779A-1R	11	20
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UNIT	BIC FOS	SSIL	CHA	RACT	ER	TICS	RTIES					STURB.	URES									
TIME-ROCK	FORAMINIFER	NANNOFOSSIL	RADIOLARIAN	DIATOMS		PALEOMAGNE	PHYS. PROPE	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DIS	SED. STRUCT	SAMPLES		LIT	HOLOGIC	DESCRI	PTION			
								• 0.45 • 1.2	1	0.5			0	*	ARAGONITE-BEARING TINE Major lithology: ARAGO SIZED SERPENTINE, do gray (10YR 7/4) intervals local patches of light gray mm) are common throug material occur in the inte foraminiters.	SANDY SI NITE-BEAF ominantly v . Contains y (7.5YR 7 hout the si rval from 2	RING SAI very pale scattered (0) finer g action. In 7 to 45 c	D SERPE NDY SILT brown (1 d, dark, p grained se termixed m. The se	-SIZED 0YR 7/4) ebble-siz erpentine pockets ection yie	SERPEN with sub ed clasts Large a of black (Ided low	ITINE AN ordinate (serpent ragonite) 7.5YR 2/0 er Pleisto	SERPEN D SAND- very dark ine?) and needles (1)) sand-si cene
E PLEISTOCENE							• P= 1.82	• 15.9	2			000000 ~~~~~	0 0 0	*	SMEAR SLIDE SUMMAI TEXTURE: Sand Silt Clay	RY (%): 1, 74 M 30 50 20	1, 74 D 30 50 20	2, 31 D 20 70 10	3, 90 D 70 20 10	4, 46 D 30 50 20	4, 46 M 30 50 20	5, 37 D 30 20 50
JUCINE - MILOU		R/M		ß		2	• 50.5 • 1.67	6.7	3			0 ~~~~~ -	ہ ہ	XRC XRC ¥	COMPOSITION: Amphibole Aragonite Chlorite Opaques Serpentine Zoisite	10 20 5 5 60	20 5 5 70	5 15 5 8 62 5	Tr 10 5 20 65	10 25 5 5 55 —	3 20 5 5 67	20 10 70
LUWER PLEISIN		CN14a					• = = = 0.6	• 0.13	4	and and and		000000000000000000000000000000000000000	0 0	XRC *								
		R/M					P=1.58	•15.4	5			0000	ہ ہ	TS *								
							201-040-803-00-	w1.XCaCO3														



LIN	810 F05	SSIL	CHA	ZONE	TER	9	riES		Τ			JRB.	83		
TIME-ROCK UI	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETIC	PHYS. PROPERI	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTU	SED. STRUCTUR	SAMPLES	LITHOLOGIC DESCRIPTION
						2	P=2.67		c		1 M				This core contained no sedimentary materials.
			_		-	-	_	_	-	-		_	-	-	
	BIO	775 SSIL	Э АТ. СНА	HO			Es		ORI	E	4R CC	RE	D I	NT	ERVAL 3967.3-3976.8 mbsl: 20.1-29.6 mbsf
TIME-ROCK UNIT	FORAMINIFERS 31 @	779 SSIL SSIL SSIL	RADIOLARIANS 2	HO ZONE RACT SWOLVIO	TER	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	4R CC	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	ERVAL 3967.3-3976.8 mbs1; 20.1-29.6 mbsf Lithologic description
TIME-ROCK UNIT	FORAMINIFERS 4 01	775 SSTRI SSSIL	AT SNEINALOLARIANS	HO ZONE RACT SWOLVIO		[2=0.0]7 ? PALEOMAGNETICS	P=1.95 . PHYS. PROPERTIES	0.30 CHEMISTRY	NOLLO SE 1 0	E METERS	4R СС сварніс Lітноlogy IM	DRILLING DISTURB.	♦ ♦ SED. STRUCTURES	*S SAMPLES IN	ERVAL 3967.3-3976.8 mbs1; 20.1-29.6 mbsf LITHOLOGIC DESCRIPTION CLAYEY SILT-SIZED SERPENTINE Major lithology: CLAYEY SILT-SIZED SERPENTINE, very sticky, bluish gray (58 5/1) with coarse-sand and granular-sized light greenish gray (10'R 7/4) to black (7.5YR 2/0) serpenti- nized(7) clasts scattered throughout the core. One pebble-sized, serpentinized ultramatic clast al 50 cm and one at 45 cm. SMEAR SLIDE SUMMARY (%):
TIME- ROCK UNIT	FORAMINIFERS 301	779 DISTRISSIL SILSSILSICSICS	AT. CHA SNUIDEN SNUIDEN	HO ZONE RACT SWOLVIG		1 2=2.29 17 2 PALEOMAGNETICS	P=1.95 • • PHYS. PROPERTIES	#1.XC8C03 0.30 CHEMISTRY	SECTION SECTION	Gin METERS	GRAPHIC LITHOLOGY	DRILLING DISTURG.	♦ ♦ SED. STRUCTURES	*S SAMPLES Z	ERVAL 3967.3-3976.8 mbs1; 20.1-29.6 mbsf LITHOLOGIC DESCRIPTION CLAYEY SILT-SIZED SERPENTINE Major linkology: CLAYEY SILT-SIZED SERPENTINE, very sticky, bluish gray (58 5r1) with coarse-sand and granular-sized light greenish gray (10YR 7/4) to black (7.5YR 2/0) serpenti- nized(7) clasts scattered throughout the core. One pebble-sized, serpentinized ultramatic clast at 53 cm and one at 45 cm. SMEAR SLIDE SUMMARY (%): 1, 57 D TEXTURE:

Amphibole Opaques Serpentine 5 5 90

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85-	-	85-	-
90-	-	90-	-
95-	-	95-	-
100-	-	100-	-
105-	-	105-	-
110-		110-	-
115-	-	115-	-
120-	-	120-	-
125-		125-	-
130-	-	130-	-
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145-	-	145_	
150-	1_	150-	1

SITE 779

EN L	FOS	SSIL	CHA	RAC	TER	8	TIES					JRB.	ŝ		
TIME-ROCK U	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETI	PHYS. PROPER	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTI	SED. STRUCTUR	SAMPLES	LITHOLOGIC DESCRIPTION
						2 2	• $\beta_{=1.88}^{=47.8}$ • $\beta_{=2.83}^{=0.0}$ v=5.1	CaCO3 • 1.0 TOC 3 • 0.17	2	0.5	IM		0	*	AMPHIBOLE-RICH SANDY SILT-SIZED SERPENTINE Major lithology: AMPHIBOLE-RICH SANDY SILT-SIZED SERPENTINE, bluish gray (58 6/1) to light gray (N7) with scattered black (7 5YR 2/0) and pale green (10G 6/2) pebbles. Faint laminations (primary?) throughout the cored interval. SMEAR SLIDE SUMMARY (%): 3, 37 D TEXTURE: Sand 30 Silt 50 Clay 20 COMPOSITION: Amphibole 5 Garnet 5 Opaques 15 Serpentine 75



ī	FOS	SSIL	CHA	RACI	REA	8	LIES					URB.	Sa		
TIME-ROCK U	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETIC	PHYS. PROPERI	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTU	SED. STRUCTUR	SAMPLES	LITHOLOGIC DESCRIPTION
							4 • • • • • • • • • • • • • • • • • • •	\$=0.9	1					XRD XRD	ZOISITE-BEARING SILT-SIZED SERPENTINE AND THULITE-RICH SILT-SIZED SERPEN TINE Major lihology: ZOISITE-BEARING SILT-SIZED SERPENTINE and THULITE-RICH SILT- SIZED SERPENTINE intermixed in core. Bluish gray (58 67) to light greenise gray (58 71) and dark blue gray (58 47) with rare pebble-sized clasts (serpentine?) and scattered coarse sand- to granule-sized clasts. The interval is slightly sheared and the basal 12 cm is faintly laminated. SMEAR SLIDE SUMMARY (%): 1, 25 1, 44 D D TEXTURE: Sand 5 10 Silt 75 90 Clay 20 - COMPOSITION: Chlorite 5 - Epidote 5 - Olivine Tr Opaques 10 10 Serpentine 75 75 Talc 15 Zoistie 10 Tr
															Thuite — Tr Garnet — Tr

1/9A-0H		
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SITE 779

E	//:	9		fee be		<u> </u>	-	-			T	T	-	ERTAL 3333./			
FC	SSIL	CHA	RAC	TER		IES					88.	00					
FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETIC	PHYS. PROPERT	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTU	SED. STRUCTURE	SAMPLES		LITH	IOLOGIC	DESCRIPTION
					2		0.36	1		IM.		Ŵ	× xrc *	SILT-SIZED SERPENTINE Major lithology: SILT-SIZED SERPENTINE, dark blue gi sections of wavy and convo (5.7YR 2/0), angular to sub elongate and oriented para	AND Z D SERPI ray (58 blute bec rounde illel to be	DISITE-R ENTINE / 4/1) to lig Idding. Co d, pebble idding.	ICH SANDY SILT-SIZED SERPENTINE AND ZOISITE-RICH SANDY SILT-SIZED ht greenish gray (586 7/1) with alternating re also contains pale green (56 7/2) to black -sized clasts of serpentine(?); some clasts are
														SMEAR SLIDE SUMMARY	(%):		
															1,26	1,26	1, 90 D
														TEXTURE	5	2	
														Sand	30	30	40
														Silt	70	70	60
														COMPOSITION			
														Amphibole	Tr	10	Tr
														Gamet	5	Tr 10	10
					1									Serpentine	75	80	73
	1.1													Thulite	Tr	Tr	2
														Zoisite		-	15
TE	779 05TR	9	HO		A	8		COF	RE	8R CO	RE	DI	NTE	Zoisite ERVAL 4005.7-4	015.	3 mbs	15 sl; 58.5-68.1 mbsł
	779 OSTR SSIL	9 AT. : CHA	HO	LE / ren	TICS	ERTIES		COF	RE	BR CO	STURB. B	URES C	NTE	Zoisite RVAL 4005.7-4	015.	3 mb:	15 sl; 58.5-68.1 mbsf
FORAMINIFERS	775 OSTR SSIL	RADIOLARIANS 2 T	HO ZONE SWOLVIG	LE // rer	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION JO	METERS	BR CC GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	Zoisite ERVAL 4005.7-4	015.	3 mbs	15 sl: 58.5-68.1 mbsf NESCRIPTION
FIME-ROCK UNIT T	775 SSIL SSIL SSIL	RADIOLARIANS 2 T C	HO	LE / ren	7 PALEOMAGNETICS	A PHYS. PROPERTIES	I CHEMISTRY	SECTION JO	WETERS	BR CO GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	* symples	Zoisite ERVAL 4005.7-4 ZOISITE-RICH SILT-SIZED :	O15.	3 mbs	15 SI: 58.5-68.1 mbsf DESCRIPTION
FORAMINIFERS	775 OSTR SSIL SSIL	RADIOLARIANS 22	HO	LE /ren	7 PALEOMAGNETICS	• • PHYS. PROPERTIES	0=9.6 1 CHEMISTRY	1 SECTION 10	======================================	BR CO GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	* symples	Zoisite ERVAL 4005.7-4 ZOISITE-RICH SILT-SIZED : Major lithology: ZOISITE-RIC Iaminated. Contains sand- to	015. LITHO SERPEN CH SILT- granule	3 mbs	15 SI: 58.5-68.1 mbsf DESCRIPTION ERPENTINE, bluish gray (58 6/1) and faintly Ists of black (5YR 2/0) serpentine(%).
TIME-ROCK UNIT T	7 7 STRIL STISSOJONNYN	RADIOLARIANS 24	HO	LE / ren	7 PALEOMAGNETICS	0.0 • • PHYS. PROPERTIES	-3.6 \$=9.5 1 CHEMISTRY	1 SECTION	AETERS 33	BR CO GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	* SAMPLES	ZOISITE ERVAL 4005.7-4 ZOISITE-RICH SILT-SIZED : Major lithology: ZOISITE-RIC laminated. Contains sand- to SMEAR SLIDE SUMMARY (015. LITHO SERPER CH SILT- granule %):	3 mbs	15 SI: 58.5-68.1 mbsf VESCRIPTION ERPENTINE, bluish gray (58 6/1) and faintly usts of black (5YR 2/0) serpentine(%).
TIME-ROCK UNIT T FORAMINIFERS 3 2 E	775 OSTRI STISSOJONNYN	LATIOLARIANS HOLE	HO ZONEE SWOLVIG	ILE /ren	7 PALEOMAGNETICS	P=2.7 • • 4 PHYS. PROPERTIES	[V=3.6 0=9.6] CHEMISTRY	1 SECTION	RE MELEUS	BR CO GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	* SAMPLES	Zoisite ERVAL 4005.7-4 ZOISITE-RICH SILT-SIZED : Major lithology: ZOISITE-RIC Iaminated. Contains sand- to SMEAR SLIDE SUMMARY (015. LITHO SERPEN Granule %): 1, 2 D	3 mbs	15 SI: 58.5-68.1 mbsf VESCRIPTION ERPENTINE, bluish gray (58 6/1) and faintly ists of black (5YR 2/0) serpontine(%).
	775 SSIL STISSOJONNYN	GAT. TA	HO	LE //rea	7 PALEOMAGNETICS	P-2.7 • • PHYS. PROPERTIES	[V=3.6 0=9.6] CHEMISTRY	1 SECTION	AE METERS	BR CO GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED, STRUCTURES	* SAMPLES	Zoisite ERVAL 4005.7-4 ZOISITE-RICH SILT-SIZED : Major lithology: ZOISITE-RIC laminated. Contains sand- to SMEAR SLIDE SUMMARY (TEXTURE:	015. LITHO SERPEN CH SILT- granule %): 1, 2 D	3 mbs	15 SI: 58.5-68.1 mbsf VESCRIPTION ERPENTINE, bluish gray (58 6/1) and taintly ists of black (5YR 2/0) serpentine(%).
TIME-ROCK UNIT T	770 OSTRL SSIL SISSOJONNYN	AT. CHA SINE INFOIDER	HO		? PALEOMAGNETICS	P-0.0 • • PHYS. PROPERTIES	[V=3.6 2=9.56] CHEMISTRY	1 8ECTION 10	METERS	BR CO GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	* SAMPLES	Zoisite ERVAL 4005.7-4 ZOISITE-RICH SILT-SIZED : Major lithology: ZOISITE-RIC Iaminated. Contains sand- to SMEAR SLIDE SUMMARY (TEXTURE: Sand Sitt Clay	015. LITHO SERPEN (H SILT. granule %): 1,2 D 10 60 30	3 mbs	15 SI: 58.5-68.1 mbsf VESCRIPTION ERPENTINE, bluish gray (58.6/1) and taintly ists of black (5YR 2/0) serpentine(%).
TIME-ROCK UNIT T	775 OSTRI SILE SISSOJONNYN	CHAT. CHA SWEIVER SWEIVER	HO	LE //ren	7 PALEOMAGNETICS P	P-2.7 • • PHYS. PROPERTIES	[V=3.6 2=9.6 1 CHEMISTRY	1 8ECTION	A CLERKS	BR CO GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	* SYMPLES	Zoisite ERVAL 4005.7-4 ZOISITE-RICH SILT-SIZED : Major lithology: ZOISITE-RIC Iaminated. Contains sand- to SMEAR SLIDE SUMMARY (TEXTURE: Sand Sitt 6 Clay 5 COMPOSITION:	015. LITHO SERPEN CH SILT- granule (%): 1, 2 D	3 mbs	15 sl; 58.5-68.1 mbsf DESCRIPTION ERPENTINE, bluish gray (58 6/1) and faintly ists of black (5YR 2/0) serpentine(%).
	775 OSTRILSSIIL	9 AT. CHA SHVINTOIDEN	HO	PLE //ren	2 PALEOMAGNETICS P	P-2.7 ● • PHYS. PROPERTIES	(V=3.6 \$ =9.5] CHEMISTRY	1 BECTION	a meters	BR CO GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED, STRUCTURES	* symbles	Zoisite ZOISITE-RICH SILT-SIZED : Major lithology: ZOISITE-RIC Iaminated. Contains sand- to SMEAR SLIDE SUMMARY (TEXTURE: Sand Sitt Clay COMPOSITION: Garnet Opaques Senseration	015. LITHO SERPEJ SERPEJ MS): 1, 2 D 10 500 300 Tr 10 70	3 mbs	15 sl: 58.5-68.1 mbsf DESCRIPTION ERPENTINE, bluish gray (58 6/1) and faintly ists of black (5YR 2/0) serpentine(%).
	775 OSTRIL STISSOJONNYN	BAT. CHA SWEINTOIDER	HO		7 PALEOMAGNETICS	0-0.0 • • 4 PHYS. PROPERTIES	[V=3.6 2=9.6 1 CHEMISTRY	1 8ECTION	METERS 32	BR CO GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED, STRUCTURES	* symples	Zoisite ZOISITE-RICH SILT-SIZED ZOISITE-RICH SILT-SIZED Major lithology: ZOISITE-RIC Iaminated. Contains sand- to SMEAR SLIDE SUMMARY (TEXTURE: Sand Sitt COMPOSITION: Garnet Opaques Sepentine Zoisite	015. LITHO SERPEH Granule %): 1, 2 D Tr 10 50 30 Tr 15	3 mbs	15 sl: 58.5-68.1 mbsf VESCRIPTION ERPENTINE, bluish gray (58.6/1) and taintly ists of black (5YR 2/0) serpentine(%).

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25-	- 10	25-	-
30-	- Ma	30-	22-
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40-	-	40-	-
45-	-19 P	45-	-
50-	-	50-	-
55-	-	55-	- 19
60-	-	60-	- (2)
65-	-	65-	1-
70-		70-	1911 S
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80-		80-	
85-	-	85-	-
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115_	-	115-	-
120-		120-	
125-	É-	125-	2.00
130-	M-	130-	
135-	1	135-	
140-	V-	140-	C. 1-
145-	-	145-	1-dt-
150-	m-	150-	

ITE	1	779)	H	LE	1	4		CO	RE	9R C	ORE	D	INT	ERVAL 4015.3-40	024	.9 ml	bsl; (68.1-77.7 mbsf
5	BIO FO	SSIL	АТ. СНЈ	ZON	E/ TER		53					38.	00						
TIME-ROCK UN	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETICS	PHYS. PROPERTI	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTUR	SED. STRUCTURE	SAMPLES		LITH	OLOGIC	DESCRI	IPTION
						2	Ø=34.9 ₽=1.89 ●	0.21	1	0.5	1 M			TS TS	CLAYEY SILT-SIZED SERPE Major lihology: CLAYEY SILT with clasts of altered serpentin cm. SMEAR SLIDE SUMMARY (%	NTINE SIZE ne(?) a	E D SERP Ind an in	ENTINE, terval of	, gray green (5G 7/1), semi-consolidate strongly disturbed bedding at 50 to 60
							• ● = 0.0		2	1.1.1	IM				TEXTURE: Sand 5 Silt 60	0	1, 23 D	1, 29 D	1, 30 D 10 60
							V=2.	W1.XCaCO3 W1.XTOC3							COMPOSITION: Amphibole Tr Aragonite — Chlorite Tr Garnet 8 Opaques 5 Serpentine 62 Talc — Zoisite 25	r r 22 5	5 5 3 	Tr10 90	Tr 1 10 82 Tr 7
TIME-ROCK ON I	FORAMINIFERS 3 0	779 SSIL SSIL SSIL	RADIOLARIANS 2	HC ZONE SWOLVIG	DLE (/ TER	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	ERVAL 4024.9-40)34 LITH	.5 mt	DSI: 7	7.7-87.3 mbsf
						2	5.4		1	0.5	I M				CLAYEY-SILT-SIZED SERPE Major lithology: CLAYEY SILT (5G 6/2), pebble-sized clasts o	-SIZEI of silt-s	D SERP	ENTINE, pentine a	dark blue gray (5B 4/1) with pale gree and sand-sized clasts of serpentine(?).
						2	• \$=0.5 v=		2		IM								

779A-9R	1	21	779A-10R	1	2
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95_			95-	No.	-
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115_			115_		
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125-	125		125-	1	
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TIME-ROCK UNIT	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	SWOLVIO	ER	PALEOMAGNETICS	PHYS. PROPERTIE:	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURE	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
						2				0.5	I M I M		\$	*	CLAYEY SILT-SIZED SERPENTINE Major lithology: CLAYEY SILT-SIZED SERPENTINE, dark blue gray (58 4/1). Contains one pale green (5G 6/2) lithic clast at 38 cm. SMEAR SLIDE SUMMARY (%): 1, 40 D TEXTURE: Sand 20 Silt 50 Clay 30 COMPOSITION: Opaques 5 Serpentine 80 Aragonite 5 Epidore 10
TE	BIO	77S	e at.	HO	LE , rer	4	ES		COF	RE	12R C	ORE	D	INT	ERVAL 4044.1-4053.8 mbsl; 96.9-106.6 mbsf
TIME-ROCK UN	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETIC	PHYS. PROPERTI	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTU	SED. STRUCTURE	SAMPLES	LITHOLOGIC DESCRIPTION
						2			1	0.5	IM				This core contained no sedimentary material.

779A-11R	11	779A-12R	1
5-	1253	5-	1
10-	AA-	10-	7-
15-		15-	-
20-		20-	12-
25-	1999-	25-	
30-	<u>- 2</u>	30-	-
35-	-	35-	-
40-	- 1-	40-	- CE
45-	-	45-	(SB-
50-	-	50-	1
55-		55-	-
60_	- 10	60-	1-
65_	-	65-	-
70-	-	70-	Constant -
75-		75-	-
80-	-	80-	1-
85_		85_	
90-		90-	VF
95-	2-	95_	1-
100-	V-	100-	
105-	W	105-	
110-	M	110-	1-
115-	LA-	115-	anp -
120-	2-	120-	7-
125-	1-	125-	
130-		130-	
135-		135-	//-
140-		140-	1-
145-	141-	145-	
150-	-	150-	

11	BI0 FOS	STRI	CHA	RACI	TER	07	Es					88.	s		
TIME-ROCK UN	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETIC	PHYS. PROPERT	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTU	SED. STRUCTUR	SAMPLES	LITHOLOGIC DESCRIPTION
										-	IM			*	SILT- AND SAND-SIZED SERPENTINE
1			1				54.6	27	,	0.5		ļ	W	TS	Major lithology: SILT- AND SAND-SIZED SERPENTINE, blue gray (58 5/1) and light gra (56 7/2) in alternating laminations which are often not continuous across the core and are slightly disturbed by the presence of dark, coarse sand-to pebble-sized clasts (serpentin
						~		•	Ċ	1.0		ļ	W		SMEAR SLIDE SUMMARY (%):
												ļ	00		1,9 2,10 D D
						~				-				TS *	TEXTURE
				11					1	1	IM	1	1	1	Sand 50 30
				- 1							0 0000				Sift 45 60
									2	-	í				Clay 5 10
										1					COMPOSITION:
										1					Amphibole 10
- 0				1.0				0		-					Garnet Tr Tr
								No C	3	-	IM		1		Olivine 2-
							1.3	UF	~		(1997) (1997)			L	Opaques 5 15
								~~~							Serpentine 70 65
								* *							Zoisite 23 10

11	810 F0	SSIL	CHA	ZONE	TER	0	ES					RB.	s		
TIME-ROCK UN	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETIC	PHYS. PROPERT	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTU	SED. STRUCTUR	SAMPLES	LITHOLOGIC DESCRIPTION
						2	V=3.4 \$ 2.87		1	0.5	IM				This core contained no sedimentary material.
							-0.1 -0.1		2	and a set of a set	T M				



5	BIO	STR	AT.	ZON	E/		ŝ						on		
TIME-ROCK UN	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETICS	PHYS, PROPERTI	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTUR	SED. STRUCTURE	SAMPLES	LITHOLOGIC DESCRIPTION
						2			1	0.5	i M				This core contained no sedimentary material.
TE		779	9	н	OLE				2	RE	16R C	DRE			FRVAL 4082.7-4092.4 mbsl: 135.5-145.2 mbsf
	BIO	STR	AT.	ZON	IE/	Γ	60	Γ						T	
K UNIT	BIO FOS	SSIL	AT. CHA	ZON	IE/	ETICS	PERTIES				CRADUIC	ISTURB.	CTURES		
TIME-ROCK UNIT	FORAMINIFERS 3 8	NANNOF OSSILS	RADIOLARIANS	SWOLVIG	IE/	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	WETERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
TIME-ROCK UNIT	FORAMINIFERS 0 8	NANNOFOSSILS	RADIOLARIANS	SWOLVIG		PALEOMAGNETICS	PHYS, PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
TIME-ROCK UNIT	FORAMINIFERS 8018	NANNOF OSSILS	RADIOLARIANS 2.1	SWOLVIG	IE/ CTER	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
TIME-ROCK UNIT	FORAMINIFERS 3018	NANNOF OSSILS	T. HA CHANNER STOLEN	SWOLVIG		PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	T SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
TIME-ROCK UNIT	FORAMINIFERS	ATRO SSIL	RADIOLARIANS	SWOLVIG		7 PALEOMAGNETICS	#5.3 PROPERTIES	CHEMISTRY	1 2	0.5	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION



5-

10

15

TIME-ROCK UNIT	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	ZONE SWOLVIQ	TER	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	LITHOLOGIC DESCRIPTION
							P=2.99		1	1.0					This core contained no sedimentary material.
						2	.0		2		IM				
							• 9:2		3						
									4						

779A-17R	1	2	3	4
5-	10		RA -	-
10-		- Contract	-	
15-	Ca-	- Cilla-	-	
20-	100	1/-		- M
25-	S-			
30-	-	-		-
35-	19		-	- 9/0-
40-	A COL	12-	-	-Net -
45-	APR AND	6	- The	
50-		ON -	Aller.	- 4 -
55-		- 63 -		m-
60-	-		-	- p -
65-	-		-	
70-	1			
75-	X	12-	- 338 -	- ( -
80-	-	-		- 1 -
85-			-	
90-		- @-		
95-			-	
100-	P-		1840	
105-	EXT.			
110-	a -	-	-	
115-	K.	-120-		-
120-	ALC: NO	-	- 463 -	
125-	-	-	- 66 -	
130-	1	-0-	- 20	
135_	X	-	1	
140-	- 104	14	6	- V -
145-	-	A	-	-
150-	-			

SITE 779

X





	FOS	STR	CHA	RACI	ren	\$	LIES					JRB.	S		
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETIC	PHYS. PROPERI	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTU	SED. STRUCTUR	SAMPLES	LITHOLOGIC DESCRIPTION
1										-	IM				PHACOIDAL SHEARED SERPENTINE
									1	0.5		~~~		* *	Major lithology: PHACOIDAL SHEARED SERPENTINE, dark green (5G 3:2) with white (7.5YR 8:0) zone at the top and small light green (5G 8:2) grains scattered throughout. Upper zone is either late-stage serpentine or carbonate. Small grains are serpentine. SMEAR SLIDE SUMMARY (%): 1, 38 1, 97
						0				-					DU
						2	-0.0 V-5.		2	contract	IM				Sand 5 20 Sait 85 60 Clay 10 20
							•			rentr					COMPOSITION: Amphibole Tr — Opaques 5 5 Sergentine 90 90
- 1										1					Talc — Tr
									3	1.1					Thulite — Tr Zoisite 5 5
E	7 810 F05	779 STR/	CHA	HO	LE /	4	IES		co	RE	20R CC	RE	Es C	NT	Thulte — Tr Zoisite 5 5 ERVAL 4116.3-4117.3 mbsl: 169.1-170.1 mbsf
E	FORAMINIFERS 10	779 STR	RADIOLARIANS 2 T	HO	LE / ren	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION 0 C	WETERS	20R CC GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	Thulte - Tr Zoisite 5 5 ERVAL 4116.3-4117.3 mbsi: 169.1-170.1 mbsf
E	FOS FOS	779 STR/ SSIL STR/	RADIOLARIANS 2 T	HO ZONE RACT SWOIVIG	LE / ren	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION 0	METERS	20R CC GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	Thulte - Tr Zoisite 5 5 ERVAL 4116.3-4117.3 mbsi: 169.1-170.1 mbsf LITHOLOGIC DESCRIPTION PHACOIDAL SHEARED SERPENTINE
E	FOSSAMINITERS	VANNOFOSSILS	T. CHA SNEIJUOIDEN	HO ZONEE RACT SWOLVID	LE / ren	? PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	COI NOILON	RE WELEYS	20R CC	DRILLING DISTURB.	SED. STRUCTURES	** SAMPLES IN	Thulite       —       Tr         Zoisite       5       5         ERVAL       4116.3 - 4117.3 mbsl; 169.1 - 170.1 mbsf         LITHOLOGIC DESCRIPTION         PHACOIDAL SHEARED SERPENTINE         Major lithology: PHACOIDAL SHEARED SERPENTINE, light greenish gray (10Y 7/2).         Pebbles of sepentinized ultramatic rock in sand-sized, zoisite and thullie-bearing matrix material. Core exhibits a sheared, phacoidal texture with veins and foliation anastomosi around dark green (5G 3/2) pebbles. Some flattening and brittle pinch and swell (norma flatting) is present.
E	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS 2. T	HO	LE / ren	7 PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	CO NOILON	RE 0.5	20R CC GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	* * SAMPLES	Thulite       —       Tr         Zoisite       5       5         ERVAL       4116.3 - 4117.3 mbsl; 169.1 - 170.1 mbsf         LITHOLOGIC DESCRIPTION         PHACOIDAL SHEARED SERPENTINE         Major lithology: PHACOIDAL SHEARED SERPENTINE, light greenish gray (10Y 7/2), Pebbles of serpentinized ultramafic rock in sand-sized, zoisite and lhulite-bearing matrimaterial. Core exhibits a sheared, phacoidal texture with veins and foliation anastomos around dark green (5G 3/2) pebbles. Some flattening and brittle pinch and swell (norma fautting) is present.         SMEAR SLIDE SUMMARY (%):
E	77 BIO: FOSVININIESS	VANNOFOSSIL SITE	A T T A SUOLARIANS	HO	LE	? PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	COI NOLLON	RE SHELLIN 0.5	20R CC GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES O	* SAMPLES	Thulite       — Tr         Zoisite       5         5       5    ERVAL 4116.3 - 4117.3 mbsl: 169.1 - 170.1 mbsf          ERVAL       4116.3 - 4117.3 mbsl: 169.1 - 170.1 mbsf    LITHOLOGIC DESCRIPTION          PHACOIDAL SHEARED SERPENTINE         Major lithology: PHACOIDAL SHEARED SERPENTINE, light greenish gray (107 7/2).         Pebbles of serpentinized ultramatic rock in sand-sized, zoisite and thulite-bearing matrix material. Core exhibits a sheared, phacoidal lexture with verins and foliation anastomos around dark green (56 3/2) pebbles. Some flattening and brittle pinch and swell (norma faulting) is present.    SMEAR SLIDE SUMMARY (%):          1, 69       1, 72         D       D
E	FOS	NANNOFOSSILS	T. HA SNUIANING	HO ZONEE RACT DIVIONS	LE	? PALEOMAGNETICS	PHYS, PROPERTIES	CHEMISTRY	CO NOLOSS	RE 0.5	20R CC GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	* SAMPLES I	Thulke       -       Tr         Zoisite       5       5         ERVAL       4116.3 - 4117.3 mbsl; 169.1 - 170.1 mbsf         LITHOLOGIC DESCRIPTION         PHACOIDAL SHEARED SERPENTINE         Major lithology: PHACOIDAL SHEARED SERPENTINE, light greenish gray (10Y 7/2).         Pebbles of seprentinized ultramatic rock in sand-sized, zoisite and thulite-bearing matrix material. Core exhibits a sheared, phacoidal texture with veins and foliation anastomosi around dark green (5G 3/2) pebbles. Some flattening and brittle pinch and swell (norma fauting) is present.         SMEAR SLIDE SUMMARY (%):         1, 69       1, 72         D       D         TEXTURE:
E	FORAMINIFERS	779 STRA	RADIOLARIANS HO	HO ZONE RACT SW01VIG	LE /ren	? PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	CO NOLLON	RE 0.5	20R CC GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	* SAMPLES N	Thulite       -       Tr         Zoisite       5       5         ERVAL       41116.3 - 41117.3 mbsl; 169.1 - 170.1 mbsf         LITHOLOGIC DESCRIPTION         PHACOIDAL SHEARED SERPENTINE         Major lithology: PHACOIDAL SHEARED SERPENTINE.         Major lithology: end (50.32) pebbles. Some flattening and brittle pinch and swell (norma flatting) is present.         SMEAR SLIDE SUMMARY (%):         1, 69       1, 72         D       D         TEXTURE:       Sand       60       70         Silit       30       20
E	FORAMINIFERS	779 STRIL STRIL STRIL	RADIOLARIANS H. T.	HO	LE / ren	7 PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	CON NOTICE	RE 0.5	20R CC GRAPHIC LITHOLOGY	DRILLING DISTURE.	SED. STRUCTURES O	** SAMPLES	Thulite       -       Tr         Zoisite       5       5         ERVAL       4116.3-4117.3       mbsl:       169.1-170.1       mbsf         LITHOLOGIC DESCRIPTION       LITHOLOGIC DESCRIPTION         PHACOIDAL SHEARED SERPENTINE         Major lithology: PHACOIDAL SHEARED SERPENTINE, light greenish gray (10Y 7/2).         Pebbles of serpentinized ultramatic rock in sand-sized, zoisite and hulite-bearing matrix around dark green (5G 3/2) pebbles. Some flattening and brittle pinch and swell (norma tauting) is present.         SMEAR SLIDE SUMMARY (%):       1, 69       1, 72         D       D       TEXTURE:         Sand       66       70         Siti       30       20         Ciay       10       10
Έ	77 BIO FOS	NANNOFOSSILE	A T T A SINGLARIANO IGAN	HO ZONE RACT SWOLVIG		2 PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	1 1	RE 883137	20R CC GRAPHIC LITHOLOGY IM	DRILLING DISTURB.	SED. STRUCTURES O	* SAMPLES Z	Thulite       -       Tr         Zoisite       5       5         ERVAL       41116.3 - 41117.3 mbsl; 169.1 - 170.1 mbsf         ERVAL       41116.3 - 41117.3 mbsl; 169.1 - 170.1 mbsf         PHACOIDAL SHEARED SERPENTINE         Major lithology: PHACOIDAL SHEARED SERPENTINE, light greenish gray (10Y 7/2).         Pebbles of serperitrized ultramatic rock in sand-sized, zoisite and fhulite-bearing matrix around dark green (56 3/2) pebbles. Some flattening and brittle pinch and swell (norma fauting) is present.         SMEAR SLIDE SUMMARY (%):         1, 69       1, 72         D       D         TEXTURE:         Sand       60       70         Sili       30       20         Ciay       10       10         COMPOSITION:       -       -
E	LORAMINIFERS	STR/SSIL	T. HA SINGLAR SADIOLAR	HO	LE /ren	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	CON NOLLOS	RE 500	20R CC GRAPHIC LITHOLOGY IM	DBILLLING DISTURE.	SED. STRUCTURES O	* SAMPLES	Thulite       -       Tr         Zoisite       5       5         ERVAL       41116.3 - 41117.3 mbsi; 169.1 - 170.1 mbsf         ERVAL       41116.3 - 41117.3 mbsi; 169.1 - 170.1 mbsf         LITHOLOGIC DESCRIPTION         PHACOIDAL SHEARED SERPENTINE         Major lithology: PHACOIDAL SHEARED SERPENTINE, light greenish gray (10Y 7/2).         Pebbles of serpentinized ultramatic rock in sand-sized, zoisite and fhulite bearing matrix around dark green (5G 3/2) pebbles. Some flattening and brittle pinch and swell (norma fautting) is present.         SMEAR SLIDE SUMMARY (%):         1, 69       1, 72         D       D         TEXTURE:         Sand       66         Siti       30         CoMPOSITION:       Opaques         Opaques       10         Opaques       10         Serpentine       55



11	BIO	STRA	CHA	ZONI	E/ TER	ŝ	IES					RB.	ŝ		
TIME-ROCK U	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETIC	PHYS. PROPERT	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTU	SED. STRUCTUR	SAMPLES	LITHOLOGIC DESCRIPTION
									1	0.5	CUTTINGS			TS	This core consisted entirely of drill cuttings.
												_			
TE	7 810 F05	779 SSIL	АТ. СНА			4	TIES		COF	RE	22R C0	RE . Ban	D		ERVAL 4117.3-4124.8 mbsl: 170.1-177.6 mbsf
TIME-ROCK UNIT T	FORAMINIFERS 3 01 0	STRASSIL STRASSIL	RADIOLARIANS 2 -	HC ZONI		PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	WETERS	22R CO GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES N	ERVAL 4117.3-4124.8 mbsl: 170.1-177.6 mbsf Lithologic description

CUTTINGS I M

V=6.1 0

V=4.9 • 0=0.0

2

3 - 7

779A-21M	1	779A-22R	1 1	2	3
5-	-	5-	100	-	
10-	ister-	10-	4 -	- A	-
15-		15-	0-	-	-
20-		20-		-	- May
25-		25-	China -	-	
30-		- 30-	2	-	-2-
35-		35-	alle -		7
40-		40-	ha	-1-1-	-13-81-
45-		45-	1	12	-
50-	-	50-	Terre-	-	-
55-	-	55-	-	-	-
60-		60-			-
65-		65			-
70-		70-		100	-
75-	•	75-	920-		- 200 -
80-		80-			1.80
85-		85-	1000	- And	
90-	-	90-		-	-
95-		95_	-p-	- 18 -	-
100-	1.317	100-	-	- 14 -	-
105-		105-	1	- 6-	-
110-	4. 11. j. j.	- 110-	-		-
115-	•	- 115-	-	- 4-	-
120-		- 120-		-	
125-	-	- 125-			
130-		- 130-		- Jacobs	
135-		- 135-	E	ARE -	
140_		- 140-	1	-	-
145-	-	- 145-	and the second s	-	-
150-	- 111	- 150-	193	P-	

810 F08	STR	CHA	RAC	TER	en	IE8			8 1		JRB.	8		
 FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETIC	PHYS. PROPERT	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTU	SED. STRUCTUR	SAMPLES	LITHOLOGIC DESCRIPTION
					3			1	0.5	CUTTINGS				This core consisted of 110 cm of drill cuttings and 30 cm of igneous- metamorphic rock; i contained no sedimentary material.

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SITE	779	HOLE	Α	CORE	24R	CORED	INTERVAL	4134.4	-4144.0	mbsl;	187.2-	196.8 mb	sf
the second se				the second se							and the second se		

Ę	FO	SSIL	CHA	ZON	E/	on	ES					88.	50		
TIME-ROCK UN	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETIC	PHYS. PROPERT	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTU	SED. STRUCTUR	SAMPLES	LITHOLOGIC DESCRIPTION
						2	P=2.86 •	[V=4.2]	1	0.5	IM				This core contained no sedimentary material.

SITE	779	HOLE	Α	CORE	25R	CORED INTERVAL	4144.0-4153.7	mbsl:	196.8-206.5 mbsf
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Ę	BI0 FO	SSIL	CHA	ZON	E/	0	IES					RB.	ŝ			
TIME-ROCK UI	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETIC	PHYS. PROPERT	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTU	SED. STRUCTUR	SAMPLES	OVMLECO	LITHOLOGIC DESCRIPTION
						2	V=5.3 • 0.0		1	0.5	IM					This core contained no sedimentary material.
									2	-	IM					

//9A-23H	TERMINED.	779A-24H	1	779A-25R	1	2
5-		- 5-	-1-	5-		
10-		- 10-	-	- 10-	-	- 6
15-		- 15-	29-	15-	1	19
20-	[1]] 花。	- 20-	-	20-	A	1
25-		- 25-	10	25-	1	- 2
30-		- 30-		- 30-		- 6
35-		- 35-		35-	11-	-
40-		- 40-		40-		
45-		- 45-	0	45-		- 1
50-		- 50-		- 50-	-Al-	- 4
55-		- 55-	0-	55-	10-	- 1
60-		- 60-	X	60-	A	- 0
65-		65-	-	65-	Contra la	
70-		- 70-		70-	161	- 1
75-		- 75-		- 75-	A STATE	-
80-		- 80-		- 80-		-17
85-		- 85-		85-		- 1
90-		- 90-	1	90-	-	-
95-		- 95-	x	95-		- 1
100-		- 100-	9-	- 100-		
105-		105-	-	105-	A	
110-		- 110-		- 110-	-	-
115_	1	- 115-	1-	115-	1	-
120-		120-		120-		-
125-	-	- 125-		125-	ta j	-
130-	No.	- 130-	-	130-	-	
135_	Same Y	- 135-	M-	135-	and the second	-
140-	1	- 140-	7 -	140-		-~
145-		- 145-	X -	145-	-	-
150-	and the	- 150-		150-		121

	FOS	STRA	CHA	STRAT. ZONE/								URB.	SBS			
	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS		PALEOMAGNETI	PHYS. PROPER	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DIST	SED. STRUCTUR	SAMPLES	LITHOLOGIC DESCRIPTION	
1										-		1			This core contained no sedimentary material.	
							5.0		1	0.5	IM					
						2	• \$*2.71 V=		2		IM					
							• $\beta_{*2.57}^{*1.2}$ v=5.0		3	There is a set	IM					
E	7 8105 F05	79 STR/	CHA	HO	LE / ER	S	TIES		COI	RE	27R C	ORE	C D		ERVAL 4163.4-4173.0 mbsl: 216.2-225.8 m	nbsf
E	FORAMINIFERS	NANNOFOSSILS 25	RADIOLARIANS 2 1	HO	LE / ER	PALEOMAGNETICS	PHYS, PROPERTIES	CHEMISTRY	SECTION	RE	27R C	DRILLING DISTURB.	SED. STRUCTURES O	SAMPLES	ERVAL 4163.4-4173.0 mbsl; 216.2-225.8 m Lithologic description	nbsf
Έ	FORAMINIFERS	79 STR	RADIOLARIANS	HO	LE / ER	PALEOMAGNETICS	4.3 PHYS. PROPERTIES	S CHEMISTRY	SECTION	RE	27R C	DRILLING DISTURB.	SED. STRUCTURES O	* SAMPLES	ERVAL 4163.4-4173.0 mbs1: 216.2-225.8 m LITHOLOGIC DESCRIPTION CLAYEY SILT-SIZED SERPENTINE	nbsf
E	FORAMINIFERS	K/M NANNOFOSSILS 23	RADIOLARIANS 2.1	HO	LE / rer	? PALEOMAGNETICS	• 0=44.3 PHYS. PROPERTIES	0.2 CHEMISTRY	SECTION	RE 84313M	27R C	DRILLING DISTURB.	SED. STRUCTURES O	*** * SAMPLES	ERVAL 4163.4 - 4173.0 mbsl; 216.2 - 225.8 m LITHOLOGIC DESCRIPTION CLAYEY SILT-SIZED SERPENTINE Major lithology: CLAYEY SILT-SIZED SERPENTINE, dark bluish gray (58 47 spersed coarse sand-to cobble-sized fragments of olive (57 4/4) ultramatic ro CNEAR SILINE SILING AND Y (%)	1) with bcks.
E	FORAMINIFERS	L/M NANNOFOSSILS SIE	RADIOLARIANS	HO	LE	7 PALEOMAGNETICS	• 0=44.3 PHYS. PROPERTIES	• 0.28 CHEMISTRY	SECTION	RE Sealar	27R C GRAPHIC LITHOLOGY	DRILLING DISTURB. BU	SED. STRUCTURES O	*** * SAMPLES	ERVAL 4163.4-4173.0 mbsl; 216.2-225.8 m LITHOLOGIC DESCRIPTION CLAYEY SILT-SIZED SERPENTINE Major lithology: CLAYEY SILT-SIZED SERPENTINE, dark blaish gray (58 4/ spersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic ro SMEAR SLIDE SUMMARY (%): 1.3 1.44 1.45 1.54 1.60 1.6	1) with pocks.
	FORAMINIFERS	L/M MANNOFOSSILS	CHA SNUTARIO	HO	LE	7 PALEOMAGNETICS	• 0.44.3 PHYS. PROPERTIES	03 0.28 CHEMISTRY	section	RE weiters	27R C	DRILLING DISTURB. D	SED. STRUCTURES O	*** * SAMPLES	CLAYEY SILT-SIZED SERPENTINE Major lithology: CLAYEY SILT-SIZED SERPENTINE, dark bluish gray (58 4/ spersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic ro SMEAR SLIDE SUMMARY (%): 1,3 1,44 1,45 1,54 1,60 1,6 D D D D D D D D T TEYTIDE.	1) with ccks.
E	FORAMINIFERS	R/M MANNOFOSSILS 100	T. HA SINGLARIANS	HO	LE	PALEOMAGNETICS	• 21.30 PHYS. PROPERTIES	XCaCO3 0.28 CHEMISTRY	SECTION O	RE SEE	27R C	DBILLLING DISTURB. D	SED. STRUCTURES O	*** * SAMPLES	CLAYEY SILT-SIZED SERPENTINE Major lithology: CLAYEY SILT-SIZED SERPENTINE, dark bluish gray (58 47 spersed coarse sand-to cobble-sized fragments of olive (57 4/4) ultramatic ro SMEAR SLIDE SUMMARY (%): 1,3 1,44 1,45 1,54 1,60 1,6 D D D D D D TEXTURE: South 15 25 15 76 10	1) with pocks.
E	TOTAMINIFERS	R/M NANNOFOSSILS 1 21 2 6 2	RADIOLARIANS 2.	HO	LE	2 PALEOMAGNETICS	• 44.3 PHYS. PROPERTIES	WT XC8C03 0.28 CHEMISTRY	SECTION	8831 M	27R C	DRILLING DISTURB.	SED. STRUCTURES O	X * * * SAMPLES	ERVAL         4163.4 - 4173.0 mbsl;         216.2 - 225.8 m           LITHOLOGIC DESCRIPTION           CLAYEY SILT-SIZED SERPENTINE           Major lithology: CLAYEY SILT-SIZED SERPENTINE, dark bluish gray (58 dr spersed coarse sand-to cobble-sized fragments of olive (57 4/4) ultramatic ro SMEAR SLIDE SUMMARY (%):	1) with pocks.
E	FORAMINIFERS	11 R/M MANNOFOSSILS 151 81 8	RADIOLARIANS HT.	HO	LE	PALEOMAGNETICS	• 21.30 РНУЗ. РВОРЕКТІЕЗ	WT.XCaC03 0.28 CHEMISTRY	SECTION	RE 88313M	27R C		SED. STRUCTURES O	NT SYMDLES	ERVAL         4163.4 - 4173.0 mbsl;         216.2 - 225.8 m           LITHOLOGIC DESCRIPTION           CLAYEY SILT-SIZED SERPENTINE           Major lithology: CLAYEY SILT-SIZED SERPENTINE, dark bluish gray (58 47 spersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramafic ro           SMEAR SLIDE SUMMARY (%):           1,3         1,44         1,45         1,54         1,60         1,6           D         D         D         D         D         D         D           TEXTURE:         Sand         15         25         15         75         10	1) with books.
	FORAMINIFERS	CN11 R/M NANNOFOSSILS TIS	T. A SUDIOLARIANS	HO		2 PALEOMAGNETICS	● 0=44.3 PHYS, PROPERTIES	W1.XCaC03 0.28 CHEMISTRY W1.XTOC 3 0.28	SECTION	RE 0.5	27R C	DRILLING DISTURB.	SED. STRUCTURES O	*** * SAMPLES	ERVAL         4163.4 - 4173.0         mbsl;         216.2 - 225.8         m           LITHOLOGIC DESCRIPTION           CLAYEY SILT-SIZED SERPENTINE           Major lithology:         CLAYEY SILT-SIZED SERPENTINE, dark bluish gray (5B 47           spersed coarse sand-to cobbile-sized fragments of olive (5Y 4/4) ultramatic rd           SMEAR SLIDE SUMMARY (%):           1,3         1,44         1,45         1,54         1,60         1,6           D         D         D         D         D         D         D           TEXTURE:           Sand         15         25         15         75         10            Silt         50         40         65         20         50         70           Clay         35         35         20         5         40         30           COMPOSITION:	1) with books.
E	FORAMINIFERS	V8/CN11 R/M MANNOFOSSILS 1 8 6	T. CHA SNVIHALOIDAR	HO ZONE RACT SHOLVIG		PALEOMAGNETICS	• 044.3 PHYS. PROPERTIES	W1.XCaC03 0.28 CHEMISTRY	SECTION	RE SREE	27R C	DRITCING DISTURB.	SED. STRUCTURES O	** * SAMPLES	ERVAL         4163.4 - 4173.0         mbsl;         216.2 - 225.8         m           LITHOLOGIC DESCRIPTION           CLAYEY SILT-SIZED SERPENTINE           Major lithology:         CLAYEY SILT-SIZED SERPENTINE, dark bluish gray (58 47 spersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic respersed coarse sand-to coa	1) with pocks.
	FORAMINIFERS	CN8/CN11 R/M MANNOFOSSILS 751 5 6	C HA SNVILYTOIDE	HO	LE	? PALEOMAGNETICS	De 1.90 PHYS, PROPERTIES	WT.XCaC03 0.28 CHEMISTRY	SECTION	RE SELEN	27R C	DRE DISTURE	SED. STRUCTURES O	*** * SAMPLES Z	ERVAL         4163.4 - 4173.0         mbsl;         216.2 - 225.8         m           LITHOLOGIC DESCRIPTION           CLAYEY SILT-SIZED SERPENTINE, dark bluish gray (5B 47 spersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic re SMEAR SLIDE SUMMARY (%):           1,3         1,44         1,45         1,54         1,60         1,6           D         D         D         D         D         D         D           TEXTURE:         Sand         15         25         15         75         10         -           Siti         50         40         65         20         50         70           Clayo         35         35         20         5         40         30           COMPOSITION:	1) with ocks.
	TORAMINIFERS	CN8/CN11 R/M MANNOFOSSILS 71 8 6	C HA SNVIJVOIGVI	HO		? PALEOMAGNETICS	Part 30 PHYS, PROPERTIES	W1:XCaC03 0.28 CHEMISTRY	SECTION	RE 0.5	27R C	DRILLING DISTURB.	SED. STRUCTURES O	N SAMPLES	ERVAL         4163.4 - 4173.0         mbsl;         216.2 - 225.8         m           LITHOLOGIC DESCRIPTION           CLAYEY SILT-SIZED SERPENTINE, dark bluish gray (5B 47 spersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic ro SMEAR SLIDE SUMMARY (%):           1,3         1,44         1,45         1,54         1,60         1,6           D         D         D         D         D         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	1) with bocks.
	T BIOS	CN8/CN11 R/M MANNOFOSSILS 62	T. CHA SNUTOIORA	HO		PALEOMAGNETICS	Part 1.90 PHYS. PROPERTIES	W1.XCaC03 0.28 CHEMISTRY W1.XTOC 3 0.28	SECTION	RE 88313W	27R C	DRILLING DISTURB.	SED. STRUCTURES O	NT ***	ERVAL         4163.4 - 4173.0 mbsl;         216.2 - 225.8 m           LITHOLOGIC DESCRIPTION           CLAYEY SILT-SIZED SERPENTINE, dark bluish gray (58 dr spersed coarse sand-to cobble-sized fragments of olive (5Y 4/4) ultramatic ro SMEAR SLIDE SUMMARY (%):           1.3         1.44         1.45         1.54         1.60         1.6           D         D         D         D         D         D         D           TEXTURE:           Sand         15         25         15         75         10	1) with pocks.
	FORAMINIFERS	CN8/CN11 R/M MANNOFOSSILS 111 6	T. HA SNEIBELOIDER	HO	LE	2 PALEOMAGNETICS	Part 1, 30 PHYS, PROPERTIES	W1.%C8C03 0.28 CHEMISTRY W1.%TOC 3 0.28 CHEMISTRY	SECTION	RE 0.5	27R C	DRILLING DISTURB. 33	SED. STRUCTURES O	*** * SAMPLES	ERVAL         4163.4 - 4173.0 mbsl;         216.2 - 225.8 m           LITHOLOGIC DESCRIPTION           CLAYEY SILT-SIZED SERPENTINE           Major lithology: CLAYEY SILT-SIZED SERPENTINE, dark bluish gray (58.47 spersed coarse sand-to cobble-sized fragments of olive (57.4/4) ultramatic ro           SMEAR SLIDE SUMMARY (%):           1.3         1.44         1.45         1.54         1.60         1.6           D         D         D         D         D         D         D           TEXTURE:           Sand         15         25         15         75         10         -           Sitt         50         40         65         20         50         70           Clay         35         35         20         5         40         30           COMPOSITION:           Amphibole         -         -         Tr         -         -           Amphibole         -         -         Tr         -         -         -           Control         -         -         Tr         -         -         -         -         -         -         -         -         -         -         -         -	1) with ocks.
	FORAMINIFERS	CN8/CN11 R/M MAMOFOSSILS 101 6	T. CHA SNEINALDICAR	HO		2 PALEOMAGNETICS	P.1.30 PHYS. PROPERTIES	w1.%CaCO3 0.28 CHEMISTRY w1.%TOC 3 0.28	SECTION DO	RE 0.5	27R C		SED. STRUCTURES O	*** * SAMPLES	ERVAL         4163.4 - 4173.0 mbsl;         216.2 - 225.8 m           LITHOLOGIC DESCRIPTION           CLAYEY SILT-SIZED SERPENTINE           Major ithology:         CLAYEY SILT-SIZED SERPENTINE.         dark bluish gray (58.4)           Spersed coarse sand-to cobble-sized fragments of olive (57.4/4) ultramatic rg         SMEAR SLIDE SUMMARY (%):         1.3         1.44         1.45         1.54         1.60         1.6           D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D         D <td>1) with hocks.</td>	1) with hocks.







SITE 779









SITE 779



LINO	BI0 FOS	STR	CHA	CONE/	s s	TIES					URB.	RES							
TIME-ROCK	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNET	PHYS. PROPER	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DIST	SED. STRUCTU	SAMPLES	LITHOLOGIC DESCRIPTION					
						4.5		1	0.5	IM	3	0	*	SILT-SIZED SERPENTINE Major lithology: SILT-SIZED SERPENTINE, bluish gray (58 5/1) to greenish gray (58G 5/1) matrix with angular clasts 1 to 2 mm in diameter of serpentinized harzburgite(?) and smalls more prevalent, clasts of serpentine(?) and fragments of light green (5G 8/2) serpentine veins. Very poorly sorted and, locally, phacoidal and foliated (especially at top and bottom sections). Zoisite and chlorite are locally abundant.					
					5	\$=0.1 V=					1	w	*	SMEAR SLIDE SUMMARY (%): 1, 34 2, 5 2, 68 D D D TEXTURE:					
								2	1				*	Sand 5 60 20 Sit 85 30 75 Clay 10 10 5					
								3		IM				COMPOSITION:           Chlorite         10         10         10           Micrite         10         5         5           Opaques         10         20         10           Organic debris         —         —         5           Secondines         70         5         5					
						-	_					-	_	Zoisite — 10 5					
TIME-ROCK UNIT	FORAMINIFERS 3 0	STRI STRI	RADIOLARIANS 2 1	HOLI RACTER	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	34R CO	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	Zoisite 5 ERVAL 4230.9-4240.5 mbs1; 283.7-293.3 mbsf LITHOLOGIC DESCRIPTION					
TIME-ROCK UNIT -	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS H. T.	HOLI CONE/ RACTER	? PALEOMAGNETICS	V=5.1 0=0.0 + PHYS. PROPERTIES	© .4 CHEMISTRY	SECTION 100	RE 88231	34R CO GRAPHIC LITHOLOGY IM	W W DRILLING DISTURB. 3	Sed. Structures	SAMPLES IL	Zoisite — 10 5 ERVAL 4230.9-4240.5 mbs1; 283.7-293.3 mbsf LITHOLOGIC DESCRIPTION SERPENTINE BRECCIA Major lithology: SERPENTINE BRECCIA, greenish gray (5GY 5/1) to light greenish gray (5GY 7/1), highly toliated (drilling disturbance?) with mm- to cm-sized clasts of serpentinize ultramatic rocks.					



-	FOI	STR	AT.	ZONE/	ER v	-					IRB.	ES								
TIME - ROOK OF	FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PAL FOMAGNETIC			SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTU	SED. STRUCTUR	SAMPLES	LITH	OLOGIC	DESCRII	PTION			
				H		•	3			IM				ZOISITE-RICH SILT-SIZED SERPE	NTINE					
					c	-0-0-0-0-C		1	0.5-	IM IM	~ ~		*	Major lithology: ZOISITE-RICH SILT light greenish gray (10Y 6/2) with co- ultramatics. Clasts in the interval 40 and matrix material from 55 to 70 cm SMEAR SLIDE SUMMARY (%):	-SIZED S arse sand to 57 cm n exhibits	SERPEN d- and pe have a t a phace	TINE, dar abble-size hin coatin idal textur	k greeni od clasts ig of pow re.	sh gray ( of serper idery ser	10Y 5/2 ntinized pentine
						0-0 ×	P#2	F		1				1, 67 D	1, 82 D					
						111								TEXTURE:						
														Sand 5 Silt 65 Clay 30	5 70 25					
								1						COMPOSITION:						
1													ļ	Opaques 2 Serpentine 85	2 85					
E	- 9	12	-	HUL	-E	A		CO	RE	36R C0	RE	DI	NT	RVAL 4250.2-4259.	.9 mb	sl: 3	03.0-	312.	7 mb	St
E	BIO	STR	AT. CHA	ZONE/	ER SOL	A			RE	36R CC	RE	URES	NT	RVAL 4250.2-4259.	.9 mb	sl: 3	- 0. 03	-312.	.7 mb	St
E	FORAMINIFERS 3 8	NANNOFOSSILS SILS	ADIOLARIANS 2	SWOLU I	PALEOMAGNETICS		AUGUICION	SECTION	METERS	36R CC	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES	RVAL 4250.2-4259.	.9 mb	SI: 3	03.0-	-312.	.7 mb	St
E	FORAMINIFERS 3 8	NANNOFOSSILS	RADIOLARIANS	SWOLT IG			Cututorov	SECTION	RE	36R CC	DRILLING DISTURB.	SED. STRUCTURES	* SAMPLES	RVAL 4250.2-4259	.9 mb	SI: 3	03.0-	-312.	.7 mb	ST
	FORAMINIFERS 3018	NANNOFOSSILS SIES	RADIOLARIANS	SWOLVIG	PALEOMAGNETICS	0=27.4 DUVE DDADEOTIES	1 0.5 Augustav	L SECTION O	RE RELEGS	GRAPHIC LITHOLOGY	V V DRILLING DISTURB.	SED. STRUCTURES O	* * SAMPLES X	RVAL 4250.2-4259. LITH SILT-SIZED SERPENTINE Major lithology: Dark greenish gray ( contains many phacoids and angular 2). The rest of the core contains inte edded with moderately phacoidal si	5G 4/1) t r, coarse rvais of ic heared to	o light gr sand siz ocal, prin	eenish gried dusky hary, subh	ay (5G 7 red grain orizontain	/1). Uppens (5R 3/ Il laminat s intersp	er 25 cm 4 to 5R ions inte ersed sa
	FORAMINIFERS 3 0	NANNOFOSSILS	A T HADIOLARIANS	SWOLT	PALEOMAGNETICS	Q=27.4	2.1 0.5 ruenorer	1 0.14 SECTION 00	RE 882 90.5-	GRAPHIC LITHOLOGY	WWW AND DRILLING DISTURB.	♦ S SED. STRUCTURES O	* * SAMPLES IN	RVAL 4250.2-4259.	5G 4/1) t r, coarse rvals of ic heared to pentine.	o light gr sand siz coal, prim extures. 1	eenish gr. ed dusky tary, subh	ay (5G 7 red grain recontain	/1), Uppe ns (5R 3/ I laminat s intersp	er 25 cm 4 to 5R ions inte ersed sa
	FORAMINIFERS 0 0	NANNOFOSSILS	AT . CHA SNEIJANS	SWOL T	PALEOMAGNETICS	Ø=27.4	2.1 0.5 Automotov	1 0.14 SECTION 00	RE superior	GRAPHIC LITHOLOGY	REITING DISTURB.	∭ ◊ Š sed. structures O	* * SAMPLES X	RVAL 4250.2-4259.	.9 mb oLogic 5G 4/1) t r, coarse- rvals of ic heared to pentine. 1, 50 D	o light gr sand siz ocal, prin extures. 1 1, 54 D	eenish gra- eed dusky hary, subh The matrix	ay (5G 7 red grain norizonta contain 2, 35 D	/1), Uppens (5R 3/ I laminat s intersp 2, 70 D	er 25 cm 4 to 5R ions inte ersed sa 2, 126 M
E	FORAMINIFERS	NANNOFOSSILS	AT. CHA SNUE AND OLAN AND AND AND AND AND AND AND AND AND A	SW014 10	2 PALEOMAGNETICS	44.4 0=27.4 PUVE PRAFETIES	8 2.1 0.5 August	1 0.14 Octoon 00	RE 822333	GRAPHIC LITHOLOGY	RE DRILLING DISTURB.	M & S SED. STRUCTURES O	* * SAMPLES *	RVAL 4250.2-4259.	.9 mb oLOGIC 5G 4/1) t r, coarse rvals of ic heared to pentine. 1, 50 D	o light gr sand siz ocal, prin extures. 1 1, 54 D	eenish gri ed dusky tary, subh The matrix 1, 117 D	ay (5G 7 red grain orizonta contain 2, 35 D	(1), Uppens (5R 3/ I laminat s intersp 2, 70 D	er 25 cm 4 to 5R ions inte ersed sa 2, 126 M
E	BIO FOS	NANNOFOSSIL SIZE	LAT . THE SUPIOLARIANS	SW044	2 PALEOWAGNETICS	▲0=44.4 0=27.4 puve photostice	0.8 0.1 0.5 curitored	0.14 mmm. 00	RE 80.5-	GRAPHIC LITHOLOGY	RE DRILLING DISTURG.	♦ M ♦ Š SED. STRUCTURES O	* * * * SAMPLES	RVAL 4250.2-4259.	.9 mb oLOGIC 5G 4/1) t , coarse- rvals of ic heared te xentine. 1, 50 D	o light gr sand siz ocal, prim xxtures. 1 1, 54 D	eenish gro eed dusky hary, subh The matrix 1, 117 D	ay (5G 7 red grain orizontain 2, 35 D	7 mb 71), Uppens (5R 3/ 1 laminat s intersp 2, 70 D 30 60	er 25 cm 4 to 5R mons inter ersed sa 2, 126 M
	FORAMINIFERS 04 018	NANNOFOSSILS	AT. CHA	SWOL VIO	2 PALEONAGNETICS	▲0=44.4 0=27.4 Duve PRAPEPTIES	0.8 2.1 0.5 Automotion	0.14 0.00 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	RE 893139 0.5- 1.0-	GRAPHIC LITHOLOGY	E DBILLING DISTURB.		* * * * SAMPLES	RVAL 4250.2-4259.	9 mb 5G 4/1) 11 5G 4/1) 12 5G 4/1) 12 5G 4/1) 12 5G 4/1) 12 10 50 40	DESCRIF DESCRIF DESCRIF D DESCRIF D 10 80 10	eenish gried dusky nary, subh The matrix 1, 117 D	3 1 2 . ay (5G 7 red grain ordizonta c contain 2, 35 D 2 78 20	7 mb //1), Uppper is (5R 3/3 l laminat is intersp 2, 70 D 30 60 10	er 25 cm 4 to 58, inte ersed sa 2, 126 M 10 60 30
	FORAMINIFERS 501	NANNOFOSSILS	LAT . TA CHA LADIOLARIANS	ZONE// RACTI		▲0=44 .4 0=27.4 <b>▲</b> Duve PDADEDTIES	0.8 2.1 0.5 curinered	CO 14 2001	0.5- 1.0-	GRAPHIC LITHOLOGY	RE	◦ S ◊ M ◊ S SED. STRUCTURES 0	T * * * * * * * * * * * * * * * * * *	RVAL 4250.2-4259.	SG 4/11 11 r, coarse r, coarse radia of the second r, 50 10 50 40 10 50 40 10 50 40 10 50 40 10 50 50 50 50 50 50 50 50 50 5	o light gr bescell scale prim estand siz bocal, prim extures. 1 1, 54 D 10 10 10	03.0 PTION eeenish gr ad dusky he matrix 1, 117 D 15 60 25	2, 35 D 27 78 20	7 mb //1). Uppens (58.3) s intersp 2, 70 D 30 60 10	er 25 cm 4 to 5R 3 toons inte ersed sa 2, 126 M 10 60 30
	FORAMINIFERS 801	NANNOFOSSILS	AT. CHA SNEINANDIOLARIANS	ZONE// RACTI	2 PALEOMAGNETICS	▲0=44.4 0=27.4 BUNC BONDEDTIFE	0 0.8 2.1 0.5 Automotion	CO 11 2001	RE 84313M	GRAPHIC LITHOLOGY	RE	○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	T * * * * * * * * * * * * * * * * * *	RVAL 4250.2-4259.	SG 4/11 11 r, coarse rvals of leared to D 10 50 40 Tr -	DESCRIF DESCRIF DESCRIF Sand siz Docal, prim 1, 54 D 10 10 10 10 10	eenish gr end dusky nary, subh the matrix 1, 117 D 15 60 25	ay (5G 7 red grain c contain 2, 35 D 2 78 20	7 mb //1). Uppens ns (58 3) is intersp 2, 70 D 30 60 10 5 - -	er 25 cm 4 to 5R. nons inte ersed sa 2, 126 M 10 60 30
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**SITE 779** 



CORE/SECTION







## 125-779A-5R-1



# 125-779A-5R-2

## **UNIT 2: SERPENTINIZED HARZBURGITE**

#### Pieces 1-3; 5-13

COLOR: Dark greenish gray (5BG 4/1).

LAYERING: Crude layering defined by pyroxene-rich intervals (4-5 cm wide); 6 layers in 1.5 m.
DEFORMATION: minor brecciation in Pieces 1-2, 10-11.

PRIMARY MINERALOGY: Olivine - Mode: 80-90%. Crystal size: Not visible.

Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 80-95.

Orthopyroxene - Mode: 10-15%. Crystal size: 1-3 mm. Crystal shape: Subhederal. Crystal orientation: None visible. Percent replacement: 50-90.

Spinel - Mode: <5%. Crystal size: <2 mm. Crystal shape: Subhedral-euhedral. Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine, dusty black magnetite? Total percent: 95-99%. Texture: Bastitic after pyroxenes and in layers. Vein material: Locally white veins (<1 mm wide) and light green veins (<1 mm wide) at no specific orientation.

## UNIT 2: SERPENTINIZED DUNITE (?)

#### Piece 4

COLOR: Dark greenish gray (5BG 4/1). LAYERING: None. DEFORMATION: None visible. PRIMARY MINERALOGY: Olivine - Mode: 95-99%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 95-99.

> Orthopyroxene - Mode: <5%. Crystal size: <1 mm. Crystal orientation: None visible. Crystal orientation: None visible. Percent replacement: 95-99.

Spinel - Mode: Trace. Crystal size: <1 mm. Crystal shape: Anhedral-subhedral. Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine; dusty magnetite?

Serpentine; dusty magnetite? Total percent: 95-99%. Texture: Mesh (?) texture in areas. Vein material: Many small serpentine veins (<1 mm wide) at no specific orientation.







#### 125-779A-8R-1

## **UNIT 2: SERPENTINIZED HARZBURGITE**

## Piece 1 Zoisite-rich silt-sized serpentine (See Sedimentary Barrel Sheets)

## **UNIT 2: SERPENTINIZED HARZBURGITE**

#### Pieces 2, 3

COLOR: Pale blue-gray (5B 6/1). LAYERING: Massive. DEFORMATION: Random cracks. PRIMARY MINERALOGY: Apparently cumulate texture. Orthopyroxene - Mode: 20%. Crystal size: 5 mm. Crystal shape: Equant. Crystal orientation: Random. Percent replacement: Variable.

> Olivine - Mode: 80%. Crystal size: 8-10 mm. Crystal shape: Corroded. Crystal orientation: Random. Percent replacement: Variable.

Spinel - Mode: Trace. Crystal size: 0.2-0.5 mm. Crystal shape: Euhedral. Crystal orientation: Disseminated. Percent replacement: 10-20. SECONDARY MINERALOGY: Serpentine replacing olivine, chlorite (?) also present. Total percent: 10-70%. Texture: N/A. Vein material: None. ADDITIONAL COMMENTS: The cumulate texture of this rock distinguishes it from the ultramafic rocks above and below it.

# **UNIT 2: SHEARED SERPENTINIZED HARZBURGITE**

## Piece 4

COLOR: Dark greenish gray (54Y 4/1).

LAYERING: None.

DEFORMATION: Top is sheared normal to core axis, top 5 mm microlaminated pale blue serpentine (chrysotile ?), next 1.5 cm consists of sheared serpentine and sheared/nonsheared crosscutting chrysotile veins. Both lamination and shearing normal to core axis, except for one riedel shear. PRIMARY MINERALOGY:

Seem to be fully replaced by serpentine. Olivine - Mode: 95%.

Crystal size: 5-10 mm. Crystal shape: None visible. Crystal orientation: None.

Percent replacement: 100.

Orthopyroxene - Mode: 0-5%. Crystal size: 5-10 mm. Crystal shape: Equant. Crystal orientation: None. Percent replacement: 100.

Spinel - Mode: Trace. Crystal size: 2 mm. Crystal shape: Elongate. Crystal orientation: None. Percent replacement: 100. SECONDARY MINERALOGY: Serpentine. Total percent: 100%. Texture: None visible. Vein material: 20%, chrysotile-filled and other serpentine minerals. ADDITIONAL COMMENTS: This piece is probably the upper sheared contact of underlying Piece 5.

#### 125-779A-8R-1 (continued)

#### UNIT 2: SERPENTINIZED HARZBURGITE

#### Pieces 5A, 5B

COLOR: Green blue (5BG 4/2) to pale gray (5B 6/1).
 LAYERING: Color layering between massive fine-grained serpentinite with few mineral relics to less serpentinized rock in which primary mineral textures are preserved.
 DEFORMATION: Fracturing, both at high and moderate angle to core axis. Shearing in zones at 30 degrees to core axis.

PRIMARY MINERALOGY: Olivine - Mode: 95%. Crystal size: 5-8 mm. Crystal shape: Rounded. Crystal orientation: Subparallel to 30 degree shears. Percent replacement: 90-100.

Orthopyroxene - Mode: 0-5%. Crystal size: 0.2-0.8 mm. Crystal shape: Elongate to rounded. Crystal orientation: Not visible. Percent replacement: 90-100. Comments: Kink-banded.

Spinel - Mode: Trace. Crystal size: 1 mm. Crystal shape: Ragged-elongate. Crystal orientation: Not visible. Percent replacement: 50-60. Comments: Forms stringers. SECONDARY MINERALOGY: 100% serpentinized for Piece A, 90% for Piece B. Total percent: 90-99%. Texture: N/A. Vein material: Chrysotile fills some fractures. ADDITIONAL COMMENTS: It appears that the degree of serpentinization is fracture controlled, with a serpentinization halo proximal to the fracture.

#### **UNIT 2: SERPENTINIZED HARZBURGITE**

#### Piece 6

COLOR: Gray green (5BG 4/1). LAYERING: Massive. DEFORMATION: Shearing at 60 degrees to core axis. PRIMARY MINERALOGY: Spinel forms stringers at 30 degrees to core axis, other primary minerals are serpentinized. Olivine - Mode: 90-95%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Variable.

Orthopyroxene - Mode: 5-10%. Crystal size: 0.5-9 mm. Crystal orientation: Not visible. Percent replacement: Variable.

Cr-spinel - Mode: <1%. Crystal size: 0.1-1 mm. Crystal shape: Equant to ragged elongate. Crystal orientation: 30 degrees to core axis. Percent replacement: Variable. SECONDARY MINERALOGY: Serpentine replaces the primary minerals. Total percent: 40-70%. Texture: N/A. Vein material: 60 degrees to core axis, up to 8 mm wide, anastomosing, filled with a white translucent mineral.

# **UNIT 2: SERPENTINIZED HARZBURGITE**

#### Piece 7

COLOR: Green gray (5G 4/1 to 5B 6/1). LAYERING: Apparent color-banding at 70 degrees to core axis. DEFORMATION: Fractures at 60 and 70 degrees, conjugate plus relict olivines appear elongated at 60 degrees to core axis. PRIMARY MINERALOGY: Variably serpentinized with some primary olivine textures preserved. Olivine - Mode: 90-95%. Crystal size: 5-15 mm. Crystal shape: Elongate-rounded. Crystal orientation: Not visible. Percent replacement: Variable. Orthopyroxene - Mode: 5-10%. Crystal size: 5-10 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Variable. Cr-spinel - Mode: Trace. Crystal size: 0.2-2 mm. Crystal orientation: 60 degrees to core axis. Percent replacement: Variable. Comments: Stringers also at 60 degrees to core axis. SECONDARY MINERALOGY:

- - Pervasively (80-100%) serpentinized. Total percent: 40-70%.

    - Texture: N/A.

Vein material: Black serpentine, oriented at 30-60 degrees to core axis. ADDITIONAL COMMENTS: 30-degree set cuts the 60-degree vein set.

## **UNIT 2: SERPENTINIZED HARZBURGITE**

## Pieces 8A and B

COLOR: Pale gray green (N 6/). LAYERING: Color banding apparent, possibly caused by serpentinized olivine layer at top of piece.

**DEFORMATION:** Not visible.

#### PRIMARY MINERALOGY:

Apparent olivine-rich band with wavy contact with orthopyroxene-rich rock at top of

piece. Olivine - Mode: 90%. Crystal size: 3-8 mm. Crystal shape: Granular. Crystal orientation: Not visible. Percent replacement: 40-50.

Orthopyroxene - Mode: <10%. Crystal size: 3-8 mm. Crystal shape: Subhedral-anhedral. Crystal orientation: Not visible. Percent replacement: 40-50.

Cr-spinel - Mode: Trace. Crystal size: 0.5-1 mm. Crystal shape: Ragged,equant to elongate. Crystal orientation: 30 degrees to core axis. Percent replacement: 10-20. SECONDARY MINERALOGY: Rock is partially serpentinized.

Total percent: 40-50%.

Texture: N/A.

Vein material: Some veining along fractures, possibly serpentine.

ADDITIONAL COMMENTS: Rock appears to be orthopyroxene-rich cumulate, with a different general appearance to the overlying tectonized harzburgites.



## UNIT 2: METASEDIMENT (MAFIC)

#### Piece 3

COLOR: Light greenish gray (5G 6/1 to 7/1). LAYERING: Massive. DEFORMATION: None. PRIMARY MINERALOGY: Primary minerals occur as detrital grains. Clinopyroxene - Mode: 20%. Crystal size: 1-2 mm. Crystal shape: Subhedral-anhedral. Crystal orientation: None. Percent replacement: 30-40.

Spinel - Mode: Trace. Crystal size: <1 mm. Crystal shape: Anhedral. Crystal orientation: None. Percent replacement: 80-90. SECONDARY MINERALOGY: Pale green hornblende occurs along the rim or cleavage trace of detrital clinopyroxene. Total percent: 80%. Texture: Sedimentary textures. Vein material: None. ADDITIONAL COMMENTS: Matrix is occupied by dusty brownish clay.

#### UNIT 2: METABASALT

## Pieces 5 to 10

COLOR: Gray (7.5YR 6/0). LAYERING: None. DEFORMATION: Brecciated and recemented, individual clasts range from 0.5 to 70 mm in size. PRIMARY MINERALOGY: Subophitic, fine-grained. Plagioclase - Mode: 40-50%. Crystal size: <0.5 mm. Crystal orientation: Felted. Percent replacement: 100. Clinopyroxene - Mode: 25-30%. Crystal size: <0.5 mm. Crystal shape: Granular. Crystal orientation: None.

Percent replacement: 30.

SECONDARY MINERALOGY:

Chlorite, pumpellyite, prehnite, dusty clay occur as secondary minerals.

Total percent: 70%. Texture: N/A.

Vein material: 0.5-3 mm wide prehnite-pumpellyite and zeolite veins; thickest oriented subparallel to the core axis.

ADDITIONAL COMMENTS: In-situ brecciation is apparent with dominant fractures oriented at 45 degrees to the core axis.

## **UNIT 2: SERPENTINIZED HARZBURGITE**

## Pieces 11, 12

COLOR: Gray (2.5Y 4/0-6/0). LAYERING: None. DEFORMATION: Tectonized. PRIMARY MINERALOGY: Olivine - Mode: 85-90%. Crystal size: 1-8 mm. Crystal shape: Equant. Crystal orientation: None. Percent replacement: 80-90.

> Orthopyroxene - Mode: 10-15%. Crystal size: 3-5 mm. Crystal shape: Equant. Crystal orientation: None. Percent replacement: 80-90. Comments: Kink-banded; highly deformed.

Spinel - Mode: <1%. Crystal size: 0.5 mm. Crystal shape: Euhedral. Crystal orientation: None. Percent replacement: 40-50. SECONDARY MINERALOGY: Mostly serpentinized. Total percent: 80-90%. Texture: N/A. Vein material: Crosscutting, <0.1 mm, orthogonal sets apparently filled with serpentine.




125-779A-10R-1

# **UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE**

# Pieces 1-5

COLOR: Gray blue-green (10Y 5/1 to 4/1).
LAYERING: None.
<b>DEFORMATION:</b> Mylonitization dipping at 70 degrees, elongation of olivine in plane of
foliation in a discrete shear zone forming the bottom 8 cm of Piece 5. Other pieces have
kink-banded orthopyroxene.
PRIMARY MINERALOGY:
Olivine - Mode: 95%.
Crystal size: Variable <10 mm.
Crystal shape: Equant-elongate.
Crystal orientation: None visible.
Percent replacement: Not visible.
Comments: Variable shape of olivine because of deformation.
Orthopyroxene - Mode: <5%.
Crystal size: 3-5 mm.
Crystal shape: Equant.
Crystal orientation: None visible.
Percent replacement: Not visible.
Spinel - Mode: Trace.
Crystal size: 0.1-0.5 mm.
Crystal shape: Ragged-elongate, disseminated.
Crystal orientation: None visible.
Percent replacement: Not visible.
SECONDARY MINERALOGY:
Serpentine.
Total percent: 80-99%.
Texture: N/A.
Vein material: 1st set sigmoidal and en echelon showing vertical, dextral shear and filled
with milky green serpentine, and 2nd generation chrysotile; 2nd set dip 45 degrees.
Sets 1 and 2 are mutually orthogonal. Serpentinization is greatest next to veins.
ADDITIONAL COMMENTS: Macro-shape of pieces because of breakage along
serpentine veins.
UNIT 2: SEPRENTINIZED DUNITE
UNIT 2. GENFENTIMIZED DUNITE
Piece 6

# Pi

COLOR: Light gray green (5Y 6/1). LAYERING: Probably primary cumulate layering dipping at 60 degrees, accentuated by parallel tectonic fabric. DEFORMATION: Shearing indicates dextral vertical shear. PRIMARY MINERALOGY: Olivine - Mode: 90-95%. Crystal size: Variable, tectonized. Crystal shape: Ragged. Crystal orientation: None visible. Percent replacement: 90-99. Orthopyroxene - Mode: 5-10%. Crystal size: 0.5-10 mm. Crystal shape: Elongate. Crystal orientation: Aligned, dip 60 degrees. Percent replacement: 90-99. Spinel - Mode: Trace. Crystal size: 0.1 mm. Crystal shape: Elongate. Crystal orientation: None visible.

Percent replacement: Not visible. SECONDARY MINERALOGY:

- Serpentine. Total percent: 80-99%.
- Texture: N/A.
- Vein material: En echelon veins 0.1-2 mm wide filled with amorphous dark gray serpentine, oriented vertically.

ADDITIONAL COMMENTS: Cumulate rock with shear overprinting primary layering.

# **UNIT 2: TECTONIZED SERPENTINIZED HARZBURGITE**

# Pieces 7-9

COLOR: Very dark gray (2.5Y 3/0). LAYERING: None. DEFORMATION: Kink-banded pyroxene, elongate spinel. PRIMARY MINERALOGY: Olivine - Mode: 95%. Crystal size: Variable. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 90-99.

Orthopyroxene - Mode: 5%. Crystal size: 5-8 mm. Crystal shape: Elongate. Crystal orientation: None visible. Percent replacement: 90-99.

Spinel - Mode: <1%. Crystal size: 0.5-1.5 mm. Crystal shape: Ragged. Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY:

#### Secondary MINERALOGY Serpentine.

Total percent: 95-99%. Texture: Bastitic pseudomorphs after orthopyroxene in areas. Vein material: Two sets, first set (2-5 mm wide) filled with milky green amorphous serpentine; 2nd set dipping subvertically filled with chrysotile and other serpentine mineral showing sub-horizontal dextral shear.

# UNIT 2: SERPENTINIZED HARZBURGITE/DUNITE CLAST, IN FOLIATED SERPENTINE MATRIX

#### Piece 11

COLOR: Dark gray green (2.5Y 3/0 to 4/2). LAYERING: None. DEFORMATION: Sheared and foliated matrix. PRIMARY MINERALOGY: Heavily serpentinized clast coated with serpentine. Spinel - Mode: <2%. Crystal size: 2-3 mm. Crystal size: 2-3 mm. Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 95-99%. Texture: N/A. Vein material: N/A.

# UNIT 2: TECTONIZED SERPENTINIZED HARZBURGITE

#### Pieces 12-13

COLOR: Dark green gray (10Y 4/1 to 4/2). DEFORMATION: Elongate spinel. PRIMARY MINERALOGY: Olivine - Mode: 90-95%. Crystal size: Variable 2-10 mm. Crystal shape: Deformed. Crystal orientation: None visible. Percent replacement: 90-99.

Orthopyroxene - Mode: 5-10%. Crystal size: 2-5 mm. Crystal shape: Elongate. Crystal orientation: None visible. Percent replacement: 80-90.

Spinel - Mode: <1%. Crystal size: 0.2-0.5 mm. Crystal shape: Elongate. Crystal orientation: Along shear planes. Percent replacement: Not visible. SECONDARY MINERALOGY: Secontians

Serpentine.

Total percent: 90-99%. Texture: N/A. Vein material: 1-3 mm, filled with amorphous serpentine sub- vertical, also 1 mm wide,

probably chrysotile at no specific orientation. **ADDITIONAL COMMENTS:** Primary mineralogy obscured by heavy serpentinization.



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### **UNIT 2: SERPENTINIZED HARZBURGITE**

#### Piece 4

COLOR: Dark greenish gray (5BG 4/1). LAYERING: None. DEFORMATION: None. PRIMARY MINERALOGY: Severely altered. Olivine - Mode: 90-95%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 90-99.

> Orthopyroxene - Mode: 5-10%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 80-90.

Spinel - Mode: Trace. Crystal size: Not visible. Crystal shape: Subhedral-anhedral. Crystal orientation: In stringers. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 90-99%. Texture: Bastitic after orthopyroxenes. Vein material: Few greenish serpentine veins at no specific orientation.

# **UNIT 2: SERPENTINIZED HARZBURGITE (?)**

#### Piece 5

COLOR: Dark greenish gray (5BG4/1). LAYERING: None. DEFORMATION: None. PRIMARY MINERALOGY: Severely altered. Olivine - Mode: 60-80%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 90-99.

> Orthopyroxene - Mode: 20-40%. Crystal size: Not visible. Crystal shape: Anhedral. Crystal orientation: None visible. Percent replacement: 80-90.

Spinel - Mode: Trace. Crystal size: Not visible. Crystal shape: Subhedral-anhedral. Crystal orientation: In stringers. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 90-99%. Texture: Bastitic after orthopyroxene. Vein material: <1-mm-wide green-white serpentine(?) veins showing no preferred orientation.

ADDITIONAL COMMENTS: Intercumulus pyroxene.

# UNIT 2: SERPENTINIZED HARZBURGITE

#### Piece 6

COLOR: Dark greenish gray (5BG 4/1). LAYERING: None, pyroxene-zone at 80 degree dip. DEFORMATION: Parallel vein-filled cracks at 60 degree dip. PRIMARY MINERALOGY: Severely altered; zone of large pyroxene (<2 cm wide) with kink bands? Olivine - Mode: 90%. Crystal size: Not visible. Crystal orientation: None visible. Percent replacement: 90-99.

Orthopyroxene - Mode: 10%. Crystal size: <4 mm. Crystal shape: Subhedral-anhedral. Crystal orientation: None visible. Percent replacement: Variable.

Spinel - Mode: Trace. Crystal size: Not visible. Crystal shape: Subhedral-anhedral. Crystal orientation: In stringers. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 90-99%.

Texture: Bastitic after pyroxenes. Vein material: Minor bluish green-white serpentine veins (<1 mm wide).



CORE/SECTION

#### 125-779A-11R-1

# UNIT 2: SERPENTINIZED HARZBURGITE

#### Piece 1

COLOR: Dark greenish gray (5BG 4/1) with bluish gray patches. LAYERING: None. DEFORMATION: Fractured. PRIMARY MINERALOGY: Olivine - Mode: 80-90%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 95-99. Orthopyroxene - Mode: 10-20%.

Crystal size: <3 mm. Crystal shape: Anhedral. Crystal orientation: None visible. Percent replacement: Variable.

Spinel - Mode: Trace. Crystal size: <1 mm. Crystal shape: Equant. Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 100%. Texture: blue-gray serpentine pseudomorphs after anhedral pyroxenes (<1 cm). Vein material: Sub-parallel bluish green veins (<2 mm wide). ADDITIONAL COMMENTS: Intercumulate(?) pyroxene.

# **UNIT 2: SERPENTINIZED HARZBURGITE**

#### Pieces 2-4

COLOR: Dark greenish gray (5BG 4/1). LAYERING: None. DEFORMATION: None. PRIMARY MINERALOGY: Olivine - Mode: 80-90%. Crystal size: Not visible. Crystal shape: Anhedral. Crystal orientation: None visible. Percent replacement: 90-99.

> Orthopyroxene - Mode: 10-15%. Crystal size: <2 mm. Crystal shape: Subhedral. Crystal orientation: None visible. Percent replacement: Variable.

Spinel - Mode: Trace. Crystal size: <2 mm. Crystal shape: Subhedral-anhedral. Crystal orientation: Stringers. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 90-99%. Texture: Bastitic after pyroxenes in areas. Vein material: 1 green serpentine vein (4 mm wide) and few white veins (<0.2 mm wide) at no specific orientation.

# **UNIT 2: SERPENTINIZED DUNITE (?)**

#### Pieces 5-6 (clast)

COLOR: Dark greenish gray (5BG4/1) with bluish white patchy fracture surfaces from vein serpentine. LAYERING: Sub-parallel veins. DEFORMATION: Vein-filled fractures. PRIMARY MINERALOGY: Olivine - Mode: 90%. Crystal size: Not visible.

Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 90-99.

Orthopyroxene - Mode: 10%. Crystal size: <5 mm. Crystal shape: Subhedral-anhedral. Crystal orientation: None visible. Percent replacement: 90.

Spinel - Mode: Trace. Crystal size: <1 mm. Crystal shape: Equant. Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 100%. Texture: Bastitic pseudomorphs after euhedral pyroxenes in areas. Vein material: abundant greenish white veins (up to 2 cm thick) non-fibrous serpentine (?) at no specific orientation.

# **UNIT 2: SERPENTINIZED HARZBURGITE**

# Pieces 7-10

COLOR: Dark greenish gray (5BG 4/1) with lighter patches. LAYERING: None. DEFORMATION: None visible. PRIMARY MINERALOGY: Olivine - Mode: 80-90%. Crystal size: Not visible. Crystal size: Not visible. Crystal orientation: None visible. Percent replacement: 90-99.

Orthopyroxene - Mode: 10-20%. Crystal size: <0.5 mm. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 90-99.

Spinel - Mode: Trace. Crystal size: <1 mm. Crystal shape: Rounded. Crystal orientation: Stringers. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 100%. Texture: Mesh-textured. Vein material: Few light greenish white veins (<1 mm).

# 125-779A-11R-1 (continued)

# UNIT 2: SERPENTINIZED DUNITE (?)

# Pieces 11-12

COLOR: Dark greenish gray (5BG 4/1) with lighter patches. LAYERING: None. DEFORMATION: None visible. PRIMARY MINERALOGY: Olivine - Mode: 90-95%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 90-99.

Orthopyroxene - Mode: 4-8%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 80-90.

Spinel - Mode: 1-2%. Crystal size: Not visible. Crystal shape: Stringers. Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 99%. Texture: Bastitic after orthopyroxene in areas and mesh-textured after olivine. Vein material: Minor serpentine veins present.



#### 125-779A-12R-1 (continued)

# **UNIT 2: SERPENTINIZED HARZBURGITE**

#### Piece 4

COLOR: Greenish black (5Y 2.5/1). LAYERING: None. DEFORMATION: None. PRIMARY MINERALOGY: Olivine - Mode: 80-90%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 90-99.

Orthopyroxene - Mode: 10-20%. Crystal size: <1.5 mm. Crystal shape: Subhedral-anhedral. Crystal orientation: None visible. Percent replacement: 80-90. SECONDARY MINERALOGY: Serpentine. Total percent: 80-90%. Texture: N/A. Vein material: N/A.

# **UNIT 2: SERPENTINIZED HARZBURGITE**

#### Piece 5

COLOR: Dark greenish gray (5BG 4/1). LAYERING: Locally pyroxene-rich and olivine-rich pockets. DEFORMATION: None. PRIMARY MINERALOGY: Olivine - Mode: 50%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 95-99.

Orthopyroxene - Mode: 50%. Crystal size: Not visible. Crystal oriantation: None visible. Percent replacement: 90.

Spinel - Mode: Trace. Crystal size: <1 mm. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 95-99%.

Texture: Slightly developed bastite pseudomorphs after pyroxenes. Vein material: N/A.

# **UNIT 2: SERPENTINITE HARZBURGITE**

# Piece 6

COLOR: Dark greenish gray (5GB 4/1) with lighter patches. LAYERING: None. DEFORMATION: None. PRIMARY MINERALOGY: Olivine - Mode: 90%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 90-99.

> Orthopyroxene - Mode: 10%. Crystal size: Not visible. Crystal shape: Subhedral-anhedral. Crystal orientation: None visible. Percent replacement: 90. Comments: Intercumulus ?

Spinel - Mode: Trace. Crystal size: <2 mm. Crystal shape: Subhedral. Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 90-99%. Texture: Bastite pseudomorphs after pyroxenes. Vein material: N/A.

# UNIT 2: SERPENTINIZED HARZBURGITE

#### Pieces 7-8

COLOR: Dark greenish gray (5BG 4/1). LAYERING: None. DEFORMATION: None. PRIMARY MINERALOGY: One equant spinel has a metallic inclusion. Olivine - Mode: 90%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 95-99.

> Orthopyroxene - Mode: 10%. Crystal size: 1-2 mm. Crystal shape: Euhedral-anhedral. Crystal orientation: None visible. Percent replacement: 90.

Spinel - Mode: Trace. Crystal size: <1 mm. Crystal shape: Equant? Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY:

Serpentine. Total percent: 95-99%. Texture: Bastite pseudomorphs after pyroxenes. Vein material: White (<1 mm) and bluish (<1 mm) veins.

# **UNIT 2: SERPENTINIZED HARZBURGITE**

#### Piece 10 (multiple fragments)

COLOR: Dark greenish gray (5BG 4/1). LAYERING: None. DEFORMATION: Brecciated. PRIMARY MINERALOGY: Modal proportions vary in each fragment. Olivine - Mode: 40-90%. Crystal size: Not visible. Crystal shape: Not visible. Crystal shape: Not visible. Percent replacement: 90-99.

> Orthopyroxene - Mode: 10-60%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 90.

Spinel - Mode: Trace. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 99%. Texture: Bastite pseudomorphs after pyroxenes in areas. Vein material: Abundant light green veins of serpentine (<1 mm wide).

#### **UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE**

#### Piece 11

COLOR: Dark greenish gray (5BG 4/1) with light patches. LAYERING: None. DEFORMATION: Deformed pyroxenes. PRIMARY MINERALOGY: Olivine - Mode: 90%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 90-99.

> Orthopyroxene - Mode: 10%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: 90.

Spinel - Mode: Trace. Crystal size: <1 mm. Crystal shape: Equant. Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY:

Serpentine. Total percent: 95-99%. Texture: Bastite pseudomorphs after pyroxenes in areas. Vein material: Very few light greenish serpentine veins.









# 125-779A-14R-1

# **UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE**

# Pieces 1 to 10

COLOR: Gray (N 6/). LAYERING: Massive, with alteration banding caused by variable serpentinization. DEFORMATION: Orthopyroxene shows wavy cleavage surfaces. PRIMARY MINERALOGY: Olivine - Mode: 80-85%. Crystal size: 1-5 mm. Crystal shape: Mesh-like. Crystal orientation: None. Percent replacement: 80-90.

Orthopyroxene - Mode: 15-20%. Crystal size: 1-5 mm. Crystal shape: Equant. Crystal orientation: None. Percent replacement: 80-90.

Spinel - Mode: <1%. Crystal size: 0.5-1 mm. Crystal shape: Equant to elongate. Crystal orientation: Elongate parallel to serp.-filled fract. Percent replacement: 30-40. SECONDARY MINERALOGY:

Serpentine.

Total percent: 80-90%.

Texture: N/A.

Vein material: Two conjugate sets, oriented at about 45 degrees to core axis; 0.5-2 mm wide, alteration haloes of serpentine extending into the host; most are filled with black serpentine, minority filled with chrysotile.





#### 125-779A-14R-3

# UNIT 2: TECTONIZED SERPENTINIZED HARZBURGITE

COLOR: Very dark gray (2.5Y 4/). LAYERING: None. DEFORMATION: Wavy cleavage surfaces on the orthopyroxene. PRIMARY MINERALOGY: Olivine - Mode: 65-80%. Crystal size: 1-4 mm. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: Not visible

Orthopyroxene - Mode: 20-35% Crystal size: 2-5 mm. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: Not visible.

Spinel - Mode: <1%. Crystal size: 0.2-3 mm. Crystal shape: Equant to elongate. Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serventing

Serpentine. Total percent: 50-90%. Texture: N/A. Vein material: Minor veining, filled with dark serpentine.



# 125-779A-15R-1

# **UNIT 2: SERPENTINIZED HARZBURGITE**

#### Pieces 1-9

COLOR: Gray (2.5YR 5/0). LAYERING: None. DEFORMATION: None. PRIMARY MINERALOGY: Olivine - Mode: 70-80%. Crystal size: 2-5 mm. Crystal shape: Equant. Crystal orientation: None visible. Percent replacement: 50. Orthopyroxene - Mode: 20-30%. Crystal size: 0.5-5 mm. Crystal shape: Equant-elongate. Crystal orientation: None visible. Percent replacement: 20-50. Spinel - Mode: <1%. Crystal size: 0.2-1. Crystal shape: Equant. Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 50-60%. Texture: N/A. Vein material: Numerous small (2-mm-wide chrysotile-filled veins). **UNIT 2: SERPENTINIZED HARZBURGITE** Pieces 10A and B, 14A and B (@85cm) COLOR: White to light gray (7.5YR 8/0-7/0). LAYERING: None. DEFORMATION: None. PRIMARY MINERALOGY: Pyroxene through a screen of chrysotile coating on clasts. SECONDARY MINERALOGY: Serpentine. ADDITIONAL COMMENTS: Primary bulk of sample obscured. **UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE** Pieces 11-13; 15-22 COLOR: Variable depending on degree of serpentinization; gray (7.5YR 3/0-6/0). LAYERING: None. DEFORMATION: Pyroxene shows kink banding and stretching. PRIMARY MINERALOGY: Olivine - Mode: 70-80%. Crystal size: 3-10 mm. Crystal shape: Equant-ragged. Crystal orientation: None visible. Percent replacement: Not visible. Orthopyroxene - Mode: 20-30%. Crystal size: 2-6 mm. Crystal shape: Equant-elongate. Crystal orientation: None visible. Percent replacement: Not visible. Spinel - Mode: <1%. Crystal size: 0.1-3 mm. Crystal shape: Elongate-ragged. Crystal orientation: Some dip at 30 degrees to horizontal. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 50-80%. Texture: N/A Vein material: 2 sets; 1st generation 65 degrees. filled with amorphous black serpentine, 1-2 mm wide; 2nd generation: occasionally crosscut 1st set, filled with (1) amorphous black-gray serpentine, (2) laminated/fibrous chrysotile (ranges from 1-15 mm wide). Thickest veins show Frankenstein texture. ADDITIONAL COMMENTS: Some sediment occurs with Piece 13A, half coating the

ADDITIONAL COMMENTS: Some sediment occurs with Piece 13A, half coating the clast, and underlies 13A. Sediment is sheared serpentine, 3 cm thick.



# UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE

#### Pieces 1 and 2

COLOR: Dark-gray, blue-gray, mottled (N 6/ to 5B 5/1). LAYERING: None DEFORMATION: Pyroxenes show wavy extinction and minor kink banding; spinel shows dumbbell shape PRIMARY MINERALOGY: Orthopyroxene - Mode: 10-15%. Crystal size: 5-10 mm. Crystal shape: Elongate. Crystal orientation: None visible. Percent replacement: Variable. Olivine - Mode: 85-90%. Crystal size: 5-15 mm. Crystal shape: Ragged. Crystal orientation: None visible. Percent replacement: Variable. Spinel - Mode: Trace. Crystal size: 0.1-0.5 mm. Crystal shape: Elongate. Crystal orientation: None visible. Percent replacement: Not visible. Comments: Cr-bearing? SECONDARY MINERALOGY: Serpentine. Total percent: 30-80%. Texture: N/A. Vein material: En echelon and sigmoidal sets indicating vertical dextral shear, completely filled with amorphous black serpentine. **UNIT 2: SERPENTINIZED DUNITE** Pieces 3, 4A, 4B, 5 COLOR: Dark greenish-gray (5B 4/1). LAYERING: None. DEFORMATION: Spinels are sheared, orthopyroxenes show kink-banding and stretching. PRIMARY MINERALOGY: Orthopyroxene - Mode: 0-1%. Crystal size: 0.2-1.5 mm. Crystal shape: Equant to elongate.

> Percent replacement: Not visible. Olivine - Mode: 99%. Crystal size: Not visible. Crystal orientation: None visible. Percent replacement: Not visible.

Crystal orientation: None visible.

Spinel - Mode: <1%. Crystal size: 0.2-0.8. Crystal shape: Elongate. Crystal orientation: None visible. Percent replacement: Not visible. SECONDARY MINERALOGY:

# Serpentine.

Total percent: 50-80%.

Texture: N/A.

Vein material: Two generations, (1)anastomosing, vertical and horizontal, steeply dipping, 1-5 mm wide, two generations of dark amorphous serpentine fill; (2) vertical and horizontal, 0.5-2 mm wide, filled with white and green fibrous chrysotile showing sinistral and vertical shear; veins total up to 2% of rocks.

# UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE

#### Pieces 6-17

COLOR: Gray to dark greenish-gray (N 5/ to 5B 4/1).
 LAYERING: Disseminated spinel grains, 25 cm thick and forming 1% to 2% modal volume, dipping at 65 degrees (found only in Piece 16).
 DEFORMATION: Orthopyroxene shows kink banding and elongation defining a coarse foliation dipping at 50 degrees.
 PRIMARY MINERALOGY:

 Olivine - Mode: 85-95%.
 Crystal size: Not visible.
 Crystal orientation: None visible.
 Percent replacement: 80-99.

Percent replacement: 80-99.

Orthopyroxene - Mode: 5-15%. Crystal size: 2-12 mm. Crystal shape: Equant-elongate. Crystal orientation: Defines foliation. Percent replacement: 80-90.

Spinel - Mode: <1%. Crystal size: 0.2-1 mm.

Crystal shape: Equant-dumbbell.

Crystal orientation: Defines foliation.

Percent replacement: Not visible. SECONDARY MINERALOGY:

Serpentine.

Total percent: 80-99%.

Texture: N/A.

Vein material: Two generations, first: conjugate sets, 0.2-8 mm wide, steeply dipping, filled with amorphous black serpentine, cut by second generation dipping at 15-25 degrees, filled with white chrysotile and carbonate(?) with occasional "Frankenstein veins" of chrysotile perpendicular to strike of veins. ADDITIONAL COMMENTS: Orthopyroxene and spinel define primary foliation.





#### **UNIT 2: TECTONIZED SERPENTINIZED HARZBURGITE**

# Pieces 1 to 21

COLOR: Bluish gray (5B 5/1) with altered dark greenish gray zones (5BG 4/1).

LAYERING: None. DEFORMATION: Fractures, locally-low angle, 20-degree normal faulting with a few mm offset in dark veins, kink-banded orthopyroxene. Shearing is caused by brecciation.

Offset in dark veins, kink-banded i PRIMARY MINERALOGY: Orthopyroxene - Mode: 5-15%. Crystal size: 2-8 mm. Crystal shape: Elongate, ragged. Crystal orientation: None visible. Percent replecement: Variable Percent replacement: Variable.

> Olivine - Mode: 85-95% Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None visible. Percent replacement: Variable.

Spinels - Mode: <1%. Crystal size: 0.1-0.8 mm.

Crystal shape: Flame, ragged. Crystal orientation: None visible.

Percent replacement: Variable. SECONDARY MINERALOGY:

# Serpentine.

Total percent: 50-70%.

Texture: Strongly deformed serpentine orthopyroxene pseudomorphs set in a matrix of mesh-textured serpentine replacing olivine.

Vein material: Dark greenish gray altered zones usually contain black-green major veins, black-green veins also occur; occasionally greenish white veins of chrysotile (< 5mm). Pyroxene may control location of fractures and veins.





# 125-779A-16R-3

# **UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE**

# Pieces 1-6

COLOR: Dark greenish gray (5BG 4/1) with lighter patches. LAYERING: None. DEFORMATION: Vein-filled fractures with perpendicular chrysotile-filled tension crack DEFORMATION: Vein-filled fract (Frankenstein). PRIMARY MINERALOGY: Olivine - Mode: 50%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: None. Percent replacement: 95-99.

Orthopyroxene - Mode: 50%. Crystal size: <2 cm? Crystal shape: Round? Crystal orientation: None. Percent replacement: 95-99. SECONDARY MINERALOGY:

Serpentine.

Total percent: 100%.

Texture: Bastite pseudomorphs after rounded deformed orthopyroxene. Vein material: Early generation of dark green veins crosscut by white tension veins. ADDITIONAL COMMENTS: Probably cumulate origin.



# UNIT 2: SERPENTINIZED DUNITE

#### Pieces 7 and 8

COLOR: Mottled pale to dark gray (N 5/ to N 4/). LAYERING: Not visible. DEFORMATION: Not visible. PRIMARY MINERALOGY: Olivine - Mode: 99% Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible Percent replacement: Not visible.

Cr-spinel - Mode: 1%. Crystal size: 0.5-1.5 mm. Crystal shape: Equant. Crystal orientation: Disseminated. Percent replacement: Not visible. Comments: Some have a white halo. SECONDARY MINERALOGY:

Serpentine. Total percent: 100%. Texture: Mesh-textured, massive.

Vein material: Rock is mottled because of serpentinization halos around veins of

several types: Two generations at least of (1) 0.5 to 1.5-mm-wide, amorphous black serpentine sub-vertical, crosscut by (2) conjugate subhorizontal, white amorphous phase

ADDITIONAL COMMENTS: First dunite sampled downward in the core for a considerable interval

# **UNIT 2: SERPENTINIZED DUNITE**

#### Piece 9

COLOR: Dark gray (N 4/). LAYERING: Caused by sheared veining of upper 10 mm of surface. DEFORMATION: Sheared. PRIMARY MINERALOGY: Olivine - Mode: 99% Crystal size: Not visible Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible.

Spinel - Mode: 1%. Crystal size: 0.5 mm. Crystal shape: Rounded-equant. Crystal orientation: Not visible. Percent replacement: Not visible.

SECONDARY MINERALOGY: Serpentine replaces all of the primary minerals.

Total percent: 100%. Texture: N/A

Vein material: 40% of the rock is made of veins; Two generations: (1) dark blue-green amorphous serpentine in upper 1 cm, apparently subhorizontal; (2) anastomosing chrysotile.

ADDITIONAL COMMENTS: Spinels have white halos (probably of chlorite).

# **UNIT 2: SERPENTINIZED DUNITE**

#### Piece 10

COLOR: Pale to dark gray (N 5/ to N 4/). LAYERING: None visible. DEFORMATION: Elongate spinels. PRIMARY MINERALOGY: Olivine - Mode: >99%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible.

Spinel - Mode: <1%. Crystal size: 0.5-1 mm. Crystal shape: Elongate to equant. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY:

Serpentine. Total percent: 100%. Texture: N/A. Vein material: Predominantly vertical, anastomosing, 0.1-8 mm wide, filled with massive dark green, laminated serpentine phase.

#### UNIT 2: SERPENTINIZED HARZBURGITIC DUNITE

# Pieces 11 to 14

COLOR: Pale gray to dark gray (N 6/ to 5B 4/1). LAYERING: Olivine layering (in Piece 14). DEFORMATION: Bent orthopyroxene cleavage. PRIMARY MINERALOGY: Olivine - Mode: 95-99%. Crystal size: 5-15 mm. Crystal shape: Elongate. Crystal orientation: Subhorizontal.

Percent replacement: Not visible. Comments: Oval-shaped and cleaved.

Orthopyroxene - Mode: <5%. Crystal size: 0.5-0.8 mm. Crystal shape: Equant-elongate. Crystal orientation: Not visible. Percent replacement: Not visible.

Cr-spinel - Mode: <1%. Crystal size: 0.2-0.5 mm. Crystal shape: Ovoid. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY:

Serpentine. Total percent: 85-95%.

Texture: N/A.

Vein material: Primary conjugate set dipping steeply, 0.5-6 mm wide, filled with laminar black amorphous-looking serpentine, making up 5-10% of rock. Crosscut by 45 degree, 0.2-mm-wide amorphous white-filled veins.

# 125-779A-17R-1 (continued)

# UNIT 2: SERPENTINIZED MYLONITIZED DUNITE

### Pieces 16 to 18

COLOR: Dark blue gray (5B 4/1). LAYERING: Not visible. DEFORMATION: Mylonitized, serpentinized olivine has pervasive sheared fabric. PRIMARY MINERALOGY: Olivine - Mode: 99%. Crystal size: Not visible. Crystal shape: Ovoid-stretched. Crystal orientation: Long axes steeply dipping. Percent replacement: Not visible.

Cr-spinel - Mode: <1%. Crystal size: <0.1 mm. Crystal shape: Ellipsoidal. Crystal orientation: Length parallel to schistosity. Percent replacement: Not visible. SECONDARY MINERALOGY: Olivine appears to have completely recrystallized to produce mylonitic fabric. Total percent: 30-50%. Texture: N/A.

Vein material: White chrysotile veins subparallel to fabric, 0.5 mm wide. ADDITIONAL COMMENTS: First mylonitized rock observed downhole.



# 125-779A-17R-2

# **UNIT 2: SERPENTINIZED DUNITE**

#### Piece 1

COLOR: Dark gray (N 4/). LAYERING: Not visible. DEFORMATION: Not visible. PRIMARY MINERALOGY: Olivine - Mode: 99%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible.

Spinel - Mode: 1%. Crystal size: 0.1-0.2 mm. Crystal shape: Elongate-dumbbell. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Extensively serpentinized. Total percent: 70-90%.

Texture: N/A. Vein material: Two generations: (1) dark gray-green serpentine, 1-2 mm wide, cut by (2) chrysotile-filled veins.

# **UNIT 2: SERPENTINIZED HARZBURGITE**

# Piece 2

COLOR: Blue gray (5B 5/1). LAYERING: Not visible. DEFORMATION: Not visible. PRIMARY MINERALOGY: Olivine - Mode: 70%. Crystal size: 5-9 mm. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Variable.

> Orthopyroxene - Mode: 25-30%. Crystal size: 3-5 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Variable.

Spinel - Mode: Trace. Crystal size: 1.5 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Variable serpentinization. Total percent: 25-75%. Texture: N/A. Vein material: Chrysotile veins, 0.3 mm wide.

# 125-779A-17R-2 (continued)

# **UNIT 2: TECTONIZED SERPENTINIZED HARZBURGITE**

# Pieces 3 to 5

COLOR: Bluish gray (5B 5/1) to dark gray (N 4/). LAYERING: Not visible. DEFORMATION: Orthopyroxene shows wavy cleavage. PRIMARY MINERALOGY: Olivine - Mode: 60-80%. Crystal size: 5-10 mm. Crystal shape: Ragged. Crystal orientation: Not visible. Percent replacement: Variable.

> Orthopyroxene - Mode: 20-40%. Crystal size: 1-3 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Variable.

Spinel - Mode: Trace. Crystal size: 0.2-1 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 20-35%. Texture: N/A. Vein material: Multiple and numerous: (1) amorphous black serpentinite, 2 conjugate sets @ 45 degrees, 1-12 mm wide; (2) chrysotile parallel and normal to dark veins, 1 mm wide.

#### **UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE**

#### Pieces 6 and 7

COLOR: Bluish gray (5B 5/1). LAYERING: Not visible. DEFORMATION: Not visible. PRIMARY MINERALOGY: Olivine - Mode: 90-95%. Crystal size: 5-10 mm. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Variable.

> Orthopyroxene - Mode: 5-10%. Crystal size: 2-6 mm. Crystal shape: Not visible Crystal orientation: Not visible. Percent replacement: Variable.

Spinel - Mode: <1%. Crystal size: 0.3-1 mm. Crystal shape: Elongate. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Variable serpentinization.

Total percent: 35-65%. Texture: N/A. Vein material: Two generations: (1) dark amorphous serpentinite 0.5-2 mm wide; (2) chrysotile following original vein paths; two veins also appear to be superimposed forming a sheared pale-green vein.

# 125-779A-17R-2 (continued)

# UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE

# Pieces 8-19

COLOR: Dark greenish gray (5BG 4/1). LAYERING: Not visible. DEFORMATION: Pyroxenes are kinked and folded, elongated spinels. PRIMARY MINERALOGY: Orthopyroxene - Mode: 10-20%. Crystal size: 5-7 mm. Crystal size: 5-7 mm. Crystal orientation: Not visible Crystal orientation: Not visible. Percent replacement: Not visible.

Olivine - Mode: 80-90%. Crystal size: 5-10 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible.

Spinel - Mode: <1%. Crystal size: 0.1-2 mm. Crystal shape: Elongate. Crystal orientation: Not visible.

Percent replacement: Not visible. SECONDARY MINERALOGY: Variably serpentinized with respect to major veins. Total percent: 25-50%.

Texture: N/A.

Vein material: Numerous, two generations (at least), primary dark green-black amorphous serpentine, up to 8 mm wide, cut by second generation: chrysotile, 0.2 mm wide.



# 125-779A-17R-3

### UNIT 2: TECTONIZED SERPENTINIZED HARZBURGITE WITH DUNITE LAYER

#### Pieces 1 to 16

COLOR: Variable from blue-gray to green-gray (5B 4/1 to N 5/) with subordinate (5BG 4/1). LAYERING: 6-cm-thick massive dunite band, rich in disseminated Cr-spinel (<1%), transitional into harzburgite over 2 cm; layering dips at 65-70 degrees parallel to dumbbell spinel.

dumbbell spinel. DEFORMATION: Wavy cleavage on orthopyroxene; stretched spinel. PRIMARY MINERALOGY: Olivine - Mode: 99-80%. Crystal size: 5-8 mm. Crystal shape: Equant-ragged. Crystal orientation: Not visible. Boroact realegement: Not visible.

- Percent replacement: Not visible

Orthopyroxene - Mode: 0-20%. Crystal size: 2-5 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible.

Cr-spinel - Mode: Trace. Crystal size: <3 mm. Crystal shape: Dumbbell. Crystal orientation: Not visible.

Percent replacement: Not visible. SECONDARY MINERALOGY:

Serpentine.

- Total percent: 25-60%.
- Texture: N/A.

Vein material: Multiple: (1) anastomosing set, thickest of which are vertical; (2) subordinate conjugate set, steeply dipping; both filled with amorphous black serpentine; (2) vertical, laminar filled with milky-green amorphous serpentine (2-8 mm wide); (3) 0.5 mm subhorizontal chrysotile. **ADDITIONAL COMMENTS:** Dunite layer has a primary contact with the harzburgite.



CORE/SECTION








CORE/SECTION

#### 125-779A-19R-1

#### UNIT 2: SERPENTINIZED DUNITE

#### Pieces 1, 3-5, and 11

COLOR: Dark green-gray to dark black-gray (5 BG 4/1 to 5B 4/1). LAYERING: Not visible. DEFORMATION: Appears slightly sheared. PRIMARY MINERALOGY: Olivine - Mode: 95%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible.

Orthopyroxene - Mode: 5%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible.

Spinel? - Mode: Trace. Crystal size: Not visible (<1 mm?). Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY:

Serpentine. Total percent: 90-99%. Texture: N/A. Vein material: Small 0.2-mm serpentine (chrysotile?) veins; small (0.2-mm) white-green

veins appear in some samples. ADDITIONAL COMMENTS: Piece 5 appears slightly tectonized.

#### **UNIT 2: SERPENTINIZED HARZBURGITE**

#### Piece 2

COLOR: Green-gray to black-gray (5BG 4/1 to 5B 4/1). LAYERING: Not visible. DEFORMATION: Not visible. PRIMARY MINERALOGY: Olivine - Mode: 75-85%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible.

Orthopyroxene - Mode: 15-25%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 95-99%. Texture: Bastitic in some areas. Vein material: Small, 0.1-mm-wide, pale-green serpentine(?) veins.

#### UNIT 2: SERPENTINIZED DUNITE

#### Pieces 13 and 22

COLOR: Dark greenish gray (5BG 4/1). LAYERING: Not visible. DEFORMATION: Not visible. PRIMARY MINERALOGY: Olivine - Mode: 90-95%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible.

> Orthopyroxene - Mode: 5-10%. Crystal size: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible.



#### 125-779A-19R-1 (continued)

SECONDARY MINERALOGY: Serpentine. Total percent: 95-99%. Texture: N/A. Vein material: Dark black, 0.1-mm-wide, serpentine(?) veining. ADDITIONAL COMMENTS: Small, 1-cm patches of light mineral within pieces. UNIT 2: SERPENTINIZED HARZBURGITE Pieces 6-10 and 14-21 COLOR: Dark greenish gray to dark gray (5BG 4/1 to N/). LAYERING: Not visible. DEFORMATION: Appears slightly sheared; fractures and veining are abundant. PRIMARY MINERALOGY: Olivine - Mode: 75-80%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible. Orthopyroxene - Mode: 20-25%. Crystal size: 1-2 mm. Crystal shape: Equant-elongate. Crystal orientation: Not visible. Percent replacement: Not visible. Spinel? - Mode: Trace. Crystal size: <1 mm? Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine; Piece 9 has a rind (1-2 cm) of dark green mineral (composition?) on edge of sample. Total percent: 90-99%. Texture: Bastitic texture in some samples. Vein material: Abundant veins 0.1-0.3 mm wide of dark black serpentine(?); also very few 0.1-0.2 mm wide veins of white-green mineral (chrysotile?). 125-779A-19R-2 **UNIT 2: SERPENTINIZED HARZBURGITE** Piece 1 COLOR: Dark green gray (5BG/1). LAYERING: Not visible.

DEFORMATION: Slightly deformed. PRIMARY MINERALOGY: Olivine - Mode: 80%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible.

> Orthopyroxene - Mode: 20%. Crystal size: 1-2 mm? Crystal shape: Subhedral. Crystal orientation: Not visible. Percent replacement: Not visible.

Spinel? - Mode: Trace. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY:

# Serpentine.

Total percent: 95-99%.

Texture: Serpentine pseudomorphic after olivine; possibly originally cumulate? Vein material: 0.5 mm pale, green-black serpentine vein 2 cm long.



#### 125-779A-19R-3

#### **UNIT 2: SERPENTINIZED HARZBURGITE**

#### Pieces 1-10

COLOR: Bluish gray (5B 5/1). LAYERING: Not visible. DEFORMATION: Not visible. PRIMARY MINERALOGY: Olivine - Mode: 20%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible.

> Orthopyroxene - Mode: 80%. Crystal size: 1-2 mm. Crystal shape: Subhedral. Crystal orientation: Not visible. Percent replacement: Not visible.

Spinel? - Mode: Trace. Crystal size: <1 mm? Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY:

Serpentine pseudomorphs after orthopyroxene and olivine; secondary magnetite(?) is visible in areas. Total percent: 95-99%.

Texture: Bastitic.

Vein material: Laminar, filled with milky-green amorphous serpentine, 2-4 mm wide.



#### 125-779A-20R-1 (continued)

#### **UNIT 2: SERPENTINIZED HARZBURGITE**

#### Pieces 5, 6 and 8

COLOR: Bluish gray (5B 5/1). LAYERING: None. DEFORMATION: Piece 5 is sheared and brecciated. PRIMARY MINERALOGY: Olivine - Mode: 60-70%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible.

Orthopyroxene - Mode: 30-40%. Crystal size: 1-2 mm. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 90%. Texture: Bastitic in areas. Vein material: Small, 0,1-mm, veins parallel to the long axis of the larger sample.

#### UNIT 2: SERPENTINIZED DUNITE(?)

#### Piece 9

COLOR: Dark black gray (5B 4/1). LAYERING: None. DEFORMATION: Some areas appear slightly sheared. PRIMARY MINERALOGY: Olivine - Mode: 80-85%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible. Orthopyroxene - Mode: 15-20%.

Ornopyroxene - Mode: 15-20%. Crystal size: 1-2 mm? Crystal shape: Slightly elongated. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Totel percent: 0007

Serpentine. Total percent: 90%. Texture: Serpentine alteration of olivine. Vein material: 0.1-mm pale-green serpentine veining; edge and exterior of rock has chrysotile(?) coating, 0.2 mm thick.



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#### **UNIT 2: SERPENTINIZED HARZBURGITE**

#### Piece 5

COLOR: Bluish gray (5B 5/1). LAYERING: Orthopyroxene appears to form layers, possibly tectonic. DEFORMATION: Wavy cleavage of orthopyroxene. PRIMARY MINERALOGY: Orthopyroxene - Mode: 70-90%. Crystal size: 2-4 mm. Crystal shape: Equant-ragged. Crystal orientation: Not visible. Percent replacement: Not visible.

Olivine - Mode: 10-30%. Crystal size: 3-5 mm. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible.

Spinel - Mode: Trace. Crystal size: <1 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 80-95%.

Texture: N/A. Vein material: 1 mm wide, filled with dark serpentine.

#### UNIT 2: SERPENTINIZED TECTONIZED DUNITE GRADING TO HARZBURGITE

#### Pieces 6 and 7

COLOR: Black (2.5Y 2/0) to dark bluish gray (5B 4/1). LAYERING: Not visible. DEFORMATION: Olivine intensively kink-banded. PRIMARY MINERALOGY: Olivine - Mode: 85-99%. Crystal size: 5-10 mm. Crystal shape: Ragged. Crystal orientation: Not visible. Percent replacement: Not visible.

> Orthopyroxene - Mode: Trace-15%. Crystal size: 3-5 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible.

Spinel - Mode: <1%. Crystal size: <2 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY:

Serpentine. Total percent: 80-95%. Texture: N/A.

Vein material: 0.1-0.3 mm wide, filled with both dark serpentine and white chrysotile. ADDITIONAL COMMENTS: Serpentinization is extensive.

#### 125-779A-22R-1 (continued)

#### UNIT 2: SERPENTINIZED TECTONIZED PYROXENITE GRADING TO DUNITE (8 AND ONE FRAGMENT OF PIECE 9)

#### Pieces 8-10

COLOR: Bluish gray (5B 5/1) to black (2.5Y 2/0). LAYERING: Apparent in gradation from pyroxenite to dunite. DEFORMATION: Undulose cleavage on orthopyroxene. PRIMARY MINERALOGY: Orthopyroxene - Mode: 50-5%. Crystal size: 3-5 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible.

Olivine - Mode: 95-50% Crystal size: 8-15 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible.

Spinel - Mode: Trace-<1%. Crystal size: <2 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 60-85% Texture: N/A. Vein material: Top of Piece 8 has laminar banded vein sub-horizontal (5-8 mm wide), filled with dark-green and white amorphous serpentine. This vein is cut by a vertical vein wedging downwards from 5-0 mm over 3 cm distance, and filled with same as above. ADDITIONAL COMMENTS: Note gradation from pyroxenite to dunite in one piece, variable serpentinization.

#### **UNIT 2: TECTONIZED SERPENTINIZED HARZBURGITE**

Piece 11

COLOR: Mottled and variable from gray (N 6/) to dark gray (N 4/). LAYERING: Not visible. DEFORMATION: Strong orthopyroxene foliation parallel to orthopyroxene elongation and dipping at 45 degrees. PRIMARY MINERALOGY: Olivine - Mode: 85-90%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible. Orthopyroxene - Mode: 15-10%. Crystal size: 8-15 mm. Crystal shape: Elongate. Crystal orientation: Not visible. Percent replacement: Not visible. Spinel - Mode: <1% Crystal size: 0.5-1 mm. Crystal shape: Elongate-dumbbell. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine.

Total percent: 70-80%.

Texture: Variable serpentinization in vicinity of veins.

Vein material: multiple: (1) dip @ 45 degrees, anastomosing, 0.1-10 mm wide, filled with amorphous dark serpentine; (2) conjugate: 1st set, dipping at 45 degrees, generally linear, 0.5-5 mm wide, filled with amorphous black to massive blue-gray material. ADDITIONAL COMMENTS: Primary vein set dominates serpentinization zones and is

parallel to orthopyroxene foliation.

#### 125-779A-22R-1 (continued)

#### **UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE**

#### Pieces 12, 14, and 16-22

COLOR: Bluish gray (5B 5/1) LAYERING: Crude layering apparent, results from orthopyroxene alignment. DEFORMATION: Orthopyroxene has wavy cleavage surfaces. PRIMARY MINERALOGY: Orthopyroxene - Mode: 50-90%. Crystal size: 3-8 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible.

Olivine - Mode: 50-10%. Crystal size: 3-5 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible.

Spinel - Mode: <1%. Crystal size: <1 mm. Crystal shape: Equant. Crystal orientation: Arranged in stringers. Percent replacement: Not visible. SECONDARY MINERALOGY:

Serpentine. Total percent: 60-85%. Texture: Variable serpentinization. Vein material: <2-mm wide veins, some subvertical, others dipping at 45 degrees; filled with dark amorphous and light green-white serpentine.



#### 125-779A-22R-2

#### **UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE**

#### Pieces 1, 15 and 16

COLOR: Bluish gray (5B 5/1). LAYERING: Not visible. DEFORMATION: Wavy cleavage and bent exsolution lamellae in orthopyroxene. PRIMARY MINERALOGY: Orthopyroxene - Mode: 50-70%. Crystal size: 3-8 mm. Crystal shape: Equant-ragged. Crystal orientation: Not visible. Percent replacement: Not visible. Olivine - Mode: 30-50%.

Crystal size: 3-8 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible.

Spinel - Mode: <1%. Crystal size: 0.1-1 mm. Crystal shape: Euhedral. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY:

Serpentine. Total percent: 70-80%. Texture: Variable serpentinization. Vein material: <1 mm wide, filled with greenish-white serpentine.

#### **UNIT 2: TECTONIZED SERPENTINIZED HARZBURGITE**

#### Pieces 2-4,9,10,12-14,17,18,20

COLOR: Gray to dark gray (N 6/ to N 5/). LAYERING: Strong layering defined by olivine and orthopyroxene. DEFORMATION: Wavy cleavage on orthopyroxene. PRIMARY MINERALOGY: Olivine - Mode: 50-80%. Crystal size: 8-20 mm. Crystal shape: Elongate-ragged. Crystal orientation: Not visible. Percent replacement: Not visible.

Orthopyroxene - Mode: 20-50%. Crystal size: 5-10 mm. Crystal shape: Elongate-equant. Crystal orientation: Not visible. Percent replacement: Not visible.

Spinel - Mode: Trace. Crystal size: 0.5-1.5 mm. Crystal shape: Equant-elongate-dumbbell. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine.

Total percent: 70-80%. Texture: N/A. Vein material: 2 sets: (1) sub-horizontal and vertical. 0.5-3 mm, amorphous gray-black serpentine fill; (2) horizontal and 65 degrees dip, 1-5 mm, filled with laminar milky green, amorphous serpentine and chrysotile. ADDITIONAL COMMENTS: Piece 2 has layering of olivine and orthopyroxene. It may be

primarily magmatic or tectonic transposition, dips at 45 degrees.

#### UNIT 2: TECTONIZED SERPENTINIZED DUNITE

#### Pieces 5-8, 11 and 19

**COLOR:** Dark bluish gray (5B 4/1). **LAYERING:** Olivine appears to be strongly stretched in some pieces defining an apparent Layering. DEFORMATION: Elongated olivines. PRIMARY MINERALOGY: Olivine - Mode: 95-99%. Crystal size: 5-12 mm. Crystal shape: Elongate-ragged. Crystal orientation: Not visible.

Orthopyroxene - Mode: 5-Trace. Crystal size: 5-8 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible.

Percent replacement: Not visible.

Spinel - Mode: <1%. Crystal size: <2 mm. Crystal size: <2 mm, Crystal shape: Equant, Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY:

Serpentine. Total percent: 70-85%. Texture: Variable serpentinization. Vein material: <5 mm wide, filled with milky white and pale green serpentine.





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#### 125-779A-24R-1

#### Pieces 1, 2, 3, 6, 7

COLOR: Dark bluish gray (5B 4/1). LAYERING: None. DEFORMATION: Appears slightly sheared (tectonized?). PRIMARY MINERALOGY: Olivine - Mode: 80-90%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: 100%.

Orthopyroxene - Mode: 10-15%. Crystal size: 1-3 mm. Crystal shape: Equant-elongate. Crystal orientation: Not visible. Percent replacement: 100%.

Spinel? - Mode: Trace. Crystal size: 0.5-1.0 mm. Crystal shape: Equant-elongate. Crystal orientation: Not visible. Percent replacement: 0%. SECONDARY MINERALOGY:

Total percent: 100%. Texture: Serpentinized mesh texture is visible. Vein material: <2-mm wide black and pale milky green serpentine veining.

#### **UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE**

#### Pieces 4, 5, 8, 9, 11, 13-16

COLOR: Bluish gray to dark bluish gray (5B 6/1 to 5B 4/1). LAYERING: None. DEFORMATION: Some pyroxenes show wavy extinction. PRIMARY MINERALOGY: Olivine - Mode: 80%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: 90%.

Orthopyroxene - Mode: 15%. Crystal size: 1-2 mm. Crystal shape: Equant-elongate. Crystal orientation: Not visible. Percent replacement: 50%.

Spinel? - Mode: Trace-5%. Crystal size: <0.5 mm. Crystal shape: Equant-elongate. Crystal orientation: N/A. Percent replacement: 0%. SECONDARY MINERALOGY:

Total percent: 70%.

Texture: Serpentine, bastitic in areas.

Vein material: Pale green and milky white serpentine veining, <2 mm wide; black serpentine veining <2 mm wide.

ADDITIONAL COMMENTS: Pieces 11 and 13 have serpentinization halos 2-3 cm wide.

#### 125-779A-24R-1(continued)

#### UNIT 2: FRAGMENTS OF SERPENTINIZED HARZBURGITES AND DUNITES

#### Pieces 10 and 12

COLOR: Dark bluish gray-dark greenish gray (5B 4/1- 5G 4/1). LAYERING: None. DEFORMATION: None visible. PRIMARY MINERALOGY: Olivine - Mode: 75-95%. Crystal size: 2-6 mm. Crystal size: 2-6 mm. Crystal orientation: Not visible. Percent replacement: 80-90%.

Orthopyroxene - Mode: 5-25%. Crystal size: 2-5 mm. Crystal shape: Elongate. Crystal orientation: Not visible. Percent replacement: 70-80%.

Spinel - Mode: Trace. Crystal size: <0.5 mm. Crystal shape: Ragged. Crystal orientation: Not visible. Percent replacement: 0%. SECONDARY MINERALOGY: Serpentine. Total percent: 80-90%. Texture: Mesh and bastite. Vein material: Two types of veins: 1) black serpentine 2) pale white-green serpentine <2 mm wide.



#### 125-779A-25R-1 (continued)

#### **UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE**

#### Pieces 3 and 6

COLOR: Dark greenish gray (5B 4/1). LAYERING: Not visible. DEFORMATION: Elongated ragged spinel; distorted orthopyroxene, some elongated. PRIMARY MINERALOGY: Olivine - Mode: 90%. Crystal size: Not visible. Crystal size: Not visible. Crystal orientation: Not visible. Percent replacement: 90%.

Orthopyroxene - Mode: 10%. Crystal size: 5-12 mm. Crystal shape: Equant to elongate. Crystal orientation: Random. Percent replacement: 90%.

Cr-spinel - Mode: Trace. Crystal size: <1 mm. Crystal shape: Equant to ragged. Crystal orientation: Random. Percent replacement: 0%. SECONDARY MINERALOGY: Serpentine. Total percent: 90-99%. Texture: Micro-mesh texture after olivine with bastite after orthopyroxene. Vein material: One subhorizontal white vein (<0.5 mm) cut by vertical white vein (1 mm thick).

#### UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE

#### Pieces 4 and 5

COLOR: Bluish gray (5B 5/1). LAYERING: Not visible. DEFORMATION: Shear fabric dipping at 60 degrees. PRIMARY MINERALOGY: Orthopyroxene - Mode: 50%. Crystal size: 3-4 mm. Crystal size: 3-4 grad. Crystal orientation: 60-70 degrees. Percent replacement: 20%.

> Olivine - Mode: 5-10%. Crystal size: 8-10 mm. Crystal shape: Elongate. Crystal orientation: Parallel to orthopyroxene. Percent replacement: 20%.

Cr-spinel - Mode: Trace. Crystal size: <1 mm. Crystal shape: Rounded-equant. Crystal orientation: Random. Percent replacement: 0%. SECONDARY MINERALOGY: Serpentine. Total percent: 20%. Texture: Serpentinization along orthopyroxene cleavage planes. Vein material: None.

ADDITIONAL COMMENTS: Comparatively orthopyroxene-rich pieces; fabric possibly relict cumulate origin now accentuated by deformation.

#### UNIT 2: SERPENTINIZED TECTONIZED DUNITE

#### Pieces 7 to 15

COLOR: Dark gray (N4/). LAYERING: Not visible. DEFORMATION: Some unfilled fractures. PRIMARY MINERALOGY: Olivine - Mode: >95%. Crystal size: 8-15 mm. Crystal shape: Elongated. Crystal orientation: Not visible. Percent replacement: 60%.

> Orthopyroxene - Mode: 5%. Crystal size: 3-5 mm. Crystal shape: Elongated. Crystal orientation: Not visible. Percent replacement: 100%.

Spinel - Mode: Trace. Crystal size: <1 mm. Crystal shape: Elongated. Crystal orientation: Not visible. Percent replacement: 0%. SECONDARY MINERALOGY: Serpentine.

Total percent: 10-70%. Texture: Variably deformed mesh texture after olivine. Vein material: Black veins surrounded by alteration zones (<1 mm wide), crosscut by white laminated veins at 60 degrees dip (2 mm wide).

#### UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE

#### Pieces 16 to 18

COLOR: Dark gray (N4/). LAYERING: Orthopyroxene-rich layer dipping at 50 degrees. DEFORMATION: Wavy cleavage on orthopyroxene. PRIMARY MINERALOGY: Olivine - Mode: 90%. Crystal size: 8-12 mm. Crystal size: 8-12 mm. Crystal orientation: Not visible. Percent replacement: 60%.

Orthopyroxene - Mode: 10%. Crystal size: 5-1.5 mm. Crystal shape: Rounded. Crystal orientation: Not visible. Percent replacement: 30%.

Spinel - Mode: Trace. Crystal size: <2 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: 0%.

#### SECONDARY MINERALOGY:

Serpentine.

Total percent: 30-60%.

Texture: Mesh texture after olivine and bastite after orthopyroxene.

Vein material: Set of black horizontal and vertical veins (<2 mm wide) cut by white veins. **ADDITIONAL COMMENTS:** Bulk of pieces broken by orthogonal set of serpentine-filled fractures.



#### 125-779A-25R-2

#### **UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE**

COLOR: Dark bluish gray (5B 4/1). DEFORMATION: Elongated ragged spinel; some elongated and deformed orthopyroxene. PRIMARY MINERALOGY:

Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: 80%.

Crystal shape: Equant-elongate. Crystal orientation: Not visible. Percent replacement: 50%.

Crystal shape: Elongate-ragged. Crystal orientation: Not visible. Percent replacement: 0%. SECONDARY MINERALOGY:

Vein material: Dark green vein (8 mm wide) cuts across the core.

#### **UNIT 2: SERPENTINIZED DUNITE**

DEFORMATION: Brittle fracture and elongation of Cr-spinel. PRIMARY MINERALOGY: Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Variable.

Orthopyroxene - Mode: <5%. Crystal shape: Elongated. Crystal orientation: Random. Percent replacement: Variable.

Crystal shape: Ragged. Crystal orientation: Disseminated. Percent replacement: 0%. SECONDARY MINERALOGY: Total percent: 50-70%. Texture: Micro-mesh texture after olivine; bastite after orthopyroxene. Vein material: 1st generation of anastomosing veins, 2-15 mm wide, of black serpentine with alteration halos 15 mm wide, dipping at 60-65 degrees.



CORE/SECTION



# 125-779A-26R-2

#### **UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE**

#### Pieces 1 and 2

COLOR: Bluish gray to dark bluish gray (5B 5/1 to 5B 4/1) with grayish green (5G 4/2) veins. LAYERING: Not visible.

DEFORMATION: Orthopyroxene has wavy cleavage; some cataclasis with sense of horizontal shear in Piece 1.

PRIMARY MINERALOGY: Olivine - Mode: 80-90%. Crystal size: 5-8 mm. Crystal shape: Equant-ragged. Crystal orientation: Not visible. Percent replacement: 25-30%.

> Orthopyroxene - Mode: 10-20%. Crystal size: 1-5 mm -5mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: 0%.

Spinel - Mode: <1.5%.

Crystal size: <1 mm.

Crystal shape: Subhedral. Crystal orientation: Disseminated.

Percent replacement: 0%. SECONDARY MINERALOGY:

#### Serpentine.

Total percent: 30%.

Texture: Protomesh after olivine and bastite after orthopyroxene.

Vein material: Polyphase veins dipping at 75 degrees, filled with several generations of dark green black serpentine, 30 mm wide; later generation of pale green amorphous serpentine 2-3 mm wide, followed by chrysotile veins (<1-2 mm wide); also a conjugate set of dark amorphous serpentine, dipping at 30 degrees.

ADDITIONAL COMMENTS: This is one of the longest complete sections of core so far recovered from 779A; intense serpentinization more pronounced closest to the veins dipping at 70 degrees.



CORE/SECTION





#### 125-779A-27R-1

#### UNIT 2: SERPENTINIZED TECTONIZED HARZBURGITE

#### Pieces 2, 3, 4 and 6

COLOR: Dark bluish gray (5B 4/1). LAYERING: Not visible. DEFORMATION: Wavy cleavage on orthopyroxene. PRIMARY MINERALOGY: Olivine - Mode: 80-90%. Crystal size: 3-8 mm. Crystal size: 3-8 gged. Crystal orientation: Not visible. Percent replacement: Variable.

> Orthopyroxene - Mode: 10-20%. Crystal size: 4-6 mm. Crystal shape: Equant-elongate. Crystal orientation: Not visible. Percent replacement: Variable.

Spinel - Mode: Trace. Crystal size: <2 mm. Crystal shape: Elongate. Crystal orientation: Not visible. Percent replacement: 0%. SECONDARY MINERALOGY:

Serpentine.

Total percent: 70%. Texture: Mesh after olivine and bastite after orthopyroxene. Vein material: 2 mm wide, dark blue-gray, serpentine-filled.

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CORE/SECTION







#### 125-779A-30R-2

# UNIT 2: STRONGLY TECTONIZED SERPENTINIZED HARZBURGITE

#### Pieces multiple clasts in clay

COLOR: Dark green black with light green fractured zones. LAYERING: Not visible. DEFORMATION: Strongly fractured. PRIMARY MINERALOGY: Olivine - Mode: 90%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: 90-99.

> Orthopyroxene - Mode: 10%. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: 90-99.

Spinel - Mode: Trace. Crystal size: Not visible. Crystal shape: Not visible. Crystal orientation: Disseminated. Percent replacement: None. SECONDARY MINERALOGY: Serpentine. Total percent: 99%. Texture: Cataclasis. Vein material: White veins: (<0.1-3 mm), in all orie

Vein material: White veins; (<0.1-3 mm), in all orientations chrysotile. ADDITIONAL COMMENTS: Strongly serpentinized.



CORE/SECTION



125-779A-31R-1

#### **UNIT 2: TECTONIZED SERPENTINIZED HARZBURGITE**

#### Pieces 1 and 2

COLOR: Dark greenish gray to greenish gray (5BG 4/1 to 5GY 5/1). LAYERING: Not visible. DEFORMATION: Wavy appearance to orthopyroxene cleavage. PRIMARY MINERALOGY: Olivine - Mode: 90-95% Crystal size: 5-12 mm. Crystal shape: Elongate-ragged. Crystal orientation: Not visible. Percent replacement: Variable.

Orthopyroxene - Mode: 5-10%. Crystal size: 3-5 mm. Crystal shape: Equant-elongate. Crystal orientation: Not visible. Percent replacement: Variable.

Spinel - Mode: Trace. Crystal size: <1 mm. Crystal shape: Equant-elongate. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY:

Serpentine. Total percent: 75-95%. Texture: Variable serpentinization. Vein material: <1-mm wide, conjugate sets, dark serpentine-filled.

#### UNIT 2: STRONGLY TECTONIZED AND SERPENTINIZED DUNITE

#### Pieces 3 to 9

COLOR: Dark greenish gray (5BG 4/1). LAYERING: Not visible. DEFORMATION: Cataclastic appearance with micro-shears and elongate serpentinized olivine. PRIMARY MINERALOGY: Olivine - Mode: 99%. Crystal size: <20 mm. Crystal shape: Elongate, ragged. Crystal orientation: Along shears. Percent replacement: Variable. Spinel - Mode: Trace.

Crystal size: <2 mm. Crystal shape: Elongate. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY:

Serpentine.

Total percent: 90-95%.

Texture: N/A.

Vein material: Numerous anastomosing, <2 mm wide, filled with amorphous gray-green cataclastic serpentine.

ADDITIONAL COMMENTS: All pieces are strongly serpentinized and deformed; it is possible that some orthopyroxene may exist, but no cleavage is visible.

#### 125-779A-31R-1 (continued)

### UNIT 2: METABASALT

#### Pieces 10 to 17

COLOR: Bluish gray, (5B 6/1). LAYERING: Not visible. DEFORMATION: Brecciated into angular clasts and elongate clasts 10-30 mm in size, indurated.

#### PRIMARY MINERALOGY:

Aphyric, very fine-grained. Plagioclase - Mode: 10-20%. Crystal size: <1 mm? Crystal shape: Not visible. Crystal orientation: None. Percent replacement: 80-90.

Clinopyroxene - Mode: 20-40%. Crystal size: <1 mm. Crystal shape: Not visible. Crystal orientation: None. Percent replacement: 80-90.

Glass - Mode: 50-60%. Crystal size: Not visible. Crystal shape: None. Crystal orientation: None. Percent replacement: 80-90. SECONDARY MINERALOGY:

# Clays; chlorite.

Total percent: 90%. Texture: N/A.

Vein material: White, non-carbonate.

ADDITIONAL COMMENTS: These pieces appear to be the upper chilled margin of a rock unit that becomes coarser-grained downwards in the core, eventually returning to a fine-grained character at the base; whole unit constitutes the majority of Core 31R except for the upper 90 cm.



#### 125-779A-31R-2

#### UNIT 2: META-MICROGABBRO

### Pieces 1 to 16

DDU	wide, showing normal faulting.
POI	Size varies downwards in the section from fine-orained to sizes given below:
	plagioclase extensively replaced by secondary phases.
	Plagioclase - Mode: 30-60%.
	Crystal size: <3 mm.
	Crystal shape: Euhedral.
	Crystal orientation: Not visible.
	Percent replacement: Not visible.
	Clinopyroxene - Mode: 40-60%.
	Crystal size: <6 mm.
	Crystal shape: Ophitic.
	Crystal orientation: Not visible.
	Percent replacement: Not visible.
	Oxide - Mode: <2%.
	Crystal size: <0.2 mm.
	Crystal shape: Anhedral.
	Crystal orientation: Not visible.
	Percent replacement: Not visible.
SEC	ONDARY MINERALOGY:
	Clays, chlorite and other low-temperature phases.
	Total percent: 30-70%.
	Vein meterial: -2 mm wide, sub barizontal to steeply dipping, filled with pale gray, a
	material
	material.



#### 125-779A-31R-3

### **UNIT 2: META-MICROGABBRO**

#### Pieces 1 to 8

COLOR: Greenish gray (5G 6/1). LAYERING: Not visible. DEFORMATION: Shear zones dipping at 45 degrees, <30 mm wide. PRIMARY MINERALOGY: Plagioclase extensively altered. Plagioclase - Mode: 30-60%. Crystal size: 1-3 mm. Crystal shape: Euhedral. Crystal orientation: Not visible. Percent replacement: Not visible. Clinopyroxene - Mode: 40-50%. Crystal size: <5 mm. Crystal shape: Ophitic. Crystal orientation: Not visible.

Oxide - Mode: Trace. Crystal size: <0.1 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Clays, chlorite.

Total percent: 30-60%. Texture: N/A.

Vein material: <1 mm wide, following shear zones and anastomosing from these; filled with greenish-white material.




# **UNIT 2: META-MICROGABBRO**

# Pieces 1-9

COLOR: Greenish gray (5G 6/1). DEFORMATION: Extensive shearing in zones <5 mm wide, subhorizontal and dipping at 40 degrees. PRIMARY MINERALOGY: Plagioclase - Mode: 40-60%. Crystal size: <0.5-4 mm. Crystal slape: Euhedral-tabular. Crystal orientation: Not visible. Percent replacement: Extensive.

Clinopyroxene - Mode: 40-50%. Crystal size: 5-8 mm. Crystal shape: Ophitic. Crystal orientation: Not visible. Percent replacement: Not visible.

Oxide - Mode: Trace. Crystal size: Equant. Crystal shape: Not visible. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Clays, chlorite, hydrogrossular. Total percent: 40-70%. Texture: N/A. Vein material: Filling shears, light green and black vein-filling materials.



# 542





CORE/SECTION





# 125-779A-33R-2

# UNIT 2: TECTONIZED SERPENTINIZED HARZBURGITE

## Pieces 1 and 2

COLOR: Bluish gray (5B 5/1) LAYERING: Possible alignment of elongate pyroxene DEFORMATION: Wavy cleavage on orthopyroxene; elongate spinels arranged in crude trains PRIMARY MINERALOGY: Orthopyroxene - Mode: 40-70%. Crystal size: 3-5 mm. Crystal shape: Ragged elongate. Crystal orientation: Not visible. Percent replacement: Variable. Olivine - Mode: 30-60%. Crystal size: 3-12 mm. Crystal shape: Ragged elongate. Crystal orientation: Not visible. Percent replacement: Variable. Spinel - Mode: Trace. Crystal size: <2 mm. Crystal shape: Ragged elongate. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 65-90%. Texture: N/A Vein material: Dark gray/black amorphous serpentine-filled, <3 mm wide, dipping at 50-30 degrees; and thin <1-mm veins filled with green-white serpentinous material. **UNIT 2: TECTONIZED SERPENTINIZED HARZBURGITE** Pieces 3 and 4 COLOR: Dark greenish gray (5BG 4/1). LAYERING: Not visible. DEFORMATION: Elongated olivine is aligned dipping subvertically; spinel trains crudely similarly aligned. **PRIMARY MINERALOGY:** Olivine - Mode: 85-95%. Crystal size: 5-12 mm. Crystal slage: 5-12 mm. Crystal shape: Elongate-ragged. Crystal orientation: Not visible. Percent replacement: Variable. Orthopyroxene - Mode: 5-15%. Crystal size: 3-4 mm. Crystal shape: Equant-ragged. Crystal orientation: Not visible. Percent replacement: Variable. Spinel - Mode: Trace. Crystal size: <2 mm. Crystal shape: Elongate-ragged. Crystal orientation: Not visible. Percent replacement: Not visible. SECONDARY MINERALOGY: Serpentine. Total percent: 65-90%. Texture: N/A. Vein material: <4 mm wide, filled with white layered serpentine, dipping at 45 degrees and, others (<2 mm) more irregular dips but similar fill.







CORE/SECTION

# UNIT 2: TECTONIZED SERPENTINIZED HARZBURGITE

## Pieces 1-3

COLOR: Bluish gray (5B 5/1). LAYERING: Possible alignment of elongate orthopyroxene. DEFORMATION: Elongate spinels in trains; wavy cleavage on orthopyroxene. PRIMARY MINERALOGY: Orthopyroxene - Mode: 15-25%. Crystal size: 3-5 mm. Crystal shape: Elongate-ragged. Crystal orientation: Not visible. Percent replacement: Variable. Olivine - Mode: 75-85%. Crystal size: 3-7 mm. Crystal shape: Elongate-ragged. Crystal orientation: Not visible. Percent replacement: Variable. Spinel - Mode: Trace. Crystal size: <2 mm. Crystal shape: Elongate-ragged. Crystal orientation: Not visible. Percent replacement: Variable. SECONDARY MINERALOGY: Serpentine. Total percent: 40-80%. Texture: N/A Vein material: Dark black amorphous serpentine-filled vein, <3 mm wide oriented almost parallel to core in Piece 2. This vein has <1-mm-wide and 2-cm-long white-green serpentine veins running perpendicular to it. Piece 1 has white-green serpentine vein, <2 mm wide, perpendicular to core. **UNIT 2: SERPENTINIZED HARZBURGITE** Pieces 4-8 COLOR: Dark greenish gray (5B 4/1).

LAYERING: None. DEFORMATION: Piece 8 appears to be slightly tectonized and exhibits elongation of the pyroxene crystals PRIMARY MINERALOGY: Olivine - Mode: 70-75% Crystal size: 1-2 mm. Crystal shape: Equant-elongate. Crystal orientation: N/A Percent replacement: N/A. Orthopyroxene - Mode: 25-30%. Crystal size: 1-3 mm. Crystal shape: Equant-elongate. Crystal orientation: N/A Percent replacement: N/A. Spinel - Mode: Trace. Crystal size: <1 mm. Crystal shape: Equant. Crystal orientation: N/A. Percent replacement: N/A. SECONDARY MINERALOGY: Serpentine. Total percent: 70? Texture: Serpentinized. Vein material: <2-mm wide white-pale green serpentine (chrysotile?) veining; Piece 4 is mixed with serpentine sediment.

# UNIT 2: SERPENTINIZED DUNITE (?)

# Pieces 9-11

COLOR: Dark blue gray (5B 4/1). LAYERING: None. DEFORMATION: None visible. PRIMARY MINERALOGY: Olivine - Mode: 90-95%. Crystal size: 1-3 mm. Crystal shape: Equant. Crystal orientation: Not visible. Percent replacement: Variable.

> Orthopyroxene - Mode: 5-10%. Crystal size: 1-4 mm. Crystal shape: Equant-elongate.

Crystal orientation: Not visible. Percent replacement: Variable.

Spinel - Mode: 0-3%. Crystal size: <2 mm. Crystal shape: Equant-ragged. Crystal orientation: Not visible. Percent replacement: Variable. SECONDARY MINERALOGY: Serpentine. Total percent: 40-90%. Texture: N/A. Vein material: <2-mm-wide black/green amorphous serpentine veins.

#### **SITE 779**

125-779A-3R-CC (Piece 2,13-15 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized dunite

GRAIN SIZE: 0.1-4 mm

TEXTURE: Mesh

PRIMARY PERCENT PERCENT SIZE COMPO-MINERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENOCRYSTS Olivine 20 94 1 - 4Anhedral Altered to mesh texture serpentine. Spinel 0.1-0.7 Equant-elongate Red; altered to magnetite. 0.1 Cr? Orthopyroxene 0 Subhedral-anhedral Altered to serpentine bastite and 5 1-3 chlorite. GROUNDMASS N/A N/A N/A N/A N/A SECONDARY REPLACING/ MINERALOGY PERCENT FILLING COMMENTS Chlorite Bladed prismatic crystals-anhedral equant patches. 0.1-1 mm 5-10 Orthopyroxene, serpentine in size; green blue-brown pleochroism; distributed throughout slide and also associated with orthopyroxene bastite. Serpentine 70-75 Mostly lizardite and/or chrysotile distributed throughout Olivine, orthopyroxene slide forming good-poor mesh texture. Magnetite 1 Dusty 0.1-mm grains; some are elongated along bastite Spinel cleavages; some spinels have cores of magnetite(?). VESTCLES/ SIZE CAVITIES PERCENT LOCATION FILLING SHAPE (mm) Vesicles 0 COMMENTS: Spinels are equant elongate and some form short stringers. Chlorite (green-brown) pleochroic present in patches, possibly in part replacing orthopyroxene. Orthopyroxenes are all altered to serpentine, but olivine is still fresh. 125-779A-4R-01 (Piece 3,27-30 cm) OBSERVER: SAB WHERE SAMPLED: Conical Seamount, southeast flank ROCK NAME: Serpentinized harzburgite GRAIN SIZE: 0.3-5 mm TEXTURE: Mesh and bastite PRIMARY PERCENT PERCENT SIZE COMPO-MINERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENOCRYSTS 0 78.5 Olivine Not visible Not visible Altered to mesh serpentine. Clinopyroxene Trace Trace N/A Subhedral-anhedral As exsolution lamellae of clinopyroxene. Spinel 1.5 1.5 0.3-1 Euhedral-anhedral Euhedral grains are undeformed. Orthopyroxene <1 20 2-5 Subhedral-anhedral Altered to serpentine bastite; some small relic olivine (now serpentitized)
included in bastite pseudomorphs of orthopyroxene-a relic poikiloblastic texture. GROUNDMASS N/A N/A N/A N/A N/A SECONDARY REPLACING/ MINERALOGY PERCENT FILLING COMMENTS Clays 10 Serpentine? Dusty brown clay distributed throughout slide & associated with the serpentine. Altered from spinel; dusty to elongate trails distributed Magnetite 1 Spinel throughout slide. Serpentine 87 Lizardite and/or chrysotile mostly; distributed across Olivine, orthopyroxene slide; forms mesh and bastite textures plus possible hourglass texture in a few places. VESICLES/ SIZE CAVITIES PERCENT LOCATION FILLING SHAPE (mm) Vesicles 0

COMMENTS: Fresh olivine-orthopyroxene preserved as inclusions inside spinel; some spinel are nicely equant and euhedral. Orthopyroxene is kink-banded and deformed. Some fresh material may still be present in the bastites. The absence of relic poikiloblastic texture indicates an original cumulate protolith.

#### 125-779A-4R-01 (Piece 3,27-30 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.3-5 mm

Magnetite

<1

Spinel

TEXTURE: Mesh and bastite

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAI	L (mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	78.5	Not visible		Not visible	Altered to mesh serpentine.
Clinopyroxene	Trace	Trace	N/A		Subhedral-anhed	ral As exsolution lamellae of clinopyroxene.
Spinel Orthopyroxene	1.5 <1	1.5 20	0.3-1 2-5		Euhedral-anhedr Subhedral-anhed	al Euhedral grains are undeformed. ral Altered to serpentine bastite; some small relic olivine (now serpentitized) included in bastite pseudomorphs of orthopyroxene-a relic poikiloblastic texture.
CROUNDMASS						
N/A	N/A	N/A	N/A		N/A	
			ii) li		N/A	
SECONDARY		REPI	LACING/			
MINERALOGY	PERCENT	FILI	LING		1.2010.0011.0.97.2011.0.00110	COMMENTS
crays	10	serpent	iné?		Dusty brown	clay distributed throughout slide & associated
Magnetite	1	Spinel			Altered from	m spinel; dusty to elongate trails distributed
Serpentine	87	Olivine	, orthopyro	xene	Lizardite a	nd/or chrysotile mostly; distributed across
8886982 <del>3</del> 749958438953			-11 - 1223C VIII - 138 - 138 - 138 - 138 - 138 - 138 - 138 - 138 - 138 - 138 - 138 - 138 - 138 - 138 - 138 - 1	5/53/17/7 41	slide; form	s mesh and bastite textures plus possible
					hourglass t	exture in a few places.
VESICLES/			STZE		***********************	
CAVITIES	PERCENT	LOCATIO	ON (mm)		FILLING	SHAPE
Vesicles	0					
125-779A-4R-01 ROCK NAME: Serr GRAIN SIZE: 0.2	(Piece 5 pentinized 2-4 mm	,42-44 cm d harzbu:	n) rgite	OBSERVER: SAB	WHERE SAMPLED:	Conical Seamount, southeast flank
TEXTURE: Mesh a	and basti	te				
DRIMARY	DEBCENT	DEDCENT	CT7F	COMPO-		
MINERALOGY	PRESENT	ORIGINAI	5 (mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS Olivine	0	83-88	Not visible		Not visible	Completely altered to mesh serpentine;
Spinel	2	2	0.2-1.5	Cr?	Anhedral-elonga	some rounded pseudomorphs found. te Red brown, contain some small round
Orthopyroxene	0	10-15	2-4		Subhedral-anhed	ollvine grains. ral Altered to serpentine bastite.
GROUNDMASS						
N/A	N/A	N/A	N/A		N/A	
			- 52 Sila (2003-2014)			
SECONDARY		REPI	LACING/			0010/71/70
Clave	10	FILI	LING		Ductor barren	COMMENTS
orays	10	serpent	uner.		pusty prown	with serpentine in the veins.
Serpentine	88	Olivin€	e, orthopyro	xene	Probably li bastitic te (1-4 mm wid	ardite and/or chrysotile forming mesh and xtures; chrysotile is dominant phase in veins e) that cut across slide.

 associated with serpentine and spinel.

 VESICLES/
 SIZE

 CAVITIES
 PERCENT LOCATION (mm.)

 FILLING
 SHAPE

 Vesicles
 0

Dusty 0.1-mm grains; distributed throughout slide and

COMMENTS: Elongate spinels are arranged in ragged trains - individual serpentine veins (1-4 mm wide) cut across this alignment at a high angle. Bastite is kink-banded and deformed (wavy extinction). Rock appears to have some

alignment at a high angle. Bastite is kink-banded and deformed (wavy extinction). Rock appears to have some relic poikilolitic textures (i.e., after a protolithic cumulate). Veins are dominant across slide and consist of clays and serpentine.

125-779A-5R-01 (Piece 10A,116-120 cm)

OBSERVER: HIR

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 1-4 mm

TEXTURE: Mesh and bastite.

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-	**********	
MINERALOGY	PRESENT	ORIGINA	L (mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	8-10	78-83	3-4		Anhedral	Altering to serpentine mesh texture.
Clinopyroxene	Trace	Trace	<0.05		Anhedral	As anhedral dot in an orthopyroxene grain.
Spinel	1-2	2	1-3	Cr?	Euhedral-anhedral	Red; altered to magnetite.
Orthopyroxene	2	15-20	3-4		Subhedral-anhedral	Altered to serpentine bastite + chlorite.
GROUNDMASS						
N/A	N/A	N/A	N/A		N/A	
SECONDARY		REP	LACING/			
MINERALOGY	PERCENT	FIL	LING			COMMENTS
Clays	3	Serpen	tine		Dusty brown in c associated with	color and distributed throughout slide, serpentine and also in veins.
Chlorite	5				Blue-green to br	cown pleochroism, as anhedral patches
					throughout slide	and along orthopyroxene cleavages and
					edges.	
Serpentine	79-81	Olivin	e, orthop	yroxene	Lizardite and/or	chrysotile defining mesh texture;
					chrysotile veins	(1 to 4 mm wide) at various orientations in
32 CWS	-	0.16.22			slide (see comme	ents).
Magnetite	1	Spinel	5 1919		Dusty, 0.1 mm, s	cometimes elongate in trains.
Brucite	Tr?	Olivin	e, orthop	yroxene	Forms in associa	tion with serpentization and appears mostly
					in second-genera	tion veining.
VESICLES/			SIZE			

COMMENTS: Olivine and orthopyroxene show wavy extinction. Veins show wavy extinction (2-mm-wide) and consist of chrysotile, brucite(?) and clays. Two generations of veins: 1) large (4-mm-wide) veins cut across slide completely, 2) small (1 to 2 mm-wide) and shorter (2-mm) veins cut perpendicular to 1st set, may be "Frankenstein" veins which were observed in hand sample. Spinels are elongate and ragged and are pulled apart across serpentine veins.

OBSERVER: SAB

FILLING

125-779A-5R-01 (Piece 12,108-109 cm)

0

PERCENT LOCATION

(mm)

WHERE SAMPLED: Conical Seamount, southeast flank

SHAPE

ROCK NAME: Serpentinized dunite

GRAIN SIZE: 0.2-5 mm

CAVITIES

Vesicles

TEXTURE: Mesh and bastite

PRIMARY PERCENT PERCENT SIZE COMPO-MORPHOLOGY COMMENTS MINERALOGY PRESENT ORIGINAL (mm) SITION PHENOCRYSTS Olivine 10 88 3-5 Anhedral Altered to mesh serpentine. Clinopyroxene <0.2 Subhedral-anhedral As exsolusion lamellae in orthopyroxene. <1 Spinel 0.5 1.5 0.2-0.4 Cr? Ragged and Altered to magnetite and possibly chlorite. elongated. Altered to bastite serpentine and Orthopyroxene 5 10 1-2 N/A chlorite. GROUNDMASS N/A N/A N/A N/A N/A SECONDARY REPLACING/ MINERALOGY PERCENT FILLING COMMENTS Blue-green-brown pleochroic distributed throughout slide in Chlorite 5-10 Orthopyroxene, serpentine association with serpentine and orthopyroxene. Located near spinels; in the veins; and grows as rims Magnetite 2 Spinel outlining olivine crystals. Serpentine 72-77 Olivine, orthopyroxene Lizardite and/or chrysotile; mesh texture is only partly developed in olivine. Small 0.1-mm-wide veins crossing slide; Brucite <1 post-serpentinization; magnetite is concentrated in these veins. VESICLES/ SIZE PERCENT LOCATION CAVITIES (mm) FILLING SHAPE Vesicles 0

COMMENTS: Orthopyroxene and olivine have wavy extinction, deformation. Spinels form ragged strings or trains. Orthopyroxene bastite also has bent cleavages. 125-779A-5R-02 (Piece 3,14-15 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Altered serpentinized harzburgite

GRAIN SIZE: 0.5-4 mm

TEXTURE: Mesh and bastite (minor)

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO- SITION	MORPHOLOGY	COMMENTS
DUDWOGDVODO						
Olivine	0	83-80	Not wigihl	<u>,</u>	Not wisible	Completely altered to serpentine mesh
Spipel	1-2	1-2	0 5-2	e Cr2	Not Visible	Completely altered to serpentine mesh.
Orthonyroyene	0	10-15	1-4	CI I	Subbodral-aphedra	Completely altered to serpentine
orenopyroxene		10-15	7-4		Subhedrar-anneura	bastite.
GROUNDMASS						
N/A	N/A	N/A	N/A		N/A	
SECONDARY		REPI	ACING/			
MINERALOGY	PERCENT	FILI	ING			COMMENTS
Clays	50-60	Serpent	ine		Dusty brownis	h clay distributed throughout slide after
Serpentine	38-49	Olivine	, orthopyr	oxene	serpentine. Lizardite and	/or chrysotile after olivine and orthopyroxene
Magnetite	<1	Spinel			distributed t	hroughout slide, chrysotile veins.
Magnetite	1	opiner			veins.	grains; distributed throughout since and along
VPCTCIPC/			oran			
CAVITIES	PERCENT	LOCATIO	SIZE ON (mm)		FILLING	SHAPE
Vesicles	0					
obsci	ured by th	ne abunda	ant veining			
125-779A-5R-02	(Piece 3,	40-43 cm	1)	OBSERVER: SAB	WHERE SAMPLED: C	onical Seamount, southeast flank
125-779A-5R-02 ROCK NAME: Serp	(Piece 3, pentinized	40-43 cm i harzbur	n) rgite	OBSERVER: SAB	WHERE SAMPLED: C	onical Seamount, southeast flank
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a	(Piece 3, centinized 05-4 mm and bastit	40-43 cm i harzbur :e	n) rgite	OBSERVER: SAB	WHERE SAMPLED: C	onical Seamount, southeast flank
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a	(Piece 3, centinized 05-4 mm and bastit	.40-43 cm i harzbur :e	n) rgite	OBSERVER: SAB	WHERE SAMPLED: C	onical Seamount, southeast flank
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY	(Piece 3, pentinized 05-4 mm and bastit PERCENT	40-43 cm i harzbur te PERCENT	n) rgite SIZE	OBSERVER: SAB	WHERE SAMPLED: C	onical Seamount, southeast flank
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY	(Piece 3, pentinized 05-4 mm and bastit PERCENT PRESENT	40-43 cm i harzbur :e PERCENT ORIGINAI	) gite SIZE , (mm)	OBSERVER: SAB COMPO- SITION	WHERE SAMPLED: C	onical Seamount, southeast flank
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS	(Piece 3, pentinized 05-4 mm and bastit PERCENT PRESENT	40-43 cm i harzbur ce PERCENT ORIGINAL	s) sgite SIZE (mm)	OBSERVER: SAB COMPO- SITION	WHERE SAMPLED: C	onical Seamount, southeast flank
125-779A-5R-02 ROCK NAME: Serg GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine	(Piece 3, pentinized 05-4 mm and bastit PERCENT PRESENT	40-43 cm i harzbur :e PERCENT ORIGINAI 83-88	) gite SIZE (mm)	COMPO- SITION	WHERE SAMPLED: C MORPHOLOGY	COMMENTS
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyrozene	(Piece 3, pentinized 05-4 mm and bastit PERCENT PRESENT <1 <1	40-43 cm i harzbur ce PERCENT ORIGINAI 83-88	) gite SIZE (mm) 1-3 0.05-0.1	COMPO- SITION	WHERE SAMPLED: C MORPHOLOGY Anhedral Appedral	COMMENTS Completely altered to serpentine mesh.
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel	(Piece 3, pentinized 05-4 mm and bastit PERCENT PRESENT <1 <1 2	40-43 cm i harzbur ce PERCENT ORIGINAL 83-88 <1 2	sgite sgite SIZE (mm) 1-3 0.05-0.1 0.5-2	OBSERVER: SAB COMPO- SITION	WHERE SAMPLED: C MORPHOLOGY Anhedral Anhedral Euhedral-anhedral	COMMENTS Completely altered to serpentine mesh. Small grains surrounded by serpentine. Red brown: altered to magnetite; some
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel	(Piece 3, coentinized 05-4 mm and bastit PERCENT PRESENT <1 <1 2	40-43 cm i harzbur ce PERCENT ORIGINAI 83-88 <1 2	sigite size (mm) 1-3 0.05-0.1 0.5-2	COMPO- SITION Cr?	WHERE SAMPLED: C MORPHOLOGY Anhedral Anhedral Euhedral-anhedral	COMMENTS Completely altered to serpentine mesh. Small grains surrounded by serpentine. Red brown; altered to magnetite; some rimmed by chlorite.
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene	(Piece 3, pentinized 05-4 mm and bastit PERCENT PRESENT <1 <1 2 1-2	40-43 cm i harzbur ce PERCENT ORIGINAI 83-88 <1 2 10-15	sigite SIZE (mm) 1-3 0.05-0.1 0.5-2 1-4	OBSERVER: SAB COMPO- SITION Cr?	WHERE SAMPLED: C MORPHOLOGY Anhedral Anhedral Euhedral-anhedral Subhedral-anhedral	COMMENTS Completely altered to serpentine mesh. Small grains surrounded by serpentine. Red brown; altered to magnetite; some rimmed by chlorite. Altered to serpentine bastite.
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene P.G.E	(Piece 3, pentinized 05-4 mm and bastif PERCENT PRESENT <1 <1 2 1-2 <0.1	40-43 cm i harzbur ce PERCENT ORIGINAL 83-88 <1 2 10-15 <0.1	) gite SIZE (mm) 1-3 0.05-0.1 0.5-2 1-4 <0.05	OBSERVER: SAB COMPO- SITION Cr?	WHERE SAMPLED: C MORPHOLOGY Anhedral Anhedral Euhedral-anhedral Subhedral-anhedral	COMMENTS Completely altered to serpentine mesh. Small grains surrounded by serpentine. Red brown; altered to magnetite; some rimmed by chlorite. Altered to serpentine bastite. Very bright reflectance grain disseminated - serpentine groundmass.
125-779A-5R-02 ROCK NAME: Serg GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene P.G.E	(Piece 3, pentinized 05-4 mm and bastif PERCENT PRESENT <1 <1 2 1-2 <0.1	40-43 cm i harzbur ce PERCENT ORIGINAL 83-88 <1 2 10-15 <0.1	) gite SIZE (mm) 1-3 0.05-0.1 0.5-2 1-4 <0.05	OBSERVER: SAB COMPO- SITION Cr?	WHERE SAMPLED: C MORPHOLOGY Anhedral Anhedral Euhedral-anhedral Subhedral-anhedral	COMMENTS Completely altered to serpentine mesh. Small grains surrounded by serpentine. Red brown; altered to magnetite; some rimmed by chlorite. Altered to serpentine bastite. Very bright reflectance grain disseminated - serpentine groundmass.
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene P.G.E GROUNDMASS N/A	(Piece 3, coentinized 05-4 mm and bastit PERCENT PRESENT <1 2 1-2 <0.1 N/A	40-43 cm i harzbur ce PERCENT ORIGINAI 83-88 <1 2 10-15 <0.1 N/A	s) sgite SIZE (mm) 1-3 0.05-0.1 0.5-2 1-4 <0.05 N/A	OBSERVER: SAB COMPO- SITION Cr?	WHERE SAMPLED: C MORPHOLOGY Anhedral Anhedral Euhedral-anhedral Subhedral-anhedra Euhedral	COMMENTS Completely altered to serpentine mesh. Small grains surrounded by serpentine. Red brown; altered to magnetite; some rimmed by chlorite. Altered to serpentine bastite. Very bright reflectance grain disseminated - serpentine groundmass.
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene P.G.E GROUNDMASS N/A SECONDARY	(Piece 3, coentinized 05-4 mm and bastit PERCENT PRESENT <1 2 1-2 <0.1 N/A	40-43 cm i harzbur ce PERCENT ORIGINAI 83-88 <1 2 10-15 <0.1 N/A REPI	s) sgite size (mm) 1-3 0.05-0.1 0.5-2 1-4 <0.05 N/A ,ACING/	COMPO- SITION Cr?	WHERE SAMPLED: C MORPHOLOGY Anhedral Anhedral Euhedral-anhedral Subhedral-anhedra Euhedral	COMMENTS Completely altered to serpentine mesh. Small grains surrounded by serpentine. Red brown; altered to magnetite; some rimmed by chlorite. Altered to serpentine bastite. Very bright reflectance grain disseminated - serpentine groundmass.
125-779A-5R-02 ROCK NAME: Serg GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene P.G.E GROUNDMASS N/A SECONDARY MINERALOGY	(Piece 3, pentinized 05-4 mm and bastit PERCENT PRESENT <1 <1 2 1-2 <0.1 N/A PERCENT	40-43 cm i harzbur ce PERCENT ORIGINAI 83-88 <1 2 10-15 <0.1 N/A REPI FUJ	s) sgite SIZE (mm) 1-3 0.05-0.1 0.5-2 1-4 <0.05 N/A ACING/ ING	OBSERVER: SAB COMPO- SITION Cr?	WHERE SAMPLED: C MORPHOLOGY Anhedral Anhedral Euhedral-anhedral Subhedral-anhedra Euhedral	COMMENTS COMMENTS Completely altered to serpentine mesh. Small grains surrounded by serpentine. Red brown; altered to magnetite; some rimmed by chlorite. Altered to serpentine bastite. Very bright reflectance grain disseminated - serpentine groundmass.
125-779A-5R-02 ROCK NAME: Serg GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene P.G.E GROUNDMASS N/A SECONDARY MINERALOGY Chlorite	(Piece 3, pentinized 05-4 mm and bastit PERCENT 2 1-2 <0.1 N/A PERCENT 2	40-43 cm i harzbur ce PERCENT ORIGINAL 83-88 <1 2 10-15 <0.1 N/A REPI FILI Serpent	SIZE (mm) 1-3 0.05-0.1 0.5-2 1-4 <0.05 N/A ACING/ JNG ine, spine	OBSERVER: SAB COMPO- SITION Cr?	WHERE SAMPLED: C MORPHOLOGY Anhedral Anhedral Euhedral-anhedral Subhedral-anhedra Euhedral N/A Small fine-gr	COMMENTS COMMENTS COMMENTS Completely altered to serpentine mesh. Small grains surrounded by serpentine. Red brown; altered to magnetite; some rimmed by chlorite. Altered to serpentine bastite. Very bright reflectance grain disseminated - serpentine groundmass.
125-779A-5R-02 ROCK NAME: Serg GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene P.G.E GROUNDMASS N/A SECONDARY MINERALOGY Chlorite	(Piece 3, pentinized 05-4 mm and bastit PERCENT <1 <1 2 1-2 <0.1 N/A PERCENT 2 0.0	40-43 cm i harzbur ce PERCENT ORIGINAL 83-88 <1 2 10-15 <0.1 N/A REPI FILI Serpent	s) sgite SIZE (mm) 1-3 0.05-0.1 0.5-2 1-4 <0.05 N/A ACING/ ING sine, spine	OBSERVER: SAB COMPO- SITION Cr?	WHERE SAMPLED: C MORPHOLOGY Anhedral Anhedral Euhedral-anhedral Subhedral-anhedra Euhedral N/A Small fine-gr serpentine; a	COMMENTS COMMENTS Completely altered to serpentine mesh. Small grains surrounded by serpentine. Red brown; altered to magnetite; some rimmed by chlorite. Altered to serpentine bastite. Very bright reflectance grain disseminated - serpentine groundmass. COMMENTS ained, anhedral patches intermixed with the lso appears to be rimming a few spinels.
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene P.G.E GROUNDMASS N/A SECONDARY MINERALOGY Chlorite Serpentine	(Piece 3, pentinized 05-4 mm and bastif PERCENT PRESENT <1 2 1-2 <0.1 N/A PERCENT 2 90-91	40-43 cm i harzbur ce PERCENT ORIGINAI 83-88 <1 2 10-15 <0.1 N/A REPI FILI Serpent Olivine	) SIZE (mm) 1-3 0.05-0.1 0.5-2 1-4 <0.05 N/A ACING/ ING ine, spine , orthopyr	OBSERVER: SAB COMPO- SITION Cr?	WHERE SAMPLED: C MORPHOLOGY Anhedral Anhedral Euhedral-anhedral Subhedral-anhedra Euhedral N/A Small fine-gr serpentine; a Lizardite and bastite and m	COMMENTS COMMENTS Completely altered to serpentine mesh. Small grains surrounded by serpentine. Red brown; altered to magnetite; some rimmed by chlorite. Altered to serpentine bastite. Very bright reflectance grain disseminated - serpentine groundmass. COMMENTS ained, anhedral patches intermixed with the lso appears to be rimming a few spinels. /or chrysotile present, forming characteristic esh textures (minor hourglass texture visible)
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene P.G.E GROUNDMASS N/A SECONDARY MINERALOGY Chlorite Serpentine Magnetite	(Piece 3, pentinized 05-4 mm and bastif PERCENT PRESENT <1 2 1-2 <0.1 N/A PERCENT 2 90-91 1	40-43 cm i harzbur :e PERCENT ORIGINAI 83-88 <1 2 10-15 <0.1 N/A REPI FILI Serpent Olivine	<pre>size size (mm) 1-3 0.05-0.1 0.5-2 1-4 &lt;0.05 N/A .ACING/ .ING .ine, spine e, orthopyr</pre>	OBSERVER: SAB COMPO- SITION Cr? 1 oxene	WHERE SAMPLED: C MORPHOLOGY Anhedral Anhedral Euhedral-anhedral Subhedral-anhedra Euhedral N/A Small fine-gr serpentine; a Lizardite and m Dusty, 0.1 mm yeins	COMMENTS COMMENTS COMMENTS Completely altered to serpentine mesh. Small grains surrounded by serpentine. Red brown; altered to magnetite; some rimmed by chlorite. Altered to serpentine bastite. Very bright reflectance grain disseminated - serpentine groundmass. COMMENTS ained, anhedral patches intermixed with the lso appears to be rimming a few spinels. /or chrysotile present, forming characteristic esh textures (minor hourglass texture visible) ; located throughout mesh edges and also in
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene P.G.E GROUNDMASS N/A SECONDARY MINERALOGY Chlorite Serpentine Magnetite Brucite	(Piece 3, pentinized 05-4 mm and bastit PERCENT PRESENT <1 2 1-2 <0.1 N/A PERCENT 2 90-91 1 2	40-43 cm i harzbur ce PERCENT ORIGINAI 83-88 <1 2 10-15 <0.1 N/A REPI FILI Serpent Olivine	) SIZE (mm) 1-3 0.05-0.1 0.5-2 1-4 <0.05 N/A ACING/ ING ine, spine s, orthopyr s, orthopyr	OBSERVER: SAB COMPO- SITION Cr? 1 oxene oxene	WHERE SAMPLED: C MORPHOLOGY Anhedral Anhedral Euhedral-anhedral Subhedral-anhedra Euhedral N/A Small fine-gr serpentine; a Lizardite and bastite and m Dusty, 0.1 mm veins. Yellow birefr brucite(?).	COMMENTS COMMENTS Completely altered to serpentine mesh. Small grains surrounded by serpentine. Red brown; altered to magnetite; some rimmed by chlorite. Altered to serpentine bastite. Very bright reflectance grain disseminated - serpentine groundmass. COMMENTS ained, anhedral patches intermixed with the lso appears to be rimming a few spinels. Yor chrysotile present, forming characteristic esh textures (minor hourglass texture visible) ; located throughout mesh edges and also in ingence mineral occurring mostly in veins
125-779A-5R-02 ROCK NAME: Serr GRAIN SIZE: 0.0 TEXTURE: Mesh a PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene P.G.E GROUNDMASS N/A SECONDARY MINERALOGY Chlorite Serpentine Magnetite Brucite	(Piece 3, pentinized 05-4 mm and bastif PERCENT PRESENT <1 2 1-2 <0.1 N/A PERCENT 2 90-91 1 2	40-43 cm i harzbur ce PERCENT ORIGINAI 83-88 <1 2 10-15 <0.1 N/A REPI FILI Serpent Olivine	<pre>s) sigite sigite size (mm) 1-3 0.05-0.1 0.5-2 1-4 &lt;0.05 N/A .ACING/ .ING .ine, spine s, orthopyr</pre>	OBSERVER: SAB COMPO- SITION Cr? 1 oxene oxene	WHERE SAMPLED: C MORPHOLOGY Anhedral Anhedral Euhedral-anhedral Subhedral-anhedra Euhedral N/A Small fine-gr serpentine; a Lizardite and bastite and m Dusty, 0.1 mm veins. Yellow birefr brucite(?).	COMMENTS COMMENTS Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Com

COMMENTS: Orthopyroxene is kinked and has wavy extinction. Some spinels have round inclusions of possible olivine or orthopyroxene? Veins (0.05 to 2 mm wide) are abundant. They appear to be two generations which occur almost perpendicular to one another. Veins consist of mostly chrysotile, magnetite, and brucite(?). Brucite determination needs further analysis, but believe the yellow birefringence intergrown with chrysotile vein is brucite. P.G.E. refers to platinum group elements.

# **SITE 779**

# 125-779A-5R-02 (Piece 4,65-69 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized dunite

GRAIN SIZE: 0.1-2 mm

TEXTURE: Mesh

PRIMARY MINERALOGY	PERCENT	PERCENT ORIGINAI	SIZE (mm)	COMPO- SITION	MO	RPHOLOGY	COMMENTS
PHENOCRYSTS							
Olivine	0	99	Not vis	ible	Not	visible	Completely altered to serpentine mesh.
Spinel	1	1	0.1-2	Cr?	Sub	hedral-anhedral	Red, altered to magnetite, a few round inclusions of olivine are found in some grains.
GROUNDMASS							
I/A	N/A	N/A	N/A		N/A		
SECONDARY		REPI	ACING/				
INERALOGY	PERCENT	FILL	ING				COMMENTS
lagnetite	1-2	Spinel				Dusty, 0.1 mm in	size; distributed throughout slide, but
Serpentine	97-98	Olivine	, ortho	pyroxene		appears concentr. Lizardite and/or	<pre>ated in veins and mesh edges. chrysotile distributed throughout slide a pictic moch touture</pre>
rucite	1	Olivine	, ortho	pyroxene, serpenti	ne	Found in veins w and serpentine.	hich cross slide; associated with magnetite
/ESICLES/		100100	SIZ	E			OUNDE
AVITIES Vesicles	PERCENT 0	LOCATIC	N (mm	)	FILLING		SHAPE
25-779A-5R-02 ROCK NAME: Ser	(Piece 5) pentinized	,34-37 cm d harzbur	) gite (t	OBSERVER: SAB	WH	ERE SAMPLED: Coni	cal Seamount, southeast flank
GRAIN SIZE: 0.	5-3 mm						
TEXTURE: Mesh	and basti	te					
PRIMARY	PERCENT	PERCENT	STZE	COMPO-			
INERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MÖ	RPHOLOGY	COMMENTS
PHENOCRYSTS	SS- 535	9.5 32					
livine	15-20	84-89	1-2		Anh	edral	Altered to serpentine mesh; some
linopyroxene	Trace	Trace	0.05		Sub	hedral-anhedral	As exsolution lamellae in orthopyroxene.
pinel	0.5	1	0.5-2	Cr?	Euh	edral-anhedral	Red, altered to magnetite and
rthopyroxene	3-5	10-15	2-3		Sub	hedral-anhedral	chlorite(?). Altered to serpentine bastite and
							chiorite.
GROUNDMASS							
/A	N/A	N/A	N/A		N/A		
ECONDARY		REPI	ACING/				
INERALOGY	PERCENT	FILL	ING	and and the second second		Colonlars to blue	COMMENTS
niorite	5	Orthopy	roxene,	spinel, serpentine	e	anhedral patches rimming some spin	e-yellow pleochrolsm, distributed as intermixed with serpentine, also found nels, and along orthopyroxene cleavage
erpentine	69-76	Olivine	, ortho	pyroxene		planes and grain Lizardite and/or	boundaries. chrysotile; forms mesh and bastite textur
agnetite	1	Spinel				along with minor Dusty, 0.1 mm, di edges of mesh, an	nourgiass textures. istributed throughout slide, concentrated nd within veins in elongated trails.
ESICLES/	PERCENT	LOCATIO	SIZ	E	FILLINC		SHADE
tagialag	PERCENT	LOCATIO	an (mm)	1	EIDDING		SHAFE

COMMENTS: Olivine and orthopyroxene have wavy extinction; orthopyroxene has kink-banding. Some spinels have inclusions of anhedral olivine(?) which has been serpentinized completely. Olivine and orthopyroxene may be fresh enough for microprobing. 2-mm-wide veins cut across slide (45 degrees to long axis). These may define a foliation which is apparent in the sample. This foliation is pervasive throughout the slide. 125-779A-6R-01 (Piece 2,18-20 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.05-4 mm

TEXTURE: Mesh (minor bastite)

PRIMARY PERCENT FIRCENT SIZE COMPO- SITION MORPHOLOGY COMMENTS  PERCENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS  Divions  1 17 0.05-1  Divions  2 2 0 0.2-1 Cr? Bubdedal-ambeddal Activity for a specific mash. Euhedial-ambeddal Statewidt for a specific mash. Euher Statewidt for a specific mash. Euhedial-ambeddal Statewidt for a speci	IEATORE: Mesh	(minor ba	stite)			-		
PHEBOCRYSTS         01-52         77-82         1-4         Anhedral         Altered to serpentine mesh.           Clinopyrozene         1         17         0.05-1         Exhedral-anhedral         Altered to serpentine mesh.           Spinel         2         2         0.2-1         Cr?         Exhedral-anhedral         Redy altered to serpentine mesh.           Spinel         2         2         0.2-1         Cr?         Exhedral-anhedral         Redy altered to serpentine mesh.           GRONDMASS         N/A         N/A         N/A         N/A         N/A         N/A           SECONDAY         PRECENT         REPLATING         COMMENTS         Comments         Comments           SECONDAY         PRECENT         Serpentine         Serpentine         Serpentine         Serpentine           Serpentine         3         Orthopyroxene, serpentine         Dusty brown clay, located maily in veins, but also after serpentine           Serpentine         58-68         Olivine, orthopyroxene         State         Dusty, 0.1 m, occurs throughts alide, also concentrated some clavage planes.           Serpentine         1         Spinel         YILING         SHAPE           Contine and clipyroxene are still relatively frequery some are still relatively frequery some anaetomosing.         Olivine and	PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO- SITION	M	ORPHOLOGY	COMMENTS
Olivine       15-20       7-82       3-4       Ahbedral       Altreed to serpentine mesh.         Spinal       2       0.2-1       Cr?       Eubedral-subhdral       Excolution lamellae, as inclusions in orthopyroseme and as a primary phase.         Spinal       2       0.2-1       Cr?       Eubedral-subhdral       Altreed to serpentine mesh.         Spinal       2       0.2-1       Cr?       Eubedral-subhdral       Altreed to serpentine mesh.         GROUNDASS       N/A       N/A       N/A       N/A       N/A         SCOMDARY       FERLENT       FERLENT       FERLENT       Serpentine         Serpentine       58-68       Olivine, orthopyroxene       Dusty brown clay, located mainly in veins, but also after serpentine.         Serpentine       58-68       Olivine, orthopyroxene       Dusty brown clay, located mainly in veins, but also after serpentine.         Serpentine       58-68       Olivine, orthopyroxene       Dusty brown clay, located mainly in veins, but also after serpentine.         Vesicies/       Spinel       Spinel       Dusty brown clay, located mainly in veins, but also after serpentine.         Vesicies/       Spinel       Spinel       Dusty brown clay, located mainly in veins, but also after serpentine.         Vesicies/       Spinel       Size       Dusty brown clay. </td <td>PHENOCRYSTS</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	PHENOCRYSTS							
Clinopyroxene 1 17 0.08-1 Exhedral-anhedral Exhedral-Exhedral Exhedral Exhe	Olivine	15-20	77-82	3-4		Anl	hedral	Altered to serpentine mesh.
Spliel       2       2       0.2-1       Cr?       Subhedral-unbedral       Interest or segment be and close or s	Clinopyroxene	1	1?	0.05-1		Eul	hedral-anhedral	Exsolution lamellae, as inclusions in
Orthopyroxene     10-15     15-20     1-4     Subhadral-anhedral     Altered to serpentine bastite; has (100 clinopyroxene exsolution lamellae.       GROUNDMASS N/A     N/A     N/A     N/A     N/A     N/A     N/A       SBOOMDARY N/A     N/A     N/A     N/A     N/A     N/A       SBOOMDARY N/A     PERCENT Serpentine     REPLACING/ PERCENT     COMMENTS     COMMENTS       Starpentine     3     Orthopyroxene, serpentine     Blue-green, nahodral, patches intergrow with serpentine, also forming characteristic mesh texture throughout slide, also concentrated some chrysotile veins.       VESICLES/ VESICLES/     SIZE COMMENTS     SIZE COMMENTS     SIZE COMMENTS       OUTONOVARES and clinopyroxene and clivine show wavy extinction; orthopyroxene is also kink-banded. Orthopyroxene has inclusions of clivine and clinopyroxenes. Chrysotile veins (0,2 mm side) are present, some anastonosing. Olivine and orthopyroxene are still relatively fresh, rock appears relatively clinopyroxene-rich.       125-779A-8R-01 (Piece SA, 27-29 cm)     OBSERVER: SAB     WHERE SAMFLED: Concicl Seamount, southeast flank       SOCK NAME: Altered aerpentinized harzburgite     SANFLED: Concicl Seamount, southeast flank       SANK SIZE: 0.1-5 mm     MORPHOLOGY     COMMENTS       PREMOUNTS     PREMOUNTS     MORPHOLOGY     COMMENTS       PREMOUNTS     Subhedral-anhedral     Ret, altered to serpentine mesh. Spinal     0.1-15       1.5     0.1-2<	Spinel	2	2	0.2-1	Cr?	Eul	hedral-subhedral	Red; altered to magnetite.
GROUNDMASS N/A     N/A     N/A     N/A     N/A       SCONDARY NINSKALOGY Clays     N/A     N/A     N/A       SCONDARY Clays     PERCENT TILING     COMMENTS Dusty brown clay, located mainly in veins, but also after serpentine.       Sconnary Clays     3     Othopyrokene, serpentine     Blue-green, anhedral, patches intergrown with serpentine, also forming along othopyrokene of claysage planes.       Strepentine     3     Spinel     Dusty brown clay, located mainly in veins, but also after serpentine.       WSICLBS/ CMVITIS     Spinel     Dusty of the othorytown the serpentine sinclusions of olivine and clinopyroxene. Chrysotile veins.       VSICLBS/ CMVITIS     PERCENT LOCATION (m)     FILLING     SHAPE       VSICLSS/ CMVITIS     DIA (Diagno)     SHAPE     Disty of clay, located mainly in veins, but also concentrated some chrysotile veins.       VSICLSS/ CMVITIS     DIA (Diagno)     DIA (Diagno)     SHAPE     Disty of clay, located mainter in the interviewer interviewer in the interviewer interviewer interviewer interviewer interviewer interviewer intervie	Orthopyroxene	10-15	15-20	1-4		Sul	bhedral-anhedral	Altered to serpentine bastite; has (100) clinopyroxene exsolution lamellae.
N/A	GROUNDMASS							
SECONDARY REPLACING/ MINERALOGY PERCENT FILLING Clays 41 Serpentine 58-68 Olivine, orthopyroxene serpentine Blue-green, anhedral, patches intergrown with serpentine, also forming along orthopyroxene cleavage planes. Lizardite and/or chrysotle forming of pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide, also consentrated accesses of the pharacteristic mesh taxtuse troughout slide and the pharacteristic mesh taxtuse troughout slide and the pharacteristic mesh taxtuse trougence of the pharacteristic mesh taxtuse trougence of the pharacteristic mesh taxtuse trougence accessing. Olivine and other pharacteristic mesh taxtuse trougence of the pharacteristic mesh taxtuse trougence taxtuse trougence of the pharacteristic mesh taxtuse trougence accesses of the pharacteristic mesh taxtuse trougence taxtuse taxtuse taxtuse taxtuse tro	N/A	N/A	N/A	N/A		N/2	Ą	
SECONDARY PERCENT FILLING COMMENTS Clays (1) Serpentine Supervised and the serpentine Server of the			2000-04-295 V					
Analoso Filenan Filenan Serpentine Serpentin	MINERALOGY	DEDCENT	REPI	ACING/				COMMENTS
Calorite 3 Orthopyroxene, serpentine serpentine serpentine. Serpentine 58-68 Olivine, orthopyroxene bioegreen, anhedral, patches intergrown with serpentine, also forming along orthopyroxene cleavage planes. Lizardite and/or chrysotile forming characteristic mesh some chrysotile veins. VESICLES/ SIZE CONTON (mm) FILLING SHAPE Vesicles 0 SHAPE Vesicles 0 Olivine and olivine show way extinction; orthopyrowene is also kink-banded. Orthopyrowene has inclusions of olivine and clinopyrowenes. Chrysotile veins (0.2 mm wide) are present, some anastomosing. Olivine and orthopyroxene are still relatively fresh, rock appears relatively clinopyrowene-rich. 125-779A-8R-01 (Piece 5A, 27-29 cm) OBSERVER: SAB WHERE SAMPLED: Conical Seamount, southeast flank NOCK NAME: Altered serpentinized harzburgite SRAIN SIZE: 0.1-5 mm TEXTURE: Mesh and minor bastite PRIMARY PERCENT FERCENT SIZE COMPO- MIREFALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENOCRYSTS Jivine 0 84-89 Not visible Completely altered to serpentine mesh. Spinal 0.5 1 0.1-2 Cr? Subhedral-anhedral Red, altered to serpentine mesh. Spinal 0.5 1 0.1-2 Cr? Subhedral-anhedral Red, altered to serpentine bastite. GROUNDMASS P.S.E. <0.1 <0.1 0.02-0.05 Anhedral SECONDARY REPLACING/ REPLACING/ INFORMARY PERCENT FILLING COMMENTS Lizardite and/or chrysotile distributed throughout slide, further altered to clays.	Clays	<1	Serpent	ine			Dusty brown clay	, located mainly in veins, but also after
Chlorite 3 Orthopyroxene, serpentine Blue-green, anhedral, patches intergrow with serpentine, also forming along orthopyroxene cleavage planes. Lizardite and/or chrysotile forming characteristic mesh texture throughout slide plus minor bastite texture. Dusty, 0.1 mm, occurs throughout slide, also concentrated acme chrysotile veins. VESICLES/ SIZE CAVITIS PERCENT LOCATION (mm) FILLING SHAPE Vesicles 0 COMMENTS: Orthopyroxene and olivine show wavy extinction; orthopyroxene is also kink-banded. Orthopyroxene has inclusions of olivine and clinopyroxenes. Chrysotile veins (0.2 mm wide) are present, some anastomosing. Olivine and olivopyroxene are still relatively fresh, rock appears relatively clinopyroxene-rich. 125-779A-8R-01 (Piece 5A, 27-29 cm) OBSERVER: SAB WHERE SAMPLED: Conical Seamount, southeast flank 30CK NAME: Altered serpentinized harzburgite RAIN SIZE: 0.1-5 mm TEXTURE: Mesh and minor bastite PHENCGY PERCENT PERCENT SIZE COMPO- MINERALOGY PERSENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENCGY PERSENT PERCENT FILLING COMMENTS PHENCGY PERCENT FILLING COMMENTS Subhedral-anhedral Altered to serpentine bastite. GROUNDMASS ?.G.E. <0.1 <0.1 0.02-0.05 Anhedral SECONDARY REPLACING/ TIMERALOGY PERCENT FILLING COMMENTS Dusty brown-red clay after serpentine and distributed throughout slide in anastomosed veins. Lizardite and/or chrysotile distributed throughout slide, further altered to clays.	1000 <b>1</b> .07.		10000 <b>1</b> 0000				serpentine.	
Serpentine       58-68       Olivine, orthopyroxene       also forming characteristic mesh Lizardite and/or chrysotile forming characteristic mesh texture throughout slide plus minor bastite texture. Dustry, 0.1 mm, occurs throughout slide, also concentrated some chrysotile veins.         VESICLES/       SIZE         CAVITIES       PERCENT LOCATION (mm)         VESICLES/       SIZE         CAVITIES       Destry, 0.1 mm, occurs throughout slide, also concentrated some chrysotile veins.         Vesicles       0         COMMENTS:       Orthopyroxene and olivine show wavy extinction, orthopyroxene is also kink-banded. Orthopyroxene has inclusions of olivine and clinopyroxenes. Chrysotile voins (0.2 mm wide) are present, some anastomosing. Olivine and orthopyroxene are still relatively fresh, rock appears relatively clinopyroxene-rich.         125-779A-8R-01       (Piece 5A, 27-29 cm)       OBSERVER: SAB       WHERE SAMPLED: Conical Seamount, southeast flank         ROCK NAME:       Altered serpentinized harzburgite       SRAIN SIZE: 0.1-5 mm       TEXTURE: Mesh and minor bastite         PRIMARY       PERCENT PERCENT SIZE COMPO- MINERALOGY       Not visible       Comments         PHENOCRYSTS       0.5 1       0.1-2       Cr?       Subhedral-anhedral       Altered to serpentine mesh.         String       0.5 1       0.1-2       Cr?       Subhedral-anhedral       Altered to serpentine bastite.         GROUNDMASS	Chlorite	3	Orthopy	roxene, s	erpentine		Blue-green, anheo	dral, patches intergrown with serpentine,
Magnetite 1 Spinel Interaction and the second secon	Serpentine	58-68	Oliving	orthony	rovoro		also forming alor	ng orthopyroxene cleavage planes.
Magnetite 1 Spinel Dusty, 0.1 mm, occurs throughout slide, also concentrated some chrysotile veins.	boxpentitie	50 00	OTTATHO	, orenopy	Lovene		texture throughou	ut slide plus minor bastite texture.
VESICLES/ SIZE VESICLES/ SIZE CVENTES OCTOMMENTS: Orthopyroxene and olivine show wavy extinction; orthopyroxene is also kink-banded. Orthopyroxene has inclusions of olivine and clinopyroxenes. Chrysotile veins (0.2 mm wide) are present, some anastomosing. Olivine and orthopyroxene are still relatively fresh, rock appears relatively clinopyroxene-ich. 125-779A-8R-01 (Piece 5A, 27-29 cm) OBSERVER: SAB WHERE SAMPLED: Conical Seamount, southeast flank NOCK NAME: Altered serpentinized harzburgite SRAIN SIZE: 0.1-5 mm TEXTURE: Mesh and minor bastite PRIMARY PERCENT PERCENT SIZE COMPO- HINERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENOCRYSTS JLVINE 0 84-89 Not visible Not visible Completely altered to serpentine mesh. Spinel 0.5 1 0.1-2 Cr? Subhedral-anhedral Altered to serpentine bastite. GROUNDMASS P.G.E. <0.1 <0.1 0.02-0.05 Anhedral Secondary REPLACING/ HINERALOGY PERCENT FILLING COMMENTS Jlays 20 Serpentine 3erpentine 77 Olivine, orthopyroxene Secondary PERCENT FILLING COMMENTS Dusty brown-red clay after serpentine and distributed throughout slide in anastomosed veins. Lizardite and/or chrysotile distributed throughout slide, further altered to clays.	Magnetite	1	Spinel				Dusty, 0.1 mm, oc	ccurs throughout slide, also concentrated in
VESICLES/ PERCENT LOCATION (mm) FILING SHAPE CAVITIES PERCENT LOCATION (mm) FILING SHAPE COMMENTS: Orthopyroxene and olivine show wavy extinction; orthopyroxene is also kink-banded. Orthopyroxene has inclusions of olivine and clinopyroxenes. Chrysotile veins (0.2 mm wide) are present, some anastomosing. Olivine and orthopyroxene are still relatively fresh, rock appears relatively clinopyroxene-rich. 125-779A-8R-01 (Piece 5A, 27-29 cm) OBSERVER: SAB WHERE SAMPLED: Conical Seamount, southeast flank ROCK NAME: Altered serpentinized harzburgite SRAIN SIZE: 0.1-5 mm TEXTURE: Mesh and minor bastite PRIMARY PERCENT PERCENT SIZE COMPO- MINERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENOCRYSTS Divine 0 84-89 Not visible Not visible Completely altered to serpentine mesh. Spinel 0.5 1 0.1-2 Cr? Subhedral-anhedral Red, altered to serpentine mesh. Spinel 0.5 1 0.1-2 Cr? Subhedral-anhedral Altered to serpentine bastite. GROUNDMASS P.G.E. <0.1 <0.1 0.02-0.05 Anhedral SECONDARY REPLACING/ MINERALOGY PERCENT FILLING COMMENTS Serpentine 77 Olivine, orthopyroxene 71 Olivine, orthopyroxene 4agnetite 2 Spinel							some chrysotile v	veins.
CAVITIES     PERCENT     LOCATION     (mm)     FILLING     SHAPE       Vesicles     0     0     SHAPE       COMMENTS:     Orthopyroxene and olivine show wavy extinction; orthopyroxene is also kink-banded. Orthopyroxene has inclusions of olivine and clinopyroxenes. Chrysotile veins (0.2 mm wide) are present, some anastomosing. Olivine and orthopyroxene are still relatively fresh, rock appears relatively clinopyroxene-rich.       125-779A-8R-01 (Piece 5A, 27-29 cm)     OBSERVER: SAB     WHERE SAMPLED: Conical Seamount, southeast flank       ROCK NAME:     Altered serpentinized harzburgite     SRAIN SIZE: 0.1-5 mm       TEXTURE:     Mesh and minor bastite     COMMENTS       PRENCENT PERCENT SIZE     COMPO- 4INERALOGY     MORPHOLOGY     COMMENTS       PHENOCRYSTS Dlivine     0     84-89     Not visible     Not visible     Completely altered to serpentine mesh.       Spinel     0.1-15     1     0.1-2     Cr?     Subhedral-anhedral     Red, altered to serpentine bastite.       GROUNDMASS PLANCENT     FILLING     COMMENTS     Dusty brown-red clay after serpentine and distributed throughout slide in anastomosed veins.       Starpentine     77     Olivine, orthopyroxene     Lizardite and/or chrysotile distributed throughout slide, further altered to clays.	VESICLES/			SIZE				
Vesicles 0 COMMENTS: Orthopyroxene and olivine show wavy extinction; orthopyroxene is also kink-banded. Orthopyroxene has inclusions of olivine and clinopyroxenes. Chrysotlle veins (0.2 mm wide) are present, some anastomosing. Olivine and orthopyroxene are still relatively fresh, rock appears relatively clinopyroxene-rich. 125-779A-8R-01 (Piece 5A, 27-29 cm) OBSERVER: SAB WHERE SAMPLED: Conical Seamount, southeast flank ROCK NAME: Altered serpentinized harzburgite SRAIN SIZE: 0.1-5 mm TEXTURE: Mesh and minor bastite PRIMARY PERCENT PERCENT SIZE COMPO- MINERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENOCRYSTS Divine 0 84-89 Not visible Not visible Completely altered to serpentine mesh. Spinel 0.5 1 0.1-2 Cr? Subhedral-anhedral Red, altered to magnetite. GROUNDMASS F.G.E. <0.1 <0.1 0.02-0.05 Anhedral SECONDARY REPLACING/ MINERALOGY PERCENT FILLING COMMENTS Dusty brown-red clay after serpentine and distributed throughout slide in anastomosed veins. Lizardite and/or chrysotile distributed throughout slide, further altered to clays.	CAVITIES	PERCENT	LOCATIO	N (mm)		FILLING		SHAPE
COMMENTS: Orthopyroxene and olivine show wavy extinction; orthopyroxene is also kink-banded. Orthopyroxene has inclusions of olivine and clinopyroxenes. Chrysotile veins (0.2 mm wide) are present, some anastomosing. Olivine and orthopyroxene are still relatively fresh, rock appears relatively clinopyroxene-rich. 125-779A-8R-01 (Piece 5A, 27-29 cm) OBSERVER: SAB WHERE SAMPLED: Conical Seamount, southeast flank ROCK NAME: Altered serpentinized harzburgite SRAIN SIZE: 0.1-5 mm TEXTURE: Mesh and minor bastite TEXTURE: Subhedral-anhedral Red, altered to serpentine mesh. Subhedral-anhedral Altered to serpentine bastite. GROUNDMARSS P.G.E. <0.1 <0.1 0.02-0.05 Anhedral SECONDARY REPLACING/ TINERALOGY PERCENT FILLING COMMENTS Dusty brown-red clay after serpentine and distributed throughout slide in anastomosed veins. Lizardite and/or chrysotile distributed throughout slide, further altered to clays. TEXTURE: 2 Spinel	Vesicles	0						
GRAIN SIZE: 0.1-5 mm         TEXTURE: Mesh and minor bastite         PRIMARY       PERCENT PERCENT SIZE         COMMENTS         PRIMARY       PERCENT PERCENT SIZE         COMMENTS         PHENOCRYSTS         Dlivine       0         0       84-89         Not visible       Completely altered to serpentine mesh.         Spinel       0.5         0       10-15         0       10-15         0       10-15         0       0.1-2         CROUNDMASS       Coll         P.G.E.       <0.1         <0.1       0.02-0.05         Anhedral         SECONDARY       REPLACING/         MINERALOGY       PERCENT         FILLING       COMMENTS         Sarpentine       77         71       0livine, orthopyroxene         Serpentine       77         Signel       COMMENTS         Lizardite and/or chrysotile distributed throughout slide, further altered to clays.	125-779A-8R-01 ROCK NAME: Alte	(Piece 5A ered serpe	1,27-29 c	m) harzburg	OBSERVER: SAB	B WE	HERE SAMPLED: Conic	cal Seamount, southeast flank
TEXTURE: Mesh and minor bastite         PRIMARY       PERCENT PERCENT SIZE       COMPO- MINERALOGY       MORPHOLOGY       COMMENTS         PHENOCRYSTS       0       84-89 Not visible       Not visible       Completely altered to serpentine mesh.         Spinel       0.5       1       0.1-2       Cr?       Subhedral-anhedral       Red, altered to magnetite.         Orthopyroxene       0       10-15       1-5       Subhedral-anhedral       Altered to serpentine mesh.         GROUNDMASS       0.1       <0.1	GRAIN SIZE: 0.1	-5 mm						
PRIMARY     PERCENT PERCENT SIZE     COMPO- MINERALOGY     MORPHOLOGY     COMMENTS       PHENOCRYSTS     0     84-89     Not visible     Not visible     Completely altered to serpentine mesh.       Spinel     0.5     1     0.1-2     Cr?     Subhedral-anhedral     Red, altered to magnetite.       Orthopyroxene     0     10-15     1-5     Subhedral-anhedral     Altered to serpentine bastite.       GROUNDMASS     P.G.E.     <0.1	TEXTURE: Mesh a	and minor	bastite					
MINERALOGY     PRESENT ORIGINAL (mm)     SITION     MORPHOLOGY     COMMENTS       PHENOCRYSTS     Olivine     0     84-89     Not visible     Not visible     Completely altered to serpentine mesh.       Spinel     0.5     1     0.1-2     Cr?     Subhedral-anhedral     Red, altered to magnetite.       Orthopyroxene     0     10-15     1-5     Subhedral-anhedral     Altered to serpentine bastite.       GROUNDMASS     P.G.E.     <0.1	PRTMARY	PERCENT	PERCENT	ST7E	COMPO-			
PHENOCRYSTS       Not visible       Not visible       Completely altered to serpentine mesh.         Spinel       0.5       1       0.1-2       Cr?       Subhedral-anhedral       Red, altered to magnetite.         Orthopyroxene       0       10-15       1-5       Subhedral-anhedral       Altered to serpentine bastite.         GROUNDMASS	MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MC	RPHOLOGY	COMMENTS
Findowners       Not visible       Not visible       Completely altered to serpentine mesh.         Spinel       0.5       1       0.1-2       Cr?       Subhedral-anhedral       Red, altered to magnetite.         Orthopyroxene       0       10-15       1-5       Subhedral-anhedral       Altered to serpentine bastite.         GROUNDMASS       P.G.E.       <0.1	DUDNOCDVORC							
Spinel     0.5     1     0.1-2     Cr?       Orthopyroxene     0     10-15     1-5     Subhedral-anhedral     Red, altered to magnetite.       GROUNDMASS     P.G.E.     <0.1	Olivine	0	84-89	Not visib	le	Not	visible	Completely altered to serpentine mesh
Orthopyroxene     0     10-15     1-5     Subhedral-anhedral     Altered to serpentine bastite.       GROUNDMASS P.G.E.     <0.1	Spinel	0.5	1	0.1-2	Cr?	Sub	bedral-anhedral	Red. altered to magnetite.
GROUNDMASS       Anhedral         P.G.E.       <0.1	Orthopyroxene	0	10-15	1-5		Sub	hedral-anhedral	Altered to serpentine bastite.
OROMERSS       P.G.E.     <0.1	CROUNDER							
SECONDARY     REPLACING/     COMMENTS       MINERALOGY     PERCENT     FILLING     COMMENTS       Clays     20     Serpentine     Dusty brown-red clay after serpentine and distributed throughout slide in anastomosed veins.       Serpentine     77     Olivine, orthopyroxene     Lizardite and/or chrysotile distributed throughout slide, further altered to clays.       Yagnetite     2     Spinel	P.G.E.	<0.1	<0.1	0.02-0.05		Anh	edral	
MINERALOGY     PERCENT     FILLING     COMMENTS       Clays     20     Serpentine     Dusty brown-red clay after serpentine and distributed throughout slide in anastomosed veins.       Serpentine     77     Olivine, orthopyroxene     Lizardite and/or chrysotile distributed throughout slide, further altered to clays.       Yagnetite     2     Spinel	SECONDARY		REPL	ACING/				
Clays     20     Serpentine     Dusty brown-red clay after serpentine and distributed throughout slide in anastomosed veins.       Serpentine     77     Olivine, orthopyroxene     Lizardite and/or chrysotile distributed throughout slide, further altered to clays.       Yagnetite     2     Spinel	MINERALOGY	PERCENT	FILL	ING				COMMENTS
Serpentine 77 Olivine, orthopyroxene Lizardite and/or chrysotile distributed throughout slide, further altered to clays.	Clays	20	Serpent	ine			Dusty brown-red c	lay after serpentine and distributed
further altered to clays. Magnetite 2 Spinel	Serpentine	77	Olivine	, orthopy	roxene		Lizardite and/or	chrysotile distributed throughout slide,
	Magnetite	2	Spinel				rurther altered t	co clays.
	VESTOLES /	********						

COMMENTS: Completely serpentinized rock which has been further altered to clays. The spinel still appears relatively fresh. Some orthopyroxene have inclusions of round serpentine pseudomorphs of olivine within themselves. Chrysotile + clay veins (<0.8 mm wide) throughout slide at no particular orientation. P.G.E. refers to platinum group elements.

FILLING

SHAPE

PERCENT LOCATION (mm)

0

CAVITIES

Vesicles

_____

# 125-779A-8R-01 (Piece 5B,57-60 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.05-5 mm

TEXTURE: Mesh and bastite

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	78	Not visit	ole	Not visible	Completely altered to serpentine mesh.
Spinel	2	2	0.05-3	Cr?	Anhedral	Red, altered to magnetite, has inclusions (see below).
Orthopyroxene	0	20	3-5		Subhedral-anh	edral Altered to bastite serpentine and chlorite.
GROUNDMASS						
P.G.E.	<<0.1	<<0.1	0.02-0.1		Anhedral	Disseminated, many
SECONDARY		REPI	ACING/			
MINERALOGY	PERCENT	FILI	ING			COMMENTS
Clays	10	Serpent	ine?		Dusty browners.	wn clay distributed throughout slide in anastomosed
Chlorite	1	Orthopy	roxene, s	serpentine	As anhedr serpentin	al, fine-grained patches intermixed with e, and near bastite grains.
Serpentine	57-67	Olivine	, orthopy	roxene	Lizardite forming b	and/or chrysotile distributed throughout slide astite and mesh textures.
Brucite	20-30	Olivine	e, orthopy	roxene	Formed as with serp	a by-product of serpentinization and is associated entine.
VESICLES/			SIZE			
CAVITIES	PERCENT	LOCATIO	ON (mm)	1	FILLING	SHAPE

COMMENTS: Bastite is deformed (wavy extinction) and former exsolution lamellae are bent. Cr-spinel is anhedral and arranged in ragged trains, subparallel to elongation of bastite. Spinels have apparent inclusions of rounded serpentine and chrysotile pseudomorphs of olivine(?) or orthopyroxene. Minor chrysotile and brucite veins (< 1 mm wide) in slide. P.G.E. refers to platinum group elements.

125-779A-8R-01 (Piece 8A,82-83 cm) OBSERVER: SAB

ROCK NAME: Tectonized serpentinized dunite

GRAIN SIZE: 0.1-0.4 mm

Vesicles

TEXTURE: Felted tectonized texture

0

Imotor no /						
Magnetite	2	Spinel			the olivine As dusty 0.	e from the vein. .1-mm grains; forms ragged trails.
Serpentine		Olivine	e, orthop	yroxene	Antigorite crystals ar	and/or chrysotile mostly; needles and fibers of re locallized, proximal to a vein set and invade
SECONDARY MINERALOGY	PERCENT	REPI	LACING/ LING			COMMENTS
GROUNDMASS P.G.E.	<0.01	<0.01	0.05		Disseminated.	
Orthopyroxene	4	5	1-4		Subhedral-anheo	iral Altered to serpentine; deformed crystals.
Spinel	2	2	0.5-2	Cr?	Euhedral-anhedr	ral Red brown, altered to magnetite?
Clinopyroxene	Trace	Trace	<0.2		Anhedral	As exsolution lamellae.
PHENOCRYSTS Olivine	45-50	93	0.1-4		Euhedral-anhedr	Altering to serpentine; some are
PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAI	SIZE (mm)	COMPO- SITION	MORPHOLOGY	COMMENTS

COMMENTS: Exsolution lamellae, bastitic grains, and primary olivine have wavy extinction. Recrystallized, small olivine grains in shear zone of larger optically continuous olivine grain (hot shear fabric) (120 degree triple junction). This slide appears tectonized, but olivine is fresh and big enough for probing. P.G.E. refers to platinum group elements.

# 125-779A-8R-01 (Piece 8B,90-93 cm)

OBSERVER: JOH

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Tectonized serpentinized dunite

GRAIN SIZE: 0.8-4 mm

TEXTURE: Felted tectonized texture

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-					
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS			
PHENOCRYSTS	40-50	96	1-4		Fundral-appedral	Altering to serpentine, some are			
orre	40-50	90	1-4		Euledra1-anneurar	neoblastic.			
Spinel	0.5	1	0.8-1	Cr	Euhedral-ragged	Deep red, altered to magnetite.			
Orthopyroxene	2	3	1-3		Subhedral-anhedral	Altered to serpentine, deformed			
						crystals.			
GROUNDMASS									
P.G.E.	N/A	N/A	N/A		N/A				
CECONDADY		DEDI	NOTNO /						
MINERALOGY	PERCENT	FILL	ING			COMMENTS			
Clays	/s 5 Serpentine?			Dusty brownish	clay distributed throughout slide.				
Serpentine	rpentine 42-52 Olivine, orthopyroxene		roxene	Antigorite blades and chrysotile fibers mainly, but					
					lizardite may also be present.				
Magnetite	<1	Spinel?	2		Dusty 0.1-mm g	rains along olivine boundaries, sometimes			
					occur as ragge	a trains.			
VESICLES/			SIZE						
CAVITIES	PERCENT	LOCATIO	ON (mm)		FILLING	SHAPE			
Vesicles	0								
2000 Serry appe beer 125-779A-9R-01	e fresh. ( pentine fe ears tector h recrysta l (Piece 3	ather-lik nized and llized. E ,15-17 cm	grains are ce crystal i some oli ?.G.E. ref n)	Olivine and o vine grains have ers to platinum OBSERVER: TER	nd fresh enough for proble orthopyroxene have wavy ex e been somewhat sheared. A group elements. WHERE SAMPLED: Co	g. Original texture obscured by ttinction, deformation. The whole slide a few smaller olivine grains may have pnical Seamount, southeast flank			
ROCK NAME: Met	camorphose	d voicani	ic sandsto	ne					
GRAIN SIZE: 0	1 to <1 m	m							
	21427-01-027-01-11								
TEXTURE: Sand:	stone								
TEXTURE: Sand:	stone								
TEXTURE: Sand:	stone								
TEXTURE: Sand:	PERCENT	PERCENT	SIZE	COMPO-	NORDERATORY	COMMENTS			
TEXTURE: Sand:  PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAI	SIZE L (mm)	COMPO- SITION	MORPHOLOGY	COMMENTS			
TEXTURE: Sand:  PRIMARY MINERALOGY PHENOCRYSTS	Stone PERCENT PRESENT	PERCENT ORIGINAI	SIZE L (mm)	COMPO- SITION	MORPHOLOGY	COMMENTS			
TEXTURE: Sand:  PRIMARY MINERALOGY PHENOCRYSTS Dlivine	Stone PERCENT PRESENT Trace	PERCENT ORIGINAI N/A	SIZE L (mm) Not visit	COMPO- SITION	MORPHOLOGY N/A	COMMENTS			

Clinopyroxene	2	2	< 1 mm	N/A	Lining.
Spinel	Trace	N/A	N/A	Not visible	
GROUNDMASS					
Glass	N/A	70-80	N/A	Anhedral	Altered. Fills in matrix in volcanic
					fragment.
Plagioclase	0	20-30	0.1-0.2	Subhedral	Altered.
Clinopyroxene	10-20	10-20	0.1-0.2	Subhedral	Lining.
Opaque	2	2	0.1	Subhedral	
SECONDARY		REP	LACING/		
MINERALOGY	PERCENT	FIL	LING		COMMENTS
Clays	40-50	Glass	matrix	Dusty.	
Chlorite	10-15				
Hornblende	20			Pale brown to	pale green in color, elongation positive,
				extinction an	ngle is 5-10 degrees.
VESICLES/			SIZE		
CAVITIES	PERCENT	LOCATI	ON (mm)	FILLING	SHAPE
Vesicles	0				

COMMENTS: This rock contains many kinds of lithic and mineral fragments, which are mainly volcanic rocks and their derivatives. All minerals excluding augite are altered. Pale-green hornblende replacing augite is observed. Whether hornblende is metamorphic or igneous is not known.

## **SITE 779**

125-779A-9R-01 (24-26 cm) OBSERVER: LAG WHERE SAMPLED: Conical Seamount, southeast flank ROCK NAME: Silt-sized serpentine GRAIN SIZE: Silt TEXTURE: Detrital PRIMARY PERCENT PERCENT SIZE COMPO-MINERALOGY PRESENT ORIGINAL (mm) MORPHOLOGY COMMENTS SITION PHENOCRYSTS Olivine 0 >90? N/A N/A Spinel <1 1 N/A Rounded-angular-(det rital) Orthopyroxene 0 5 N/A N/A Bastite. GROUNDMASS All serpentine with very small amounts N/A N/A N/A N/A N/A of blue chlorites. SECONDARY REPLACING/ MINERALOGY PERCENT COMMENTS FILLING "Flowers" of micrite. Carbonate 3 Serpentine Chrysotile and/or lizardite. 1-2 Magnetite _____ VESICLES/ SIZE CAVITIES PERCENT LOCATION (mm) FILLING SHAPE Vesicles 0 COMMENTS: Layered serpentine silt-sized detrital mud. Shows layers of brownish agglomerates with bacteria. One layer is felted. A clear fabric axial plane to the fold is outlined by the preferred alignment of serpentine flakes. Detrital grains of serpentine are scattered everywhere. No piece # given. 125-779A-9R-01 (54-56 cm) OBSERVER: HIR WHERE SAMPLED: Conical Seamount, southeast flank ROCK NAME: Serpentinous mudstone GRAIN SIZE: Fine-grained TEXTURE: Foliate tectonite (soft-sediment) PRIMARY PERCENT PERCENT SIZE COMPO-MINERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS N/A N/A N/A N/A N/A SECONDARY REPLACING/ MINERALOGY PERCENT COMMENTS FILLING 10-15 Clays Serpentine 80-90 Magnetite <2 VESICLES/ SIZE CAVITIES PERCENT LOCATION (mm) FILLING SHAPE

COMMENTS: A 5-mm prismatic fragment had been originally a serpentine vein of tectonized and serpentinized peridotite. It shows rhythmical kinking, which is similar to texture of serpentine vein observed in tectonized peridotite. Foliation is defined by parallel arrangments of serpentine crystal and brownish black cleavage. No piece number given.

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Vesicles

0

125-779A-9R-01 (Piece 5,66-68 cm)

OBSERVER: JOH

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Metabasalt

GRAIN SIZE: 0.05-0.15 mm

TEXTURE: Micro-aphyric intersertal

		********					
PRIMARY	PERCENT	PERCENT	SIZE	COMPO-			000 M 100 M
MINERALOGI	PRESENT	ORIGINAL	(mm)	SITION	MC	RPHOLOGY	COMMENTS
PHENOCRYSTS							
Plagioclase	0	15-25	0.1-0.15		Lat	hs	100% altered to clays.
Clinopyroxene	20-30	25-35	0.05-0.15		Anh	edral	10-25% altered to chlorite.
GROUNDMASS	0	50 50	** / *				
GIASS	0	50-60	N/A		N/A	8	Completely altered to brown clays and
							chiorite.
SECONDARY		REPI	ACING/				
MINERALOGY	PERCENT	FILL	ING				COMMENTS
Clays	50-60	Glass,	plagioclase,	veins		Brown clays after	glass and plagioclase and forming many
						veins.	전 지 않는 것 같은 것
Carbonate	<1-1	Cavitie	S			0.5 mm across.	
Zeolites	<5	Vein	595 J. 199 B			Low index of refr	action, colorless, determination uncertain.
Chlorite	15-20	Veins,	glassy matri	x, clinopyroxene		Pale-green, minor	radiating fabric, but mostly after
Destruiter						clinopyroxene and	matrix.
prennite/	2-4	Veins				Lime-green in col	or with radiating habit; the two minerals
Magnetite?	<1	Matrix				Appear to be inti	cruetale black opaque in matrix <0.5
nagneerce.		NGCLIX				mm.	crystars, brack, opaque, in matrix, (0.5
VESICLES/			SIZE				
CAVITIES	PERCENT	LOCATIC	N (mm)	FILI	LING		SHAPE
Vesicles	0						
COMPNIES - Deset							
COMMENTS: Rare	radiating	intergr	owths of pla	glociase and cline	pyrox	ene. Crystallizati	on
seque	ance=crine	pyroxene	-pragrocrase	•::			
125-7798-98-01	(Piece 8	97-99 cm	0	BSERVER. HIR	LUT.	FRE SAMPLED. Conic	al Seamount, southeast flank
	10 2000 01	97 99 ON	<i>.</i> ,			und onthe block oonite	ar ocalicant, ocacitate raint
ROCK NAME: Meta	abasalt						
GRAIN SIZE: <0.	.01-0.03 1	nm					
TEXTURE: Appur:							
TERTONE. Aphyr.	rei grass	t::					
PRIMARY	PERCENT	PERCENT	SIZE	COMPO-	1263		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MC	RPHOLOGY	COMMENTS
Glass	0	60-70	N/A		N/F	hadred Jackha	Completely altered/recrystallized.
Fiagiociase	0	10-20	0.01-0.03		Sut	nedral, laths	aggregated with clipopurovene
Clinopyroxene	10-15	20-40	0 01-0 02		Suk	bodral	Microphenocrysts within glassy/finely
erruch trought	20 2V		0.01 0.04		Jui	an a	crystalline matrix.
SECONDARY		REPI	ACING/				
MINERALOGY	PERCENT	FILI	ING				COMMENTS
Clays		Glass,	plagioclase			Brown, amorphous	clays after glass and pseudomorphs after
						plagioclase.	
Chlorite		C1	alizarrayar	e, veins		Most is in veins	
	10-30	Glass,	crinopyroxen				with prehnite and pumpellyite, 1-5%
Land the Balance of the State	10-30	Glass,	сттюругохен			replaces clinopyr	with prehnite and pumpellyite, 1-5% coxene and glass.
Sphene	10-30 <2	Matrix	стпоругохен			replaces clinopyr	with prehnite and pumpellyite, 1-5% coxene and glass.
Sphene Prehnite/	10-30 <2 5-15	Matrix Veins	crinopyroxen			replaces clinopyr Veins up to 1.5 m	with prehnite and pumpellyite, 1-5% coxene and glass.
Sphene Prehnite/ pumpellyite	10-30 <2 5-15	Matrix Veins	ciinopyroxen			replaces clinopyr Veins up to 1.5 m pumpellyite appar	with prehnite and pumpellyite, 1-5% coxene and glass. mm wide of intermixed prehnite and rently in equilibrium, both are green and
Sphene Prehnite/ pumpellyite	10-30 <2 5-15	Matrix Veins	ciinopyroxen			replaces clinopyr Veins up to 1.5 m pumpellyite appar have wavy extinct	with prehnite and pumpellyite, 1-5% coxene and glass. mm wide of intermixed prehnite and rently in equilibrium, both are green and ion.
Sphene Prehnite/ pumpellyite Magnetite	10-30 <2 5-15 1	Matrix Veins ?	ciinopyroxen			replaces clinopyr Veins up to 1.5 m pumpellyite appar have wavy extinct Found as clusters	with prehnite and pumpellyite, 1-5% coxene and glass. mm wide of intermixed prehnite and rently in equilibrium, both are green and ion. s of anhedral crystals (0.01 mm).
Sphene Prehnite/ pumpellyite Magnetite VESICLES/	10-30 <2 5-15 1	Matrix Veins ?	SIZE			replaces clinopyr Veins up to 1.5 m pumpellyite appar have wavy extinct Found as clusters	with prehnite and pumpellyite, 1-5% coxene and glass. mm wide of intermixed prehnite and rently in equilibrium, both are green and ion. s of anhedral crystals (0.01 mm).
Sphene Prehnite/ pumpellyite Magnetite VESICLES/ CAVITIES	10-30 <2 5-15 1 PERCENT	Matrix Veins ?	SIZE NN (mm)	FIL	LING	replaces clinopyr Veins up to 1.5 m pumpellyite appar have wavy extinct Found as clusters	with prehnite and pumpellyite, 1-5% coxene and glass. mm wide of intermixed prehnite and cently in equilibrium, both are green and cion. s of anhedral crystals (0.01 mm).
Sphene Prehnite/ pumpellyite Magnetite VESICLES/ CAVITIES Vesicles	10-30 <2 5-15 1 PERCENT 0	Matrix Veins ? LOCATIO	SIZE N (mm)	FIL	LING	replaces clinopyr Veins up to 1.5 m pumpellyite appar have wavy extinct Found as clusters	with prehnite and pumpellyite, 1-5% coxene and glass. mm wide of intermixed prehnite and rently in equilibrium, both are green and tion. of anhedral crystals (0.01 mm). SHAPE

COMMENTS: Original crystallization sequence was plagioclase-clinopyroxene. Difficult to distinguish chlorite from prehnite/pumpellyite. They appear intimately intergrown in veins.

125-779A-9R-01 (Piece 9A,106-108 cm) OBSERVER: JOH

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Metabasalt

GRAIN SIZE: <0.01-0.02

TEXTURE: Aphyri	c								
PRIMARY MINERALOGY Glass/matrix	PERCENT PRESENT 0	PERCENT ORIGINA 50-60	SIZE L (mm) N/A	COMPO- SITION	MOF N/A	RPHOLOGY	COMMENTS 100% altered to clays and chlorite.		
Plagioclase	0	10-15	0.01-0.	02	Lath	, subhedral	85-100% altered (saussuritized) to clays.		
Clinopyroxene Spinel	<5 <1	25-40 <1	0.01-0. 0.01-0.	02 02	Subt	nedral nedral	50-95% altered to clays. Probably alteration products.		
SECONDARY MINERALOGY	PERCENT	REP FIL	LACING/ LING				COMMENTS		
Clays Chlorite	45-60 25-35	Glass, Glass,	matrix, matrix,	plagioclase clinopyroxene		Brown amorphous Pale-green, slig	clays pervasive alteration (illite?). htly pleochroic, in matrix and may form tene.		
Prehnite/pumpel	L 5-10	Vein				Occurs intimatel	y associated in veins, as radiating bundles		
Magnetite	<1	Spinel	?		With wavy extinction and bow-tie structure. Randomly distributed, but locally altered, anhedral blebs, black opaque.				
VESICLES/ CAVITIES Vesicles	PERCENT 0	LOCATI	SIZ ON (mm	E )	FILLING		SHAPE		
COMMENTS: Very Prehr	fine-gra	ined roc	k altere ite appe	d to prehnite/pum ar to be in equil	pellyite fac ibrium with	ties and showing each other.	lower greenschist facies alteration.		
125-779A-9R-02	(Piece 4E	3,52-54	cm)	OBSERVER: SAB	WHE	RE SAMPLED: Coni	cal Seamount, southeast flank		
ROCK NAME: Tect	onized se	rpentin:	ized har	zburgite					
GRAIN SIZE: 0.5 TEXTURE: Mesh (	-5 mm and minor	: bastite	a)						
PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT	SIZE L (mm)	COMPO- SITION	MOR	PHOLOGY	COMMENTS		
PHENOCRYSTS	1212112121	122752	121 I.S.						
Olivine Clinopyroxene	20-30 1	83.5- 1	2-4 <0.5		Anhe Anhe	dral dral	Altered to serpentine mesh. As exsolution lamellae and small		
Spinel Orthopyroxene	1.5	1.5	0.05-1	Cr?	Subh	edral-anhedral edral-anhedral	patches. Red, altered to magnetite. Altered to serpentine bastite.		
CROUNDMASS		10 10			oubli	cordr unicardi	nicorda do Borgandino Babbreat		
P.G.E.	<0.1	N/A	N/A		N/A		Found disseminated 0.03 mm grains in veins with magnetite + serpentine.		
SECONDARY	PERCENT	REPI	LACING/				COMMENTS		
Clays	2	Serpent	tine			Dusty brown clay	distributed throughout slide and also small chrysotile veins.		
Chlorite	1					Anhedral patches	intergrown with serpentine; also minor ins which cut across mesh texture.		
Magnetite	1	Spinel				Dusty 0.1-mm siz	ed; analyzed in elongated ragged trails		
Serpentine		Olivin	e, ortho	pyroxene		Lizardite and/or orthopyroxene an	chrysotile altered from olivine and d distributed throughout slide.		
VESICLES/ CAVITIES	PERCENT	LOCATIO	SIZ ON (mm	E )	FILLING		SHAPE		

COMMENTS: Olivine and orthopyroxene have wavy extinctions; clinopyroxene exsolution lamellae are bent also. Orthopyroxene has minor olivine and clinopyroxene inclusions. The northwest corner of the slide shows a good example of mesh texture developed by the intersecting of 2 generations of veins: small 0.1-mm-wide chlorite vein (Fe-Mg-rich) cut by second generation chrysotile and magnetite veins <0.05 mm wide. Slide appears

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tectonized. P.G.E. refers to platinum group elements.

Vesicles

0

# 125-779A-10R-01 (Piece 3,26-29 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized tectonized dunite(?)

GRAIN SIZE: 0.05-2 mm

TEXTURE: Mesh in areas; tectonized

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	55	94	0.1-2	Fo90	N/A	2V=+85-+90 degrees; altered to serpentine mesh, but mesh texture is poorly developed.
Clinopyroxene	<0.1	<0.1	0.05		Anhedral	Clots besides orthopyroxene.
Spinel	0.5	1	0.05-1	Cr?	Subhedral-anhedral	Red, altered to magnetite and chlorite.
Orthopyroxene	1	5	1-2		Subhedral-anhedral	Altered to serpentine bastite and chlorite.
GROUNDMASS						
PGE/sulfide	<0.01	<0.01	0.5		N/A	Disseminated rounded grains.
SECONDARY		REPI	ACING/			
MINERALOGY	PERCENT	FILI	ING			COMMENTS
Chlorite	3	Orthopy	roxene,	spinel, serpentine	Blue-green to br intermixed with orthopyroxene gr	own pleochroism; forms anhedral patches serpentine and also forms along mains, colorless chlorite rims some spinels.
Serpentine	37	Olivine	, ortho	pyroxene	Lizardite and ch concentrated nea	arysotile are mainly present. They are mostly or the central 1-cm-wide chrysotile vein, attion pear the edges of the slide
Magnetite	3	Spinel			Dusty 0.1-mm gra	tins; distributed throughout slide, also veins.
Brucite	Trace	Serpent	ine		Might be occurri	ng along with serpentine in the veins.
VESICLES/			SIZ	Е		
CAVITIES Vesicles	PERCENT 0	LOCATIO	ON (mm	) FI	LLING	SHAPE

COMMENTS: Orthopyroxene and primary olivine have wavy extinction; olivine shows mylonitization with recrystallization of neoblastic olivine with 120 degrees triple junction!!! Slide has veins criss-crossing it. A beautiful 1-cm-wide chrysotile vein cuts the slide. This vein is also sheared in some places. This vein also cuts across an earlier generation (5-mm-wide) vein of serpentine which is perpendicular to it. P.G.E. refers to platinum group elements. 2

125-779A-10R-01 (Piece 5,39-43 cm)

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Tectonized serpentinized dunite

GRAIN SIZE: 0.5-7 mm

TEXTURE: Felted, tectonized

VESICLES/ CAVITIES Vesicles	PERCENT 0	LOCATIO	SIZE N (mm)		FILLING		SHAPE
Brucite	3	Olivine	, orthop	roxene		Usually found in slide.	completely serpentinized portion on edge of
Magnetite	2	Spinel				chrysotile areas Dusty 0.1-mm siz trails and conce	and fresher olivine, orthopyroxene areas. The anhedral grains which forms elongated Antrates mostly in veins.
Serpentine	51	Olivine	, orthopy	roxene		Lizardite, chrys mainly on edges Antigorite-rich	otile, antigorite all present; concentrated of tectonized fresher zone in middle. veins (<3 mm wide) cut across lizardite and
Carbonate	1	?				Not calcite; ref in association w	ractive index is higher than calcite; found the tectonized portion of slide.
SECONDARY MINERALOGY	PERCENT	REPL. FILL	ACING/ ING				COMMENTS
P.G.E.	<0.05	N/A	N/A		N/A		May be sulfide. Form disseminated, grains and veins <= 0.25 mm.
Orthopyroxene	2	3	1-3		Sub	hedral-anhedral	Altered to serpentine bastite; deformed crystals.
Spinel	0.5	1	0.5-2	Cr?	Anh	edral	Red-red brown, some have inclusions of olivine? clinopyroxene?
PHENOCRYSTS Olivine	40	97	0.5-7		Sub	hedral-anhedral	Altered to serpentine, neoblasts(?), deformed.
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MO	RPHOLOGY	COMMENTS
PRIMARY	PERCENT	PERCENT	SIZE	COMPO-			

OBSERVER: HIR

COMMENTS: This section contains two different types of rocks. In one portion the olivine and orthopyroxene are fresher and are intensely elongated with wavy extinction and kink-banding. some olivine appears recrystallized. Portion of slide appears tectonized and somewhat sheared. In the other portion the minerals are completely altered to serpentine (lizardite, antigorite and chrysotile); olivine to antigorite and brucite; orthopyroxene to bastite; Cr-spinel is still fresh-looking. This portion appears to be a serpentinization rind around the fresher minerals. It appears on both sides of the tectonized fresher minerals. Also the serpentinized part may show prograde metamorphism because of the presence of orthopyroxene-lizardite-antigorite. P.G.E. refers to platinum group elements.

#### 125-779A-10R-01 (Piece 6,54-57 cm)

OBSERVER: TER

WHERE SAMPLED: Conical Seamount, southeast flank

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WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Tectonized serpentinized dunite

GRAIN SIZE: 0.1-4 mm

#### TEXTURE: Tectonized

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	50	97	1-4		Anhedral	Altered to serpentine (blades and fibers).
Spinel	0.5	1	0.1-2	Cr?	Euhedral-anhe	dral Red, altered to magnetite.
Orthopyroxene	2	3	1-2		Subhedral-anh	edral Altered to serpentine.
GROUNDMASS						
P.G.E. ?	<0.1	N/A	N/A		N/A	Disseminated and with magnetite in
						veins.
SECONDARY		REPI	ACING/			
MINERALOGY	PERCENT	FILL	ING			COMMENTS
Serpentine	42	Olivine	, orthop	yroxene	Mostly an elongated	tigorite and chrysotile; serpentine forms mostly fibers across olivine cleavages and fractures.
Brucite	3	Olivine			Associate	d with serpentine and intermixed with it.
Magnetite	2	Spinel			Fine-grai spinels.	ned (0.1 mm); located in veins, altered from
VESICLES/			SIZE			
CAVITIES	PERCENT	LOCATIC	N (mm)		FILLING	SHAPE

CAVITIES	PERCENT	LOCATION	(mm)	FII
Vesicles	0			

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COMMENTS: Olivine and orthopyroxene are deformed and show wavy extinctions and kink-banding. Olivine shares in wavy extinction of serpentine (ductilely deformed bent along with serpentine), but also forms subgrains. Most easily visible in some long olivine lamellae, which are segmented, but individual segments have undulatory extinction. Therefore, deformation at high temperature and/or high confining pressure. Minerals also appear slightly elongated; serpentine formation and texture is interesting because of formation along olivine cleavages. P.G.E. refers to platinum group elements.

OBSERVER: TER

125-779A-10R-02 (Piece 1,28-31 cm)

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.05-5 mm

TEXTURE: Bastite (poor)

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-			
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MO	RPHOLOGY	COMMENTS
PHENOCRYSTS							
Olivine	0	88	Not visib	Le	Not	visible	Completely altered to serpentine; mesh texture is very poorly developed.
Spinel	Trace	<1	<0.05		Sub	hedral-anhedral	Altered to magnetite?
Orthopyroxene	0	12	1-5		Anh	edral?	Altered to serpentine bastite.
GROUNDMASS							
N/A	N/A	N/A	N/A		N/A	<u>E</u>	
SECONDARY		REPI	ACING/				
MINERALOGY	PERCENT	FILI	ING				COMMENTS
Serpentine	96	Olivine	, orthopy	roxene		Lizardite and ch good mesh textur visible.	rrysotile mainly throughout entire slide. No re is visible; minor bastitic texture is
Magnetite	<1	Spinel				Dusty and fine-o	grained, appears concentrated next to veins.
Brucite?	3?	Olivine	e, orthopy	roxene		Yellow interfere relief than serp	ence color mineral with slightly different pentine; intermixed with serpentine.
VESICLES/			SIZE				
CAVITIES Vesicles	PERCENT 0	LOCATIO	ON (mm)		FILLING		SHAPE

COMMENTS: Veins (1-3 mm wide) of chrysotile cutting across slide larger vein (3 mm wide) may have post-dated smaller (1 mm wide) veins. These small ones are oriented almost perpendicular to the larger one. Slide is completely serpentinized with no relic mineralogy left.

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# 125-779A-11R-01 (Piece 2,6-9 cm)

OBSERVER: VAN

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.1-3 mm

TEXTURE: Mesh and (minor) bastite

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-			
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORE	HOLOGY	COMMENTS
PHENOCRYSTS							
Olivine	<1	87	0.1-0.3		Anheo	iral	Altered to serpentine mesh texture but a few relic grains are still visible.
Clinopyroxene	Trace	Trace	0.1-0.2		Anheo	iral	One anhedral grain visible near larger orthopyroxene.
Spinel	1	1	0.1-1	Cr?	Subhe	dral-anhedral	Red; appear disseminated.
Orthopyroxene	0	12	0.5-3		N/A		Altered to serpentine bastite; few orthopyroxene (bastite) grains have inclusions of anhedral olivine?
GROUNDMASS							
N/A	N/A	N/A	N/A		N/A		
SECONDARY MINERALOGY	PERCENT	REPI	ACING/				COMMENTS
Serpentine	98	Olivine	, orthopy	roxene	1	izardite and/or	chrysotile form mesh-texture throughout
			,		с л	slide. The mesh m wide).	is cut by a later-stage chrysotile vein (3
Magnetite	<1	Spinel			I	usty grains thr	oughout slide.
Brucite	<1	Olivine	, orthopy	roxene	נ ת	(ellow interfere um wide) veins c	nce color mineral appears in smaller (<0.5 rosscutting serpentine; XRD is necessary.
VESICLES/			SIZE				
CAVITIES	PERCENT	LOCATIO	N (mm)		FILLING		SHAPE
Vesicles	0						

COMMENTS: Orthopyroxene is kinked and has wavy extinction. This slide is completely serpentinized. A larger (3 mm wide) chrysotile vein crosses slide at 45 degrees orientation to the long axis of slide.

# 125-779A-11R-01 (Piece 3,14-18 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.05-5 mm

TEXTURE: Mesh (minor bastite)

PRIMARY MINERALOGY	PERCENT PRESENT	PERCEN'	F SIZE AL (mm)	COMPO- SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS Olivine	Tr?	82	Not visi	ble	Not visible	Completely altered to serpentine mesh texture, but small inclusions in
Clinopyroxene	1.5	1.5	0.05-0.3		Anhedral	orthopyroxene(?) still remain. As exsolution lamellae, also as fresh grains.
Spinel Orthopyroxene	1.5 0	1.5 15	0.5-2 1-5	Cr?	Subhedral-anhedra Subhedral-anhedra	al Red; some are elongated. Al Altered to serpentine bastite; has (100) clinopyroxene exsolution lamellae.
GROUNDMASS P.G.E. (sulfide)	<0.01	N/A	N/A		N/A	Disseminated, rare with magnetite in serpentine.
SECONDARY MINERALOGY Serpentine	PERCENT 97	REI FII Olivin	PLACING/ LLING ne, orthop	yroxene	Lizardite and with minor ba appears undef	COMMENTS d/or chrysotile, forming mostly mesh texture astite texture throughout the slide. The mesh formed in areas, but somewhat deformed in other
Magnetite	<1	Spine:	1		areas. Dusty 0.1-mm	grains scattered throughout slide.
VESICLES/	PERCENT	LOCAT	SIZE ION (mm)	an lan an a	FILLING	SHAPE
COMMENTS: Orth elon oliv whic harz	opyroxene gated. Som dine? (or d h is still burgite. F	has way ne spin orthopy l very P.G.E.	vy extinct els and or roxene or fresh. Com refers to	ion and clinopy thopyroxene hav clinopyroxene); pletely serpent platinum group	vroxene exsolution lamellae re inclusions which are now orthopyroxene also have i inized rock but the clinop elements.	e are bent; some appear slightly v rounded serpentine pseudomorphs after inclusions of anhedral clinopyroxene syroxene is fresh. Clinopyroxene-rich
COMMENTS: Orth elon oliv whic harz 125-779A-11R-0 ROCK NAME: Serp	opyroxene gated. Som ine? (or o h is still burgite. F 1 (Piece 5 pentinized	has war me spin porthopy: l very 1 P.G.E. 5,34-36 l dunite	vy extinct els and or roxene or fresh. Com refers to cm)	ion and clinopy thopyroxene hav clinopyroxene); pletely serpent platinum group OBSERVER: TE	vroxene exsolution lamellae re inclusions which are now orthopyroxene also have i inized rock but the clinop elements. R WHERE SAMPLED: C	e are bent; some appear slightly w rounded serpentine pseudomorphs after inclusions of anhedral clinopyroxene byroxene is fresh. Clinopyroxene-rich Conical Seamount, southeast flank
COMMENTS: Orth elon oliv whic harz 125-779A-11R-0 ROCK NAME: Ser GRAIN SIZE: <0 FEXTURE: Mesh	opyroxene gated. Som ine? (or o h is still burgite. F 1 (Piece 5 pentinized .1 mm	has war me spin prthopy: L very : P.G.E. : 5,34-36	vy extinct els and or roxene or fresh. Com refers to cm)	ion and clinopy thopyroxene hav clinopyroxene); pletely serpent platinum group OBSERVER: TE	vroxene exsolution lamellae re inclusions which are now orthopyroxene also have i inized rock but the clinop elements. R WHERE SAMPLED: C	e are bent; some appear slightly w rounded serpentine pseudomorphs after inclusions of anhedral clinopyroxene pyroxene is fresh. Clinopyroxene-rich Conical Seamount, southeast flank
COMMENTS: Orth elon oliv whic harz 125-779A-11R-0 ROCK NAME: Ser GRAIN SIZE: <0 TEXTURE: Mesh	opyroxene gated. Som ine? (or o h is still burgite. F 1 (Piece 5 pentinized .1 mm	has way me spino prthopy 1 very 2.G.E. 5,34-36 1 dunite	vy extinct els and or roxene or fresh. Com refers to cm)	ion and clinopy thopyroxene hav clinopyroxene); pletely serpent platinum group OBSERVER: TE	vroxene exsolution lamellae re inclusions which are now orthopyroxene also have i inized rock but the clinop elements. R WHERE SAMPLED: C	e are bent; some appear slightly w rounded serpentine pseudomorphs after inclusions of anhedral clinopyroxene byroxene is fresh. Clinopyroxene-rich Conical Seamount, southeast flank
Vesicles COMMENTS: Orth elon oliv whic harz 125-779A-11R-0 ROCK NAME: Serp GRAIN SIZE: <0 FEXTURE: Mesh PRIMARY MINERALOGY	opyroxene gated. Som ine? (or o ih is still) burgite. F 1 (Piece 5 pentinized .1 mm PERCENT PRESENT	has way me spin prthopy: 1 very 2 2.G.E. 3 5,34-36 1 dunite 9 PERCENT ORIGIN/	vy extinct els and or roxene or fresh. Com refers to cm) e T SIZE AL (mm)	ion and clinopy thopyroxene hav clinopyroxene); pletely serpent platinum group OBSERVER: TE OBSERVER: TE COMPO- SITION	vroxene exsolution lamellad re inclusions which are now orthopyroxene also have i inized rock but the clinop elements. TR WHERE SAMPLED: C MORPHOLOGY	e are bent; some appear slightly w rounded serpentine pseudomorphs after inclusions of anhedral clinopyroxene pyroxene is fresh. Clinopyroxene-rich Conical Seamount, southeast flank COMMENTS
Vesicles COMMENTS: Orth elon oliv whic harz 125-779A-11R-0 ROCK NAME: Ser GRAIN SIZE: <0 FEXTURE: Mesh CEXTURE: ME	opyroxene gated. Som ine? (or o ih is still) burgite. F 1 (Piece 5 pentinized .1 mm PERCENT PRESENT 0	has way me spin prthopy: 1 very 2 2.G.E. 2 5,34-36 1 dunite 1 dunite PERCENT ORIGIN/ 99	vy extinct els and or roxene or fresh. Com refers to cm) e T SIZE AL (mm) Not visil	ion and clinopy thopyroxene hav clinopyroxene); pletely serpent OBSERVER: TE OBSERVER: TE COMPO- SITION	vroxene exsolution lamellad re inclusions which are now orthopyroxene also have i inized rock but the clinop elements. CR WHERE SAMPLED: C MORPHOLOGY Not visible	e are bent; some appear slightly v rounded serpentine pseudomorphs after inclusions of anhedral clinopyroxene pyroxene is fresh. Clinopyroxene-rich Conical Seamount, southeast flank COMMENTS Completely altered to mesh textured
Vesicles COMMENTS: Orth elon oliv whic harz 225-779A-11R-0 ROCK NAME: Serj GRAIN SIZE: <0 YEXTURE: Mesh PRIMARY MINERALOGY PHENOCRYSTS Dlivine Spinel	opyroxene gated. Som ine? (or of h is still burgite. F 1 (Piece 5 pentinized .1 mm PERCENT PRESENT 0 Trace	has war he spin orthopy: 1 very 5 6,34-36 1 dunite PERCENT ORIGINI 99 1	vy extinct els and or roxene or fresh. Com refers to cm) e f SIZE AL (mm) Not visil 0.2	ion and clinopy thopyroxene hav clinopyroxene); pletely serpent OBSERVER: TE OBSERVER: TE COMPO- SITION ble Cr	vroxene exsolution lamellad re inclusions which are now orthopyroxene also have is inized rock but the clinop elements. CR WHERE SAMPLED: C MORPHOLOGY Not visible Subhedral-anhedra	e are bent; some appear slightly w rounded serpentine pseudomorphs after inclusions of anhedral clinopyroxene syroxene is fresh. Clinopyroxene-rich Conical Seamount, southeast flank Conical Seamount, southeast flank Completely altered to mesh textured serpentine. Cr=red; 1 small grain present and elongated.
/esicles COMMENTS: Orth elon oliv whic harz .25-779A-11R-0 COCK NAME: Serj RAIN SIZE: <0 YEXTURE: Mesh CRIMARY INERALOGY PHENOCRYSTS 'livine pinel GROUNDMASS /A	opyroxene gated. Som ine? (or of h is still burgite. F 1 (Piece 5 pentinized .1 mm PERCENT PRESENT 0 Trace N/A	has war he spin prthopy: l very i c.G.E. : c.G.E. : c.G.E. : d dunite dunite PERCENT ORIGINA 99 1 N/A	vy extinct els and or fresh. Com refers to cm) e r SIZE AL (mm) Not visil 0.2 N/A	ion and clinopy thopyroxene hav clinopyroxene); pletely serpent OBSERVER: TE OBSERVER: TE COMPO- SITION ble Cr	vroxene exsolution lamellad re inclusions which are now orthopyroxene also have i inized rock but the clinop elements. R WHERE SAMPLED: C MORPHOLOGY Not visible Subhedral-anhedra N/A	e are bent; some appear slightly w rounded serpentine pseudomorphs after inclusions of anhedral clinopyroxene syroxene is fresh. Clinopyroxene-rich Conical Seamount, southeast flank Conical Seamount, southeast flank COMMENTS Completely altered to mesh textured serpentine. Cr=red; 1 small grain present and elongated.
Vesicles COMMENTS: Orth elon oliv whic harz 125-779A-11R-0 ROCK NAME: Serj GRAIN SIZE: <0 TEXTURE: Mesh CEXTURE: M	opyroxene gated. Som ine? (or of h is still burgite. F 1 (Piece 5 pentinized .1 mm PERCENT PRESENT 0 Trace N/A PERCENT 100	has war he spin prthopy: l very i s, 34-36 d dunite dunite PERCENT ORIGINA 99 1 N/A REF FII Olivir	vy extinct els and or roxene or fresh. Com refers to cm) e r SIZE AL (mm) Not visil 0.2 N/A PLACING/ LLING ne, orthop	ion and clinopy thopyroxene hav clinopyroxene); pletely serpent OBSERVER: TE OBSERVER: TE COMPO- SITION ble Cr	vroxene exsolution lamellad re inclusions which are now orthopyroxene also have is inized rock but the clinop elements. R WHERE SAMPLED: C MORPHOLOGY Not visible Subhedral-anhedra N/A Lizardite and	<pre>e are bent; some appear slightly v rounded serpentine pseudomorphs after inclusions of anhedral clinopyroxene syroxene is fresh. Clinopyroxene-rich Conical Seamount, southeast flank Comments Comments Comments Comments Comments Comments I/or chrysotile forming mesh texture, large</pre>
Vesicles COMMENTS: Orth elon oliv whic harz 125-779A-11R-0: ROCK NAME: Serj GRAIN SIZE: <0 TEXTURE: Mesh PRIMARY MINERALOGY PHENOCRYSTS Dlivine Spinel GROUNDMASS N/A SECONDARY 4INERALOGY Serpentine 4agnetite	opyroxene gated. Som ine? (or o ih is still) burgite. F 1 (Piece 5 pentinized .1 mm PERCENT PRESENT 0 Trace N/A PERCENT 100 Trace	has way he spin- prthopy: l very i 5,34-36 i dunite percent ORIGIN/ 99 1 N/A REE FII Olivir Spinel	vy extinct els and or roxene or fresh. Com refers to cm) e r SIZE AL (mm) Not visil 0.2 N/A PLACING/ LLING he, orthopy	ion and clinopy thopyroxene hav clinopyroxene); pletely serpent OBSERVER: TE OBSERVER: TE COMPO- SITION ble Cr	vroxene exsolution lamellad re inclusions which are now orthopyroxene also have is inized rock but the clinop elements. R WHERE SAMPLED: C MORPHOLOGY Not visible Subhedral-anhedra N/A Lizardite and chrysotile ve Dusty grains	<pre>e are bent; some appear slightly v rounded serpentine pseudomorphs after inclusions of anhedral clinopyroxene pyroxene is fresh. Clinopyroxene-rich Conical Seamount, southeast flank Comments Completely altered to mesh textured serpentine. Cr=red; 1 small grain present and elongated. COMMENTS Comments Comments across slide.</pre>

COMMENTS: Quality of this thin section is bad. It covers a small area and is too thin, therefore quality of optical determination is low. 1 to 3-mm-wide chrysotile veins run throughout the slide cutting across mesh texture.

# 125-779A-12R-01 (Piece 6,38-42 cm)

OBSERVER: JOH

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.05-4 mm

TEXTURE: Mesh and bastite

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO- SITION	МО	RPHOLOGY	COMMENTS
PHENOCRYSTS							
Olivine	10	86	2-4		Sub	hedral-anhedral	Altered to serpentine mesh texture.
Clinopyroxene	1	1	0.05		Anh	edral	As exsolution lamellae and small anhedral grains.
Spinel	1	1	0.2-0.8	Cr?	Euh	edral-anhedral	Red; altered to magnetite and chlorite (see comments).
Orthopyroxene	8	12	0.5-4		Sub	hedral-anhedral	Altered to serpentine bastite; has exsolution lamellae of clinopyroxene; altered to chlorite.
GROUNDMASS							
N/A	N/A	N/A	N/A		N/A		
SECONDARY		REPL	ACING/				
MINERALOGY	PERCENT	FILL	ING				COMMENTS
Chlorite	2	Serpent	ine? orth	opyroxene, sp	inel	Blue-green yello throughout serpe grain boundaries	w pleochroic anhedral patches distributed ntine and along orthopyroxene cleavages ; some spinels.
Serpentine	78	Olivine	, orthopy	roxene		Lizardite and/or orthopyroxene, f	chrysotile altering from olivine and orming mesh and minor bastite texture.
Magnetite	<1	Spinel				A few dusty 0.1-	mm grains throughout slide.
VESICLES/			SIZE				
CAVITIES	PERCENT	LOCATIO	N (mm)		FILLING		SHAPE
Vesicles	0						

COMMENTS: Orthopyroxene has wavy extinction, kink-banding; inclusions of olivine and clinopyroxene. Olivine has wavy extinction and is altering to textured serpentine. One 0.8-mm euhedral spinel has two different rinds. The first has anomalous brown interference colors (some oxide phase) and surrounds the spinel. This is then further rimmed by anomalous blue interference colors (chlorite and/or serpentine). May be tectonized because mesh is deformed in portions of the slide. 125-779A-13R-01 (Piece 1,2-5 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentized harzburgite

GRAIN SIZE: 0.05-4 mm

TEXTURE: Mesh (minor bastite)

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO- SITION	MC	RPHOLOGY	COMMENTS
PHENOCRYSTS Olivine Spinel Orthopyroxene	0 <1 0	87 1 12	Not visibl 0.05-1 1-4	e Cr	Not Sub Sub	visisble hedral-anhedral hedral-anhedral	Completely altered to serpentine mesh. Red brown, altered to magnetite. Altered to serpentine bastite and chlorite.
GROUNDMASS P.G.E./sulfide	<0.1	N/A	N/A		N/A	i.	With magnetite, as isolated grains in matrix, <0.1 mm, moderate abundance.
SECONDARY MINERALOGY Clays	PERCENT <1	REPL FILL Serpent	ACING/ ING ine			Dusty light brown	COMMENTS clay distributed throughout slide and in
Chlorite	2	Orthopy	roxene, se	rpentine		mesh texture edge Fine-grained anne minerals along or	s. dral patches intermixed with serpentine thopyroxene cleavages in bastites.
Magnetite Serpentine	<1 95	Olivine	e, orthopyr	oxene		Dusty, fine grain Lizardite and/or mesh and bastite	s distributed throughout slide. chrysotile distributed throughout slide in textures.
VESICLES/ CAVITIES Vesicles	PERCENT 0	LOCATIC	SIZE ON (mm)		FILLING		SHAPE
COMMENTS: Ortho prese Slide plati	pyroxene ent. Mesh appears num group	bastites texture slightly element	have wavy is strongl tectonize	extinction. R y developed in d(?) because o	ock is stro portions o f the defor	ngly serpentinized f slide. In other mation of the mesh	with no relic mineral grains portions it is poorly developed. in places. P.G.E. refers to
125-779A-13R-02	(0-3 cm)			OBSERVER: HIR	WB	ERE SAMPLED: Conic	al Seamount, southeast flank
ROCK NAME: Pebb	oly serpe	ntinous m	udstone (d	ebris flow)			
GRAIN SIZE: Fin	e-coarse	parallel	"melange"	fabric			
PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO- SITION	МС	RPHOLOGY	COMMENTS
PHENOCRYSTS Spinel	<1	N/A	N/A		N/A		Cr-spinel, dark red.
GROUNDMASS N/A	N/A	N/A	N/A		N/A		
SECONDARY MINERALOGY Clays Serpentine Magnetite	PERCENT 20-30 70-80 <2	REPL FILL	ACING/ ING			Dusty brownish cl	COMMENTS ay.
VESICLES/ CAVITIES Vesicles	PERCENT 0	LOCATIC	SIZE DN (mm)		FILLING		SHAPE

COMMENTS: Spectacular "melange" structure. Ductile boudinage and brittle fracture (former dominant) of large clasts in fine-grained matrix. Strong foliation and layer II shortening. No piece # given.

# 125-779A-13R-02 (Piece 1,50-54 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.1-5 mm

TEXTURE: Mesh and bastite (developing)

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-	No	DDUOT OCY	CONDITINITO
MINERALOGI	PRESENT	ORIGINA	L (nun)	SITION	MO	RPHOLOGI	COMMENTS
PHENOCRYSTS							
Olivine	20-25	79-84	0.5-3		Anh	edral	Altering to serpentine mesh texture.
Clinopyroxene	<1	<1	0.1-1		Anh	edral	As exsolution lamellae; anhedral grains near orthopyroxene.
Spinel	<1	1	0.1-1	Cr?	Sub	hedral-anhedral	Red; altered to magnetite.
Orthopyroxene	10-15	15-20	1-5		Sub	hedral-anhedral	Altered to serpentine bastite texture, have inclusions of olivine?
GROUNDMASS							
N/A	N/A	N/A	N/A		N/A		
SECONDARY		REP	LACING/				
MINERALOGY	PERCENT	FIL	LING				COMMENTS
Chlorite	2	Orthop	yroxene,	spinel, serp	pentine	Blue-green to ye anhedral patches orthopyroxene al	ellow pleochroism (weak), in fine-grained a intermixed with serpentine and so rimming some spinel.
Serpentine	54-64					Lizardite and/or textures through may be present.	c chrysotile forming mesh and bastite nout slide. Some minor bladed antigoritite
Magnetite	2	Spinel				Dusty 0.1-mm gra elongated trails moderate abundan (< 0.1 mm), diss	ains throughout slide; also some form a with minor chrysotile veins (<0.2 mm). Plus ace of platinum group elements, some sulfide seminated.
VESICLES/			SIZ	E			
CAVITIES	PERCENT	LOCATI	ON (mm	)	FILLING		SHAPE
/esicles	0						

COMMENTS: Orthopyroxene has wavy extinction and clinopyroxene exsolution lamellae are bent. Olivine has wavy extinction. Some anhedral olivine inclusions occur in orthopyroxene crystals. Cleavage of magnetite infilled with silicate. Some portions of slide appear tectonized (? mylonitinized) because of disruption of mesh, olivine and orthopyroxene grains into finer grains. 125-779A-13R-03 (Piece 1,9-11 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.2-6 mm

TEXTURE: Cumulative (primary) altering to mesh and bastite

PRIMARY						
MINERABOGI	PERCENT PRESENT	PERCENT ORIGINAL	SIZE L (mm)	COMPO- SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS Olivine	50	86	1-5		Anhedral	Altering to serpentine mesh, highly
Clinopyroxene	Trace	Trace	0.2		Anhedral	fractured grains. Exsolution lamellae of orthopyroxene;
Spinel	1	2	0.3-1	Cr	Subhedral-anhe	small separate grains. edral Red; altered to magnetite and chlorite.
Orthopyroxene	5	12	1-6		Subhedral-anhe	edral Altering to serpentine bastite.
GROUNDMASS P.G.E./sulfide	<1	N/A	N/A		N/A	A few 0.05-0.08 mm disseminated grains.
SECONDARY MINERALOGY	PERCENT	REPI FILI	LACING/			COMMENTS
Chiorite	1	Spinel,	Serpen	Line	Anomalous	blue bladed crystals surrounding some spinel and i with serpentine.
Serpentine	42	Olivine	e, ortho	pyroxene	Lizardite orthopyros orthopyros	and/or chrysotile mainly altering from olivine and kene. Concentrated along olivine fractures and kene cleavages.
Magnetite	1	Spinel			Fine dusty elongated	<pre>/ grains (0.3 mm) throughout slide, also in trains in some portions.</pre>
VESICLES/ CAVITIES Vesicles	PERCENT	LOCATIO	SIZ DN (mm	E )	FILLING	SHAPE
ROCK NAME: Ser	pentinized					
GRAIN SIZE: 0. TEXTURE: Mesh	5-4 mm	a dunite				
GRAIN SIZE: 0. TEXTURE: Mesh 	5-4 mm PERCENT PRESENT	PERCENT	SIZE	COMPO- SITION	MORPHOLOGY	COMMENTS
GRAIN SIZE: 0. TEXTURE: Mesh PRIMARY MINERALOGY PHENOCRYSTS	5-4 mm PERCENT PRESENT	PERCENT ORIGINAI	SIZE L (mm)	COMPO- SITION	MORPHOLOGY	COMMENTS
GRAIN SIZE: 0. TEXTURE: Mesh PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene	5-4 mm PERCENT PRESENT 20-25 <0.1	PERCENT ORIGINAI 95 <0.1	SIZE (mm) 0.5-4 0.5	COMPO- SITION	MORPHOLOGY Anhedral Anhedral	COMMENTS Altered to serpentine mesh texture. Formed as small anhedral grains (rare).
GRAIN SIZE: 0. TEXTURE: Mesh PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene	<pre>&gt;=4 mm PERCENT PRESENT 20-25 &lt;0.1 1 1</pre>	PERCENT ORIGINAJ 95 <0.1 2 3	SIZE (mm) 0.5-4 0.5 0.1-0.5 0.5-1	COMPO- SITION Cr	MORPHOLOGY Anhedral Anhedral Subhedral-anhe Subhedral-anhe	COMMENTS Altered to serpentine mesh texture. Formed as small anhedral grains (rare). edral Red, altered to magnetite. edral Altered to serpentine bastite and chlorite.
GRAIN SIZE: 0. TEXTURE: Mesh  PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene GROUNDMASS N/A	PERCENT PRESENT 20-25 <0.1 1 1 N/A	PERCENT ORIGINAI 95 <0.1 2 3 N/A	SIZE (mm) 0.5-4 0.5 0.1-0.5 0.5-1 N/A	COMPO- SITION Cr	MORPHOLOGY Anhedral Anhedral Subhedral-anhe Subhedral-anhe	COMMENTS Altered to serpentine mesh texture. Formed as small anhedral grains (rare). edral Red, altered to magnetite. edral Altered to serpentine bastite and chlorite.
GRAIN SIZE: 0. TEXTURE: Mesh PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene GROUNDMASS N/A SECONDARY	PERCENT PRESENT 20-25 <0.1 1 1 N/A	PERCENT ORIGINAI 95 <0.1 2 3 N/A REPI	SIZE (mm) 0.5-4 0.5 0.1-0.5 0.5-1 N/A LACING/	COMPO- SITION Cr	MORPHOLOGY Anhedral Anhedral Subhedral-anhe Subhedral-anhe	COMMENTS Altered to serpentine mesh texture. Formed as small anhedral grains (rare). edral Red, altered to magnetite. edral Altered to serpentine bastite and chlorite.
GRAIN SIZE: 0. TEXTURE: Mesh 	PERCENT PRESENT 20-25 <0.1 1 N/A PERCENT 2	PERCENT ORIGINAI 95 <0.1 2 3 N/A REPI FILI Veins	SIZE (mm) 0.5-4 0.5 0.1-0.5 0.5-1 N/A LACING/ LING	COMPO- SITION Cr	MORPHOLOGY Anhedral Anhedral Subhedral-anhe Subhedral-anhe N/A Dusty brow	COMMENTS Altered to serpentine mesh texture. Formed as small anhedral grains (rare). edral Red, altered to magnetite. edral Altered to serpentine bastite and chlorite. COMMENTS en clay concentrated mainly in serpentine vein (1
GRAIN SIZE: 0. TEXTURE: Mesh 	PERCENT PRESENT 20-25 <0.1 1 N/A PERCENT 2 3	95 <0.1 2 3 N/A REPT FILI Veins Orthopy	SIZE (mm) 0.5-4 0.5 0.1-0.5 0.5-1 N/A LACING/ JNG (roxene,	COMPO- SITION Cr	MORPHOLOGY Anhedral Anhedral Subhedral-anhe Subhedral-anhe N/A Dusty brow mm wide) o Blue greer throughout	COMMENTS Altered to serpentine mesh texture. Formed as small anhedral grains (rare). edral Red, altered to magnetite. edral Altered to serpentine bastite and chlorite. COMMENTS on clay concentrated mainly in serpentine vein (1 prossing slide. yellow pleochroic anhedral blades and patches i slide and near bastite grains along old
GRAIN SIZE: 0. TEXTURE: Mesh PRIMARY MINERALOGY PHENOCRYSTS Olivine Clinopyroxene Spinel Orthopyroxene GROUNDMASS N/A SECONDARY MINERALOGY Clays Chlorite Serpentine	PERCENT PRESENT 20-25 <0.1 1 N/A PERCENT 2 3 67-72	PERCENT ORIGINAL 95 <0,1 2 3 N/A REPI FILL Veins Orthopy Olivina	SIZE (mm) 0.5-4 0.5 0.1-0.5 0.5-1 N/A LACING/ LING (roxene, e, orthop	COMPO- SITION Cr serpentine pyroxene	MORPHOLOGY Anhedral Anhedral Subhedral-anhe Subhedral-anhe N/A Dusty brov mm wide) o Blue greer throughout orthopyros Lizardite orthopyros	COMMENTS Altered to serpentine mesh texture. Formed as small anhedral grains (rare). edral Red, altered to magnetite. edral Altered to serpentine bastite and chlorite. COMMENTS en clay concentrated mainly in serpentine vein (1 crossing slide. 1-yellow pleochroic anhedral blades and patches t slide and near bastite grains along old tene cleavages. and/or chrysotile altering from olivine and tene, forming mesh and bastite textures. A
GRAIN SIZE: 0.3 TEXTURE: Mesh 	<pre>5-4 mm PERCENT PRESENT 20-25 &lt;0.1 1 N/A PERCENT 2 3 67-72 1</pre>	PERCENT ORIGINAI 95 <0.1 2 3 N/A REPI FILI Veins Orthopy Oliving Spinel	SIZE (mm) 0.5-4 0.5 0.1-0.5 0.5-1 N/A LACING/ LING (roxene, e, ortho)	COMPO- SITION Cr serpentine pyroxene	MORPHOLOGY Anhedral Anhedral Subhedral-anhe Subhedral-anhe N/A N/A Dusty brow mm wide) o Blue greer throughout orthopyroo Lizardite orthopyroo serpentine Dusty 0.1- which are	COMMENTS Altered to serpentine mesh texture. Formed as small anhedral grains (rare). edral Red, altered to magnetite. edral Altered to serpentine bastite and chlorite. COMMENTS wn clay concentrated mainly in serpentine vein (1 crossing slide. yellow pleochroic anhedral blades and patches t slide and near bastite grains along old sene cleavages. and/or chrysotile altering from olivine and sene, forming mesh and bastite textures. A e vein (0.1 mm wide) crossing slide. mm grains; also elongated trails (<0.5 mm long) crudely perpendicular to main serpentine vein.

COMMENTS: Spinels are altered to magnetite, polyphase material present in the oxide grains, gray-yellow reflectivity.

125-779A-14R-01 (Piece 5A,74-77 cm)

OBSERVER: JOH

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized dunite

GRAIN SIZE: 0.2-7 mm

TEXTURE: Cataclastic (going to mesh and bastite)

CAVITIES	PERCENT	LOCATIO	N (mm)		FILLING		SHAPE
VESICLES/			SIZE				
Magnetite	1	Spinel				Dusty 0.3-mm gra concentrated wit	ins, anhedral elongated trails which are hin serpentine veins.
•			,			orthopyroxene an along olivine fr Chrysotile vein	d forming mesh and bastite textures; forming actures and orthopyroxene cleavages. (~1 mm wide) cuts across slide.
Serpentine	54	Olivine	. orthop	vroxene		some spinels; Bl intermixed with cleavages. Lizardite and/or	ue-green to yellow pleochroic chlorite is serpentine and along orthopyroxene chrysotile altering from olivine and
Chlorite	2	Orthopy	roxene,	serpentine		Anomalous brown	interference colors (some oxide phase) rims
SECONDARY MINERALOGY	PERCENT	REPL	ACING/ ING				COMMENTS
GROUNDMASS N/A	N/A	N/A	N/A		N/A		
Orthopyroxene	2	8	1-2		Sub	hedral-anhedral	Altering to serpentine bastite and chlorite.
spiner	1	1	0.5-1	Cr	Eun	edral-annedral	chlorite(?).
Clinopyroxene	<1	<1	0.2		Sub	hedral-anhedral	As minor exsolution lamellae.
PHENOCRYSTS Olivine	40	91	0.2-7		Sub	hedral-anhedral	Altering to serpentine mesh; some may be neoblastic(?).
			(	011100		ALL HODOOL	SOLUTION S
MINERALOGY	PRESENT	ORTGINAL	(mm)	STTION	MC	PPHOLOCY	COMMENTS

COMMENTS: Olivine fractures appear to parallel main serpentine (chrysotile) vein. The serpentine which forms along the olivine fractures also parallels the main vein. This may indicate formation of primary veins with secondary veins at the same time as the olivine fractures. Some olivine grains (<0.2 mm) may be neoblastic?? Spinels are altered to some other oxide phase, and are rimmmed by chlorite.

### 125-779A-14R-02 (Piece 16,139-141 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.01-5 mm

#### TEXTURE: Cumulate, mesh

PRIMARY	PERCENT	PERCENT	STZE	COMPO-			
MINERALOGY	PRESENT	ORIGINAL	L (mm)	SITION	MC	RPHOLOGY	COMMENTS
PHENOCRYSTS							
Olivine	40	78-83	0.5-4		N/A		Altering to poor-looking mesh texture serpentine, some olivine may be recrystallized.
Clinopyroxene	<1	<1	0.01		Sub	hedral-anhedral	As exsolution lamellae; as scattered grains.
Spinel	1	1.5	0.05-1	Cr?	Anh	edral	Red
Orthopyroxene	10	15-20	0.5-5		Sub	hedral-anhedral	Altering to serpentine bastite texture; some orthopyroxene appears recrystallized.
GROUNDMASS							
N/A	N/A	N/A	N/A		N/A		
SECONDARY		REPI	LACING/				
MINERALOGY	PERCENT	FILI	LING				COMMENTS
Chlorite	3	Orthopy	roxene,	spinel		Blue-green to ye with the serpent	ellow pleochroism bladed grains, associated time bastite and some spinels.
Serpentine	45	Olivine	e, orthop	pyroxene		Lizardite and/or chrysotile vein serpentine veins Serpentinization	r chrysotile forming mesh and bastite; (2 mm wide) crosses slide and cuts earlier s (0.5 mm wide) that run 60 degrees to it. n is greatest near larger chrysotile vein.
Magnetite	1	Spinel				Dusty 0.1-mm and	nedral grains located in veins.
VESICLES/			SIZ	E			
CAVITIES	PERCENT	LOCATIO	ON (mm)		FILLING		SHAPE
Vesicles	0						

COMMENTS: Relatively fresh tectonized serpentinized harzburgite. Elongate anhedral spinels arranged in trains; orthopyroxene is kink-banded and exsolved clinopyroxene lamellae are bent; spinel has a reaction halo, altering to some other oxide phase and chlorite surrounding that. Olivine has wavy extinction and appears kinked also. Orthopyroxene has inclusions of anhedral olivine. Some orthopyroxene and olivine may be recrystallized; slide is tectonized. 125-779A-14R-02 (Piece 8,77-79 cm)

OBSERVER: JOH

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.05-6 mm

TEXTURE: Cumulate (primary) forming mesh

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAI	, (mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS Olivine	40-50	80-85	0.5-5		Anhedral	Kink-banding, wavy extinction, mesh
Clinopyroxene	3	3	0.01-0.5		Anhedral	texture serpentine. As exsolution lamellae and smaller
Spinel	2	2	0.05-2		Fubedral-anhedral	grains. Red: altering to magnetite
Orthopyroxene	10-15	15-20	0.5-6		Subhedral-anhedra	Altering to serpentine bastite; wavy extinction and recrystallization.
GROUNDMASS						
N/A	N/A	N/A	N/A		N/A	
SECONDARY		REPI	ACING/			
INERALOGY	PERCENT	FILI	ING			COMMENTS
Serpentine	30-45	Olivine	, orthopyr	oxene	Lizardite and textures alon	/or chrysotile forming mostly mesh and bastite g olivine fractures and orthopyroxene
Magnetite	<1	Spinel			cleavages. Fine-grained, boundaries.	disseminated, many follow olivine grain
/ESICLES/ CAVITIES	PERCENT	LOCATIO	SIZE DN (mm)		FILLING	SHAPE
COMMENTS: Rela leav clin clin 125-779A-15R-01 ROCK NAME: Clin	tively fre e the orth opyroxene opyroxene 1 (Piece 4 nopyroxene	,15-17 c	m)	d. Both olivir Orthopyroxene OBSERVER: SAB	e and orthopyroxene grain has inclusions of anhedr WHERE SAMPLED: C	s exhibit recrystallization; exsolved al olivine and possible onical Seamount, southeast flank
COMMENTS: Rela leav clin clin 125-779A-15R-0: ROCK NAME: Clin GRAIN SIZE: 0.( FEXTURE: Cumula	tively fre e the orth opyroxene opyroxene 1 (Piece 4 nopyroxene 05-4 mm ate, mesh	hopyroxer lamellae (?). ,15-17 c	e unchange are bent. m)	d. Both olivir Orthopyroxene OBSERVER: SAB i harzburgite	e and orthopyroxene grain has inclusions of anhedr WHERE SAMPLED: C	s exhibit recrystallization; exsolved al olivine and possible onical Seamount, southeast flank
COMMENTS: Rela leav clin clin .25-779A-15R-0: COCK NAME: Clin RAIN SIZE: 0.( 'EXTURE: Cumula	tively fre e the orth opyroxene 1 (Piece 4 nopyroxene 05-4 mm ate, mesh	hopyroxer lamellae (?). ,15-17 c rich se	e unchange are bent. m) rpentinized	d. Both olivir Orthopyroxene OBSERVER: SAB i harzburgite	e and orthopyroxene grain has inclusions of anhedr WHERE SAMPLED: C	s exhibit recrystallization; exsolved al olivine and possible onical Seamount, southeast flank
COMMENTS: Rela leav clin clin 25-779A-15R-01 OCK NAME: Clin RAIN SIZE: 0.( EXTURE: Cumula 	tively fre e the orth opyroxene 1 (Piece 4 nopyroxene 05-4 mm ate, mesh PERCENT PRESENT	<pre>percent or of the set of the set of the</pre>	e unchange are bent. m) rpentinized SIZE (mm)	d. Both olivir Orthopyroxene OBSERVER: SAB i harzburgite compo- SITION	ne and orthopyroxene grain has inclusions of anhedr WHERE SAMPLED: C MORPHOLOGY	s exhibit recrystallization; exsolved al olivine and possible onical Seamount, southeast flank COMMENTS
COMMENTS: Rela leav clin clin .25-779A-15R-0: ROCK NAME: Clin GRAIN SIZE: 0.( YEXTURE: Cumula PRIMARY MINERALOGY PHENOCRYSTS	tively fre e the orth opyroxene opyroxene 1 (Piece 4 nopyroxene 05-4 mm ate, mesh PERCENT PRESENT	<pre>hopyroxer lamellae (?). ,15-17 c rich se PERCENT ORIGINAL</pre>	e unchange are bent. m) rpentinized SIZE (mm)	d. Both olivir Orthopyroxene OBSERVER: SAB i harzburgite COMPO- SITION	ne and orthopyroxene grain has inclusions of anhedr WHERE SAMPLED: C MORPHOLOGY	s exhibit recrystallization; exsolved al olivine and possible onical Seamount, southeast flank COMMENTS
COMMENTS: Rela leav clin clin 125-779A-15R-01 ROCK NAME: Clin GRAIN SIZE: 0.0 NEXTURE: Cumula NEXTURE: Cumula NERALOGY PHENOCRYSTS Divine Clinopyroxene	tively fre e the orth opyroxene 1 (Piece 4 nopyroxene 05-4 mm ate, mesh PERCENT PRESENT 33 3	PERCENT ORIGINAL 83-85 3	<pre>e unchangee are bent. m) rpentinized SIZE (mm) 0.05-3 0.2-1.5</pre>	d. Both olivir Orthopyroxene OBSERVER: SAB harzburgite compo- SITION	e and orthopyroxene grain has inclusions of anhedr WHERE SAMPLED: C MORPHOLOGY Anhedral Subhedral-anhedra	s exhibit recrystallization; exsolved al olivine and possible onical Seamount, southeast flank COMMENTS Altering to mesh serpentine. 1 Primary clinopyroxene grains; also as overolution lumplas
COMMENTS: Rela leav clin clin 25-779A-15R-0: COCK NAME: Clin FRAIN SIZE: 0.0 FEXTURE: Cumula FRIMARY INERALOGY PHENOCRYSTS Divine Clinopyroxene Spinel prthopyroxene	tively free the orth opyroxene 1 (Piece 4 nopyroxene 05-4 mm ate, mesh PERCENT PRESENT 33 3 1 12	hopyroxer lamellae (?). ,15-17 c -rich se PERCENT ORIGINAL 83-85 3 2 12	<pre>e unchangee are bent. m) rpentinized (mm) 0.05-3 0.2-1.5 0.05-1 0.5-4</pre>	d. Both olivir Orthopyroxene OBSERVER: SAB harzburgite COMPO- SITION	e and orthopyroxene grain has inclusions of anhedr WHERE SAMPLED: C MORPHOLOGY Anhedral Subhedral-anhedra Subhedral-anhedra	<pre>s exhibit recrystallization; exsolved al olivine and possible onical Seamount, southeast flank COMMENTS Altering to mesh serpentine. 1 Primary clinopyroxene grains; also as exsolution lamellae. 1 Red; altering to magnetite. 1 No good serpentine bastite formed; only minor alteration to serpentine.</pre>
COMMENTS: Rela leav clin clin 25-779A-15R-0: OCK NAME: Clin RAIN SIZE: 0.( EXTURE: Cumula CINERALOGY PHENOCRYSTS clivine Clinopyroxene pinel prthopyroxene GROUNDMASS	tively fre e the orth opyroxene 0 (Piece 4 nopyroxene 05-4 mm ate, mesh D5-4 mm ate, mesh PERCENT PRESENT 33 3 1 12 N/A	PERCENT ORIGINAL 83-85 2 12	<pre>size unchanges are bent. m) rpentinized (mm) 0.05-3 0.2-1.5 0.05-1 0.5-4 N/A</pre>	d. Both olivir Orthopyroxene OBSERVER: SAB harzburgite COMPO- SITION	e and orthopyroxene grain has inclusions of anhedr WHERE SAMPLED: C MORPHOLOGY Anhedral Subhedral-anhedra Subhedral-anhedra	s exhibit recrystallization; exsolved al olivine and possible onical Seamount, southeast flank COMMENTS Altering to mesh serpentine. 1 Primary clinopyroxene grains; also as exsolution lamellae. 1 Red; altering to magnetite. 1 No good serpentine bastite formed; only minor alteration to serpentine.
COMMENTS: Rela leav clin clin 25-779A-15R-0: OCK NAME: Clir RAIN SIZE: 0.( EXTURE: Cumula INERALOGY PHENOCRYSTS livine linopyroxene pinel rthopyroxene GROUNDMASS /A	tively fre e the orth opyroxene 1 (Piece 4 nopyroxene 05-4 mm ate, mesh PERCENT PRESENT 33 1 12 N/A	hopyroxer lamellae (?). ,15-17 c -rich se PERCENT ORIGINAL 83-85 3 2 12 N/A	size (mm) size bent. size (mm) 0.05-3 0.2-1.5 0.05-1 0.5-4 N/A	d. Both olivir Orthopyroxene OBSERVER: SAB I harzburgite COMPO- SITION	MORPHOLOGY Anhedral Subhedral-anhedra Subhedral-anhedra N/A	s exhibit recrystallization; exsolved al olivine and possible onical Seamount, southeast flank COMMENTS Altering to mesh serpentine. 1 Primary clinopyroxene grains; also as exsolution lamellae. 1 Red; altering to magnetite. 1 No good serpentine bastite formed; only minor alteration to serpentine.
COMMENTS: Rela leav clin clin 25-779A-15R-0: OCK NAME: Clir RAIN SIZE: 0.( EXTURE: Cumula INERALOGY PHENOCRYSTS livine linopyroxene pinel rthopyroxene GROUNDMASS /A ECONDARY	tively fre e the orth opyroxene 1 (Piece 4 nopyroxene 05-4 mm ate, mesh PERCENT PRESENT 33 3 1 12 N/A	hopyroxer lamellae (?). ,15-17 c -rich se PERCENT ORIGINAL 83-85 3 2 12 N/A REPL	<pre>size unchanges are bent. m) rpentinized (mm) 0.05-3 0.2-1.5 0.05-1 0.5-4 N/A ACING/</pre>	d. Both olivir Orthopyroxene OBSERVER: SAB i harzburgite COMPO- SITION	<pre>More and orthopyroxene grain has inclusions of anhedr WHERE SAMPLED: C MORPHOLOGY Anhedral Subhedral-anhedra Subhedral-anhedra Subhedral-anhedra</pre>	s exhibit recrystallization; exsolved al olivine and possible onical Seamount, southeast flank COMMENTS Altering to mesh serpentine. 1 Primary clinopyroxene grains; also as exsolution lamellae. 1 Red; altering to magnetite. 1 No good serpentine bastite formed; only minor alteration to serpentine.
COMMENTS: Rela leav clin clin 25-779A-15R-0: OCK NAME: Clin RAIN SIZE: 0.0 EXTURE: Cumula INERALOGY PHENOCRYSTS livine linopyroxene pinel rthopyroxene GROUNDMASS /A ECONDARY INERALOGY erpentine	tively fre e the orth opyroxene 1 (Piece 4 nopyroxene 05-4 mm ate, mesh PERCENT PRESENT 33 3 1 12 N/A PERCENT 50	hopyroxer lamellae (?). ,15-17 c -rich se PERCENT ORIGINAL 83-85 3 2 12 N/A REPL FILL Olivine	<pre>min period are bent. m) rpentinized size (mm) 0.05-3 0.2-1.5 0.05-1 0.5-4 N/A ACING/ ING , orthopyrc</pre>	d. Both olivir Orthopyroxene OBSERVER: SAB harzburgite COMPO- SITION	ne and orthopyroxene grain has inclusions of anhedr WHERE SAMPLED: C MORPHOLOGY Anhedral Subhedral-anhedra Subhedral-anhedra Subhedral-anhedra	s exhibit recrystallization; exsolved al olivine and possible onical Seamount, southeast flank COMMENTS Altering to mesh serpentine. 1 Primary clinopyroxene grains; also as exsolution lamellae. 1 Red; altering to magnetite. 1 No good serpentine bastite formed; only minor alteration to serpentine. COMMENTS /or chrysotile altering olivine along fracture
COMMENTS: Rela leav clin clin 25-779A-15R-0: OCK NAME: Clin RAIN SIZE: 0.0 EXTURE: Cumula CLIN RIMARY INERALOGY PHENOCRYSTS livine linopyroxene pinel rthopyroxene GROUNDMASS /A ECONDARY INERALOGY erpentine agnetite	tively fre e the orth opyroxene 1 (Piece 4 nopyroxene 05-4 mm ate, mesh PERCENT PRESENT 33 1 12 N/A PERCENT 50	hopyroxer lamellae (?). ,15-17 c -rich se -rich se PERCENT ORIGINAL 83-85 3 2 12 N/A REPL FILL Olivine Spice'	<pre>e unchanges are bent. m) rpentinized (mm) 0.05-3 0.2-1.5 0.05-1 0.5-4 N/A ACING/ ING , orthopyro</pre>	d. Both olivir Orthopyroxene OBSERVER: SAB i harzburgite COMPO- SITION	<pre>More and orthopyroxene grain has inclusions of anhedr WHERE SAMPLED: C MORPHOLOGY Anhedral Subhedral-anhedra Subhedral-anhedra Subhedral-anhedra N/A Lizardite and and forming m Dustry 0 1.mm</pre>	s exhibit recrystallization; exsolved al olivine and possible onical Seamount, southeast flank COMMENTS Altering to mesh serpentine. Primary clinopyroxene grains; also as exsolution lamellae. Red; altering to magnetite. No good serpentine bastite formed; only minor alteration to serpentine. COMMENTS /or chrysotile altering olivine along fracture esh texture.
COMMENTS: Rela leav clin clin 25-779A-15R-01 OCK NAME: Clin RAIN SIZE: 0.0 EXTURE: Cumula CEXTURE: CUMULA CEXT	tively fre e the orth opyroxene 1 (Piece 4 nopyroxene 05-4 mm ate, mesh PERCENT PRESENT 33 1 12 N/A PERCENT 50 1	hopyroxer lamellae (?). ,15-17 c rich se PERCENT ORIGINAL 83-85 3 2 12 N/A REPL FILL Olivine Spinel	size (mm) size bent. size (mm) 0.05-3 0.2-1.5 0.05-1 0.5-4 N/A ACING/ ING , orthopyrc	d. Both olivir Orthopyroxene OBSERVER: SAB i harzburgite COMPO- SITION	<pre>More and orthopyroxene grain has inclusions of anhedr WHERE SAMPLED: C MORPHOLOGY Anhedral Subhedral-anhedra Subhedral-anhedra Subhedral-anhedra N/A Lizardite and and forming m Dusty 0.1-mm</pre>	s exhibit recrystallization; exsolved al olivine and possible onical Seamount, southeast flank COMMENTS Altering to mesh serpentine. 1 Primary clinopyroxene grains; also as exsolution lamellae. 1 Red; altering to magnetite. 1 No good serpentine bastite formed; only minor alteration to serpentine. COMMENTS /or chrysotile altering olivine along fracture esh texture. grains; some elongated trails are formed.

COMMENTS: Orthopyroxene has wavy extinction, bent exsolution lamellae but is still relatively fresh and not altered to serpentine. Olivine has wavy extinction and serpentine alteration along fractures forming mesh texture; some olivines may be recrystallized(?). Portions of slide appear fresh and portions appear altered and tectonized.

## 125-779A-15R-02 (Piece 3,18-20 cm)

OBSERVER: TER

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.01-5 mm

#### TEXTURE: Mesh

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-	1203131	911254×113		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORE	PHOLOGY	COMMENTS	
PHENOCRYSTS								
Olivine	21	87	1-5		Anheo	iral	Altering to serpentine mesh texture;	
							appears deformed and kinked, wavy	
							extinction.	
Clinopyroxene	<1	<1	0.1-1		Subhe	edral-anhedral	Appears as small patches.	
Spinel	1	1	0.01-1	Cr	Subhe	edral-anhedral	Red brown; altered to magnetite.	
Orthopyroxene	/	12	1-3		Anheo	iral	Altered to serpentine bastite texture;	
							wavy excinction.	
GROUNDMASS								
N/A	N/A	N/A	N/A		N/A			
SECONDARY		REPI	ACING/					
MINERALOGY	PERCENT	FILI	LING				COMMENTS	
Serpentine	70	Olivine	, orthopyr	oxene	1	Lizardite and/or	chrysotile forming mesh and bastite	
Magnetite		Codesal			1	textures.		
Magnetite	T	spinei			1	Dusty 0.1-mm grai	ins, most are concentrated in veins as	
						elongace craits a	ind also in mesh edges.	
VESICLES/			SIZE					
CAVITIES	PERCENT	LOCATIO	N (mm)		FILLING		SHAPE	
Vesicles	0							
COMMENTS: Some	spinels a	are elong	pated into	trails; olivine	is kink-bar	nded. Olivine and	l orthopyroxene have wavy	
extin	iction; se	ome ortho	opyroxene a	ppear to have a	inhedral oliv	vine inclusions.		
							지수는 그리는 사람이 아직에 많은 지수가 유가에서 가지 않는 것을 들었다. 것을 들었다.	
125-779A-15R-02	(Piece 3	3,24-27 c	:m)	OBSERVER: SAB	WHEF	RE SAMPLED: Conic	al Seamount, southeast flank	
125-779A-15R-02	(Piece :	3,24-27 c	:m)	OBSERVER: SAB	WHEF	RE SAMPLED: Conic	al Seamount, southeast flank	
125-779A-15R-02 ROCK NAME: Serg	(Piece ) Pentinized	3,24-27 c i dunite	:m)	OBSERVER: SAB	WHEF	RE SAMPLED: Conic	al Seamount, southeast flank	
125-779A-15R-02 ROCK NAME: Serp GRAIN SIZE: 0.1	(Piece ) pentinized -4 mm	3,24-27 c 1 dunite	:m)	OBSERVER: SAB	WHEF	RE SAMPLED: Conic	al Seamount, southeast flank	
125-779A-15R-02 ROCK NAME: Serr GRAIN SIZE: 0.1	(Piece 3 Pentinized -4 mm	3,24-27 c 1 dunite	:m)	OBSERVER: SAB	WHEF	RE SAMPLED: Conic	al Seamount, southeast flank	
125-779A-15R-02 ROCK NAME: Serr GRAIN SIZE: 0.1 TEXTURE: Mesh t	(Piece 3 pentinized -4 mm exture do	3,24-27 c 1 dunite ominant	:m)	OBSERVER: SAB	WHEF	RE SAMPLED: Conic	al Seamount, southeast flank	
125-779A-15R-02 ROCK NAME: Serg GRAIN SIZE: 0.1 TEXTURE: Mesh t	(Piece 3 Pentinized -4 mm exture do	3,24-27 c i dunite ominant	:m)	OBSERVER: SAB	WHEF	RE SAMPLED: Conic	al Seamount, southeast flank	
125-779A-15R-02 ROCK NAME: Serg GRAIN SIZE: 0.1 TEXTURE: Mesh t	Piece : Pentinized -4 mm exture do	3,24-27 c d dunite ominant	:m)	OBSERVER: SAB	WHEF	RE SAMPLED: Conic	al Seamount, southeast flank	
125-779A-15R-02 ROCK NAME: Serr GRAIN SIZE: 0.1 TEXTURE: Mesh t	(Piece 3 pentinized -4 mm exture do	3,24-27 c 1 dunite pminant	m) Stze	OBSERVER: SAB	WHEF	RE SAMPLED: Conic	al Seamount, southeast flank	
125-779A-15R-02 ROCK NAME: Serp GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY	Piece : Pentinized -4 mm exture do PERCENT PRESENT	3,24-27 c i dunite ominant PERCENT ORIGINAL	m) SIZE	OBSERVER: SAB	WHEF	RE SAMPLED: Conic	al Seamount, southeast flank	
125-779A-15R-02 ROCK NAME: Serp GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY	(Piece 3 pentinized -4 mm exture do PERCENT PRESENT	3,24-27 c d dunite ominant PERCENT ORIGINAI	SIZE , (mm)	OBSERVER: SAB COMPO- SITION	WHEF	RE SAMPLED: Conic	al Seamount, southeast flank	
125-779A-15R-02 ROCK NAME: Serp GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS	(Piece 3 pentinized -4 mm exture do PERCENT PRESENT	3,24-27 c d dunite ominant PERCENT ORIGINAI	m) SIZE (mm)	OBSERVER: SAB COMPO- SITION	WHEF	RE SAMPLED: Conic	al Seamount, southeast flank	
125-779A-15R-02 ROCK NAME: Serg GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine	(Piece 3 eentinized -4 mm eexture do PERCENT PRESENT 10	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97	size (mm) 1-3	OBSERVER: SAB COMPO- SITION	WHEF MORE Anheo	RE SAMPLED: Conic	al Seamount, southeast flank COMMENTS Altered to serpentine mesh texture.	
125-779A-15R-02 ROCK NAME: Serr GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel	(Piece 3 pentinized -4 mm exture do PERCENT PRESENT 10 0.3	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1	SIZE (mm) 1-3 0.1-0.5	OBSERVER: SAB COMPO- SITION Cr	WHEF MORE Anhec Subhe	RE SAMPLED: Conic PHOLOGY dral edral-anhedral	al Seamount, southeast flank COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and	
125-779A-15R-02 ROCK NAME: Serr GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel	(Piece 3 pentinized -4 mm exture do PERCENT PRESENT 10 0.3	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1	SIZE (mm) 1-3 0.1-0.5	OBSERVER: SAB COMPO- SITION Cr	WHEF MORE Anhec Subhe	RE SAMPLED: Conic PHOLOGY dral edral-anhedral	COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite.	
125-779A-15R-02 ROCK NAME: Serr GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene	Piece : entinized -4 mm exture do PERCENT PRESENT 10 0.3 0	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1 2-5	SIZE (mm) 1-3 0.1-0.5 1-4	OBSERVER: SAB COMPO- SITION Cr	WHEF MORE Anheo Subhe N/A	RE SAMPLED: Conic PHOLOGY dral edral-anhedral	al Seamount, southeast flank COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite	
125-779A-15R-02 ROCK NAME: Serp GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene	Piece 3 -4 mm exture do PERCENT PRESENT 10 0.3 0	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1 2-5	m) SIZE (mm) 1-3 0.1-0.5 1-4	OBSERVER: SAB COMPO- SITION Cr	WHEF MORE Anheo Subhe N/A	RE SAMPLED: Conic PHOLOGY dral edral-anhedral	COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely.	
125-779A-15R-02 ROCK NAME: Serg GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene	Piece : entinized -4 mm exture do PERCENT PRESENT 10 0.3 0	3,24-27 c d dunite ominant PERCENT ORIGINAL 94-97 1 2-5	SIZE (mm) 1-3 0.1-0.5 1-4	OBSERVER: SAB COMPO- SITION Cr	WHEF MORE Anheo Subhe N/A	RE SAMPLED: Conic PHOLOGY iral edral-anhedral	COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely.	
125-779A-15R-02 ROCK NAME: Serg GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A	Piece : entinized -4 mm exture do PERCENT PRESENT 10 0.3 0 N/A	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1 2-5 N/A	SIZE (mm) 1-3 0.1-0.5 1-4	OBSERVER: SAB COMPO- SITION Cr	WHEF MORE Anheo Subhe N/A	RE SAMPLED: Conic PHOLOGY dral edral-anhedral	COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely.	
125-779A-15R-02 ROCK NAME: Serg GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A	(Piece 3 pentinized -4 mm exture do PERCENT PRESENT 10 0.3 0 N/A	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1 2-5 N/A	m) SIZE (mm) 1-3 0.1-0.5 1-4 N/A	OBSERVER: SAB COMPO- SITION Cr	WHEF MORE Anheo Subhe N/A	RE SAMPLED: Conic PHOLOGY dral edral-anhedral	COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely.	
125-779A-15R-02 ROCK NAME: Serp GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A SECONDARY	(Piece 3 pentinized -4 mm eexture do PERCENT PRESENT 10 0.3 0 N/A	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1 2-5 N/A REPI	m) SIZE (mm) 1-3 0.1-0.5 1-4 N/A .ACING/	OBSERVER: SAB COMPO- SITION Cr	WHEF MORE Anheo Subhe N/A	RE SAMPLED: Conic	COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely.	
125-779A-15R-02 ROCK NAME: Serr GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A SECONDARY MINERALOGY	<pre>(Piece 3 pentinized -4 mm eexture do PERCENT PRESENT 10 0.3 0 N/A PERCENT</pre>	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1 2-5 N/A REPI FILI	m) SIZE (mm) 1-3 0.1-0.5 1-4 N/A .ACING/ .ING	OBSERVER: SAB COMPO- SITION Cr	WHEF MORE Anheo Subhe N/A N/A	RE SAMPLED: Conic	COMMENTS COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely.	
125-779A-15R-02 ROCK NAME: Serr GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A SECONDARY MINERALOGY Chlorite	<pre>(Piece : pentinized -4 mm exture do PERCENT PRESENT 10 0.3 0 N/A PERCENT &lt;1</pre>	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1 2-5 N/A REPI FILI Serpent	m) SIZE (mm) 1-3 0.1-0.5 1-4 N/A ACING/ JING tine, spine	OBSERVER: SAB COMPO- SITION Cr	WHEF MORE Subhe N/A N/A	RE SAMPLED: Conic PHOLOGY dral edral-anhedral	COMMENTS COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely.	
125-779A-15R-02 ROCK NAME: Serg GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A SECONDARY MINERALOGY Chlorite	Percent PERCENT PRESENT 10 0.3 0 N/A PERCENT <1	3,24-27 c d dunite ominant PERCENT ORIGINAI 94-97 1 2-5 N/A REPI FILI Serpent	SIZE (mm) 1-3 0.1-0.5 1-4 N/A .ACING/ .ING ine, spine	OBSERVER: SAB COMPO- SITION Cr	WHEF MORE Subhe N/A N/A	RE SAMPLED: Conic PHOLOGY iral edral-anhedral Blue green yellow serpentine, also	COMMENTS COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely.	
125-779A-15R-02 ROCK NAME: Serg GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A SECONDARY MINERALOGY Chlorite Serpentine	<pre>(Piece : pentinized -4 mm exture do PERCENT PRESENT 10 0.3 0 N/A PERCENT &lt;1 82</pre>	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1 2-5 N/A REPI FILI Serpent Olivine	SIZE (mm) 1-3 0.1-0.5 1-4 N/A .ACING/ .ING :ine, spine e, orthopyr	OBSERVER: SAB COMPO- SITION Cr Cr	WHEF MORE Anheo Subhe N/A N/A	RE SAMPLED: Conic PHOLOGY iral edral-anhedral Blue green yellow serpentine, also Lizardite and/or	COMMENTS COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely. COMMENTS pleochroic; anhedral patches within rimming some spinel. chrysotile forms mesh texture throughout	
125-779A-15R-02 ROCK NAME: Serp GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A SECONDARY MINERALOGY Chlorite Serpentine	Piece : entinized -4 mm exture do PERCENT PRESENT 10 0.3 0 N/A PERCENT <1 82 5	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1 2-5 N/A REPI FILI Serpent Olivine	m) SIZE (mm) 1-3 0.1-0.5 1-4 N/A ACING/ ING tine, spine t, orthopyr	OBSERVER: SAB COMPO- SITION Cr Cr	WHEF MORE Anhec Subhe N/A N/A	RE SAMPLED: Conic PHOLOGY dral edral-anhedral Blue green yellow serpentine, also bizardite and/or the slide.	COMMENTS COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely. COMMENTS pleochroic; anhedral patches within rimming some spinel. chrysotile forms mesh texture throughout	
125-779A-15R-02 ROCK NAME: Serr GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A SECONDARY MINERALOGY Chlorite Serpentine Brucite?	<pre>(Piece 3 pentinized -4 mm eexture do PERCENT PRESENT 10 0.3 0 N/A PERCENT &lt;1 82 5 2</pre>	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1 2-5 N/A REPI FILI Serpent Olivine Colivine	SIZE (mm) 1-3 0.1-0.5 1-4 N/A .ACING/ .ING iine, spine e, orthopyr e, orthopyr	OBSERVER: SAB COMPO- SITION Cr Cr	WHEF MORE Anheo Subhe N/A N/A	RE SAMPLED: Conic PHOLOGY dral edral-anhedral Blue green yellow serpentine, also Lizardite and/or the slide. Decurs in veins c	COMMENTS COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely. COMMENTS pleochroic; anhedral patches within rimming some spinel. chrysotile forms mesh texture throughout mutting slide; XRD determination is needed	
125-779A-15R-02 ROCK NAME: Serp GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A SECONDARY MINERALOGY Chlorite Serpentine Brucite? Magnetite	<pre>(Piece : pentinized -4 mm exture dd PERCENT PRESENT 10 0.3 0 N/A PERCENT &lt;1 82 5 2</pre>	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1 2-5 N/A REPI FILI Serpent Olivine Spinel	m) SIZE (mm) 1-3 0.1-0.5 1-4 N/A ACING/ ING :ine, spine e, orthopyr	OBSERVER: SAB COMPO- SITION Cr Cr	WHEF MORE Subhe N/A N/A	RE SAMPLED: Conic PHOLOGY dral edral-anhedral Blue green yellow serpentine, also Lizardite and/or the slide. Docurs in veins c Dusty 0.1-mm grai	COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely. COMMENTS pleochroic; anhedral patches within rimming some spinel. chrysotile forms mesh texture throughout putting slide; XRD determination is needed ns; occurs concentrated in veins.	
125-779A-15R-02 ROCK NAME: Serg GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A SECONDARY MINERALOGY Chlorite Serpentine Brucite? Magnetite VESICLES/	<pre>(Piece : pentinized -4 mm exture do PERCENT PRESENT 10 0.3 0 N/A PERCENT &lt;1 82 5 2</pre>	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1 2-5 N/A REPI FILI Serpent Olivine Spinel	m) SIZE (mm) 1-3 0.1-0.5 1-4 N/A ACING/ ING ine, spine s, orthopyr s, orthopyr	OBSERVER: SAB COMPO- SITION Cr Cr	WHEF MORE Subhe N/A N/A	RE SAMPLED: Conic PHOLOGY dral edral-anhedral Alue green yellow serpentine, also Lizardite and/or the slide. Docurs in veins c Dusty 0.1-mm grai	COMMENTS COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely. COMMENTS pleochroic; anhedral patches within rimming some spinel. chrysotile forms mesh texture throughout mutting slide; XRD determination is needed ns; occurs concentrated in veins.	
125-779A-15R-02 ROCK NAME: Serr GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A SECONDARY MINERALOGY Chlorite Serpentine Brucite? Magnetite	Piece : Pentinized -4 mm exture do PERCENT PRESENT 10 0.3 0 N/A PERCENT <1 82 5 2 PERCENT	3,24-27 c i dunite pminant PERCENT ORIGINAL 94-97 1 2-5 N/A REPI FILL Serpent Olivine Olivine Spinel	m) SIZE (mm) 1-3 0.1-0.5 1-4 N/A .ACING/ .ING ine, spine s, orthopyr s, orthopyr SIZE NN (mm)	OBSERVER: SAB	WHEF MORE Anhec Subhe N/A N/A I S I I C I I I I I I I I I I I I I I I	RE SAMPLED: Conic PHOLOGY dral edral-anhedral Blue green yellow serpentine, also Lizardite and/or the slide. Docurs in veins c Dusty 0.1-mm grai	COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely. COMMENTS pleochroic; anhedral patches within rimming some spinel. chrysotile forms mesh texture throughout autting slide; XRD determination is needed ns; occurs concentrated in veins.	
125-779A-15R-02 ROCK NAME: Serp GRAIN SIZE: 0.1 TEXTURE: Mesh t PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A SECONDARY MINERALOGY Chlorite Serpentine Brucite? Magnetite VESICLES/ CAVITIES VesicLes	Piecent Pentinized -4 mm exture do PERCENT PRESENT 10 0.3 0 N/A PERCENT <1 82 5 2 PERCENT 0	3,24-27 c i dunite ominant PERCENT ORIGINAI 94-97 1 2-5 N/A REPI FILI Serpent Olivine Olivine Spinel	m) SIZE (mm) 1-3 0.1-0.5 1-4 N/A .ACING/ .ING .ine, spine e, orthopyr e, orthopyr SIZE N (mm)	OBSERVER: SAB	WHEF MORE Anheo Subhe N/A N/A E S I t t C I FILLING	RE SAMPLED: Conic PHOLOGY iral edral-anhedral Blue green yellow serpentine, also Lizardite and/or the slide. Douty 0.1-mm grai	COMMENTS Altered to serpentine mesh texture. Red brown; altered to magnetite and chlorite. Altered to serpentine bastite completely. COMMENTS pleochroic; anhedral patches within rimming some spinel. chrysotile forms mesh texture throughout mutting slide; XRD determination is needed ins; occurs concentrated in veins.	

COMMENTS: Veining occurs mostly at 40 degrees angle from the long axis of slide. Veins also serpentine (chrysotile) and brucite, and magnetite assemblage. They are ~0.01-0.05 mm wide. Veining seems to be post-serpentinization. Mesh texture appears tectonized in portions of slide. Some spinels are rimmed by yellow-brown interference color mineral (fibers) which may be another oxide phase.

## **SITE 779**

125-779A-15R-02 (Piece 5,37-40 cm) OBSERVER: SAB WHERE SAMPLED: Conical Seamount, southeast flank ROCK NAME: Serpentinized harzburgite GRAIN SIZE: 0.5-3 mm TEXTURE: Cataclastic PRIMARY PERCENT PERCENT SIZE COMPO-MINERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENOCRYSTS Olivine 40 81 0.5-2 Anhedral Highly fractured, broken up, and altering to serpentine. Clinopyroxene 1 1 0.1-0.3 Subhedral-anhedral As exsolution lamellae, also anhedral grains. Spinel 0.5-2 3 3 Cr Subhedral-anhedral Red brown; altered to magnetite. Orthopyroxene 10 15 0.5-3 Subhedral-anhedral Altered to serpentine bastite; wavy extinction. GROUNDMASS N/A N/A N/A N/A N/A SECONDARY REPLACING/ MINERALOGY PERCENT FILLING COMMENTS Serpentine 45 Olivine, orthopyroxene Lizardite and/or chrysotile mainly occur in larger veins, criss-crossing the slide almost perpendicular to one another. Magnetite 1 Spinel Dusty grains concentrated in veins mostly. _____ VESICLES/ SIZE CAVITIES PERCENT LOCATION (mm) FILLING SHAPE Vesicles 0 COMMENTS: Orthopyroxene has wavy extinction, bent clinopyroxene exsolution lamellae; olivine has wavy extinction; most of serpentine in slide is concentrated in a number of criss-crossing veins (0.2-0. 5 mm wide). The rest of slide has tectonized (mylonitized) olivine and orthopyroxene grains. 125-779A-15R-02 (Piece 17,110-111 cm) OBSERVER: SAB WHERE SAMPLED: Conical Seamount, southeast flank ROCK NAME: Serpentinized dunite GRAIN SIZE: 0.2-7 mm TEXTURE: Porphyroblastic PRIMARY PERCENT PERCENT SIZE COMPO-MINERALOGY PRESENT ORIGINAL (mm) COMMENTS SITION MORPHOLOGY PHENOCRYSTS Olivine 97 0.2-7 Euhedral-anhedral Relic grains are anhedral to subhedral 54 and neoblasts are subhedral to euhedral. Spinel 1 2 0.5-2 Cr Euhedral-anhedral Red; altered to magnetite, chlorite. No bastite visible; orthopyroxene is Orthopyroxene Trace Trace 3 Anhedral severely fractured and tectonized. GROUNDMASS N/A N/A N/A N/A N/A SECONDARY REPLACING/ COMMENTS MINERALOGY PERCENT FILLING Pale brown; forming feather-like crystals. Clavs Vein 2 Chlorite <1 Spinel, serpentine Pale green to colorless; rims some spinels and in some veins. Mostly lizardite and/or chrysotile occurring in vicinity of Serpentine 40 major veining. Minor antigorite blades are visible. Magnetite 2 Dusty 0.2-mm elongated trails; concentrated in veins as well Spinel as throughout slide.

as throughout slide.
VESICLES/ SIZE
CAVITIES PERCENT LOCATION (mm) FILLING SHAPE
Vesicles 0

COMMENTS: This slide is pervasively tectonized. Recrystallized olivine subgrains occur as an aggregate of fine-grained crystals. A portion of recrystallized olivine grains occur along the cleavages or rim of the olivine crystals (7 mm across). Olivines (relic) have wavy extinction and kink-banding; spinels show alteration to another mineral phase (brown interference, fibers), and then to anomalous blue chlorite(?). Veins may occur as a conjugate set with 30-150 degrees orientation.

## 125-779A-16R-01 (Piece 3,16-19 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.05-10 mm

TEXTURE: Porphyroblastic, felted

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PRIMARY	PERCENT	PERCENT	SIZE	COMPO-			
MINERALOGY	PRESENT	ORIGINAL	L (mm)	SITION	M	ORPHOLOGY	COMMENTS
PHENOCRYSTS							
Olivine	50	86	0.1-10		Sul	bhedral-anhedral	Kink-banded, neoblasts; hardly serpentinized, some grains appear elongated.
Spinel	1	2	0.05-2	Cr	Sul	ohedral-anhedral	Red; altered to magnetite; some elongated.
Orthopyroxene	7	12	1-3		Sul	phedral-anhedral	Altered to serpentine bastite. Some grains appear elongated.
GROUNDMASS							
N/A	N/A	N/A	N/A		N/1	A	
SECONDARY		REPI	LACING/				
MINERALOGY	PERCENT	FILI	LING				COMMENTS
Chlorite	<1	Spinel				Colorless; anoma around some spin	alous, blue interference color; located mels mostly.
Serpentine	40	Olivine	e, orthop	yroxene		Appears to be mo serpentine veins chrysotile fiber cleavages.	ostly bladed antigorite concentrated in Might be some lizardite present; s are present in veins and along olivine
Magnetite	2	Spinel				Dusty 0.3-mm elo portion and in v	ongate; distributed throughout serpentinized reins.
VESICLES/			SIZE				
CAVITIES	PERCENT	LOCATIO	ON (mm)		FILLING		SHAPE
Vesicles	0						

COMMENTS: Elongated Cr-spinels arranged in trains; one set crossing a vein shows a well-formed "sinistral" shear. Orthopyroxene shows wavy extinction and exsolved clinopyroxene lamellae are bent. Orthopyroxene and spinels are altered but olivine appears relatively fresh, but still has wavy extinction and kink-bands. Some olivine has recrystallized into neoblastic subgrains. Veins are oriented mostly parallel and are ~40 degrees to long axis of slide (0.2-2 mm wide). Spinels are also altered to a mineral with brownish anomalous interference color (could be another oxide phase), also altered to chlorite(?).

#### **SITE 779**

125-779A-16R-01 (Piece 3,19-23 cm)		OBSERVER: SAB	WHERE SAMPLED: Coni	cal Seamount, southeast flank		
ROCK NAME: Dun	ite					
GRAIN SIZE: 0.	01-6 mm					
TEXTURE: Porph	yroblasti	c-grano	blastic			
PRIMARY	PERCENT	PERCEN	T SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGIN	AL (mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	76-81	95	0.1-6		Anhedral	Kink-banded, elongated, wavy extinction recrytallized neoblasts.
Clinopyroxene	<1	<1	0.01		Subhedral-anhedral	Small patch of crystals in slide.
Spinel	0.5	1.5	0.05-0.5	Cr?	Subhedral-anhedral	Red; some altered to magnetite; elongated trains.
Orthopyroxene	2	3	1-2		Subhedral-anhedral	Altered to serpentine bastite.
GROUNDMASS						
N/A	N/A	N/A	N/A		N/A	
SECONDARY		RE	PLACING/			
MINERALOGY	PERCENT	FI	LLING			COMMENTS
Serpentine 15-20					Mostly antigorit cross the slide fibers are also	e blades forming 1-3 mm wide veins which perpendicular to each other. Chrysotile present. Lizardite may be present.
Magnetite 1					Dusty 0.1-mm anh along cleavages.	edral grains distributed mostly in veins and

VESICLES/ SIZE CAVITIES PERCENT LOCATION (mm) FILLING SHAPE Vesicles 0

COMMENTS: Relatively fresh tectonized dunite. There were two slides made from this rock. The other slide (779A 16R-01 16-19) is described as a serpentinized hazzburgite. Orthopyroxene is altered to serpentine while olivine is still very fresh and recrystallized in portions; two vein sets running perpendicular to one another and composed of serpentine and magnetite; rest of slide is recrystallized. Tectonized olivine grains elongated parallel to 2nd generation veins.
## 125-779A-16R-01 (Piece 6,37-40 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Harzburgite

GRAIN SIZE: 0.01-4 mm

TEXTURE: Cataclastic, granoblastic (minor mesh)

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-			
MINERALOGY	PRESENT	ORIGINAL	L (mm)	SITION	MORE	HOLOGY	COMMENTS
PHENOCRYSTS							
Olivine	69	83	0.01-4		Anheo	Iral	Kink-banded, wavy extinction, elongated neoblasts; altering to serpentine (poor mesh).
Clinopyroxene	<1	<1	0.01-0.05		Anheo	Iral	Exsolution lamellae in orthopyroxene, small anhedral patches.
Spinel	<1	2	0.05-1	Cr	Anheo	Iral	Red; altered to magnetite.
Orthopyroxene	7	15	0.5-4		Subhe	dral-anhedral	Altering to serpentine bastite; has (100) lamellae of clinopyroxene, wavy extinction, elongated.
GROUNDMASS							
N/A	N/A	N/A	N/A		N/A		
SECONDARY		REPI	LACING/				
MINERALOGY	PERCENT	FILI	LING				COMMENTS
Serpentine	25	Olivine	e, orthopy	roxene	1 1	ooks like blade izardite may al entral zone.	d antigorite and fibrous chrysotile, but so be present. Concentrated mostly in
Magnetite	2	Spinel			E	ousty 0.2-mm anh reins.	edral grains concentrated mostly in 4-mm
Talc?	4	Orthopy	yroxene		E C N	longation, exti color; may not h nostly in sheare	nction angle ~ 0 degree; high interference e talc rather mylonitized olivine; appears d central zone as fine-grained fibers.
VESICLES/			SIZE				
CAVITIES	PERCENT	LOCATIO	ON (mm)		FILLING		SHAPE
Vesicles	0						

COMMENTS: Rock is pervasively tectonized. Olivine and orthopyroxene are elongated and deformed (kink-banded and wavy extinction). Orthopyroxene appears to be more extensively altered than olivine; olivine is mostly recrystallized into smaller neoblasts; center of slide appears to be a tectonized or shear zone where most of serpentine is where the primary minerals have been altered, sheared, and practically obliterated. Away from the center zone, the primary minerals are hardly serpentinized, but are elongated, deformed, and recrystallized. Orthopyroxene has small anhedral inclusions of olivine.

125-779A-16R-01 (Piece 8,50-52 cm)

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Harzburgite

GRAIN SIZE: 0.01-0.4 mm

TEXTURE: Cataclastic, granoblastic (minor bastite)

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-			
MINERALOGY	PRESENT	ORIGINAI	, (mm)	SITION	MORI	PHOLOGY	COMMENTS
PHENOCRYSTS							
Olivine	68	84	0.01-4		Anhee	iral	Kinked, elongated, wavy extinction, neoblastic in areas, altering to serpentine (poor mesh).
Clinopyroxene	<1	<1	0.5		Anheo	iral	Exsolution lamellae, small subhedral to anhedral grains (also in orthopyroxene).
Spinel	<1	1	0.1-0.5		Anheo	iral	Dark red brown; altering to magnetite.
Orthopyroxene	7	15	0.5-4		Subh	edral-anhedral	Altered to serpentine bastite, elongate, wavy extinction, recrystallized; associated with talc(?).
GROUNDMASS							
N/A	N/A	N/A	N/A		N/A		
SECONDARY		REPI	ACING/				
MINERALOGY	PERCENT	FILI	ING				COMMENTS
Clays	Trace	Veins			1	Dusty brown clay zone).	along one edge of slide (0.2-mm-thick
Serpentine	20	Olivine	, orthopyr	oxene	1	Could be lizardit Appear concentrat cutting slide.	e and/or chrysotile, also antigorite(?). ed mostly in and near veins (0.2-0.8 mm)
Magnetite	1	Spinel			1	Ousty 0.3-mm elor	gate grains; located mostly in veins.
Talc?	3	Orthopy	roxene		ä	(+)Elongation, hi angle ~ 0 degree. associated with a	<pre>gh interference colors, fibrous, extinction This may or may not be talc but it is lteration of orthopyroxene.</pre>
VESICLES/			SIZE				
CAVITIES Vesicles	PERCENT 0	LOCATIO	N (mm)		FILLING		SHAPE

OBSERVER: SAB

COMMENTS: Rock is severely tectonized; olivine and orthopyroxene are deformed (kink-banded wavy extinction) and elongated. Orthopyroxene appears to be more extensively altered than olivine. Olivine is recrystallizing into small neoblasts. Orthopyroxene has rounded inclusions of olivine and anhedral to subhedral inclusions of clinopyroxene; orthopyroxene also has bent exsolution lamellae, some grains appear recrystallized. Primary crystals are all elongated in same direction which parallel the long direction of slide; some chromite appears rimmed by magnetite. Edge of slide has rim of clays. OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized dunite

GRAIN SIZE: 0.01-5 mm

TEXTURE: Granoblastic-cataclastic (felted in areas, bastite also)

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-			
MINERALOGY	PRESENT	ORIGINAI	(mm)	SITION	MORPHO	LOGY	COMMENTS
PHENOCRYSTS							
Olivine	52	90	0.01- 5		Anhedra	1	Kink-banded, wavy extinction, neoblasts; elongated, altering to serpentine (poor mesh).
Clinopyroxene	Trace	Trace	0.01		Subhedr	al-anhedral	As exsolution lamellae.
Spinel	1	2	0.2-1		Anhedra	1	Dark red brown; altered to magnetite.
Orthopyroxene	3	8	1-4		Subhedr	al-anhedral	Altered to serpentine bastite and talc; kinked, wavy extinction, recrystallized.
GROUNDMASS							
N/A	N/A	N/A	N/A		N/A		
SECONDARY		REPI	ACING/				
MINERALOGY	PERCENT	FILI	ING				COMMENTS
Clays	1	Serpent	ine		Dus wit	ty brown clay h the serpent	located on one side of slide, intermixed ine.
Serpentine	40	Olivine	e, orthop	yroxene	Mos dif mm) vei	tly antigorit ficult to tel which cut sl	e and chrysotile; might be lizardite, but 1. Serpentine is mostly in veins (0.1-0.4 ide and tend to alter minerals closest to
Magnetite	1	Spinel			Dus	ty 0.5-mm elo pentine veins	ngated trains; mostly concentrated in (0.1-0.4 mm).
Talc?	2	Orthopy	roxene		Hig ~0 ort	h birefringen degree; May o hopyroxene al	<pre>ce, (+) elongation, fibrous extinction angle r may not be talc, but associated with teration.</pre>
VESICLES/			SIZE				
CAVITIES	PERCENT	LOCATIO	ON (mm)		FILLING		SHAPE
Vesicles	0						

COMMENTS: Slide appears tectonized. Olivine and orthopyroxene are elongated in a parallel direction that defines a fabric across the slide. Olivine and orthopyroxene are both deformed (kink-banded and wavy extinction) and recrystallized. Serpentine veins appear to have a conjugate set orientation (crudely!!) Tectonic elongation tends to follow first-generation serpentine veins. The second-generation serpentine veins cut across elongation fabric and first-generation vein set. One orthopyroxene grain has clinopyroxene lamellae and is altered to serpentine, but clinopyroxene lamellae still extend into serpentine.

125-779A-16R-02 (Piece 6,44-47 cm)

-47 cm) OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.1-3 mm

TEXTURE: Mesh and bastite

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	18	81	1-3		Anhedral	Wavy extinction altered to serpentine mesh.
Clinopyroxene	5	5	0.1-0.4		Equant-anhedr	al Exsolution lamellae, occur at orthopyroxene edges, fresh.
Spinel	1	2	0.2-0.5	Cr	Anhedral	Red; elongated-ragged alters to magnetite, some clinopyroxene inclusions.
Orthopyroxene	5	12	1-3		Subhedral-anh	edral Ragged appearance in some grains, altered to serpentine bastite.
GROUNDMASS						
N/A	N/A	N/A	N/A		N/A	
SECONDARY		REPL	ACING/			
MINERALOGY	PERCENT	FILL	ING			COMMENTS
Serpentine	70	Olivine	, orthopy	roxene	Lizardite	and/or chrysotile forming mesh and bastite
					textures; crossing	Chrysotile also concentrated in major vein sets slide (0.5-2 mm wide).
Magnetite	1	Spinel			Dusty 0.2 veins.	-mm grains, ragged trains concentrated serpentine
VESICLES/			SIZE			
CAVITIES	PERCENT	LOCATIO	N (mm)		FILLING	SHAPE
Vesicles	0					

COMMENTS: Orthopyroxenes are kink-banded and have bent clinopyroxene exsolution lamellae. Spinels sometimes form ragged trails. Multiple vein sets with a crude conjugate set orientation. Possibly even a crude "Frankenstein" texture in an area. Appears that the 1st-generation vein set developed, then 2nd set and 3rd set, but difficult to decipher. Relatively clinopyroxene-rich harzburgite.

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125-779A-16R-02 (Piece 9,61-64 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.1-5 mm

TEXTURE: Mesh (minor bastite)

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-			
MINERALOGY	PRESENT	ORIGINAL	L (mm)	SITION	MORPHOLO	DGY	COMMENTS
PHENOCRYSTS							
Olivine	20	85	0.1-3		Anhedral		Altering to serpentine mesh, wavy extinction, neoblastic?
Clinopyroxene	2	2	0.8-2		Subhedral	L-anhedral	Exsolution lamellae; and near orthopyroxene margins.
Spinel	1	1	0.5-2	Cr	Ragged-ar	nhedral	Red; altered to magnetite.
Orthopyroxene	10	12	0.5-5		N/A		Altering to serpentine bastite and
							chlorite; have (100) exsolution
							lamellae.
GROUNDMASS							
I/A	N/A	N/A	N/A		N/A		
SECONDARY		REP	LACING/				
MINERALOGY	PERCENT	FIL	LING				COMMENTS
Chlorite	1	Orthop	vroxene		Blue-	-green to ye	llow pleochroism; associated mainly along
					ortho	pyroxene cle	eavages and grains.
Serpentine	65	Olivin	e, orthog	yroxene	Lizar	dite and/or	chrysotile forming mesh and bastite
					textu	ire; chrysot	ile also dominates in multiple veins sets
					(0.2-	-3 mm wide)	crossing slide.
Magnetite	1	Spinel			Dusty most1	y 0.1-mm gra Ly.	ins; disseminated throughout and in veins
VESICLES/			SIZE				
CAVITIES	PERCENT	LOCATI	ON (mm)		FILLING		SHAPE
Vesicles	0						

COMMENTS: Relatively clinopyroxene-rich harzburgite; orthopyroxene has wavy extinction, and inclusions of clinopyroxene and olivine. Spinels have inclusions of serpentine pseudomorphs of round olivine(?); olivine and orthopyroxene may be slightly recrystallized in areas. Very complicated sets of vein criss crossing slide; may be some "Frankentein" texture. One large vein_set (1 cm wide) is cut perpendicular by minor (2 mm wide) veins.

125-779A-16R-02 (Piece 9,74-77 cm)

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Harzburgite

GRAIN SIZE: 0.05-5 mm

TEXTURE: Mesh (minor bastite)

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	48	76.5	1-3		Anhedral	Kink-banded; wavy extinction, altering to serpentine mesh.
Clinopyroxene	2	2	0.05-0.5		Subhedral-an	hedral Exsolution lamellae; small grains near orthopyroxene grains.
Spinel	1	1.5	0.05-4	Cr	Anhedral	Red; elongate trains; has inclusions of olivine(?).
Orthopyroxene	12	20	1-5		Subhedral-an	hedral Altering to serpentine bastite chlorite; (100) clinopyroxene lamellae is well developed.
GROUNDMASS N/A	N/A	N/A	N/A		N/A	
SECONDARY		REPI	ACING/			
MINERALOGY	PERCENT	FILI	ING			COMMENTS
Chlorite	1	Orthopy	roxene		Blue-gree orthopyr	en-pale green pleochroic; forming along oxene cleavages and grains.
Serpentine	35	Olivine	e, orthopy	roxene	Lizardit	e and/or chrysotile forming mesh and bastite throughout slide and in veins.
Magnetite	1	Spinel			Dusty 0. veins ac	1-mm grains concentrated mainly in minor chrysotile ross slide.
VESICLES/			SIZE			
CAVITIES	PERCENT	LOCATIO	ON (mm)		FILLING	SHAPE
vestcies	U					

OBSERVER: SAB

COMMENTS: Relatively fresh serpentinized harzburgite; olivine and orthopyroxene have wavy extinction and kink-banded; orthopyroxene have inclusions of anhedral olivine and subhedral(?) clinopyroxene; some spinels have olivine(?) inclusions and are elongated. Rock is relatively clinopyroxene-rich. Has multiple sets of intersecting serpentine veins (0.1-0.4 mm wide). Spinels and magnetite tend to follow veins which may be 2nd generation(?).

#### 125-779A-16R-02 (Piece 11,117-120 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.1-4 mm

TEXTURE: Mesh (minor bastite)

VESICLES/ CAVITIES	PERCENT	LOCATIO	SIZE N (mm)		FILLING		SHAPE
agnetite	1	Spinel				Dusty 0.1-mm gra	ins concentrated mainly in veins.
erpentine	75	Olivine	, orthopyro	oxene		Lizardite and/or texture. Area ne	chrysotile forming mesh and bastite ar veins are strongly serpentinized and
hlorite	Trace	Orthopy	roxene			Blue-green to pa orthopyroxene fr	ectures and cleavages.
SECONDARY MINERALOGY	PERCENT	REPL	ACING/				COMMENTS
GROUNDMASS N/A	N/A	N/A	N/A		N/1		
Orthopyroxene	10	15	0.2-4		Sub	hedral-anhedral	Altered to serpentine bastite; wavy extinction, (100) exsolution lamellae
pinel	1	1	0.05-1		Sub	hedral-anhedral	Red, altered to magnetite; minor inclusions of olivine(?).
linopyroxene	1	1	0.055		Ani	edral	Exsolution lamellae, grains around orthopyroxene.
PHENOCRYSTS	12	83	0.1-4		Ani	edral	Altered to serpentine mesh; wavy extinction.
INERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MO	RPHOLOGY	COMMENTS

COMMENTS: Orthopyroxene have wavy extinction, kink-banded and clinopyroxene exsolution lamellae which are sometimes bent. Orthopyroxene also have small inclusions of clinopyroxene grains. One orthopyroxene grain appears to have recrystallized across a large fracture cutting its cleavages. Major vein set (1-2 mcm wide) crossing slide and consists of serpentine and magnetite. This vein set is cut by smaller serpentine veins (0.1-3 mm wide) in "Frankenstein" orientation.

125-779A-17R-01 (Piece 17,144-145 cm) OBSERVER: SAB WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized dunite

GRAIN SIZE: 0.01-5 mm

TEXTURE: Porphyroblastic and mesh

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		22101001	
PHENOCRYSTS	PRESENT	ORIGINAL	, (mm)	SITION	MC	RPHOLOGY	COMMENTS
Olivine	31	98	0.01-5	Fo 95	Sub	bhedral-anhedral	Altered to serpentine mesh, 2V=-85. Wavy extinction, neoblastic.
Spinel	1	2	0.05-5		Eul	edral-anhedral	Red-brown, altered to magnetite. Minor inclusions.
GROUNDMASS							
N/A	N/A	N/A	N/A		N/A	V.	
SECONDARY		REPT	ACTNG/				
MINERALOGY	PERCENT	FILI	ING				COMMENTS
Clays	2	Veins				Dusty brown-blue neoblastic areas	clays concentrated mainly in veins and in ; not associated with primary grains.
Serpentine	65	Olivine	, orthopy	roxene		Lizardite and/or concentrated in slide. Serpentin veins.	chrysotile forming mesh. Mostly veins and vein sets (1-5 mm wide) crossing ization of primary minerals is greatest near
Magnetite	1	Spinel				Dusty black grai	ns concentrated in veins.
VESICLES/			STZE				
CAVITIES Vesicles	PERCENT 0	LOCATIO	N (mm)		FILLING		SHAPE

COMMENTS: Rock is tectonized. Olivine shows wavy extinction; elongation and recrystallization into subgrains throughout most of slide. No orthopyroxene is visible as either primary or as bastite. Some olivine grains (neoblasts) show triple junction (120 degrees); possible shear planes in olivine. Veining of chrysotile is abundant throughout slide.

125-779A-17R-02 (Piece 3,17-20 cm)

OBSERVER: SAB WH

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Harzburgite

GRAIN SIZE: 0.1-5 mm

TEXTURE: Cataclastic

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-			
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	M	ORPHOLOGY	COMMENTS
PHENOCRYSTS							
Olivine	48	73	0.1-5		Sul	bhedral-anhedral	Kink-banded, wavy extinction, altering to serpentine (poor mesh serpentine).
Clinopyroxene	Trace	Trace	0.25-0.5		Anl	nedral	As exsolution lamellae.
Spinel	1	2	0.2-1	Cr	Eul	hedral-anhedral	Red brown; altered to magnetite, elongate.
Orthopyroxene	15	25	0.5-4		Sul	bhedral-anhedral	Altered to serpentine bastite and chlorite has exsolution lamellae of clinopyroxene.
GROUNDMASS							
A/A	N/A	N/A	N/A		N/4	Α	
SECONDARY		REPL	ACING/				
MINERALOGY	PERCENT	FILL	ING				COMMENTS
Chlorite	<1	Orthopy	roxene			Blue-green to pa orthopyroxene cl	ele-yellow pleochroism, found mostly along eavages and fractures.
Serpentine	35	Olivine	, orthopy	yroxene		Mostly lizardite slide. Serpentin vein and its vic	and/or chrysotile in wide vein across mization of primary minerals is greatest in minity.
Magnetite	1	Spinel				Dusty 0.1-mm gra	ins concentrated mainly in veins.
VESICLES/			SIZE				
CAVITIES	PERCENT	LOCATIC	N (mm)		FILLING		SHAPE
Vesicles	0						

COMMENTS: Orthopyroxene is kink-banded, wavy extinction, bent clinopyroxene exsolution lamellae. Olivine is kinked, has wavy extinction, altering to serpentine, but is mainly suffering cataclastic deformation with minor amount of neoblast formation. Slide is tectonized. Have major vein set of serpentine and magnetite (~1 cm wide) crossing slide. The elongation of olivine crudely parallel the veins orientation. Some brighter/yellowish phase in layer spinels, developed along cracks (magnetite, ferric chromite?).

#### 125-779A-17R-02 (Piece 3,21-24 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Harzburgite

GRAIN SIZE: 0.1-4 mm

#### TEXTURE: Cataclastic-granoblastic

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-			
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPH	HOLOGY	COMMENTS
PHENOCRYSTS							
Olivine	47	74	0.1-3		Anhedr	ral	Kinked, wavy extinction, tectonized with minor neoblasts formation; altering to serpentine.
Clinopyroxene	Trace	Trace	N/A		Anhedr	ral	As exsolution lamellae in orthopyroxene. Minor patches.
Spinel	1	1	0.2-0.4	Cr	Subhec	iral-anhedral	Altering to magnetite; minor inclusions of olivine(?).
Orthopyroxene	20	25	1-4		Subhec	iral-anhedral	Wavy extinction, clinopyroxene exsolution lamellae, altered to serpentine bastite(?).
GROUNDMASS							
N/A	N/A	N/A	N/A		N/A		
SECONDARY		REPI	ACING/				
MINERALOGY	PERCENT	FILI	ING				COMMENTS
Chlorite	Trace	Orthopy	roxene		Bl	lue-green to pa thopyroxene cl	le-green pleochroic; associated with eavages and fractures mostly.
Serpentine	30	Olivine	e, orthopy	roxene	Mc se mi	ostly lizardite erpentine veins inerals.	and/or chrysotile; large (0.05-5 mm) cutting slide and altering primary
Magnetite	2	Spinel			Du	isty 0.2-mm gra erpentine veins	ins throughout slide and concentrated along .
VESICLES/			SIZE				
CAVITIES Vesicles	PERCENT 0	LOCATIO	ON (mm)		FILLING		SHAPE

COMMENTS: Rock appears tectonized, but is still fairly fresh. Serpentinization occurs in veins and in the vicinity of veins and decreases as move away from veins. The fresher (non-altered) minerals have been deformed cataclastically and some minor neoblasts have formed from both olivine and orthopyroxene. Orthopyroxene has bent exsolution lamellae, wavy extinction, slight elongation and minor olivine inclusions. Olivine has wavy extinction and kink-bands, but is still fairly fresh and is elongated.

125-779A-17R-03 (Piece 8B,77-80 cm)

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Harzburgite

GRAIN SIZE: 0.05-4 mm

TEXTURE: Cataclastic (w/wo granoblastic and mesh)

CAVITIES	PERCENT	LOCATIO	ON (mm)		FILLING		SHAPE
VESICLES/			SIZE				
Magnetite	1	Spinel				Dusty grains 0.2 elongated trains	-mm anhedral grains concentrated in in veins.
						serpentine veins orientations (0.	(chrysotile) cutting slide at two main 5-3 mm wide).
Serpentine	35	Olivine	, orthopy	roxene		Lizardite and/or	chrysotile forming mesh texture. Abundant
SECONDARY MINERALOGY	PERCENT	REPI	LACING/				COMMENTS
GROUNDMASS N/A	N/A	N/A	N/A		N/A		
							extinction; has inclusions of clinopyroxene(?).
rthopyroxene	10	15	1-4		Sub	hedral-anhedral	Altering to serpentine bastite; wavy
Spinel	1	2	0.05-1		Sub	hedral-anhedral	orthopyroxene. Dark red brown: altered to magnetite.
linopyroxene	Trace	Trace	0.05-5		Sub	hedral-anhedral	lamellae-like kinks; elongate, altered to serpentine, neoblastic. Exsolution lamellae; small grains near
PHENOCRYSTS Divine	53	83	0.05-2		Sub	hedral-anhedral	Kink-banded; wavy extinction,
IINERALOGY	PRESENT	ORIGINAL	L (mm)	SITION	MO	RPHOLOGY	COMMENTS
RIMARI	PERCENT	PERCENT	SIZE	COMPO-			

OBSERVER: SAB

COMMENTS: This slide is severely tectonized. Olivine and orthopyroxene have wavy extinction, elongation and kinks and deformed. Olivine appears more altered and fractured and recrystallized than orthopyroxene. Serpentine veins appear in a conjugate set type orientation and are abundant. In one portion it appears that primary olivine was fractured, then serpentinized into mesh texture, then recrystallized into neoblasts with little or no serpentine mesh rim around it.

#### 125-779A-17R-03 (Piece 8B,80-83 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Harzburgite

#### GRAIN SIZE: 0.01-5 mm

#### TEXTURE: Granoblastic (cataclastic?)

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-			
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPH	OLOGY	COMMENTS
PHENOCRYSTS							
Olivine	43	83	0.05-4		Subhed	ral~anhedral	Wavy extinction; altered to serpentine mesh, microgranoblastic.
Clinopyroxene	<1	<1	0.01-0.5		Anhedra	al	Exsolution lamellae in orthopyroxene; grains near orthopyroxene.
Spinel	1	2	N/A	Cr	Anhedr	al	Red; altered to magnetite; some are elongate.
Orthopyroxene	10	15	1-5		Subhed	ral-anhedral	Altered to serpentine bastite and chlorite, deformed wavy extinction.
GROUNDMASS							
N/A	N/A	N/A	N/A		N/A		
SECONDARY		REPI	ACING/				
MINERALOGY	PERCENT	FILL	ING				COMMENTS
Chlorite	Trace	Orthopy	roxene		Bli	ue-green to pa d cracks.	le-green pleochroic; forms along cleavages
Serpentine	45	Olivine	, orthopy	roxene	Li: or	zardite and/or thopyroxene. F	chrysotile altering from olivine and corming anastomosing veins throughout slide.
Magnetite	1	Spinel			Du th	sty 0.2-mm elo roughout slide	ngate trails concentrated in veins
VESICLES/			SIZE				
CAVITIES Vesicles	PERCENT 0	LOCATIC	ON (mm)		FILLING		SHAPE

COMMENTS: Relatively fresh tectonized harzburgite; Cr-spinel contain inclusions of primary minerals (olivine) and certain irregular veins of a more yellowish reflective phase. Orthopyroxene grains have wavy extinction and clinopyroxene exsolution lamellae are bent; spinels are elongate, ragged, and may be present in trains. Possible cumulus texture. Some of the fresh olivine is microgranular (0.05 mm).

125-779A-17R-04 (Piece 4,44-47 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.05-3 mm

TEXTURE: Granoblastic and mesh

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT	SIZE L (mm)	COMPO- SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS Olivine	27.5	87	0.05-3		Subhedral-anhed	ral Kinked, wavy extinction altering to
Clinopyroxene	Trace	Trace	0.05-0.2		Subhedral-anhed	serpentine mesh, also recrystallizing. ral As exsolution lamellae and minor grains
Spinel	0.5	1	0.2-0.5	Cr	Subhedral-anhed	in orthopyroxene. ral Red; altered to magnetite.
Orthopyroxene	7	12	1-3		Subhedral-anhed	ral Kinked, wavy extinction, altering to serpentine bastite.
GROUNDMASS						
N/A	N/A	N/A	N/A		N/A	
SECONDARY		REP	LACING/			
MINERALOGY	PERCENT	FIL	LING			COMMENTS
Serpentine	65	Olivin	e, orthopy:	coxene	Lizardite a forming mes occur (0.5-	nd/or chrysotile occurring throughout slide and h and minor bastite textures; serpentine veins 3 mm wide) throuchout slide.
Magnetite	1				Fine-graine serpentine	d, dusty, 0.1-mm grains occurring mostly in veins.
VESICLES/ CAVITIES Vesicles	PERCENT	LOCATIO	SIZE DN (mm)		FILLING	SHAPE
alte appe Serp vein 125-779A-19R-0	red than c ar to be r entine vei 2 (Piece )	ecrysta ns occu 13,97-99	cm)	any great degr acific orientat	ee. Orthopyroxene has i ion with a wider zone o WHERE SAMPLED:	nclusions of anhedral clinopyroxene. f serpentinization following the major Conical Seamount, southeast flank
alte appe Serp vein 125-779A-19R-0 ROCK NAME: Dun GRAIN SIZE: 0.	red than c ar to be r entine vei 2 (Piece : ite 02-5	ecrysta ns occu 13,97-99	cm)	any great degr ecific orientat OBSERVER: SAM	ee. Orthopyroxene has i ion with a wider zone o WHERE SAMPLED:	nclusions of anhedral clinopyroxene. f serpentinization following the major Conical Seamount, southeast flank
alte appe Serp vein 125-779A-19R-0 ROCK NAME: Dun GRAIN SIZE: 0. TEXTURE: Grano	red than c ar to be r entine vei 2 (Piece : ite 02-5 blastic ar	nthopyrd ecrysta 13,97-99	d	any great degr ecific orientat OBSERVER: SAI	e. Orthopyroxene has i ion with a wider zone o WHERE SAMPLED:	nclusions of anhedral clinopyroxene. f serpentinization following the major Conical Seamount, southeast flank
alte appe Serp vein 125-779A-19R-0 ROCK NAME: Dun GRAIN SIZE: 0. TEXTURE: Grano	red than c ar to be r entine vei 2 (Piece : ite 02-5 blastic ar	nthopyr ecrystal 13,97-99 nd felte	cm)	of amount of any great degr coffic orientat OBSERVER: SAM	e. Orthopyroxene has i ion with a wider zone o WHERE SAMPLED:	nclusions of anhedral clinopyroxene. f serpentinization following the major Conical Seamount, southeast flank
alte appe Serp vein 125-779A-19R-0 ROCK NAME: Dun GRAIN SIZE: 0. TEXTURE: Grano PRIMARY MINERALOGY	red than c ar to be r entine vei 2 (Piece : ite 02-5 blastic ar PERCENT PRESENT	nthopyr ecrystal ins occu 13,97-99 nd felte PERCENT ORIGINA	cm) cm) cm) cm) cm) cm) cm)	COMPO- SITION	ee. Orthopyroxene has i ion with a wider zone o WHERE SAMPLED: MORPHOLOGY	nclusions of anhedral clinopyroxene. f serpentinization following the major Conical Seamount, southeast flank COMMENTS
alte appe Serp vein 125-779A-19R-0 ROCK NAME: Dun GRAIN SIZE: 0. TEXTURE: Grano PRIMARY MINERALOGY PHENOCRYSTS Olivine	red than c ar to be r entine vei 2 (Piece : ite 02-5 blastic ar  PERCENT PRESENT 61.5	orthopyr ecrystal ins occus 13,97-99 nd felte PERCENT ORIGINA 99	cm) cm) cm) cm) cm) cm) cm) cm) cm) cm)	De of amount o any great degr coffic orientat OBSERVER: SAM OBSERVER: SAM OBSERVER: SAM OBSERVER: SAM OBSERVER: SAM OBSERVER: SAM SAM SAM SAM SAM SAM SAM SAM SAM SAM	e. Orthopyrotene has i ion with a wider zone o wHERE SAMPLED: MORPHOLOGY Subhedral-anheo	nclusions of anhedral clinopyroxene. f serpentinization following the major Conical Seamount, southeast flank COMMENTS tral Kink-banded; wavy extinction, altered to
alte appe Serp vein 125-779A-19R-0 ROCK NAME: Dun GRAIN SIZE: 0. TEXTURE: Grano  PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel	red than c ar to be r entine vei 2 (Piece : ite 02-5 blastic ar  PERCENT PERCENT FRESENT 61.5 0.5	nthopyr ecrystal ins occu 13,97-99 nd felte PERCENT ORIGINA 99 1	cm) cat no spe cm) d sIZE L (mm) 0.02-5 0.5-1	COMPO- SITION	MORPHOLOGY Subhedral-anhee Subhedral-anhee	nclusions of anhedral clinopyroxene. f serpentinization following the major Conical Seamount, southeast flank COMMENTS Iral Kink-banded; wavy extinction, altered to serpentine blades and fibers, 2V=-85. Iral Dark red-brown, altered to magnetite.
alte appe Serp vein 125-779A-19R-0 ROCK NAME: Dun GRAIN SIZE: 0. TEXTURE: Grand  PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel GROUNDWASS	red than c ar to be r entine vei 2 (Piece : ite 02-5 blastic ar PERCENT PRESENT 61.5 0.5	nthopyr ecrystal ins occui 13,97-99 nd felte PERCENT ORIGINA 99 1	cm) cat no spe cm) d sIZE L (mm) 0.02-5 0.5-1	COMPO- SITION Fo95	e. Orthopyroxene has i ion with a wider zone o WHERE SAMPLED: MORPHOLOGY Subhedral-anheo Subhedral-anheo	nclusions of anhedral clinopyroxene. f serpentinization following the major Conical Seamount, southeast flank COMMENTS iral Kink-banded; wavy extinction, altered to serpentine blades and fibers, 2V=-85. Iral Dark red-brown, altered to magnetite.
alte appe Serp vein 125-779A-19R-0 ROCK NAME: Dun GRAIN SIZE: 0. TEXTURE: Grano PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel GROUNDMASS N/A	red than c ar to be r entine vei 2 (Piece : ite 02-5 blastic ar PERCENT PRESENT 61.5 0.5 N/A	nrthopyr ecrystal ins occu 13,97-99 nd felte PERCENT ORIGINA 99 1 N/A	xene becau Llizing to c at no spe cm) d SIZE L (mm) 0.02-5 0.5-1 N/A	De of amount o any great degr coffic orientat OBSERVER: SAM OBSERVER: SAM COMPO- SITION F095	e. Orthopyrotene has i ion with a wider zone o wHERE SAMPLED: MORPHOLOGY Subhedral-anheo Subhedral-anheo	nclusions of anhedral clinopyroxene. f serpentinization following the major Conical Seamount, southeast flank COMMENTS Iral Kink-banded; wavy extinction, altered to serpentine blades and fibers, 2V=-85. Iral Dark red-brown, altered to magnetite.
alte appe Serp vein 125-779A-19R-0 ROCK NAME: Dun GRAIN SIZE: 0. TEXTURE: Grano PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel GROUNDMASS N/A SECONDARY	red than c ar to be r entine vei 2 (Piece : ite 02-5 blastic ar  PERCENT PERCENT FRESENT 61.5 0.5 N/A	nrthopyr ecrystal ins occui 13,97-99 nd felte PERCENT ORIGINA 99 1 N/A REP	xene becau Llizing to c at no spe cm) d sIZE L (mm) 0.02-5 0.5-1 N/A LACING/	De of amount o any great degr coffic orientat OBSERVER: SAM OBSERVER: SAM COMPO- SITION F095	e. Orthopyrotene has i ion with a wider zone o wHERE SAMPLED: MORPHOLOGY Subhedral-anheo Subhedral-anheo N/A	nclusions of anhedral clinopyroxene. f serpentinization following the major Conical Seamount, southeast flank COMMENTS Iral Kink-banded; wavy extinction, altered to serpentine blades and fibers, 2V=-85. Iral Dark red-brown, altered to magnetite.
alte appe Serp vein 125-779A-19R-0 ROCK NAME: Dun GROLN SIZE: 0. FEXTURE: Grano PRIMARY MINERALOGY PHENOCRYSTS Dlivine Spinel GROUNDMASS W/A SECONDARY MINERALOGY Serpentine	red than c ar to be r entine vei 2 (Piece : ite 02-5 blastic ar  PERCENT 61.5 0.5 N/A PERCENT 35	nthopyr recrystal ns occui 13,97-99 nd felte PERCENT ORIGINA 99 1 N/A REP FIL Olivia	cm) cm) d cm) 0.02-5 0.5-1 N/A LACING/ LING e	COMPO- SITION	e. Orthopyrotene has i ion with a wider zone o WHERE SAMPLED: MORPHOLOGY Subhedral-anheo Subhedral-anheo N/A	COMMENTS contents contents contents contents contents contents comments comments comments comments comments comments comments comments comments comments comments comments comments
alte appe Serp vein 125-779A-19R-0 ROCK NAME: Dun GRAIN SIZE: 0. TEXTURE: Grano PRIMARY MINERALOGY PHENOCRYSTS Dlivine Spinel GROUNDMASS N/A SECONDARY MINERALOGY Serpentine	red than c ar to be r entine vei 2 (Piece : ite 02-5 blastic ar PERCENT 61.5 0.5 N/A PERCENT 35	nthopyr recrystal ns occui 13,97-99 nd felte PERCENT ORIGINA 99 1 N/A REP FIL Olivin	xene becau Llizing to c at no spe cm) d sIZE L (mm) 0.02-5 0.5-1 N/A LACING/ LING e	COMPO- SITION	e. Orthopyrotene has i ion with a wider zone o wHERE SAMPLED: MORPHOLOGY Subhedral-anheo Subhedral-anheo N/A Mostly anti olivine. Po	COMMENTS COMMENTS COMMENTS COMMENTS COMMENTS COMMENTS COMMENTS COMMENTS COMMENTS COMMENTS COMMENTS comments comments gorite blades and chrysotile fibers forming after sesible lizardite also.
alte appe Serp vein 125-779A-19R-0 ROCK NAME: Dun GRAIN SIZE: 0. TEXTURE: Grano  PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel GROUNDMASS N/A SECONDARY MINERALOGY Serpentine Magnetite	red than c ar to be r entine vei 2 (Piece : ite 02-5 blastic ar PERCENT G1.5 0.5 N/A PERCENT 35 2	nthopyr ecrystal ins occui 13,97-99 hd felte PERCENT ORIGINA 99 1 N/A REP FIL Olivin Spinel	xene becau Llizing to c at no spe cm) d sIZE L (mm) 0.02-5 0.5-1 N/A LACING/ LING e	COMPO- SITION	MORPHOLOGY Subhedral-anheo N/A Mostly anti olivine. Po Dusty 0.3-m	COMMENTS COMMENTS COMMENTS COMMENTS COMMENTS COMMENTS Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Commen
alte appe Serp vein 125-779A-19R-0 ROCK NAME: Dun GRAIN SIZE: 0. TEXTURE: Grand  PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel GROUNDMASS N/A SECONDARY MINERALOGY Serpentine Magnetite Brucite?	red than c ar to be r entine vei 2 (Piece : ite 02-5 blastic ar PERCENT 61.5 0.5 N/A PERCENT 35 2 1	nrthopyr ecrystal ns occui 13,97-99 nd felte PERCENT ORIGINA 99 1 N/A REP FIL Olivin Spinel Olivin	xene becau Llizing to c at no spe cm) d sIZE L (mm) 0.02-5 0.5-1 N/A LACING/ LING e e, serpent	ine	MORPHOLOGY Subhedral-anheo Subhedral-anheo N/A Mostly anti olivine. Po Dusty 0.3-n and along o Might be di determinati	COMMENTS COMMENTS Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments Comments gorite blades and chrysotile fibers forming after seible lizardite also. m anhedral grains which occur in serpentine veir cleavages. Stributed within serpentinized area, but on is very difficult.

MMENTS: Serpentine tends to form along olivine "shear" fractures. May indicate tectonized (i.e., mantle deformation). Rock appears to have deformed and recrystallized, then antigorite formed. This is apparent in the neoblasts which appear to be serpentinized. The antigorite blades don't form in a preferred orientation, but rather form a feather-like, felted texture across olivine.

## 125-779A-22R-01 (Piece 11,58-60 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Altered serpentinized harzburgite

GRAIN SIZE: 0.01-2 mm

TEXTURE: Mesh and bastite

PRIMARY	PERCENT	PERCENT	STZE	COMPO-			
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MO	RPHOLOGY	COMMENTS
DUENOCRYCTC							
Olivine	Trace	84	0.01		Sub	hedral	Altered completely to serpentine mesh
Spinel	1	1	0.5-2		Sub	hedral-anhedral	Dark brown-red: altered to magnetite.
Orthopyroxene	1	15	1-2		Sub	hedral-anhedral	Altered to serpentine bastite; bastite appears kinked with wavy extinctions.
GROUNDMASS							
N/A	N/A	N/A	N/A		N/A		
SECONDARY		REPI	ACING/				
MINERALOGY	PERCENT	FILL	ING				COMMENTS
Clays	25	Serpent	ine			Dusty, brownish-	bluish clay scattered throughout the slide.
Serpentine	70	Olivine	, orthop	yroxene		Chrysotile and/o mineralogy. Form serpentine then chrysotile veins	r lizardite completely replacing primary ing mesh and bastite textures. The appears to be altered to clays. Also (0.5 mm wide) throughout slide.
Magnetite	1	Spinel				Dusty 0.2-mm gra	ins throughout slide and along serpentine
Brucite	2	Serpent	ine			veins. Distributed thro	ughout slide within later chrysotile veins.
VESICLES/ CAVITIES	PERCENT	LOCATIO	SIZE N (mm)		FILLING		SHAPE
Vesicles	0						
Curr	ing verno		wide) an	a concarno braci	ce(i) and m	agnoorbol	
ROCK NAME: Ser	(Piece 1) pentinized	1,63-65 c i harzbur	m) gite	OBSERVER: SAB	WHE	RE SAMPLED: Conic	al Seamount, southeast flank
Curr 125-779A-22R-01 ROCK NAME: Ser GRAIN SIZE: 0. TEXTURE: Cumul	(Piece 1) pentinized 02-4 mm ate, mesh	1,63-65 c i harzbur and bast	m) gite ite.	OBSERVER: SAB	WHE	RE SAMPLED: Conic	al Seamount, southeast flank
Current Curren	(Piece 1) pentinized 02-4 mm ate, mesh	1,63-65 c i harzbur and bast	m) gite ite.	OBSERVER: SAB	WHE	RE SAMPLED: Conic	al Seamount, southeast flank
ROCK NAME: Ser GRAIN SIZE: 0. TEXTURE: Cumul PRIMARY MINERALOGY	(Piece 1) pentinized 02-4 mm ate, mesh PERCENT PRESENT	1,63-65 c i harzbur and bast PERCENT ORIGINAL	m) gite ite. SIZE (mm)	OBSERVER: SAB COMPO- SITION	WHE	RE SAMPLED: Conic	al Seamount, southeast flank
ROCK NAME: Ser GRAIN SIZE: 0. TEXTURE: Cumul PRIMARY MINERALOGY PHENOCRYSTS	(Piece 1) pentinized 02-4 mm ate, mesh PERCENT PRESENT	1,63-65 c i harzbur and bast PERCENT ORIGINAL	m) gite ite. SIZE (mm)	COMPO- SITION	WHE	RE SAMPLED: Conic	al Seamount, southeast flank
PRIMARY PHENOCRYSTS Olivine	(Piece 1) pentinized 02-4 mm ate, mesh PERCENT PRESENT 35	1,63-65 c i harzbur and bast PERCENT ORIGINAL 79	m) gite ite.  SIZE (mm) 0.5-4	OBSERVER: SAB COMPO- SITION	WHE MO	RE SAMPLED: Conic REHOLOGY	al Seamount, southeast flank COMMENTS Altered to serpentine mesh, fractured.
PRIMARY PHENOCRYSTS Olivine Spinel Orthopyroxene	(Piece 1) pentinized 02-4 mm ate, mesh PERCENT PRESENT 35 <1 12	and bast PERCENT ORIGINAL 79 1 20	m) gite ite. SIZE (mm) 0.5-4 0.02-1 0.1-5	COMPO- SITION	WHE MO Anh Euh Subl	RE SAMPLED: Conic RPHOLOGY edral edral-subhedral hedral-anhedral	al Seamount, southeast flank COMMENTS Altered to serpentine mesh, fractured. Red-dark brown; altered to magnetite. Altered to serpentine bastite and chlorite wavy extinction, kink-banded.
Current Content of Con	(Piece 1) pentinized 02-4 mm ate, mesh PERCENT PRESENT 35 <1 12	And bast PERCENT ORIGINAL	m) gite ite. SIZE (mm) 0.5-4 0.02-1 0.1-5	COMPO- SITION	MO Anh Euh Subl	RE SAMPLED: Conic RPHOLOGY edral edral-subhedral hedral-anhedral	al Seamount, southeast flank COMMENTS Altered to serpentine mesh, fractured. Red-dark brown; altered to magnetite. Altered to serpentine bastite and chlorite wavy extinction, kink-banded.
Current Content of Con	(Piece 1) pentinized 02-4 mm ate, mesh PERCENT PRESENT 35 <1 12 N/A	1,63-65 c i harzbur and bast PERCENT ORIGINAL 79 1 20 N/A	m) gite ite.  SIZE (mm) 0.5-4 0.02-1 0.1-5 N/A	OBSERVER: SAB COMPO- SITION Cr	MO MO Anh Euh Sub	RE SAMPLED: Conic REPHOLOGY edral edral-subhedral hedral-anhedral	al Seamount, southeast flank COMMENTS Altered to serpentine mesh, fractured. Red-dark brown; altered to magnetite. Altered to serpentine bastite and chlorite wavy extinction, kink-banded.
Current Content of Con	(Piece 1) pentinized 02-4 mm ate, mesh PERCENT PRESENT 35 <1 12 N/A	1,63-65 c d harzbur and bast PERCENT ORIGINAL 79 1 20 N/A REPL	m) gite ite.  (mm) 0.5-4 0.02-1 0.1-5 N/A ACING/	COMPO- SITION	MO MO Anh Euh Sub N/A	RE SAMPLED: Conic REPHOLOGY edral edral-subhedral hedral-anhedral	al Seamount, southeast flank COMMENTS Altered to serpentine mesh, fractured. Red-dark brown; altered to magnetite. Altered to serpentine bastite and chlorite wavy extinction, kink-banded.
CULC 125-779A-22R-01 ROCK NAME: Ser GRAIN SIZE: 0. TEXTURE: Cumul PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A SECONDARY MINERALOGY	(Piece 1) pentinized 02-4 mm ate, mesh PERCENT PRESENT 35 <1 12 N/A PERCENT	1,63-65 c i harzbur and bast PERCENT ORIGINAL 79 1 20 N/A REPL FILL	m) gite ite.  SIZE (mm) 0.5-4 0.02-1 0.1-5 N/A ACING/ ING	COMPO- SITION	MO MO Anh Euh Sub N/A	RE SAMPLED: Conic RPHOLOGY edral edral-subhedral hedral-anhedral	al Seamount, southeast flank COMMENTS Altered to serpentine mesh, fractured. Red-dark brown; altered to magnetite. Altered to serpentine bastite and chlorite wavy extinction, kink-banded.
Current Content of Con	(Piece 1) pentinized 02-4 mm ate, mesh PERCENT PRESENT 35 <1 12 N/A PERCENT 1	1,63-65 c i harzbur and bast PERCENT ORIGINAL 79 1 20 N/A REPL FILL Orthopy	m) gite ite.  SIZE (mm) 0.5-4 0.02-1 0.1-5 N/A ACING/ ING roxene	COMPO- SITION	MO MO Anh Euh Sub N/A	RE SAMPLED: Conic RPHOLOGY edral edral-subhedral hedral-anhedral Blue-green to gro	al Seamount, southeast flank COMMENTS Altered to serpentine mesh, fractured. Red-dark brown; altered to magnetite. Altered to serpentine bastite and chlorite wavy extinction, kink-banded. COMMENTS men pleochroism, found along orthopyroxene
Current Content of the content of th	(Piece 1) pentinized 02-4 mm ate, mesh PERCENT PRESENT 35 <1 12 N/A PERCENT 1 50	And bast and bast PERCENT ORIGINAL 79 1 20 N/A REPL FILL Orthopy Olivine	m) gite ite.  SIZE (mm) 0.5-4 0.02-1 0.1-5 N/A ACING/ ING roxene , orthopy	OBSERVER: SAB COMPO- SITION Cr	MO MO Anh Euh Sub N/A	RE SAMPLED: Conic RE SAMPLED: Conic RPHOLOGY edral edral-subhedral hedral-anhedral Blue-green to gr edges, cleavages Lizardite and/or textures. Numero	al Seamount, southeast flank COMMENTS Altered to serpentine mesh, fractured. Red-dark brown; altered to magnetite. Altered to serpentine bastite and chlorite wavy extinction, kink-banded. COMMENTS een pleochroism, found along orthopyroxene and fractures. chrysotile forming mesh and bastite us chrysotile + magnetite veins (0.5 mm
ROCK NAME: Ser GRAIN SIZE: 0. TEXTURE: Cumul PRIMARY MINERALOGY PHENOCRYSTS Olivine Spinel Orthopyroxene GROUNDMASS N/A SECONDARY MINERALOGY Chlorite Serpentine Magnetite	(Piece 1) pentinized 02-4 mm ate, mesh PERCENT PRESENT 35 <1 12 N/A PERCENT 1 50 1	1,63-65 c i harzbur and bast PERCENT ORIGINAL 79 1 20 N/A REPL FILL Orthopy Olivine Spinel	m) gite ite. SIZE (mm) 0.5-4 0.02-1 0.1-5 N/A ACING/ ING roxene , orthopy	OBSERVER: SAB COMPO- SITION Cr	MO Anh Euh Subl	RE SAMPLED: Conic RPHOLOGY edral edral-subhedral hedral-anhedral Blue-green to gr edges, cleavages Lizardite and/or textures. Numerou wide) cutting ac Dusty 0.2-mm gra	al Seamount, southeast flank COMMENTS Altered to serpentine mesh, fractured. Red-dark brown; altered to magnetite. Altered to serpentine bastite and chlorite wavy extinction, kink-banded. COMMENTS een pleochroism, found along orthopyroxene and fractures. chrysotile forming mesh and bastite us chrysotile + magnetite veins (0.5 mm ross slide. ins forming elongate trains and located
Current Contents of the content of t	(Piece 1) pentinized 02-4 mm ate, mesh PERCENT PRESENT 35 <1 12 N/A PERCENT 1 50 1 <1	I,63-65 c i harzbur and bast PERCENT ORIGINAL 79 1 20 N/A REPL FILL Orthopy Olivine Spinel Serpent	m) gite ite.  SIZE (mm) 0.5-4 0.02-1 0.1-5 N/A ACING/ ING roxene , orthopy ine	OBSERVER: SAB COMPO- SITION Cr	MO MO Anh Euh Sub N/A	RE SAMPLED: Conic RE SAMPLED: Conic RPHOLOGY edral edral-subhedral hedral-anhedral bedral-anhedral bizardite and/or textures. Numero wide) cutting ac Dusty 0.2-mm gra mostly in serpen Possibly located	al Seamount, southeast flank COMMENTS Altered to serpentine mesh, fractured. Red-dark brown; altered to magnetite. Altered to serpentine bastite and chlorite wavy extinction, kink-banded. COMMENTS een pleochroism, found along orthopyroxene and fractures. chrysotile forming mesh and bastite us chrysotile + magnetite veins (0.5 mm ross slide. ins forming elongate trains and located tine veins; some grains are euhedral. in center of chrysotile + magnetite veins.

COMMENTS: Relatively coarse-grained, orthopyroxene-rich harzburgite. Orthopyroxene is still relatively fresh and not as altered as olivine. Orthopyroxene has anhedral olivine inclusions and is somewhat elongated. One spinel grain has an olivine inclusion (anhedral). One orthopyroxene grain has an interesting set of inclusions: looks slightly like sheared "Frankenstein" veining within a crystal. 125-779A-24R-01 (Piece 6,36-38 cm)

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized dunite

GRAIN SIZE: 0.3-2 mm

TEXTURE: Mesh and bastite

RIMARY RIMERALOGY       FERCENT FERCENT SIZE (CMMPC)       COMPO- SITION       MORPHOLOGY       COMMENTS         PERSORCYSTS JUVINE       0       93       0.5-1       Anhedral (dvaloped.)       Completely altered to serpentine mer which is well devaloped.         pinel       0.3-1       Cr       Euhedral-anhedral (dvaloped.)       Red, altered to serpentine mer which is well devaloped.         pinel							
RIMARY PERCENT PERCENT SIZE COMPO- NORPHOLOGY COMMENTS Divine 0 93 0.5-1 Anhedral Completely altered to serpentine men which is well developed. GROUNDMASS //A N/A N/A N/A N/A N/A N/A N/A N/A ECONDARY REPLACING/ INTERALOGY PERCENT FILLING COMMENTS Barbiel Divine, orthopyroxene Divine, orthopyroxene Divine Commentated in veins. ERSICLES/ ANTIES PERCENT LOCATION (mm) FILLING COMMENTS ERSICLES/ ANTIES PERCENT LOCATION (mm) FILLING SHAPE GROUNDMASS //A N/A N/A N/A N/A N/A N/A N/A N/A ERSICLES/ ANTIES PERCENT LOCATION (mm) FILLING SHAPE ERSICLES/ ANTIES PERCENT LOCATION (mm) FILLING SHAPE COMMENTS: Completely serpentinized dunite. No relig mineralogy left. Appearance of clay minerals indicate the serpentine is being further altered. The mesh is well developed and does not appear to be deformed or tectonized. Veins of serpentine, magnetic, and clays criss-cross slide (0.01-2 mm wide). 25-779A-25R-01 (Piece 10B, 65-87 cm) OBSERVER: SAB WHERE SAMPLED: Conical Seamount, southeast flank OCK NAME: Serpentinized dunite RAIN SIZE: 0.1-6 mm EXTURE: Mesh (poorly developed) 							
<pre>INMERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PREMECRYSTS Jlvine 0 93 0.5-1 Anhedral Completely altered to serpentine mean which is well developed. prinel &lt;1 &lt;1 0.3-1 Cr Euhedral-anhedral Red, altered to magnetize. Subhedral-euhedral Completely altered to serpentine bastite. GROUNDMASS //A N/A N/A N/A N/A N/A N/A INCA N/A INCA N/A N/A N/A N/A INCA N/A INCA N/A N/A N/A N/A INCA N/A INCA N/A INCA N/A N/A N/A N/A N/A INCA N/A INCA N/A INCA N/A N/A N/A N/A N/A INCA N/A INCA N/A INCA N/A N/A N/A N/A N/A INCA N/A INCA N/A N/A N/A N/A INCA N/A INCA N/A INCA N/A N/A N/A N/A N/A INCA N/A INCA N/A INCA N/A N/A N/A N/A N/A INCA N/A INCA N/A INCA N/A N/A N/A N/A N/A INCA N/A INCA N/A INCA N/A N/A N/A N/A N/A INCA N/A INCA N/A INCA N/A N/A N/A N/A INCA N/A INCA N/A INCA N/A N/A N/A N/A N/A INCA N/A INCA N/A INCA N/A INCA N/A N/A N/A N/A N/A INCA N/A INCA N/A INCA N/A N/A N/A N/A N/A INCA N/A INCA N/A INCA N/A N/A N/A N/A N/A INCA N/A INCA</pre>	PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
PHENOCRYSTS         Nivine       0       93       0.5-1       Anhedral       Completely altered to serpentine max which is well developed.         pinal       <1	MINERALOGY	PRESENT	ORIGINAL	. (mm)	SITION	MORPHOLOGY	COMMENTS
<pre>Nivine 0 93 0.5-1 Anhedral Completely altered to sarpentine mesh pinal &lt;1 &lt;1 0.3-1 Cr Subhedral-subhedral Red; altered to magnetite. pinal &lt;1 &lt;1 0.3-1 Cr Subhedral-subhedral Red; altered to magnetite. Subhedral-subhedral Red; altered to magnetite. Completely altered to serpentine mesh particle is well developed. N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A</pre>	PHENOCRYSTS						
pinel       (1       (1       0.3-1       Cr       Subhedral-anhedral       Red; altered to magnetite.         GROUNDMASS       //A       N/A       N/A       N/A       N/A       N/A         (/A       N/A       N/A       N/A       N/A       N/A       Subhedral-anhedral       Red; altered to magnetite.         (/A       N/A       N/A       N/A       N/A       N/A       Subhedral-anhedral       Red; altered to magnetite.         (/A       N/A       N/A       N/A       N/A       N/A       Subhedral-anhedral       Red; altered to magnetite.         (/A       N/A       N/A       N/A       N/A       N/A       Subhedral-anhedral       Red; altered to magnetite.         (/A       N/A       N/A       N/A       N/A       Subhedral-anhedral       Red; altered to magnetite.         (/A       N/A       N/A       N/A       N/A       N/A       Subhedral-anhedral       Subhedral-anhed	Olivine	0	93	0.5-1		Anhedral	Completely altered to serpentine mesh
pinel       <1				1993 BUS B		THIN OLD BE	which is well developed.
Pithopyroxene       0       7       1-2       Subhedral-euhedral       Completely altered to serpentine bastite.         GRONDMASS       N/A       N/A       N/A       N/A       N/A         GRONDMASS       N/A       N/A       N/A       N/A         EECONDARY       REPLACING/ INMERALOGY       REPLACING/ PERCENT       COMMENTS         Lays       7       Serpentine       Dusty, brown and blue green clay distributed throughou slide as an alteration product of serpentine.         Lays       7       Size       Dusty, brown and blue green clay distributed throughou slide. Mesh texture dominant.         Perpentine       93       Olivine, orthopyroxene       Lizardite and/or chrysotile forming mesh and bastite textures throughout slide. Mesh texture dominant.         ESICLES/       SIZE       SIZE       Dusty grains concentrated in veins.         COMMENTS: Completely serpentinized dunite. No relic mineralogy left. Appearance of clay minerals indicate the serpentine is being further altered. The mesh is well developed and does not appear to be deformed or tectonized. Veins of serpentine, magnetite, and clays criss-cross slide (0.01-2 mm wide).         25-779A-25R-01 (Piece 108,85-87 cm)       OBSERVER: SAB       WHERE SAMPLED; Conical Seamount, southeast flank         OCK NAME: Serpentinized dunite       RAIN SIZE: 0.1-6 mm       TEXTURE: Mesh (poorly developed)         TRIMARY       PERCENT PERCENT SIZE	Spinel	<1	<1	0.3-1	Cr	Euhedral-anhedra	Red; altered to magnetite.
GROUNDASS (YA N/A N/A N/A N/A N/A N/A N/A N/A N/A N/	Orthopyroxene	0	7	1-2		Subhedral-euhedr	al Completely altered to serpentine
GROUNDMASS //A     N/A     N/A     N/A     N/A     N/A       INDEXALOGY     REFLACING/ INNERALOGY     REFLACING/ FILLING     COMMENTS       Clays     7     Serpentine     Dusty, brown and blue green clay distributed throughou slide as an alteration product of serpentine. Lizardite and/or chrysolie forming mesh and bastite textures throughout slide. Mesh texture dominant. Dusty grains concentrated in veins.       Residues     0     SIZE SIZE AVITIES     SIZE PERCENT LOCATION (mm)     FILLING       SHAPE     0     SHAPE       Generation     0     SHAPE							bastite.
VA     N/A     N/A     N/A     N/A       EECONDARY     REPLACING/ INMERALOGY     REPLACING/ PERCENT     COMMENTS       Lays     7     Serpentine     Dusty, brown and blue green clay distributed throughou slide as an alteration product of serpentine. Lizardite and/or chrysolie forming mesh and bastite textures throughout slide. Mesh texture dominant. Dusty grains concentrated in veins.       TESICLES/     SIZE AVITIES     SIZE PERCENT LOCATION (mm)     FILLING       SWINTES     Completely serpentinized dunite. No relic mineralogy left. Appearance of clay minerals indicate the serpentine is being further altered. The mesh is well developed and does nut appear to be deformed or tectonized. Veins of serpentine, magnetice, and clays criss-cross slide (0.01-2 mm vide).       25-779A-25R-01 (Piece 10B, 85-87 cm)     OBSERVER: SAB     WHERE SAMPLED: Conical Seamount, southeast flank       NOCK NAME:     Serpentinized dunite     SAMPLED:       RRAIN SIZE:     0.1-6 mm     EXTURE: Mesh (poorly developed)       TEXTURE:     MARY     PERCENT PERCENT SIZE COMPO- INMERALOGY     COMMENTS       PHENOCRYSTS Dilyine     20     99     1-6     Subhedral-anhedral     Altering to serpentine mesh (poorly developed). Wavy extinction.	GROUNDMASS						
BECONDARY       REPLACING/         INNERRALOGY       PERCENT         PERCENT       FILLING         COMMENTS       Dusty, brown and blue green clay distributed throughou slide as an alteration product of serpentine.         Hays       7         Serpentine       93         Olivine, orthopyroxene       Lizardite and/or chrysotile forming mesh and bastite textures throughout slide. Mesh texture dominant.         Eagletite       Trace         Eagletite       Trace         FESICLES/       SIZE         COMMENTS:       Completely serpentinized dunite. No relic mineralogy left. Appearance of clay minerals indicate the serpentine is being further altered. The mesh is well developed and does not appear to be deformed or tectonized. Veins of serpentinized dunite         COMMENTS:       Completely serpentinized dunite         RRAIN SIZE:       0.1-0 fm         VEXTURE:       Mesh (poorly developed)         CEXTURE:       Mesh (poorly developed)         CEXTURE:       Mesh (poorly developed)         CENTURES       Subhedral-anhedral         PHENOCRYSTS       1         Dify       20         Dify       1         Dify       20         Dify       1         Dify       20         Dify       1	N/A	N/A	N/A	N/A		N/A	
EECONDARY     REPLACING/ FILLING     COMMENTS       Lays     7     Serpentine     Dusty, brown and blue green clay distributed throughou slide as an alteration product of serpentine. Lizardite and/or chrysotile forming mesh and bastite textures throughout slide. Mesh texture dominant. Dusty grains concentrated in velns.       Identitie     Trace     Spinel     Dusty grains concentrated in velns.       TESICLES/ SAVITIES     SIZE PERCENT LOCATION (mm)     FILLING     SHAPE       Tesicles     0     SHAPE     SHAPE       COMMENTS:     Completely serpentinized dunite. No relic mineralogy left. Appearance of clay minerals indicate the serpentine is being further altered. The mesh is well developed and does not appear to be deformed or tectonized. Veins of serpentine, magnetite, and clays criss-cross slide (0.01-2 mm wide).       25-779A-25R-01     (Piece 10B, 85-87 cm)     OBSERVER: SAB     WHERE SAMPLED: Conical Seamount, southeast flank       MOCK NAME:     Serpentinized dunite     SIZE     SIZE       RIMARY     PERCENT PERCENT SIZE     COMPO- INNERALOGY     COMMENTS       PHENOCRYSTS     Julyine     20     99     1-6       Subhedral-anhedral     Altering to serpentine mesh (poorly developed). Wave extinction.							
INTERALOGY       PERCENT       FILLING       COMMENTS         Pilays       7       Serpentine       Dusty, brown and blue green clay distributed throughou slide as an alteration product of serpentine.         Perpentine       93       Olivine, orthopyroxene       Lizardite and/or chrysotile forming mesh and bastite textures throughout slide. Mesh texture dominant.         Idagnetite       Trace       Spinel       Dusty grains concentrated in veins.         TESICLES/       SIZE       Size         AVITIES       PERCENT LOCATION (mm)       FILLING       SHAPE         resides       0       Shape       Shape         OMMENTS:       Completely serpentinized dunite. No relic mineralogy left. Appearance of clay minerals indicate the serpentine is being further altered. The mesh is well developed and does not appear to be deformed or tectonized. Veins of serpentine, magnetite, and clays criss-cross slide (0.01-2 mm wide).       25-779A-25R-01 (Piece 10B, 85-87 cm)       OBSERVER: SAB       WHERE SAMPLED: Conical Seamount, southeast flank         COCK NAME:       Serpentinized dunite       Strain Size: 0.1-6 mm       Size       Componentine         RRIMARY       PERCENT PERCENT SIZE       COMPO-       MORPHOLOGY       COMMENTS         PHENOCRYSTS       101/0 5       Subhedral-anhedral       Altering to serpentine mesh (poorly developed). Wavy extinction.         Usine       20       9	SECONDARY		REPL	ACING/			
Clays       7       Serpentine       Dusty, brown and blue green clay distributed throughou slide as an alteration product of serpentine. Lizardite and/or chrysotile forming mesh and bastite textures throughout slide. Mesh texture dominant. Dusty grains concentrated in veins.         Rependite       Trace       Spinel       Dusty, brown and blue green clay distributed throughout slide as an alteration product of serpentine. Lizardite and/or chrysotile forming mesh and bastite textures throughout slide. Mesh texture dominant. Dusty grains concentrated in veins.         TESICLES/       SIZE       SIZE         CAVITIES       PERCENT LOCATION (mm)       FILLING         RAVITIES       PERCENT LOCATION (mm)       FILLING         COMMENTS:       Completely serpentinized dunite. No relic mineralogy left. Appearance of clay minerals indicate the serpentine is being further altered. The mesh is well developed and does not appear to be deformed or tectonized. Veins of serpentine, magnetite, and clays criss-cross slide (0.01-2 mm wide).         .25-779A-25R-01       (Piece 10B, 85-87 cm)       OBSERVER: SAB       WHERE SAMPLED: Conical Seamount, southeast flank         NOCK NAME:       Serpentinized dunite       Structure       Structure         RRIARY       PERCENT PERCENT SIZE       COMPO-IINERALOGY       COMMENTS         PHENOCRYSTS       July in STION       MORPHOLOGY       COMMENTS         PHENOCRYSTS       July in Structure       Subhedral-anhedral       Altering to serpentine mesh (p	MINERALOGY	PERCENT	FILL	ING			COMMENTS
Berpentine       93       Olivine, orthopyroxene       Slide as an alteration product of serpentine.         Lizardite and/or chrysotile forming mesh and bastite textures throughout slide. Mesh texture dominant.       Dusty grains concentrated in veins.         Agnetite       Trace       Spinel       Dusty grains concentrated in veins.         TESICLES/       SIZE       SIZE         AVITIES       PERCENT LOCATION (mm)       FILLING       SHAPE         Fesicles       0       O         COMMENTS: Completely serpentinized dunite. No relic mineralogy left. Appearance of clay minerals indicate the serpentine is being further altered. The mesh is well developed and does not appear to be deformed or tectonized. Veins of serpentine, magnetite, and clays criss-cross slide (0.01-2 mm wide).         25-779A-2SR-01 (Piece 10B,85-87 cm)       OBSERVER: SAB       WHERE SAMPLED: Conical Seamount, southeast flank         NOCK NAME: Serpentinized dunite       SRAIN SIZE: 0.1-6 mm       Subhedral-anhedral       Altering to serpentine mesh (poorly developed)         PRIMARY       PERCENT PERCENT SIZE       COMPO-INTRON       MORPHOLOGY       COMMENTS         PHENOCRYSTS       01-0       5       1       0.1-0.5       Eubedral-anhedral       Altering to serpentine mesh (poorly developed).	Clays	7	Serpent	ine		Dusty, brown	and blue green clay distributed throughout
ierpentine       93       Olivine, orthopyroxene       Lizardite and/or chrysotile forming mesh and bastite textures throughout slide. Mesh texture dominant.         tagnetite       Trace       Spinel       Dusty grains concentrated in veins.         TESICLES/       SIZE         CAVITES       PERCENT       LOCATION       (mm)         resicles       0       FILLING       SHAPE         COMMENTS:       Completely serpentinized dunite. No relic mineralogy left. Appearance of clay minerals indicate the serpentine is being further altered. The mesh is well developed and does not appear to be deformed or tectonized. Veins of serpentine, magnetite, and clays criss-cross slide (0.01-2 mm wide).         25-779A-25R-01       (Piece 10B, 85-87 cm)       OBSERVER: SAB       WHERE SAMPLED: Conical Seamount, southeast flank         NOCK NAME:       Serpentinized dunite       STZE       COMPO-         RRAN SIZE:       0.1-6 mm       STZE       COMPO-         YRIMARY       PERCENT PERCENT SIZE       COMPO-         INERRALOGY       PRESENT ORIGINAL (mm)       STITON       MORPHOLOGY         YRIMARY       PERCENT PERCENT SIZE       COMPO-         YRIMARY       PERCENT PERCENT SIZE       COMPO-         YRIMARY       PERCENT PERCENT SIZE       COMPO-         YRIMARY       PERCENT PERCENT SIZE       COMPO- <t< td=""><td>2 82</td><td>122</td><td></td><td></td><td></td><td>slide as an</td><td>alteration product of serpentine.</td></t<>	2 82	122				slide as an	alteration product of serpentine.
Iagnetite       Trace       Spinel       Dusty grains concentrated in veins.         TESICLES/       SIZE       Dusty grains concentrated in veins.         TAVITIES       PERCENT LOCATION (mm)       FILLING       SHAPE         Tesicles       0       SHAPE       SHAPE         ToomMENTS: Completely serpentinized dunite. No relic mineralogy left. Appearance of clay minerals indicate the serpentine is being further altered. The mesh is well developed and does not appear to be deformed or tectonized. Veins of serpentine, magnetite, and clays criss-cross slide (0.01-2 mm wide).       25-779A-25R-01 (Piece 10B, 85-87 cm) OBSERVER: SAB       WHERE SAMPLED: Conical Seamount, southeast flank         NOCK NAME: Serpentinized dunite       SRAIN SIZE: 0.1-6 mm       SITE       COMPO-         RIMARY       PERCENT PERCENT SIZE       COMPO-       MORPHOLOGY       COMMENTS         PHENOCRYSTS       NINERALOGY       PRESENT ORIGINAL (mm)       SITION       MORPHOLOGY       COMMENTS         PHENOCRYSTS       0 99 1-6       Subhedral-anhedral       Altering to serpentine mesh (poorly developed)       developed)         The developed       0.5       0.1-0.5       Fubedral-anhedral       Altering to serpentine mesh (poorly developed)	Serpentine	93	Olivine	, orthopy	roxene	Lizardite an	d/or chrysotile forming mesh and bastite
lagnetite       Trace       Spinel       Dusty grains concentrated in veins.         TESICLES/       SIZE         CAVITIES       PERCENT LOCATION (mm)       FILLING       SHAPE         resicles       0       Size       SHAPE         resicles       0       State       State         resides       0       OBSERVER: SAB       WHERE SAMPLED: Conical Seamount, southeast flank         rescal       0.01-6       mm       State       State         rescal       0.1-6       State       State       State         rescal       0.1-6       State       State       State       State         rescal       0.1-6	V					textures thr	oughout slide. Mesh texture dominant.
TESICLES/ SIZE AVITIES PERCENT LOCATION (mm) FILLING SHAPE resicles 0 COMMENTS: Completely serpentinized dunite. No relic mineralogy left. Appearance of clay minerals indicate the serpentine is being further altered. The mesh is well developed and does not appear to be deformed or tectonized. Veins of serpentine, magnetite, and clays criss-cross slide (0.01-2 mm wide). 25-779A-25R-01 (Piece 10B, 85-87 cm) OBSERVER: SAB WHERE SAMPLED: Conical Seamount, southeast flank NOCK NAME: Serpentinized dunite ERAIN SIZE: 0.1-6 mm TEXTURE: Mesh (poorly developed) AND PERCENT PERCENT SIZE COMPO- MINERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENOCRYSTS Divine 20 99 1-6 Subhedral-anhedral Altering to serpentine mesh (poorly developed). Way extinction.	Magnetite	Trace	Spinel			Dusty grains	concentrated in veins.
AVITIES       PERCENT LOCATION (mm)       FILLING       SHAPE         Testcles       0       0       0       0         COMMENTS: Completely serpentinized dunite. No relic mineralogy left. Appearance of clay minerals indicate the serpentine is being further altered. The mesh is well developed and does not appear to be deformed or tectonized. Veins of serpentine, magnetite, and clays criss-cross slide (0.01-2 mm wide).       0         25-779A-25R-01 (Piece 10B,85-87 cm)       OBSERVER: SAB       WHERE SAMPLED: Conical Seamount, southeast flank         NOCK NAME: Serpentinized dunite	VESICLES/			SIZE			
resicles       0         COMMENTS:       Completely serpentinized dunite. No relic mineralogy left. Appearance of clay minerals indicate the serpentine is being further altered. The mesh is well developed and does not appear to be deformed or tectonized. Veins of serpentine, magnetite, and clays criss-cross slide (0.01-2 mm wide).         25-779A-25R-01 (Piece 10B,85-87 cm)       OBSERVER: SAB       WHERE SAMPLED: Conical Seamount, southeast flank         SOCK NAME:       Serpentinized dunite         SRAIN SIZE:       0.1-6 mm         TEXTURE:       Mesh (poorly developed)         CRIMARY       PERCENT PERCENT SIZE         COMPO- MINERALOGY       PRESENT ORIGINAL (mm)         SITION       MORPHOLOGY         COMMENTS         PHENOCRYSTS         Divine       20       99         1-6       Subhedral-anhedral       Altering to serpentine mesh (poorly developed). Wavy extinction.         Invine       0.5       1       0.1-0.5	CAVITIES	PERCENT	LOCATIO	N (mm)		FILLING	SHAPE
<pre>COMMENTS: Completely serpentinized dunite. No relic mineralogy left. Appearance of clay minerals indicate the serpentine is being further altered. The mesh is well developed and does not appear to be deformed or tectonized. Veins of serpentine, magnetite, and clays criss-cross slide (0.01-2 mm wide).</pre> 25-779A-25R-01 (Piece 10B,85-87 cm) OBSERVER: SAB WHERE SAMPLED: Conical Seamount, southeast flank COCK NAME: Serpentinized dunite SRAIN SIZE: 0.1-6 mm TEXTURE: Mesh (poorly developed) PRIMARY PERCENT PERCENT SIZE COMPO- HINERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENOCRYSTS PIENOCRYSTS Divine 20 99 1-6 Subhedral-anhedral Altering to serpentine mesh (poorly developed). Wavy extinction. Funderal-subhedral Reference in agenetiter.	Vesicles	0					
Z25-779A-25R-01 (Piece 10B, 85-87 cm)       OBSERVER: SAB       WHERE SAMPLED: Conical Seamount, Southeast flank         NOCK NAME: Serpentinized dunite       SRAIN SIZE: 0.1-6 mm         SRAIN SIZE: 0.1-6 mm       ************************************	is b of s	eing furth erpentine	her alter , magneti	ed. The m te, and c	esh is well de lays criss-cro	eveloped and does not appe oss slide (0.01-2 mm wide)	ar to be deformed or tectonized. Veins
ACCK NAME: Serpentinized dunite GRAIN SIZE: 0.1-6 mm TEXTURE: Mesh (poorly developed) TRIMARY PERCENT PERCENT SIZE COMPO- MINERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENOCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS PhenoCRYSTS	125-779A-25R-0.	I (Piece .	108,85-8/	Cm)	OBSERVER: SA	AB WHERE SAMPLED:	Conical Seamount, Southeast flank
SRAIN SIZE: 0.1-6 mm TEXTURE: Mesh (poorly developed) PRIMARY PERCENT PERCENT SIZE COMPO- MINERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENOCRYSTS Plivine 20 99 1-6 Subhedral-anhedral Altering to serpentine mesh (poorly developed). Wavy extinction. Red-dark brown: altered to magnetife	ROCK NAME: Ser	pentinized	d dunite				
<pre>iRAIN SIZE: 0.1-6 mm  EXTURE: Mesh (poorly developed)  PRIMARY PERCENT PERCENT SIZE COMPO- MINERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENOCRYSTS Plivine 20 99 1-6 Subhedral-anhedral Altering to serpentine mesh (poorly developed). Wavy extinction. Extended and brown: altered to magnetife initial 0.5 1 0.1-0.5 </pre>							
TEXTURE: Mesh (poorly developed) PRIMARY PERCENT PERCENT SIZE COMPO- MINERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENOCRYSTS Plivine 20 99 1-6 Subhedral-anhedral Altering to serpentine mesh (poorly developed). Wavy extinction. Red-dark brown: altered to magnetife	GRAIN SIZE: 0.	1-6 mm					
PRIMARY PERCENT PERCENT SIZE COMPO- MINERALOGY PRESENT ORIGINAL (mm) SITION MORPHOLOGY COMMENTS PHENOCRYSTS Divine 20 99 1-6 Subhedral-anhedral Altering to serpentine mesh (poorly developed). Wavy extinction. Epipel 0.5 1 0.1-0.5 Eucledral-subhedral Sector brown: altered to magnetify	TEXTURE: Mesh	(poorly de	eveloped)				
PRIMARY       PERCENT PERCENT SIZE       COMPO- INDERALOGY       MORPHOLOGY       COMMENTS         PHENOCRYSTS       Divine       20       99       1-6       Subhedral-anhedral       Altering to serpentine mesh (poorly developed). Wavy extinction.         pinel       0.5       1       0.1-0.5       Eubedral-subhedral       Red-dark brown: altered to magnetified							
MINERALOGY     PRESENT ORIGINAL (mm)     SITION     MORPHOLOGY     COMMENTS       PHENOCRYSTS     0     0     99     1-6     Altering to serpentine mesh (poorly developed). Wavy extinction.       Ipinel     0.5     1     0.1-0.5     Eubedral-subbedral     Red-dark brown; altered to magnetite	PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
PHENOCRYSTS Divine 20 99 1-6 Subhedral-anhedral Altering to serpentine mesh (poorly developed). Wavy extinction.	MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS Divine 20 99 1-6 Subhedral-anhedral Altering to serpentine mesh (poorly developed). Wavy extinction. Epipel 0.5 1 0.1-0.5 Euhedral-subhedral Red-dark brown; altered to magnetite				25 400097 <b>0</b> 11			
Divine 20 99 1-6 Subhedral-anhedral Altering to serpentine mesh (poorly developed). Wavy extinction.	PHENOCRYSTS						
ueveroped), wavy extinction. ueveroped), wavy extinction. Binel 0.5 1 0.1-0.5 Euhedral-subhedral Red-dark brown; altered to magnetify	Olivine	20	99	1-6		Subhedral-anhedr	al Altering to serpentine mesh (poorly
THE REAL PROPERTY AND A RE	Spinel	0.5	1	0.1-0.5		Eubedral-subbedr	al Red-dark brown; altered to magnetite.

Subhedral-anhedral

mm) throughout slide.

_____

Altering to serpentine bastite.

Lizardite and/or chrysotile forming mesh texture (poor) from

serpentine. Chrysotile also forms anastomosing veins (0.1-1

Dusty 0.1-mm grains concentrated along serpentine veins.

SHAPE

COMMENTS

OBSERVER: SAB

COMMENTS: Olivine is locally recrystallized into subgrains (microgranoblasts). Some olivines appear elongated and have wavy extinction and kink-banding. Most spinels are perfectly euhedral. Serpentine veins are anastomosing and vary from 0.1-0.7 cm wide. Olivine neoblasts appear to also be serpentinizing in areas of slide.

FILLING

N/A

Orthopyroxene

GROUNDMASS N/A

SECONDARY

MINERALOGY

Serpentine

Magnetite

VESICLES/

CAVITIES

Vesicles

N/A

PERCENT

78

1

0 -----

0

Trace 2-4

N/A N/A

Olivine

Spinel

-----

PERCENT LOCATION

REPLACING/

SIZE

(mm)

FILLING

### 125-779A-26R-02 (Piece 2B,50-52 cm)

OBSERVER: SAB

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Harzburgite

GRAIN SIZE: 0.02-5 mm

TEXTURE: Cumulate, granoblastic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO- SITION		MORPHOLOGY	COMMENTS
PHENOCRYSTS							
Olivine	48	81	0.5-4			Subhedral-anhedral	Wavy extinction, kink-banded, altering to serpentine; locally
Clinopyroxene	<1	<1	N/A			N/A	As exsolution lamellae, inclusions in orthonyrozene rims orthonyrozene
Spinel	1	1.5	0.02-2	Cr		Anhedral	Red-brown, altering to magnetite.
Orthopyroxene	15	18	1-5			N/A	Wavy extinction, elongated, clinopyroxene exsolution lamellae, altering to serpentine.
GROUNDMASS							
N/A	N/A	N/A	N/A			N/A	
SECONDARY		REPL	ACING/				
MINERALOGY	PERCENT	FILL	ING				COMMENTS
Serpentine	35	Olivine	, orthopyro	oxene		Chrysotile and/or	r lizardite altering olivine and
Magnetite	1	Spinel				orthopyroxene to fresh to fully de	mesh and bastite texture, but still too evelop these textures.
nagnetite		opiner				veins.	ins concentrated in serpentine areas and
VESICLES/ CAVITIES	PERCENT	LOCATIO	SIZE N (mm)		FILLIN	G	SHAPE
Vesicles	0						
COMMENTS: Relat ragge elong recry ortho	ively free ed trails gated, kin ystallized opyroxene	esh tecto sometime nks). Oli i. Orthop	nized harzh s. Olivine vine is loc yroxene has	and orthopyros cally recrystal inclusions of	spinels xene app llized i f clinop	have small anhedral i ear tectonized and de nto microgranoblasts; yroxene; clinopyroxer	inclusions of olivine; spinels form aformed (wavy extinctions, ; orthopyroxene appears to be ne occurs as rims around
125-779A-26R-02	(Piece 2	2C,71-75	cm)	OBSERVER: SAB		WHERE SAMPLED: Conic	cal Seamount, southeast flank
ROCK NAME: Alte	red serpe	entinized	harzburgit	e			
GRAIN SIZE: 0.0	1-4 mm						
TEXTURE: Minor	mesh and	bastite	in 1.5~cm-v	vein zone			
PRIMARY	PERCENT	ORIGINAL	SIZE (mm)	COMPO-		MORPHOLOGY	COMMENTS
in the state of th	1 HEIODALI	onionni	(many	billow		Noke Hobogi	commute
PHENOCRYSTS	2	86	0 2-1			Anhodral	Altoring to corporting mach wave
orivine	2	00	0.2-1			Annedral	extinction.
Clinopyroxene	Trace	Trace	0.01-0.05			Subhedral-anhedral	As exsolution lamellae in orthopyroxene.
Spinel	1	2	0.01-2			Subhedral-anhedral	Dark brown, altered to magnetite.
Orthopyroxene	2	12	1-4			Subhedral-anhedral	Altered to serpentine bastite; wavy extinction, bent clinopyroxene lamellae.
GROUNDMASS							
N/A	N/A	N/A	N/A		1	N/A	
SECONDARY		REPL	ACING/				
MINERALOGY	PERCENT	FILL	ING				COMMENTS
Clays	30	Serpent	ine			Dusty brown clay	distributed mainly along serpentine veins.
Serpentine	10-201221	Olivine	, orthopyro	xene		Chrysotile and/or	r lizardite forming multiple veins which run
Magnetite	2	Spinel				In various orient	ins concentrated in vein zone.
Brucite	Trace	Serpent	ine			May be intermixed	d with serpentine and magnetite in veins.
VESICLES/ CAVITIES Vesicles	PERCENT 0	LOCATIO	SIZE N (mm)		FILLIN	G	SHAPE

COMMENTS: Slide consists mostly of 1.5-cm-wide zone of veins (serpentine, magnetite, brucite(?)) which run 45 degrees from long axis of slide. This slide has numerous crosscutting relationships. Has a moderate "Frankenstein" texture. Orthopyroxene and olivine have wavy extinctions; orthopyroxene has bent exsolution lamellae. Spinel grains are arranged in trails perpendicular to main vein zone. 125-779A-26R-03 (Piece 3B,101-103 cm)

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.02-5 mm

TEXTURE: Poor mesh and bastite (from cumulate)

OBSERVER: SAB

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO- SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
livine	21.5	62.5	0.5-3		Anhedral	Kink-banded, wavy extinction, altered to
linopyroxene	1	1	0.02-0.5		Anhedral	As exsolution lamellae, grains in and around orthopyroxene also.
pinel	1.5	1.5	0.02-2		Anhedral-ragged	Dark red brown, altered to magnetite.
rthopyroxene	25	35	0.1-5		Subhedral-anhed	ral Altering to serpentine bastite; (100) clinopyroxene lamellae are poor, wavy extinction.
GROUNDMASS						
/A	N/A	N/A	N/A		N/A	
ECONDARY		REPL	ACING/			
INERALOGY	PERCENT	FILL	ING			COMMENTS
erpentine	50	Olivine	, orthopyro	xene	Chrysotile a orthopyroxer abundance of wide).	and/or lizardite altering olivine and ne. Mesh is poorly developed because of large f chrysotile and magnetite veins (0.2-0.8 mm
lagnetite	1	Spinel			Dusty 0.1-mm	n grains concentrated in veins.
ESTCLES /			QT7E			
AVITIES	PERCENT	LOCATIO	N (mm)		FILLING	SHAPE
esicles	0	DOCATIO	is (nair)		FIBLING	SHAPE
Majo serp vein 25-779A-28R-0 OCK NAME: Alt	or zone of entine and zone. 22 (109-11: ered serpe	multiple i magneti 3 cm) entinized	serpentine te veins an dunite	veins oriente d is about 1. OBSERVER: SAB	ed ~ 50 degrees to long 5 cm wide. Spinels are e WHERE SAMPLED:	axis of slide. It is defined by multiple elongated in trains perpendicular to main Conical Seamount, southeast flank
Majc serp vein 25-779A-28R-( OCK NAME: Alt RAIN SIZE: 0. EXTURE: Tecto	or zone of entine and zone. 2 (109-11: cered serpe 1-1 mm onized mes)	multiple i magneti 3 cm) entinized h	serpentine te veins an dunite	veins oriento d is about 1. OBSERVER: SAB	ed ~ 50 degrees to long 5 cm wide. Spinels are e WHERE SAMPLED:	axis of slide. It is defined by multiple elongated in trains perpendicular to main Conical Seamount, southeast flank
Majc serp vein 25-779A-28R-0 OCK NAME: Alt RAIN SIZE: 0. EXTURE: Tecto COCK Tecto RIMARY	pr zone of entine and zone. 22 (109-11: ered serpe 1-1 mm ponized mesi	multiple i magneti 3 cm) entinized h	serpentine te veins an dunite SIZE	veins orienta d is about 1. OBSERVER: SAB	ed ~ 50 degrees to long 5 cm wide. Spinels are e WHERE SAMPLED:	axis of slide. It is defined by multiple elongated in trains perpendicular to main Conical Seamount, southeast flank
Majc serp vein .25-779A-28R-0 NOCK NAME: Alt RAIN SIZE: 0. YEXTURE: Tecto YEXTURE: Tecto RIMARY HINERALOGY	Pr zone of entine and zone. 22 (109-11: ered serpe 1-1 mm onized mes) PERCENT PRESENT	multiple i magneti 3 cm) entinized h PERCENT ORIGINAL	serpentine te veins an dunite SIZE (mm)	veins oriento d is about 1. OBSERVER: SAB COMPO- SITION	ed ~ 50 degrees to long 5 cm wide. Spinels are e WHERE SAMPLED: MORPHOLOGY	axis of slide. It is defined by multiple elongated in trains perpendicular to main Conical Seamount, southeast flank
Majc serp vein 25-779A-28R-( OCK NAME: Alt RAIN SIZE: 0. EXTURE: Tecto INERALOGY PHENOCRYSTS	Pr zone of entine and zone. 22 (109-11: ered serpe 1-1 mm onized mes) PERCENT PRESENT	multiple i magneti 3 cm) entinized h PERCENT ORIGINAL	SETPENTINE	veins orienta d is about 1. OBSERVER: SAB COMPO- SITION	ed ~ 50 degrees to long 5 cm wide. Spinels are e WHERE SAMPLED: MORPHOLOGY	axis of slide. It is defined by multiple slongated in trains perpendicular to main Conical Seamount, southeast flank COMMENTS
Majc serp vein 25-779A-28R-0 OCK NAME: Alt RAIN SIZE: 0. EXTURE: Tecto RIMARY UNERALOGY PHENOCRYSTS livine pinel	Pr zone of entine and zone. 22 (109-11: cered serpe 1-1 mm ponized mesi PERCENT PRESENT 0 Trace	multiple i magneti 3 cm) entinized h PERCENT ORIGINAI 99-10 Trace	serpentine te veins an dunite SIZE (mm) Not visible 0.1-0.7	veins orienta d is about 1. OBSERVER: SAB COMPO- SITION	ed ~ 50 degrees to long 5 cm wide. Spinels are e WHERE SAMPLED: MORPHOLOGY Not visible Euhedral-subhed:	axis of slide. It is defined by multiple elongated in trains perpendicular to main Conical Seamount, southeast flank COMMENTS Completely altered to serpentine mesh. ral Red; altered to magnetite; has bent cracks in some grains.
Majc serp vein 25-779A-28R-0 OCK NAME: Alt RAIN SIZE: 0. EXTURE: Tecto 	pr zone of entine and zone. 22 (109-11: cered serpe 1-1 mm ponized mesi percent present 0 Trace	multiple i magneti 3 cm) entinized h PERCENT ORIGINAI 99-10 Trace	serpentine te veins an dunite SIZE (mm) Not visible 0.1-0.7	veins orienta d is about 1. OBSERVER: SAB COMPO- SITION	ed ~ 50 degrees to long 5 cm wide. Spinels are e WHERE SAMPLED: MORPHOLOGY Not visible Euhedral-subhed:	axis of slide. It is defined by multiple elongated in trains perpendicular to main Conical Seamount, southeast flank COMMENTS Completely altered to serpentine mesh. ral Red; altered to magnetite; has bent cracks in some grains.
Majc serp vein 25-779A-28R-( OCK NAME: Alt RAIN SIZE: 0. EXTURE: Tecto 	Pr zone of entine and zone. 22 (109-11: ered serpe 1-1 mm onized mesh percent PRESENT 0 Trace N/A	multiple i magneti 3 cm) entinized h PERCENT ORIGINAI 99-10 Trace N/A	serpentine te veins an dunite SIZE (mm) Not visible 0.1-0.7	veins orienta d is about 1. OBSERVER: SAB COMPO- SITION	ed ~ 50 degrees to long 5 cm wide. Spinels are e WHERE SAMPLED: MORPHOLOGY Not visible Euhedral-subhed: N/A	axis of slide. It is defined by multiple elongated in trains perpendicular to main Conical Seamount, southeast flank COMMENTS Completely altered to serpentine mesh. ral Red; altered to magnetite; has bent cracks in some grains.
Majc serp vein 25-779A-28R-( OCK NAME: Alt RAIN SIZE: 0. EXTURE: Tecto INTERALOGY PHENOCRYSTS livine pinel GROUNDMASS /A ECONDARY	Pr zone of Pentine and zone. 22 (109-11: cered serpe 1-1 mm ponized mesi PERCENT PRESENT 0 Trace N/A	multiple i magneti 3 cm) entinized h PERCENT ORIGINAL 99-10 Trace N/A	serpentine te veins an dunite SIZE (mm) Not visible 0.1-0.7 N/A ACING/	veins orienta d is about 1. OBSERVER: SAB COMPO- SITION Cr	ed ~ 50 degrees to long 5 cm wide. Spinels are e WHERE SAMPLED: MORPHOLOGY Not visible Euhedral-subhed: N/A	axis of slide. It is defined by multiple elongated in trains perpendicular to main Conical Seamount, southeast flank COMMENTS Completely altered to serpentine mesh. ral Red; altered to magnetite; has bent cracks in some grains.
Majc serp vein 25-779A-28R-0 OCK NAME: Alt RAIN SIZE: 0. EXTURE: Tecto RIMARY INERALOGY PHENOCRYSTS Livine binel SROUNDMASS /A ECONDARY INERALOGY	Pr zone of entine and zone. 22 (109-11: cered serpe 1-1 mm pnized mesi percent PRESENT 0 Trace N/A PERCENT	multiple i magneti 3 cm) entinized h PERCENT ORIGINAL 99-10 Trace N/A REPI	serpentine te veins an dunite SIZE (mm) Not visible 0.1-0.7 N/A ACING/	veins orienta d is about 1. OBSERVER: SAB COMPO- SITION	ed ~ 50 degrees to long 5 cm wide. Spinels are e WHERE SAMPLED: MORPHOLOGY Not visible Euhedral-subhed: N/A	axis of slide. It is defined by multiple elongated in trains perpendicular to main Conical Seamount, southeast flank COMMENTS Completely altered to serpentine mesh. ral Red; altered to magnetite; has bent cracks in some grains.
Majc serp vein 25-779A-28R-0 OCK NAME: Alt RAIN SIZE: 0. EXTURE: Tecto INERALOGY PHENOCRYSTS livine pinel GROUNDMASS /A ECONDARY INERALOGY lays	r zone of entine and zone. 22 (109-11: cered serpe 1-1 mm onized mesh percent PRESENT 0 Trace N/A PERCENT 15-20	multiple i magneti 3 cm) entinized h PERCENT ORIGINAL 99-10 Trace N/A REPI FILL Serpent	serpentine te veins an dunite SIZE (mm) Not visible 0.1-0.7 N/A ACING/ ING ine	veins orienta d is about 1. OBSERVER: SAB COMPO- SITION	ed ~ 50 degrees to long 5 cm wide. Spinels are e WHERE SAMPLED: MORPHOLOGY Not visible Euhedral-subhed: N/A Fine-grainee	axis of slide. It is defined by multiple elongated in trains perpendicular to main Conical Seamount, southeast flank COMMENTS Completely altered to serpentine mesh. ral Red; altered to magnetite; has bent cracks in some grains. COMMENTS d dusty brown clay throughout slide, also
Majc serp vein 25-779A-28R-( OCK NAME: Alt RAIN SIZE: 0. TEXTURE: Tecto RIMARY HINERALOGY PHENOCRYSTS livine pinel GROUNDMASS (/A ECONDARY HINERALOGY Hays erpentine	r zone of entine and zone. 2 (109-11: ered serpe 1-1 mm onized mesl present PRESENT 0 Trace N/A PERCENT 15-20 78-83	multiple i magneti 3 cm) entinized h PERCENT ORIGINAI 99-10 Trace N/A REPI FILI Serpent Olivine	serpentine te veins an dunite SIZE (mm) Not visible 0.1-0.7 N/A ACING/ ING ine	veins orienta d is about 1. OBSERVER: SAB COMPO- SITION	ed ~ 50 degrees to long 5 cm wide. Spinels are e WHERE SAMPLED: MORPHOLOGY Not visible Euhedral-subhed: N/A Fine-grained concentrated Poorly deve:	axis of slide. It is defined by multiple elongated in trains perpendicular to main Conical Seamount, southeast flank COMMENTS Completely altered to serpentine mesh. ral Red; altered to magnetite; has bent cracks in some grains. COMMENTS d dusty brown clay throughout slide, also i in large veins. loped mesh; large chrysotile veins; lizardite
Majc serp vein 25-779A-28R-( OCK NAME: Alt RAIN SIZE: 0. EXTURE: Tecto INERALOGY PHENOCRYSTS livine pinel GROUNDMASS //A ECONDARY INERALOGY lays erpentine	r zone of entine and zone. 2 (109-11: ered serpe 1-1 mm onized mesl present present 0 Trace N/A PERCENT 15-20 78-83	multiple i magneti 3 cm) entinized h PERCENT ORIGINAI 99-10 Trace N/A REPI FILI Serpent Olivine	serpentine te veins an dunite SIZE (mm) Not visible 0.1-0.7 N/A ACING/ ING ine	veins orienta d is about 1. OBSERVER: SAB COMPO- SITION	ed ~ 50 degrees to long 5 cm wide. Spinels are e WHERE SAMPLED: MORPHOLOGY Not visible Euhedral-subhed: N/A Fine-grained concentrated Poorly devel also present Duete concent	axis of slide. It is defined by multiple elongated in trains perpendicular to main Conical Seamount, southeast flank COMMENTS Completely altered to serpentine mesh. ral Red; altered to magnetite; has bent cracks in some grains. COMMENTS d dusty brown clay throughout slide, also d in large veins. loped mesh; large chrysotile veins; lizardite t.
Majc serp vein 25-779A-28R-0 OCK NAME: Alt RAIN SIZE: 0. EXTURE: Tecto TEXTURE: Tecto RIMARY INERALOGY PHENOCRYSTS livine pinel GROUNDMASS /A ECONDARY INERALOGY lays erpentine agnetite rucite?	r zone of entine and zone. 22 (109-11: cered serpe 1-1 mm onized mesh percent present 0 Trace N/A PERCENT 15-20 78-83 1 <1	multiple i magneti 3 cm) entinized h PERCENT ORIGINAI 99-10 Trace N/A REPI FILI Serpent Olivine Spinel Serpent	serpentine te veins an dunite SIZE (mm) Not visible 0.1-0.7 N/A ACING/ ING ine	veins orienta d is about 1. OBSERVER: SAB COMPO- SITION Cr	ed ~ 50 degrees to long 5 cm wide. Spinels are e WHERE SAMPLED: MORPHOLOGY Not visible Euhedral-subhed: N/A Fine-grained concentrated Poorly devel also present Dusty grain. Forms in ve	axis of slide. It is defined by multiple elongated in trains perpendicular to main Conical Seamount, southeast flank COMMENTS Completely altered to serpentine mesh. ral Red; altered to magnetite; has bent cracks in some grains. COMMENTS d dusty brown clay throughout slide, also d in large veins. loped mesh; large chrysotile veins; lizardite t. s concentrated in veins. ins, subhedral.

COMMENTS: No bastite texture visible. Entire slide appears to be severly deformed mesh serpentine cut by 4-mm-wide vein of chrysotile, clay, and magnetite. Slide was impregnated and veins turned purple. No piece # given.

## 125-779A-28R-03 (Piece 2A,26-28 cm)

OBSERVER: SAB

#### WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Serpentinized harzburgite

GRAIN SIZE: 0.05-6 mm

TEXTURE: Mesh and bastite

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO- SITION	MORPHOLOGY	COMMENTS
DURNOGRYGEG						
livine	Trace	83.5	0.1		Anhedral	Completely altered to serpentine mesh; two anhedral grains present as
pinel	1	1.5	0.05-1	Cr	Fubedral-anhedral	Red: altered to magnetite
rthopyroxene	0	15	1-6	- CL	Subhedral-anhedra	al Completely altered to serpentine bastite.
GROUNDMASS						
/A	N/A	N/A	N/A		N/A	
ECONDARY		REPL	ACING/			
INERALOGY	PERCENT	FILL	ING			COMMENTS
lays	5	Serpent	ine		Dusty brown o blue-green to bastite grain	clay distributed across slide; also clay with o yellow pleochroism which is in orthopyroxen ns (may be chlorite?).
erpentine	93	Olivine	, orthopyn	roxene	Lizardite and textures; and	d/or chrysotile forming mesh and bastite tigorite is present in feather-like blades, b r amounts (5%)
agnetite	<1				Dusty grains	concentrated in veins and mesh edges.
ESICLES/			SIZE			
AVITIES	PERCENT	LOCATIC	N (mm)		FILLING	SHAPE
esicles	0					
25-779A-31R-01 )CK NAME: Meta	l (Piece 1 abasalt	0,102-10	3 cm)	OBSERVER: HI	R WHERE SAMPLED: C	Conical Seamount, southeast flank
25-779A-31R-01 OCK NAME: Meta RAIN SIZE: 0.0	l (Piece 1 abasalt 05-0.15	0,102-10	3 cm)	OBSERVER: HI	R WHERE SAMPLED: C	Conical Seamount, southeast flank
25-779A-31R-01 OCK NAME: Meta RAIN SIZE: 0.0 EXTURE: Microp	l (Piece 1 abasalt 05-0.15 phyric wit	0,102-10 h glassy	3 cm) margin	OBSERVER: HI	R WHERE SAMPLED: C	Conical Seamount, southeast flank
25-779A-31R-01 OCK NAME: Meta RAIN SIZE: 0.( EXTURE: Microp	l (Piece 1 abasalt 05-0.15 Dhyric wit	0,102-10 h glassy	3 cm) margin	OBSERVER: HI	R WHERE SAMPLED: C	Conical Seamount, southeast flank
25-779A-31R-03 DCK NAME: Meta RAIN SIZE: 0.0 EXTURE: Microp RIMARY	l (Piece 1 abasalt 05-0.15 phyric wit PERCENT	0,102-10 h glassy PERCENT	margin SIZE	OBSERVER: HI	R WHERE SAMPLED: C	Conical Seamount, southeast flank
25-779A-31R-03 OCK NAME: Meta RAIN SIZE: 0.0 SXTURE: Microp CONTRACTION RIMARY INERALOGY	l (Piece 1 abasalt 05-0.15 ohyric wit PERCENT PRESENT	0,102-10 h glassy  PERCENT ORIGINAL	margin SIZE (mm)	OBSERVER: HI COMPO- SITION	R WHERE SAMPLED: C MORPHOLOGY	Conical Seamount, southeast flank
25-779A-31R-03 OCK NAME: Meta RAIN SIZE: 0.0 EXTURE: Microp RIMARY INERALOGY PHENOCRYSTS	l (Piece 1 abasalt D5-0.15 phyric wit PERCENT PRESENT	0,102-10 h glassy PERCENT ORIGINAL	margin SIZE (mm)	OBSERVER: HI COMPO- SITION	R WHERE SAMPLED: C	Conical Seamount, southeast flank
25-779A-31R-03 DCK NAME: Meta RAIN SIZE: 0.0 EXTURE: Microp RIMARY INERALOGY PHENOCRYSTS linopyroxene	l (Piece 1 abasalt 05-0.15 ohyric wit PERCENT PRESENT 20-25	0,102-10 h glassy PERCENT ORIGINAL 25-35	margin SIZE (mm)	OBSERVER: HI COMPO- SITION	R WHERE SAMPLED: C MORPHOLOGY Subhedral	Conical Seamount, southeast flank COMMENTS Some radiating bunches may be quench features. 10-20% alteration to chlorite.
25-779A-31R-03 DCK NAME: Meta RAIN SIZE: 0.0 EXTURE: Microp RIMARY INERALOGY PHENOCRYSTS linopyroxene GROUNDMASS	l (Piece 1 abasalt D5-0.15 phyric wit PERCENT PRESENT 20-25	0,102-10 h glassy PERCENT ORIGINAL 25-35	margin SIZE (mm)	OBSERVER: HI COMPO- SITION	R WHERE SAMPLED: C MORPHOLOGY Subhedral	Conical Seamount, southeast flank COMMENTS Some radiating bunches may be quench features. 10-20% alteration to chlorite.
25-779A-31R-03 OCK NAME: Meta NAIN SIZE: 0.0 EXTURE: Microp CRIMARY INERALOGY PHENOCRYSTS Linopyroxene BROUNDMASS Lass	l (Piece 1 abasalt D5-0.15 ohyric wit PERCENT PRESENT 20-25 0	0,102-10 h glassy PERCENT ORIGINAL 25-35 50-60	margin SIZE (mm) 0.05-0.15	OBSERVER: HI COMPO- SITION	R WHERE SAMPLED: C MORPHOLOGY Subhedral N/A	Comical Seamount, southeast flank COMMENTS Some radiating bunches may be quench features. 10-20% alteration to chlorite. 100% altered to brown amorphous clays.
25-779A-31R-01 OCK NAME: Mets RAIN SIZE: 0.0 EXTURE: Microp CONTRACTOR RIMARY INERALOGY PHENOCRYSTS Linopyroxene SROUNDMASS Lass Lagioclase	0 (Piece 1 abasalt 05-0.15 phyric wit PERCENT PRESENT 20-25 0 0	0,102-10 h glassy PERCENT ORIGINAL 25-35 50-60 10-20	margin SIZE (mm) 0.05-0.15 N/A 0.01-0.2	OBSERVER: HI COMPO- SITION	R WHERE SAMPLED: C MORPHOLOGY Subhedral N/A Lath	Conical Seamount, southeast flank COMMENTS Some radiating bunches may be quench features. 10-20% alteration to chlorite 100% altered to brown amorphous clays. Quench textured needles occasionally associated with clinopyroxene. 100%
25-779A-31R-01 OCK NAME: Mets RAIN SIZE: 0.0 EXTURE: Microp RIMARY INERALOGY PHENOCRYSTS Linopyroxene SROUNDMASS Lass Lagioclase	l (Piece 1 abasalt D5-0.15 phyric wit PERCENT PRESENT 20-25 0 0	0,102-10 h glassy PERCENT ORIGINAL 25-35 50-60 10-20	margin SIZE (mm) 0.05-0.15 N/A 0.01-0.2	OBSERVER: HI COMPO- SITION	R WHERE SAMPLED: C MORPHOLOGY Subhedral N/A Lath	Conical Seamount, southeast flank COMMENTS Some radiating bunches may be quench features. 10-20% alteration to chlorite 100% altered to brown amorphous clays. Quench textured needles occasionally associated with clinopyroxene. 100% altered to clays.
25-779A-31R-01 OCK NAME: Mets KAIN SIZE: 0.0 EXTURE: Microp CONTRACTOR RIMARY INERALOGY PHENOCRYSTS Linopyroxene SROUNDMASS Lass Lass Lass Lass Lass Lass Lass La	l (Piece 1 abasalt D5-0.15 phyric wit PERCENT PRESENT 20-25 0 0 <1	0,102-10 h glassy PERCENT ORIGINAL 25-35 50-60 10-20 <1	margin SIZE (mm) 0.05-0.15 N/A 0.01-0.2 0.01-0.05	OBSERVER: HI	R WHERE SAMPLED: C MORPHOLOGY Subhedral N/A Lath Subhedral	Conical Seamount, southeast flank COMMENTS Some radiating bunches may be quench features. 10-20% alteration to chlorite 100% altered to brown amorphous clays. Quench textured needles occasionally associated with clinopyroxene. 100% altered to clays. Black, disseminated.
25-779A-31R-01 OCK NAME: Meta NAIN SIZE: 0.0 CXTURE: Microp CXTURE: Microp CALMARY INERALOGY PHENOCRYSTS Linopyroxene GROUNDMASS Lass Lass Lass Lass Lass Lass Lass La	l (Piece 1 abasalt 05-0.15 phyric wit PERCENT PRESENT 20-25 0 0 <1	0,102-10 h glassy PERCENT ORIGINAL 25-35 50-60 10-20 <1 REPL	margin SIZE (mm) 0.05-0.15 N/A 0.01-0.2 0.01-0.05 ACING/	OBSERVER: HI	R WHERE SAMPLED: C MORPHOLOGY Subhedral N/A Lath Subhedral	Conical Seamount, southeast flank COMMENTS Some radiating bunches may be quench features. 10-20% alteration to chlorite 100% altered to brown amorphous clays. Quench textured needles occasionally associated with clinopyroxene. 100% altered to clays. Black, disseminated.
25-779A-31R-01 OCK NAME: Meta RAIN SIZE: 0.0 EXTURE: Microp CEXTURE: Microp RIMARY INERALOGY PHENOCRYSTS linopyroxene GROUNDMASS lass lagioclase pinels ECONDARY INERALOGY INERALOGY	l (Piece 1 abasalt D5-0.15 phyric wit PERCENT 20-25 0 0 <1 PERCENT	0,102-10 h glassy PERCENT ORIGINAL 25-35 50-60 10-20 <1 REPL FILL	margin SIZE (mm) 0.05-0.15 N/A 0.01-0.2 0.01-0.05 ACING/ ING	OBSERVER: HI	R WHERE SAMPLED: C MORPHOLOGY Subhedral N/A Lath Subhedral	COMMENTS Some radiating bunches may be quench features. 10-20% alteration to chlorite 100% altered to brown amorphous clays. Quench textured needles occasionally associated with clinopyroxene. 100% altered to clays. Black, disseminated. COMMENTS
25-779A-31R-01 DCK NAME: Meta RAIN SIZE: 0.0 EXTURE: Microp CONTRESS MICROP RIMARY INERALOGY PHENOCRYSTS linopyroxene GROUNDMASS lass lagioclase pinels ECONDARY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY	l (Piece 1 abasalt D5-0.15 phyric wit PERCENT 20-25 0 0 <1 PERCENT 20-30	0,102-10 h glassy PERCENT ORIGINAL 25-35 50-60 10-20 <1 REPL FILL Glass, Glass	margin SIZE (mm) 0.05-0.15 N/A 0.01-0.2 0.01-0.05 ACING/ ING plagioclass	OBSERVER: HI COMPO- SITION	R WHERE SAMPLED: C MORPHOLOGY Subhedral N/A Lath Subhedral Brown clay us	Conical Seamount, southeast flank COMMENTS Some radiating bunches may be quench features. 10-20% alteration to chlorite 100% altered to brown amorphous clays. Quench textured needles occasionally associated with clinopyroxene. 100% altered to clays. Black, disseminated. COMMENTS sually as pseudomorphs after plagioclase. ud weakly birefringent in matrix and after
25-779A-31R-01 CCK NAME: Meta VAIN SIZE: 0.0 XTURE: Microp XIMARY NERALOGY PHENOCRYSTS inopyroxene ROUNDMASS ass agioclase pinels CONDARY NERALOGY Ays ilorite	l (Piece 1 abasalt D5-0.15 ohyric wit PERCENT 20-25 0 0 <1 PERCENT 20-30	0,102-10 h glassy PERCENT ORIGINAL 25-35 50-60 10-20 <1 REPL FILL Glass, Glass,	margin SIZE (mm) 0.05-0.15 N/A 0.01-0.2 0.01-0.05 ACING/ ING plagioclas clinopyrox	OBSERVER: HI COMPO- SITION e ene veins	R WHERE SAMPLED: C MORPHOLOGY Subhedral N/A Lath Subhedral Brown clay us Light-green a clinopyroxene blue-grav in	COMMENTS Some radiating bunches may be quench features. 10-20% alteration to chlorite 100% altered to brown amorphous clays. Quench textured needles occasionally associated with clinopyroxene. 100% altered to clays. Black, disseminated. COMMENTS bually as pseudomorphs after plagioclase. ind weakly birefringent in matrix and after . Veins: colorless in plane light, but crossed nicols (0.03-1.5 mm).
25-779A-31R-01 OCK NAME: Meta WAIN SIZE: 0.0 EXTURE: Microp CRIMARY INERALOGY PHENOCRYSTS Linopyroxene GROUNDMASS Lagioclase Dinels CCONDARY INERALOGY LAYS LIORITE	l (Piece 1 abasalt D5-0.15 ohyric wit PERCENT 20-25 0 0 <1 PERCENT 20-30	0,102-10 h glassy PERCENT ORIGINAL 25-35 50-60 10-20 <1 REPL FILL Glass, Glass,	margin SIZE (mm) 0.05-0.15 N/A 0.01-0.2 0.01-0.05 ACING/ ING plagioclas clinopyrox	OBSERVER: HI COMPO- SITION	R WHERE SAMPLED: C MORPHOLOGY Subhedral N/A Lath Subhedral Brown clay us Light-green a clinopyroxene blue-gray in	COMMENTS Some radiating bunches may be quench features. 10-20% alteration to chlorite 100% altered to brown amorphous clays. Quench textured needles occasionally associated with clinopyroxene. 100% altered to clays. Black, disseminated. COMMENTS bually as pseudomorphs after plagioclase. ind weakly birefringent in matrix and after . Veins: colorless in plane light, but crossed nicols (0.03-1.5 mm).
25-779A-31R-01 CCK NAME: Meta VAIN SIZE: 0.0 XTURE: Microry XIMARY NERALOGY PHENOCRYSTS inopyroxene SROUNDMASS ass agioclase pinels CCONDARY NERALOGY Ays Horite SICLES/	l (Piece 1 abasalt D5-0.15 ohyric wit PERCENT 20-25 0 0 <1 PERCENT 20-30	0,102-10 h glassy PERCENT ORIGINAL 25-35 50-60 10-20 <1 REPL FILL Glass, Glass,	margin SIZE (mm) 0.05-0.15 N/A 0.01-0.2 0.01-0.2 0.01-0.05 ACING/ ING plagioclas clinopyrox	OBSERVER: HI COMPO- SITION	R WHERE SAMPLED: C MORPHOLOGY Subhedral N/A Lath Subhedral Brown clay us Light-green a clinopyroxene blue-gray in	COMMENTS Some radiating bunches may be quench features. 10-20% alteration to chlorite 100% altered to brown amorphous clays. Quench textured needles occasionally associated with clinopyroxene. 100% altered to clays. Black, disseminated. COMMENTS sually as pseudomorphs after plagioclase. ind weakly birefringent in matrix and after s. Veins: colorless in plane light, but crossed nicols (0.03-1.5 mm).
25-779A-31R-01 OCK NAME: Meta RAIN SIZE: 0.0 SXTURE: Microp CRIMARY INERALOGY PHENOCRYSTS linopyroxene GROUNDMASS lass lagioclase pinels ECONDARY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY INERALOGY SCICLES/ AVITIES	l (Piece 1 abasalt D5-0.15 Phyric wit PERCENT 20-25 0 0 <1 PERCENT 20-30 PERCENT	0,102-10 h glassy PERCENT ORIGINAL 25-35 50-60 10-20 <1 REPL FILL Glass, Glass, LOCATIO	margin SIZE (mm) 0.05-0.15 N/A 0.01-0.2 0.01-0.05 ACING/ ING plagioclas clinopyrox SIZE N (mm)	OBSERVER: HI COMPO- SITION	R WHERE SAMPLED: C MORPHOLOGY Subhedral N/A Lath Subhedral Brown clay us Light-green a clinopyroxene blue-gray in FILLING	Conical Seamount, southeast flank COMMENTS Some radiating bunches may be quench features. 10-20% alteration to chlorite. 100% altered to brown amorphous clays. Quench textured needles occasionally associated with clinopyroxene. 100% altered to clays. Black, disseminated. COMMENTS sually as pseudomorphs after plagioclase. ind weakly birefringent in matrix and after to veins: colorless in plane light, but crossed nicols (0.03-1.5 mm).

------____ COMMENTS: One half of thin section is a glassy chilled margin with >95% glass and a few quenched crystals of plagioclase. The other half is microcrystalline. Entire sample is heavily veined with chlorite veins and pervasively altered to clays.

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125-779A-31R-01 (Piece 13,119-121 cm) OBSERVER: JOH

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Metabasalt

GRAIN SIZE: 0.05-0.15 mm

TEXTURE: Aphyric

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-			
MINERALOGY	PRESENT	ORIGINAL	L (mm)	SITION	MORPHOLOGY	COMMENT	S
Glass	0	40-50	N/A	UIIION	N/A	100% altered to 1	brown clavs
Plagioclase	0	15-20	0.05-0.15		Laths, subhedral	100% altered to	clavs, not evenly
						distributed through	ughout thin section.
Clinopyroxene	20-25	25-40	0.05-0.1		Anhedral	10-20% altered to	o chlorite,
						occassionally in	timate intergrowth with
						plagioclase.	
Spinels	<<1	<<1	0.05		Subhedral	Black, sparse.	
SECONDARY		REPI	ACTNG/				
MINERALOGY	PERCENT	FILI	ING			COMMENTS	
Clays	55-75	Glass.	plagioclase	, veins	Brown clavs per	vasively altered fro	om glass and pseudomorphs
5767969 <b>*</b> 067	1.42926 - 12.427		[	1	after plagioclas	se.	on grado and pocudomorphis
Chlorite	5-10	Veins,	vesicles, c	avities in matrix	Light to deep-gr	reen in plane light.	, mildly pleochroic
					blue-gray to nea	arly black in cross	ed nicols.
Pumpellyite	1-2	Vein			2-mm-wide vein,	apple-green, possil	bly Fe-rich. Some prehnite
					may be intergrow	wn.	
VESICLES/			STZE				
CAVITIES	PERCENT	LOCATIO	ON (mm)	FIL	ING	CHADE	COMMENTS
Vesicles	<1-1	Through	nout 0.1-0.2	Chlor	tite	Bandom	Filled with bright gree
				011201			pleochroic chlorite.
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met	portions 2 (Piece 3 abasalt	B, 32-34	cm)	OBSERVER: JOH	WHERE SAMPLED: Con:	ical Seamount, sout	heast flank
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr	2 (Piece 3 abasalt 05-0.1 ic	BB, 32-34	cm)	OBSERVER: JOH	WHERE SAMPLED: Con:	ical Seamount, sout	heast flank
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr PRIMARY	2 (Piece 3 abasalt 05-0.1 ric PERCENT	PERCENT	cm) SIZE	COMPO-	WHERE SAMPLED: Con:	ical Seamount, sout	heast flank
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr PRIMARY MINERALOGY	POPULIONS 2 (Piece 3 abasalt 05-0.1 Tic PERCENT PRESENT	PERCENT ORIGINAL	cm) SIZE L (mm)	COMPO- SITION	WHERE SAMPLED: Con: MORPHOLOGY	ical Seamount, sout	heast flank
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr PRIMARY MINERALOGY Glass	2 (Piece 3 abasalt 05-0.1 tic PERCENT PRESENT 0	PERCENT N/A	cm) SIZE L (mm) N/A	COMPO- SITION	WHERE SAMPLED: Con: MORPHOLOGY N/A	COMMENT	heast flank  S brown clays.
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr PRIMARY MINERALOGY Glass Clinopyroxene	2 (Piece 3 abasalt 05-0.1 tic PERCENT PRESENT 0 <5-10	PERCENT ORIGINAI N/A 25-40	SIZE L (mm) N/A 0.05-0.1	COMPO- SITION	WHERE SAMPLED: Con: MORPHOLOGY N/A Anhedral	COMMENT 100% altered to 1 80-100% altered	heast flank S brown clays. to brown clays and
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr PRIMARY MINERALOGY Glass Clinopyroxene	2 (Piece 3 abasalt 05-0.1 ic PERCENT PRESENT 0 <5-10	PERCENT N/A 25-40	Cm) SIZE L (mm) N/A 0.05-0.1	COMPO- SITION	WHERE SAMPLED: Con: MORPHOLOGY N/A Anhedral	COMMENT COMMENT 100% altered to 1 80-100% altered chlorite(?).	heast flank S brown clays. to brown clays and
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr PRIMARY MINERALOGY Glass Clinopyroxene Plagioclase Spicol	2 (Piece 3 abasalt 05-0.1 ic PERCENT PRESENT 0 <5-10 0	PERCENT N/A 25-40 15-25	cm) SIZE L (mm) N/A 0.05-0.1 0.03-0.2 0.01-0.2	COMPO- SITION	WHERE SAMPLED: Con: MORPHOLOGY N/A Anhedral Laths, quench Eubedral-anhedral	COMMENT COMMENT 100% altered to 1 80-100% altered chlorite(?). 100% altered. Plack sparse	heast flank S brown clays. to brown clays and
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr TEXTURE: Aphyr PRIMARY MINERALOGY Glass Clinopyroxene Plagioclase Spinel	2 (Piece 3 abasalt 05-0.1 Tic PERCENT PRESENT 0 <5-10 0 <<1	PERCENT ORIGINAJ N/A 25-40 15-25 <<1	SIZE L (mm) N/A 0.05-0.1 0.03-0.2 0.01-0.02	COMPO- SITION	WHERE SAMPLED: Con: MORPHOLOGY N/A Anhedral Laths, quench Euhedral-anhedral	COMMENT COMMENT 100% altered to 1 80-100% altered chlorite(?). 100% altered. Black, sparse.	heast flank S brown clays. to brown clays and
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr PRIMARY MINERALOGY Glass Clinopyroxene Plagioclase Spinel SECONDARY	2 (Piece 3 abasalt 05-0.1 fic PERCENT PRESENT 0 <5-10 0 <<1	PERCENT ORIGINAI N/A 25-40 15-25 <<1 REPI	SIZE L (mm) N/A 0.05-0.1 0.03-0.2 0.01-0.02 LACING/	COMPO- SITION	WHERE SAMPLED: Con: MORPHOLOGY N/A Anhedral Laths, quench Euhedral-anhedral	COMMENT COMMENT 100% altered to 80-100% altered chlorite(?). 100% altered. Black, sparse.	heast flank S brown clays. to brown clays and
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr 	POPTIONS 2 (Piece 3 abasalt 05-0.1 Tic PERCENT 0 <5-10 0 <<1 PERCENT	PERCENT ORIGINAJ N/A 25-40 15-25 <<1 REPI FILJ	SIZE L (mm) N/A 0.05-0.1 0.03-0.2 0.01-0.02 LACING/ LING	COMPO- SITION	WHERE SAMPLED: Con: MORPHOLOGY N/A Anhedral Laths, quench Euhedral-anhedral	COMMENT COMMENT 100% altered to 80-100% altered chlorite(?). 100% altered. Black, sparse. COMMENTS	heast flank S brown clays. to brown clays and
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr PRIMARY MINERALOGY Glass Clinopyroxene Plagioclase Spinel SECONDARY MINERALOGY Clays	2 (Piece 3 abasalt 05-0.1 ic PERCENT 0 <5-10 0 <<1 PERCENT	PERCENT ORIGINAI N/A 25-40 15-25 <<1 REPI FILI Glass,	SIZE L (mm) N/A 0.05-0.1 0.03-0.2 0.01-0.02 LACING/ LING plagioclase	COMPO- SITION	WHERE SAMPLED: Con: MORPHOLOGY N/A Anhedral Laths, quench Euhedral-anhedral Brown clays are	COMMENT: COMMENT: 100% altered to 1 80-100% altered chlorite(?). 100% altered. Black, sparse. COMMENTS pervasive after gl.	heast flank S brown clays. to brown clays and ass and clinopyroxene and
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr PRIMARY MINERALOGY Glass Clinopyroxene Plagioclase Spinel SECONDARY MINERALOGY Clays	2 (Piece 3 abasalt 05-0.1 ic PERCENT PRESENT 0 <5-10 0 <<1 PERCENT	PERCENT ORIGINAI N/A 25-40 15-25 <<1 REPI FILI Glass,	SIZE L (mm) N/A 0.05-0.1 0.03-0.2 0.01-0.02 LACING/ LING plagioclase	COMPO- SITION	WHERE SAMPLED: Con: MORPHOLOGY N/A Anhedral Laths, quench Euhedral-anhedral Brown clays are pseudomorphs aft	COMMENT: 100% altered to 1 80-100% altered chlorite(?). 100% altered. Black, sparse. COMMENTS pervasive after gl. ter plagioclase.	heast flank S brown clays. to brown clays and ass and clinopyroxene and
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr PRIMARY MINERALOGY Glass Clinopyroxene Plagioclase Spinel SECONDARY MINERALOGY Clays Chlorite	2 (Piece 3 abasalt 05-0.1 ic PERCENT PERCENT 0 <5-10 0 <<1 PERCENT 3-15	PERCENT ORIGINAI N/A 25-40 15-25 <<1 REPI FILI Glass, Cavitie	SIZE L (mm) N/A 0.05-0.1 0.03-0.2 0.01-0.02 LACING/ LING plagioclase es, clinopyr	COMPO- SITION , clinopyroxene	WHERE SAMPLED: Con: MORPHOLOGY N/A Anhedral Laths, quench Euhedral-anhedral Brown clays are pseudomorphs aff Small (0.2-0.4 r blue-gray in cro rarely observed	COMMENT: 100% altered to 1 80-100% altered chlorite(?). 100% altered. Black, sparse. COMMENTS pervasive after gl. ter plagioclase. mm) patches of colo oss nicols. Pale-gr.	heast flank S brown clays. to brown clays and ass and clinopyroxene and rless material which is een, pleochroic mineral is
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr PRIMARY MINERALOGY Glass Clinopyroxene Plagioclase Spinel SECONDARY MINERALOGY Clays Chlorite	2 (Piece 3 abasalt 05-0.1 ic PERCENT PRESENT 0 <5-10 0 <<1 PERCENT 3-15	PERCENT N/A 25-40 15-25 <<1 REPI FILI Glass, Cavitie	SIZE L (mm) N/A 0.05-0.1 0.03-0.2 0.01-0.02 LACING/ LING plagioclase es, clinopy	COMPO- SITION ;, clinopyroxene	WHERE SAMPLED: Con: MORPHOLOGY N/A Anhedral Laths, quench Euhedral-anhedral Brown clays are pseudomorphs af Small (0.2-0.4 r blue-gray in crv rarely observed	COMMENT: 100% altered to 1 80-100% altered chlorite(?). 100% altered. Black, sparse. COMMENTS pervasive after gl. ter plagicclase. mm) patches of colo oss nicols. Pale-gr.	heast flank S brown clays. to brown clays and ass and clinopyroxene and rless material which is een, pleochroic mineral is
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr PRIMARY MINERALOGY Glass Clinopyroxene Plagioclase Spinel SECONDARY MINERALOGY Clays Chlorite VESICLES/	2 (Piece 3 abasalt 05-0.1 ic PERCENT PERCENT 0 <5-10 0 <<1 PERCENT 3-15	PERCENT ORIGINAI N/A 25-40 15-25 <<1 REPI FILI Glass, Cavitie	cm) SIZE L (mm) N/A 0.05-0.1 0.03-0.2 0.01-0.02 LACING/ LING plagioclase es, clinopyr	COMPO- SITION	WHERE SAMPLED: Con: MORPHOLOGY N/A Anhedral Laths, quench Euhedral-anhedral Brown clays are pseudomorphs aff Small (0.2-0.4 m blue-gray in cro rarely observed	COMMENT: 100% altered to 1 80-100% altered chlorite(?). 100% altered. Black, sparse. COMMENTS pervasive after gl. ter plagioclase. mm) patches of colo oss nicols. Pale-gr.	heast flank S brown clays. to brown clays and ass and clinopyroxene and rless material which is een, pleochroic mineral is
COMMENTS: Some 125-779A-31R-0 ROCK NAME: Met GRAIN SIZE: 0. TEXTURE: Aphyr PRIMARY MINERALOGY Glass Clinopyroxene Plagioclase Spinel SECONDARY MINERALOGY Clays Chlorite VESICLES/ CAVITIES Compliance	POPTIONS 2 (Piece 3 abasalt 05-0.1 ic PERCENT PRESENT 0 <5-10 0 <<1 PERCENT 3-15 PERCENT	PERCENT N/A 25-40 15-25 <<1 REPI FILI Glass, Cavitie	cm) SIZE L (mm) N/A 0.05-0.1 0.03-0.2 0.01-0.02 LACING/ LING plagioclass es, clinopyn SIZE ON (mm)	COMPO- SITION e, clinopyroxene coxene?	WHERE SAMPLED: Con: MORPHOLOGY N/A Anhedral Laths, quench Euhedral-anhedral Brown clays are pseudomorphs aff Small (0.2-0.4 m blue-gray in crw rarely observed	COMMENT: 100% altered to 1 80-100% altered chlorite(?). 100% altered. Black, sparse. COMMENTS pervasive after gl. ter plagioclase. mm) patches of colo oss nicols. Pale-gr.	heast flank S brown clays. to brown clays and rless material which is een, pleochroic mineral is

COMMENTS: Sample is extensively and pervasively altered. Occasional spherulitic intergrowths of plagioclase after clinopyroxene are present. The long (0.15-0.3 mm) and skinny (0.02-0.04 mm) nature of the plagioclase suggests a quench texture.

# 125-779A-31R-02 (Piece 11,103-105 cm) OBSERVER: HIR

WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Metabasalt

GRAIN SIZE: 0.2-1 mm, medium grains

TEXTURE: Intersertal, microphyric

DDIMADY	DEDCENT	DEDOENT	CT2P	COMPO			
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MOI	RPHOLOGY	COMMENTS
DUENOCDVCTC							
Plagioclase	0	10-30	0.5-0.8		Latl	ns	100% pseudomorphed by clays;
Clinopyroxene	20-25	25-35	0.02-1		Anh	edral	20-30% altered to chlorite and clavs.
Spinel	<<1	<<1	0.05-0.1		Subl	hedral	Black, opaque, sparse.
GROUNDMASS							
Glass/matrix	0	40-55	N/A		N/A		100% altered to brown and deep green amorphous clays and hydrogrossular.
SECONDARY		REPL	ACING/				
MINERALOGY	PERCENT	FILL	ING	1.3			COMMENTS
Clays	50-60	Glass,	matrix, cav	ities		Brown clays. Per	vasive after glass and plagioclase.
Hydrogrossular	<10	Glass	nlagioclase	ss, cavities		Anhedral fine-gr	rained
Opaque	1-2	Matrix	pragrocrase			Unevenly dispers	ed. concentrated in chlorite patches,
						0.01-0.02 mm, bl	ack.
VESICLES/			SIZE				
CAVITIES	PERCENT	LOCATIO	N (mm)		FILLING		SHAPE
Cavities	2	Through	iout 1-2		Chlorite,	clay	Irregular
COMMENTS: Occas perva	ionally sively a	spherulit ltered.	ic intergro	wths of plagi	oclase afte	r clinopyroxene.	Sample is extensively and
125-779A-31R-02	(Piece	13,119-12	2 cm)	OBSERVER: JOH	WHI	ERE SAMPLED: Coni	cal Seamount, southeast flank
ROCK NAME: Meta	basalt						
GRAIN SIZE: 0.3	-0.9 mm						
TEXTURE: Phyric	, inters	ertal					
PRIMARY	PERCENT	PERCENT	SIZE	COMPO-			
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MOI	RPHOLOGY	COMMENTS
PHENOCRYSTS							
Plagioclase	0	5-25	0.02-0.06		Lat	s. subhedral	100% altered to clavs + hydrogrossular?
Clinopyroxene	15-20	20-40	0.03-0.09		Subl	nedral	20-80 % altered, occasionally associated
Spinel	<<1	<<1	0.03-0.05		Anhe	edral	with plagioclase. Black, sparse.
GROUNDMASS							
Glass	0	40-70	N/A		N/A		100% altered to clays and hydrogrossular?
		<u></u>	0.0000000				an Chananan Childhichte Start
SECONDARY	DEDORME	REPL	ACING/				CONTRACTOR
Clavs	50-70	FILL	veins plac	ioclase		Brown amorphous	clave nervasive in sample after glass and
cidys	50-70	Grass,	verns, prag	IOCIASE		plagioclase	ciays pervasive in sample after grass and
Chlorite	15-25	Patches	, veins			Clinopyroxene pe	rvasive in matrix: pale-green, slightly
						pleochroic, usua	ity amorphous, although a few veins show
Hydrogrossular	8-10	?				Anhedral, fine-g	rained.
VESICLES/			ST7E				
CAVITIES	PERCENT	LOCATIO	N (mm)		FILLING		SHAPE
Cavities	1-2	Through	out 0.1-1.5		Chlorite c.	Lay	Usually
					540 S.M. 57 S.	0.21	round

COMMENTS: Extensive and pervasive alteration. Original texture and mineral relationships have been observed.

125-779A-31R-CC (Piece 5,39-41 cm) OBSERVER: HIR

: HIR WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Metadiabase

GRAIN SIZE: 0.2-1 mm medium-coarse grained

TEXTURE: Ophitic

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS		00.45			weeks contractive	
Plagoiciase	0	20-45	0.04-0.06		Lath, eunedral	100% altered to clays and
Clinopyroxene	5-15	20-40	0.8-1.2		Subhedral	20-85% altered to clays, chlorite.
GROUNDMASS	122		000.0003			
Glass/matrix	0	15-30	N/A		N/A	100% replaced by amorphous brown clays.
SECONDARY		REPI	ACTNG/			
MINERALOGY	PERCENT	FILI	LING			COMMENTS
Clays	45-65	Glass,	plagioclase		Pervasive afte	r glass (matrix) and plagioclase. Few (<5%)
					pseudomorphs a	fter plagioclase.
Chlorite	15-25	Matrix,	plagioclase	e, clinopyroxene	Around clinopy	roxene and plagioclase crystals and as patche
the days group and low	15 20			(0)	within matrix.	Maderal dark and have conference
	15-20		pragrocrase	3(1)	0.2-0.4 mm, Su	
VESICLES/			SIZE			
CAVITIES	PERCENT	LOCATIO	ON (mm)	FILL	ING	SHAPE
Vesicles	0					
COMMENTS: Sampl miner	e is extended abunda	ensively ance and	and pervasiv relationship	vely altered to cla os.	ys, chlorite and hyd	rogrossular. Alteration masks primary
125-779A-31R-CC	C (Piece	6,47-59 0	cm)	OBSERVER: HIR	WHERE SAMPLED: Co	nical Seamount, southeast flank
ROCK NAME: Alte	ered pyro	clastic :	rocks, may b	e tuffaceous		
ROCK NAME: Alte GRAIN SIZE: <0.	ered pyro	clastic :	rocks, may b	e tuffaceous		
ROCK NAME: Alte GRAIN SIZE: <0. TEXTURE: Clasti	ered pyro 1 mm 1c, layer	clastic : ed	rocks, may b	e tuffaceous		

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
Clinopyroxene	40-30	20	<0.1		Anhedral	Occurs as feather-like crystal throughout the rock.
Plagioclase	0	20	<0.1		Subhedral	Occurs as feather-like crystal throughout the rock.
Glass	0	60	N/A		N/A	
SECONDARY		REPI	ACING/			
MINERALOGY	PERCENT	FILL	ING			COMMENTS
Clays	60-70	Matrix			Dusty browni	ish clay.
Chlorite	2	Vein				
VESICLES/			SIZE			
CAVITIES	PERCENT	LOCATIC	ON (mm)	FI	LLING	SHAPE
Vesicles	0					

COMMENTS: Hydrogrossular determined by XRD cannot be observed.

125-779A-31R-CC (Piece 6,47-59 cm) OBSERVER: HIR WHERE SAMPLED: Conical Seamount, southeast flank

ROCK NAME: Altered basalt

GRAIN SIZE: 0.5-1 mm

# TEXTURE: Ophitic

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
Clinopyroxene	35	35	1		Subhedral	
Plagioclase	0	65	0.5-1		Subhedral	Altered to hydrogrossular and clay.
SECONDARY		REPL	ACING/			
MINERALOGY	PERCENT	FILL	ING			COMMENTS
Clays	10				Brownish dus	sty clay.
Chlorite	5				Pale-green,	anomalous interference color.
Hydrogrossular	50				Birefringenc	e ~0, high reflective index.
VESICLES/			SIZE			
CAVITIES	PERCENT	LOCATIO	N (mm)		FILLING	SHAPE
Vesicles	0					