Drilling disturbance

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Core Photo

Hole U1349A Core 1W, Interval 0-0.18 m (core depth below seafloor)

Major: Red (10R 5/6) chert.

Three red chert nodules with multiple light pink porcellanite inclusions, preserving bioturbation features and fossil "ghosts". Occasional pale red (10R 7/3), very thin porcellanite coatings and black dendritic mineral growths (manganese oxide?). First nodule (0-4 cm) has large hole filled with soft calcareous sediment. Infill appears to be recrystalized pink calcite or altered calcitic microfossils, as some spherical shapes are preserved and packed together with finer-grained material.

Age Ichnofossil / Fossil Magnetic Susceptibility (x10⁵ SI) (MS, MS Point - raw; MS, MS Point - filtered) Core length (cm) Reflectance Structure P. Foraminifer zone (L*, b* - raw; L*, b* - filtered) Bioturbation intensity Sedimentary structure GRA bulk Lithologic accessories Core image Shipboard sample Depth (m) density (g/cm³) (GRA - raw; GRA - filtere Section Grain size red) Graphic lithology 150 350 -20 Ņ 0-00400 o ŝ PAL 0 -***** 1 R. a ė NC10a-b

Hole U1349A Core 2R, Interval 116-116.03 m (core depth below seafloor)

Major: Pinkish white (2.5 YR 8/2) calcareous ooze with nannofossils.

Mostly very small calcite crystals with some calcareous nannofossils. Most likely the result of calcareous nannofossil recrystalization. Some minor fish debris.

Depth (m) Core length (cm) Section Core image	GRA bulk density (g/cm³) (GRA - raw; GRA - filtered Graphic lithology	Susceptibility L (x10 ⁵ SI) (MS, MS Point - raw; MS, MS Point - filtered) L Q Q Q Q Q Q	eflectance (L ¹ , b ⁻ raw; ¹ , b ⁻ filtered) [ISSO UNENCE (ST 100 - 1	e - L O O O O O O O O O O O O O O O O O O O	Shipboard sample Bioturbation intensity	Ichnofossil / Fossil	Sedimentary structure Lithologic accessories	Drilling disturbance
			NC6-NC10b	T. primula	SED			X.



Hole U1349A Core 3R, Interval 125.6-125.71 m (core depth below seafloor)

Major: Red (2.5 YR 4/6) chert.

Chert nodules contain abundant pinkish white (2.5 YR 7/3) patches filled with soft carbonate or porcellanite material, likely burrow structures. Fossil "ghosts" are visible as well as black, dendritic minerals which are likely oxides (manganese oxide?). Some of the original bedding laminations are visible, though distorted due to silicification.

Depth (m)	Core length (cm) Section	ති E E O litholog	Magnetic Susceptibility (x10 ⁵ SI) (MS, MS Point - raw;)) MS, MS Point - filtered) G G G G G G	Reflectance	ББ	Shipboard sample	Bioturbation intensity Ichnofossil / Fossil	Sedimentary structure	Lithologic accessories	Drilling disturbance
			8	📲 🗸 🗸 NJK d-NK	3b	PAL	990		-	X.



Hole U1349A Core 4R, Interval 135.2-135.51 m (core depth below seafloor)

Major: Red (10R 4/4) to reddish black (2.5 YR 2.5/1) chert.

Minor: Light brown (2.5Y 5/4), sands-silt-claystone with chert granules.

Chert has pale brown to pale pink porcellanite blebs and blotches throughout. Probably relict bedding and bioturbation. Microfossiis (mostly forams) are concentrated along the tops of a few red/pink chert pieces. These rocks have porcellanitic outer edges with highly silificied, true chert at their centres. Some opaque, secondary oxide (manganese oxide?) present at 0-3 cm.

Sands-silt-claystone mixed with chert is completely brecciated by drilling disturbance.

Depth (m)	Core length (cm)	Section Core image	Graphic lithology	GRA bulk density (g/cm³) (GRA - raw; GRA - filtered) پ م م	Magnetic Susceptibility (x10 ⁵ SI) (MS, MS Point - raw; MS, MS Point - filtered)	Reflectance 52 52 52 52 52 52 52 52 52 52	zone P. Foraminifer zone	Grain size ວຸດທຸຈາຍຜ	Shipboard sample	Bioturbation intensity	Ichnofossil / Fossil	Sedimentary structure	Lithologic accessories	Drilling disturbance
-		1		·		1.1	T. primula		BALSED		•	Ø		*



Hole U1349A Core 5R, Interval 144.8-151.525 m (core depth below seafloor)

Major: Dark gray (N 4), massive lapillistone, lapillituff and volcanic sandstone

Minor: Dark yellowish brown (10YR 4/4), polymictic, carbonate-cemented sandstone. Light reddish brown (2.5YR 6/3) chert. Massive lapillistone is mainly clast supported and moderately sorted to poorly sorted. Matrix is volcanic sand. Clasts are various colors (red/gray/green/ black/brown), and show various features (vesicular/ non-vesicular/angular/subangular/subrounded) basalt. Clasts are mainly granule to pebble sized.

Yellowish brown sandstone is present as two isolated pieces at the top of the core. Constituent grains are multicolored and polymictic. Grains are very coarse sand-sized (-2 mm) and subangular.

Chert is present as isolated piece near the top of the core, (fall-in?).

Depth (m)	Core length (cm)	Section	Core image	Graphic lithology	GRA bulk density (g/cm³) (GRA - raw; GRA - filtered) پ م م	0 0 0	Reflectance 12, b*-raw; 12, b*-raw; 12, b*-filtered 120 120 120 120 120 120 120 120	e JU	⁻ oraminifer le	Grain size	Shipboard sample	Bioturbation intensity	Ichnofossil / Fossil	Sedimentary Structure	Lithologic accessories	Drilling disturbance
145 -	100-	1								F	SED SED TSB·TS PP. SED				八 ジョ で	X
146 -	200-									h	TSB-TS -SED			•		* * *
147 -	300-	2				(ððð	•	Z	*
	400-	3		V 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0							·SED PP·				Z	*
149 -	500-	4									PAL-				-Z-	
151 -	600-	5		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 000000							PAL ⁻ SED PP- TSB-TS				-Z-	

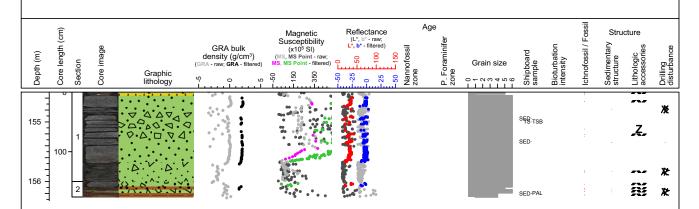


Hole U1349A Core 6R, Interval 154.5-156.26 m (core depth below seafloor)

Major: Gray (N 3 to N 4), massive lapillistone and volcanic sandstone.

Minor: Reddish-yellow (7.5YR 6/6) crumbly, silty sandstone with volcaniclastic granules Reddish brown (2.5 YR 4/4) chert.

Massive lapillistone is mainly clast supported and moderately sorted to poorly sorted. Matrix is volcanic sand. Clasts are composed of various colors (red/gray/green/ black/brown), and various features (vesicular/ non-vesicular/angular/subangular/subrounded) basalt. Clasts are mainly granule to pebble sized. Friable, reddish-yellow silty sandstone contains many iron oxy-hydroxide minerals and possible pedogenic texture (paleosol?).





Hole U1349A Core 7R, Interval 164.1-169.055 m (core depth below seafloor)

Major: Reddish brown (5 YR 3/2), vesicular basalt. Altered reddish yellow (7.5YR 6/6) volcanic conglomerate with volcanic breccia.

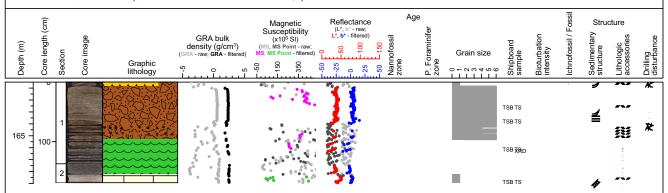
Minor: Pale red (10R 4/4) chert. Pinkish white (7.5YR 8/2) recrystallized limestone with bioclastics.

Contact between volcanic conglomerate and basalt occurs in Section 1 at 96 cm. Basalt is reddish brown and highly vesicular.

Massive to graded volcanic conglomerate in Section 1 is composed of various colored grains (red/gray/greet black/brown), and with various features (vesicular/non-vesicular/angular/subrounded). Casts are mainly granule to peble sized basalt or other vesthered sedimentary rock. Some of the matrix consists of valicity and with various features (vesicular/non-vesicular/angular/subrounded).

Upper part of conglomerate is moderately to poorly sorted volcanic conglomerate (6-60 cm). Matrix is granule sized (2-6 mm). Some imbricated clasts are present. Some clast-supported thin layers (1-2 cm) are interbedded.

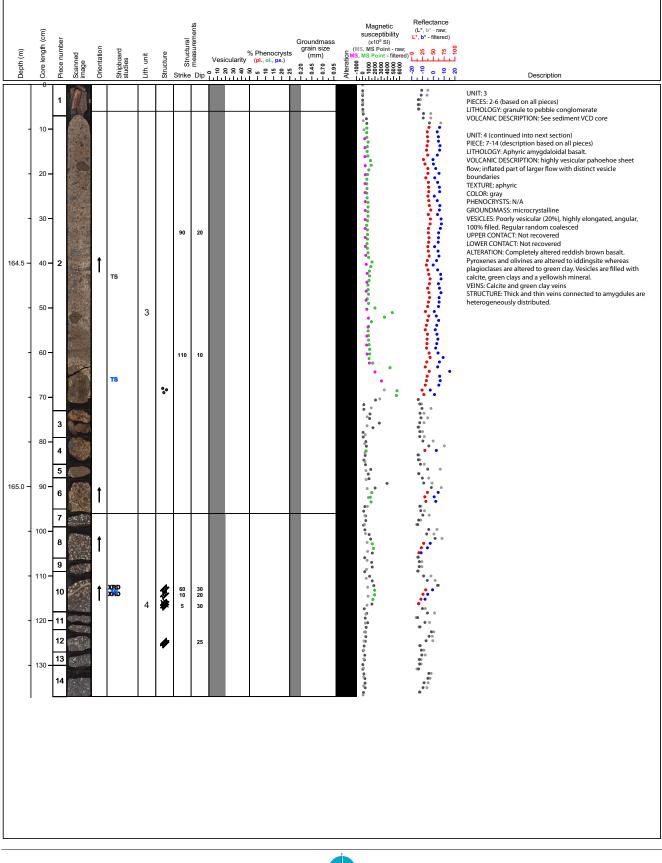
Lower part of conglomerate is mainly massive, matrix-supported and poorly sorted conglomerate. One large subangular, red colored clast (8 cm) is present at 60 cm-70 cm. Matrix is mainly granule sized. Clasts are mainly pebble sized Limestone interbed in basalt in Section 2 is recrystallized. Contains shallow water fauna such as echinoderms, bryozoans and bivalves.





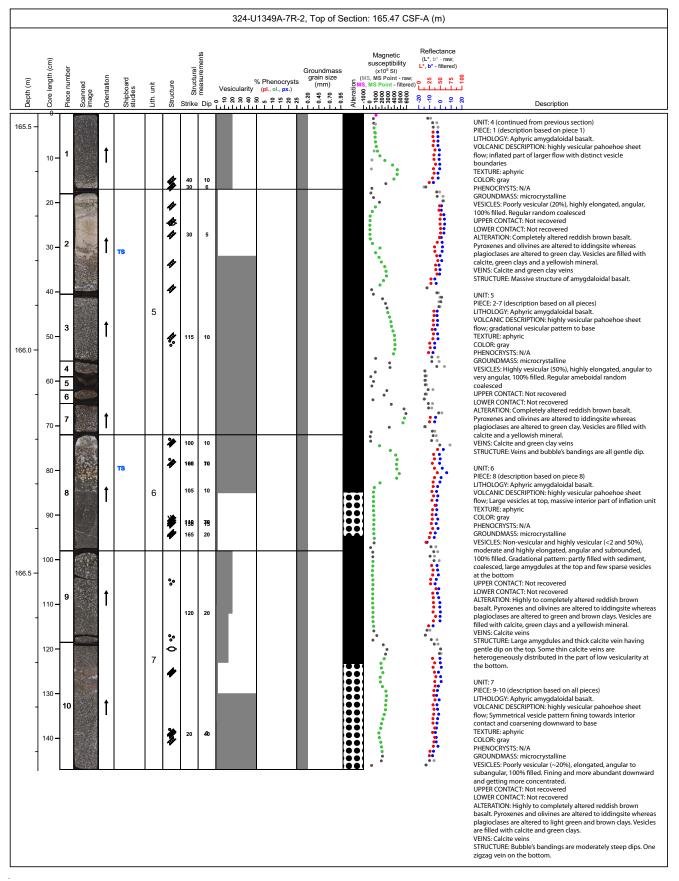
Site U1349 core descriptions

Core Photo

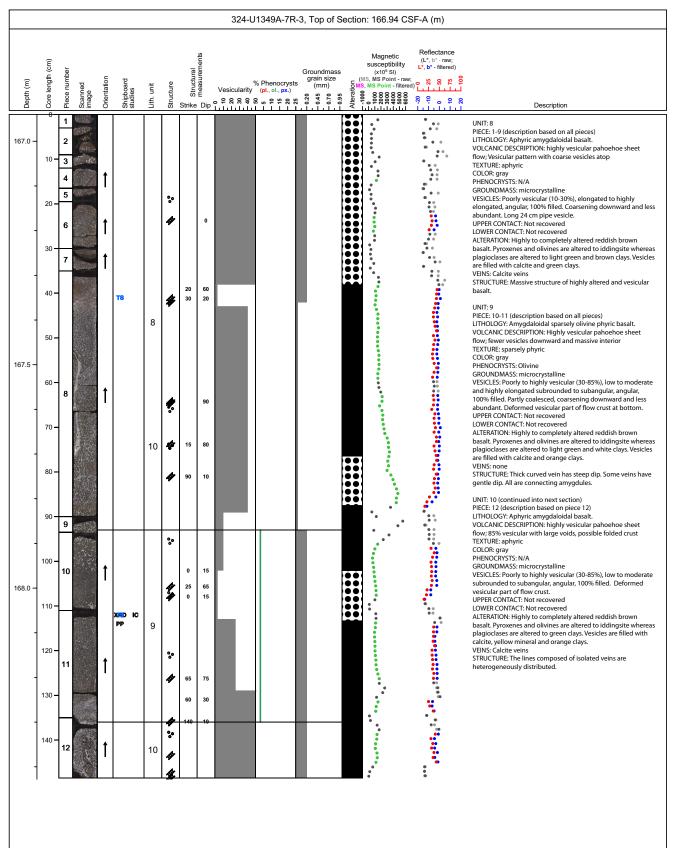


324-U1349A-7R-1, Top of Section: 164.1 CSF-A (m)

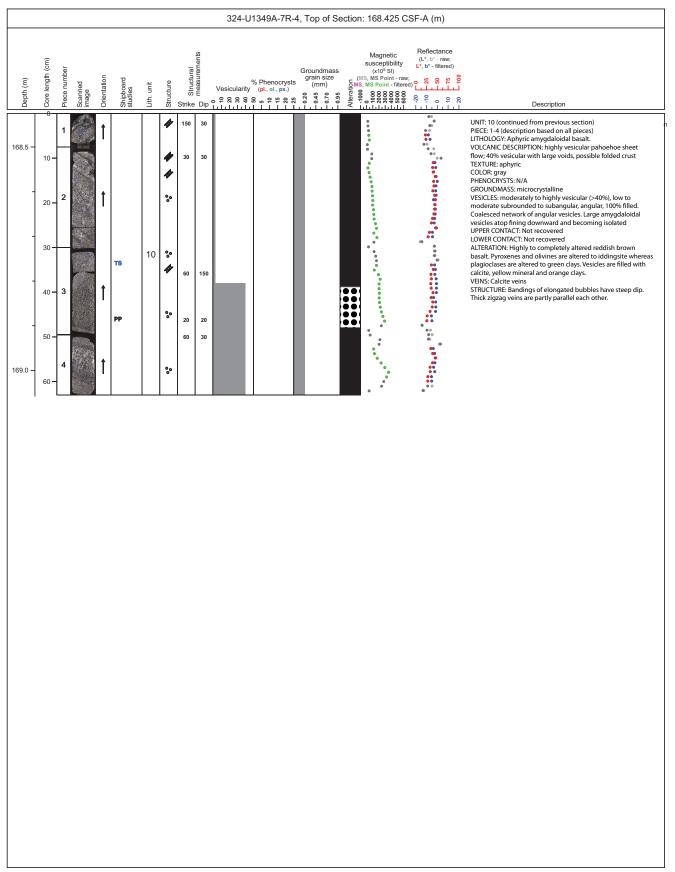




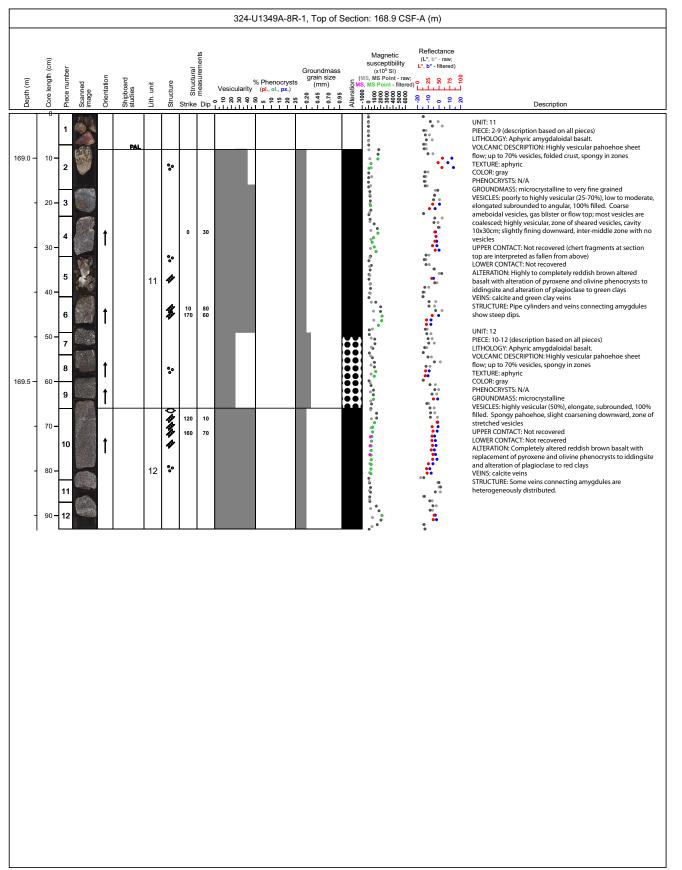












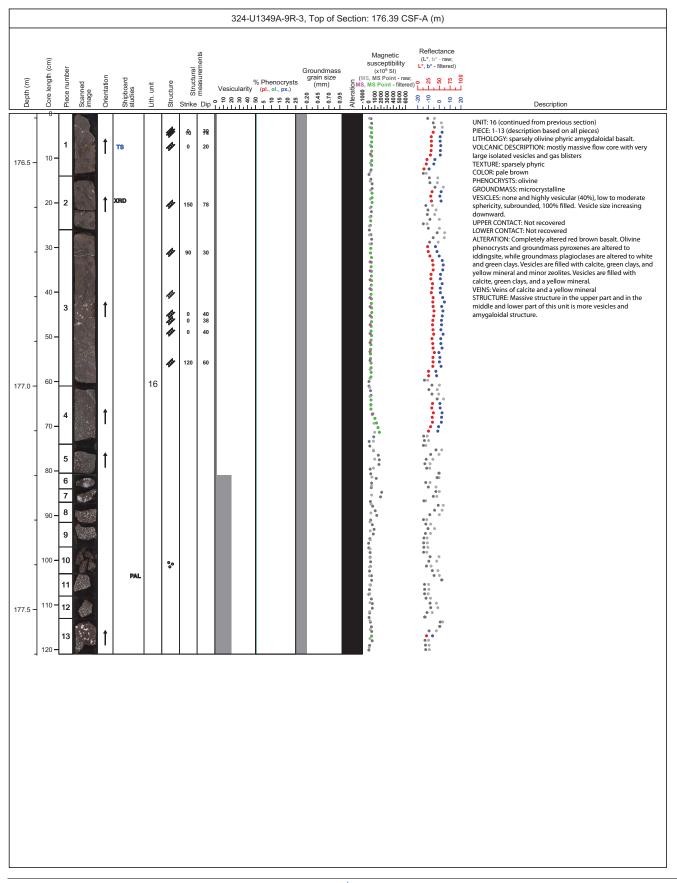


										324-L	J1349A-9F	R-1, Top of S	ectio	on: 173.7 CSI	F-A (m)	
Depth (m)	Core length (cm)		Piece number Scanned	Orientation	Shipboard studies	Lith. unit	Structure	Structural	di di	Vesicularity 도 은 ጺ 응 용 달	6 Phenocrysts (pl., ol., px.) 3 여 은 또 원 원	()	Alteration	Magnetic susceptibility (x10 ⁵ SI) MS, MS Point - filtered S, MS Point - filtered C C C C C C C C C C C C C C C C C C C	Reflectance (L*, b* - raw; L*, b* - filtered)	Description
	- 10	0-	1		PAL	13								9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9		UNIT: 13 PIECE: 1 (description based on all pieces) LITHOLOGY: ooliiti limestone VOLCANIC DESCRIPTION: sedimentary intercalation upon flow top - infilling open vesicular top of flow ALTERATION: none VEINS: none
	- 20	0-	2 3 3 4		TS	14	80	0	20					••• •••		STRUCTURE: massive structure UNIT: 14 PIECE: 2-6 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt. VOLCANIC DESCRIPTION: highly vesicular inflation unit TEXTURE: sparsely phyric COLOR: gray
174.0 -	- 30 - 40	ŀ	5 6	Î	TS		*	0	20							PHENOCRYSTS: olivine GROUNDWASS: microcrystalline VESICLES: highly vesicular (30-50%), low to moderate sphericity subangular, subrounded, 100% filled. Flattened rounded, some are coalescing. UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered ALTERATION: Completely altered red brown basalt. Olivine
	- 50	0-	7 8 9		XRD		100 m	0 0 0	10 2 2							phenocrysts and groundmass pyroxenes are altered to iddingsite, while groundmass plagioclases are altered to white clays. Vesicles are filled with calcite, green clays, and yellow mineral and minor zeolites. VEINS: none STRUCTURE: amygdaloidal structure. Some vesicles are preferentially oriented because of deformation.
	- 60 - 70	0 	10 (3) 11 (9) 12 (9) 13 (9)				1	0	2 70					• • • • • • • •		UNIT: 15 (continued into next section) PIECE: 7-20 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt. VOLCANIC DESCRIPTION: blocky lava unit with secondary magma injection TEXTURE: sparsely phyric COLOR: gray PHENOCRYSTS: olivine
174.5 -	- 80	0	14	Ì	XRD			0	50 60							GROUNDMASS: microcrystalline VESICLES: highly vesicular (60%), low to moderate sphericity, subrounded, 100% filled. Spongy texture. UPPER CONTACT: Not recovered (reddened weathering zone) LOWER CONTACT: Not recovered ALTERATION: Completely altered red brown basalt. Olivine phenocrysts and groundmass pyroxenes are altered to iddingsite, while groundmass plagioclases are altered to white clays. Vesicles are filled with calcite, green clays, and yellow
	- 100	0-	16	† •		15		0	50 64					••••		VENCS and minor zeolites, vens mineral and minor zeolites, vens VEINS: calcite and green clay vens STRUCTURE: amygdaloidal structure and chaotic flow structure shown by variation and distribution of vesicle sizes. They are cut by late calcite vein.
	- 110		18	Î			THE AS	14 10 0	78 74 15							
175.0 -		0-	19	Î Î	T 8		14 14	8 0 14	10 15 22 64					40 40 40 40 40 40 40 40 40 40 40 40 40 4		
		L	[A.			1		<u> </u>						б ф	00 00 00	

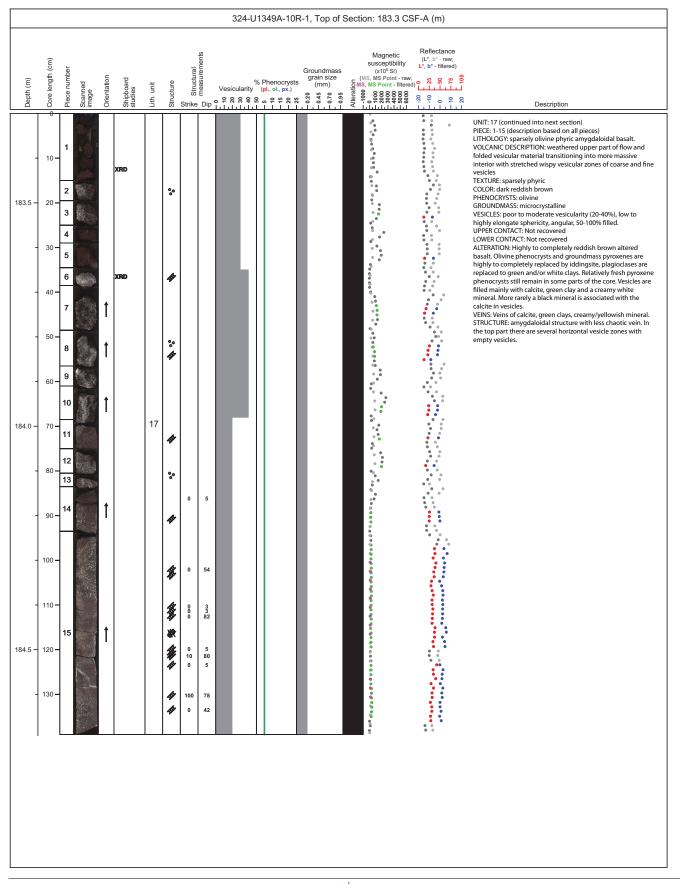


											324-U	1349A-9R	-2, Top of S	ectio	n: 175.09 CS	8F-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard	studies	Lith. unit	Structure	Structural Structural	di di	Vesicularity	% Phenocrysts (pl., ol., px.) 중 요 은 또 & 籷	()	u (li	Magnetic susceptibility (x10 ⁵ SI) AS, MS Point - filtered SB SB SB SB C C R R S SB SB C C R R SB SB C C R R SB SB SB SB SB C C R R SB	Reflectance (L*, b* - raw; L*, b* - filtered) 100 100 100 100 100 100 100 100 100 10	Description
-	0- 10- 20-	1	NC 35	t			15	f	1 0 4 0 0	28 4 4							UNIT: 15 (continued from previous section) PIECE: 1-5 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt. VOLCANIC DESCRIPTION: blocky lava unit with secondary magma injection along fissures TEXTURE: sparsely phyric COLOR: pale brown PHENOCRYSTS: olivine GROUNDMASS: microcrystalline VESICLES: highly vesicular (60%), low to moderate sphericity, subrounded, 100% filled. Spongy texture.
-	30 -	4							0	4							UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered (redened weathering zone) ALTERATION: Completely altered red brown basalt. Olivine phenocrysts and groundmass pyroxenes are altered to iddingsite, while groundmass plagioclases are altered to white clays. Vesicles are filled with calcite, green clays, yellow mineral and minor zeolites. VEINS: calcite and green clay veins
175.5 -	40 - 50 -	7		1				\$	0	5							STRUCTURE: This unit develops many horizontal vesicle zones. Amygdaloidal structure. UNIT: 16 (continued into next section) PIECE: 6-12 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt. VOLCANIC DESCRIPTION: mostly massive flow core with very large isolated vesicles and gas blisters TEXTURE: sparsely phyric
-	60 -	8 9 10															COLOR: pale brown PHENOCRYSTS: olivine GROUNDMASS: microcrystalline VESICLES: non and highly vesicular (40%), low to moderate sphericity, subrounded, 100% filled. spongy texture, vesicle size increasing downward. UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered ALTERATION: Completely altered red brown basalt. Olivine
-	70 - 80 -						16										phenocrysts and groundmass proxenes are altered to iddingsite, while groundmass plagicalases are altered to white and green clays. Vesicles are filled with calcite, green clays, and yellow mineral and minor zeolites. Vesicles are filled with calcite, green clays, and a yellow mineral. VEINS: Veins of calcite and a yellow mineral STRUCTURE: Massive structure and in the middle and lower part of this unit is less vesicle and but more veinlets.
176.0 -	90 - 100 -	11		1	PP TS	ю		14 14 14	0 190	50 88							
-	110-			•				•	0	20 60							
-	120 -	12		1											2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -		

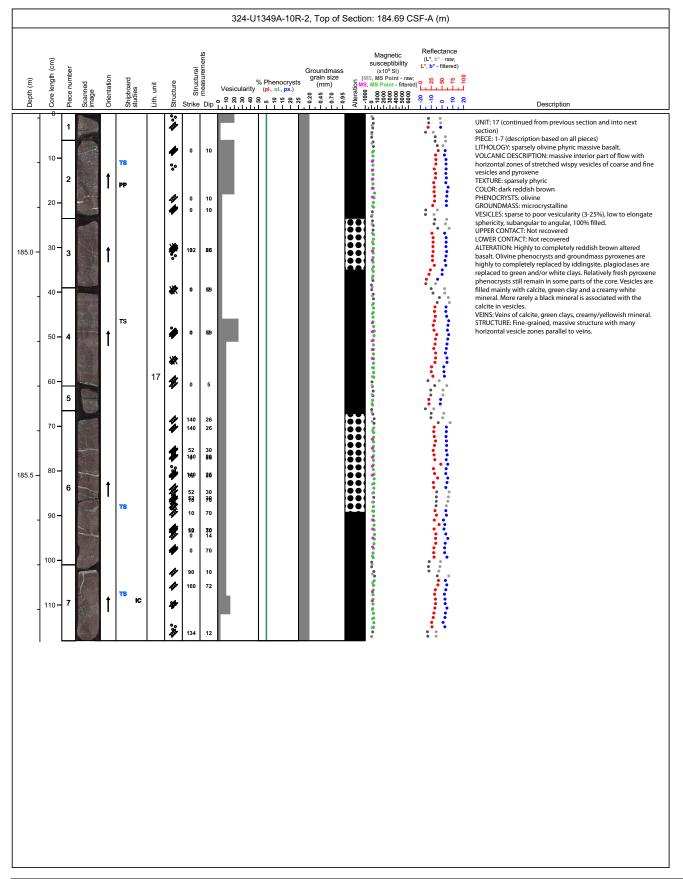




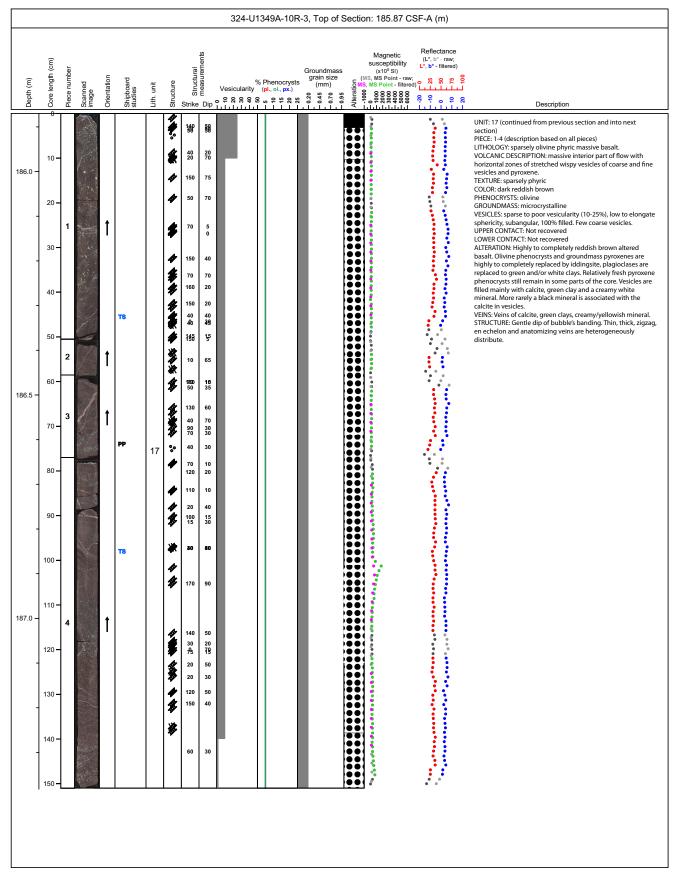








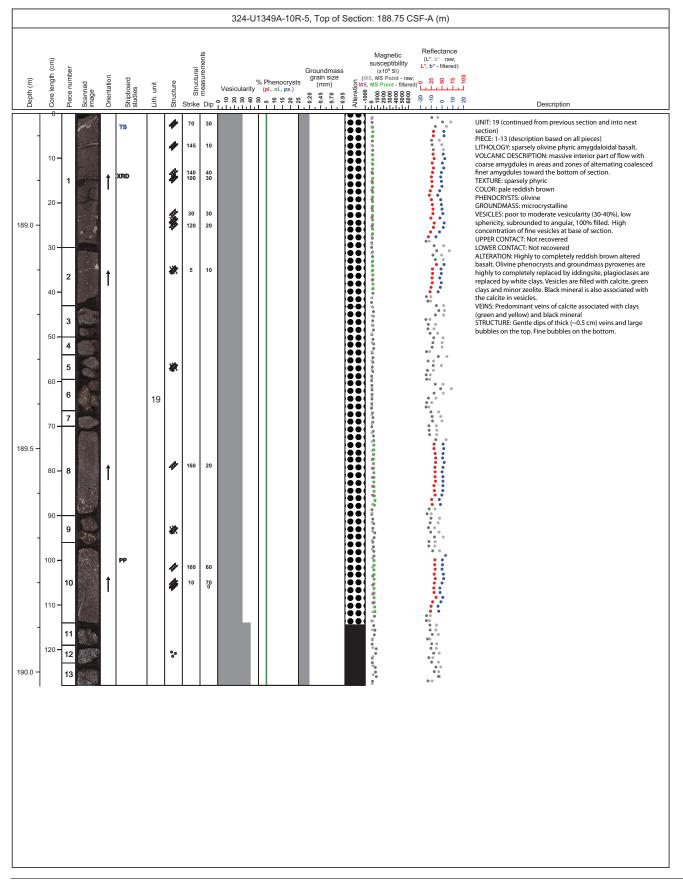






										324-U1349A-10F	R-4, Top of S	Section: 187.38 C	SF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Structural Strike		% Phenocryst Vesicularity (pl., ol., px.) 우 중 유 중 공 등 등 등 은 운 용 날	0 0 0 0	Magnetic susceptibility (x10 ⁵ Si) uMS, MS Point - filtered 00,000,000,000 - 000,000,000 - 000,000,000,000 - 000,000,000,000 - 000,000,000,000 - 000,000,000,000,000 - 000,000,000,000,000 - 000,000,000,000,000,000,000 - 000,000,000,000,000,000,000 - 000,000,000,000,000,000,000,000,000,00	Reflectance (L*, b* - raw; L*, b* - filtered) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Description
- 187.5 –	0- 10-	1 2 3		1		17	80					. • • • • • • • • • • • •		UNIT: 17 (continued from previous section) PIECE: 1-3 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt. VOLCANIC DESCRIPTION: possible base of flow, swirled vesicles TEXTURE: sparsely phyric COLOR: dark reddish brown PHENOCRYSTS: olivine
_	20 -	4	0.69											GROUNDMASS: microcrystalline VESICLES: poorly to moderately vesicular (30-50%), low to highly elongate sphericity, subangular to angular, 90-100% filled. UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered
-	30 -	6			XRD									ALTERATION: Highly to completely reddish brown altered basalt. Olivine phenocrysts and groundmass pyroxenes are highly to completely replaced by iddingsite, plagioclases are replaced to green and/or white clays. Relatively fresh pyroxene phenocrysts still remain in some parts of the core. Vesicles are filled mainly with calcite, green clay and a creamy white
-	40 -				IC TS		*	150 20	65 20					mineral. More rarely a black mineral is associated with the calcite in vesicles. VEINS: Veins of calcite, green clays, creamy/yellowish mineral. STRUCTURE: Concentrated parts of amygdule are heterogeneously distributed.
-	50 -	7		1	PP	18	*	45	30					UNIT: 18 PIECE: 48 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt. VOLCANIC DESCRIPTION: vesicular upper part of flow transitioning into more massive amygdaloidal interior with amygdules up to 8 mm in diameter
88.0 -	60 - 70 -		1 3 2				*							TEXTURE: sparsely phyric COLOR: dark reddish brown PHENOCRYSTS: olivine GROUNDMASS: microcrystalline VESICLES: sparely (10%), moderate sphericity, subrounded, 50% filled.
-	80 -	8		t			*	15	80					UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered ALTERATION: Highly to completely reddish brown altered basalt. Olivine phenocrysts and groundmass pyroxenes are highly to completely replaced by iddingsite, plagioclases are replaced by white clays. Vesicles are filled with calcite, green
	90 -			1				60	20					clays and minor zeolite. VEINS: Predominant veins of calcite STRUCTURE: Networked, anatomizing and curved veins are heterogeneously distributed. Fine amygdules are concentrated on the bottom. Gentle dips of banding amygdules.
-	100 -	9		1			°°							UNIT: 19 (continued into next section) PIECE: 9-12 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt. VOLCANIC DESCRIPTION: spongy upper part (?) of flow or highly vesicular horizon transitioning into massive zone with coarse amygdules
88.5 –	110 -	11		1		19	•	0	70					TEXTURE: sparsely phyric COLOR: dark reddish brown PHENOCRYSTS: olivine GROUNDMASS: microcrystalline VESICLES: moderate vesicularity (30%), low to elongate sphericity, angular to subrounded, 90-100% filled.
-	120 -	12					°°		0					UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered ALTERATION: Highly to completely reddish brown altered basalt. Olivine phenocrysts and groundmass pyroxenes are highly to completely replaced by iddingsite, plagioclases are replaced by white clays. Vesicles are filled with calcite, green
-	130 -						*							clays and minor zeolite. Black mineral is also associated with the calcite in vesicles. VEINS: Predominant veins of calcite associated with clays (green and yellow) and black mineral STRUCTURE: Massive structure of highly altered and vesicular basalt.





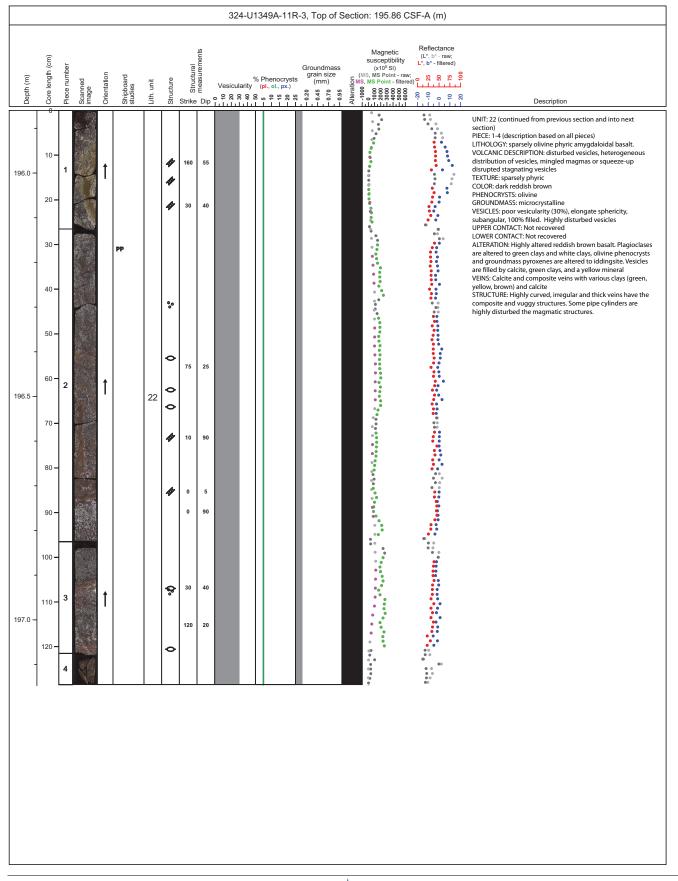


											324-U13	349A-11F	R-1, Top of §	Section: 192.9 CS	SF-A (m)	
Depth (m)	Core length (cm)		Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Structural	di di	% F Vesicularity (j 5 은 은 은 은 우 운 .		0 10 0 10	Magnetic susceptibility (X10 ⁵ SI) (MS, MS Point - filtered 8000000000000000000000000000000000000	Reflectance (L*, b* - raw; L*, b* - filtered) 20 20 20 20 20 20 20 20 20 20 20 20 20	Description
193.0	- 1	0-	1 2 3				19	°,0								UNIT: 19 (continued from previous section) PIECE: 1-3 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt. VOLCANIC DESCRIPTION: massive areas with coarse and fine amygdaloidal horizons, diffuse boundaries of dense and sparse concentrations of vesicles, few areas of unfilled vesicles, disturbed vesicular horizons TEXTURE: sparsely phyric COLOR: pale reddish brown
	- 21 - 31 - 41	0 -	4 5		ſ	TS			160 120	65 60						PHENOCRYSTS: olivine GROUNDMASS: microcrystalline VESICLES: sparse to poor vesicularity (5-30%), elongate sphericity, subangular, 100% filled. Spongy deformed vesicles in areas, swirled vesicles UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered ALTERATION: Highly altered reddish brown basalt. Primary phases are replaced by class, iddingsite for olivine phenocrysts and groundmass pyroxenes and orange and green clays for plagioclase in the groundmass. Vesicles are filled with calcite and green clays. VEINS: none STRUCTURE: Massive structure of highly altered and amygdaloidal basalt.
193.5 -	- 51 - 61 - 71		7		ſ				150	70						UNIT: 20 (continued into next section) PIECE: 4-10c (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt. VOLCANIC DESCRIPTION: swirled dense and sparse concentrations of vesicles TEXTURE: sparsely phyric COLOR: pale reddish brown PHENOCRYSTS: olivine GROUNDMASS: microcrystalline VESICLES: poor vesicularity (30%), elongate sphericity, subangular, 100% filed. Swirled vesicles UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered
	- 81 - 91		8		Î		20	% •	140	50 70						ALTERATION: Highly altered reddish brown basalt. Plagioclases are altered to green clays and white clays, olivine phenocrysts and groundmass pyroxenes are altered to iddingsite. Vesicles are filled by calcite, a yellow mineral and opaques VEINS: Composite veins with various clays (green, yellow) and calcite STRUCTURE: Amygdule bandings show sharp dips.
194.0	- 10 - 11	0 -	9						0 0	15 10						
	- 13	o —	10		t	78		*	165	80						
	1					l <u>vnn</u>	I							<u> </u>	-	

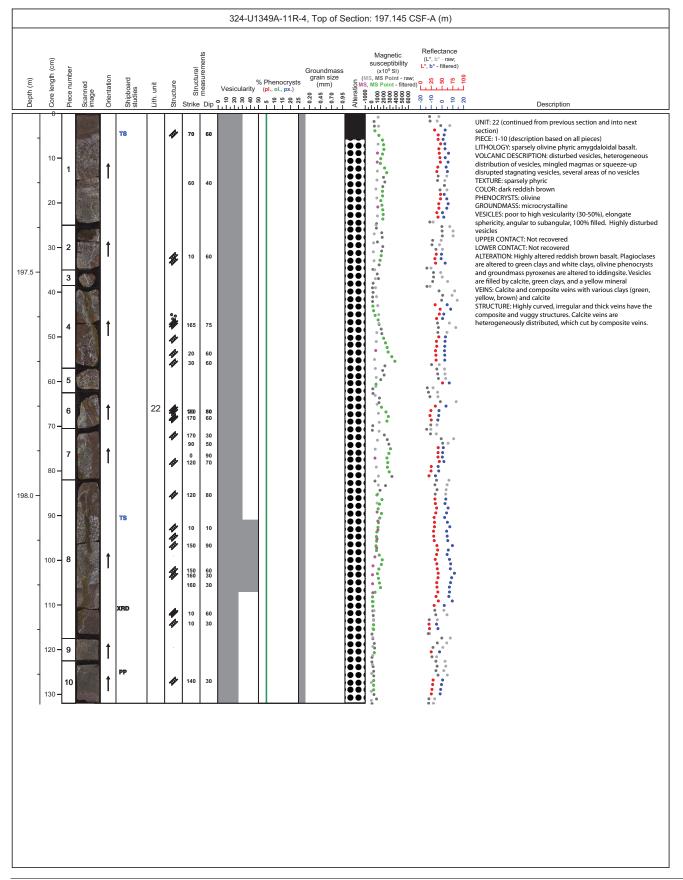


									324-U1349A-11F	-2, Top of §	Sectio	n: 194.39 CS	SF-A (m)	
Depth (m)	, Core length (cm)	Piece number Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Structural	did	% Phenocrysts Vesicularity (pl., ol., px.) ୦ ଟ ର ର ଟ କୁ ଜ ଜ ମ ଜ ନ ଜ ନ	()	Alteration — -1000 <mark>%</mark> ∭	Magnetic susceptibility (x10 ⁵ SI) S, MS Point - raw; MS Point - filtered 00000000000000000000000000000000000	Reflectance (L*, b* - raw; L*, b* - filtered) 0, 0; 0; 0; 0, 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0; 0;	Description
- 194.5 -	0	1 2 3			20	TEL.								UNIT: 20 (continued from previous section) PIECE: 1-5 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt. VOLCANIC DESCRIPTION: switcle dense and sparse concentrations of vesicles TEXTURE: sparsely phyric COLOR: pale reddish brown
-	20 -	4	1				20	70						PHENOCRYSTs: olivine GROUNDMASS: microcrystalline VESICLES: poor vesicularity (30%), elongate sphericity, subangular, 100% filled. Swirled vesicles UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered ALTERATION: Highly altered reddish brown basalt. Plagioclases
-	30-	6 7	1				30	30						are altered to green clays and white clays, olivine phenocrysts and groundmass pyroxenes are altered to iddingsite. Vesicles are filled by calcite. VEINS: Composite veins with various clays (green, yellow, orange) and calcite STRUCTURE: Massive structure of highly altered and amygdaloidal basalt. Elongated bubbles.
-	40 - 50 -	8	t											UNIT: 21 PIECE: 6-10 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt. VOLCANIC DESCRIPTION: massive areas with coarse and fine amygdaloidal horizons, diffuse concentrations of vesicles TEXTURE: sparsely phyric
195.0 –	60 -				21		40	40						COLOR: dark reddish brown PHENOCRYSTS: olivine GROUNDMASS: microcrystalline VESICLES: poor vesicularity (30%), elongate sphericity, subangular, 100% filled. Swirled vesicles UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered
	70 -	9	Ĩ			°°°	40	40						ALTERATION: Highly altered reddish brown basalt. Plagioclases are altered to green clays and white clays, olivine phenocrysts and groundmass pyroxenes are altered to iddingsite. Vesicles are filled by calcite, a yellow mineral and opaques VEINS: Composite veins with various clays (green, yellow) and calcite STRUCTURE: Massive structure of highly altered and
-	80 - 90 -	10	1											amygdaloidal basalt. Bubble's banding show the gentle to sharp dips. UNIT: 22 (continued into next section) PIECE: 11-17 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt. VOLCANIC DESCRIPTION: disturbed vesicles, heterogeneous
-	100 -	12 13 14	t				125	15						distribution of vesicles TEXTURE: sparsely phyric COLOR: dark reddish brown PHENOCRYSTS: olivine GROUNDMASS: microcrystalline VESICLES: poor vesicularity (30%), elongate sphericity,
195.5 -	110-	15	1	PP	22									subangular, 100% filled. Disturbed vesicles UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered ALTERATION: Highly altered reddish brown basalt. Plagioclases are altered to green clays and white clays, olivine phenocrysts and groundmass pyroxenes are altered to iddingsite. Vesicles are filled by calcite, green clays, and a yellow mineral
-	120-													VEINS: Calcite and composite veins with various clays (green, yellow, brown) and calcite STRUCTURE: Massive structure of highly altered and amygdaloidal basalt. Bubble's banding show the gentle dip.
-	130 -	16	1											
		17	1									о ^н а на	•••	

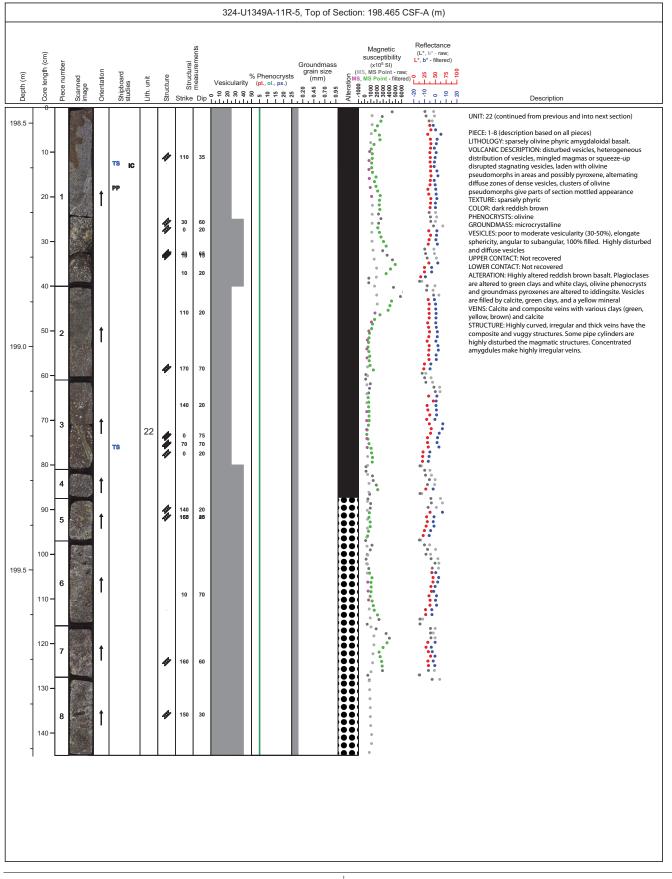




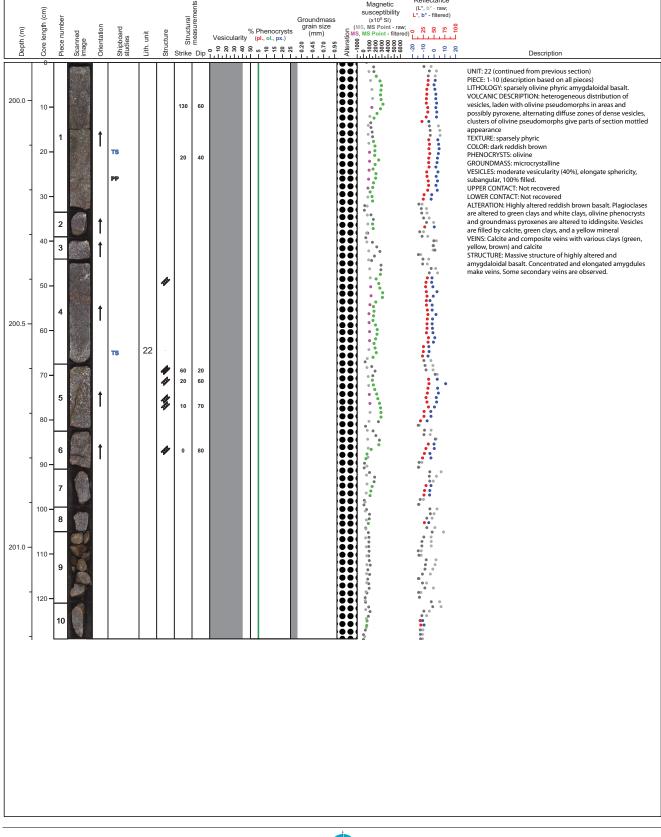












324-U1349A-11R-6, Top of Section: 199.915 CSF-A (m)

Groundmass

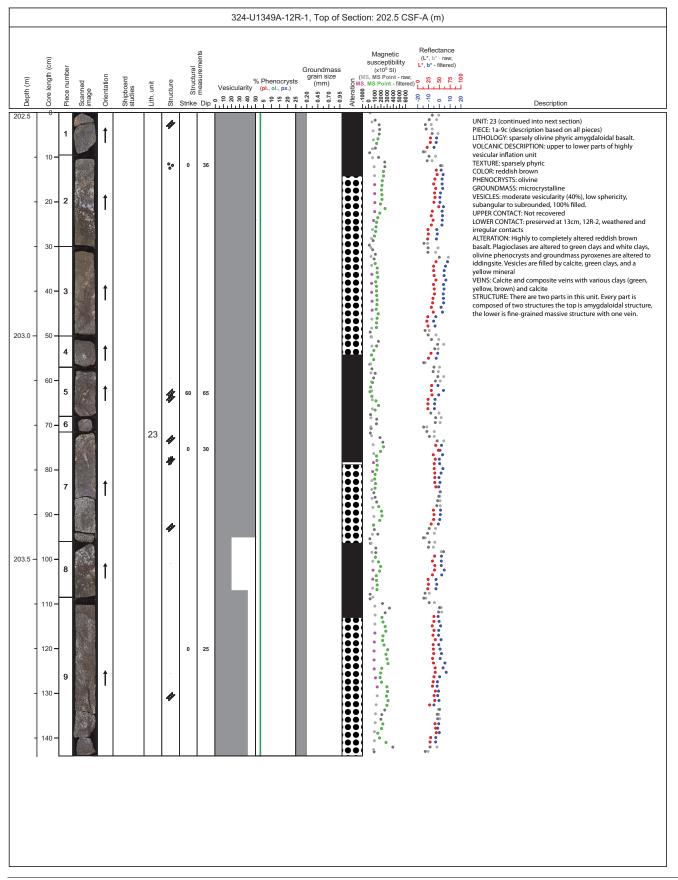
Reflectance

(L*, b* - raw; L*, b* - filtered)

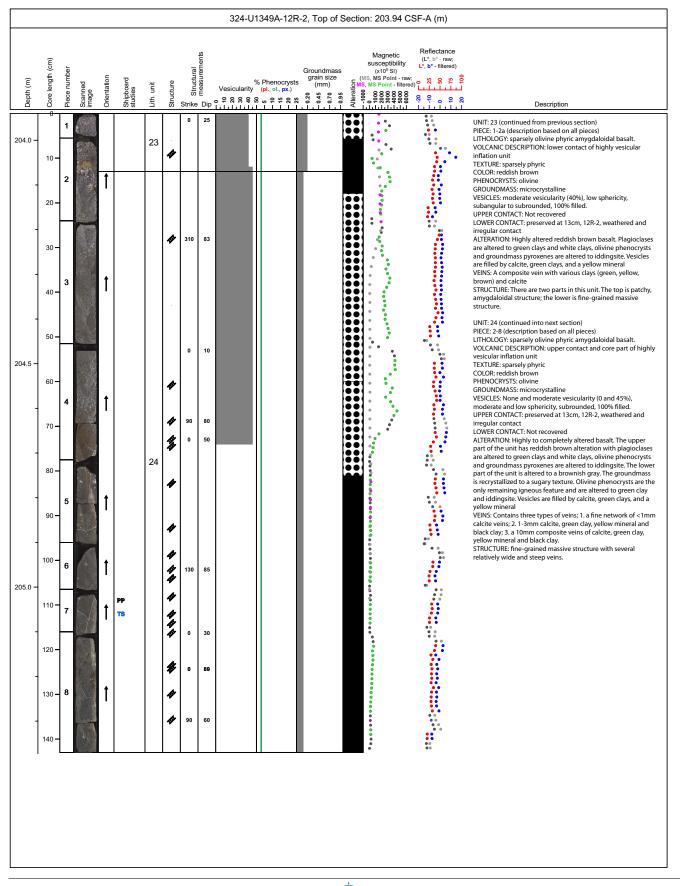
Magnetic

susceptibility

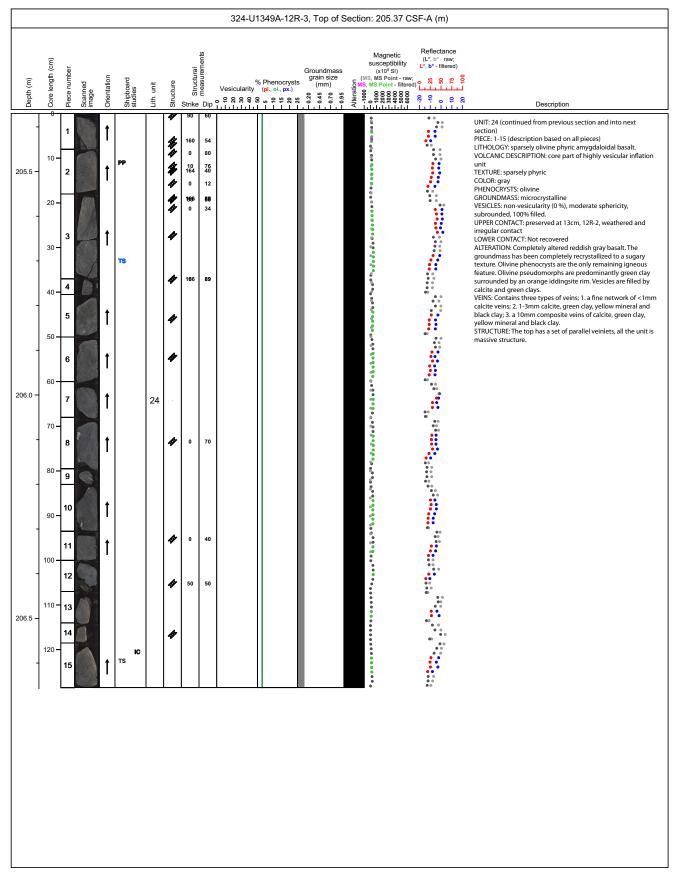






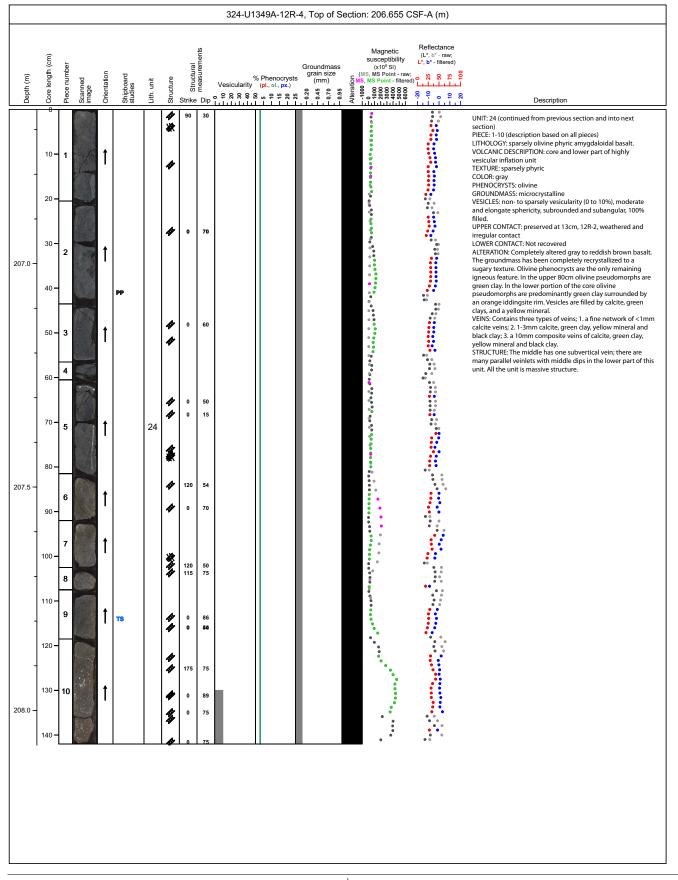




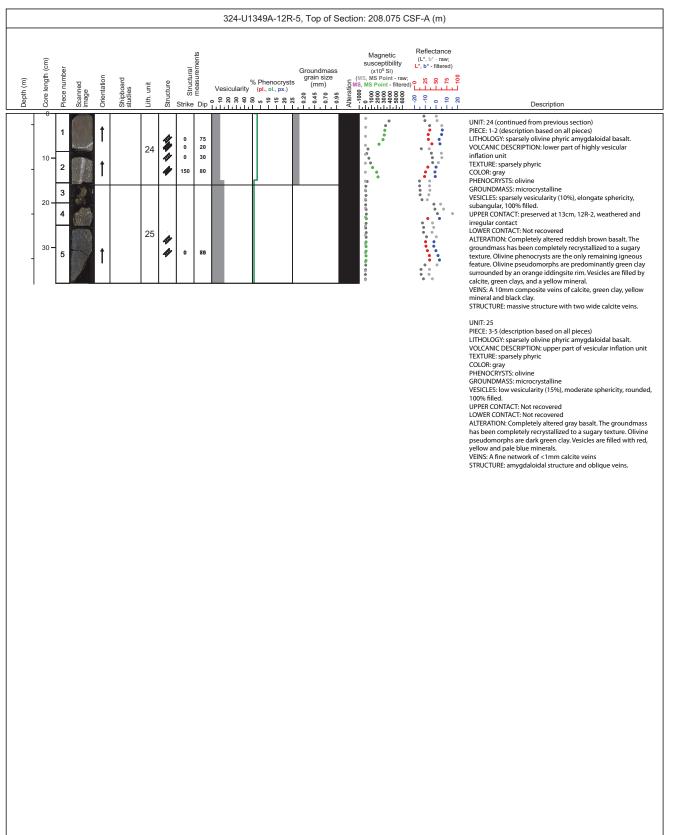




Site U1349 core descriptions



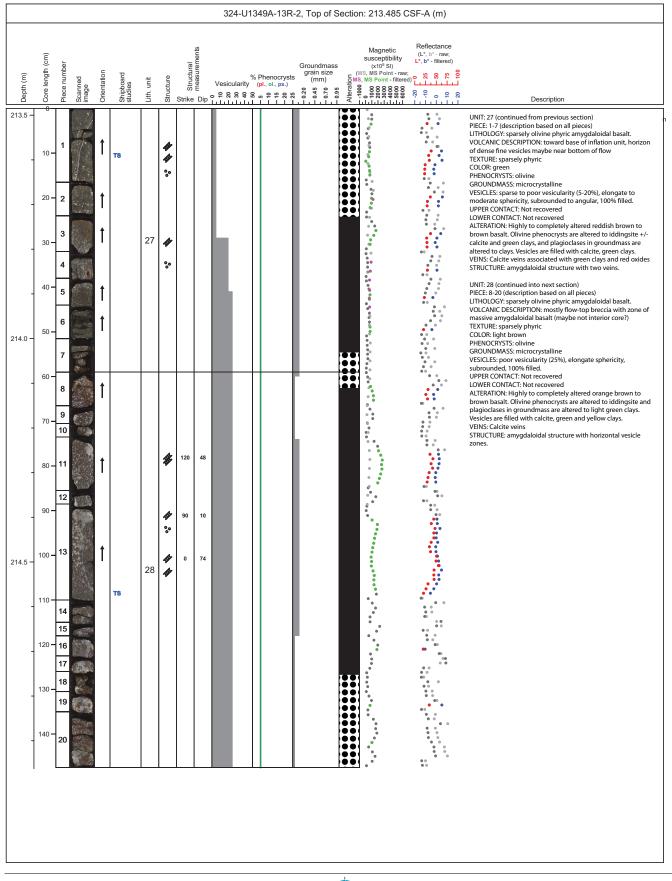




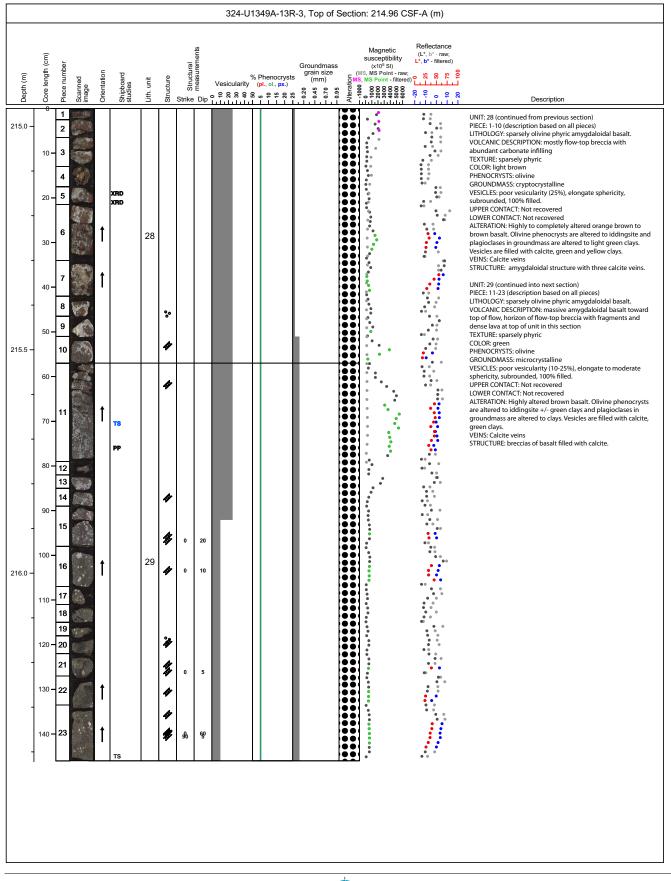


										324-U1	349A-13	R-1, Top of	Section	on: 212.1 CS	8F-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Structural Strike		% Vesicularity 도우 & 용 용 &		0 0 0 0	Alteration 	Magnetic susceptibility (x10 ⁵ SI) IS, MS Point - raw; MS Point - filtered	Reflectance (L*, b* - raw; L*, b* - filtered) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Description
	10-	1	2			26										UNIT: 26 PIECE: 1-2 (description based on all pieces) LITHOLOGY: chert VOLCANIC DESCRIPTION: TEXTURE:
-	20 -	3			XRD PP		THE T	138	86							COLOR: PHENOCRYSTS: GROUNDMASS: cryptocrystalline VESICLES: UPPER CONTACT: LOWER CONTACT: Not recovered ALTERATION:
-	30 -	4		1	TS			0	80 10							VEINS: STRUCTURE: lamellae bedding. UNIT: 27 (continued into next section) PIECE: 3-12 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt.
212.5 –	40 -						*	0	60							VOLCANIC DESCRIPTION: massive interior of inflation unit, horizon of dense spherical vesicles TEXTURE: sparsely phyric COLOR: green PHENOCRYSTS: olivine GROUNDWASS: microcrystalline VESICLES: sparse vesicularity (3-10%), elongate to moderate
-	50 - 60 -	5		1			151	19800 0	28 20							sphericity, subrounded, 100% filled. UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered ALTERATION: Highly to completely altered reddish brown to brown basalt. Olivine phenocrysts are altered to iddingsite +/- calcite and green clays, and plagioclases in groundmass are altered to clays. Vesicles are filled with calcite, green clays.
-	70 -						THE THE	0 130	78 48							VEINS: Calcite veins associated with react the green clays. And end oxides VEINS: Calcite veins associated with green clays and red oxides STRUCTURE: There are three parts in this unit. Each part has two sections. The top section has more vesicles with amygdaloidal structure, the middle has less vesicle but more veinlets, the lower has some vesicles and shear veinlets.
-	80 -					27	\$ ₽ () °°	62	56							
213.0 -	90 -	6		1			191 194 114	195	82							
-	100 -							0	44							
	110 -	7 8					ABC									
-	130 -			1			*	0	8					4.0 ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° °		
		11 12	S. Construction											9 ° 0 ° 0		





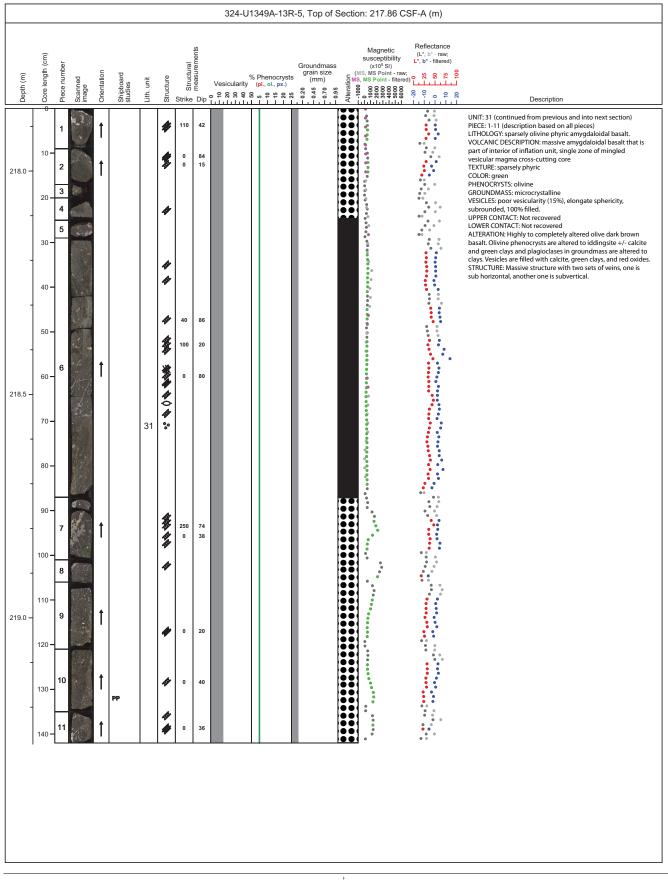




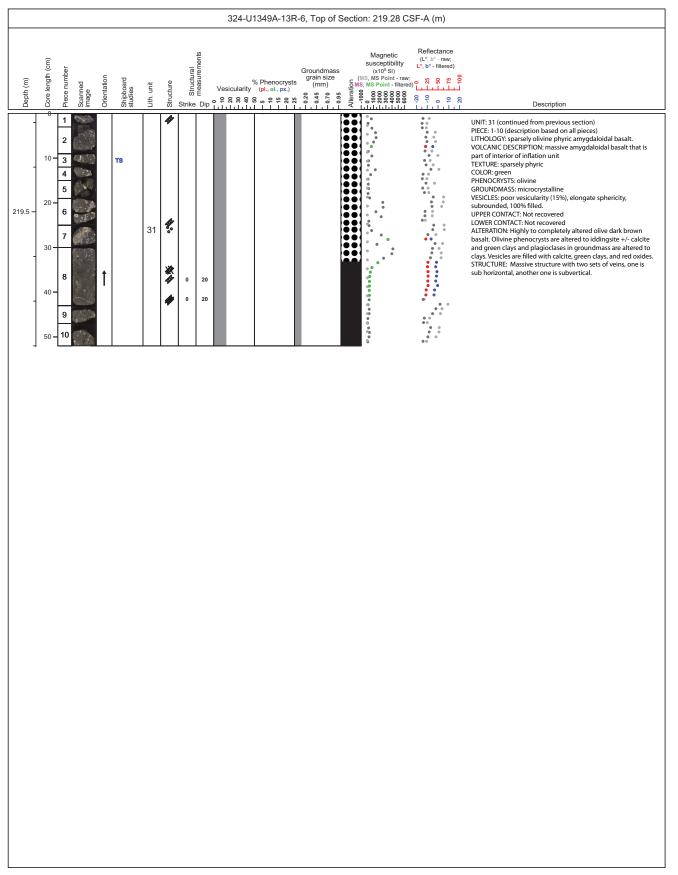


										324-U134	9A-13R	-4, Top of S	Sectio	n: 216.42 CS	SF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Structural Strike	Dip	%Pi Vesicularity (pi 아우 유 유 유 유 요 요 나나나나나	nenocrysts ., ol., px.) ද ද ද ද ද	()	Iteration	Magnetic susceptibility (x10 ⁵ SI) S, MS Point - raw; MS Point - filtered 8888888 00000000000000000000000000000	Reflectance (L*, b* - raw; L*, b* - filtered) 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	Description
216.5 –	10 -	1		1		29	Ş	90	5							UNIT: 29 (continued from previous section) PIECE: 1-4 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt. VOLCANIC DESCRIPTION: massive amygdaloidal basalt toward base(?) of flow, horizon of breccia with fragments TEXTURE: sparsely phyric COLOR: green PHENOCRYSTS: olivine
-	20 - 30 -	2 3 4 5														GROUNDMASS: microcrystalline VESICLES: poor vesicularity (10%), moderate sphericity, subrounded, 100% filled. UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered ALTERATION: Highly altered brown basalt. Olivine phenocrysts are altered to iddingsite +/- green clays and plagioclases in groundmass are altered to clays. Vesicles are filled with calcite,
-	40 -	6 7 8 9	18 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8													green clays. VEINS: Calcite veins STRUCTURE: amygdaloidal structure with several sub horizontal veins. UNIT: 30 PIECE: 5-16 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt.
- 217.0 –	50 - 60 -	10 11 12 13				30	%									VOLCANIC DESCRIPTION: mostly flow-top breccia with abundant carbonate infilling, possibly entire unit is flow top breccia and is part of the top of the next unit TEXTURE: sparsely phyric COLOR: light brown PHENOCRYSTS: olivine GROUNDMASS cryptocrystalline VESICLES: poor vesicularity (10%), low sphericity, subrounded,
-	70 -	14		1			B									100% filled. UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered ALTERATION: Highly altered brown to orange brown basalt. Olivine phenocrysts are altered to iddingsite and plagioclases in groundmass are altered to clays. Vesicles are filled with calcite, green and orange clays. VEINS: Calcite and green clay veins
-	80 - 90 -	16 17 18 - 19														STRUCTURE: Massive structures with several sub horizontal veins and few vesicles. UNIT: 31 (continued into next section) PIECE: 17-24 (description based on all pieces) LITHOLOGY: sparsely olivine phyric amygdaloidal basalt. VOLCANIC DESCRIPTION: horizon of flow-top breccia at top of unit becomes massive amygdaloidal basalt toward bottom of
-	100 -	20 21		1			*	0	38							section TEXTURE: sparsely phyric COLOR: green PHENOCRYSTS: olivine GROUNDMASS: microcrystalline VESICLES: poor vesicularity (15%), elongate sphericity, subrounded, 100% filled. UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered
- 17.5	110 -		173 . 	t		31	*	0	84 38					•		ALTERATION: Highly to completely altered olive dark brown basalt. Olivine phenocrysts are altered to iddingsite +/- calcite and green clays and plagioclases in groundmass are altered to clays. Vesicles are filled with calcite, green clays, and red oxides. VEINS: Calcite, clays and red oxides veins STRUCTURE: breccias.
-	130 -	- 23	10 - X		ts IC									•••••		
-	140 -	24		1			*	118	78					•		

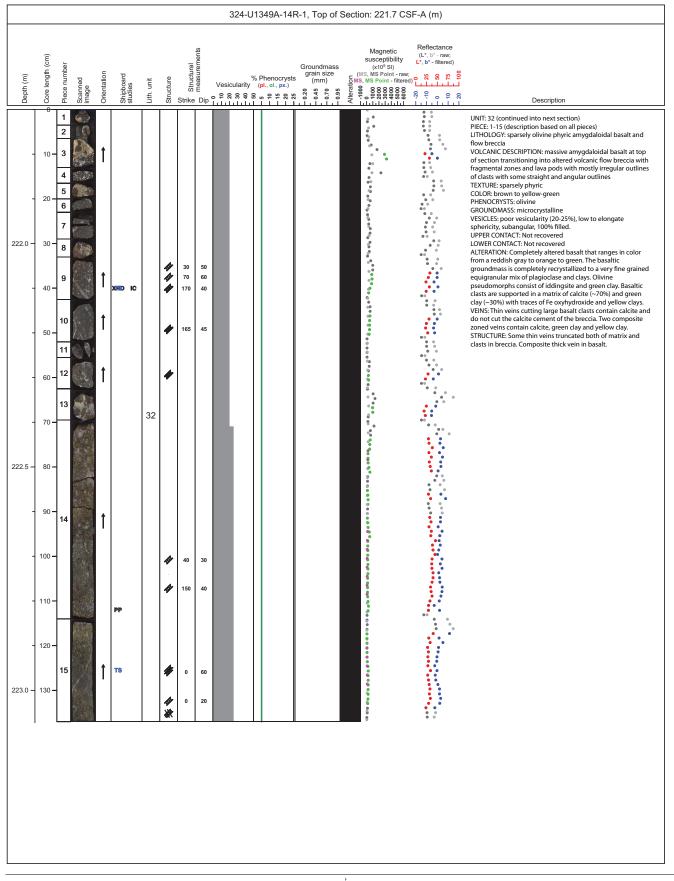




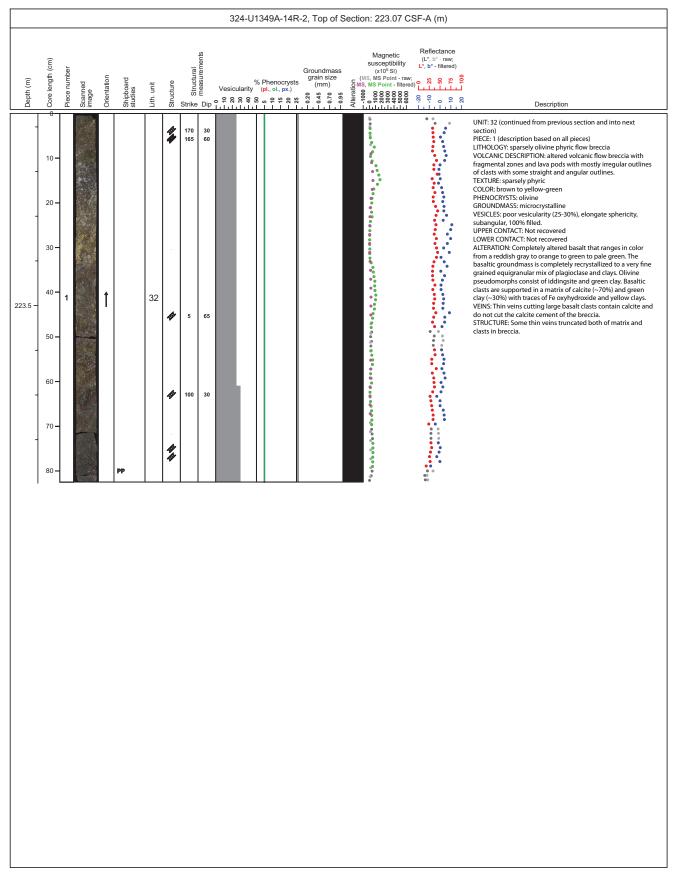










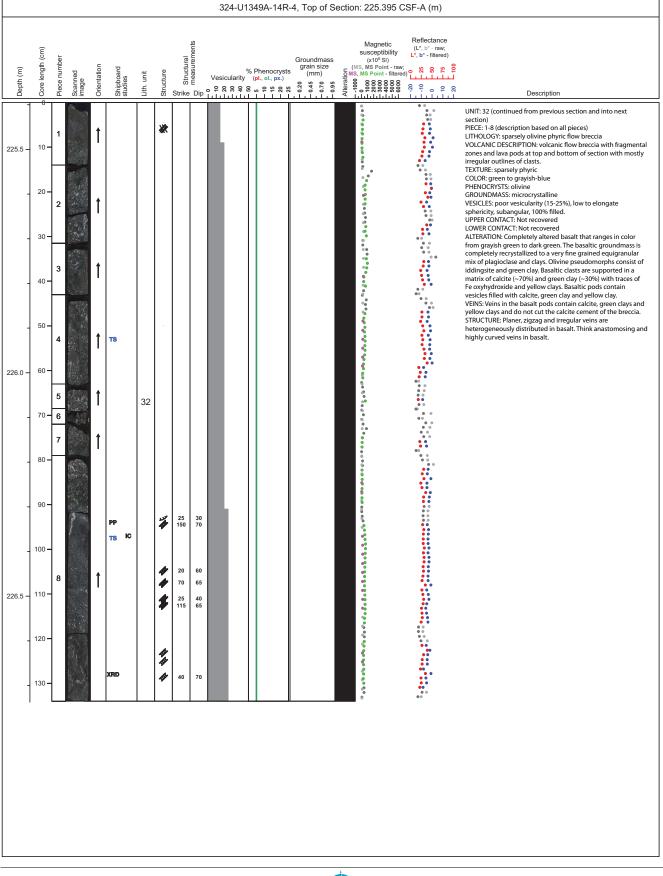




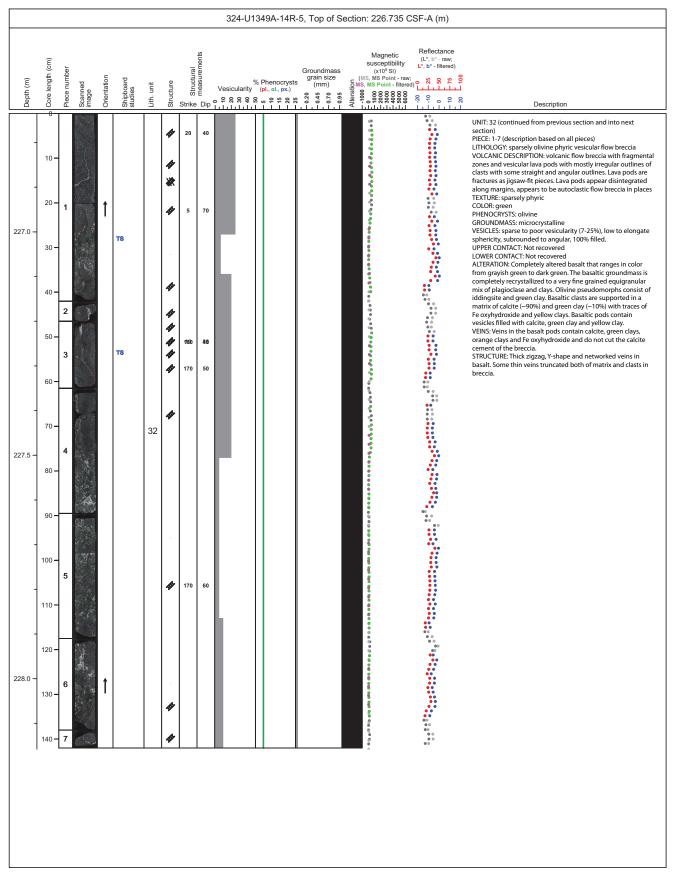
										324-U1	349A-14R	-3, Top of Se	ection: 223.895 C	SF-A (m)	
Depth (m)	Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	ay Structural measurements	Dip	Vesicularity 우 은 ጺ 운 용 윤	o Phenocryst (pl., ol., px.) ເມີຍ ຊີຊີຊີຊີ	()	Magnetic susceptibility (x10 ⁵ SI) (MS, MS Point - fitters 000000000000000000000000000000000000	Reflectance (L*, b* - raw; 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Description
224.0 -								50	20 30				14 44 <i>8</i> , 8, 8, 8, 8, 8, 9, 10, 1		UNIT: 32 (continued from previous section and into next section) PIECE: 6 (description based on all pieces) LITHOLOGY: sparsely olivine phyric flow breccia VOLCANIC DESCRIPTION: massive amygdaloidal basalt that is part of interior of inflation unit at top of section transitioning into altered volcanic flow fragmental zone with mostly irregular outlines of clasts with some straight and angular outlines, end of yellow-green alteration from within section
-	20 - 30 -						**		20 40	Γ.					TEXTURE: sparsely phyric COLOR: brown to yellow-green PHENOCRYSTS: olivine GROUNDMASS: microcrystalline VESICLES: poor vesicularity (10-15%), elongate sphericity, subangular, 100% filled. UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered
-	40 -	-	P. C. A.	t											ALTERATION: Completely altered basalt. In the upper 60cm alteration color varies from reddish gray to orange to green to pale green to red. Below 60cm alteration color varies from pale green to dark green. The basaltic groundmass is completely recrystallized to a very fine grained equigranular mix of plagioclase and clays. Olivine pseudomorphs consist of iddingsite and green clay. Basaltic clasts are supported in a matrix of calcite (~60%) and green clay (~40%) with traces of Fe oxyhydroxide and yellow clays.
- 224.5 –	50 - 60 -			I											YE oxynyatroxide and yenow cays. VEINS: Fine venis cut large basaltic clasts but are not observed in highly brecciated zones. STRUCTURE: Some thin veins truncated both of matrix and clasts in breccia.
-	70 - 80 -		a the state			32									
-	90 -														
- 225.0 -	100 - 110 -	2		t											
-	120 -	3	The second	t									0 0 4 ⁰ 0 0 0 0 00 00 00 00 00 00 00 00 00 00 00		
-	130 - 140 -	4		t											
	150 -	6		•											



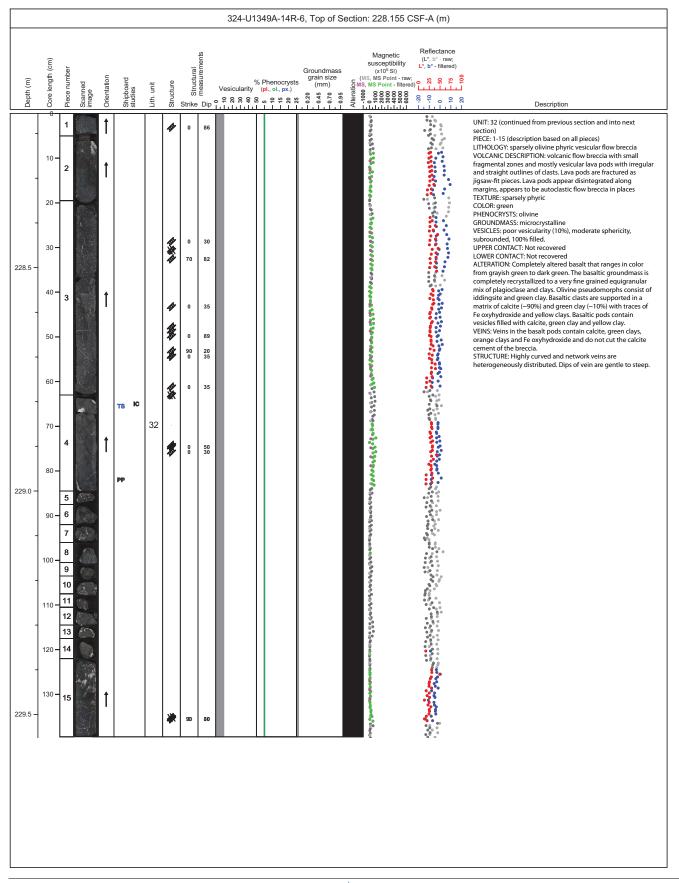
Site U1349 core descriptions



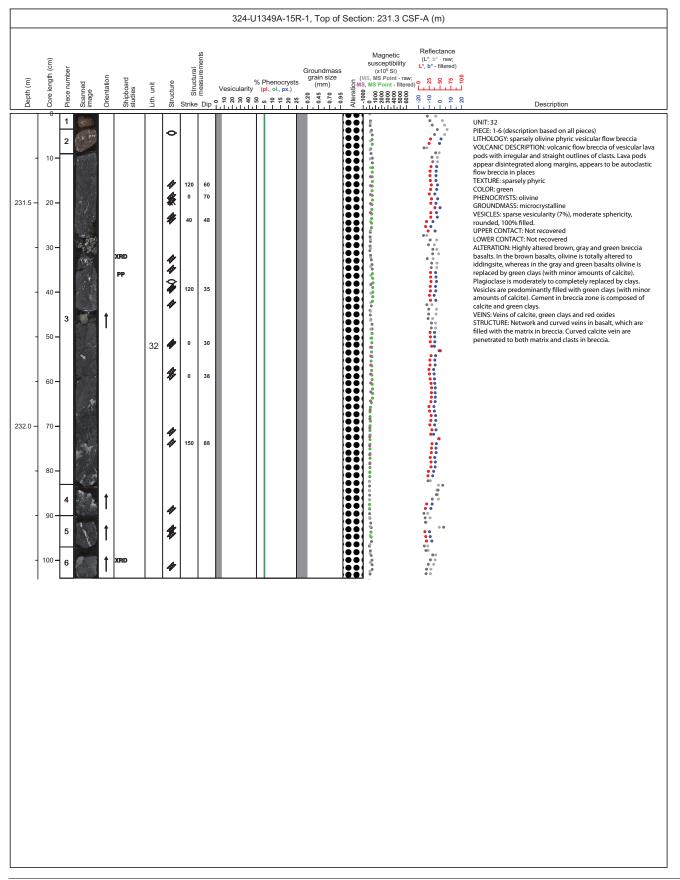






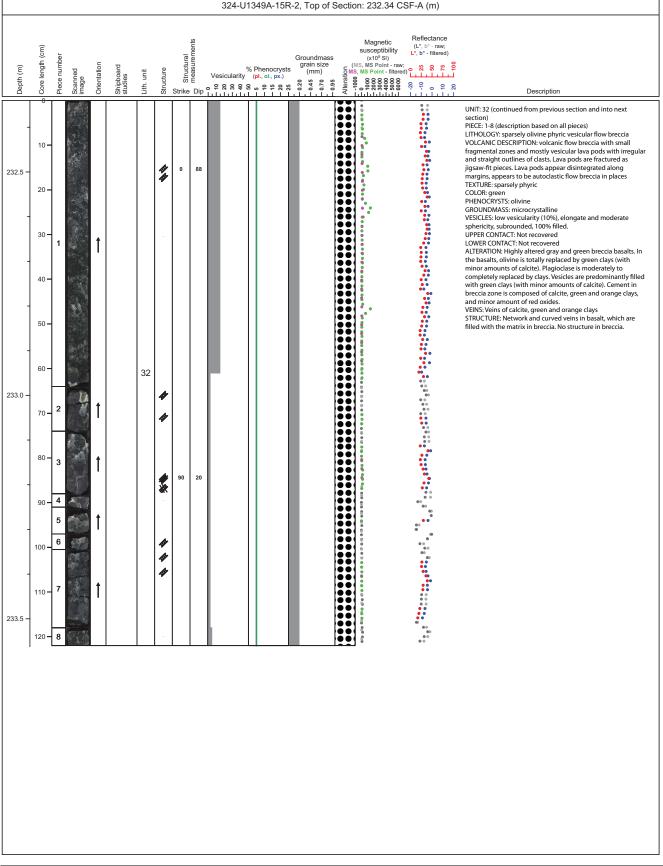




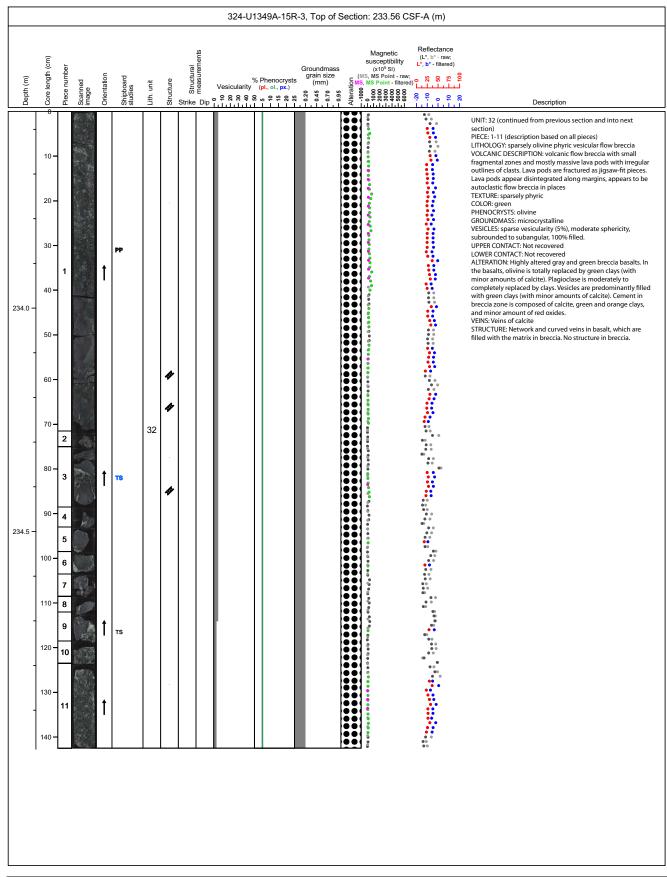


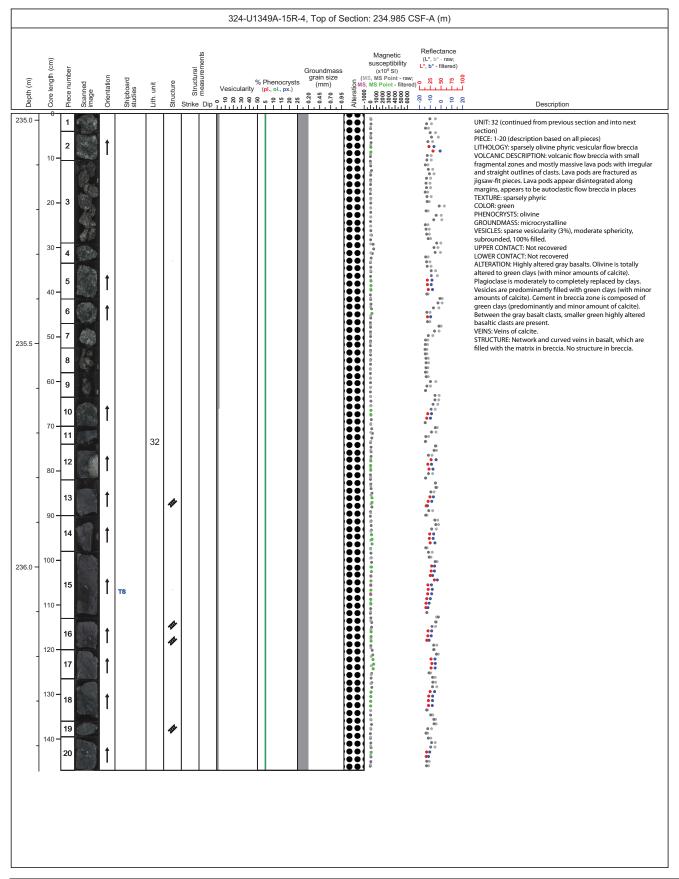


Site U1349 core descriptions

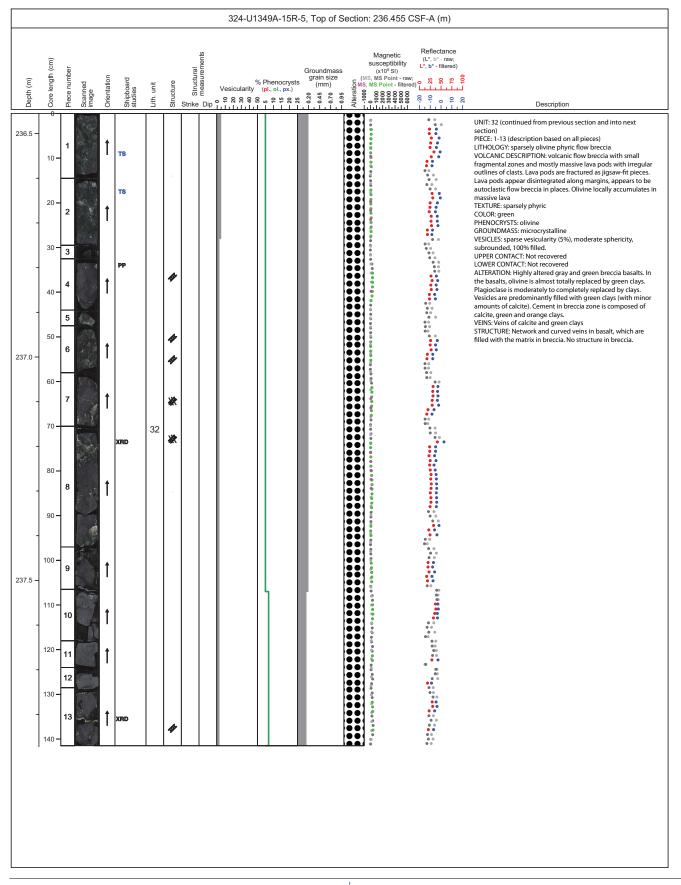




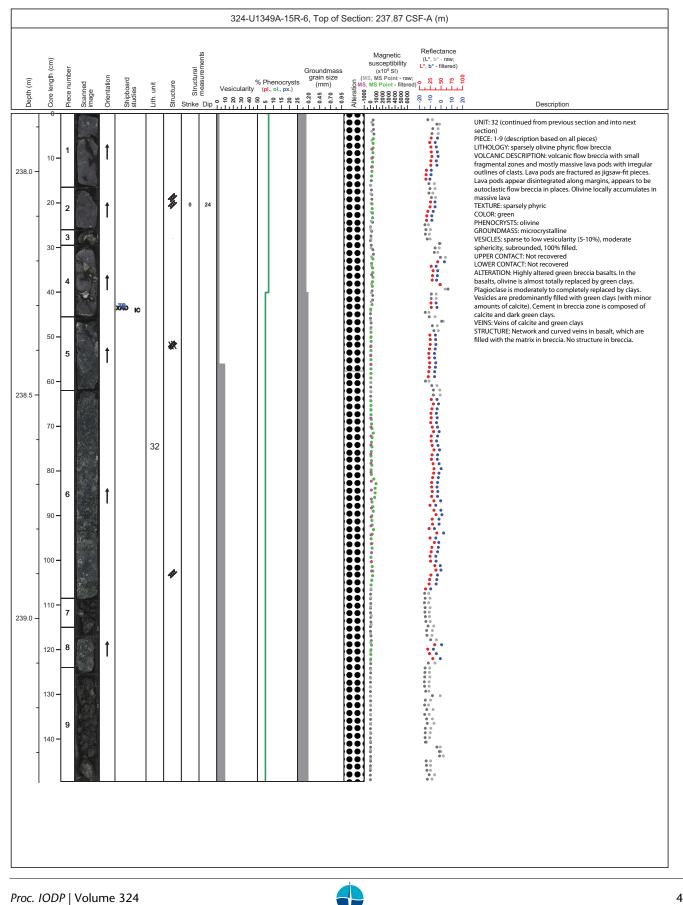






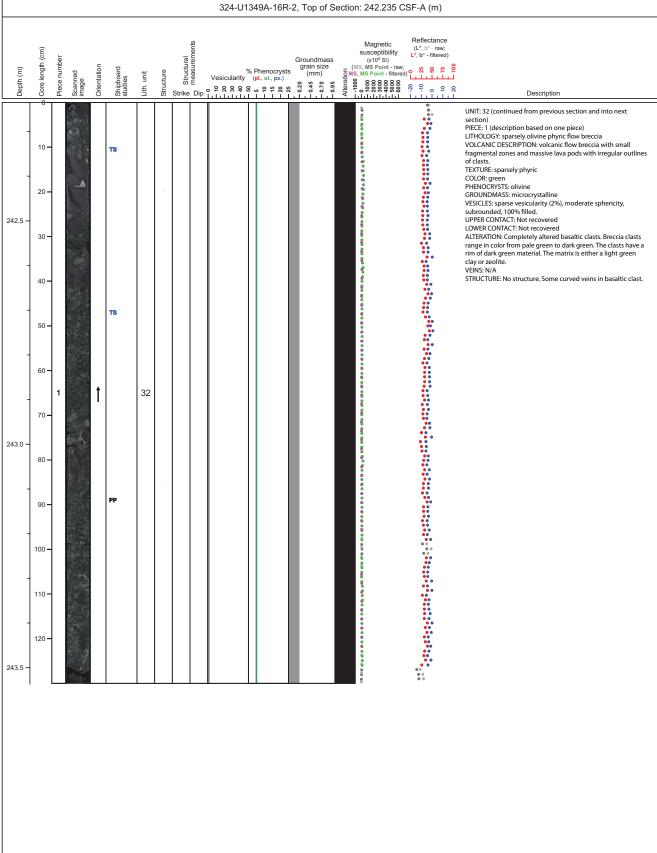


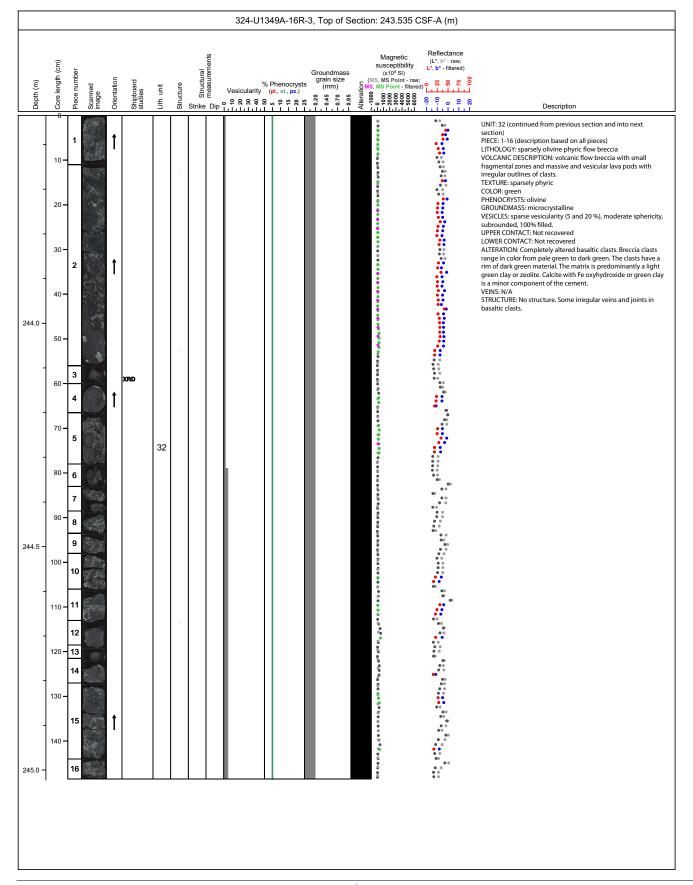


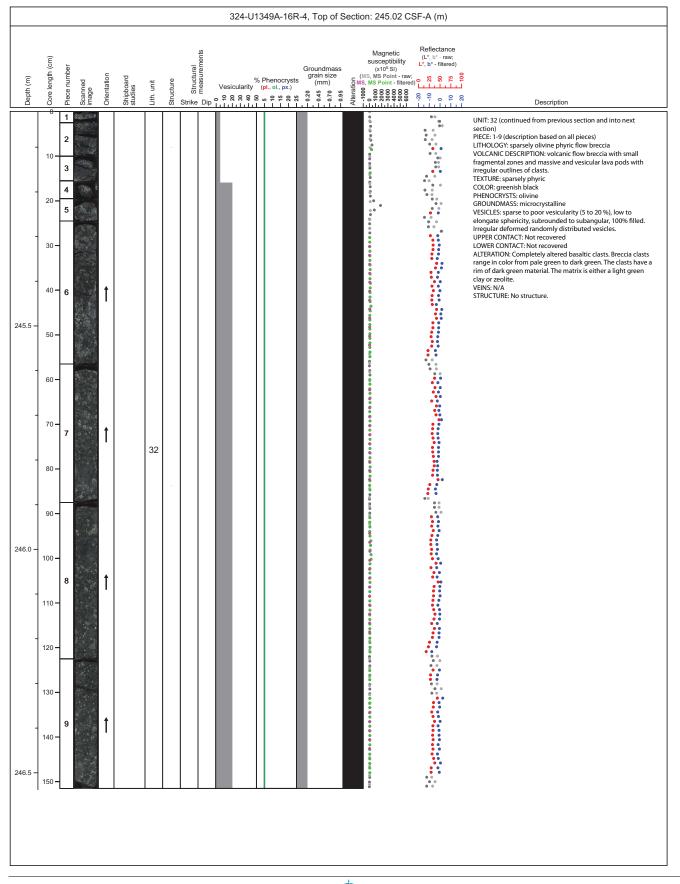


									324-U1349A-1	6R-1, Top of	Section: 240.9 CS	SF-A (m)	
Depth (m)	, Core length (cm)	Piece number	Scanned image	Orientation	Shipboard studies	Lith. unit	Structure	Structural measurements dig	% Phenocry Vesicularity (pl., ol., px., ୦	()	Magnetic susceptibility (x10 ⁵ SI) (MS, MS Point - filtered (SS 99 00 00 00 00 00 00 00 00 00 00 00 00	Reflectance $(L^*, b^* - raw;$ $L^*, b^* - filtered)$ S_{2}	Description
241.0 -	10 -	1											UNIT: 32 (continued from previous section and into next section) PIECE: 1-9 (description based on all pieces) LITHOLOGY: sparsely olivine phyric flow breccia VOLCANIC DESCRIPTION: volcanic flow breccia with small fragmental zones and massive lava pods with irregular outlines of clasts. TEXTURE: sparsely phyric
	20 - 30 -	2	100000										COLOR: green PHENOCRYSTS: olivine GROUNDMASS: microcrystalline VESICLES: sparse vesicularity (5%), moderate sphericity, subrounded, 100% filled. UPPER CONTACT: Not recovered LOWER CONTACT: Not recovered ALTERATION: Completely altered basaltic clasts. Breccia clasts range in color from pale green to dark green. The clasts have a
	40 - 50 -	3											rim of dark green material. The matrix is either a light green clay or zeolite. VEINS: Iv/A STRUCTURE: No structure. A few irregular veins in basaltic clasts.
241.5 -	60 -	4		Î		32							
.	70 - 80 -	5	5	Î		52							
	90 -										0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
242.0 -		6		† †									
.	120 - 130 -	8		1									





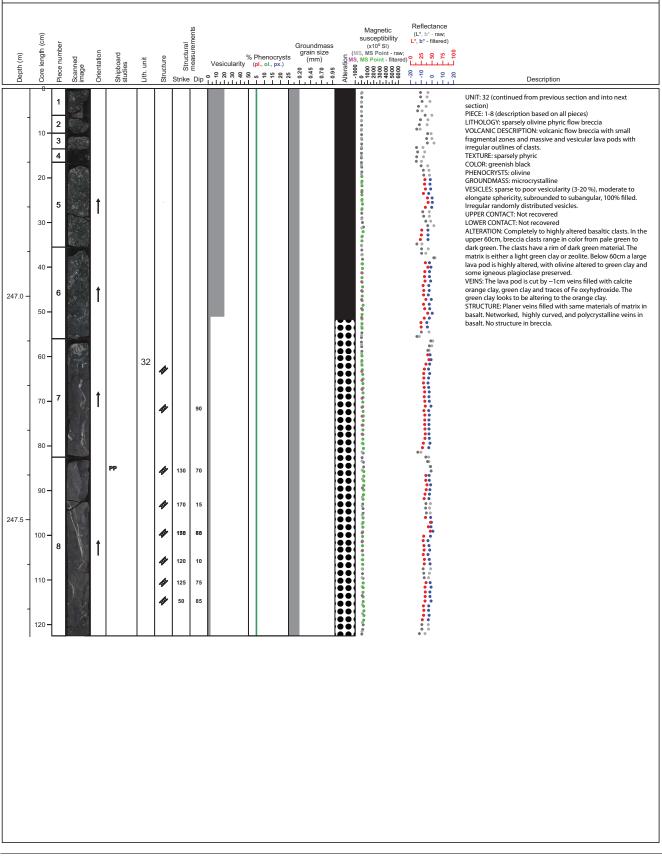






Site U1349 core descriptions

Core Photo



324-U1349A-16R-5, Top of Section: 246.535 CSF-A (m)



