144-878A-44M-1 (73-76 cm) ROCK NAME: Altered Vitric Tuff OBSERVER: DMC

WHERE SAMPLED: Interbedded in upper breccia of Lithologic Unit V.

GRAIN SIZE: 2-5 mm. TEXTURE: Clastic.

TEXTURE: Clastic.					***************************************	***************************************
PRIMARY MINERALOGY	PERCENT	PERCENT	SIZE	COMPO-		201 B 271 772
MINERALOGI	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Clasts	2-5				Angular, irregular.	50% vesicles, devitrified glassy basalt scoria
GROUNDMASS						
Matrix	<1					Finely divided angular basaltic glass.
Pyrite	5		<1		Granular.	Along cracks and lining voids in matrix.
SECONDARY		REPLACING/				
MINERALOGY	PERCENT	FILLING				COMMENTS
Brown clay	95	Everything				Relict fabric beautifully preserved.
COMMENTS: Some cl	asts are elongate					have been flattened on compaction.
144-878A-46M-1 (112	The state of the s		OBSERVI	ER: DMC	WHERE SAMPLED:	Large clast in upper breccia Unit 5
ROCK NAME: Hawaiite						
GRAIN SIZE: Aphaniti	c.					
TEXTURE: Trachytic.						
PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	15	0.2-2		Anhedral equant,	Altered to iddingsite and green/brown clay.
GROUNDMASS						
Plagioclase	40	40		An ₅₅	Laths.	
Clinopyroxene	30	30		670-81	Prisms.	Greenish.
Magnetite	15	15			Cubes.	
Green clay	15				Interstitial.	Replacing original feldspar or nepheline.
Apatite	0	0				
		REPLACING/				
SECONDARY		FILLING				COMMENTS
	PERCENT	T ILLUM TO				
SECONDARY MINERALOGY Calcite	PERCENT <1	Vein, vesicles				
MINERALOGY						
MINERALOGY Calcite	<1	Vein, vesicles	vesicles			
Calcite Brown clay	<1	Vein, vesicles	vesicles	FILLING	SHAPE	COMMENTS
MINERALOGY Calcite Brown clay VESICLES/	<1 10	Vein, vesicles Olivine, some	vesicles	FILLING Matrix	SHAPE Round	COMMENTS Filled by calcite or brown clay.

COMMENTS: Texture and abundance of plagioclase suggest that this is a hawaiite, although plagioclase is a little too calcic.

144-878A-46M-2 (52-57 cm)

OBSERVER; DMC

WHERE SAMPLED: Clast in breccia of Lithologic Unit V.

ROCK NAME: Hawaiite GRAIN SIZE: Aphanitic. TEXTURE: Pilotaxitic.

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	1.0	0.2 - 1		Subhedral equant.	Altered to green/brown clay.
Plagioclase	<1	<1	0.5 - 2		Broken prisms.	Partly corroded.
Plagioclase	5	5	1	An ₅₀	Laths.	
GROUNDMASS						
Olivine	0	5	0.05		Anhedral.	Replaced by green clay.
Clinopyroxene	10	10	0.01-0.05		Prisms.	
Plagioclase	20	20	0.0 - 0.3	An ₅₀	Laths.	Composition tenuous, minimum value.
Plagioclase	20	40	0.1-0.3		Interstitial.	Could include alkali feldspar or nepheline.
Magnetite	10	10	0.05-0.1		Cubes.	
SECONDARY		REPLACING/				
MINERALOGY	PERCENT	FILLING				COMMENTS
Green clay	15	Original felds	par or nephel	ine		
Colorless clay	20	Interstitial fe	ldspar			
GROUNDMASS						
Apatite	2	Primary, in m	atrix as 0.2 m	m needles		Unusually abundant.
Biotite	<1	Platy, <0.1 m	ım			Associated with magnetite.

COMMENTS: Resembles Sample 78R-1, 127-129 cm, from igneous Unit 1.

144-878A-78R-1 (Piece 25, 127-129 cm) OBSERVER: DMC

WHERE SAMPLED: Massive flow, Unit 1

ROCK NAME: Hawaiite GRAIN SIZE: Microcrystalline. TEXTURE: Pilotaxitic.

CAVITIES Vesicles	PERCENT 1-2	LOCATION 1-2	(mm)	FILLING Calcite, clay	SHAPE Round	
VESICLES/	2400000000		SIZE	1000000000		
Green/brown clay	40	Olivine, matr	ix, vesicles			
Apatite	1	Primary				0.1-0.3 mm needles in groundmass.
MINERALOGY	PERCENT	FILLING				COMMENTS
SECONDARY		REPLACING/				
Mesostasis	0	30	0.1-0.3		Interstitial.	Replaced by green/brown clay.
Magnetite	15	15	0.02		Cubes.	
Clinopyroxene	10	10	0.02 - 0.03		Subhedral prisms.	Green.
Plagioclase	30	40	0.1 - 0.2	An ₅₀	Laths and interstitial.	Probably some interstitial alkali feldspar.
Olivine	0	5	0.05		Anhedral granular.	Altered to green/brown clay.
GROUNDMASS						
Plagioclase	5	5	1-2		Laths.	Oriented.
Plagioclase	<1	<1	1-2		Broken prisms.	Alkali feldspar overgrowths.
PHENOCRYSTS Olivine	0	15	0.1-0.3		Subophitic diamonds.	Altered to green/brown clay.
	FRESENT	ORIGINAL	(mm)	SITION	MORPHOLOG I	COMMENTS
PRIMARY MINERALOGY	PERCENT	PERCENT ORIGINAL	SIZE	COMPO- SITION	MORPHOLOGY	COMMENTS

COMMENTS: Plagioclase composition not robust, high for hawaiite. Texture and mineralogy suggest hawaiite.

144-878A-78R-2 (Piece 3, 71-73 cm)

ROCK NAME: Alkali basalt GRAIN SIZE: Microcrystalline. TEXTURE: Trachytic.

OBSERVER: DMC

WHERE SAMPLED: Lower part of flow, Unit 1

PRIMARY MINERALOGY	PERCENT	PERCENT	SIZE	COMPO-	MORDIJOI OCV	COMMENTS
TEXTURE: Trachytic.						
GRAIN SIZE: Microcry						
144-878A-79R-3 (Piece 4, 117-119 cm) ROCK NAME: Hawaiite		OBSERVER	. DNC	WHERE SAMPLED: Lower part of massive flow, Unit 2		
144-878A-79R-3 (Piece	e 4. 117–119 cm)		OBSERVER	· DMC	WHERE CAMPLED, I	ower part of massive flow Unit 2
COMMENTS: Mildly i	ron-stained throug	ghout.		****		
Green clay	20	.5	< 0.05		Interstitial.	Replacing interstitial feldspar or nepheline.
Ilmenite	10	10	0.02		Irregular, bladed.	
						in part.
Plagioclase	50	50	0.02 - 0.05	An ₆₀	Laths.	Minor interstitial patches, could be alkali feldspa
Clinopyroxene	10	10	0.02 - 0.03		Prisms.	Green.
Olivine	0	10	0.02 - 0.03		Anhedral granular.	Altered to green clay.
GROUNDMASS						
Apatite	1	1	0.1-0.2		Needles.	
GROUNDMASS						
Plagioclase	.5	5	0.5-1		Laths.	Preferred orientation.
1 lagiociase	~1	×1	0.5-1		prisms.	Colloded coles.
Plagioclase	<1	<i>S</i>	0.2-2		Euhedral diamond. Subhedral and broken	Completely altered to orange iddingsite. Corroded cores.
PHENOCRYSTS Olivine	0	3	0.2-2		E 1-1-1 E	Completely altered to assume iddingsite
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	3	0.2 - 2		Euhedral diamonds.	Altered to green/brown clay.
Plagioclase	5	5	0.5-1		Laths.	Oriented. Alkali feldspar overgrowths.
PHASES						
Apatite	1	1	0.1-0.2		Needles.	
GROUNDMASS						
Olivine	0	15	0.02-0.03		Anhedral.	Altered to green/brown clay.
Clinopyroxene	5-10	5-10	0.02 - 0.03		Prisms,	Green.
Plagioclase	50	50	0.02 - 0.5	An ₅₀	Laths.	Minor interstitial patches could be alkali feldspar.
Magnetite	10	10	0.02		Irregular, equant.	
Green clay	20	*	< 0.05		Interstitial.	Replacing interstitial feldspar or nepheline.

144-878A-80R-6 (Piece 4, 98-101 cm) ROCK NAME: Basanitoid

GRAIN SIZE: Microcrystalline.

TEXTURE: Intersertal.

OBSERVER: DMC

WHERE SAMPLED: Lower part of massive flow, Unit 8.

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	5	10	0.1-2		Euhedral and broken.	Altered to iddingsite rims, green/brown clay center
GROUNDMASS:						
Titanaugite	40	40	0.1-0.5		Anhedral; glomerocry	sts.
GROUNDMASS						
Plagioclase	25	30	0.02	An ₅₅	Laths and interstitial.	Possibly some nepheline.
Magnetite	10	10	0.02-0.05		Cubes.	
Apatite	1	1	0.02		Needles.	
Green clay	10		< 0.05		Interstitial.	Mottled extinction. Replacing interstitial feldspar nepheline.
Nepheline?	5	10	< 0.05		Interstitial.	Low birefringence. Identification uncertain. Mottle extinction where altered.
SECONDARY		REPLACING/				
MINERALOGY	PERCENT	FILLING				COMMENTS
Colorless clay	5	Nepheline?				Colorless, mottled extinction, low birefringence.
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microcr	oid ystalline.)	OBSERVER	: DMC	WHERE SAMPLED: N	Aid-flow, Unit 10.
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microcr TEXTURE: Intersertal.	oid ystalline.				WHERE SAMPLED: N	Mid-flow, Unit 10.
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microcr TEXTURE: Intersertal.	oid ystalline. PERCENT	PERCENT	SIZE	СОМРО-		
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microcr TEXTURE: Intersertal.	oid ystalline.				WHERE SAMPLED: MORPHOLOGY	did-flow, Unit 10.
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microcr TEXTURE: Intersertal.	oid ystalline. PERCENT	PERCENT	SIZE	СОМРО-		
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microcr TEXTURE: Intersertal. PRIMARY MINERALOGY	oid ystalline. PERCENT	PERCENT	SIZE	СОМРО-		
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microor TEXTURE: Intersertal. PRIMARY MINERALOGY	oid ystalline. PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	СОМРО-	MORPHOLOGY	COMMENTS Iddingsite rims, yellow high birefringent clay
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microer TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine	oid ystalline. PERCENT PRESENT 0	PERCENT ORIGINAL	SIZE (mm)	СОМРО-	MORPHOLOGY Euhedral or broken. Clusters euhedral	COMMENTS Iddingsite rims, yellow high birefringent clay
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microcr TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Titanaugite	oid ystalline. PERCENT PRESENT 0	PERCENT ORIGINAL	SIZE (mm)	СОМРО-	MORPHOLOGY Euhedral or broken. Clusters euhedral	COMMENTS Iddingsite rims, yellow high birefringent clay
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microer TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Titanaugite	percent present 0 <1	PERCENT ORIGINAL 5 <<1	SIZE (mm) 0.1-3 0.2-0.5	СОМРО-	MORPHOLOGY Euhedral or broken. Clusters euhedral prisms.	COMMENTS Iddingsite rims, yellow high birefringent clay
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microor TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Titanaugite GROUNDMASS Titanaugite	PERCENT PRESENT 0 <<1	PERCENT ORIGINAL 5 <<1	SIZE (mm) 0.1-3 0.2-0.5	СОМРО-	MORPHOLOGY Euhedral or broken. Clusters euhedral prisms. Anhedral clusters. Cubes. Laths and	COMMENTS Iddingsite rims, yellow high birefringent clay
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microor TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Titanaugite GROUNDMASS Titanaugite Magnetite	PERCENT PRESENT 0 <<1	PERCENT ORIGINAL 5 <<1	SIZE (mm) 0.1-3 0.2-0.5	COMPO- SITION	MORPHOLOGY Euhedral or broken. Clusters euhedral prisms. Anhedral clusters. Cubes.	COMMENTS Iddingsite rims, yellow high birefringent clay centers. About equal amounts each form. Identification uncertain. Mostly altered, colorless
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microor TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Titanaugite GROUNDMASS Titanaugite Magnetite Plagioclase	PERCENT PRESENT 0 <<1 40 10 40	PERCENT ORIGINAL 5 <<1 40 10 40	SIZE (mm) 0.1-3 0.2-0.5 0.01-0.2 0.01-0.02 0.1-0.02	COMPO- SITION	MORPHOLOGY Euhedral or broken. Clusters euhedral prisms. Anhedral clusters. Cubes. Laths and interstitial.	COMMENTS Iddingsite rims, yellow high birefringent clay centers. About equal amounts each form.
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microcr TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Titanaugite GROUNDMASS Titanaugite Magnetite Plagioclase Nepheline? Apatite	PERCENT PRESENT 0 <<1 40 10 40 5	PERCENT ORIGINAL 5 <<1 40 10 40 20	SIZE (mm) 0.1-3 0.2-0.5 0.01-0.2 0.01-0.02 0.1-0.2 <0.05 0.01-0.02	COMPO- SITION	MORPHOLOGY Euhedral or broken. Clusters euhedral prisms. Anhedral clusters. Cubes. Laths and interstitial. Interstitial.	COMMENTS Iddingsite rims, yellow high birefringent clay centers. About equal amounts each form. Identification uncertain. Mostly altered, colorless
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microer TEXTURE: Intersertal	oid ystalline. PERCENT PRESENT 0 <<1 40 10 40 5 <1	PERCENT ORIGINAL 5 <<1 40 10 40 20 <1	SIZE (mm) 0.1-3 0.2-0.5 0.01-0.2 0.01-0.02 0.1-0.2 <0.05 0.01-0.02 SIZE	COMPO- SITION An ₆₅	MORPHOLOGY Euhedral or broken. Clusters euhedral prisms. Anhedral clusters. Cubes. Laths and interstitial. Interstitial. Needles.	COMMENTS Iddingsite rims, yellow high birefringent clay centers. About equal amounts each form. Identification uncertain. Mostly altered, colorless with mottled extinction.
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microer TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Titanaugite Magnetite Plagioclase Nepheline? Apatite VESICLES/ CAVITIES	oid ystalline. PERCENT PRESENT 0 <<1 40 10 40 5 <1 PERCENT	PERCENT ORIGINAL 5 <<1 40 10 40 20 <1 LOCATION	SIZE (mm) 0.1-3 0.2-0.5 0.01-0.2 0.01-0.02 0.1-0.2 <0.05 0.01-0.02	COMPO- SITION An ₆₅	MORPHOLOGY Euhedral or broken. Clusters euhedral prisms. Anhedral clusters. Cubes. Laths and interstitial. Interstitial. Needles.	COMMENTS Iddingsite rims, yellow high birefringent clay centers. About equal amounts each form. Identification uncertain. Mostly altered, colorless
144-878A-81R-2 (Piec ROCK NAME: Basanit GRAIN SIZE: Microcr TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Titanaugite GROUNDMASS Titanaugite Magnetite Plagioclase Nepheline?	oid ystalline. PERCENT PRESENT 0 <<1 40 10 40 5 <1	PERCENT ORIGINAL 5 <<1 40 10 40 20 <1	SIZE (mm) 0.1-3 0.2-0.5 0.01-0.2 0.01-0.02 0.1-0.2 <0.05 0.01-0.02 SIZE	COMPO- SITION An ₆₅	MORPHOLOGY Euhedral or broken. Clusters euhedral prisms. Anhedral clusters. Cubes. Laths and interstitial. Interstitial. Needles.	COMMENTS Iddingsite rims, yellow high birefringent clay centers. About equal amounts each form. Identification uncertain. Mostly altered, colorless with mottled extinction.

144-878A-81R-5 (Piece 1, 22-25 cm)

OBSERVER: DMC

WHERE SAMPLED: Mid-flow, Unit 11.

ROCK NAME: Basanitoid GRAIN SIZE: Microcrystalline. TEXTURE: Intersertal.

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	5	0.5-2		Anhedral.	Altered to iddingsite and dark amorphous clay.
Titanaugite	<1	<1	1		Subhedral prism.	Affected to ladingsite and dark amorphous etay.
37.7					•	
GROUNDMASS						
Titanaugite	40	40	0.01-0.02		Anhedral clusters.	
Magnetite	15	15	0.02		Subhedral cubes.	
Plagioclase	10	20	0.05-0.1		Laths and interstitial.	Some nepheline?
Apatite	1	1	0.01-0.02		Needles.	
Light brown clay	10	1/2/	0.05-0.1		Interstitial.	
VESICLES/			SIZE	54055554 A BEST SHE HERE TO SHE		
CAVITIES	PERCENT	LOCATION	(mm)	FILLING	SHAPE	
Vesicles	<1	3-4		Calcite	Round	
144-878A-82R-2 (Piece ROCK NAME: Alkali Ba GRAIN SIZE: Microcrys TEXTURE: Intergranular.	salt talline.		OBSERVER	: DMC	WHERE SAMPLED:	Large clast near base of breccia, Unit 12.
PRIMARY	PERCENT	DEDCENE	OFTC			***************************************
MINERALOGY	PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO- SITION	MORPHOLOGY	COMMENTS
	500000000		V	5111011	mora nobodi	
PHENOCRYSTS						
Olivine	0	10	0.1-2		Euhedral or broken	Altered to iddingsite rims, brown clay,
ACCESSORY PHASES:					diamonds.	isotropic zeolite and calcite.
Biotite	<1	<1	< 0.02			
Apatite	<1	<1	< 0.02		Needles.	
GROUNDMASS			100		122/2014/00/00/00/00/00/00/00/00/00/00/00/00/00	
Clinopyroxene	15	15	< 0.01		Prisms and anhedral	Green.
Dissipalson	20	20	0.1.0.0		grains	
Plagioclase	20 5	20	0.1-0.2		Laths.	B 01 1 1 1 1 1 1 2 2 1 1 1 1 1 1 1 1 1 1
Plagioclase	3	15	< 0.2		Interstitial.	Possibly includes alkali feldspar or nepheline. Alter- to colorless clay (?) with mottled extinction.
Magnetite	15	15	< 0.01-0.02		Subhedral cubes.	300, 300
Mesostasis	40	40	< 0.05		Interstitial.	Fine clinopyroxene, oxide minerals and
						brown clay, trace biotite.
VESICLES/	***************	***************************************	SIZE			
CAVITIES	PERCENT	LOCATION	(mm)	FILLING	SHAPE	COMMENTS
Vesicles	5	1-5		See comment	Elongate	Lined by low to round birefringent radiating zeolite. Filled by crystalline tetragonal zeolite (chabazite?) and calcite in larger sizes only.

COMMENTS: Moderately altered, iron-stained with abundant clay in groundmass. More altered equivalent of Sample 84R-4, 104-105 cm.

OBSERVER: DMC

WHERE SAMPLED: Mid-flow, Unit 15.

144-878A-84R-4 (Piece 4, 104–105 cm) ROCK NAME: Basanitoid GRAIN SIZE: Microcrystalline. TEXTURE: Intergranular.

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO- SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	5	20	0.1-2		Euhedral and broken	Altered to iddingsite rims and
					diamonds	green/brown clay centers.
Plagioclase	<1	<1	0.1-0.2		Subhedral prisms,	
GROUNDMASS						
Titanaugite	40	40	0.01 - 0.05		Anhedral clusters.	
Plagioclase	30	40	0.1-0.2	An ₆₅	Laths and interstitial.	Possibly includes interstitial nepheline.
Magnetite	5	5	0.02-0.1		Irregular.	Partially to completely encloses titanaugite.
Light green clay	15		<0.1		Interstitial.	Percentage varies widely. Much higher in places. Replacing original feldspar or nepheline.
SECONDARY		REPLACING/				
MINERALOGY	PERCENT	FILLING				COMMENTS
Zeolite	<5	Matrix				Radiating, low birefringence.
Green clay	15	Matrix				Mottled extincton. Percentage varies within sample
VESICLES/			SIZE	***************************************		
CAVITIES	PERCENT	LOCATION	(mm)	FILLING	SHAPE	COMMENTS
Vesicles	1-2	0.5-2	See commer	nt	Round	Filled by calcite or colorless, radiating low birefringent zeolite.
144-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry TEXTURE: Intergranula	sid estalline. er,		OBSERVER:		WHERE SAMPLED: N	Aid-flow, Unit 15.
144-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry TEXTURE: Intergranula PRIMARY	e 8, 87–105 cm) oid estalline. ur.	PERCENT	SIZE	COMPO-		Aid-flow, Unit 15.
144-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry TEXTURE: Intergranula PRIMARY	e 8, 87–105 cm) oid estalline, or,		*********	******************		
144-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry TEXTURE: Intergranula PRIMARY MINERALOGY PHENOCRYSTS	e 8, 87–105 cm) oid stalline. or. PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-	MORPHOLOGY	Aid-flow, Unit 15.
144-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry FEXTURE: Intergranula PRIMARY MINERALOGY	e 8, 87–105 cm) oid estalline. ur.	PERCENT	SIZE	COMPO-		Aid-flow, Unit 15.
144-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry FEXTURE: Intergranula PRIMARY MINERALOGY PHENOCRYSTS Olivine	e 8, 87–105 cm) oid stalline. or. PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-	MORPHOLOGY	COMMENTS Larger grains about 50% fresh material, remainder altered to iddingsite rims and light brown
144-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry FEXTURE: Intergranula PRIMARY MINERALOGY PHENOCRYSTS Olivine	e 8, 87–105 cm) oid stalline. or. PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-	MORPHOLOGY Subhedral diamonds. Euhedral prisms to	COMMENTS Larger grains about 50% fresh material, remainder altered to iddingsite rims and light brown
44-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry TEXTURE: Intergranula PRIMARY MINERALOGY PHENOCRYSTS Olivine GROUNDMASS	e 8, 87–105 cm) oid stalline. rr. PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPO-	MORPHOLOGY Subhedral diamonds. Euhedral prisms to anhedral. Laths and	COMMENTS Larger grains about 50% fresh material, remainder altered to iddingsite rims and light brown
44-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry TEXTURE: Intergranula PRIMARY MINERALOGY PHENOCRYSTS Olivine GROUNDMASS Titanaugite Plagioclase	e 8, 87–105 cm) oid rstalline. r. PERCENT PRESENT 5	PERCENT ORIGINAL 10 30 30	SIZE (mm) 0.1-2 0.05-0.3 0.1-0.2	COMPO-	MORPHOLOGY Subhedral diamonds. Euhedral prisms to anhedral. Laths and interstitial.	COMMENTS Larger grains about 50% fresh material, remainder altered to iddingsite rims and light brown clay. Altered to colorless clay with mottled extinction.
44-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry FEXTURE: Intergranula PRIMARY MINERALOGY PHENOCRYSTS Olivine GROUNDMASS Titanaugite Plagioclase Magnetite	PERCENT PRESENT 30 15	PERCENT ORIGINAL 10	SIZE (mm) 0.1-2 0.05-0.3 0.1-0.2 0.05-0.3	COMPO-	MORPHOLOGY Subhedral diamonds. Euhedral prisms to anhedral. Laths and interstitial. Irregular.	COMMENTS Larger grains about 50% fresh material, remainder altered to iddingsite rims and light brown clay.
144-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry TEXTURE: Intergranula PRIMARY MINERALOGY PHENOCRYSTS Olivine GROUNDMASS Titanaugite Plagioclase	e 8, 87–105 cm) oid rstalline. r. PERCENT PRESENT 5	PERCENT ORIGINAL 10 30 30 5	SIZE (mm) 0.1-2 0.05-0.3 0.1-0.2	COMPO-	MORPHOLOGY Subhedral diamonds. Euhedral prisms to anhedral. Laths and interstitial.	COMMENTS Larger grains about 50% fresh material, remainder altered to iddingsite rims and light brown clay. Altered to colorless clay with mottled extinction.
144-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry TEXTURE: Intergranula PRIMARY MINERALOGY PHENOCRYSTS Olivine GROUNDMASS Titanaugite Plagioclase Magnetite Green clay Apatite	PERCENT PRESENT 30 15 5 30 15 5 35	PERCENT ORIGINAL 10 30 30 5	SIZE (mm) 0.1-2 0.05-0.3 0.1-0.2 0.05-0.3 <0.1	COMPO-	MORPHOLOGY Subhedral diamonds. Euhedral prisms to anhedral. Laths and interstitial. Irregular. Interstitial.	COMMENTS Larger grains about 50% fresh material, remainder altered to iddingsite rims and light brown clay. Altered to colorless clay with mottled extinction.
I44-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry FEXTURE: Intergranula PRIMARY MINERALOGY PHENOCRYSTS Olivine GROUNDMASS Titanaugite Plagioclase Magnetite Green clay Apatite SECONDARY	PERCENT PRESENT 30 15 5 30 15 5 35	PERCENT ORIGINAL 10 30 30 5	SIZE (mm) 0.1-2 0.05-0.3 0.1-0.2 0.05-0.3 <0.1	COMPO-	MORPHOLOGY Subhedral diamonds. Euhedral prisms to anhedral. Laths and interstitial. Irregular. Interstitial.	COMMENTS Larger grains about 50% fresh material, remainder altered to iddingsite rims and light brown clay. Altered to colorless clay with mottled extinction.
144-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry FEXTURE: Intergranula PRIMARY MINERALOGY PHENOCRYSTS Olivine GROUNDMASS Titanaugite Plagioclase Magnetite Green clay Apatite SECONDARY MINERALOGY Colorless clay	e 8, 87–105 cm) oid rstalline. or. PERCENT PRESENT 5 30 15 5 35 <1 PERCENT 15	PERCENT ORIGINAL 10 30 30 5 - <1 REPLACING/ FILLING Plagioclase	SIZE (mm) 0.1-2 0.05-0.3 0.1-0.2 0.05-0.3 <0.1 0.01-0.02	COMPO-	MORPHOLOGY Subhedral diamonds. Euhedral prisms to anhedral. Laths and interstitial. Irregular. Interstitial.	COMMENTS Larger grains about 50% fresh material, remainder altered to iddingsite rims and light brown clay. Altered to colorless clay with mottled extinction. Partially to completely surrounding titanaugite.
144-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry TEXTURE: Intergranula PRIMARY MINERALOGY PHENOCRYSTS Olivine GROUNDMASS Titanaugite Plagioclase Magnetite Green clay Apatite SECONDARY MINERALOGY	e 8, 87–105 cm) oid ostalline. or. PERCENT PRESENT 5 30 15 5 31 PERCENT PRESENT	PERCENT ORIGINAL 10 30 30 5 - <1 REPLACING/ FILLING	SIZE (mm) 0.1-2 0.05-0.3 0.1-0.2 0.05-0.3 <0.1 0.01-0.02	COMPO-	MORPHOLOGY Subhedral diamonds. Euhedral prisms to anhedral. Laths and interstitial. Irregular. Interstitial.	COMMENTS Larger grains about 50% fresh material, remainder altered to iddingsite rims and light brown clay. Altered to colorless clay with mottled extinction. Partially to completely surrounding titanaugite.
144-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry TEXTURE: Intergranula PRIMARY MINERALOGY PHENOCRYSTS Olivine GROUNDMASS Titanaugite Plagioclase Magnetite Green clay Apatite SECONDARY MINERALOGY Colorless clay Green clay Green clay	2 8, 87–105 cm) oid stalline. rr. PERCENT PRESENT 5 30 15 5 35 <1 PERCENT 15 35 35 41	PERCENT ORIGINAL 10 30 30 5 -<1 REPLACING/ FILLING Plagioclase Original matrix	SIZE (mm) 0.1-2 0.05-0.3 0.1-0.2 0.05-0.3 <0.1 0.01-0.02	COMPO- SITION	MORPHOLOGY Subhedral diamonds. Euhedral prisms to anhedral. Laths and interstitial. Irregular. Interstitial. Needles.	COMMENTS Larger grains about 50% fresh material, remainder altered to iddingsite rims and light brown clay. Altered to colorless clay with mottled extinction. Partially to completely surrounding titanaugite.
144-878A-84R-5 (Piece ROCK NAME: Basanito GRAIN SIZE: Microcry TEXTURE: Intergranula PRIMARY MINERALOGY PHENOCRYSTS Olivine GROUNDMASS Titanaugite Plagioclase Magnetite Green clay Apatite SECONDARY MINERALOGY Colorless clay Green clay	e 8, 87–105 cm) oid rstalline. or. PERCENT PRESENT 5 30 15 5 35 <1 PERCENT 15	PERCENT ORIGINAL 10 30 30 5 - <1 REPLACING/ FILLING Plagioclase	SIZE (mm) 0.1-2 0.05-0.3 0.1-0.2 0.05-0.3 <0.1 0.01-0.02	COMPO-	MORPHOLOGY Subhedral diamonds. Euhedral prisms to anhedral. Laths and interstitial. Irregular. Interstitial.	COMMENTS Larger grains about 50% fresh material, remainder altered to iddingsite rims and light brown clay. Altered to colorless clay with mottled extinction. Partially to completely surrounding titanaugite.

144-878A-85R-2 (Piece 8, 90–92 cm) ROCK NAME: Basanitoid GRAIN SIZE: Microcrystalline. TEXTURE: Intergranular.

OBSERVER: DMC

WHERE SAMPLED: Middle thin flow, Unit 16

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	5	0.1 - 1		Euhedral diamonds.	Altered to iddingsite rims and light green/brown cla
ACCESSORY PHASES:						centers.
Apatite	<1	<1	< 0.02		Needles.	
GROUNDMASS						
Titanaugite	40	40	0.01-0.1		Anhedral grains to euhedral prisms.	
Plagioclase	15	20	0.1-0.2		Laths.	Partially altered to colorless clay, mottled extinction
Plagioclase	5	15	< 0.2		Interstitial.	Possibly partly nepheline or alkali feldspar. Large
						replaced by colorless clay with mottled extinction.
Magnetite	10	10	0.01-0.02		Subhedral cubes.	Also very fine grains and blades within titanaugite.
Green clay	10-15		<0.1		Interstitial.	Irregularly distributed within sample.
SECONDARY		REPLACING/				
MINERALOGY	PERCENT	FILLING				COMMENTS
See comments above						
VESICLES/			SIZE			
CAVITIES	PERCENT	LOCATION	(mm)	FILLING	SHAPE	COMMENTS
						Di di Lingui di Companya di Co
Vesicles	1-2	0.2-1		See comments	Round	Rimmed by pale green isotropic zeolite.
	1-2	0.2-1		See comments	Round	Filled by radiating, colorless, low
	1, 42–45 cm)	0.2-1	OBSERVER	**************	***************************************	지유가 있었는 바닷컴, 아닌지 그 일을 하는 다래.
Vesicles 44-878A-86R-3 (Piece ROCK NAME: Basanitoi GRAIN SIZE: Microcryst FEXTURE: Intergranular	1, 42–45 cm) id stalline.	0.2-1	OBSERVER	**************	***************************************	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite.
Vesicles 144-878A-86R-3 (Piece	1, 42–45 cm) id stalline.	0.2-1 PERCENT	OBSERVER:	: DMC	***************************************	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite.
Vesicles 44-878A-86R-3 (Piece COCK NAME: Basanitoi GRAIN SIZE: Microcry: EXTURE: Intergranular	1, 42–45 cm) id stalline.		***********	**************	***************************************	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite.
Vesicles 44-878A-86R-3 (Piece ROCK NAME: Basanitoi BRAIN SIZE: MicrocrystexTURE: Intergranular PRIMARY MINERALOGY	1, 42–45 cm) id stalline. r.	PERCENT	SIZE	: DMC	WHERE SAMPLED:	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18.
Vesicles 44-878A-86R-3 (Piece ROCK NAME: Basanitoi GRAIN SIZE: MicrocrystexTURE: Intergranular PRIMARY MINERALOGY	1, 42–45 cm) id stalline. r.	PERCENT	SIZE	: DMC	WHERE SAMPLED:	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18. COMMENTS
Vesicles 44-878A-86R-3 (Piece ROCK NAME: Basanitoi BRAIN SIZE: MicrocrystextURE: Intergranular PRIMARY MINERALOGY PHENOCRYSTS	1, 42–45 cm) id stalline. r. PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	: DMC	WHERE SAMPLED: MORPHOLOGY	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18.
44-878A-86R-3 (Piece ROCK NAME: Basanitoi GRAIN SIZE: Microcry: EXTURE: Intergranular PRIMARY MINERALOGY PHENOCRYSTS Olivine	1, 42–45 cm) id stalline. r. PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	: DMC	WHERE SAMPLED: MORPHOLOGY Euhedral diamonds.	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18. COMMENTS Partly iddingsitized.
44-878A-86R-3 (Piece COCK NAME: Basanitoi GRAIN SIZE: Microcrys: EXTURE: Intergranular PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine	1, 42–45 cm) id stalline. r. PERCENT PRESENT 1 0	PERCENT ORIGINAL	SIZE (mm) 1-2 0.1-0.5	: DMC	WHERE SAMPLED: MORPHOLOGY Euhedral diamonds. Anhedral.	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18. COMMENTS Partly iddingsitized. Completely iddingsitized.
Vesicles 144-878A-86R-3 (Piece ROCK NAME: Basanitoi GRAIN SIZE: Microcrystexture: Intergranular PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Plagioclase	1, 42–45 cm) id stalline. r. PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm) 1-2 0.1-0.5 0.2-2	: DMC	WHERE SAMPLED: MORPHOLOGY Euhedral diamonds. Anhedral. Anhedral prisms.	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18. COMMENTS Partly iddingsitized. Completely iddingsitized. Zoned. High dispersion.
Vesicles 44-878A-86R-3 (Piece ROCK NAME: Basanitoi GRAIN SIZE: MicrocrystextURE: Intergranular PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Plagioclase	1, 42–45 cm) id stalline. r. PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm) 1-2 0.1-0.5 0.2-2	: DMC	WHERE SAMPLED: MORPHOLOGY Euhedral diamonds. Anhedral. Anhedral prisms.	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18. COMMENTS Partly iddingsitized. Completely iddingsitized. Zoned. High dispersion.
Vesicles 44-878A-86R-3 (Piece ROCK NAME: Basanitoi GRAIN SIZE: MicrocrystextURE: Intergranular PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Plagioclase GROUNDMASS	1, 42–45 cm) id stalline. r. PERCENT PRESENT 1 0 2 <1	PERCENT ORIGINAL	SIZE (mm) 1-2 0.1-0.5 0.2-2	: DMC	WHERE SAMPLED: MORPHOLOGY Euhedral diamonds. Anhedral. Anhedral prisms, Subhedral prisms.	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18. COMMENTS Partly iddingsitized. Completely iddingsitized. Zoned. High dispersion. Corroded cores. Possibly includes some nepheline or alkali feldspar. Part altered to
44-878A-86R-3 (Piece ROCK NAME: Basanitoi GRAIN SIZE: Microcrys: EXTURE: Intergranular PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Plagioclase GROUNDMASS Plagioclase	1, 42–45 cm) id stalline. r. PERCENT PRESENT 1 0 2 <1	PERCENT ORIGINAL	SIZE (mm) 1-2 0.1-0.5 0.2-2	: DMC	WHERE SAMPLED: MORPHOLOGY Euhedral diamonds. Anhedral. Anhedral prisms. Subhedral prisms.	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18. COMMENTS Partly iddingsitized. Completely iddingsitized. Zoned. High dispersion. Corroded cores. Possibly includes some nepheline or
Vesicles 44-878A-86R-3 (Piece ROCK NAME: Basanitoi GRAIN SIZE: MicrocrystexTURE: Intergranular PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Plagioclase GROUNDMASS	1, 42–45 cm) id stalline. r. PERCENT PRESENT 1 0 2 <1	PERCENT ORIGINAL 2 5 2 <1	SIZE (mm) 1-2 0.1-0.5 0.2-2 1 0.1-0.2	: DMC	WHERE SAMPLED: MORPHOLOGY Euhedral diamonds. Anhedral. Anhedral prisms. Subhedral prisms. Laths and interstitial. Prisms.	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18. COMMENTS Partly iddingsitized. Completely iddingsitized. Zoned. High dispersion. Corroded cores. Possibly includes some nepheline or alkali feldspar. Part altered to
A44-878A-86R-3 (Piece ROCK NAME: Basanitoi GRAIN SIZE: MicrocrystextURE: Intergranular PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Plagioclase GROUNDMASS Plagioclase Clinopyroxene	1, 42–45 cm) id stalline. r. PERCENT PRESENT 1 0 2 <1 50	PERCENT ORIGINAL 2 5 2 <1 60	SIZE (mm) 1-2 0.1-0.5 0.2-2 1 0.1-0.2	: DMC	WHERE SAMPLED: MORPHOLOGY Euhedral diamonds. Anhedral. Anhedral prisms. Subhedral prisms. Laths and interstitial. Prisms. Irregular, anhedral.	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18. COMMENTS Partly iddingsitized. Completely iddingsitized. Zoned. High dispersion. Corroded cores. Possibly includes some nepheline or alkali feldspar. Part altered to colorless clay, mottled extinction.
44-878A-86R-3 (Piece ROCK NAME: Basanitoi GRAIN SIZE: MicrocrystextURE: Intergranular PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Plagioclase GROUNDMASS Plagioclase Clinopyroxene Magnetite	1, 42–45 cm) iid stalline. r. PERCENT PRESENT 1 0 2 <1 50 15 15 15	PERCENT ORIGINAL 2 5 2 <1 60	SIZE (mm) 1-2 0.1-0.5 0.2-2 1 0.1-0.2	: DMC	WHERE SAMPLED: MORPHOLOGY Euhedral diamonds. Anhedral. Anhedral prisms. Subhedral prisms. Laths and interstitial. Prisms.	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18. COMMENTS Partly iddingsitized. Completely iddingsitized. Zoned. High dispersion. Corroded cores. Possibly includes some nepheline or alkali feldspar. Part altered to
Vesicles 144-878A-86R-3 (Piece ROCK NAME: Basanitoi GRAIN SIZE: MicrocrystexTURE: Intergranular PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Plagioclase GROUNDMASS Plagioclase Clinopyroxene Magnetite Olivine Apatite	1, 42–45 cm) id stalline. r. PERCENT PRESENT 1 0 2 <1 50 15 15 0	PERCENT ORIGINAL 2 5 2 <1 60 15 15 5	SIZE (mm) 1-2 0.1-0.5 0.2-2 1 0.1-0.2 0.01-0.02 0.01-0.05 0.01-0.05 0.01	: DMC	WHERE SAMPLED: MORPHOLOGY Euhedral diamonds. Anhedral. Anhedral prisms. Subhedral prisms. Laths and interstitial. Prisms. Irregular, anhedral. Anhedral.	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18. COMMENTS Partly iddingsitized. Completely iddingsitized. Zoned. High dispersion. Corroded cores. Possibly includes some nepheline or alkali feldspar. Part altered to colorless clay, mottled extinction.
Vesicles 44-878A-86R-3 (Piece ROCK NAME: Basanitoi GRAIN SIZE: MicrocrystextURE: Intergranular PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Plagioclase GROUNDMASS Plagioclase Clinopyroxene Magnetite Olivine	1, 42–45 cm) id stalline. r. PERCENT PRESENT 1 0 2 <1 50 15 15 0	PERCENT ORIGINAL 2 5 2 <1 60 15 15 5	SIZE (mm) 1-2 0.1-0.5 0.2-2 1 0.1-0.2 0.01-0.02 0.01-0.05 0.01-0.05 0.01 SIZE	COMPO- SITION	WHERE SAMPLED: MORPHOLOGY Euhedral diamonds. Anhedral. Anhedral prisms. Subhedral prisms. Laths and interstitial. Prisms. Irregular, anhedral. Anhedral. Needles.	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18. COMMENTS Partly iddingsitized. Completely iddingsitized. Zoned. High dispersion. Corroded cores. Possibly includes some nepheline or alkali feldspar. Part altered to colorless clay, mottled extinction.
Vesicles 44-878A-86R-3 (Piece ROCK NAME: Basanitoi GRAIN SIZE: Microcry: EXTURE: Intergranular PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Plagioclase GROUNDMASS Plagioclase Clinopyroxene Magnetite Olivine Apatite VESICLES/	1, 42–45 cm) iid stalline. r. PERCENT PRESENT 1 0 2 <1 50 15 15 0 <<1	PERCENT ORIGINAL 2 5 2 <1 60 15 15 5 <<1	SIZE (mm) 1-2 0.1-0.5 0.2-2 1 0.1-0.2 0.01-0.02 0.01-0.05 0.01-0.05 0.01	: DMC	WHERE SAMPLED: MORPHOLOGY Euhedral diamonds. Anhedral. Anhedral prisms. Subhedral prisms. Laths and interstitial. Prisms. Irregular, anhedral. Anhedral.	Filled by radiating, colorless, low birefringent zeolite, rarely with calcite. Bottom of flow, Unit 18. COMMENTS Partly iddingsitized. Completely iddingsitized. Zoned. High dispersion. Corroded cores. Possibly includes some nepheline or alkali feldspar. Part altered to colorless clay, mottled extinction. Replaced by iddingsite.

144-878A-88R-3 (Piece 1, 4-6 cm)

OBSERVER: DMC

WHERE SAMPLED: Lower section of flow, Unit 20.

ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystalline. TEXTURE: Intergranular.

	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	1	1-2		Euhedral diamonds.	Altered to iddingsite.
Olivine	0	5	0.1-0.2		Subhedral diamonds.	Altered to iddingsite.
Clinopyroxene	<1	<1	0.1 - 1		Anhedral.	
ACCESSORY PHASES: Apatite	2	2	< 0.02		Needles.	
CD OF INTERVAL						
GROUNDMASS Plagioclase	20	40	0.1-0.2		Laths.	
Plagioclase	20 20	40 25	< 0.05		Interstitial,	Part altered to colorless clay with
riagiociase	20	23	C0.03		meranna	mottled birefringence, Possibly includes nepheline or alkali feldspar.
Clinopyroxene	20	20	0.01-0.02		Prisms.	
Magnetite	15	15	0.01		Anhedral to	
7					subhedral cubic.	
Mesostasis	5	5	< 0.1		Interstitial.	Mixture of fine clinopyroxene, apatite, green/
						brown clay.
SECONDARY		REPLACING/				
MINERALOGY	PERCENT	FILLING				COMMENTS
See comments above						
VESICLES/			SIZE			
CAVITIES	PERCENT	LOCATION	(mm)	FILLING	SHAPE	COMMENTS
Vesicles	5		0.5-2		See comment	Irregular. Clay or zeolite, colorless with mottled extinction, rare calcite.
Owner of Co.		57.467.5.76.00.00	0.00	VI. 1000		
Vein	<1	Across	0.5	Calcite, brown		
Vein	<1	Across	0.5	isotropic clay	Irregular trend	
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic,	3, 45–47 cm) asalt stalline. intergranular.		OBSERVER:	isotropic clay	Irregular trend WHERE SAMPLED: M	Mid-flow, Unit 21.
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic,	3, 45–47 cm) asalt stalline. intergranular.		(*************************************	isotropic clay		Mid-flow, Unit 21.
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic,	3, 45–47 cm) asalt stalline. intergranular.	section	OBSERVER:	isotropic clay		Mid-flow, Unit 21. COMMENTS
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY	3, 45–47 cm) asalt stalline. intergranular.	section PERCENT	OBSERVER:	DMC COMPO-	WHERE SAMPLED: N	
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY	3, 45–47 cm) asalt stalline. intergranular.	section PERCENT	OBSERVER:	DMC COMPO-	WHERE SAMPLED: N	
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY	23, 45–47 cm) asalt stalline. intergranular. PERCENT PRESENT	PERCENT ORIGINAL	OBSERVER:	DMC COMPO-	WHERE SAMPLED: MORPHOLOGY	COMMENTS
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Clinopyroxene	asalt stalline. intergranular. PERCENT PRESENT	PERCENT ORIGINAL	OBSERVER: SIZE (mm) 0.1-0.5	DMC COMPO-	WHERE SAMPLED: MORPHOLOGY Anhedral diamonds.	COMMENTS Iddingsitized.
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Clinopyroxene Plagioclase	3, 45–47 cm) asalt stalline. intergranular. PERCENT PRESENT 0 <1	PERCENT ORIGINAL	OBSERVER: SIZE (mm) 0.1-0.5 0.5-2	DMC COMPO-	WHERE SAMPLED: MORPHOLOGY Anhedral diamonds. Subhedral diamonds.	COMMENTS Iddingsitized. Partly iddingsitized.
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Clinopyroxene	3, 45–47 cm) asalt stalline. intergranular. PERCENT PRESENT 0 <1	PERCENT ORIGINAL	OBSERVER: SIZE (mm) 0.1-0.5 0.5-2 0.5-2	DMC COMPO-	WHERE SAMPLED: N MORPHOLOGY Anhedral diamonds. Subhedral diamonds. Anhedral, rounded.	COMMENTS Iddingsitized. Partly iddingsitized. Contains rare pyrite(?) blebs, strong dispersion. Resorbed margins.
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Clinopyroxene Plagioclase Biotite	3, 45–47 cm) asalt stalline. intergranular. PERCENT PRESENT 0 <1 1	PERCENT ORIGINAL	OBSERVER: SIZE (mm) 0.1-0.5 0.5-2 0.5-2 0.5-2	DMC COMPO-	WHERE SAMPLED: N MORPHOLOGY Anhedral diamonds. Subhedral diamonds. Anhedral, rounded. Euhedral, broken.	COMMENTS Iddingsitized. Partly iddingsitized. Contains rare pyrite(?) blebs, strong dispersion. Resorbed margins. Unusually abundant. Pleochroic red-brown, yellow
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Clinopyroxene Plagioclase Biotite	3, 45–47 cm) asalt stalline. intergranular. PERCENT PRESENT 0 <1 1	PERCENT ORIGINAL	OBSERVER: SIZE (mm) 0.1-0.5 0.5-2 0.5-2 0.5-2	DMC COMPO-	MORPHOLOGY Anhedral diamonds. Subhedral diamonds. Anhedral, rounded. Euhedral, broken. Platy.	COMMENTS Iddingsitized. Partly iddingsitized. Contains rare pyrite(?) blebs, strong dispersion. Resorbed margins. Unusually abundant. Pleochroic red-brown, yellow
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Clinopyroxene Plagioclase Biotite GROUNDMASS	23, 45–47 cm) asalt stalline. intergranular. PERCENT PRESENT 0 <1 1 1 <1	PERCENT ORIGINAL 5 1 1 <1	OBSERVER: SIZE (mm) 0.1–0.5 0.5–2 0.5–2 0.5–2 0.05–0.1	DMC COMPO-	MORPHOLOGY Anhedral diamonds. Subhedral diamonds. Anhedral, rounded. Euhedral, broken. Platy. Euhedral prisms. Laths and	COMMENTS Iddingsitized. Partly iddingsitized. Contains rare pyrite(?) blebs, strong dispersion. Resorbed margins. Unusually abundant. Pleochroic red-brown, yellow
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Clinopyroxene Plagioclase Biotite GROUNDMASS Clinopyroxene Plagioclase	as, 45–47 cm) asalt stalline. intergranular. PERCENT PRESENT 0 <1 1 1 1 50	PERCENT ORIGINAL 5 1 1 <1 10 60	OBSERVER: SIZE (mm) 0.1-0.5 0.5-2 0.5-2 0.5-2 0.05-0.1 0.01-0.05 0.05-0.2	DMC COMPO-	WHERE SAMPLED: N MORPHOLOGY Anhedral diamonds. Subhedral diamonds. Anhedral, rounded. Euhedral, broken. Platy. Euhedral prisms. Laths and interstitial.	COMMENTS Iddingsitized. Partly iddingsitized. Contains rare pyrite(?) blebs, strong dispersion. Resorbed margins. Unusually abundant. Pleochroic red-brown, yellow colorless.
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Clinopyroxene Plagioclase Biotite GROUNDMASS Clinopyroxene Plagioclase Ilmenite	a3, 45–47 cm) asalt stalline. intergranular. PERCENT PRESENT 0 <1 1 1 1 50 10	PERCENT ORIGINAL 5 1 1 <1 10 60 10	OBSERVER: SIZE (mm) 0.1-0.5 0.5-2 0.5-2 0.5-2 0.05-0.1 0.01-0.05 0.05-0.2	DMC COMPO-	WHERE SAMPLED: MORPHOLOGY Anhedral diamonds. Subhedral diamonds. Anhedral, rounded. Euhedral, broken. Platy. Euhedral prisms. Laths and interstitial. Subhedral prisms.	COMMENTS Iddingsitized. Partly iddingsitized. Contains rare pyrite(?) blebs, strong dispersion. Resorbed margins. Unusually abundant. Pleochroic red-brown, yellow colorless. Moderate flow orientation.
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Clinopyroxene Plagioclase Biotite GROUNDMASS Clinopyroxene Plagioclase	as, 45–47 cm) asalt stalline. intergranular. PERCENT PRESENT 0 <1 1 1 1 50	PERCENT ORIGINAL 5 1 1 <1 10 60	OBSERVER: SIZE (mm) 0.1-0.5 0.5-2 0.5-2 0.5-2 0.05-0.1 0.01-0.05 0.05-0.2	DMC COMPO-	WHERE SAMPLED: N MORPHOLOGY Anhedral diamonds. Subhedral diamonds. Anhedral, rounded. Euhedral, broken. Platy. Euhedral prisms. Laths and interstitial.	COMMENTS Iddingsitized. Partly iddingsitized. Contains rare pyrite(?) blebs, strong dispersion. Resorbed margins. Unusually abundant. Pleochroic red-brown, yellow colorless.
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Clinopyroxene Plagioclase Biotite GROUNDMASS Clinopyroxene Plagioclase Ilmenite Olivine Apatite	a3, 45–47 cm) asalt stalline. intergranular. PERCENT PRESENT 0 <1 1 1 1 50 10 0	PERCENT ORIGINAL 5 1 1 <1 10 60 10 5 1	OBSERVER: SIZE (mm) 0.1-0.5 0.5-2 0.5-2 0.5-2 0.05-0.1 0.01-0.05 0.05-0.2	DMC COMPO-	WHERE SAMPLED: MORPHOLOGY Anhedral diamonds. Subhedral diamonds. Anhedral, rounded. Euhedral, broken. Platy. Euhedral prisms. Laths and interstitial. Subhedral prisms. Anhedral.	COMMENTS Iddingsitized. Partly iddingsitized. Contains rare pyrite(?) blebs, strong dispersion. Resorbed margins. Unusually abundant. Pleochroic red-brown, yellow colorless. Moderate flow orientation.
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Clinopyroxene Plagioclase Biotite GROUNDMASS Clinopyroxene Plagioclase Ilmenite Olivine Apatite	asalt stalline. intergranular. PERCENT PRESENT 0 <1 1 1 1 <1 10 50 10 0 1 1	PERCENT ORIGINAL 5 1 1 <1 10 60 10 5 1 REPLACING/	OBSERVER: SIZE (mm) 0.1-0.5 0.5-2 0.5-2 0.5-2 0.05-0.1 0.01-0.05 0.05-0.2	DMC COMPO-	WHERE SAMPLED: MORPHOLOGY Anhedral diamonds. Subhedral diamonds. Anhedral, rounded. Euhedral, broken. Platy. Euhedral prisms. Laths and interstitial. Subhedral prisms. Anhedral.	COMMENTS Iddingsitized. Partly iddingsitized. Contains rare pyrite(?) blebs, strong dispersion. Resorbed margins. Unusually abundant. Pleochroic red-brown, yellow colorless. Moderate flow orientation. Replaced by green clay.
144-878A-89R-4 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Pilotaxitic, PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Clinopyroxene Plagioclase Biotite GROUNDMASS Clinopyroxene Plagioclase Ilmenite Olivine	a3, 45–47 cm) asalt stalline. intergranular. PERCENT PRESENT 0 <1 1 1 1 50 10 0	PERCENT ORIGINAL 5 1 1 <1 10 60 10 5 1	OBSERVER: SIZE (mm) 0.1-0.5 0.5-2 0.5-2 0.5-2 0.05-0.1 0.01-0.05 0.05-0.2 0.01-0.05 0.05 0.05	DMC COMPO- SITION	WHERE SAMPLED: MORPHOLOGY Anhedral diamonds. Subhedral diamonds. Anhedral, rounded. Euhedral, broken. Platy. Euhedral prisms. Laths and interstitial. Subhedral prisms. Anhedral.	COMMENTS Iddingsitized. Partly iddingsitized. Contains rare pyrite(?) blebs, strong dispersion. Resorbed margins. Unusually abundant. Pleochroic red-brown, yellow colorless. Moderate flow orientation.

COMMENTS: There are two sharply bounded regions in this thin section. The second region differs from the one described as follows: Ilmenite is about twice as abundant and much finer (<0.005 mm). Remaining mineral proportions are about the same but grain sizes are less than half.

144-878A-90R-1 (Piece 6, 105-107 cm) ROCK NAME: Alkali Basalt OBSERVER: DMC

WHERE SAMPLED: Lower flow, Unit 21.

GRAIN SIZE: Microcrystalline.
TEXTURE: Pilotaxitic, intergranular.

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	5	10	0.1 - 1		Euhedral and broken.	Altered to iddingsite.
Basalt	<1	<1	10		Angular,	Finer grained, but otherwise similar, pilotaxitic basalt inclusion.
MINOR PHASES						
Biotite	1	1	< 0.05		Platy.	Pleochroic light brown to clear.
Melilite?	2	2	<0.05		Subhedral prisms.	Uniaxial negative, strong basal parting. Colorless but often stained orange, thus resembling altered olivine.
GROUNDMASS						
Plagioclase	50	60	0.05-0.1		Laths and interstitial.	Possibly part alkali feldspar. Partially altered to colorless clay with mottled extinction
Clinopyroxene	20	20	0.01 - 0.02		Prisms.	Green.
Magnetite	15	20	0.005-0.02	2	Subhedral cubes, octahedra.	1/3 of grains are altered to hematite.
Ilmenite	<5	<5	< 0.01		Blades.	

COMMENTS: Identification of melilite is tentative.

144-878A-91R-3 (Piece 6B, 94-97 cm)

ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystalline.

GRAIN SIZE: Microcrystalline. TEXTURE: Pilotaxitic.

OBSERVER:	DMC

WHERE SAMPLED: Mid-flow, Unit 23

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	1	3	1-2		Anhedral.	
Clinopyroxene	1	1	0.2 - 0.5		Anhedral.	
Plagioclase	2	2	1-2		Subhedral prisms.	Zoned, broken.
Olivine	0	15	0.2 - 0.5		Anhedral.	Replaced by green/brown clay. Grades into groundmass.
Biotite	<1	<1	0.1-0.2		Platy.	
GROUNDMASS						
Titanaugite	20	20	0.01 - 0.1		Anhedral clusters.	
Olivine	0	10	< 0.1		Anhedral,	Altered to green/brown clay.
Plagioclase	50	60	0.05 - 0.5	An ₅₀	Laths and interstitial.	Possibly includes nepheline or alkali feldspar.
Apatite	<1	<1	< 0.02		Needles.	•

OBSERVER: DMC

WHERE SAMPLED: Base of flow, Unit 24.

144-878A-92R-1 (Piece 16A, 101–103 cm) ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystalline. TEXTURE: Intersertal.

MINERALOGY PHENOCRYSTS Olivine Olivine	PRESENT	ORIGINAL				
Olivine			(mm)	SITION	MORPHOLOGY	COMMENTS
Olivine	0	2-3	1-2		Euhedral, broken.	Iddingsitized.
	0	25	0.05 - 0.2		Anhedral.	Grades into groundmass. Altered to
						iddingsite and bright blue/green clay.
Titanaugite	<1	<1	< 0.5		Clusters of prisms.	
Biotite	<1	<1	0.1 - 0.2		Platy.	
GROUNDMASS						
Plagioclase	20	40	0.1-0.3		Laths and	Possibly includes some alkali feldspar.
ragiociase	2.0	40	0.1-0.5		interstitial.	1 033101) Herades some alkali terespai.
Titanaugite	15	15	0.02-0.05		Anhedral clusters.	
Ilmenite	10	10	0.05-0.2		Subhedral, bladed.	
Olivine	0	5	< 0.05		Anhedral,	Replaced by iddingsite and green/brown clay.
Brown clay	30	2	<0.1		Interstitial.	Replacing original mesostasis.
Drown clay		-	NO.1		interstitiat.	replacing original mesostasis.
VESICLES/			SIZE			
CAVITIES	PERCENT	LOCATION	(mm)	FILLING	SHAPE	COMMENTS
Vesicles	3	1-2	See comment	t	Round	Lined by fine-grained isotropic zeolite, High
1 Calcies						bin friends because along and and
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall	lt		OBSERVER:	DMC	WHERE SAMPLED: N	Near base of flow. Unit 26
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal.	lt lline.	DEDCENT		***************************************	WHERE SAMPLED: N	
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal.	lt lline. PERCENT	PERCENT	SIZE	COMPO-		Near base of flow. Unit 26
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal.	lt lline.	PERCENT ORIGINAL		***************************************	WHERE SAMPLED: N	
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY	lt lline. PERCENT		SIZE	COMPO-		Near base of flow. Unit 26
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS	lt lline. PERCENT		SIZE	COMPO-		Near base of flow. Unit 26
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine	PERCENT PRESENT	ORIGINAL	SIZE (mm)	COMPO-	MORPHOLOGY	Near base of flow. Unit 26 COMMENTS
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine	PERCENT PRESENT	ORIGINAL 2-3	SIZE (mm)	COMPO-	MORPHOLOGY Euhedral, broken.	Near base of flow. Unit 26 COMMENTS Iddingsitized.
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine	PERCENT PRESENT	ORIGINAL 2-3	SIZE (mm)	COMPO-	MORPHOLOGY Euhedral, broken.	COMMENTS Iddingsitized. Grades into groundmass. Altered to
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine	PERCENT PRESENT 0 0	ORIGINAL 2-3 25	SIZE (mm) 1-2 0.05-0.2	COMPO-	MORPHOLOGY Euhedral, broken. Anhedral.	COMMENTS Iddingsitized. Grades into groundmass. Altered to
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Biotite	PERCENT PRESENT 0 0	2-3 25	SIZE (mm) 1-2 0.05-0.2 <0.5	COMPO-	MORPHOLOGY Euhedral, broken. Anhedral. Clusters of prisms.	COMMENTS Iddingsitized. Grades into groundmass. Altered to
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Biotite GROUNDMASS	PERCENT PRESENT 0 0	2-3 25	SIZE (mm) 1-2 0.05-0.2 <0.5	COMPO-	MORPHOLOGY Euhedral, broken. Anhedral. Clusters of prisms. Platy.	COMMENTS Iddingsitized. Grades into groundmass. Altered to iddingsite and blue/green clay.
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Biotite GROUNDMASS Plagioclase	PERCENT PRESENT 0 0 <1 <1	ORIGINAL 2-3 25 <1 <1	SIZE (mm) 1-2 0.05-0.2 <0.5 0.1-0.2	COMPO-	MORPHOLOGY Euhedral, broken. Anhedral. Clusters of prisms. Platy. Laths and interstitial.	COMMENTS Iddingsitized. Grades into groundmass. Altered to
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Biotite GROUNDMASS Plagioclase Titanaugite	PERCENT PRESENT 0 0 <1 <1	ORIGINAL 2-3 25 <1 <1	SIZE (mm) 1-2 0.05-0.2 <0.5 0.1-0.2 0.1-0.3 0.02-0.05	COMPO-	MORPHOLOGY Euhedral, broken. Anhedral. Clusters of prisms. Platy. Laths and interstitial. Anhedral clusters.	COMMENTS Iddingsitized. Grades into groundmass. Altered to iddingsite and blue/green clay.
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Biotite GROUNDMASS Plagioclase Titanaugite Ilmenite	PERCENT PRESENT 0 0 <1 <1 <1 20 15	ORIGINAL 2-3 25 <1 <1 40 15 10	SIZE (mm) 1-2 0.05-0.2 <0.5 0.1-0.2 0.1-0.3 0.02-0.05 0.05-0.2	COMPO-	MORPHOLOGY Euhedral, broken. Anhedral. Clusters of prisms. Platy. Laths and interstitial. Anhedral clusters. Subhedral, bladed.	COMMENTS Iddingsitized. Grades into groundmass. Altered to iddingsite and blue/green clay. Possibly includes alkali feldspar.
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Biotite GROUNDMASS Plagioclase Titanaugite Ilmenite	PERCENT PRESENT 0 0 <1 <1 <1 20 15 10	ORIGINAL 2-3 25 <1 <1 40 15	SIZE (mm) 1-2 0.05-0.2 <0.5 0.1-0.2 0.1-0.3 0.02-0.05	COMPO-	MORPHOLOGY Euhedral, broken. Anhedral. Clusters of prisms. Platy. Laths and interstitial. Anhedral clusters.	COMMENTS Iddingsitized. Grades into groundmass. Altered to iddingsite and blue/green clay.
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Biotite GROUNDMASS Plagioclase Titanaugite Ilmenite Olivine Brown clay	PERCENT PRESENT 0 0 <1 <1 <1 20 15 10 0	ORIGINAL 2-3 25 <1 <1 40 15 10	SIZE (mm) 1-2 0.05-0.2 <0.5 0.1-0.2 0.1-0.3 0.02-0.05 0.05-0.2 <0.05 <0.1	COMPO-	MORPHOLOGY Euhedral, broken. Anhedral. Clusters of prisms. Platy. Laths and interstitial. Anhedral clusters. Subhedral, bladed. Anhedral.	COMMENTS Iddingsitized. Grades into groundmass. Altered to iddingsite and blue/green clay. Possibly includes alkali feldspar. Replaced by iddingsite and green/brown clay.
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Biotite GROUNDMASS Plagioclase Titanaugite Ilmenite Olivine Brown clay	PERCENT PRESENT 0 0 <1 <1 <1 0 0 30	ORIGINAL 2-3 25 <1 <1 10 5 -	SIZE (mm) 1-2 0.05-0.2 <0.5 0.1-0.2 0.1-0.3 0.02-0.05 0.05-0.2 <0.05 <0.1 SIZE	COMPO- SITION	MORPHOLOGY Euhedral, broken. Anhedral. Clusters of prisms. Platy. Laths and interstitial. Anhedral clusters. Subhedral, bladed. Anhedral. Interstitial.	COMMENTS Iddingsitized. Grades into groundmass. Altered to iddingsite and blue/green clay. Possibly includes alkali feldspar. Replaced by iddingsite and green/brown clay. Replacing original mesostasis.
144-878A-92R-4 (Piece 1D, ROCK NAME: Alkali Basalt GRAIN SIZE: Microcrystall TEXTURE: Intersertal. PRIMARY MINERALOGY PHENOCRYSTS Olivine Olivine Titanaugite Biotite GROUNDMASS Plagioclase Titanaugite Ilmenite Olivine Brown clay VESICLES/ CAVITIES	PERCENT PRESENT 0 0 <1 <1 <1 20 15 10 0	ORIGINAL 2-3 25 <1 <1 40 15 10	SIZE (mm) 1-2 0.05-0.2 <0.5 0.1-0.2 0.1-0.3 0.02-0.05 0.05-0.2 <0.05 <0.1	COMPO- SITION	MORPHOLOGY Euhedral, broken. Anhedral. Clusters of prisms. Platy. Laths and interstitial. Anhedral clusters. Subhedral, bladed. Anhedral.	COMMENTS Iddingsitized. Grades into groundmass. Altered to iddingsite and blue/green clay. Possibly includes alkali feldspar. Replaced by iddingsite and green/brown clay.

144-878A-92R-5 (Piece 3C, 41-43 cm)

ROCK NAME: Alkali basalt GRAIN SIZE: Microcrystalline. TEXTURE: Pilotaxitic.

Ilmenite

VESICLES/

CAVITIES

Vesicles

Magnetite

Mesostasis

8

15

PERCENT

2-3

10

LOCATION

0.5-2

5

OBSERVER: DMC

WHERE SAMPLED: Middle of thin flow, Unit 27.

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	0	10	0.3-0.5		Anhedral.	Grades into groundmasss. Altered to iddingsite and green/brown clay.
Olivine	0	2	0.5-2		Anhedral to euhedral, diamonds.	Altered to iddingsite, brown, low birefringent zeolite (?), and colorless, high birefringent clay
Clinopyroxene	<1	<1	0.5-1		Anhedral.	No.
Plagioclase	<<1	<<1	< 0.5		Anhedral.	Appear broken from larger prisms.
Biotite	<1	<1	< 0.1-0.2		Platy.	
GROUNDMASS						
Plagioclase	40	50	0.2-0.5		Laths and interstitial.	Possibly includes some alkali feldspar.
Titanaugite	20	20	0.01-0.05		Anhedral clusters and prisms.	
Ilmenite	10	10	0.01-0.05		Subhedral blades and prisms.	Additional tiny grains included in titanaugite.
Olivine	0	5	< 0.05		Anhedral.	Altered to green/brown clay.
Biotite	<1	<1	<0.1		Platy.	Pleochroic light brown to colorless.
VESICLES/			SIZE			
CAVITIES	PERCENT	LOCATION	(mm)	FILLING	SHAPE	
Vesicles	1	0.5–2	M100000 0#6	Calcite and brown clay	Round	
144-878A-93R-2 (Piece ROCK NAME: Alkali B GRAIN SIZE: Microcry TEXTURE: Intergranula	Basalt ystalline.	n) OBSERVER:	DMC	WHERE SAM	MPLED: Below flow top b	
PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Clinopyroxene	5	5	0.2-3		Anhedral to euhedral prisms.	Zoned, high dispersion.
Plagioclase	<1	<1	1-2		Broken prisms.	Corroded rims and cores - xenocrysts?
Plagioclase	2	2	0.5-2	An ₈₀	Euhedral elongate prisms.	ereconnection and authorized reconnection and an authorized and an executive and an executi
Olivine	0	5	0.2-2		Euhedral (large grains) to anhedral.	Altered to iddingsite and minor calcite.
GROUNDMASS						
Plagioclase	40	60	0.2 - 0.5	An ₆₀	Laths and interstitial.	Probably includes some alkali feldspar.
Clinopyroxene	10	10	0.01-0.05	W020	Anhedral granular.	
Ilmenite	8	1.0	0.02.0.05		Subbadeal bladed	

Subhedral bladed.

Subhedral cubes.

Fine mixture of clinopyroxene, opaque

Light brown isotropic zeolite rims, calcite centers.

minerals, brown clay.

COMMENTS

Interstitial.

SHAPE

Round

0.02-0.05

0.02-0.03

< 0.1

SIZE

(mm)

FILLING

See comment

144-878A-97R-1 (Piece 7, 28-31 cm)

OBSERVER: DMC

WHERE SAMPLED: Upper Unit 34, flow-top breccia not recovered.

ROCK NAME: Alkali Basalt GRAIN SIZE: Very fine-grained. TEXTURE: Pilotaxitic, intergranular.

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	1	5	0.1 - 1		Subhedral diamonds.	Part fresh, altered to green/brown clay.
Olivine	1	1	0.1		Hollow diamonds.	Fresh microphenocrysts, abundance varies across section
Biotite	1	1	0.01 - 0.1		Platy.	Pleochroic red-brown to colorless.
Plagioclase	<1	<1	0.5		Broken prisms.	Xenocrysts?
Plagioclase	10-15	10-15	0.2-1	An ₆₀	Large laths	Flow oriented, abundance varies across section.
GROUNDMASS						
Plagioclase	60	60	0.05-0.3	An ₆₀	Laths and interstitial.	Flow orientation weak to strong in different parts of section, May include some alkali feldspar,
Clinopyroxene	15	15	< 0.05		Anhedral granular.	P
Ilmenite	15	1.5	0.01-0.02		Subhedal prisms.	
Brown clay	10	1.00	< 0.05		Interstitial.	Replaces original mesostasis.

COMMENTS: Strong color banding parallel to flow banding in matrix reflecting changes in grain size and opaque mineral content. Above figures are for a fine, dark band. Some are a little finer, Lighter bands are coarser with less magnetite (10%; 0.02–0.05 mm), more clinopyroxene (20%; 0.05 mm) and comparable plagioclase content (60%; 0.3–0.5 mm).

144-878A-97R-2 (Piece 12, 123-125 cm) OBSERVER: DMC

WHERE SAMPLED: Mid-flow, Unit 34.

ROCK NAME: Alkali Basalt GRAIN SIZE: Very fine-grained. TEXTURE: Intergranular.

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	<1	1	0.5		Anhedral, rounded.	Xenocrysts.
Plagioclase	1	1	0.5		Anhedral, rounded.	Xenocrysts.
Clinopyroxene	-1	31	0.5		Anhedral, rounded.	Xenocrysts.
Olivine	1	1	0.1 - 1		Hollow diamonds.	Fresh microphenocrysts.
Plagioclase	10-15	10-15	0.2 - 1		Large laths.	Randomly oriented. Abundance varies within section
GROUNDMASS						
Plagioclase	60	60	0.05-0.3		Laths and interstitial,	
Clinopyroxene	15	1.5	< 0.05		Anhedral granular.	
Ilmenite	15	15	0.01-0.02		Subhedral prisms.	
Brown clay	10	9	< 0.05		Interstitial.	Replaces original mesostasis.

COMMENTS: Very similar to Sample 144-878A-97R-1, 28-31 cm, but lacks flow orientation. Similar color variations occur, but in this case they affect irregular domains of about 1 cm size.

144-878A-98R-3 (Piece 2, 46-48 cm) ROCK NAME: Alkali Olivine Basalt OBSERVER: DMC

WHERE SAMPLED: Mid-flow, Unit 35.

GRAIN SIZE: Microcrystalline. TEXTURE: Intergranular, microporphyritic.

PRIMARY	PERCENT	PERCENT	SIZE	COMPO-		
MINERALOGY	PRESENT	ORIGINAL	(mm)	SITION	MORPHOLOGY	COMMENTS
PHENOCRYSTS						
Olivine	3	3	0.1 - 1		Anhedral, rounded.	Fresh with green/brown clay on fractures.
Clinopyroxene	<1	<1	< 0.5		Anhedral.	
Plagioclase	10	10	0.5		Laths.	
GROUNDMASS						
Plagioclase	50	50	0.05-0.1		Clusters of	
					subhedral prisms.	
Ilmenite	10	10	< 0.01-0.03		Anhedral grains to	
					subhedral prisms.	
Olivine	5	20	0.05 - 0.3		Anhedral.	Some fresh, altered to green/brown clay.
Green clay	5		< 0.1		Interstitial.	Replacing original mesostasis?