

168-1028A-15X-07 (piece 6, 47–51 cm)

ROCK NAME: Moderately phyric plagioclase-olivine basalt  
 GRAIN SIZE: Glassy, cryptocrystalline to microcrystalline  
 TEXTURE: Subvolcanic, honeycomb, sheaf-spherulitic and branching; porphyritic

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>						
Olivine	0.2	1.8	0.4-0.8 (Ave 0.5)		Skeletal, euhedral, subhedral	Fresh or partially to completely replaced by clay minerals ± talc; occurs singly or together with plagioclase in glomerocrysts.
Plagioclase	4.0	4.0	1-2.5 (Ave 1.5)		Skeletal, subhedral, euhedral	Mostly in monomineralic or polymineralic glomerocrysts; normally zoned; contains glass inclusions measuring up to 0.1mm and partially to completely devitrified; some plagioclase is partially altered along cleavages and fractures.
<b>GROUNDMASS</b>						
Plagioclase	18.0	18.0	0.05-0.8 (Ave 0.3)		Laths, needles, skeletal	Locally, may exhibit subparallel alignment; some crystals form stellate aggregates.
Olivine	3.4	4.0	0.05-0.6 (Ave 0.2)		Euhedral, skeletal	Isolated or in clusters with plagioclase.
Opaque oxide	Tr	Tr	≤0.01		Skeletal	Sparse grains in mesostasis.
Pyrite	Tr	Tr	≤0.02		Anhedral	Granular, in mesostasis.
Mesostasis	64.4	71.8				Varies from red-brown, near the glass margin, to gray.
<b>SECONDARY MINERALOGY</b>						
	PERCENT	REPLACING/ FILLING				COMMENTS:
Saponite	6.6	Olivine, vesicles, veinlets, mesostasis				Pale brown; fibrous to cryptocrystalline aggregates.
Celadonite	2.0	Olivine, vesicles, veinlets, mesostasis				Bright green; fibrous to cryptocrystalline aggregates.
Talc	1.2	Olivine				Fibrous; partially replaces olivine together with saponite.
Iddingsite	0.2	Veinlets, vesicles				Concentrated near veinlets.
<b>VESICLES/CAVITIES</b>						
	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS:
Gas vesicles	0.4	Even	0.1-0.4	Clays + iddingsite	Round, irregular	Empty or partially or completely filled by saponite ± celadonite ± iddingsite.
Segregation	0.2	Even	≤0.35	Mesostasis	Round	Filled by massive dark brown mesostasis.
COMMENTS:	Network of ≤0.05mm-wide veins, filled by saponite ± celadonite ± iddingsite (saponite typically at the middle).					

168-1028A-15X-07 (piece 9, 75–79 cm)

ROCK NAME: Moderately phyric plagioclase-olivine-pyroxene basalt  
 GRAIN SIZE: Cryptocrystalline to microcrystalline  
 TEXTURE: Sheaf-spherulitic to intersertal; honeycomb in quench margin

PRIMARY MINERALOGY	PERCENT PRESENT	PERCENT ORIGINAL	SIZE (mm)	COMPOSITION	MORPHOLOGY	COMMENTS
<b>PHENOCRYSTS</b>						
Olivine	0.6	0.8	1-2.8 (Ave 1.5)		Euhedral, subhedral, skeletal	Partially to completely replaced by clay minerals and talc. Present as solitary crystals and within polyminerale glomeroporphyritic clots.
Plagioclase	4.6	4.6	0.8-1.0		Skeletal, subhedral	Isolated crystals or in monomineralic or polyminerale glomeroporphyritic clots.
Clinopyroxene	Tr	Tr	0.3-0.9		Euhedral	Solitary crystals, pristine (no alteration), contains glass inclusions. As in poikilitic arrangement with plagioclase laths and altered olivine microcrysts.
<b>GROUNDMASS</b>						
Plagioclase	9.2	9.2	0.1-0.6		Needles, laths, skeletal	Seriate texture. Hollow and swallowtail forms are abundant.
Olivine	1.4	1.8	0.1-0.6 (Ave 0.2)			Isolated grains or in clusters with plagioclase microphenocrysts; mostly fresh although some are altered to talc ± saponite (granular).
Pyrite	Tr	Tr	≤0.005		Anhedral	In mesostasis; slide is not well-polished, though.
Mesostasis	78.8	83.4				Varies from reddish-brown to gray with a massive to sheaf-spherulitic texture.
<b>SECONDARY MINERALOGY</b>						
	PERCENT	REPLACING/ FILLING				COMMENTS:
Saponite	4.2	Olivine, vesicles, veinlets, mesostasis				Tan brown; fibrous to granular texture. (Fibers line edges of vesicles with granular saponite filling center.)
Celadonite	0.8	Vesicles, veinlets, mesostasis				Fibrous to granular. Concentrated in and around veinlets.
Talc	0.2	Olivine				Associated with saponite; talc exhibits strong micaceous cleavage.
<b>VESICLES/CAVITIES</b>						
	PERCENT	LOCATION	SIZE (mm)	FILLING	SHAPE	COMMENTS:
Gas vesicles	Trace	Even	0.05-0.4 (Ave 0.1)	Saponite, ± celadonite, iddingsite	Round to irregular	Filled by granular saponite. Some rare celadonite and iddingsite fills others.
Segregation vesicles	0.2	Even	0.05-0.2 (Ave 0.08)	Mesostasis ± saponite	Round	Most are filled by dark brown massive mesostasis; some have inner gas bubble filled by saponite.

COMMENTS: Veinlets, ≤0.05mm wide, filled by clays (primarily saponite with the addition of celadonite ± iddingsite locally).  
 Rounded plagioclase + olivine glomerocrysts reach 2.8mm across.