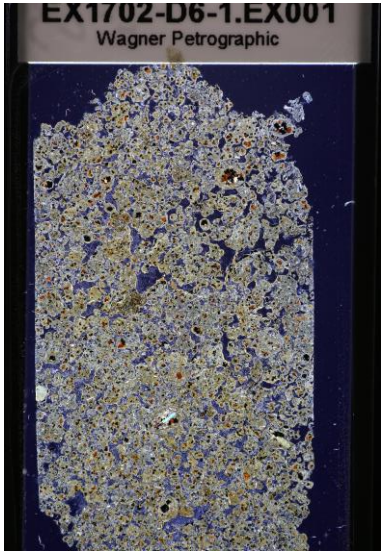
General Information			
Sample Name (IGSN)	EX1702-D6-1		
Describer	Kevin Konrad		
Sample Location	Utu Seamount		
Lithology prefix	Heavily Altered		
General Lithology	Hyaloclastite		
Texture 1	Glassy		
Texture 2	Biotite and Amphibole bearing		
Whole Rock Original (%)	100	Check [Ph + Vs + Gm = 100%]	OK
Whole Rock Present (%)	20	Check [Or = Pr + Rf]	OK
Whole Rock Replaced (%)	80	Check [Or = Pr + Rf]	OK
Total Groundmass Original (%)	100	Check [Gp + Gl + Ms = 100%]	OK
Total Groundmass Present (%)	0	Check [Or = Pr + Rf]	OK
Total Groundmass Replaced (%)	100	Check [Or = Pr + Rf]	OK
Whole Rock Summary	A brittle chunk of greenish rock. Difficult to tell if a hydrothermal deposit or altered igenous rock. Contains thin Mn rind and a whitish alteration halo.		
Thin Section Summary	A heavily altered hyaloclastite with some preserved and large grains of biotite, amphibole, clinopyroxene, spinel and finer plagioclase and iddingsite. One large (~2 mm) biotite and one small grain (0.25mm) are found in the thin section. In addition one large elongated amphibole grain (~2mm) is observed. A few shards of clinopyroxene (< 1 mm) are also observed. Spinel grains are frequent and ocasionally very course (>0.25mm). Iddingsite is found throughout the sample. Plagioclase grains are fine (<0.25mm) and found in some altered clasts. The groundmass consists of a greenish palagonite-like alteration while zeolite fills fractures and voids throughout.		

Whole Rock

Transmitted Light

PHENOCRYSTS [Ph]	OL	PLAG	OPX	CPX	SPINEL	OTHER	VESICLES [Vs]	GRNDM [Gm]
Original (%) [Or]	10	5		4		5		76
Present (%) [Pr]	0	4		3		4		0
Replaced / Filled (%) [Rf]	10	1		1		1		76
Check [Or = Pr + Rf]	OK	OK	OK	OK	OK	OK	OK	OK
Minimum Size (mm)	0.25	0.1		0.25		0.25		
Maximum Size (mm)	0.4	0.25		0.6		2.5		
Modal Size (mm)	0.3	0.2		0.5		2		
Shape	anhedral	subhedral		subhedral		subhedral		
Habit								
Zonation Type								
Zonation Extent								
Exsolution Type								
Special Features								
Comments	100% iddingsite					Biotite, spinel and amphibole		

Cross Polarized



GROUNDMASS [Gp]	OL	PLAG	OPX	CPX	SPINEL	OTHER	GLASS [Gl]	MSTASIS [Ms]
Original (%) [Or]								100
Present (%) [Pr]								0
Replaced / Filled (%) [Rf]								100
Check [Or = Pr + Rf]	OK	OK	OK	OK	OK	OK	OK	OK
Minimum Size (mm)								
Maximum Size (mm)								
Modal Size (mm)								
Shape								
Habit								
Comments								Very altered