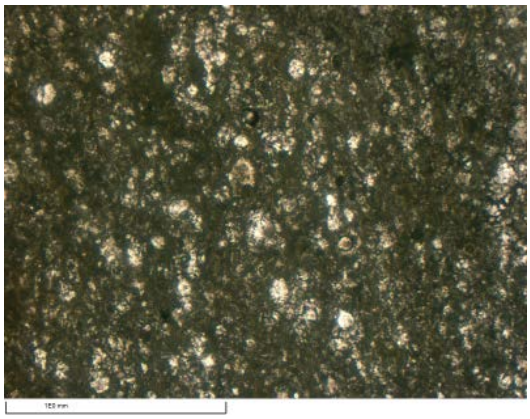
THIN SECTION LABEL ID:	**392-U1579D-52R-1-W 113/117-TSB-TS 2**	Thin section no.:	TS2
Unit/Subunit:	IIc	Observer:	HCC/DJ

Thin section summary: 392-U1579D-52R-1-W 113/117 is a calcareous chalk with clay that has subrounded calcite grains in a microcrystalline calcite matrix that appears light grayish green under plain polarized light and dark olive green under crossed polarized light. Small (~50 micron diameter) grains of glauconite, reddish brown alteration products of glass (possibly) and infilled foraminifera shells are also seen.

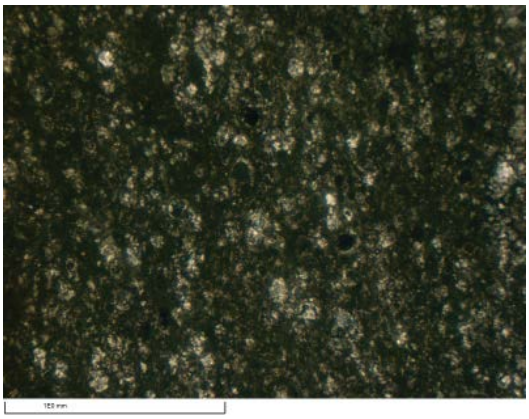
Plane-polarized:

Cross-polarized:

Photomicrograph (Plane-pol.)



Photomicrograph (Cross-Pol.)



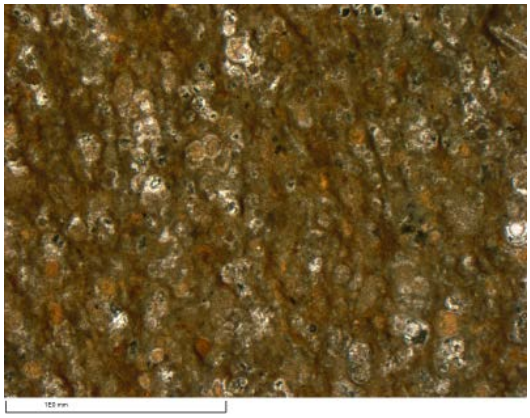
THIN SECTION LABEL ID:	**392-U1579D-52R-2-W 56/60-TSB-TS 1**	Thin section no.:	TS1
Unit/Subunit:	IIc	Observer:	HCC/DJ

Thin section summary: 392-U1579D-52R-2-W 56/60 is a calcareous chalk with clay, that has subrounded grains of calcite in a reddish brown clay matrix with iron staining, Amorphous, microcrystalline / cryptocrystalline calcite is also seen in the matrix. Bright red or orange material occurs around grain boundaries. Infilled foraminifera grains are common and the infilling material shows high order birefringence under crossed polars. Opaque minerals are also common.

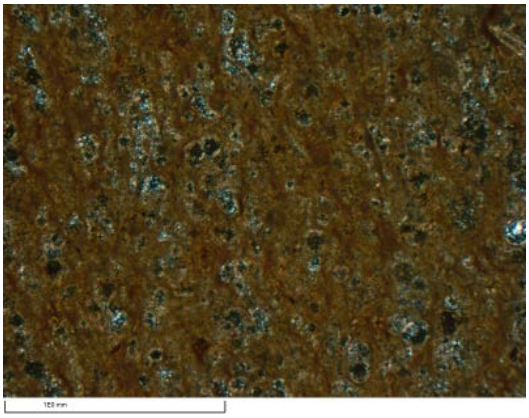
Plane-polarized:

Cross-polarized:

Photomicrograph (Plane-pol.)



Photomicrograph (Cross-Pol.)

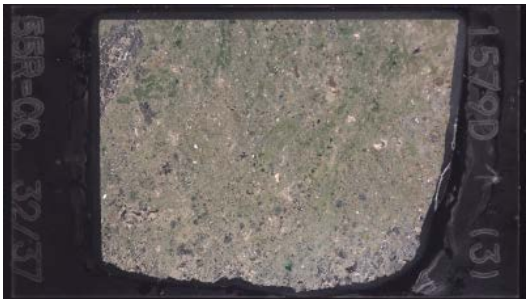


THIN SECTION LABEL ID:	**392-U1579D-55R-CC-PAL(9-14)-TSB-TS 3**	Thin section no.:	TS3
Unit/Subunit:	III	Observer:	HCC / DG

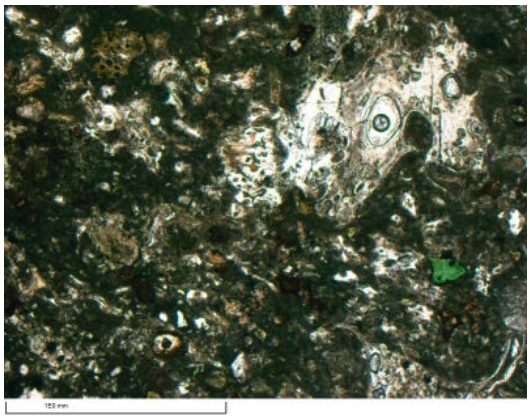
Thin section summary: Sample U1579D-55R-CC-PAL(9-14) is a zeolitic siltstone with glauconite which consists of highly altered grains of carbonate, feldspars, possibly volcanic glass in a glauconitic clay matrix. Dark green grains and patches of glauconite are common in the intergranular spaces, along with lesser amounts of interstitial calcite, zeolitic minerals, secondary vein infilling by calcite. Large, angular, orangeish-brown grains of (possible) glass are seen to have secondary zeolites precipitated in vesicles and along grain boundaries. Several foraminifera shells, often infilled with green glauconitic material, are common. Opaque minerals are also common in this sample.

Plane-polarized:

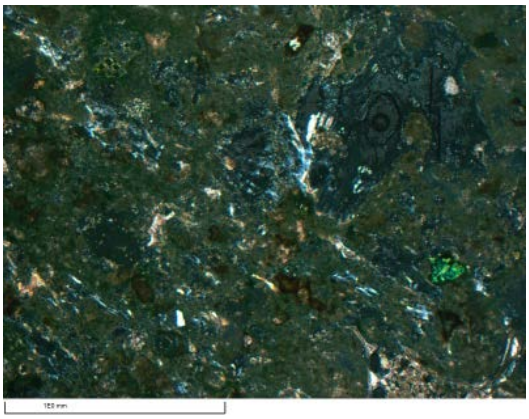
Cross-polarized:



Photomicrograph (Plane-pol.)



Photomicrograph (Cross-Pol.)

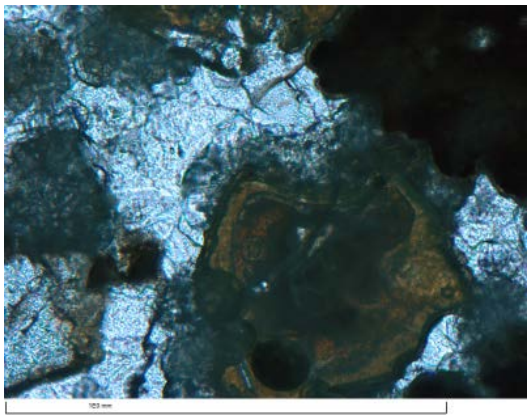


THIN SECTION LABEL ID:	**392-U1579D-56R-3-W 93/96-TSB-TS 4**	Thin section no.:	TS4
Unit/Subunit:	III	Observer:	HCC / DG
Thin section summary:	Sample U1579D-56R-3-W 93/96 is a zeolitic siltstone with clay consisting of large, angular, vesicular lithic fragments with a microcrystalline/cryptocrystalline groundmass. Other components include opaque black and dark brown minerals (possibly iron oxides), siderite (brighter orange), quartz, possible altered glass. The intergranular space is filled with zeolitic minerals.		

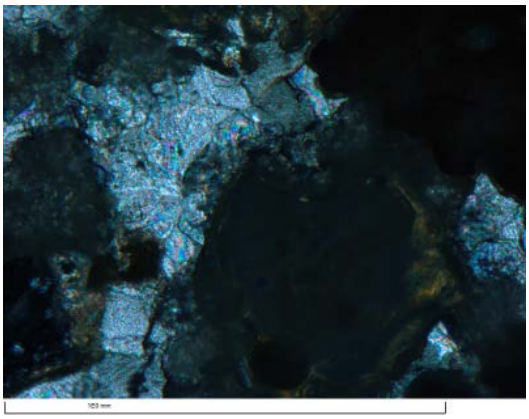
Plane-polarized:

Cross-polarized:

Photomicrograph (Plane-pol.)



Photomicrograph (Cross-Pol.)

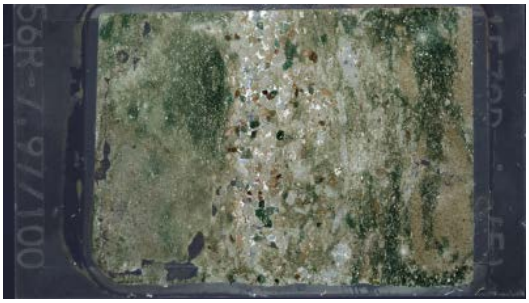


THIN SECTION LABEL ID:	**392-U1579D-56R-7-W 97/100-TSB-TS 5**	Thin section no.:	TS5
Unit/Subunit:	III	Observer:	DJ

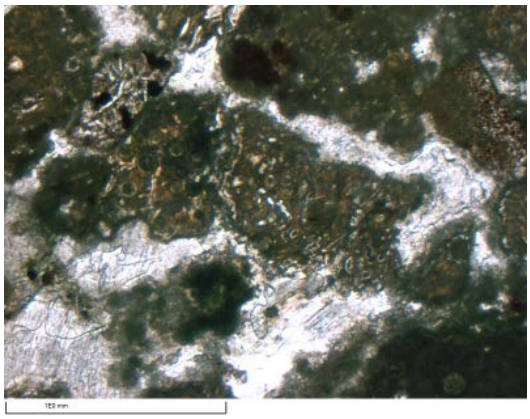
Thin section summary: Sample 392-U1579D-56R-7-W 97/100 is a zeolitic siltstone with clay made up of large, angular, vesicular lithic fragments densely packed in a microcrystalline/cryptocrystalline greenish-colored groundmass. Other common components include opaque black and dark brown minerals (possibly iron oxides), siderite (brighter orange), bright green grains of glauconite, altered feldspar grains, large, possibly volcanic rock fragments with altered plagioclase feldspar laths, (possible) altered glass, and trace amounts of quartz and infilled foraminifera tests. The intergranular space is filled with zeolitic minerals.

Plane-polarized:

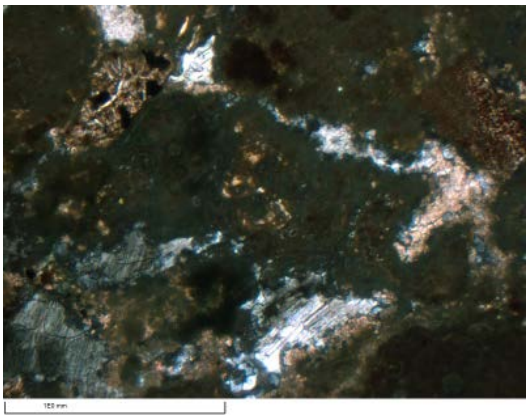
Cross-polarized:



Photomicrograph (Plane-pol.)



Photomicrograph (Cross-Pol.)



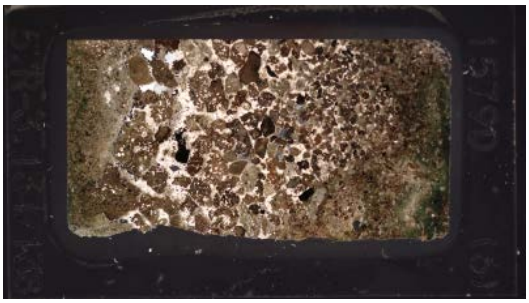
THIN SECTION LABEL ID: **392-U1579D-57R-3-W 134/138-TSB-TS 6** Thin section no.: TS6

Unit/Subunit: III Observer: HCC / DG

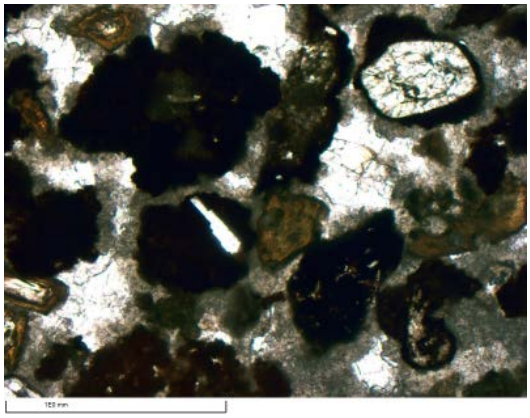
Thin section summary: Sample U1579D-57R-3-W 134/138 is a zeolitic siltstone with clay consisting of large, angular, vesicular lithic fragments in a microcrystalline / cryptocrystalline groundmass. Opaque black and dark brown minerals (possibly iron oxides), siderite (brighter orange), altered feldspar, zeolite minerals, siderite, and clay minerals are common in the matrix. Several large vesicles and intergranular spaces are filled with secondary zeolitic minerals.

Plane-polarized:

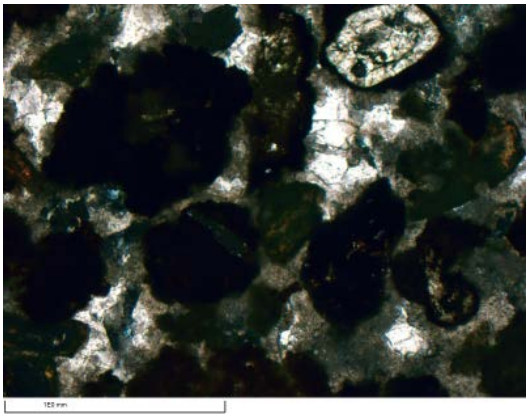
Cross-polarized:



Photomicrograph (Plane-pol.)



Photomicrograph (Cross-Pol.)



THIN SECTION LABEL ID: **392-U1579D-60R-CC-W 12/15-TSB-TS 7** Thin section no.: TS7

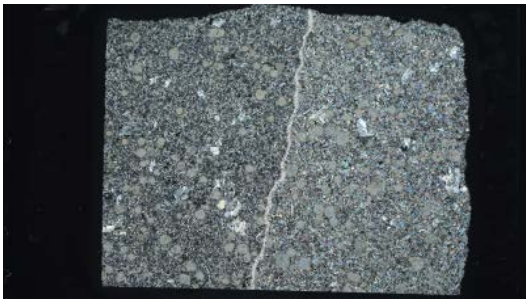
Observer: PD/JG Piece no.:

Unit/subunit: 1

Thin section summary: Sample U1579D-60R-CCW 12/15 is a fine-grained vesicular basalt with a thin calcite-filled vein crosscutting the thinsection. One half is more highly altered and contains only unaltered plagioclase, though, it is also partially altered. The clinopyroxenes and olivines are completely altered on this half. There are less signs of alteration on the other half which includes fresh clinopyroxene and plagioclase; however, there is no unaltered olivine. Vesicles in both halves are completely filled with clay minerals. Plagioclase glomerocrysts are present, some with zoning. Groundmass and phenocrystic plagioclase is generally euhedral and clinopyroxene and other alteration products are anhedral and space-filling.

Plane-polarized:

Cross-polarized:



Igneous Petrology

Lithology: porphyritic basalt

Groundmass grain size (avg.) fine-grained

Texture 1: porphyritic

Texture 2: vesicular

Phenocrysts	Original (%)	Replaced (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Plagioclase	3	35	2	2.5	euhedral-subhedral	Glomerocrysts

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	30	95	0.2	subhedral	
Plagioclase	30	35	0.3	euhedral-subhedral	
Clinopyroxene	35	50	0.2	0.2	
Opaques	5	0	0.1	anhedral	

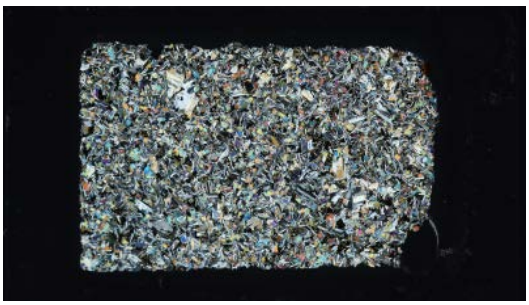
Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	10	100	0.8	1.2	rounded	

THIN SECTION LABEL ID: **392-U1579D-61R-6-W 0/3-TSB-TS 8**
Thin section no.: TS8
Observer: PD/JG
Piece no.: 1
Unit/subunit: 1

Thin section summary: Sample U1579D-61R-6W 0/3 is a medium-grained basalt with plagioclase glomerocrysts. It has slight to moderate alteration of interstitial groundmass phases. Fresh plagioclase, clinopyroxene, and olivine are all present. Plagioclase glomerocrysts are fresh and some show zoning. Plagioclases are euhedral to subhedral while clinopyroxene is the dominant space-filling mineral.

Plane-polarized:

Cross-polarized:



Igneous Petrology

Lithology: porphyritic basalt

Groundmass grain size (avg.) medium-grained

Texture 1: porphyritic

Texture 2:

Phenocrysts	Original (%)	Replaced (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Plagioclase	5	0	2	3	euhedral-subhedral	Glomerocrysts

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	30	50	0.4	subhedral	
Plagioclase	40	5	0.8	euhedral-subhedral	
Clinopyroxene	25	10	0.4	0.4	
Opaques	5	0	0.15	subhedral to sceletal	

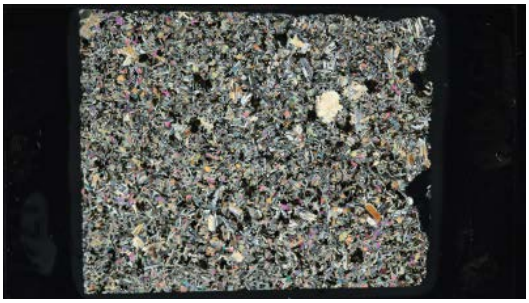
Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

THIN SECTION LABEL ID: **392-U1579D-63R-3-W 17/19-TSB-TS 9**
Thin section no.: TS9
Observer: PD/JG
Piece no.: 1
Unit/subunit: 1

Thin section summary: Sample U1579D-63R-3W 17/19 is a medium-grained basalt with plagioclase glomerocrysts. It has slight to moderate alteration of interstitial groundmass phases. Fresh plagioclase, clinopyroxene, and olivine are all present. Plagioclase glomerocrysts are fresh and some show zoning. Plagioclases are euhedral to subhedral while clinopyroxene and olivine are the dominant space-filling minerals.

Plane-polarized:

Cross-polarized:



Igneous Petrology

Lithology: porphyritic basalt

Groundmass grain size (avg.) medium-grained

Texture 1: porphyritic

Texture 2:

Phenocrysts	Original (%)	Replaced (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Plagioclase	5	0	2	2.5	euhedral-subhedral	Glomerocrysts

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	25	50	0.3	subhedral	
Plagioclase	35	5	0.8	euhedral-subhedral	
Clinopyroxene	35	10	0.3	0.3	
Opaques	3	0	0.25	anhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	0					

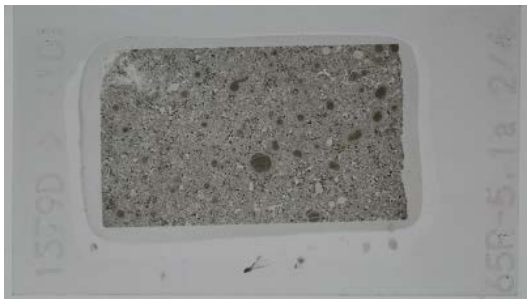
THIN SECTION LABEL ID: **392-U1579D-65R-5-W 2/4-TSB-TS 10** Thin section no.: TS10

Observer: PD/JG Piece no.: 1

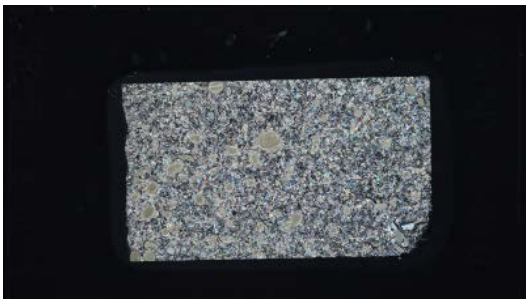
Unit/subunit: 2

Thin section summary: Sample U1579D-65R-5W 2/4 is a fine-grained vesicular basalt. It has moderate alteration of all groundmass phases, but the clinopyroxenes more so than the plagioclases. Very little to no fresh olivine is present though pseudomorphs are present. Plagioclases are euhedral to subhedral while clinopyroxene is the dominant space-filling mineral. Vesicles are all round and completely filled with clay minerals. One plagioclase glomerocryst is present.

Plane-polarized:



Cross-polarized:



Igneous Petrology

Lithology: aphyric basalt

Groundmass grain size (avg.) fine-grained

Texture 1: subophitic

Texture 2: vesicular

Phenocrysts	Original (%)	Replaced (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Plagioclase	1	20	2.5	2.5	euhedral-subhedral	Glomerocryst

Groundmass	Original (%)	Replaced (%)	Size mode (mm)	Shape	Comments
Olivine	30	95	0.2	subhedral	
Plagioclase	35	20	0.3	euhedral-subhedral	
Clinopyroxene	30	50	0.2	0.2	
Opaques	3	0	0.08	anhedral	

Vesicle	Original (%)	Filled (%)	Size mode (mm)	Size max. (mm)	Shape	Comments
Vesicle	5	100	0.8	2	rounded	