Dredge 1

USGS DREDGE STATION LOG

Depth = 2250 - 2300 m

SHIP / LEG L9-84-CP

	ON BOTTOM	OFF BOTTOM
LATITUDE	07 15.008	07 14.431
LONGITUDE	171 00.534	171 00.939

STATION NO. Sta. 01

LINE NO. Dredge 1

DAY/MONTH/YEAR
DATE 28/ 7/84

TYPE OF STORAGE (check one)

☐ DRY ☐ COLD ☐ FROZEN

Depth = 2250 - 2300 m

SAMPLE NO. TYPE & ID.	UNCORRECTED DEPTH (M)	CORE LENGTH	BASIC LITHOLOGY	AGE OF BOTTOM
D1-1 to D1-9				
see sample description				

REMARKS: Total weight approx. ≈ less than 20 lbs,

9 pieces breccia with calcareous matrix and angular red-brown basaltic clasts with very thin Mn-oxide crust.

Mn crust: average thickness ≈ 0.1 cm — (max 0.2 min 0.0

Surface texture: relatively smooth to granular with porous (clinkery surfaces) 50-60% porous crust

internal structure: mostly massive to v. faint layering

crust scraped off several pieces for XRF

NEB00

Sample Description

Cruise I.D: L9-84-CP | Sample I.D: Sta: 01 D 1 - 1 Location: Majuro

Size: 23x13x11 Weight: ~ 4 kg Depth: 2250 - 2300 m

Mn crust thickness:

Total: min: 0 max: 2 mm ave: 1 mm

Inner crust: min: — max: — ave: —

Outer crust: min: — max: — ave: —

Surface texture: granular to very porous

Internal structure: none to

layered: v. faintly layered
laminated:
massive:
porous:
dendritic:
other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:
matrix somewhat phosphatized

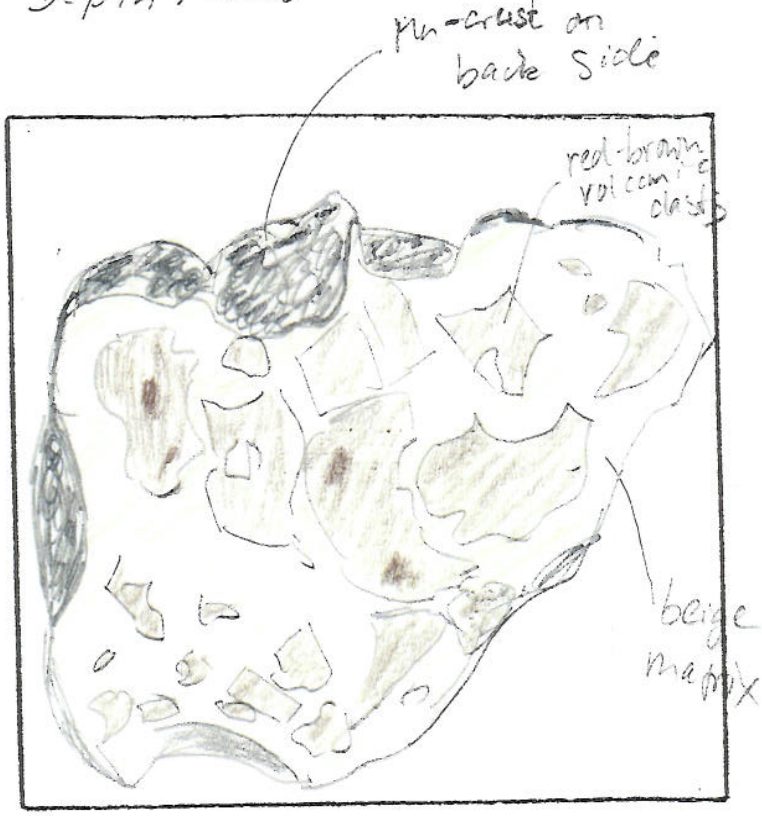
Substratum:

Rock type: Volcanic breccia in phosphatized limest. matrix

Description:
very angular fractured volcanic clasts in beige phosphatized limestone — (may be pepperite)

volcanic clast with plag. and mafic mineral(?) phenocrysts glassy rinds on some has inclusions of clear looking basalt pieces (xenolith ??) NO!

Mineralogy (XRD):



Analyses and subsamples:

analysis:	analyst:
1 piece ~5x5	Janet Haggerty
1 " for T.S.	A. Davis
crust scraped off several samples	~~XRF Tim Ling~~
Sampled bulk* crust & substrate for chemistry	C. Daniel

* Scraped off surface (0-2 mm)

Sample Description

Cruise I.D: L9-84-CP | Sample I.D: Sta: 01 D 1-2 Location: Majuro

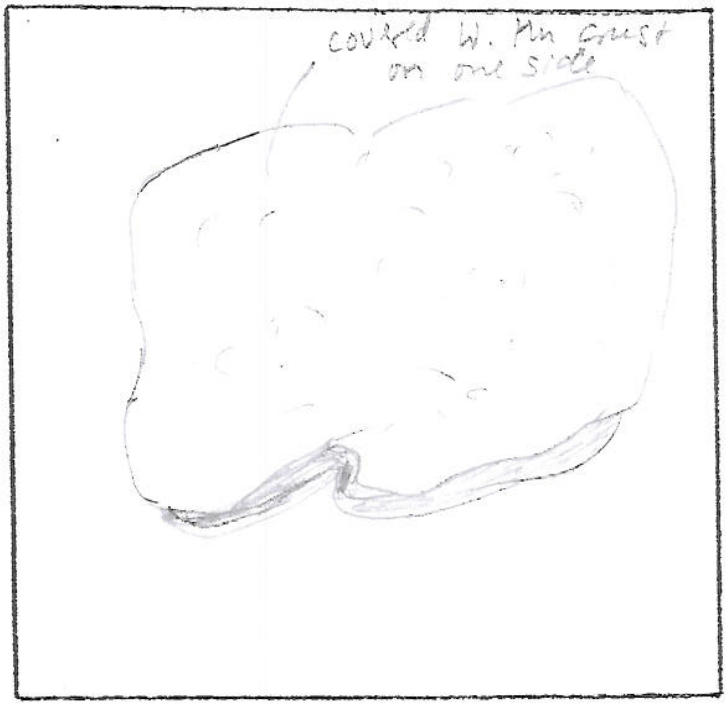
Size: 12x8x4cm Weight: ~0.5 kg Depth: 2250-2300m

Mn crust thickness:

Total: min: 0 max: 2 mm ave: 1 mm

Inner crust: min: max: ave:

Outer crust: min: max: ave:



Surface texture: relatively smooth

Internal structure: none to faintly layered

layered: layered
laminated:
massive:
porous: v. minor patches
dendritic:
other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: angular red-brown basalt clast

Description:

volcanic clast like D1-1

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
piece for T.S.	A. Davis
Sampled for XRD	
D1-2: Bulk 0-2mm	

Sample Description

Cruise I.D: L9-84-CP | Sample I.D: Sta: 01 D 1-3 | Location: Majuro

Size: 8x6x4 Weight: 0.3 kg

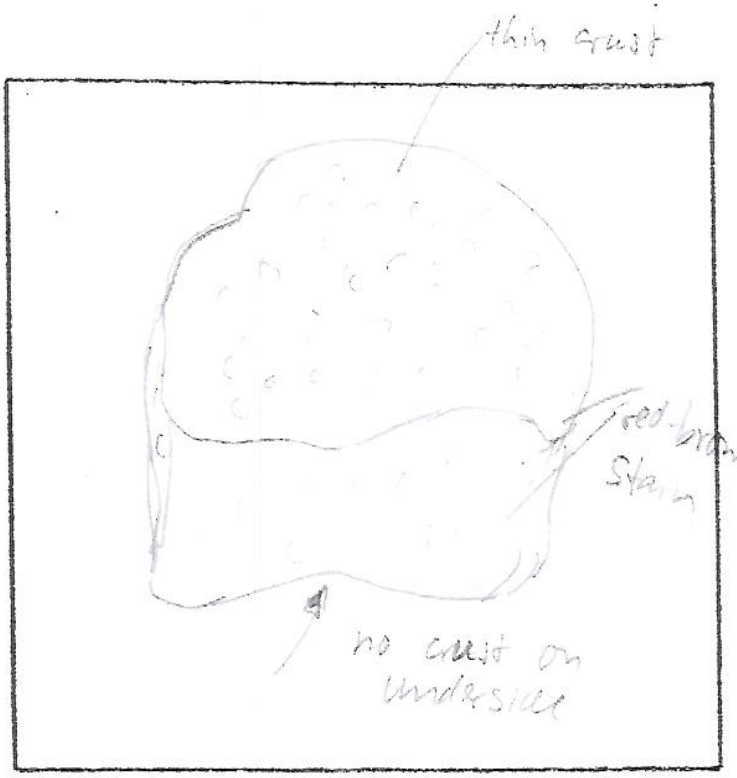
Depth: 2250-2300 m

Mn crust thickness:

Total: min: 0 max: 2mm ave: 1mm

Inner crust: min: max: ave:

Outer crust: min: max: ave:



Surface texture: mostly smooth to granular

Internal structure:

layered:
laminated:
massive:
porous:
dendritic:
other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:
red-brown + yellow-brown botryoids (Fe oxides ??)

Substratum:

Rock type: volcanic rock + breccia filled in fractures

Description:
physic basalt w. plag. and pyroxene (??) phenocrysts + olivine (pseudomorphed be Fe oxide?)

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
piece for T.S.	A. Davis
Sampled for chem.	C. Daniel
D1-3-a - bulk crust (0-2mm)	
D1-3-b substrate	

Cruise I.D: L9-84-CP

Sample Description

Sample I.D: Sta: D1 D1-4 Location: Mejuro

Size: 8x6x4 Weight: 0.2 kg

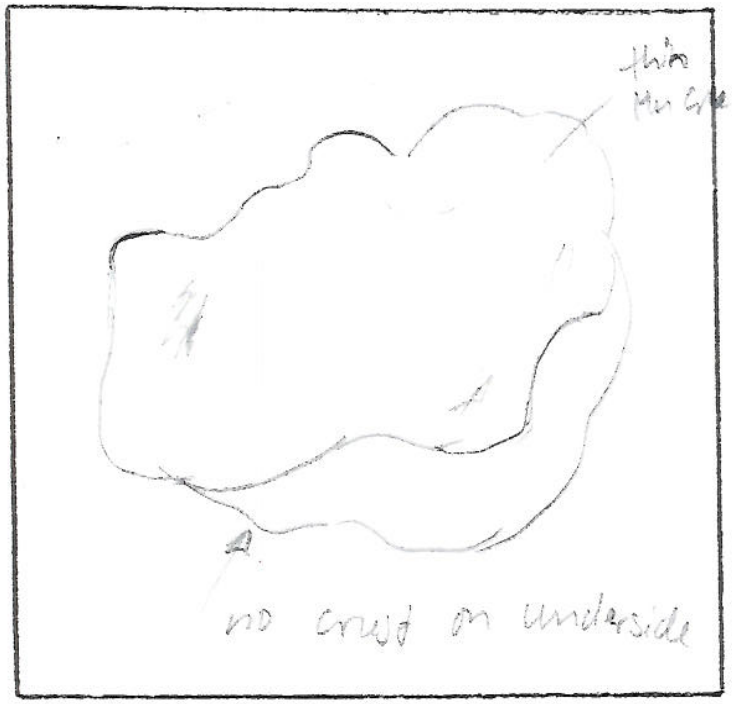
Depth: 2250-2300 m

Mn crust thickness:

Total: min: 0 max: 1mm ave: < 1mm

Inner crust: min: max: ave:

Outer crust: min: max: ave:



Surface texture: Smooth w/ porous areas

Internal structure:

layered:
laminated:
massive:
porous:
dendritic:
other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

red-brown Fe oxide / yellow-brown staining

Substratum:

Rock type: volcanic breccia in limestone matrix

Description:

volcanic clasts like in D1-1

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
XRD D1-4-I bulk substrate	

Sample Description

Cruise I.D: L9-84-CP | Sample I.D: Sta: 01 D1-5 | Location: Majuro

Size: 7x7x4 Weight: 0.2 kg | Depth: 2250 - 2300 m

Mn crust thickness:

Total: min: 0 max: 2mm ave: 1mm

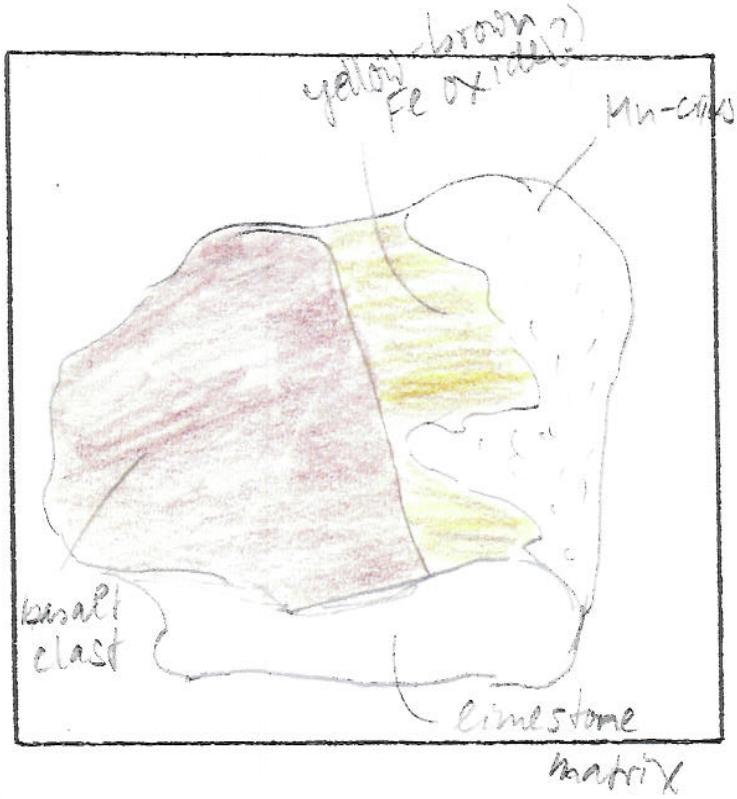
Inner crust: min: ___ max: ___ ave: ___

Outer crust: min: ___ max: ___ ave: ___

Surface texture: granular - small botryoids

Internal structure: ___

layered: ___
laminated: ___
massive: ___
porous: ___
dendritic: ___
other: ___



Mineralogy (XRD): ___

Associated alteration, phosphorite, or hydrothermal deposits:
phosphatized limestone matrix
red-brown Fe oxide stains

Substratum:

Rock type: volcanic breccia with limestone matrix

Description: same as D1-1

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
XRD	C. Daniel
I: Mn crust, bulk 0-2 mm	
II: volc clast	
III: white sed (matrix)	
Double Polished Thin Section by Von Huene	

Cruise I.D: L9-84-CP

Sample Description

Sample I.D: Sta: 01 D 1-6 Location: Majuro

Size: 9x5x3cm Weight: 0.2 kg

Depth: 2250-2300 m

Mn crust thickness:

Total: min: 0 max: 1mm ave: <1 mm

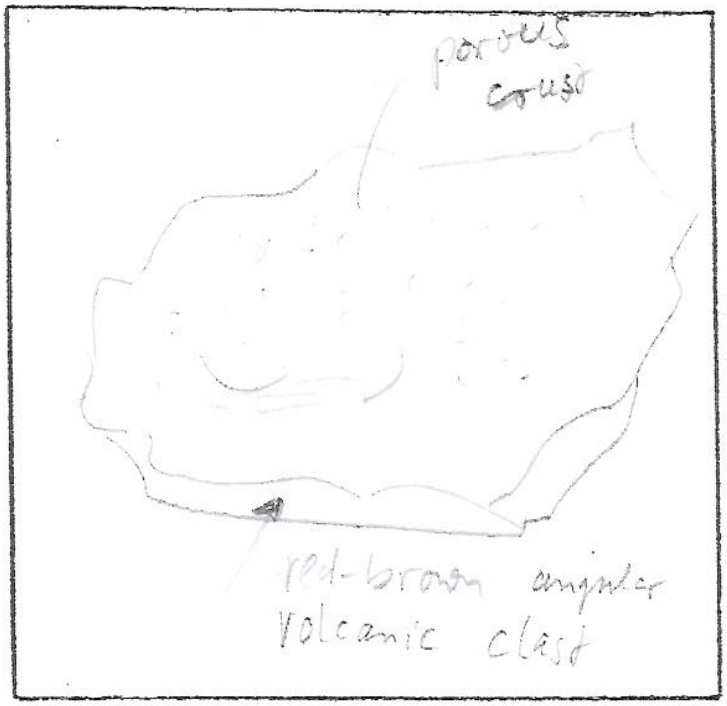
Inner crust: min: — max: — ave: —

Outer crust: min: — max: — ave: —

Surface texture: smooth + porous area

Internal structure: —

layered: —
laminated: —
massive: —
porous: —
dendritic: —
other: —



Mineralogy (XRD): —

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: volcanic rock same as D1-L

Description:

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
piece of crust	Lauren M. (Scripps)

Cruise I.D: L9-84-CP

Sample Description

Sample I.D: Sta: 01 D 1 – 7

Location: Mariana

Size: 7x6x5 Weight: < 0.2kg

Depth: 2250 – 2300 m

Mn crust thickness:

Total: min: 0 max: 1mm ave: < 1mm

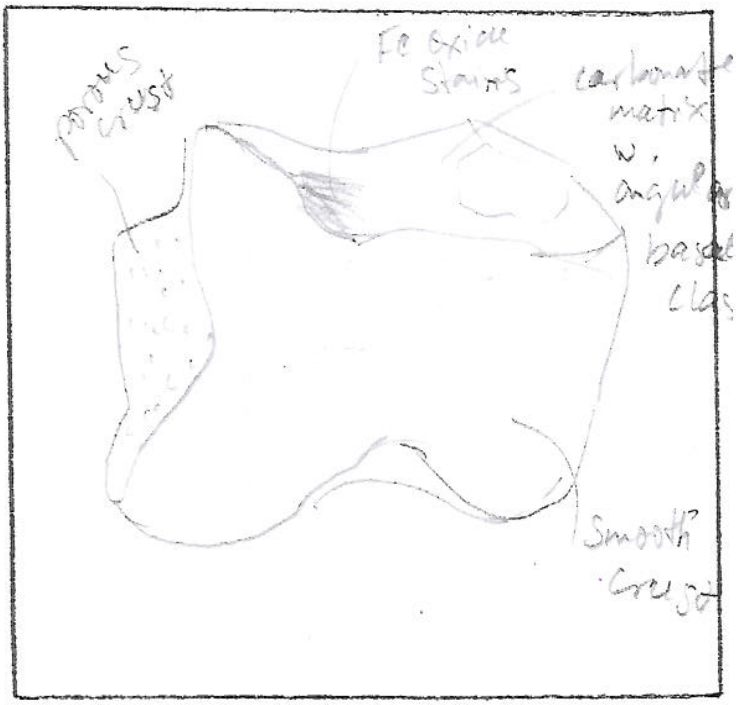
Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: smooth to granular with porous areas

Internal structure:

layered:
laminated:
massive: ✓
porous:
dendritic:
other:



Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Fe oxide stains
matrix phosphatized

Substratum:

Rock type: Volcanic breccia in limestone matrix

Description:

basalt. same as D1-1

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
XX missing used for chem. analyses	A. Labs
Only 2 sawed	
pieces in bag	

Sample Description

Cruise I.D: L9-84-CP

Sample I.D: Sta: 01 D 1-8

Location: Ma jiro

Size: 6x5x3 cm Weight: 0.15 kg

Depth: 2250 m - 2300 m

Mn crust thickness:

Total: min: 0 max: 2 mm ave: 1 mm

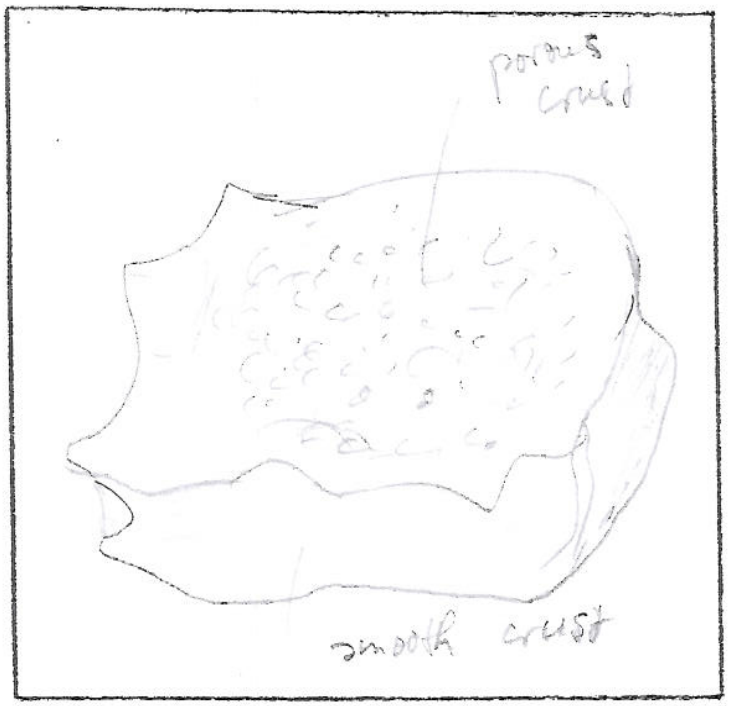
Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: mostly granular porous

Internal structure:

layered:
laminated:
massive:
porous:
dendritic:
other:



Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Fe oxide stains

Substratum:

Rock type: volcanic clast

Description: red-brown volcanic piece, angular similar to previous clasts

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
Scraped crust for bulk chemistry (0-2mm)	C. Daniel

Sample Description

Cruise I.D: L9-84-CP Sample I.D: Sta: 01 D 1 - 9 Location: Magnura

Size: 6x4x1cm Weight: < 0.1 kg Depth: 2250 - 2300 m

Mn crust thickness:

Total: min: 0 max: 2mm ave: 1mm

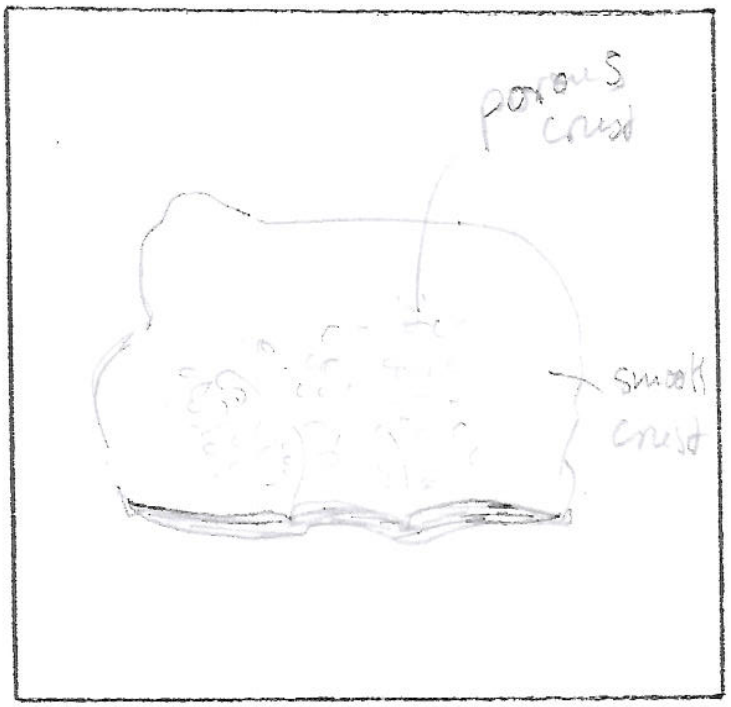
Inner crust: min: ___ max: ___ ave: ___

Outer crust: min: ___ max: ___ ave: ___

Surface texture: porous, smooth in minor areas (tiny botryoids)

Internal structure: ___

layered: ___
laminated: ___
massive: ___
porous: ___
dendritic: ___
other: ___



Mineralogy (XRD): ___

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: volcanic clay very thin w. thin crust

Description: same as D1-1 clasts

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
small piece to	Henry Meyer