ORE DGE 58
Komachi
Smt.

SAMPLE ID	*Mn CHEM	Pt & Au*	REE *	Si Chem*	P.Sect.	35mm Pho	Archive	Paleo	XRD				
D58-1	✓			✓				✓	[illegible]				
D58-2													
D58-3	✓												
D58-4	✓												
D58-5													
D58-6													
D58-7	✓	✓	✓										
D58-8													
D58-9	[illegible]								x'tal				
D58-10	✓												
D58-11	✓	✓	✓										
D58-12													
D58-13													
D58-14													

* All chemistry samples have XRD mineralogy done also.

Mariana Islands

Cruise I.D: TT-192

Sample Description

Sample I.D: Sta: D58-1

Location: Lomagan Smt Depth 740-108

Size: _____ Weight: 9.25 kg (already scabbed) ½ [illegible]

Mn crust thickness:

Total: min: 5 mm max: 25 mm ave: 15 mm

Inner crust: min: _____ max: _____ ave: _____

Outer crust: min: _____ max: _____ ave: _____

Surface texture: Botryoidal

Internal structure:

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

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: phosphorite

Description: highly altered phosphorite (?) with volcanic clasts incorporated. Several basalt clasts (1 to 2 cm) have rinds of Mn. Wet substrate has rust color & dry has yellow ochre color. There are harder vesicular "layers-areas" lighter in color. There is one clast which has totally altered; the only thing differentiating it from the rest of substrate is the remaining Mn ring that covered clast.

Mineralogy (XRD):

MUD IN VUG

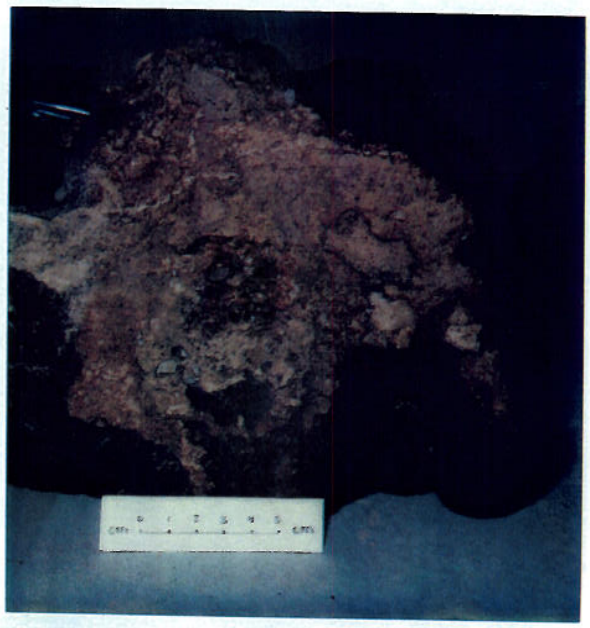
D58-1 Wet Half

Mariana Is TT192

Analyses and subsamples:

analysis:	analyst:
Chemistry	
D58-1-A Bulk Crust Mn Chem	M Morrison 10-12-87
D58-1-B Silicate Chem on Substrate	
*D58-1-C Mn-Chemistry	
Blk-granular crust off bottom	
XRD	
D58-1-D MUD IN VUG	
D58-1-E Bulk crust	
* D58-1-F Blk granular crust from bottom of sample	
* D58-1-G Xtal from substrate	
D58-1-H Substrate	
Dalco - Mud in Vug	

* See Back



D58-1 DRY HALF

Mariana Is TT192

D58-1-C and D58-1-F Black granular Mn and Mn Crust scrapped from bottom of wet half

D58-1-G is a 7'tal from the substrate of dry half; found on broken surface, where Rock was attached to outcrop.

D58-1-D Mud in Vug; this sample scraped from Vug
sample of this also given to Paula for possible Nannos

Substrate sample for XRD, Iorncentrated on lighter colored vesicular material

SAMPLE DESCRIPTION

Id: T T 192 Size: [illegible] Location: [illegible]

Sample Id: D58-2 Weight: _____ Depth: 740 - 1080 m

Mn Crust Description

Surface Texture: [illegible]

Mn Crust Thickness:

Min: [illegible] Max: [illegible] Ave: 15 mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

Basalt Clast

Mariana Islands

D58-2

C[illegible]nts and XRD Mineralogy:

Massive to porous crust growth [illegible] visible

Sort of Nodular Crust covers all sides

Substrate Description

Rock Type: Breccia

Description:

Phosphorite replacement of Reef rock?

Basalt Clasts fairly fresh and clast so altered they are of undetermable affinity

ANALYSES

1/2 gone to (?)

Described By: JSM

Subsampled By:

Sample Description

Mariana Is.

Cruise I.D: ~~L5-83-HW~~ **Sample I.D: Sta:** D [illegible] **Location:** [illegible]

Size: [illegible] **Weight:** [illegible]

[illegible]

Mn crust thickness:

Total: min: [illegible] max: [illegible] ave: [illegible]

Inner crust: min: ______ max: ______ ave: ______

Outer crust: min: ______ max: ______ ave: ______

Surface texture: [illegible]

Internal structure: ______

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

Mineralogy (XRD): [illegible]

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Phosphorite

Description: [illegible]

Mineralogy(XRD):

D58-3
Mariana Islands

Analyses and subsamples:

analysis:	analyst:
Chemistry: bulk crust, [illegible]	[illegible]
XRD: bulk crust, [illegible] sample	
[illegible] for [illegible] (D58-3-I)	
D58-3 [illegible]	

Sample Description

Cruise I.D: ~~[illegible]~~ Marianas Is

Sample I.D: Sta: D58-4

Location: Kumach Int

Depth: 240 to 800m

Size: ½ of a slabbed face

Weight: 820 gms (wet)

Mn crust thickness:

Total: min: 0.2 cm max: 1.3 cm ave: 0.7 cm

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: Botryoidal (worn)

Internal structure:

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

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Limestone

Description: Breccia of reef rock, animal pieces

Mineralogy (XRD):

Mariana Islands

D58-4

Analyses and subsamples:

analysis:	analyst:
Chemistry: Bulk crust manheim	L. Morgenson
XRD: Bulk crust from sample sent for chem (D58-4-I)	

SAMPLE DESCRIPTION

Id: TT192 Size: 19.5 x 10.5 x 8 cm Location: Komachi Smt

Sample Id: D58-5 Weight: 2 kg Depth: 7-10 - 1080

Mn Crust Description

Surface Texture: Botryoidal smooth and

Hollow between botryoids filled w/ [illegible]

[illegible]

Mn Crust Thickness:

Min: 5 mm Max: 14 mm Ave: 10 mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

Mariana Islands

D58-5

C[illegible]nts and XRD Mineralogy:

Crust is Massive w/areas of porosity and Fe stains

ANALYSES

½ gone to (?)

Substrate Description

Rock Type: Breccia

Description:

Breccia w/ highly altered Clasts, matrix of sandstone matrix dominates.

Mn "blebs" in breccia

Described By: JSM Subsampled By:

Mariana Is.

Sample Description

Cruise I.D: ~~L5-83-HW~~ Sample I.D: Sta: D 58-7 Location: Kurnack Ind

Size: 22x9x10.5cm Weight: 2.2 kg (wet) Depth: 700-1080m

Mn crust thickness:

Total: min: 5mm max: 14mm ave: 10mm

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: Botryoidal

Internal structure:

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

Mineralogy (XRD): Crust has siliceous spongy on the outer surface

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Phosphorite

Description:

Phosphatized limestone (?) or Volcanic Breccia

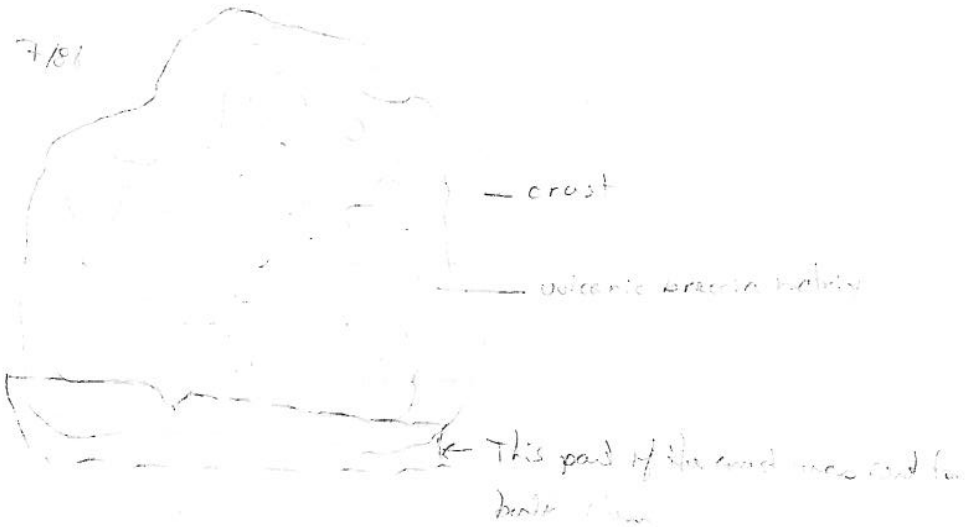
Mineralogy (XRD):

Mariana Islands
D58-7

Analyses and subsamples:

analysis:	analyst:
Chemistry: Bulk crust sample for "manheim" + Pt Group + Au + REE see drawing on back	L. Morgenson 7/86
XRD: bulk crust from sample sent for chem (D58-7-I)	

7/81



Mariana Islands

Cruise I.D: TT-192

Sample Description

Sample I.D: Sta: D58-8

Location: Komachi Smt

Depth 1140-1080 m

Size: _____ Weight: 194.6 gm (ONLY 1/2 of specimen) DRY

Mn crust thickness:

Total: min: 1.5 cm max: 3 cm ave: 2.25 cm

Inner crust: min: 1 cm max: 1.5 cm ave: 1.25 cm

Outer crust: min: 1 cm max: 3 cm ave: 1.5 cm

Surface texture: Botryoidal

Internal structure:

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

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Volcanic Breccia, highly altered

Description: White translucent unaltered xtal in breccia, maybe plagioclase? (not calcite) maybe zeolite

Mineralogy (XRD):

Mariana Islands

D58-8

Analyses and subsamples:

analysis:	analyst:
D58-8-I outer layer 0-5mm Mn-Chem-Pkg & XRD	M. Morrison 10-6-87
D58-8-II inner layer Mn-Chem Pkg & XRD 5-10mm	"
D58-8-I-A hard outer crust-XRD	"
D58-8B- XRD Translucent Xtal	

layers [illegible]
and [illegible] staining

[illegible]
[illegible] that on [illegible] layer
[illegible], 1 to 2mm thick, which is much harder
than the rest of the outer layer.
I sampled this hard layer separately for XRD. N.

Also, observed that the rust [illegible]
appeared between (in lower) the [illegible] M.A.

Harder layer appears again at the
top of the inner layer, 1 to 2mm thick

Mariana Islands

Cruise I.D: TT-192

Sample Description

Sample I.D: Sta: D

Location:

Size: Weight:

Mn crust thickness:

Total: min: max: ave:

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture:

Internal structure:

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

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type:

Description:

Mineralogy (XRD):

Mariana Islands

D58-10

Analyses and subsamples:

analysis:	analyst:
[illegible]	M. Morrison
[illegible]	M. Morrison
[illegible]	M. Morrison

Notes: layers / [illegible] very faint
along slabbed edge.
where [illegible] land we
more [illegible] along broken edge
[illegible]

Sample Description

Cruise I.D: [illegible]

Sample I.D: Sta: D [illegible]

Location: [illegible]

Size: [illegible] Weight: [illegible]

Mn crust thickness:

Total: min: max: ave:

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: [illegible]

Internal structure:

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

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: [illegible]

Description: [illegible]

Mineralogy (XRD):

Mariana Islands

D58-11

Analyses and subsamples:

analysis:	analyst:
[illegible]	[illegible]

SAMPLE DESCRIPTION

Id: [illegible] Size: [illegible] Location: [illegible]

Sample Id: [illegible] Weight: [illegible] Depth: [illegible]

Mn Crust Description

Surface Texture: [illegible]

Mn Crust Thickness:

Min: 5mm Max: 15mm Ave: 8mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

[illegible]nts and XRD Mineralogy:

Mariana Island

D58-12

ANALYSES

Substrate Description

Rock Type: [illegible]

Description:

[illegible]

Described By: JSM

Subsampled By:

SAMPLE DESCRIPTION

Id: _____ Size: _____ Location: _____

Sample Id: _____ Weight: _____ Depth: _____

Mn Crust Description

Surface Texture: _____

Mn Crust Thickness:

Min: _____ Max: _____ Ave: _____

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

C nts and XRD Mineralogy:

ANALYSES

Mariana Islands

D58-13

Substrate Description

Rock Type: _____

Description:

Described By: _____ Subsampled By:

SAMPLE DESCRIPTION

Id: TT192 Size: 26x[illegible] Location: [illegible]

Sample Id: D58-14 Weight: [illegible] Depth: 740-1080m

Mn Crust Description

Surface Texture: [illegible]

Mn Crust Thickness:

Min: 8 mm Max: 20 mm Ave: 10 mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

Mariana Islands
D58-14

C[illegible]nts and XRD Mineralogy:

Crust is fairly uniform [illegible] on both sides of sample.
Massive

Substrate Description

Rock Type: Volcanic Breccia, Highly Altered

Description:

Animal in whole volcanic [illegible] appears on crust

ANALYSES

Described By: JSM Subsampled By: