DREDGE 54
N Hiyoshi
Smt

AMPLE ID	Mn CHEM	Pt & Au	REE	Si Chem	P.Sect.	35mm Pho	Archive	Paleo
D54-1								
D54-2	[illegible]							
D54-3								
D54-4				[illegible]				
D54-5								

SAMPLE DESCRIPTION

6 x 6 x 2.5 cm [illegible]

Cruise Id: TT192 Size: 13x7.5x4.5cm [illegible] Location: N. Side North [illegible]

Sample Id: D54-1 Weight: 1kg Depth: 1250-1640 m

Mn Crust Description

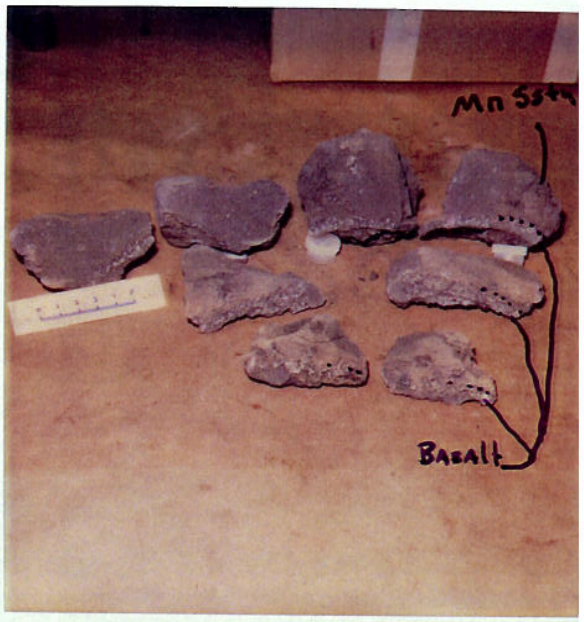
Surface Texture: [illegible]

Mn Crust Thickness:

Min:_____ Max:_____ Ave:_____

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
[illegible]				



Mariana Islands
D54-1

Comments and XRD Mineralogy:

Each Basalt is covered w/ Mn Sandstone poorly sorted, angular grains, cemented by Mn

Substrate Description

Rock Type: Porphyritic Basalt

Description:

Vesicular, dark gray groundmass w/ phenocrysts (up to 3mm) of plagioclase & pyroxene

ANALYSES

TSM

Sample Description

Cruise I.D: ~~L5-83-HW~~ Mariana Is

Sample I.D: Sta: D54-2

Location: N side N [illegible] Cmt

Size: 7 pieces Weight: 707 gms total (wet)

from 6x3x1 cm to 13x7x2.5 cm

Depth: 1250-[illegible] m

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: Mn Sandstones, misc pieces

Description: All pieces medium to fine grained S.S. w/a layer of more ochre yellow color and finer grained. Either more clayey or massive Mn oxide layer

Mineralogy (XRD):

Mariana Islands
D54-2

Analyses and subsamples:

analysis:	analyst:
Chemistry: bulk crust "manteau" from the largest piece	L. Mortenson
XRD: bulk crust from some piece sent for chem (D54-2-I) (D54-2)	
*D54-2-IA (D54-2-1) Mn-chem pkg & XRD of massive ochre layer	M. Morrison 10-1

*Had problem getting [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

SAMPLE DESCRIPTION

Cruise Id: TT192 Size: Larger sample 8x4.5x2.5cm Location: N. Side N. Hiyoshi Smt

Sample Id: D54-3 Weight: 1kg Depth: 1250-1640

Mn Crust Description

Surface Texture:

Mn Crust Thickness:

Min: Max: Ave:

Layers (Outer to Inner):

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

[redacted] Mariana Island

D54-3

Comments and XRD Mineralogy:

ANALYSES

Substrate Description

Rock Type: Marganiferous Foraminiferal Sandstone

Description:

Sandstone w/ Mn rich layers & Mn Cemented Detrital Clasts and forams. (Does react to HCl) Top Fe stained layer

Mariana Islands

Cruise I.D: TT-192

Sample Description

Sample I.D: Sta: D54-4

Location: N side N. Fixed Smt

Size: 70mm x 55x40 (already slabbed) Weight: 105 gms (dry)

Mn crust thickness:

Total: min: <1mm max: 3mm ave: 2mm

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: botryoidal, but worn

Internal structure:

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

Mariana Islands
D54-4

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Mn volcanic(?) breccia

Description: poorly sorted, angular clasts, with Mn cementing (?) or partially surrounding clasts. Hydrothermal Mn on outside of sample broken off in places.

Clasts really don't look volcanic, maybe highly altered

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
Silicate Chem on Bulk Sample from smaller ½	M Morrison 10-2-87

SAMPLE DESCRIPTION

Cruise Id: TT192 Size: Largest 7x4 [illegible] cm Location: N. Side N. Hiyosh Smt

Sample Id: D54-5 Weight: 1 kg Depth: 1250 - 1640

Mn Crust Description

Surface Texture:

Mn Crust Thickness:

Min: Max: Ave:

Layers (Outer to Inner):

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

Mariana Islands
D54-5

Comments and XRD Mineralogy:

ANALYSES

Substrate Description

Rock Type: Manganiferous Breccia

Description:

Clasts are very mainly altered may have been mudstones, maybe volcanic(?). Almost looks as if clasts are being replaced by Mn (?). larger clasts (up to 2 cm) in a sandstone manganese matrix

TSM