DREDGE 20
NW Uracas
Smt.

SAMPLE ID	Mn CHEM	Pt & Au	REE	Si Chem	P.Sect.	35mm Pho	Archive	Paleo					
D20-1	Bulk				✓								
D20-2													

Mariana Islands

Sample Description

Cruise I.D: ~~L5-83-HW~~ Sample I.D: Sta: D20-1 Location: NW Uracus Spot

Size: 10x9x5cm to 6x3.5x1.5cm Weight: 410 g 7 pieces

Depth: 1640-1510 m

Mn crust thickness:

Total: min: max: ave:

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: Smooth & granular to oddly-shaped flow-like pieces & one w/ large clast sticking out.

Internal structure:

layered: ✓

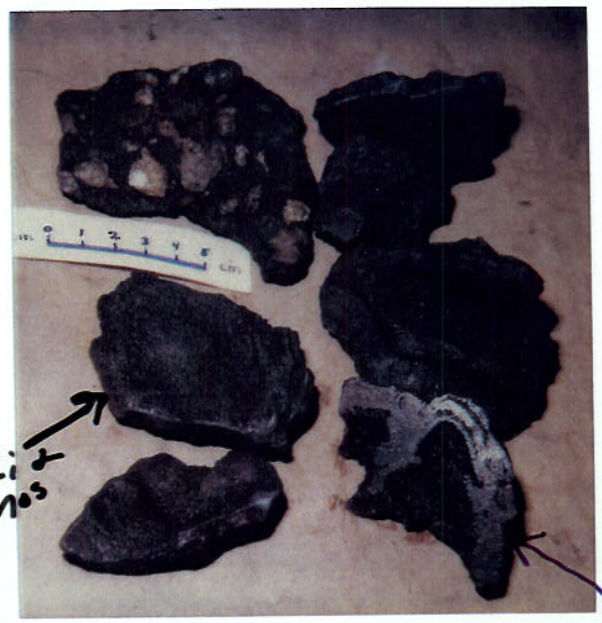
laminated:

massive:

porous:

dendritic:

other:



Mariana Islands

D20-1

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum: None

Rock type:

Description: One piece of Mn has subrounded basalt? & pumice? pebbles in it which are loosely packed & poorly sorted (1-25mm)

Mineralogy (XRD):

Analyses and subsamples:

All Chem samples from this piece

analysis:	analyst:
XRD: D20-1-I: bulk Mn	Charlaine
Chemistry-CC D20-1-A: bulk Mn	E. Brown Reston USGS
P.T.S.	Mann Petro.
D20-1-A Bulk Mn, Hg, 6.7gm; Taken from same sample as other chemistry (see above)	
Small pieces to Dr Kevin Shelton University Missouri	
Li Isotopes - 9gm	Yeh
Mossbauer - 10gm	V. Rusanov
Split Be & other isotopes	O'Nions

MARIANA ISLANDS
D20-1

Sample Description

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

Sample I.D: Sta: D20-2

Location: NW Uracus Cnk

Ave. Size: 5x4x.5cm Weight: 6.33 kg

4 med bags of small broken pieces of Mn

Mn crust thickness:

Total: min: max: ave:

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: Smooth to granular

Some are oddly shaped from currents (?)

Internal structure:

layered: ✓

laminated:

massive:

porous:

dendritic:

other:

MARIANAS ISLANDS
D20-2

Mineralogy (XRD): Strata Form Mn - Dense & Fibrous layers - alternating layers; lots of small chips some w/ pumice & volcaniclastic fragments

Associated alteration, phosphorite, or hydrothermal deposits:

Mn around fragments is submetallic and looks ponded, like Mercury

Substratum: NONE

Rock type:

Description:

95 mm-scale lamina → 2 massive layers & 1 columnar layer

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
XRD:	
D20-2-I: bulk Mn	
Small sample sent to Yeh for O_2 isotopes	
D20-2-2 O-isotopes	Yeh
D20-2-3 O-isotopes	Yeh
5% of laminated pieces	Linda Godfrey

D20-2

TT192

Small pieces of hydrothermal Mn