DATE: 15 August 1984 SAMPLE:
CRUISE ID: SO 33 44 DK box dredge
LOC: VI
AREA: D (N of SP Lee Guyot)

	time (GMT)	LAT (N)	LON (W)	water depth (m)	wire o
ON BOTTOM =	0053	9°13.512	164°46.791	~146=	170
OFF BOTTOM =	0149				147
mean dredge data (corrected):		9°13'32"	164°46'45"	1464 (801 fm)	

RECOVERY WEIGHT = total 30 kg crust 15 kg
15 phosphorite + breccia + basalt

CRUST THICKNESS = veneer to 4 cm Avg = 2.5 cm
2 generations

SUBSTRATE = Phosphorite, breccia, basalt

COMMENTS:

* 1 bio sample

44 DK

44 DK

Gesamtmenge: 60 kg
15% Kruste

Basaltisches Substrat, dicht massig, leicht alteriert, durchzogen mit Phosphorit
überzogen mit 2-4 cm Mn-Kruste Ø 2,5 cm
unter der Kruste meistens eine Lage Phosphorit
2 Krustengenerationen: 1.5 cm junge Kruste
1.5 cm alte Kruste

Oberfläche: knotig (0.5 cm Knotengröße)

44 DK 1 30 x 20 cm grobklastischer, brekziierter Basalt
durchzogen mit Phosphorit
3 cm Krustenauflage
2 Krustengenerationen 1.5 cm junge Kruste
1.5 cm alte "
Oberfläche: knotig

44 DK 2 s.o.

44 DK 3 s.o.

47 DK

Gesamt: 150 g
100 g Kruste
1 faustgroßer Alkali-Olivin-Basalt

Mn-Kruste isolierte, 1 cm mächtig, 2 Krustengenerationen, glatte Oberfläche, seitlich knotige Oberfläche

Sample Description

Cruise I.D: S033

Sample I.D: Sta: 440K

Location: SP Lee Sm Area
9°13'32" N
164°46'45" W
(-) 1464 m.

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):

Analyses and subsamples:

analysis:	analyst:

1

Rock Type: Olivine Basalt massive (AOB?)

Color: Brownish-black (5YR 2/1) to pale brown (5YR 5/2)

Texture: Microphyric, intersertal-intergranular (single euhedra)

Phenocrysts: Olivine, ± 20%, ± 0.5 mm dia.

Groundmass: Olivine, plagioclase?, clinopyroxene?, glass?, opaques? } not determined

Vesicles: % ±1%

Size: ~0.50 mm

Shape: irregular

filling: lined with zeolites(?)

Alteration: extensive - complete(?) (Oxidation, hydration, smectitization of glass?, iddingsitization of olivines, zeolitization of glass?)

Remarks: gravel to cobble-size, subrounded basalt clasts set in phosphorite cement; apparently the clasts have been water-worked to some extent prior to being deposited from a high-energy environment; the basalt was probably oxidized and altered largely before cooling

2

Volcanogenic Breccia

Grayish-red (5R 4/2)

Clastic

(Matrix:) Basaltic rock fragments, ± 75%

(Cement:) Phosphorite (francolite?) ± 25%

(Avge grain size:) ± 30 mm

(grain shape:) subrounded - angular

(Sorting:) very poorly-sorted

(porosity:) ± 5%

(permeability:) ± 5%

(Alteration:) intense: complete(?) phosphorization of calcareous ooze cement; subsequent permeation with hydrothermal fluids produced deposition of $Fe(OH)_3$(?), hematite(?) on all exposed surfaces and zeolitization

Remarks: large cobble-size clasts dislodged by dredge composed of gravel size to small cobble-size subrounded clasts cemented with phosphorite which, itself, bears a micro matrix of quartz and fossils. Silt-to-sand-size basaltic fragments vary in greatly in concentration from place to place. the phosphorite cement is colored pale reddish-brown and thus may be related to the same processes which left deposits of hematite(?) / $Fe(OH)_3$(?) on exposed clast surfaces. Ultimately serves as substrate for encrustation of thick, warty, knobby Mn-oxide (± 2 cm) on surfaces exposed to seawater.

Same unit

←→