DATE: 14 August 1984 SAMPLE:
CRUISE ID: SO 33 40 DK box dredge
LOC: VI
AREA: D (near SP Lee Guyot)

	time (GMT)	LAT (N)	LON (W)	water depth (m)	wire out
ON BOTTOM =	1019	9°9.962	164°47.863	~ 140	1609
OFF BOTTOM =	1214				1132
Mean dredge data (corrected):		9°11'31"	164°48'59"	1267 (692 fm)	

RECOVERY WEIGHT = total 40 kg crust 1 kg

CRUST THICKNESS = 0.2 – 3 cm Avg = 0.5 cm
1 generation

SUBSTRATE = Breccia

COMMENTS:

40 DK

40 DK

Gesamtmenge 40 kg
davon 5 kg Kruste

grobklastische Breccie, zementiert mit Mn-Präzipitat, Phosphorit und Carbonat, Bruchstücke bis 10 cm auflagernd 2-3 mm Mn-Kruste mit glatter Oberfläche

40 DK 1 basalt. Breccie 10 x 15 cm mit 3 mm Mn-Kruste

40 DK 2 2-3 cm isolierte Kruste 7 x 4 cm: Probe

Sample Description

Cruise I.D: 5033

Sample I.D: Sta: 40 DK

Location: S. P. Lee Jr area
9°11'3" N
164°48'59" W
(-)1267 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:

Rock Type: Basalt, Massive (AOB?)

Color: Medium gray (N5) (brownish tinge) to Dark gray (N3) (brownish tinge)

Texture: micro-Phyric, intersertal intergranular

Phenocrysts: Olivine - ± 20%, ± 0.75 mm dia. (microphenocrysts & glomerocrysts)
Augite(?) rare! (single black shiny pxt, ± 1 mm dia.)

Gr[illegible]: Plagioclase, Olivine, Clinopyroxene, Glass, Opaques (not determined)

Vesicles: absent

Alteration: moderate - extensive (oxidation, smectitization of glass component, iddingsitization of olivine component, hydration

Remarks: fine gravel to cobble-size angular-to-subangular fragments and clasts of basalt set in phosphorized(?), indurated calcareous foraminiferal(?) ooze cement; the absence of vesicles could indicate (and uniformity of grain size) a trap-rock origin for the basalt component of the volcanogenic breccia dredged from this site; iddingsitization likely took place before cooling; ubiquitous staining of the breccia with $Fe(OH)_3$ and Mn-oxide could indicate hydrothermal activity; manganese coating generally thin (± 2 mm), probably of hydrogenous origin by exposure of substrate to seawater.

Volcanogenic Breccia

very pale orange (10 YR 8/2) (Cement component) - where not stained with $Fe(OH)_3$(?)

Clastic

(Matrix:) Basaltic rock fragments, ± 70%

(Cement:) phosphorized(?), indurated calcareous (foraminiferal) ooze, ± 30%

(Average grain size:) extremely variable (± 5 mm dia avge, (fine sand - cobble-size)

("grain shape): angular - subrounded

(Sorting:) very poorly-sorted

(porosity:) ± 25%

(Permeability:) ± 15%

(Alteration:) phosphorization? of calcareous cement, penetration by Fe & Mn-bearing solutions leaving deposits of oxide-hydroxides smectitization of matrix material? Zeolitization(?) "

Remarks: very rough angular clasts probably dislodged by dredge, very great disparity in grain sizes, grain shapes, and sorting indicates rapid deposition from a high energy environment presence of subrounded grains indicates that some components were subjected to some reworking prior to final deposition and induration; serves as substrate for deposition of thin (± 2 mm) (usually much less!) layer of Mn-oxide on surfaces exposed to seawater