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
ON BOTTOM =	1019	9°9.962	164°47.863	~ 1410	160
OFF BOTTOM =	1214				113

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

1

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.)

Groundmass: 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 would 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.

2

Volcanogenic Breccia

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

Clastic

(Matrix:) Basaltic rock fragments, ± 70%

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

(Average grain size:) extremely variable (± 5 mm dia. av.) (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-hydroxide, 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 environ 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