DATE: 19 August 1984 SAMPLE:
CRUISE ID: SO 33 57 DK box dredge
LOC: VII
AREA: E

	time (GMT)	LAT (N)	LON (W)	water depth (m)	wire o
ON BOTTOM =	1835	15°35.66	169°12.16	1227	1696
OFF BOTTOM =	1858	15°36.16	169°12.03	1354	1858
ON Bottom:	1902	15°36.2	169°12.02	1381	1542
off Bottom:	1935	15°35'22"	169° 12'30"	1209 (661 fa)	

RECOVERY WEIGHT = total 120 kg crust 20 kg

CRUST THICKNESS = 4-8 cm Avg 4.5 cm
2 generations

SUBSTRATE = hyaloclastite

COMMENTS:

* microbio sample

* confidential

57 DK

Sample Description

Cruise I.D: So 33

Sample I.D: Sta: 57DK

Location: "Kelp" Sm Ridge
15°35'22" N
169°12'30" W
(-)1209 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:

Sample No.: 56 55 57 DK 1	56 55 57 DK 2	56 55 57 DK 3
Rock Type: Basalt Hyaloclastite	→ do →	→ do →
Color: Moderate brown (5YR 3/4) (cement)	Grayish-yellow (5Y 8/4) (matrix) Olive gray (5Y 3/2) (cement)	Light brown (5YR 5/6)
Texture: pyroclastic	→ do →	→ do →
Matrix: Basaltic glass shards ±70% " rock fragments ±5%	→ do, ±50%	basaltic glass shards ±65% basaltic rock fragments, ±3%
Cement: zeolites ±20% $Fe(OH)_3$ (?) ±5%	Phosphorite? zeolites? calcite } ±50% (intimate mixture)	zeolites, ±30%
~~Average~~ grain size: ±0.50 mm (range: fine sand-medium gravel)	±2 mm (fine sand — medium gravel)	±1 mm (fine sand - fine gravel)
Grain shape: angular-subrounded	angular — subangular	→ do →
Sorting: very poorly sorted	poorly sorted	moderately poorly sorted
Porosity: 80+%	±45%	70+%
Permeability: -do-	±5%	-do-
Alteration: complete (oxidation, zeolitization, hydration, zeolitization, smectitization)	→ do → (zeolitization, smectitization, phosphorization, hydration, carbonation)	→ do → (oxidation, zeolitization, hydration, ~~zeolitization~~, smectitization)
Remarks: Similar to material from 54, 55, 56 DK oxidized type), very much less well-cemented, consolidated than 56 DK 1 or 57 DK 3; penetrated by manganese and iron-oxide deposits - serves as substrate for ±4 cm-thick deposit of knobby, warty ferro-manganese oxide. (dendritic growth, one generation) * perhaps	→ do, to material from 56 DK 2 * Very like 56 DK 2	→ do, to material from 54, 55, 56 DK (oxidized)

all these materials are of the same origin?