5537 46 DS Station Dark 5-30-85

Pinger on wire 300m from dredge

	Time (GMT)	Lat N.	Lon W.	Water Depth	Wire Length	Tension
Begin operation:	18:16	15°34' 983"	169°12'788"	1605	0	0
Begin Lowering.	18:20	15°34' 986"	169°12'738"	1601	0	0.2
+1 Bottom Contact:	19:00	15°35' 04"	169°12'29"	1605	1625	1.2
Off bottom:	20:15	15°35'34"	169°11'50"	1263	1552	1.8
Begin heaving:	19:50	15°35'24"	169°11'76"	1311	1908	2.2.
End heaving:	20:50	15°35'27"	169°11'15"	1275	—	—
		15°35'55" N	169°12'47" (average of [illegible] bath.)			

Ship course: 060°

total time of bottom contact: 75

Recovery:
250 kg. total
no nodules
60 kg. crusts
220 kg. substrates

Total dredge recovery: 250 kg
no nodules
total crust recovery: 30 kg
total substrate recovery: 220 kg.
100% coverage w/ MnO_2
± 80% talus
± 20% outcrop

Botryoidal surfaces, some corroded, abraded
3 generations: lowest 2-3mm thick, densely dendritic; middle ~1 cm thick porous and dendritic, Fe-rich; upper fairly dense, dendritic ~0.5 cm thick; no phosphorite hiatus

Thickest crust - 5 cm
Thinnest " ± 3 mm } avge: ± 1 cm

photos ?
encrusting organisms: numerous tubular forams (~3%)
Substrates: AOB Hydroclastite, chalk

ock Type:	AOB Hyaloclastite (volcanogenic breccia)	→ -do-	→ Phosphorized chalk
lor:	Moderate brown (5YR4/4) (grains) to Dark gray (N3) (cement)	→ Light brown (5YR5/6) (large grains) to Pale greenish-yellow (10Y8/2) (cement)	→ Very pale yellowish-orange (10YR9/6) to Light gray (N7)
amework rains:	AOB Hyaloclasts ±35%, ±2mm; AOBclasts, ±35%, ±2mm	→ -do-, but ±55%, ±20%	→ Foraminiferal tests, ±80%; Ferromanganese micronodules(?) ±3%; Volcaniclastic sand, ±2%
ment:	dense Phosphorite, ±30%	→ ±25% Phillipsite(?)	→ ±10% phillipsite(?), ±5% Mn(OOH)? dendrites
erage grainsize:	±2mm	→ ±0.75 mm	→ ±0.25 mm
nge:	≤0.20 mm – ±3mm)	→ (range: ≤0.10 mm – ±4mm)	→ (range ±0.10 mm – ±0.50mm)
erage grain shape:	subrounded	→ subangular	→ round
rting:	moderately poor	→ very poor	→ rather good (cross-bedding?) has produced very segregated grain size distribution)
rosity:	moderately high	→ very high	→ extremely high
rmeability:	low	→ high	→ extremely high
lteration:	penultimate (Oxidation, Smectitization, Zeolitization(?), Phosphorization)	→ -do-, (subtract phosphorization)	→ Total (Phosphorization, Zeolitization[?]) (network of tiny, short, colorless, transparent capillary crystals observed in gray areas)
marks:	our sample is a subrounded, elongate, tabular talus clast completely enclosed in dendritic (internally), finely botryoidal (externally) ±1mm-thick ferromanganese encrustation. the substrate displays (as these hyaloclastites do) a remarkably uniform grain-size distribution. density is high because of penetration and infilling of pore and interstice spaces with apatite and phosphorized chalk. smectitization (argillation) of the matrix clasts is intense, many pieces developing desiccation cracks on drying in air.	our samples are large pebble-size fragments of what were likely subrounded cobble-size talus clasts completely enclosed in ferromanganese crust such as described on material from previous dredges from Keli Ridge. The substratum is very similar to 46 DS1, and may in fact be the same material, but with different cement and grainsize distribution (this material displays a greater volume and distribution of sub-millimeter size particles); also, these samples display faint bedding.	our sample is large cobble-size fragment of (probably) dislodged outcrop which bears on its (upper?) surface (very irregular topography) a carious thin (±1mm) flaky, porous dendritic (internally), corroded microbotryoidal (has a velvet-like appearance to the naked eye) ferromanganese deposit; the substratum perhaps represents a chalk layer which once capped a flat-lying deposit (hyaloclastite?...trace) as its lower(?) surface is quite flat with regard to the upper surface and appears to be a bedding plane (sample displays faint, undulating bedding – perhaps even cross-bedding); sample is curiously mottled – related to chemical alteration by fluid transfer(?) around and through worm(?) tubes that penetrate the chalk; alteration is striking peripheral to the tubes.