DATE: 19 August 1984 SAMPLE:
CRUISE ID: SO 33 52 GTV TV Grab
LOC: VII
AREA: E

	time (GMT)	LAT (N)	LON (W)	water depth (m)	wire on
ON BOTTOM =	0019				
OFF BOTTOM =	0614				

RECOVERY WEIGHT: 45 kg nodules

CRUST THICKNESS: 0.5 - 1 cm Avg = .8 cm
Classic knobby Mn nodules
2-3 cm x 3-5 cm

SUBSTRATE: nuclei of hyaloclastite + phosphate

COMMENTS: Sampled from terrace on side of seamount

(SP) ~~Souveneir~~ Souvenir Material!

* confidential

52 GTV

Sample Description

Cruise I.D: S033

Sample I.D: Sta: 52GTV

Location: Johnston Is. Summit area ("Keli Ridge")

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:

52GTV

Rock Type: Varied basaltic, ~~trachytic~~ hyaloclastite, brecciated, etc, volcanic rocks, phosphorite fragments serving as substrates (nuclei) for ferromanganese nodules

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

Texture: warty, knobby exteriors, like truffles, with finely nodose small-scale surface texture

Remarks: dredge recovery from plateau or ledge on seamount side; rock fragments (angular, blocky) generally the same size (pebbles) set in calcareous (foraminiferal) ooze, encrusted with ± 1cm thick layer of Mn-oxide.

So33 52GTV1 — Basalt hyaloclastite (AOB?)

So33 52GTV2 — Phosphorized (~60%) Foraminiferal chalk

53GTV1

Trachyte
Volcanogenic Breccia

Very pale orange (10YR 8/2) to moderate orange pink (10R 7/4) & Moderate greenish-yellow (10Y 7/4) (cement)

clastic

(Matrix) leucotrachyte clasts
(cement) phosphorized(?) foraminiferal chalk
(large grain size:) quite variable; (range: fine gravel to large pebble)
(" grain shape:) angular to subrounded
(sorting:) poorly sorted
porosity: ± 75%
permeability: ± 50%
Alteration: extensive: (matrix material has probably not been much altered since cementation into the breccia)
phosphorization(?) of chalk matrix
matrix: smectitization (nontronite), zeolitization, hydration,

Remarks: Clasts of varying size, probably dislodged by dredge, composed of altered leucotrachyte set in superficially indurated chalk (leucotrachyte is a subsilicic felsic effusive rock containing few, if any, dark minerals) the trachyte was probably subjected to hydrothermal alteration as it is suffused with zeolites and colored greenish-yellow by nontronite, perhaps it lay exposed to seawater on the bottom for a period of time, as each clast is rimmed with <1mm thickness of ferromanganese oxide, and often penetrated by todorokite(?) dendrites along fractures; perhaps these clasts represent the nuclei of first-stage manganese nodules in which growth was terminated by burial in calcareous ooze; phosphorization brings induration to the chalk cement (patchy distribution) the breccia serves as substrate for encrustation of thin (± 3mm) layer of [illegible]