Data again!

DATE: 24 August 1984 SAMPLE: 68 GTV
CRUISE ID: SO 33
LOC: VIII
AREA: F

	time (GMT)	LAT (N)	LON (W)	water depth (m)	wire c
ON BOTTOM =	0822	20°08.66	170°36.88	1108	
OFF BOTTOM = + SAMPLE ↗	1308	20°01.62	170°38.29	1913	

RECOVERY WEIGHT = total 4 kg crust <.5 kg

CRUST THICKNESS: veneer, some chips of crust < 1cm

SUBSTRATE: subangular pebbles + cobbles (up to 2-3cm) of fresh basalt, with little or no Mn-veneer. Also, chalk + phosphorite pebbles.

COMMENTS:

68 GTV

GTV-Protokoll

68 GTV GMT

Datum: 24.8.84
Beginn GTV: 0749
Ende GTV:
Gesamtzeit:

Protokoll: Hb. / Commeau / Bath

Midpac 2	Areal F	Lokation VIII	Station 68 GTV

Beginn Fieren:

Datum	GMT Uhrzeit h min	Long.	Lat.	WT		
		170 36.97	20 08.36	1135	m	nk
24.8.84	0757				m	k

Boden erreicht:

	Uhrzeit h min	Long.	Lat.	WT		
		170 36.88	20 08.66	1127	m	nk
	0822				m	k

Probennahme:

	Uhrzeit h min	Long.	Lat.	WT		
		170 38.29	20 01.62	1913	m	nk
	[illegible]				m	k
	h min				m	nk
					m	k
	h min				m	nk
					m	k

Beginn Hieven:

	Uhrzeit h min	Long.	Lat.	WT		
		170 38.29	20 01.62	1913	m	nk
	1308				m	k

Ende Hieven:

	Uhrzeit h min	Long.	Lat.	WT		
					m	nk
	1345				m	k

Gerät an Bord:

Uhrzeit h min

Probe	Menge (kg)	Beschreibung
1355		

Bemerkungen:

Station 68GTV
So 33
Area F Loc 8

ANSCHLUSSBLATT:

PROTOKOLL KAMERA-EINSATZ

Datum: 24.8.84 Kontin. Protokoll: Halbach/Commeau/Bath

Datum Zeit (von-bis)	Position Lat. Long.	Wassertiefe m (Korr.)	Seilänge m	V-Schiff	Kurs rw	Boden-photos I	Boden-photos II	Boden-photos Nr.	Film-typ	Blende	Kamera-Entfer.	Bemerkungen
0822	20 08.65 170 36.88	1108	1128									START TAPE thin Crust Field with Sedimen
0824	20 08.64 170 36.9	1109	1128									Crust Field (90%) with very thin sediment (0.02) cont
0826	20 08.6 170 36.9	1115	1128									Crust Field (95%) with sediment.
0828	20 08.6 170 36.9	1118	1110									Crust Field - fractured Boulder (95%) with Sedimen
0830	20 08.6 170 36.9	1131	1121									Crust Field (95%) Orthogo fractures with sediments
0833	20 08.6 170 37.0	1148	1132									Crust Field (95%) Random fractures with sediments
0835	20 08.5 170 37.0	1155	1142									Crust field (95%) fractu blocks - thin sediment on top in betw
0838	20 08.5 170 37.0	1161	1151									Crust field (99%) fractu blocks - thin sediments
0840	20 08.5 170 37.0	1164	1159									Crust field (90%) fract Rocks - sediments thicker curved ripp
0842	20 08.5 170 37.0	1167	1167									Crust field (94%) even distribution of thin sediment
0844	20 08.5 170 37.0	1171	1171									Crust field (99%) with small Rock fragments - thin sediments
0846	20 08.4 170 37.1	1171	1174									Crust field (100%) - Knobs sticking up through thin seds.
0848	20 08.4 170 37.1	1176	1178									Crust field (100%) - Sedimen another thicker curved top pol
0850	20 08.4 170 37.1	1174	1188									Crust field (95%) - Some fract. surfaces - thin sediments
0852	20 08.4 170 37.1	1171	1195									Crust field (95%) small Rock fracs - thin sediments
0854	20 08.35 170 37.17	1167	1202									Crust field (95%) small Rock fracs on top - sediments
0856	20 08.35 170 37.20	1177	1196									Crust field (90%) some fra blocks - sediments
0858	20 08.36 170 37.21	1177	1197									Crust field (95%) some sma blocks - sediments
0900	20 08.35 170 37.23	1168	1194									Crust field Knobby relief small fract blocks - thickened sed
0902	20 08.42 170 37.22	1167	1178									Crust field (95%) Knobby, small fractured rocks - sediments
0904	20 08.45 170 37.20	1168	1180									Crust field (95%) Knobby surfa sediments
09:04 to 09:15	Tried to obtain a grab sample - No Good!											

weitere Bemerkungen vgl. Anlageprotokoll

Anschlußblatt AMR - Dr.F 18.2.1979

Station 68GTV So 33 Area F, Loc 8

ANSCHLUSSBLATT:

PROTOKOLL KAMERA-EINSATZ

Kontin. Protokoll

Datum Zeit (von-bis)	Position Lat. Long.	Wassertiefe m (Korr.)	Seillänge m	V-Schiff	Kurs rw	Boden-photos I	Boden-photos II	Boden-photos Nr.	Film-typ	Blende	Kamera-Entfer.	Bemerkungen
0917	20 08.51 170 37.15	1177	1183									Crustfield (95%) Knobby, thin sediments. Startup profile again.
0919	20 08.50 170 37.17	1177	1176									Crustfield (95%) Knobby, small rocks. Fractured. Seds
0922	20 08.46 170 37.21	1183	1180									Crustfield (95%) Knobby t[illegible] small fract. rocks - seds
0924	20 08.44 170 37.24	1184	1184									Crustfield (95%) Knobby fract. rocks - seds. Ripple ma[illegible]
0926	20 08.41 170 37.27	1188	1195									Crustfield (95%) Knobby fractured - Seds -
0928	20 08.37 170 37.32	1184	1205									Crustfield (95%) fractu[illegible] rocks - seds.
0930	20 08.35 170 37.35	1187	1214									Crustfield (80%?) Knobby texture, Blocks - sedimen[illegible]
0932	20 08.32 170 37.38	1187	1217									Crustfield (80%?) cover by sediment - Ripple MAR
0934	20 08.30 170 37.41	1187	1221									Crustfield (95%?) covere[illegible] by sediments - Ripple MAR
0936	20 08.26 170 37.44	1193	1225									Crustfield (95%?) Cover by sediments - Ripple mark
0938	20 08.24 170 37.46	1194	1225									Crustfield (95%) fractu[illegible] sediments
0940	20 04.95 170 37.0[illegible]	1195	1220									Crustfield (95%) Knobby, sediment.
0943	20 04.91 170 37.00	1197	1203									Crustfield (95%?) Knobby texture, thick seds.
0945	20 04.90 170 37.01	1200	1201									Crustfield (95%?) Knobby thick seds. Some blocks
0947	20 04.87 170 37.02	1203	1201									Crustfield (95%) fractu[illegible] small rocks, blocks - seds
0949	20 04.85 170 37.05	1203	1208									Crustfield (95%) Knobb[illegible] fract. small rocks - sed s
0952	20 04.81 170 37.10	1201	1215									[illegible] Knobb[illegible] seds
0954	20 04.79 170 37.14	1207	1220									Crustfield (95%) [illegible] rock frags. - seds
0956	20 04.76 170 37.19	1217	1225									Crustfield (80%?) cover by sediments
0958	20 04.74 170 37.24	1214	1227									Crustfield (99%) Lar[illegible] Blocks & small frags
1000	20 04.73 170 37.27	1217	1229									Crustfield (95%) frac[illegible] rocks. seds.
1002	20 04.714 170 37.31	1220	1234									Crustfield (?%) cover by seds. blocks, ripple mark

Satellite Update?

weitere Bemerkungen vgl. Anlageprotokoll

Anschlußblatt AMR - Dr. 15.2.[illegible]

Station 68GTV
So 33
Aren 5, Loe 8

ANSCHLUSSBLATT:
PROTOKOLL KAMERA-EINSATZ

Kontin. Protokoll

Datum Zeit (von-bis)	Position Lat. Long.	Wassertiefe m (Korr.)	Seillänge m	V-Schiff	Kurs rw	Boden-photos I	Boden-photos II	Boden-photos Nr.	Film-typ	Blende	Kamera-Entfer.	Bemerkungen
1004	20 04.70 170 37.34	1221	1236									Crustfield (90%) knobby, blocks, small rock frags, se
1006	20 04.69 170 37.39	1227	1236									Crustfield (95%) fractur small blocks + seds
1008	20 04.67 170 37.42	1224	1239									Crustfield (95%) fractur small blocks + seds inbetwe
1010	20 04.66 170 37.46	1236	1243									Crustfield (?%) fractur pieces covered by sedimen
1012	20 04.64 170 37.50	1230	1245									Crustfield (90%) fractur blocks-seds
1014	20 04.63 170 37.53	1230	1250									Crustfield (80%?) covere by sediments, knobby
1016	20 04.62 170 37.58	1226	1254									Crustfield (80%) small fragments with seds.
1018	20 04.60 170 37.62	1230	1256									Sediments
1020	20 04.59 170 37.65	1232	1256									Sediments with encrus rock frags 10-40% crust cover
1022	20 04.57 170 37.71	1239	1254									Crust covered large rock + small frags 50-50 with se
1024	20 04.56 170 37.73	1237	1255									Sediments
1026	20 04.54 170 37.78	1252	1256									Crustfield (90%) large encrusted rock frags, Sed
1028	20 04.53 170 37.81	1249	1258									Crustfield (80%) fragme small blocks sedimen
1030	20 04.51 170 37.85	1243	1261									Sediments with occasion blocks
1032	20 04.5[illegible] 170 37.9[illegible]	1242	1262									Sediments with frag encrust. blocks 50-50
1034	20 04.4[illegible] 170 37.4[illegible]	1244	1267									Sediments
1036	20 04.4[illegible] 170 37.9[illegible]	1250	1273									Crustfield (80%) frag seds, ripple marks
1038	20 04.44 170 38.02	1249	1271									Crustfield (?%) covere by seds + ripple marks
1040	20 04.43 170 38.05	1249	1263									Fragments blocks with crust (60%) + seds, bi
1042	20 04.42 170 38.10	1262	1269									Bioturbated sediment with occasional block.
1044	20 04.40 170 38.15	1257	1272									50-50 Seds + frags encrusted
1046	20 04.39 170 38.18	1259	1273									50-50 Seds + encrust rock fragments

weitere Bemerkungen vgl. Anlageprotokoll

Anschlußblatt AMR - Dr.
15.2.197

Station 4

So 33 Area F Loc 8

ANSCHLUSSBLATT:

PROTOKOLL KAMERA-EINSATZ

68GTV

Kontin. Protokoll Haibach/Commeau/Bath

Datum Zeit (von-bis)	Position Lat. Long.	Wassertiefe m (Korr.)	Seilänge m	V-Schiff	Kurs rw	Boden-photos I	Boden-photos Nr.	Film-typ	Blende	Kamera-Entfer.	Bemerkungen
1048	20 04.37 170 38.23	1259	1279								Sediments - Looks lik crusts or crust frags underne
1050	20 04,36 170 38.27	1260	1280								Encrusted Rock frags (30%) with seds
1052	20 04,35 170 38,32	1262	1279								Encrusted rock frags (25%) with seds - crusts underneath
1054	20 04,32 170 38.37	1273	1282								Encrusted rock frags (30%) with Seds
1056	20 04.29 170 38.40	1270	1284								Crust field (60%), frags + blocks - sediments
1058	20 04.25 170 38.45	1269	1292								Crustfield (60%) frags + blocks - sediments
1100	20 04.21 170 38.49	1276	1299								Crust frags + blocks (20 in sediments
1102	20 04,19 170 38.52	1279	1301								Pillow Lava, good crust (50%) - sediments
1104	20 04.19 170 37.80	1279	1309								Sediments
1106	20 04.15 170 37.85	1285	1301								Sediments
1108	20 04.12 170 37.87	1293	1307								Crust frags, Pillow Lava (60%) with sediments
1110	20 04.07 170 37.89	1290	1309								Crust frags (30%) wit sediments
1112	20 04.02 170 37.93	1293	1321								Crust field (40%) frag blocks - seds.
1114	20 03.97 170 37.96	1298	1327								Crustfield (30%) frag + blocks - sediments
1116	20 03.93 170 37.98	1299	1330								Sediments, Large ripp marks - a few blocks
1118	20 03.92 170 37.99	1308	1324								Sediments, A few small fragments.
1120	20 03.87 170 38.02	1309	1340								Crusts (30%), Seds.
1122	20 03.82 170 38.05	1318	1346								Crusts (50%), Seds.
1124	20 03.77 170 38.08	1311	1350								Crustfield (50%), Seds
1126	20 03.73 170 38.10	1306	1334								Crustfield (95%) Knobb texture - Sediments
1127 1128	20 03.69 170 38.13	1315	1361								Crustfield (50%) frag + Blocks, Sediments
1129											START TAPE TW

Satellite Update?

End of Video Tape One

weitere Bemerkungen vgl. Anlageprotokoll

Anschlußblatt

AMR - Dr.
15.2.1972

Station 5

68GTV
So 33
Area F, Loc. 8

ANSCHLUSSBLATT:

PROTOKOLL KAMERA-EINSATZ

Kontin. Protokoll Halbach/Commeau/Bath

Datum Zeit (von-bis)	Position Lat. Long.	Wassertiefe m (Korr.)	Seitlänge m	V-Schiff	Kurs rw	Boden-photos I	Boden-photos Nr.	Film-typ	Blende	Kamera-Entfer.	Bemerkungen
1130	20 03.65 170 38.15	1312	1366								Crustfield (90%) frags. + Sediment
1132	20 03.61 170 38.17	1322	1369								Crustfield (70%) frags. + Sediment
1134	20 03.58 170 38.19	1332	1367								Crustfield (70%) frags + Sediment
1136	20 03.53 170 38.22	1338	1371								Crustfield (90%) + Sediment
1138	20 03.49 170 38.25	1338	1375								Crustfield (90%) + Sediment
1140	20 03.45 170 38.27	1345	1379								Crustfield (95%) + Knobby Sediments
1142	20 03.42 170 38.29	1346	1388								Sediments with crust frags (30% frags)
1144	20 03.36 170 38.32	1351	1395								Sed: With crust frags (40%)
1146	20 03.32 170 38.34	1358	1399								Crustfield (80%) frag + blocks - Sed.
1148	20 03.29 170 38.35	1359	1404								Crustfield (95%) Pillow Lava - Sediments
1150	20 03.24 170 38.38	1361	1416								Nodules in Sediment
1152	20 03.20 170 38.40	1361	1412								Crustfield (95%) Pillow Lava - Sediment
1154	20 03.15 170 38.42	1368	1419								Crustfield (90%) frag + blocks, Nodules - Seds.
1156	20 03.11 170 38.45	1371	1428								Crust frags, Pillow Lav (90%) - Sediments
1158	20 03.07 170 38.46	1372	1432								Encrusted Rock frags, Nodules - Sediments
1200	20 03.04 170 38.48	1374	1435								Nodules (50%) in Sed
1202	20 02.98 170 38.49	1378	1439								Nodules (25%) in Sed Crust beneath Seds
1204	20 02.93 170 38.49	1377	1444								" "
1206	20 02.88 170 38.49	1378	1447								" "
1208	20 02.82 170 38.48	1384	1449								Nodules + encrusted frags (40%) in Seds
1210	20 02.77 170 38.46	1391	1455								Sediment - a few Nodu or frags
1212	20 02.76 170 38.45	1392	1457								Nodules (25%) in Se

weitere Bemerkungen vgl. Anlageprotokoll

Anschlußblatt

AMR - Dr.Fe
15.2.1973

Station 6

68GTV
So 33
AreaF Loc8

ANSCHLUSSBLATT:

PROTOKOLL KAMERA-EINSATZ

Kontin. Protokoll

Datum Zeit (von-bis)	Position Lat. Long.	Wassertiefe m (Korr.)	Seillänge m	V-Schiff	Kurs rw	Boden-photos I	Boden-photos II	Boden-photos Nr.	Film-typ	Blende	Kamera-Entfer.	Bemerkungen
1214	20 02.72 170 38.44	1395	1460									Nodules + Rock Frags (25%) in Sediments
1216	20 02.67 170 38.41	1400	1456									Nodules (30%) in Seds Ripple Marks
1218	20 02.34 170 38.60	1404	1463									Encrusted Rock Frags + Blocks (30%) in Seds.
1220	20 02.28 170 38.59	1414	1482									Encrusted Rocks + Nodules (25%) in Seds.
1222	20 02.24 170 38.59	1418	1481									Pillow Lava, frags (25%) in Seds.
1224	20 02.21 170 38.56	1427	1476									Encrusted Rock Frags, Pillow Lava (30%) in Seds
1226	20 02.18 170 38.54	1539	1465									Encrusted Pillow Lava, frags (30%) in Seds
1228	20 02.15 170 38.52	1548	1469									" "
1230	20 02.11 170 38.51	1623	1479									Nodules + Encrusted Rock (50%) - in Sed.
1232	20 02.08 170 38.49	1677	1482									Encrusted Pillow Lava (40%) in Sed.
1234	20 02.06 170 38.45	1674	1477									Crusts (90%) Pillow Lava Seds
1236	20 02.06 170 38.44	1674	1503									Proceeding down cliff Face.
1238	20 02.04 170 38.42	1696	1570									Encrusted Basalt (95%) with a little Sediment
1240	20 02.03 170 38.40	1719	1610									Encrusted Basalt (90%) continuing down cliff Face
1242	20 02.00 170 38.37	1732	1633									" "
1244	20 01.99 170 38.35	1737	1656									Encrusted Basalt + Pillow Lava (90%) - Seds
1246	20 01.97 170 38.33	1750	1670									Crusts (90%) - Seds
1248	20 01.96 170 38.32	1773	1691									Encrusted Rock frags + Nodules (50%) in Seds
1250	20 01.92 170 38.27	1770	1719									" "
1252	20 01.90 170 38.24	1770	1730									Rock frags (30%) in Seds
1254	20 01.86 170 38.22	1790	1756									Sediments
1256	20 01.76 170 38.19	1834	1786									Sediments

weitere Bemerkungen vgl. Anlageprotokoll

Anschlußblatt

AMR - Dr.F
15.2.1973

Tape #2 Ended at 1600 → 1258 GMT

(over)

GMT	Lat/Lon	Depth(m)	Wire(m)	Comments
1300	20 01.69 170 38.21	1871	1852	Nodules(10%) in Sed.
1307	20 01.67 170 38.23	1881	1858	Sediment
1305	20 01.66 170 38.27	1913	1867	Embedded Blocks (20%) in Sed.
⇒ 1308	20 01.62 170 38.29	1913		Took Grab Sample

68 GTV Areal F

Gesamtmenge: 5 kg
davon 100 g Krusten

Kleine Gesteinsbruchstücke - Geröll mit hauchdünner Mn-Kruste, basaltische Breccie, carbonatisch zementiert im verfestigten Carbonatsediment, Basaltbruchstücke

68 GTV - 1 verschiedene Substratgesteine s.o

68 GTV - 2 isolierte Mn-Krustenstückchen cm groß
0,5 - 1 cm mächtig

Sample Description

Cruise I.D: 5033

Sample I.D: Sta: 68 GTV

Location: Mid Pac Mt (Area F)

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:

68GTV1

Rock Type: Alkalic Basalt Trachytic (?) Flow

Color: Dark gray (N3) (fresher) to light brown (5YR 5/6) (altered)

Texture: Aphyric-Subaphyric; subtrachytic

Phenocrysts: Plag. Sayidine(?) ±2%, ±1mm dia.
Hornblende? (cpx) ( ) ±1%, ±1mm dia.

Groundmass: Plag. Sayidine? Hornblende? cpx glass (?) Opaques (?) (not determined)

Vesicles: absent (dense)

Alteration: superficial to extensive (oxidation, hydration, smectitization)

Remarks: angular to rounded pebble-size clasts of mainly very altered basalt trachyte? flow with highly directed, layered texture; relative abundance of hornblende? (cpx) xenocrysts and phenocrysts, sometimes glomerophyric with the feldspar phenocrysts, dark color of the less altered rock;

rounding of the clasts suggests considerable reworking by water currents (wave-action?); altered condition of the rocks probably a result of subaerial weathering (more altered peripheries, less altered cores); serves as substrate for thin (<1mm thick) encrustations of Mn. oxide.

68GTV2

Alkali? Basaltic Trachytic? Hyaloclastite Breccia

Light Brown (5YR 5/6) (matrix) & Pale yellowish-brown (10YR 6/2) Clastic

(Matrix:) Basaltic Trachytic? glass fragments ± 25%
" rock fragments ± 25%

(Cement:) Calcite, Zeolites, ± 25%

(Open space; ± 25%)

(Average grain size:) ±2mm (extreme variability) (range; fine sand to coarse gravel)

Average grain shape: angular to subrounded

Sorting: very poorly sorted

Porosity: 80+%

Permeability: 60+%

Alteration: ± Complete (oxidation, hydration, zeolitization, smectitization)

Remarks: angular pebble-size clasts probably dislodged from outcrop by dredge; rounding of grains suggests a period of reworking prior to final deposition, cementation, and induration; zeolitization probably took place as a result of hydrothermal activity; no manganese oxide deposition, except dendritic, observed.

Sample Description

Cruise I.D: S033

Sample I.D: Sta: 68 GTV

Location: Mid-Pac. Mts (Area F)

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:

	68GTV3	68GTV4
Rock Type:	Phosphorite breccia	Chalk
Color:	Dark yellowish brown (10YR 4/2)	White (N9) to Very light gray (N8)
Texture:	Clastic	granular
Matrix:	basaltic volcanic rock clasts ± 30%, phosphorite clasts ± 20%	calcareous foraminifera
Cement:	phosphorite (francolite?) 50+%	calcite
Average grain size: (range:	± 10 mm fine gravel to pebble size)	± 0.5 mm
" grain shape:	angular to subrounded	rounded
Sorting:	very poorly-sorted	moderately well-sorted
porosity:	± 15%	30+%
Permeability:	± 5%	80+%
Alteration:	complete (phosphorization of original chalk cement, hydrothermal, ambient alteration of matrix components)	superficial (recrystallization of calcite in foraminiferal tests?)
Remarks:	angular to subangular pebble-size clasts composed mostly of yellowish-brown, very fine-grained dense phosphorite with incorporated smaller clasts of basaltic volcanic rocks and lighter-colored, fine-grained dense- to porous phosphorite; probably represents the most recent deposit recovered by the dredge at this site because it incorporates fragments of all other rocks recovered; serves as substrate for encrustation by thin (<1 mm dia) ferromanganese oxide.	Rare pebble-size angular clasts of bioturbated, burrowed foraminiferal chalk; very soft, scarcely (if at all) cemented; generally quite pure $CaCO_3$, not much (if any) clastic or chemical contaminants observed, ferromanganese deposits noted on insides of worm(?) tubes.