Received 12/3/84
#84010

CRUISE REPORT

1. Ship name	R/V Sonne Leg SO33
2. Cruise ID	MIDPAC 2
3. Parent organization	Technical University of Clausthal-Zellerfeld, Federal Republic of Germany
4. Funding Agency	Ministry of Technology, FRG; German National Science Foundation
5. Area of Operations	Cross Seamount Group, Kingman-Palmyra Reef, Line Islands, and Horizon Guyot
6. Cruise start Cruise end	Honolulu, July 29,1984 @ 1000h Honolulu, August 27,1984 @ 1400h
7. Chief scientist	Peter Halbach

8. Scientific party and affiliations

1. Peter Halbach	Chief scientist, Geochemist TUCLZ
2. Heinrich Gundlach	Geochemist BGR
3. Dieter Hansen	Geophysicist, Preussag
4. Hans Sulzbacher	Geophysicist, Preussag
5. Elmar Heidbuechel	Medical Doctor, Preussag
6. Doris Putaneus	Geochemist, TUCLZ
7. Horst Schuettenhelm	ET, Preussag
8. Manfred Spoetter	MT, Preussag
9. Axel Bath	Scientist, Preussag
10. Yogi Hoffman	ET, Preussag
11. Peter Otten	Mineralogist
12. Roger Schmidt-Grassegger	Petrologist, BGR
13. Carl Sattler	Research Asst., TUCLZ
14. Cornelia Kriete	Research Asst., TUCLZ
15. Andreas Janetzke	Data curator and Photographer, TUCLZ
16. Candice Lane	Geologist, USGS Woods Hole
17. Robert Commeau	Geologist, USGS Woods Hole
18. Rosemary Sliney	Geologist, USGS Menlo
19. Walter Friesen	Petrologist, USGS Menlo
20. Dongyu Xu	Scientist, P.R of China

9. Ships captain	Kapitan Papenhagen

10. Objectives	Study the distribution and composition of cobalt rich ferromanganese crusts in Mid-pac and central Pacific area; observe testing of new TV controlled hydraulic grab sampler.
11. Navigation	Magnavox dead reckoning w/ satellite updates.
12. Equipment employed	Large capacity box dredge Chainbag dredge Box core Spade core Photo sled w/Benthos camera and Hydro-products TV camera TV grab Multisonde hydro-sampler Seabeam VAX 11/780 computer 3.5 kHz Subbottom profiler Echo sounder Phillips XRF Siebtechnick rock grinder
13. Tabulated data	30 days at sea 6 sets of Seabeam tracks comprised of 72 individual profile lines 950 Km. of Seabeam tracks 73 sample stations occupied

MIDPAC 2 Seabeam Profiles

Area A

Line No.	Start		End	
3301	7/30	1523	7/30	1650
3302	7/30	1658	7/30	1803
3303	7/30	1814	7/30	1910
3304	7/30	1920	7/30	2010
3305	7/30	2025	7/30	2119
3306	7/30	2130	7/30	2223
3307	7/30	2234	7/30	2313
3308	7/31	0018	7/31	0126
3309	7/31	0156	7/31	0307
3310	7/31	1554	7/31	1718
3311	7/31	1727	7/31	1832
3312	7/31	1838	7/31	2002
3313	7/31	2026	7/31	2133

Area B

3315	8/03	1839	8/03	2010
3316	8/03	2033	8/03	2153
3317	8/03	2234	8/03	2319
3318	8/03	2323	8/04	0009
3319	8/04	0017	8/04	0045
3320	8/04	0048	8/04	0139
3321	8/04	0150	8/04	0243
3322	8/04	0254	8/04	0318
3323	8/04	0327	8/04	0505
3324	8/04	0505	8/04	0545
3325	8/04	0550	8/04	0735
3326	8/04	0747	8/04	1026
3327	8/04	1142	8/04	1331
3328	8/04	1336	8/04	1344
3329	8/04	1555	8/04	1703
3330	8/04	1715	8/04	1828
3331	8/04	1836	8/04	1938

Area C1

3332	8/08	0442	8/08	0450
3332	8/08	0454	8/08	0603
3333	8/08	0620	8/08	0741
3334	8/08	0751	8/08	0910
3335	8/08	0922	8/08	1113
3336	8/08	1123	8/08	1219
3337	8/08	1227	8/08	1323
3338	8/08	1336	8/08	1432

Area C1(con't)

Line No.	Start		End	
3339	8/08	1451	8/08	1535
3340	8/08	1547	8/08	1640
3341	8/08	1653	8/08	1747
3342	8/08	1756	8/08	1851
3343	8/08	1858	8/08	1953
3344	8/08	2002	8/08	2104
3345	8/08	2116	8/08	2211
3346	8/08	2213	8/08	2249

Area C2

3347	8/09	1849	8/09	2023
3348	8/09	2042	8/09	2234
3349	8/09	2256	8/10	0039
3350	8/10	0055	8/10	0239
3351	8/10	0254	8/10	0426
3352	8/10	0442	8/10	0611
3353	8/10	0624	8/10	0801
3354	8/10	0809	8/10	0935
3355	8/10	0940	8/10	1121
3356	8/11	2200	8/12	0121
3357	8/12	0126	8/12	0302
3358	8/12	0317	8/12	0415

Area D

3359	8/13	1412	8/13	1619
3360	8/13	1622	8/13	1708
3361	8/13	1709	8/13	1906
3362	8/16	0250	8/16	0500

Area E

3363	8/18	0120	8/18	0421
3364	8/18	0430	8/18	0619
3365	8/18	0634	8/18	0819
3366	8/18	0828	8/18	0857
3367	8/18	0906	8/18	1039
3368	8/18	1056	8/18	1252
3369	8/18	1313	8/18	1456
3370	8/18	1516	8/18	1649
3371	8/18	1707	8/18	1850
3372	8/18	1900	8/18	2056

MIDPAC 2 SAMPLE STATIONS

Station	Latitude	Longitude	Depth in mm.	Recovery in kg.	Crust Thickness in mm.
AREA A 7/30/84 to 8/01/84					
1DK	18.6994	-158.3801	3261	150	5
2DK	18.6426	-158.2948	1924	500	50
3DK	18.6369	-158.3128	2002	400	30
4GTV	18.6595	-158.3424	2439	-	-
5MS	18.5842	-158.3516	3541	-	-
6DK	18.6830	-158.3141	1047	300	30
AREA B 8/03/84 to 8/07/84					
7FE	9.6398	-162.1855	3322	-	30
8DK	9.6939	-162.1784	1993	120	7
9DK	9.6959	-162.1810	1927	350	10
10GTV	9.7019	-162.1948	2231	-	-
11MS	9.7599	-162.1327	2129	-	-
12KH	9.7576	-162.1465	1226	-	-
13MS	9.6937	-162.2084	2929	-	-
14KH	9.6933	-162.2030	2773	-	-
15DK	9.7163	-162.1671	1602	35	-
16FE	9.6811	-162.1816	2650	-	-
17DK	9.6815	-162.1843	2706	100	-
18DK	9.7053	-162.1840	1940	50	-
19GTV	9.7241	-162.1729	1623	-	-
20MS	9.6691	-162.2016	3356	-	-
21FE	9.6704	-162.1703	2696	-	-
AREA C1,C2 8/08/84 to 8/12/84					
22KH	6.5709	-162.4413	3710	20	-
23FE	6.5413	-162.4419	3474	-	-
24DS	6.5155	-162.4084	2349	1	-
25DS	6.5029	-162.3704	2572	70	5
26MS	6.3152	-162.7902	861	-	-
27GTV/1	6.3114	-162.7757	861	-	-
27GTV/2	6.2807	-162.7763	893	-	-
27GTV/3	6.2685	-162.7730	1090	-	-
28MS	6.1737	-162.8645	3778	-	-
29DK	6.2710	-162.8755	2957	25	2
30DK	6.2737	-162.8862	2217	50	2
31DK	6.2810	-162.8778	1376	50	-

AREA C1,C2(con't)

Station	Latitude	Longitude	Depth in m.	Recovery in kg.	Crust Thickness in mm.
32KH	6.2158	-162.7550	1451	-	-
33DS	6.2627	-162.9633	2887	50	2
34DK	6.2898	-162.9699	2486	25	40

AREA D
8/13/84 to
8/16/84

37DK	9.1639	-164.8424	2291	20	2
38DK	9.1719	-164.8259	1853	100	-
39DK	9.1790	-164.8299	1263	10	-
40DK	9.1660	-164.7977	1427	11	-
41DK	9.1398	-164.7894	2638	10	-
42DK	9.1696	-164.7777	1872	225	-
43DK	9.1936	-164.7698	1677	1	-
44DK	9.2252	-164.7798	1456	30	-
45GTV	9.1592	-164.7582	2294	100	-
48DK	9.2413	-164.8407	1350	250	-
49DK	9.2002	-164.9289	1400	20	10

AREA E
8/18/84 to
8/23/84

52GTV/1	15.5948	-169.2044	1607	45	-
53GTV/1	15.5375	-169.2338	-	50	1
54GTV/1	15.5912	-169.2084	-	350	20
55DK	15.5824	-169.2082	1680	3	-
56DK	15.5913	-169.2024	1335	10	60
57DK	15.5908	-169.2080	1227	50	-
58DK	15.5904	-169.2073	-	100	40
60GK	15.5883	-169.2182	1585	-	-
61KH/1	15.5683	-169.2150	-	-	-
61KH/2	15.5867	-169.2233	-	-	-
62DK	15.5383	-162.2283	1552	40	30
63DK	15.4925	-169.2483	2929	200	15
64DK	15.4925	-169.2360	2468	100	3

AREA F
8/24/84 to
8/26/84

69DK	20.1333	-170.6808	1476	21	-
71DK	20.2177	-170.6003	2220	-	-
72DK	20.2177	-170.5892	1480	250	25
73GTV	20.2120	-170.5878	1313	-	-

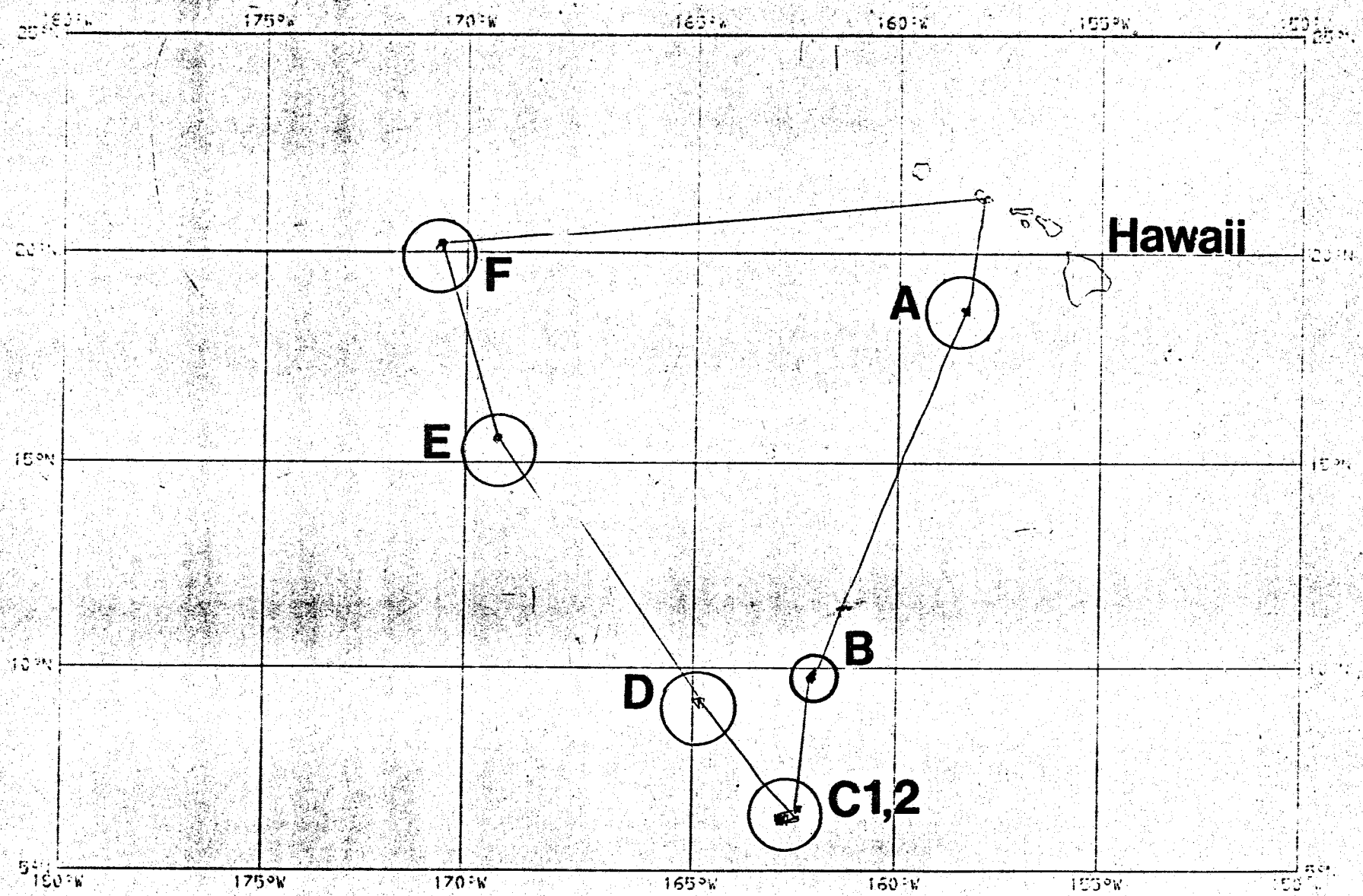
Remarks:

		Below
DK=	Box Dredge	30 Sta Smps
DS=	Chainbag Dredge	2 "
FE=	Photo Sled	
MS=	CTD (Multisonde)	
GTV=	TV Grab	7 "
KH=	Box Core	
GK=	Spade Core	1 "

Station E was occupied twice. We had to leave the area due to a hurricane forecast and returned two days later. Johnston Island was in fact evacuated. Both B.Commeau and I have signed an affidavit stating that we wouldn't divulge the coordinates of AREA E and that they would remain confidential until they were published by the Germans.

On board ship, we subsampled 82 ground crusts. These were analyzed on the ship XRF unit by D. Putaneus and P. Otten, J.Commeau is analyzing them in Woods Hole and they are also being sent to ALABS in Wash. DC for furthur analysis. We also have representative samples for most stations for SEM analysis, water content measurements, dating, and extensive chemical analyses. They are listed below:

Sample Number	Number of Raw Samples	Sample Number	Number of Raw Samples
1DK	4	53GTV	2
2DK	3	54GTV	3
3DK	5	55DK	1
6DK	4	56DK	1
8DK	8	57DK	2
9DK	6	58DK	2
15DK	2	62DK	1
17DK	3	63DK	7
18DK	3	64DK	1
25DS	2	65GTV	1
29DK	1	70GTV	1
30DK	4	71DK	7
31DK	3	72DK	6
33DS	2	73GTV	1
34DK	2		
37DK	1		
38DK	3		
39DK	1		
41DK	1		
42DK	1		
44DK	3		
45GTV/1	1		
48DK	4		
49DK	2		
50GK	3		
52GTV/1	3		



"MIDPAC 2" CRUISE TRACK 7/29/84 - 8/27/84
CREATED 10/19/84 BY C.M. LANE