APPENDIX II. ORGANIC CARBON AND CALCIUM CARBONATE ANALYSES, DEEP SEA DRILLING PROJECT LEG 93, NORTH AMERICAN CONTINENTAL RISE[1]

Philip A. Meyers, Oceanography Program, Department of Atmospheric & Oceanic Science, University of Michigan[2]

A large number of samples of nonlithified and lithified sediments from Leg 93 sites were analyzed for their contents of organic carbon and calcium carbonate. An average of two samples was selected from every core for carbonate determination; organic carbon was measured in most of these samples. Nearly all of these analyses were performed on board *Glomar Challenger* for samples from Sites 603 and 604. Site 605 samples, plus some of the deeper samples from Hole 603B, were analyzed at the University of Michigan. The procedures used in both cases were virtually the same, and their results compared well.

Organic carbon analyses were done using a Hewlett-Packard 185-B CHN Analyzer. Portions of samples selected for calcium carbonate determinations were treated with dilute HCl to remove carbonate, washed with deionized water, and dried at 110°C. A Cahn Electrobalance was used to weight 20-mg samples of sediment for CHN analysis. Samples were combusted at 1050°C in the presence of an oxidant, and the volumes of the evolved gases determined as measures of the C, H, and N contents of sediment organic matter. Areas of gas peaks were determined and compared to those of rock standards of known carbon and nitrogen contents. These values were used to standardize instrument response so that C/N atomic ratios could be reported. Organic carbon concentrations were calculated on the basis of sediment dry weight. Hydrogen elemental analysis with the procedure used is untrustworthy because of the variable amounts of clay minerals and their hydrates, hence hydrogen values are not reported for samples analyzed by this method.

Concentrations of carbonate minerals were determined by the "Karbonate Bombe" procedure of Müller and Gastner (1971) as improved by Dunn (1980). Dried samples of sediment and rock were ground, and approximately 1 g was treated with concentrated HCl in a closed cylinder. The resulting increase in pressure due to formation of CO_2 gas was proportional to the concentration of carbonate. In this appendix, all carbonate minerals are assumed to exist as calcium carbonate.

ACKNOWLEDGMENTS

I thank Brad Julson and Keith Dunham for their participation in making the measurements described in this appendix. I appreciate the careful reading of the tabulated data by Jim Ogg, who brought several errors to my attention. I am grateful to the National Science Foundation for its support of the Deep Sea Drilling Project and for providing the opportunity for me to participate in Leg 93.

REFERENCES

Dunn, D. A., 1980. Revised techniques for quantitative calcium carbonate analysis using the "Karbonate Bombe," and comparisons to other quantitative carbonate analysis methods. *J. Sed. Petrol.*, 50:631–637.

Müller, G., and Gastner, M., 1971. The "Karbonate-Bombe," a simple device for determination of the carbonate content in sediments, soils and other materials. *Neues Jahrb. Mineral. Monatsh.*, 10: 466–469.

Core-Section, interval in cm	Sub-bottom depth (m)	$CaCO_3$[a] (%)	C_{org} (%)	C/N
Hole 603				
1-1, 80–83	0.8	21	0.29	10.5
1-6, 80–83	8.3	20	0.28	10.9
2-3, 83–85	12.8	13	0.42	10.3
2-5, 32–35	15.3	9	0.56	11.1
3-1, 17–19	84.0	17	0.44	11.4
4-1, 80–82	123.0	11	0.23	8.2
4-2, 80–82	124.5	18	0.43	10.2
4-3, 80–82	126.0	13	0.33	9.1
4-4, 80–82	127.5	9	0.38	9.0
4-5, 80–82	129.0	17	0.37	10.4
4-6, 70–72	130.4	7	0.57	10.7
5-1, 84–87	132.6	3	0.32	8.9
5-2, 80–83	134.1	16	0.26	8.4
5-3, 80–83	135.6	15	0.35	9.5
5-4, 80–83	137.1	21	0.37	9.8
7-1, 80–83	180.6	<1	0.32	8.8
7-2, 80–83	182.1	<1	0.47	10.2
7-3, 80–83	183.6	<1	0.29	8.6
7-5, 80–83	186.6	3	0.44	9.6
7-6, 80–83	188.1	3	0.49	9.7
7-7, 80–83	189.6	8	0.40	8.2
8-1, 80–83	199.8	13	0.68	8.8
8-2, 60–63	201.1	20	0.39	9.3
8-3, 45–48	202.5	7	0.43	9.6
9-1, 80–83	209.4	16	0.36	9.2
9-2, 80–83	210.9	6	0.53	9.0
9-3, 80–83	212.4	8	0.39	8.3
9-4, 80–83	213.9	19	0.34	8.6
10-1, 80–83	219.0	<1	0.49	9.0
10-2, 80–83	220.5	10	0.32	8.7
10-3, 80–83	222.0	7	0.49	10.2
10-4, 80–83	223.5	4	0.44	9.0
10-5, 80–83	225.0	4	—	—
10-6, 80–83	226.5	4	0.38	8.8
11-1, 80–83	228.6	9	0.50	10.1
11-2, 35–38	229.7	7	0.40	9.3

[1] van Hinte, J. E., Wise, S. W., Jr., et al., *Init. Repts. DSDP*, 93: Washington (U.S. Govt. Printing Office).

[2] Address: Oceanography Program, Dept. of Atmospheric & Oceanic Science, University of Michigan, 2455 Hayward Ave., Ann Arbor, MI 48109-2143.

Core-Section, interval in cm	Sub-bottom depth (m)	$CaCO_3$[a] (%)	C_{org} (%)	C/N
Hole 603 (Cont.)				
11-3, 80-83	231.6	<1	0.68	11.7
11-4, 80-83	233.1	4	0.39	8.7
11-5, 80-83	234.6	9	0.32	7.9
11-6, 32-35	235.6	5	0.33	7.9
12-1, 80-83	267.1	<1	0.30	7.7
12-2, 80-83	268.6	<1	0.36	8.9
12-3, 80-83	270.1	2	0.43	8.8
13-1, 80-83	276.6	7	0.37	8.6
13-2, 80-83	278.1	6	0.29	8.0
13-3, 80-83	279.6	15	0.27	7.5
13-4, 80-83	281.1	<1	0.31	7.8
13-5, 80-83	282.6	8	0.26	7.4
13-6, 80-83	284.1	5	0.24	7.0
14-1, 79-82	315.0	10	0.45	9.9
14-2, 80-83	316.5	11	0.23	7.9
14-3, 79-82	318.0	5	0.22	7.2
14-4, 79-82	319.5	11	0.37	9.0
14-5, 11-14	320.3	13	—	—
15-1, 78-81	324.6	16	0.26	7.7
15-2, 78-81	326.1	<1	0.32	7.9
15-3, 78-81	327.6	1	0.37	8.2
15-4, 78-81	329.1	3	0.35	8.4
15-5, 78-81	330.6	1	0.34	8.2
15-6, 78-81	332.1	<1	0.35	7.9
16-1, 80-83	363.0	17	0.27	8.0
16-2, 80-83	364.5	18	0.23	7.8
16-3, 80-83	366.0	1	0.40	7.8
16-4, 80-83	367.5	<1	0.23	7.0
17-1, 10-13	371.9	6	0.35	8.3
17-2, 55-58	373.9	—	—	—
17-5, 15-18	378.0	5	0.32	8.0
18-1, 90-93	411.1	<1	0.42	7.9
19-1, 80-83	420.6	3	0.33	6.4
19-3, 80-83	423.6	4	0.45	8.4
19-5, 80-83	426.6	<1	0.30	8.0
20-1, 80-83	449.4	<1	0.18	5.4
20-2, 80-83	450.9	<1	0.35	7.4
20-3, 80-83	452.4	<1	0.30	6.8
20-4, 80-83	453.9	<1	0.35	7.2
20-5, 20-23	454.8	<1	0.18	6.7
21-1, 76-78	459.0	<1	0.29	6.7
21-2, 76-78	460.5	<1	0.32	7.6
21-3, 77-81	442.0	<1	—	—
22-1, 80-83	468.6	3	—	—
22-2, 80-83	470.1	<1	0.26	6.3
22-3, 80-83	471.6	<1	—	—
22-4, 84-87	473.1	—	—	—
22-5, 80-83	474.6	3	0.35	8.9
22-6, 79-80	476.1	1	—	—
23-1, 82-83	407.0	—	—	—
23-2, 83-84	508.5	<1	0.50	9.7
23-3, 89-90	510.1	<1	—	—
23-4, 84-85	511.5	5	—	—
23-5, 20-21	512.4	4	—	—
24-1, 80-81	516.6	3	—	—
24-2, 84-85	518.1	<1	0.42	9.3
24-3, 81-82	519.6	2	—	—
24-4, 81-82	521.1	1	—	—
24-5, 80-81	522.6	4	0.38	9.4
24-6, 81-82	524.1	—	—	—
25-1, 60-61	545.2	2	—	—
25-2, 80-82	546.9	<1	0.33	8.3
25-3, 84-86	548.4	<1	—	—
25-4, 83-85	549.9	6	—	—
25-5, 80-82	551.4	3	0.47	9.9
25-6, 80-82	552.9	2	—	—
25,CC (33-35)	554.0	3	—	—
26-1, 130-132	555.5	<1	—	—
26-2, 130-132	557.0	<1	0.29	7.5
26-3, 130-132	558.5	<1	—	—
26-4, 130-132	560.0	2	—	—
26-5, 130-132	561.5	<1	0.44	10.0
26-6, 65-57	562.4	<1	—	—
27,CC (20-21)	564.0	2	—	—
28-1, 33-35	564.1	5	—	—
29-1, 135-137	574.8	3	—	—
29-2, 135-137	576.3	2	0.44	9.2
29-3, 135-137	577.8	1	—	—
29-4, 135-137	479.3	4	0.35	6.9
30-1, 98-100	589.0	1	—	—
30-2, 77-78	585.3	<1	0.24	7.8
30-3, 77-78	586.8	<1	—	—
30-4, 77-78	588.3	<1	—	—
30-5, 12-13	589.1	1	0.22	7.1
31-1, 71-72	593.3	2	—	—
31-2, 119-120	595.3	2	0.25	7.9
31-3, 71-72	596.3	2	—	—
32-1, 58-59	602.8	<1	—	—
32-2, 58-59	604.3	<1	0.13	6.3
33-1, 70-71	612.5	<1	—	—
33-2, 70-71	614.0	<1	0.13	6.2
33-3, 67-68	615.5	2	—	—
33-4, 67-68	617.0	<1	—	—
33-5, 75-76	618.6	<1	0.22	7.0
33-6, 28-29	619.6	6	—	—
34-1, 81-82	622.2	2	—	—
34-3, 80-81	625.2	2	—	—
34-4, 77-79	626.7	6	—	—
35-1, 79-80	631.8	3	—	—
35-2, 80-81	633.3	<1	0.28	8.5
35-3, 81-82	634.8	2	—	—
35-4, 77-78	636.3	6	—	—
35-5, 77-78	637.8	5	0.21	6.8
35-6, 75-76	639.3	<1	—	—
36-1, 77-78	641.4	13	—	—
36-1, 73-74	641.3	<1	—	—
36-2, 81-82	642.9	1	0.25	6.7
36-3, 73-74	644.3	12	—	—
36-4, 75-76	645.8	2	—	—
37-1, 66-67	650.9	<1	—	—
37-2, 55-56	652.3	3	0.23	7.1
37-2, 80-82	652.6	6	0.57	10.3
37-3, 15-16	653.3	<1	—	—
38-1, 80-82	660.6	<1	—	—
38-2, 80-82	662.1	3	0.26	6.8
38-3, 14-15	662.9	2	—	—
39-1, 70-71	670.1	3	—	—
39-2, 51-52	671.4	<1	0.14	5.6
40-1, 80-81	679.8	<1	—	—
40-2, 79-80	681.3	<1	0.18	5.8
40-3, 75-76	682.8	<1	—	—
40-4, 79-80	684.3	4	—	—
40-5, 82-83	685.8	3	0.14	5.0
40-6, 80-81	687.3	1	—	—
41-1, 80-81	689.4	3	—	—
41-2, 80-81	690.9	3	0.08	4.5
41-3, 80-81	692.4	6	—	—
41-4, 80-81	693.4	6	—	—
41-5, 80-81	695.4	5	0.26	7.6
41-6, 80-81	696.9	2	—	—
42-1, 74-75	598.9	5	—	—
42-2, 74-75	700.4	4	0.26	8.2
42-3, 74-75	701.9	4	—	—
42-4, 74-75	703.4	4	—	—
43-1, 70-72	708.5	4	—	—
44-1, 55-56	718.0	2	—	—
44-2, 55-56	719.5	3	0.36	9.5
44-3, 55-56	721.0	3	—	—
44-4, 55-56	722.5	2	—	—
45-1, 70-71	727.7	3	—	—
45-2, 70-71	729.2	3	0.59	10.3
45-3, 70-71	730.7	<1	—	—
45-4, 70-71	732.2	2	—	—
45-5, 70-71	733.7	3	0.38	9.7
46-1, 80-81	737.4	6	—	—
46-2, 59	738.7	73	0.45	15.8
46-2, 90-91	739.0	3	0.31	9.0
46-3, 80-81	740.4	<1	—	—
46-4, 78-80	741.9	3	—	—
46,CC (10-11)	742.7	11	—	—
47-1, 70-71	746.9	4	—	—
48-1, 74-75	756.5	3	—	—
49-1, 80-81	756.2	6	—	—
49-2, 80-81	767.7	4	0.21	6.7

Core-Section, interval in cm	Sub-bottom depth (m)	$CaCO_3$[a] (%)	C_{org} (%)	C/N
Hole 603 (Cont.)				
49-3, 58-59	769.0	4	—	—
50-1, 76-77	775.8	4	—	—
50-2, 82-83	777.3	4	0.60	9.7
50-3, 82-83	778.8	3	—	—
50-4, 86-87	780.3	2	—	—
51-1, 48-49	785.1	3	—	—
51-2, 48-49	786.6	3	0.67	11.3
52-2, 80-81	796.5	4	0.44	7.8
52-3, 80-81	798.0	7	—	—
52-4, 80-81	799.5	<1	—	—
52-5, 10-11	800.3	4	0.55	10.9
53-1, 70-71	804.5	2	—	—
Hole 603B				
5-2, 75-77	823.7	7	—	—
5-5, 75-77	828.2	9	0.58	11.3
6-2, 75-77	833.3	8	0.33	9.4
6-5, 20-22	836.2	10	0.42	10.4
7-2, 70-72	852.4	8	0.24	8.3
7-5, 70-72	856.9	9	0.39	9.9
8-2, 80-81	871.7	9	0.34	9.4
8-5, 82-84	876.2	10	0.55	11.8
9-1, 20-22	892.2	8	0.52	12.3
10-2, 82-84	900.5	9	0.31	9.5
10-5, 77-79	905.0	8	0.35	9.8
11-2, 78-80	910.1	10	0.37	10.7
11-5 81-82	914.1	9	0.24	8.6
12-2, 80-82	929.3	8	0.14	8.4
12-5, 80-82	933.8	8	0.29	10.0
13-2, 85-87	939.0	7	0.20	9.8
14-1, 80-81	947.0	0	0.01	6.8
14-2, 80-81	948.5	0	0.01	6.5
14-3, 10-11	949.3	2	0.01	3.4
14-3, 80-81	950.0	0	0.01	2.3
14-4, 80-81	951.5	6	0.01	1.1
14-5, 80-81	953.0	<1	0.01	1.2
14-6, 80-81	954.5	<1	0.01	1.6
15-2, 81-82	958.1	<1	0.01	1.8
15-5, 66-67	962.5	<1	0.01	1.7
16-2, 70-72	967.6	<1	0.01	4.2
16-5, 70-22	972.1	<1	0.01	5.3
17-2, 70-72	977.3	<1	0.01	4.6
17-5, 53-55	982.6	<1	0.01	2.5
18-2, 75-77	986.9	<1	0.01	4.1
19-2, 105-106	994.2	<1	0.01	2.5
20-2, 78-79	1004.9	<1	0.01	3.8
21-2, 75-77	1013.9	<1	0.01	3.8
21-5, 77-79	1018.4	<1	0.01	3.7
22-2, 54-55	1022.6	<1	0.01	4.0
22-2, 101-103	1023.1	<1	0.01	2.4
22-3, 47-48	1024.1	1	0.01	2.5
22-3, 90-91	1024.5	1	0.01	5.6
23-2, 13-15	1031.2	<1	0.01	2.4
25-2, 70-71	1049.8	1	0.01	7.1
26-2, 60-62	1058.7	1	0.01	3.7
26-4, 26-27	1061.4	9	0.01	13.6
26-4, 28-29	1061.4	6	1.95	35.6
28-2, 81-82	1075.5	2	0.01	2.9
28-4, 76-78	1078.5	3	0.01	5.8
29-1, 70-72	1081.5	2	1.34	5.8
29-2, 70-72	1083.0	<1	0.01	3.5
29-5, 25-27	1087.1	<1	0.01	3.3
30-2, 68-70	1092.6	4	0.01	3.1
31-2, 81-83	1102.3	2	0.01	3.1
31-5, 38-40	1106.4	<1	0.01	3.6
32-2, 33-34	1111.3	2	0.01	4.0
33-2, 26-28	1120.3	1	6.03	36.4
33-3, 10-11	1121.6	2	4.14	39.9
34-1, 72-74	1128.2	<1	11.59	43.1
34-1, 51-53	1128.0	<1	10.54	44.1
34-2, 28-80	1129.8	1	6.86	40.7
34-2, 135-137	1130.4	<1	13.59	42.5
34-5, 78-80	1134.3	<1	0.93	30.3
34-4, 76-78	1132.8	<1	1.35	25.2
35-1, 25-26	1136.8	<1	0.92	22.9
35-1, 70-72	1137.2	<1	4.10	32.1

Core-Section, interval in cm	Sub-bottom depth (m)	$CaCO_3$[a] (%)	C_{org} (%)	C/N
Hole 603B (Cont.)				
35-2, 70-72	1138.7	1	0.66	31.0
35-2, 19-20	1138.2	2	4.16	34.8
35-3, 65-67	1140.2	<1	1.96	26.5
35-3, 132-135	1140.8	<1	0.89	31.9
35-2, 147-148	1139.5	<1	0.01	10.5
35-4, 55-57	1141.6	1	5.50	36.1
36-1, 71-72	1146.2	<1	1.45	29.2
36-2, 71-72	1147.7	1	0.82	23.0
37-1, 70-72	1155.2	7	1.13	28.3
37-2, 71-72	1156.7	1	0.21	19.8
37-3, 70-72	1158.2	1	1.53	27.9
37-5, 70-72	1161.2	1	0.28	24.0
38-1, 50-52	1164.0	<1	0.01	10.5
38-2, 52-54	1165.5	1	0.12	17.4
38-3, 50-52	1167.0	<1	0.01	5.9
38-4, 50-52	1168.5	1	0.01	4.3
38-5, 52-54	1170.0	1	0.12	15.4
39-2, 80-82	1174.8	<1	0.01	7.3
39-5, 77-79	1179.3	1	0.01	7.8
40-2, 26-29	1183.3	2	0.01	7.3
40-5, 80-82	1183.4	2	1.37	38.5
40-5, 80-82	1188.3	2	0.08	14.0
42-2, 80-82	1199.5	1	2.45	34.9
42-3, 42-45	1200.6	2	0.74	25.1
42-5, 85-87	1204.1	1	0.01	18.3
43-5, 82-84	1207.6	<1	0.01	4.8
43-5, 79-81	1207.6	<1	0.01	7.3
44-1, 78-80	1215.2	15	2.13	32.5
44-2, 79-81	1217.7	13	2.15	33.5
44-3, 80-82	1218.2	3	2.00	38.3
44-4, 81-82	1219.7	13	1.90	35.8
45-1, 70-71	1224.7	4	0.33	38.9
46-2, 70-71	1235.8	6	0.01	29.5
47-1, 60-61	1243.8	2	0.01	28.6
48-2, 70-71	1255.0	4	0.22	37.0
49-1, 139-141	1263.8	9	1.52	32.2
49-2, 72-74	1264.6	40	1.42	38.9
49-3, 70-72	1266.1	32	0.95	31.9
49-4, 60-63	1267.5	56	2.57	27.7
49-5, 32-34	1268.7	78	1.75	28.7
50-1, 95-97	1273.0	30	0.98	36.0
51-1, 74-76	1282.4	9	0.69	33.7
51-2, 89-91	1284.0	90	0.51	28.3
51-3, 73-75	1285.3	8	1.14	32.6
51-4, 78-80	1286.9	84	1.28	31.1
51-5, 82-83	1288.4	39	1.21	34.2
51-6, 93-95	1290.0	82	1.50	30.3
52-1, 80-82	1292.0	76	1.34	28.7
52-2, 79-81	1293.5	76	2.14	28.6
52-3, 76-79	1295.0	21	1.56	33.2
52-4, 82-84	1296.5	21	1.59	32.7
52-5, 76-78	1298.0	15	1.04	37.0
52-6, 86-88	1299.5	13	1.73	38.7
53-1, 73-75	1301.5	23	1.28	34.8
53-2, 77-79	1303.1	16	1.48	37.8
53-3, 64-66	1304.4	22	1.38	35.2
53-4, 79-81	1306.1	66	2.38	30.1
53-5, 76-78	1307.6	79	0.19	33.2
53-6, 40-43	1308.7	44	1.77	34.2
54-1, 80-82	1311.2	4	0.10	46.6
54-2, 89-91	1312.8	34	1.36	35.9
54-3, 87-90	1314.3	6	0.01	23.8
54-4, 86-88	1315.8	3	0.39	46.5
54-5, 71-73	1317.1	25	1.70	43.9
55-1, 68-70	1320.7	21	1.35	34.9
55-2, 70-72	1322.2	3	0.06	30.2
55-3, 69-71	1323.7	35	0.05	24.0
55-5, 90-92	1326.9	61	0.74	63.9
56-1, 70-72	1330.3	5	0.37	42.7
56-2, 95-97	1332.1	37	1.79	37.2
56-3, 95-97	1333.6	52	1.08	33.9
57-1, 64-66	1339.8	5	0.06	35.4
57-2, 68-70	1341.4	58	0.59	46.3
57-3, 89-90	1343.1	26	0.92	29.8
57-4, 67-69	1344.4	27	0.05	20.3
57-5, 44-46	1345.7	39	0.79	32.0
57-6, 65-67	1347.4	3	0.01	25.4

Core-Section, interval in cm	Sub-bottom depth (m)	$CaCO_3$[a] (%)	C_{org} (%)	C/N
Hole 603B (Cont.)				
58-1, 75-77	1349.6	75	0.18	31.6
58-2, 75-77	1351.1	3	0.08	44.8
58-3, 67-70	1352.5	71	0.29	34.3
58-4, 78-80	1354.1	5	0.32	49.6
58-5, 91-93	1355.7	79	0.22	31.8
58-6, 22-25	1356.5	82	1.87	345.3
59-1, 108-111	1359.5	27	0.01	22.6
59-2, 114-116	1361.1	30	1,06	34.4
59-3, 126-128	1362.7	79	2.19	31.8
59-4, 35-38	1363.2	79	0.57	38.5
59-5, 56-58	1365.0	6	0.53	41.6
60-1, 71-73	1368.7	2	0.01	15.8
60-2, 70-73	1370.2	4	0.76	50.4
60-3, 40-42	1371.4	75	0.17	24.6
60-4, 40-42	1372.9	13	2.01	60.3
61-1, 78-80	1378.4	40	0.01	1.9
61-2, 92-94	1380.0	7	0.23	41.8
61-3, 73-75	1380.9	74	1.07	34.9
61-4, 102-104	1383.1	78	2.03	31.6
61-5, 89-90	1384.5	19	1.72	40.9
61-6, 74-76	1385.8	18	0.80	38.8
62-1, 81-83	1388.0	56	0.26	29.2
62-2, 85-88	1389.6	71	2.14	30.3
62-3, 100-103	1391.2	10	0.75	44.2
62-4, 86-88	1392.6	66	0.88	44.0
64-3, 76-77	1409.5	75	1.49	35.2
64-4, 86-87	1411.1	9	1.10	36.9
64-5, 76-79	1412.5	81	0.17	39.2
65-1, 27-30	1415.0	55	1.82	33.9
65-2, 84-86	1417.1	4	0.09	43.6
65-3, 68-70	1418.4	27	1.78	33.0
65-4, 70-73	1419.9	75	0.83	30.7
65-5, 69-71	1421.4	84	0.15	50.1
66-1, 83-85	1424.5	74	0.13	28.4
66-2, 93-95	1426.1	3	0.01	21.5
66-3, 73-75	1427.4	17	1.63	33.6
66-4, 81-83	1429.0	72	0.20	26.8
66-5, 81-83	1430.5	84	0.33	38.7
67-1, 66-68	1433.4	78	1.29	32.8
67-2, 80-82	1435.0	82	0.15	31.9
67-3, 72-74	1436.4	4	0.01	20.1
67-4, 63-65	1437.8	80	0.15	30.3
67-5, 74-76	1439.5	18	1.51	38.0
68-1, 71-73	1442.4	82	0.62	32.0
68-3, 70-72	1445.4	8	2.08	38.8
68-4, 95-97	1447.2	85	0.11	24.2
68-5, 50-52	1448.2	17	1.47	39.4
69-1, 88-90	1451.6	12	1.27	35.3
69-2, 70-72	1452.9	76	0.06	28.9
69-3, 92-94	1454.6	80	1.07	32.1
69-4, 79-80	1456.0	75	1.12	34.2
69-5, 68-70	1457.4	79	0.20	38.7
70-1, 86-87	1460.6	15	1.18	31.0
70-2, 83-85	1462.0	77	0.12	28.7
70-3, 85-87	1463.6	70	0.34	31.7
70-4, 82-84	1465.0	80	0.10	24.7
70-5, 83-85	1466.5	22	1.00	30.6
71-1, 80-83	1469.5	4	0.15	28.3
71-2, 83-86	1471.0	25	1.31	39.3
71-3, 82-84	1472.5	11	0.65	44.9
71-4, 85-88	1474.1	81	1.85	34.2
71-5, 80-83	1475.5	77	0.25	29.6
71-6, 80-82	1477.0	73	0.18	26.7
73-1, 70-72	1483.4	18	0.96	34.1
73-2, 78-80	1485.0	14	0.70	41.1
73-4, 74-76	1486.4	68	0.36	31.2
73-4, 75-78	1488.0	28	0.01	24.0
73-5, 63-65	1489.3	77	0.72	40.1
74-1, 70-72	1493.0	66	0.38	29.6
74-2, 67-69	1494.5	91	0.12	25.3
74-3, 67-69	1496.0	70	2.42	37.7
74-4, 68-70	1497.5	77	0.16	25.8
74-5, 70-72	1499.0	10	0.80	42.6
74-6, 67-69	1500.5	68	0.67	37.8
75-2, 70-72	1504.1	28	0.99	38.6
75-5, 41-42	1508.3	18	1.63	36.2
76-2, 67-70	1513.7	66	1.45	35.5
76-5, 71-72	1518.2	66	1.88	43.9
77-2, 79-82	1523.4	71	0.44	35.1
77-5, 77-79	1527.9	89	0.04	22.9
78-2, 74-76	1533.0	59	1.41	34.1
79-2, 84-85	1542.5	58	1.09	36.7
79-5, 84-86	1547.1	58	1.33	38.6
80-2, 79-81	1551.5	77	0.04	25.6
80-5, 71-73	1555.9	68	0.07	29.4
81-2, 62-63	1560.3	53	0.17	24.8
81-5, 62-63	1564.8	67	0.01	18.2
82-2, 75-76	1569.5	54	0.12	23.9
82-5, 73-74	1573.9	73	0.13	75.1
Hole 603C				
1-1, 74-76	1.0	27	0.21	13.1
2-2, 75-78	4.3	25	0.11	11.0
2-5, 75-78	8.8	25	0.21	9.4
3-2, 75-78	13.9	18	0.15	7.9
3-5, 75-78	18.4	28	0.17	9.5
4-3, 75-78	25.0	26	0.19	10.4
4-5, 75-78	28.0	31	0.23	9.8
5-2, 75-78	33.1	20	0.23	10.1
5-5, 75-78	37.6	28	0.13	9.5
6-2, 75-78	42.7	35	0.25	8.8
6-5, 75-78	47.2	16	0.25	8.1
7-7, 75-78	52.2	11	0.25	8.1
7-5, 75-78	56.7	30	0.22	10.1
8-2, 75-78	61.7	15	0.43	10.7
8-5, 75-78	66.2	3	0.49	9.8
9-2, 75-78	70.1	12	0.36	8.7
9-5, 75-78	74.6	12	0.08	9.6
10-2, 75-78	79.6	11	0.23	9.1
10-5, 75-78	83.9	8	0.35	9.4
11-2, 75-78	87.1	14	0.42	10.1
13-2, 75-78	99.5	12	0.28	9.0
14-5, 75-78	113.6	11	0.13	6.8
15-2, 75-78	118.7	9	0.33	9.0
15-5, 75-78	123.2	3	0.20	7.1
16-2, 75-78	128.3	2	0.17	7.8
16-5, 75-78	132.8	18	0.27	8.7
16-6, 75-78	134.2	8	0.27	9.1
17-2, 75-78	137.9	19	0.22	8.1
17-5, 75-78	142.4	20	0.38	9.5
18-2, 75-78	147.5	14	0.25	8.7
18-5, 75-78	152.0	2	0.25	8.5
19-2, 75-78	157.1	5	0.41	10.1
19-5, 75-78	163.6	12	0.35	8.6
20-2, 75-78	166.7	13	0.33	8.5
20-5, 75-78	171.2	15	0.31	8.5
21-2, 75-78	176.3	16	0.28	8.4
21-5, 75-78	180.8	9	0.28	8.5
22-2, 75-78	185.9	7	0.30	7.7
22-5, 75-78	190.4	7	0.36	8.5
23-2, 75-78	195.5	1	0.25	7.5
23-5, 75-78	200.0	2	0.27	8.7
24-2, 75-78	205.1	19	0.28	7.6
24-5, 75-78	209.6	4	0.40	8.2
25-2, 75-78	214.7	7	0.28	7.9
25-5, 75-78	219.2	4	0.25	7.1
26-2, 75-78	224.3	8	0.31	7.8
26-5, 75-78	228.8	14	0.30	7.6
27-2, 75-78	233.8	9	0.29	3.4
27-5, 75-78	233.3	4	0.20	6.3
28-2, 75-78	243.5	7	0.27	7.7
28-5, 75-78	243.0	8	0.25	7.1
30-2, 75-78	262.6	2	0.23	6.7
31-5, 75-78	276.8	2	0.29	6.6
33-2, 72-74	291.4	2	0.47	8.3
33-5, 72-74	296.1	5	0.30	7.1
34-1, 105	299.9	14	0.34	8.4
35-2, 75-78	310.7	9	0.31	6.8
35-5, 75-78	315.2	3	0.40	8.6
36-2, 75-78	320.3	7	0.37	8.6
36-5, 75-78	324.8	4	0.23	8.0
37-2, 75-78	329.9	6	0.29	7.2
37-5, 81-84	334.4	2	0.26	7.6
38-2, 75-78	339.5	4	0.30	8.0
38-4, 75-78	342.5	20	0.26	8.5

Core-Section, interval in cm	Sub-bottom depth (m)	$CaCO_3$[a] (%)	C_{org} (%)	C/N
Hole 603C (Cont.)				
39-2, 71–74	349.1	11	0.30	7.7
39-5, 75–78	353.6	2	0.27	7.1
40-2, 75–78	358.7	3	0.23	7.6
40-5, 75–78	363.2	14	0.30	7.4
Hole 604				
1-2, 75–78	2.3	14	1.06	14.5
1-3, 75–78	3.8	10	0.19	10.6
2-1, 75–78	7.3	10	0.31	12.7
3-1, 75–78	16.9	8	0.25	10.2
5-2, 75–78	37.6	10	0.21	12.7
6-2, 75–78	47.2	5	0.20	14.4
6-5, 75–78	50.7	8	0.79	15.7
8-2, 70–73	66.3	5	0.06	15.8
10-2, 77–80	85.6	9	0.83	18.2
11-2, 75–80	95.2	4	0.21	14.3
11-5, 75–80	99.7	8	0.17	15.6
12-1, 75–78	103.3	9	0.21	14.2
13-2, 75–78	114.4	7		
14-2, 75–78	124.0	9	1.03	14.1
14-5, 75–78	128.5	13	0.48	11.5
15-2, 75–78	133.6	19	0.54	16.8
15-3, 12–15	134.4	12	0.77	13.1
16-2, 75–78	143.2	7	0.07	7.8
16-4, 75–78	146.2	6	0.45	10.8
17-2, 75–78	152.8	19	0.79	15.3
17-4, 75–75	155.8	8	0.39	11.9
18-2, 75–78	162.4	11	0.50	12.4
18-4, 75–78	165.4	4	0.59	12.3
19-2, 75–78	172.0	2	0.76	11.9
19-4, 75–78	175.0	13	1.06	23.5
20-2, 75–78	181.6	8	1.00	13.4
21-2, 75–78	191.2	7	1.00	12.3
22-2, 75–78	200.8	9	1.00	12.7
22-5, 75–78	205.3	9	1.10	13.3
23-2, 75–78	210.4	12	1.06	13.0
25-2, 75–78	229.6	5	0.94	14.3
25-4, 75–78	232.6	3	2.11	18.8
26-2, 75–78	239.2	2	1.06	15.2
27-1, 75–78	247.3	59	0.22	12.9
Hole 605				
3-1, 75–78	164.7	11.5	0.33	33.5
3-3, 75–78	167.7	07.6	0.42	19.7
4-1, 75–78	174.3	09.6	0.33	22.6
4-3, 75–78	177.3	11.6	0.42	23.8
5-1, 75–78	183.9	18.3	0.32	33.0
6-1, 75–78	193.5	09.4	0.35	25.4
6-3, 75–78	196.5	09.2	0.33	27.8
7-3, 75–78	206.1	46.7	0.19	36.2
7-5, 75–78	209.1	50.7	0.16	32.6
9-1, 75–78	222.3	59.5	0.13	31.0
9-3, 75–78	225.3	61.3	0.12	28.5
18-2, 75–78	310.7	54.6	0.11	04.5
19-2, 75–78	320.3	48.9	0.12	18.8
19-4, 75–78	323.3	55.8	0.10	23.1
20-1, 75–78	327.9	48.7	0.13	18.8
20-3 ,75–78	330.9	54.7	0.09	04.7
21-2, 76–78	339.0	59.6	0.11	17.8
21-5, 76–78	343.5	43.8	0.18	35.9
22-2, 76–78	348.6	52.7	0.13	19.9
22-5, 76–78	351.6	34.5	0.25	10.8
23-2, 75–77	358.2	38.8	0.18	09.3
23-5, 75–77	362.7	30.9	0.24	26.5
24-2, 75–77	367.8	31.2	0.25	26.5
24-5, 75–77	372.3	36.9	0.23	33.0
25-2, 75–77	377.4	36.9	0.23	33.0
25-5, 75–77	381.9	41.2	0.30	46.1
26-2, 75–77	387.0	38.0	0.17	08.3
26-5, 75–77	391.5	26.3	0.16	24.4
27-2, 75–77	396.6	31.8	0.21	08.4
27-5, 75–77	401.1	41.7	0.56	100
28-3, 75–77	407.8	30.1	0.32	50.3
29-2, 75–78	415.8	39.3	0.31	39.4
29-5, 75–77	420.3	22.7	0.22	25.8
30-2, 75–78	425.4	31.3	0.19	30.0
Hole 605 (Cont.)				
30-4, 75–78	428.4	51.8	0.12	22.0
31-2, 75–78	435.0	51.8	0.28	45.5
31-5, 75–78	439.5	45.3	0.10	19.7
32-5, 75–78	444.6	53.0	0.11	16.2
32-5, 75–78	449.1	44.6	0.11	17.5
33-2, 75–78	454.2	44.2	0.11	17.2
33-5, 75–78	458.7	42.9	0.08	14.8
34-2, 75–78	463.8	34.8	0.08	18.6
34-5, 75–78	468.3	33.3	0.14	23.9
35-2, 75–78	473.4	26.8	0.15	15.5
35-5, 75–78	477.9	30.9	0.11	16.6
36-2, 75–77	483.0	40.8	0.18	33.9
37-2, 75–77	492.6	28.4	0.60	100
37-5, 75–77	497.1	35.9	0.28	05.8
38-2, 75–77	502.2	38.7	0.13	23.7
38-5, 75–77	506.7	37.7	0.17	20.8
39-2, 75–77	511.8	37.2	0.25	49.0
39-5, 75–77	516.3	34.6	0.28	33.2
40-2, 75–77	521.4	44.5	0.20	22.2
40-4, 75–77	524.4	41.0	0.16	14.7
41-2, 75–78	531.0	33.9	0.19	18.7
41-6, 75–78	538.5	39.3	0.17	20.4
42-2, 75–78	540.6	45.6	0.11	14.9
42-5, 75–78	545.1	43.2	0.16	08.1
43-2, 75–78	550.2	51.6	0.10	12.6
43-5, 75–78	554.7	66.0	0.10	21.4
44-2, 75–78	559.8	59.9	0.13	29.1
44-5, 75–78	564.3	39.9	0.18	17.9
45-2, 75–78	569.4	35.2	0.24	31.2
45-4, 75–78	572.4	33.2	0.22	25.6
46-2, 75–78	579.0	28.3	0.19	16.6
46-4, 75–78	582.0	26.8	0.20	18.4
47-2, 75–77	588.6	17.1	0.21	14.1
47-5, 75–77	593.1	25.3	0.25	22.3
48-2, 75–77	598.2	18.2	0.30	24.2
48-4, 75–77	601.2	22.0	0.22	15.4
49-1, 75–77	606.3	17.9	0.17	20.4
49-5, 75–77	612.3	42.0	0.17	37.0
50-1, 75–77	615.9	28.5	0.36	32.5
50-5, 75–77	621.9	41.0	0.34	64.9
51-2, 75–77	627.0	40.9	0.21	39.8
52-2, 75–77	636.6	43.3	0.31	60.8
52-5, 75–77	641.1	46.9	0.32	66.7
53-1, 75–78	644.7	09.1	0.21	19.3
54-1, 75–78	649.2	39.8	0.35	57.5
55-2, 75–78	655.8	40.1	0.21	15.8
55-5, 75–78	660.3	41.0	0.41	86.0
56-1, 75–78	663.9	45.0	0.15	13.8
56-5, 75–78	669.9	56.4	0.18	41.2
57-2, 75–78	675.0	36.6	0.27	42.9
57-5, 75–78	679.5	38.5	0.34	35.0
59-2, 75–77	694.2	40.7	0.40	40.1
59-5, 75–77	698.7	41.5	0.17	21.2
60-2, 75–77	703.8	29.8	0.47	50.9
60-5, 75–77	708.3	41.3	0.52	100
61-2, 75–77	713.4	31.4	0.29	09.1
61-5, 75–77	717.9	31.6	0.26	21.2
62-2, 75–77	723.0	35.5	0.29	41.7
62-5, 75–77	727.5	37.5	0.21	48.0
63-2, 75–77	732.6	25.5	0.28	33.9
63-5, 75–77	737.1	25.3	0.21	07.7
64-2, 75–77	742.3	46.9	0.15	18.2
64-5, 75–77	746.8	17.7	0.15	17.6
65-2, 71–74	751.7	12.0	0.17	16.2
66-2, 72–76	761.3	41.2	0.15	06.6
67-2, 75–78	771.0	61.6	0.16	10.2
68-2, 24–27	780.1	58.5	0.13	06.5
68-5, 75–77	785.1	63.6	0.13	33.0
69-2, 75–78	790.2	68.5	0.14	10.6
69-5, 75–78	794.7	57.2	0.17	18.3
70-2, 75–78	799.8	58.5	0.23	16.2
70-5, 75–78	804.3	56.5	0.23	11.6
71-2, 75–77	809.4	58.7	0.17	21.2
71-5, 75–77	813.9	60.0	0.16	07.7

[a] For Hole 603B organic carbon percentages given as 0.01 represent values at or below the limit of detection of the CHN analyzer (~0.02–0.03%).