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1. Data Report: Sediment Geochemistry at Site 1089, Leg 177[1]

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INTRODUCTION

A primary objective of Ocean Drilling Program Leg 177 was to document changes in circulation and biogeochemical cycling on glacial/interglacial time scales across a wide latitudinal range of the south Atlantic Ocean. One of the more northerly sites drilled, Site 1089 (41°S, 10°E), is located within the present-day Subantarctic Zone, south of the Subtropical Front. The drilling site itself is located in the southern Cape Basin at a water depth of 4620 m. Pleistocene sediments at this site are dominated by interbedded carbonate and opal oozes. Initial shipboard stratigraphy identified the opal-rich sediments as deposited during glacial intervals and the carbonate-rich sediments as deposited during interglacial intervals (Gersonde, Hodell, Blum, et al., 1998). Postcruise isotopic stratigraphy, however, verified that this site displayed a Pacific Pleistocene sedimentation pattern with glacial intervals marked by high carbonate content (Hodell and Charles, 1999).

To assess changes in biological productivity and terrigenous inputs at this site, a number of geochemical indicators were determined. Phosphorus concentrations and P/metal ratios were determined to assess changes in export production on glacial/interglacial time scales. Metal concentrations, along with elemental ratios, were used to assess terrigenous inputs.

Sediment geochemistry allows us to identify changes in the lithologic component using elemental data based on Fe, Al, and Ti concentrations. Records of concentrations and ratios of biologically related elements identify changes in export production. The P and metal results are important to assess the glacial/interglacial changes in P burial and the relationships between a major nutrient such as P with metals (and possibly trace nutrients) like Fe.

[1] Latimer, J.C., and Filippelli, G.M., 2001. Data report: Sediment geochemistry at Site 1089, Leg 177. *In* Gersonde, R., Hodell, D.A., and Blum, P.(Eds.), *Proc. ODP, Sci. Results,* 177, 1–14 [Online]. Available from World Wide Web: <http://www-odp.tamu.edu/publications/177_SR/VOLUME/CHAPTERS/SR177_01.PDF>. [Cited YYYY-MM-DD]
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METHODS OF ANALYSIS

Five hundred samples from Site 1089 with depths ranging from 0 to 90 meters composite depth were analyzed for P and a suite of metals (Fe, Al, Ti, Mn, Zn, Cd, Ba, Mg, and Ca) by inductively coupled plasma–atomic emission spectrometry (ICP-AES). Bulk samples were dried, crushed, and stored in glass scintillation vials.

Approximately 0.1 g of each sample was dissolved using a CEM Corp. MDS 2000 microwave digestion system in concentrated trace-metal grade HNO_3, HF, and HCl following Environmental Protection Agency SW846 Method 3051. Once the digestion was complete, 0.1 g of boric acid was added to stabilize the solutions. Samples were transferred to new 50-mL polyethylene centrifuge tubes and diluted to 50 mL with Milli-Q water. A Leeman Labs P950 ICP-AES with a CETAC Corp. AT 5000+ ultrasonic nebulizer was used to determine the total elemental concentrations. All elemental data is presented in Table **T1.** Ten percent of the samples were analyzed as randomly chosen replicates, which agreed within 7% for all elements analyzed. The precision of ratios was calculated and averaged 2% for the P/metal ratios and 7% for the Fe, Al, and Ti ratios.

DISCUSSION OF DATA

Downcore P concentrations (Fig. **F1**) are variable, ranging between 9 and 35 µmol P/g, with high concentrations occurring during interglacial intervals and lower P concentrations occurring during glacial intervals. P/Al and P/Ti ratios (Fig. **F2**) are high during glacial intervals and near average continental crustal values (P/Al = 0.012; P/Ti = 0.19) (Faure, 1998) during interglacial intervals, possibly indicating increases in export production during glacials.

Downcore metal concentration trends (Fig. **F3**) are similar to those observed for P, with maximum concentrations during interglacial intervals and lower concentrations during glacial intervals. Ratios of Fe, Al, and Ti can provide information about general metal sources. The Al/Ti ratios (Fig. **F4A**) are variable downcore, fluctuating between values similar to basalt or oceanic crust (Al/Ti ≤ 9) (Taylor and McLennan, 1985) or continental sources (average upper crust Al/Ti = 26.8; average continental crust Al/Ti = 15.6) (Taylor and McLennan, 1985). In general, the lower Al/Ti ratios occur during glacial intervals. The higher values, more characteristic of continental sources, are observed during interglacial intervals. The trends in the Fe/Al ratios (Fig. **F4B**) are similar to those observed in the P/Al record, with maximum values occurring during glacial intervals. The Fe/Ti ratio (Fig. **F4C**) remains constant for most of the record with more variation during the latter part of the record.

ACKNOWLEDGMENTS

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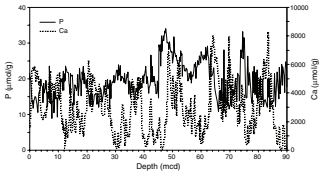

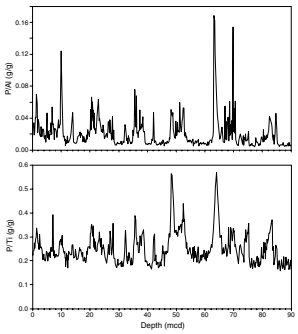

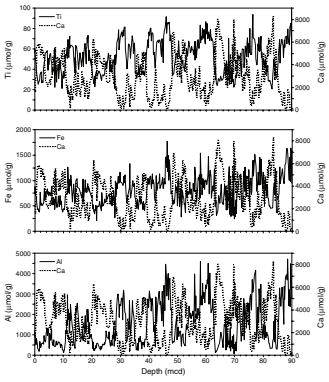

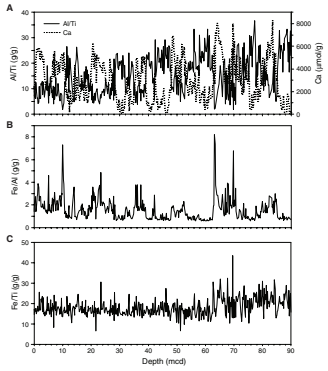

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Hodell, D.A., and Charles, C.D., 1999. Phase relationships between carbonate and benthic $\delta^{18}O$ in ODP Site 1089 is a direct test of the "Coral Reef Hypothesis" for atmospheric CO_2 variability. *Eos,* 80:S198.

Taylor, S.R., and McLennan, S.M., 1985. *The Continental Crust: Its Composition and Evolution.* Oxford (Blackwell).

Figure F1. Phosphorus and calcium concentrations vs. depth. High Ca concentrations indicate glacial intervals, and low Ca concentrations indicate interglacial intervals. Maximum P concentrations occur during interglacial intervals, and minimum P concentrations occur during glacial intervals. The marine isotope Stage (MIS) 5/6 boundary occurs at ~18 m, and the MIS 11/12 boundary occurs at ~63 m.

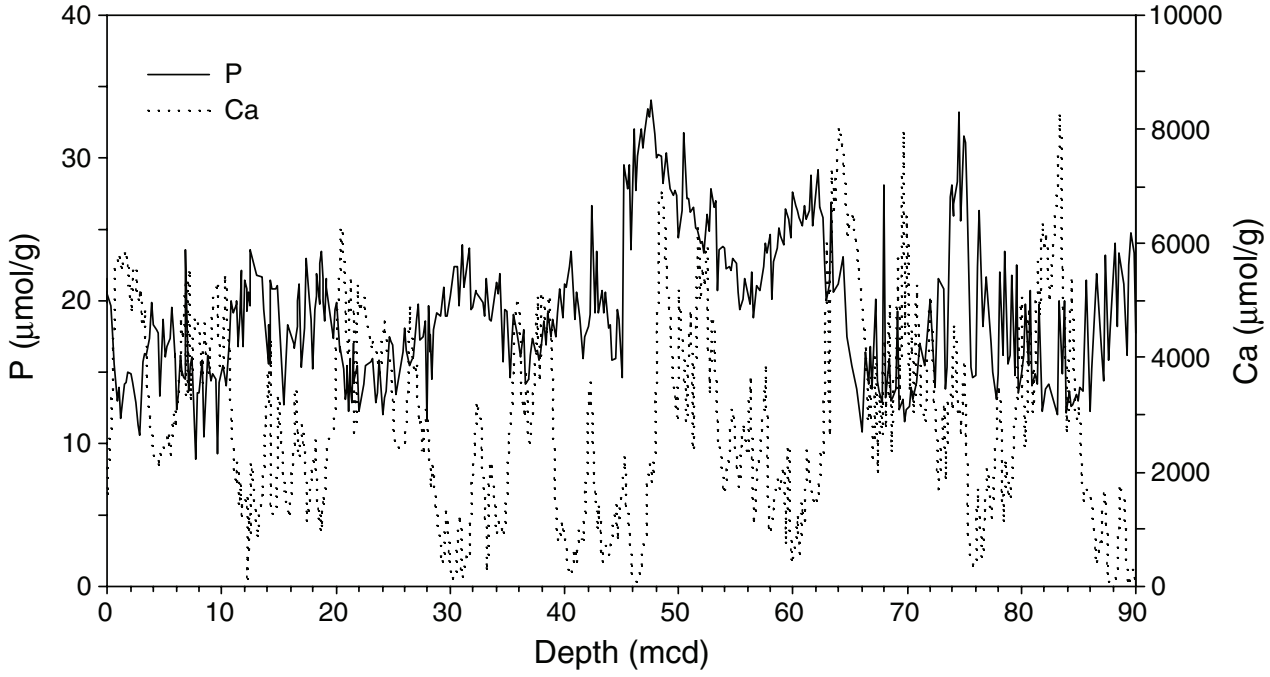

Figure F2. P/Al and P/Ti ratios. Maximum P/metal ratios occur during glacial intervals, suggesting export production may have increased during glacial intervals.

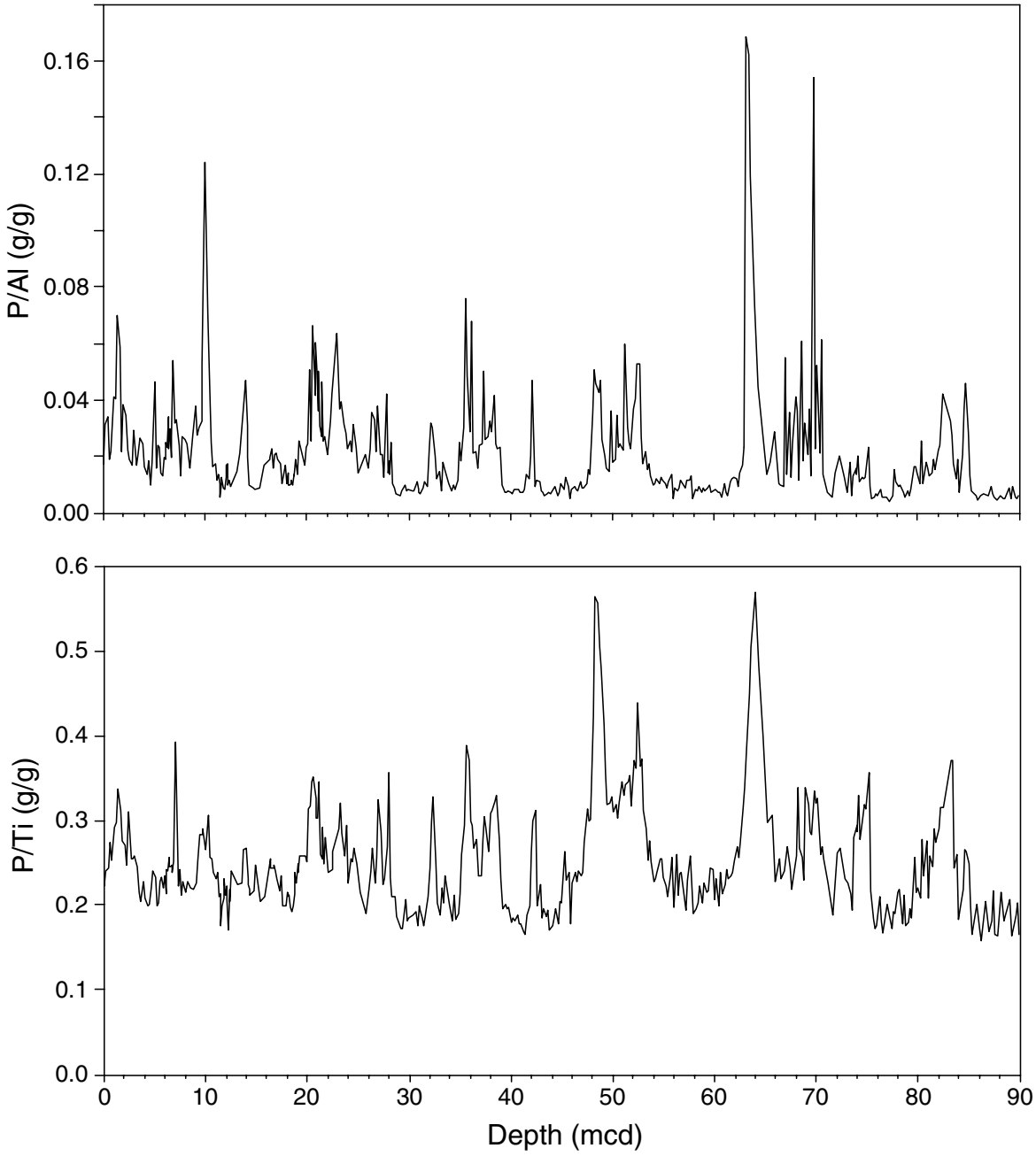

Figure F3. Fe, Al, and Ti concentrations. Metal concentrations are plotted with Ca concentrations to illustrate the timing of glacial/interglacial intervals. Maximum metal concentrations occur during interglacial intervals, similar to P.

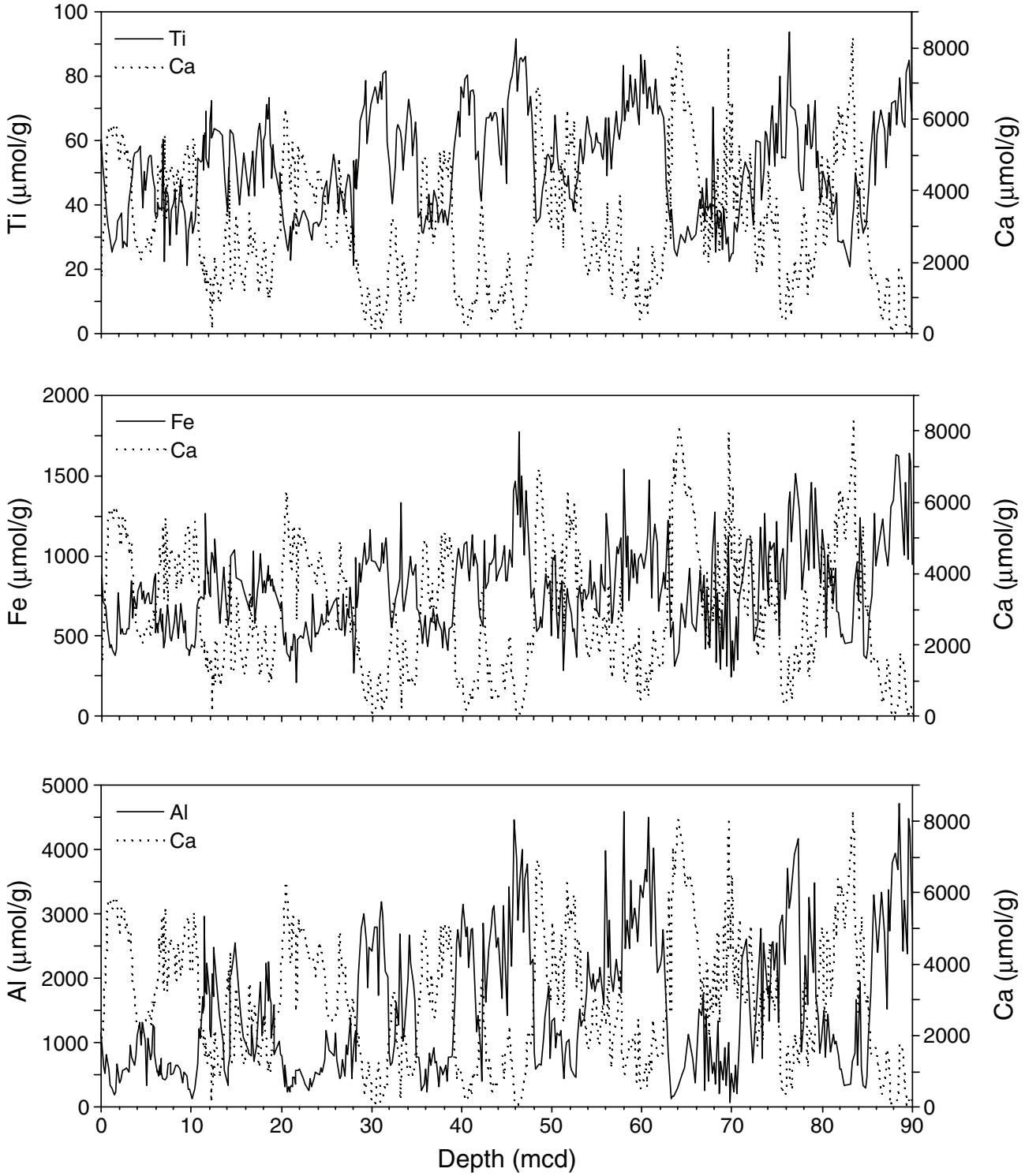

Figure F4. A. Al/Ti ratios are variable downcore, suggesting metal sources were different during glacial/interglacial intervals. Maximum Al/Ti ratios occur during interglacial intervals. **B.** Fe/Al ratios are similar to trends observed in the P/Al record, with high Fe/Al ratios during interglacial intervals. **C.** Fe/Ti ratios are constant downcore, with more variability at the base of the record.

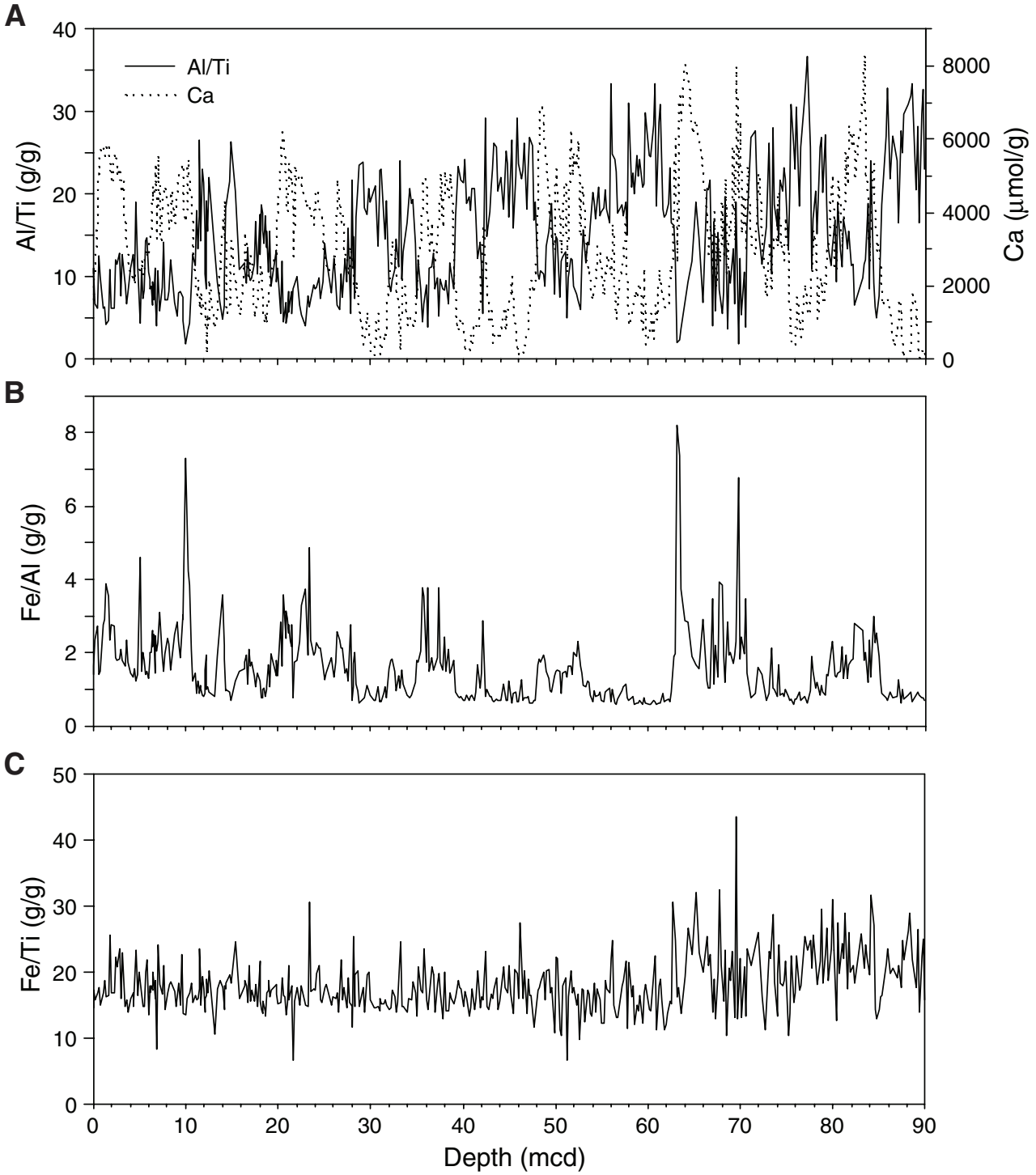

Table T1. Elemental concentrations, Site 1089. (See table notes. Continued on next six pages.)

Core, section, interval (cm)	Depth (mcd)	P (µmol/g)	Ti (µmol/g)	Ba (µmol/g)	Cd (µmol/g)	Zn (µmol/g)	Mn (µmol/g)	Sr (µmol/g)	Mg (µmol/g)	Fe (µmol/g)	Al (µmol/g)	Ca (µmol/g)
177-1089A-												
1H-1, 10-11.5		21.57	60.24	6.37	0.1114	2.16	31.67	4.15	340	758	1102	1640
1H-1, 15-16.5		19.88	56.83	6.03	0.1085	2.71	103.11	3.94	366	744	1108	1588
1H-1, 20-21.5		20.57	59.17	6.73	0.1112	4.76	27.14	4.26	431	807	1161	1824
1H-1, 25-26.5	0.01	20.40	59.20	6.53	0.1180	1.46	14.09	4.61	452	882	1110	2111
1H-1, 45-46.5	0.21	19.61	52.78	6.68	0.1196	1.40	9.98	4.92	404	715	628	2726
1H-1, 65-66.5	0.41	17.76	47.25	6.57	0.1112	1.10	11.93	6.36	429	684	521	3878
1H-1, 85-86.5	0.61	15.55	36.66	6.22	0.0405	1.45	11.25	7.59	465	557	810	5665
1H-1, 105-106.5	0.81	12.95	33.21	5.44	0.1267	0.75	14.06	9.14	411	429	594	5726
1H-1, 125-126.5	1.01	13.95	30.90	5.14	0.0887	0.52	13.91	10.95	330	449	338	5833
1H-1, 140-141.5	1.16	11.71	25.46	4.26	0.0180	2.84	14.24	9.52	330	411	291	5537
1H-2, 15-16.5	1.41	14.09	27.13	4.63	0.0902	0.46	17.91	11.20	288	379	201	5889
1H-2, 35-36.5	1.61	14.24	29.59	5.35	0.0923	0.66	19.03	11.19	341	416	243	5838
1H-2, 55-56.5	1.81	14.99	35.06	5.36	0.0984	0.74	20.66	9.29	430	771	680	5258
1H-2, 75-76.5	2.01	14.88	35.59	5.46	0.0989	1.27	20.11	7.90	399	513	388	4789
1H-2, 95-96.5	2.21	14.27	37.31	5.33	0.0939	1.02	19.29	7.73	439	542	414	5595
1H-2, 115-116.5	2.41	12.80	26.67	4.57	0.0354	1.27	17.82	6.74	474	510	571	5617
1H-2, 135-136.5	2.61	11.28	28.71	4.53	0.0226	1.18	17.18	5.32	515	511	587	4969
1H-3, 5-6.5	2.81	10.60	26.99	4.01	0.0148	1.72	14.22	4.73	467	546	618	5211
1H-3, 25-26.5	3.01	15.69	39.25	6.00	0.1048	1.14	21.74	7.83	480	541	537	4544
177-1089D-												
2H-2, 140-141.5	3.21	16.33	42.92	5.91	0.1015	1.28	21.62	6.88	617	842	967	4853
177-1089A-												
1H-3, 65-66.5	3.41	16.15	48.56	6.21	0.0976	1.30	19.60	6.26	489	615	774	3416
1H-3, 85-86.5	3.61	17.30	54.62	6.99	0.1077	1.53	19.39	5.78	482	744	651	3060
1H-3, 105-106.5	3.81	19.86	56.41	7.25	0.1389	1.86	17.86	4.75	522	673	803	2435
1H-3, 125-126.5	4.01	18.28	56.75	6.81	0.1177	1.53	18.47	4.57	544	781	1117	2247
1H-4, 5-6.5	4.31	17.96	58.31	6.57	0.1227	1.65	18.16	4.42	560	839	1316	2286
1H-4, 15-16.5	4.41	17.71	57.08	7.13	0.1273	1.80	19.10	4.00	494	728	966	2080
1H-4, 35-36.5	4.61	13.31	39.14	5.51	0.0491	1.57	15.68	2.97	596	783	1317	2404
1H-4, 55-56.5	4.81	18.71	50.19	6.97	0.0592	2.07	20.52	3.97	488	706	1029	2391
1H-4, 75-76.5	5.01	16.07	44.49	5.83	0.0545	1.77	19.56	3.77	308	764	344	2523
1H-4, 95-96.5	5.21	16.80	54.73	6.26	0.1109	1.55	22.29	5.15	527	774	1068	2713
1H-4, 115-116.5	5.41	17.39	55.40	4.81	0.1136	1.44	22.13	4.98	373	707	727	2300
1H-4, 130-131.5	5.56	19.49	55.45	5.96	0.1148	1.46	22.83	5.52	486	708	830	2706
177-1089D-												
2H-2, 40-41.5	5.72	17.91	49.83	5.95	0.1083	1.64	22.86	5.16	688	855	1272	3009
2H-2, 55-56.5	5.87	16.05	47.17	6.16	0.0361	1.69	24.47	4.99	676	890	1236	2785
2H-2, 65-66.5	5.97	16.30	44.85	5.54	0.1038	1.19	22.84	6.28	367	523	832	3180
2H-2, 75-76.5	6.07	12.41	37.70	5.05	0.0303	1.48	23.34	6.12	487	582	649	3312
2H-2, 85-86.5	6.17	13.46	35.94	5.01	0.0244	1.43	21.37	5.95	472	523	543	3420
2H-2, 95-96.5	6.27	13.54	36.52	4.74	0.0238	1.38	21.99	6.15	511	560	578	3660
2H-2, 105-106.5	6.37	16.21	40.78	5.04	0.1037	1.09	23.16	7.74	359	604	478	4716
2H-2, 115-116.5	6.47	14.73	38.69	4.99	0.1035	0.99	22.97	7.43	404	667	642	4331
2H-2, 125-126.5	6.57	14.96	39.30	4.90	0.0910	0.97	24.74	8.17	363	608	505	4552
2H-2, 115-116.5	6.67	14.63	38.13	5.14	0.1042	0.89	21.39	7.45	401	528	749	4589
2H-2, 125-126.5	6.72	14.55	39.51	4.96	0.0960	0.92	21.77	8.31	412	637	539	5356
177-1089D-												
2H-2, 135-136.5	6.87	23.50	60.55	6.51	0.0933	1.79	35.35	8.73	546	432	434	3300
2H-2, 140-141.5	7.02	13.69	22.58	4.25	0.0290	1.14	23.10	8.34	432	467	425	5565
2H-3, 5-6.5	7.22	15.48	44.89	5.91	0.1045	1.18	21.78	6.75	525	697	468	3234
2H-3, 20-21.5	7.42	16.05	42.90	5.38	0.1119	19.21	19.74	6.76	540	615	665	4299
2H-3, 40-41.5	7.62	8.93	27.25	3.59	0.0192	1.11	13.53	5.02	464	494	688	4727
2H-3, 60-61.5	7.77	13.57	38.44	4.92	0.0999	1.75	19.37	7.87	386	471	497	4625
2H-3, 80-81.5	8.02	13.59	40.77	4.67	0.1022	1.04	19.16	7.66	477	591	517	4362
2H-3, 95-96.5	8.22	15.78	44.97	5.09	0.1084	1.18	17.94	6.98	464	699	651	3563
2H-3, 120-121.5	8.42	10.45	30.65	3.41	0.0119	1.08	15.03	5.20	471	485	658	4610
2H-3, 140-141.5	8.77	16.13	47.84	4.48	0.1010	1.05	16.59	6.72	390	700	584	3693
2H-4, 10-11.5	9.02	14.33	41.16	4.80	0.1068	1.22	17.67	6.88	328	523	380	4544
2H-4, 65-66.5	9.22	14.84	37.89	4.61	0.0976	0.86	20.16	8.61	404	598	539	5046
2H-4, 70-71.5	9.42	14.52	33.08	3.93	0.0221	1.13	20.73	6.98	355	428	480	5199
2H-4, 110-111.5	9.62	9.25	21.19	2.93	0.0066	0.74	16.98	6.90	317	414	285	5328
2H-4, 130-131.5	9.72	14.25	31.77	3.48	0.0889	0.73	25.67	8.92	300	377	269	3906
2H-4, 140-141.5	10.02	15.50	37.81	4.22	0.0934	1.15	25.25	8.98	340	442	125	3764
2H-5, 20-21.5	10.22	14.70	30.98	4.65	0.0878	0.67	26.88	9.92	335	425	207	5469
2H-5, 40-41.5	10.42	14.07	35.57	4.87	0.1007	0.77	28.74	9.74	392	515	277	4701
2H-5, 60-61.5	10.62	17.21	43.71	5.64	0.1119	1.16	23.55	7.64	492	689	682	4059

Table T1 (continued).

Core, section, interval (cm)	Depth (mcd)	P (µmol/g)	Ti (µmol/g)	Ba (µmol/g)	Cd (µmol/g)	Zn (µmol/g)	Mn (µmol/g)	Sr (µmol/g)	Mg (µmol/g)	Fe (µmol/g)	Al (µmol/g)	Ca (µmol/g)
2H-5, 80-81.5	10.77	20.04	54.48	5.98	0.1040	2.12	19.73	6.06	562	723	1222	2938
2H-5, 95-96.5	11.02	19.09	53.31	6.38	0.0596	1.83	13.68	3.66	454	749	1077	1992
177-1089A-												
2H-5, 120-121.5	11.23	19.79	53.69	6.06	0.0546	1.99	19.25	3.64	625	730	1714	1765
2H-3, 135-136.5	11.28	19.93	61.47	6.20	0.1054	1.68	19.32	4.56	491	849	1455	2164
2H-3, 140-141.5	11.43	16.70	50.80	6.39	0.0487	2.03	15.42	3.69	575	760	1559	1607
2H-4, 5-6.5	11.48	17.03	62.66	7.93	0.0523	1.49	14.16	2.30	603	1266	2959	1403
2H-4, 10-11.5	11.58	18.79	61.27	6.29	0.1137	1.73	15.09	3.77	583	957	1802	1826
2H-4, 20-21.5	11.68	22.14	69.08	6.87	0.1176	1.87	14.65	3.29	437	889	1756	1234
2H-4, 30-31.5	11.73	19.46	54.36	7.00	0.0735	1.87	11.63	2.63	553	905	2227	1401
2H-4, 35.5-37	11.93	16.78	51.45	6.06	0.0378	1.94	13.67	2.93	569	770	1947	1532
2H-4, 55-56.5	12.03	21.40	62.16	7.01	0.0739	2.41	17.55	3.54	531	748	1717	1469
2H-4, 65-66.5	12.08	20.83	65.28	7.21	0.1303	2.49	19.69	4.41	473	899	1209	1579
2H-4, 70-72.5	12.18	19.23	72.57	0.08	0.0429	2.32	15.56	0.76	177	1025	1096	144
2H-4, 80-81.5	12.28	20.55	60.80	6.63	0.0752	2.23	16.09	2.84	635	989	2064	1235
2H-4, 90-91.5	12.43	19.63	62.01	6.65	0.0949	2.85	13.65	2.60	435	893	1708	928
2H-4, 105-106.5	12.53	23.52	63.53	6.94	0.0861	3.21	14.86	3.76	614	1101	2480	2167
2H-4, 115-116.5	13.07	21.77	63.04	7.78	0.0791	2.04	13.37	2.91	387	579	1472	849
2H-5, 19-21.5	13.47	21.59	61.81	6.59	0.1387	3.66	11.89	3.55	420	933	1025	1640
2H-5, 59-61.5	13.68	19.41	47.39	5.42	0.0428	3.37	23.37	5.11	642	764	570	2610
2H-5, 80-81.5	14.03	15.61	37.88	5.20	0.1010	1.91	35.88	8.13	428	574	331	3802
2H-5, 115-116.5	14.13	18.35	51.51	6.06	0.0392	1.94	22.04	5.24	404	635	599	3229
2H-5, 125-126.5	14.19	15.60	45.06	5.46	0.1001	0.92	29.55	6.18	528	696	787	4338
177-1089B-												
2H-3, 69-71.5	14.28	21.45	63.32	7.25	0.0676	1.80	12.48	3.41	671	954	2030	1518
177-1089A-												
2H-5, 140-141.5	14.33	20.75	63.25	6.99	0.0748	1.98	13.19	2.84	564	1000	2067	1236
2H-5, 145-146.5	14.69	20.80	61.85	6.42	0.0760	2.21	12.53	2.75	699	1038	2363	1358
177-1089B-												
2H-3, 119-121.5	14.9	21.02	54.79	6.13	0.0796	2.42	21.76	5.04	667	863	2558	3344
2H-3, 140-141.5	15.4	12.69	40.17	4.67	0.0570	1.19	9.06	2.18	484	848	1449	1795
2H-4, 40-43	15.8	18.25	56.23	5.78	0.0577	1.73	14.02	3.27	462	776	1084	1199
2H-4, 80-81.5	16.35	16.82	42.83	5.71	0.0123	1.43	19.78	4.82	508	661	883	2705
2H-4, 135.136.5	16.4	16.63	44.08	6.15	0.1035	0.89	21.52	5.80	477	710	847	3476
2H-4, 140-141.5	16.6	18.21	48.26	7.25	0.0661	2.08	13.24	3.72	472	745	793	2593
2H-5, 10-11.5	16.65	20.02	52.27	7.26	0.0500	1.82	16.22	4.81	577	690	1260	2244
2H-5, 15-16.5	16.8	21.12	56.75	6.60	0.1127	1.28	15.21	5.01	401	1028	1021	2371
2H-5, 30-31.5	16.95	15.31	42.84	6.27	0.0185	1.14	23.13	5.59	497	575	724	2840
2H-5, 45-46.5	17.19	18.08	53.81	7.30	0.1113	1.01	23.76	5.26	475	798	947	2351
2H-5, 69-71.5	17.4	22.97	63.12	7.67	0.1256	2.47	13.46	3.18	397	851	1295	1136
2H-5, 90-91.5	17.6	20.03	65.31	7.18	0.1244	1.31	10.03	3.06	531	1013	1939	1377
2H-5, 110-111.5	17.8	18.68	60.83	7.42	0.1120	1.27	14.13	4.05	482	771	1116	2046
2H-5, 130-131.5	18	15.15	45.35	5.52	0.0472	1.27	12.98	3.13	580	844	1412	2224
2H-6, 0-1.5	18.1	19.40	59.87	6.36	0.1252	1.65	17.31	5.33	458	797	1349	2560
2H-6, 10-11.5	18.2	20.29	62.15	7.03	0.1230	1.46	15.76	3.47	570	772	2062	1836
2H-6, 20-21.5	18.3	21.88	71.41	8.06	0.1302	1.32	9.55	3.38	510	845	2234	1575
2H-6, 30-31.5	18.4	20.86	70.21	8.19	0.1276	1.29	9.20	2.92	430	939	1953	1176
2H-6, 40-41.5	18.5	19.69	66.49	7.89	0.1345	1.89	8.27	2.80	402	845	1659	981
2H-6, 50-51.5	18.6	22.59	73.14	8.24	0.1294	1.39	8.25	2.92	476	875	2264	1274
2H-6, 60-61.5	18.69	23.41	71.06	8.00	0.1548	6.27	8.25	2.85	425	815	1715	1004
2H-6, 69-70.5	18.8	21.54	58.53	6.83	0.0679	1.63	9.10	3.08	460	848	1615	1470
2H-6, 80-81.5	18.9	20.00	57.14	6.48	0.0713	1.54	10.45	2.98	389	851	1062	1416
2H-6, 90-91.5	19	18.55	48.16	6.04	0.0675	1.44	10.33	3.19	490	775	1328	2014
2H-6, 100-101.5	19.1	21.56	58.60	6.86	0.0380	1.72	12.97	4.39	660	812	1587	2249
2H-6, 110-111.5	19.2	20.91	52.35	6.07	0.0472	2.37	12.84	4.08	494	780	826	2566
177-1089D-												
3H-5, 110-111.5	19.78	17.38	43.40	5.92	0.0251	1.28	13.21	5.42	539	673	1017	2760
3H-5, 120-121.5	19.88	19.36	49.74	6.43	0.1274	0.99	15.38	6.61	432	713	823	3809
3H-5, 135-136.5	20.03	19.85	40.98	4.73	0.0990	0.85	18.02	7.91	387	533	804	4497
3H-6, 10-11.5	20.28	16.44	33.59	3.23	0.0871	1.19	24.92	10.13	359	447	326	5647
3H-6, 20-21.5	20.38	16.79	31.43	3.02	0.1168	0.74	23.09	9.65	298	517	661	6309
3H-6, 40-41.5	20.58	15.17	28.01	3.11	0.0906	0.48	24.85	10.83	286	395	229	5741
177-1089B-												
3H-1, 105-106.5	20.79	13.05	25.96	3.87	0.0243	1.04	22.79	9.32	334	364	313	4796
3H-1, 115-116.5	20.89	13.86	29.67	4.09	0.0948	0.66	24.61	9.44	237	345	229	4179
3H-1, 125-126.5	20.99	15.51	33.11	4.59	0.1001	0.81	23.70	9.32	249	438	306	4031
3H-1, 135-136.5	21.09	12.26	22.94	3.48	0.0135	0.97	21.93	7.95	355	414	336	4816

Table T1 (continued).

Core, section, interval (cm)	Depth (mcd)	P (µmol/g)	Ti (µmol/g)	Ba (µmol/g)	Cd (µmol/g)	Zn (µmol/g)	Mn (µmol/g)	Sr (µmol/g)	Mg (µmol/g)	Fe (µmol/g)	Al (µmol/g)	Ca (µmol/g)
3H-1, 145-146.5	21.19	15.94	31.21	4.15	0.0932	0.82	33.24	10.02	299	422	317	5365
3H-2, 5-6.5	21.29	14.11	35.01	4.78	0.0951	0.88	26.59	8.67	392	511	457	4852
3H-2, 15-16.5	21.39	12.79	32.43	4.34	0.0194	1.36	25.01	7.19	385	496	473	4913
3H-2, 25-26.5	21.49	16.96	37.55	4.78	0.1043	1.26	28.66	7.42	362	490	366	4807
3H-2, 35-36.5	21.59	14.26	36.90	3.44	0.0863	0.93	28.27	6.16	67	213	562	2706
3H-2, 55-56.5	21.79	15.41	35.56	4.45	0.0399	1.33	27.09	6.83	375	476	565	5286
3H-2, 75-76.5	21.99	12.21	33.18	4.26	0.0182	1.28	22.41	6.58	477	505	590	4821
3H-2, 115-116.5	22.39	14.12	37.66	4.83	0.1004	1.30	27.23	7.07	401	488	437	5071
3H-2, 130-131.5	22.54	15.49	38.07	5.24	0.1098	1.13	27.62	7.77	367	585	367	4740
3H-3, 25-26.5	22.99	15.71	34.99	5.14	0.0305	1.33	33.06	9.10	406	448	248	4139
3H-3, 45-46.5	23.19	15.92	32.13	4.66	0.0370	1.37	31.05	8.06	370	406	436	4266
3H-3, 65-66.5	23.39	12.80	29.11	4.50	0.0245	1.43	26.37	7.37	454	762	324	4187
3H-3, 85-86.5	23.59	13.60	33.97	4.69	0.0176	1.36	26.82	6.51	477	495	434	3860
3H-3, 105-106.5	23.79	15.76	34.67	5.20	0.0410	1.42	28.67	6.47	418	519	557	3661
3H-3, 125-126.5	23.99	12.04	34.60	4.35	0.0163	1.25	32.30	5.16	415	511	526	4491
3H-3, 145-146.5	24.19	13.13	33.25	4.38	0.0405	1.55	27.13	5.23	405	568	514	4635
3H-4, 15-16.5	24.39	13.65	35.30	4.76	0.0289	1.63	31.51	5.93	496	640	620	4128
3H-4, 35-36.5	24.59	17.50	42.47	5.94	0.1161	1.46	33.49	6.60	428	574	556	4043
3H-4, 55-56.5	24.79	17.11	44.40	6.26	0.1041	0.98	36.45	7.13	457	587	740	3685
3H-4, 75-76.5	24.99	16.84	47.62	5.78	0.0376	1.40	24.51	5.12	563	722	1184	2668
3H-4, 95-96.5	25.19	13.44	40.23	4.63	0.0163	1.29	22.89	4.45	516	627	886	2416
3H-5, 5-6.5	25.79	16.44	55.78	5.99	0.1177	3.14	21.36	4.61	464	716	790	2452
3H-5, 25-26.5	25.99	18.08	53.32	5.97	0.0606	1.63	16.76	3.47	567	740	1154	2480
3H-5, 45-46.5	26.19	16.56	44.72	4.90	0.0425	1.43	26.52	5.76	379	614	731	3155
3H-5, 65-66.5	26.39	15.42	37.39	4.66	0.0287	1.32	36.51	6.07	327	542	435	4920
3H-5, 85-86.5	26.59	15.81	45.31	5.85	0.0948	1.03	35.80	6.35	364	541	479	4077
3H-5, 105-106.5	26.79	16.09	40.63	5.04	0.0300	1.26	34.37	6.60	591	759	742	3731
3H-5, 125-126.5	26.99	18.65	37.20	5.83	0.0310	1.36	42.48	7.31	383	506	494	3921
3H-5, 145-146.5	27.19	19.71	44.34	5.19	0.0374	1.45	27.25	5.22	569	673	958	2837
3H-6, 15-16.5	27.39	17.23	49.65	5.87	0.1021	1.05	25.91	5.71	436	621	826	2889
3H-6, 35-36.5	27.59	17.47	49.05	6.13	0.0329	1.61	22.18	4.34	673	802	1378	2301
3H-6, 55-56.5	27.79	18.59	44.75	4.82	0.0890	1.07	34.29	6.45	421	589	440	3089
3H-6, 75-76.5	27.99	11.67	21.19	3.02	0.1052	0.32	22.59	4.42	130	268	818	2795
3H-6, 85-86.5	28.09	19.64	53.58	6.71	0.1188	1.31	30.73	5.55	391	536	1048	2254
3H-6, 95-96.5	28.19	16.40	45.37	5.18	0.0375	1.50	18.74	3.37	485	988	1190	2121
3H-6, 105.106.5	28.29	17.55	54.06	6.32	0.0979	1.62	24.36	3.50	353	682	708	1732
3H-6, 115-116.5	28.39	14.53	44.85	5.70	0.0616	1.96	26.46	3.30	567	752	1363	2112
177-1089C-												
4H-2, 10-11.5	28.58	17.92	55.09	6.54	0.0442	1.54	32.76	2.83	576	953	2024	1608
4H-2, 30-31.5	28.78	19.10	66.31	7.85	0.0715	1.96	15.74	2.69	628	839	2775	1283
4H-2, 70-71.5	29.18	18.91	71.12	7.76	0.0579	1.88	9.94	1.34	486	1083	3005	393
4H-2, 90-91.5	29.38	20.89	78.73	8.75	0.1509	1.72	13.68	1.96	385	946	2575	645
4H-2, 110-111.5	29.58	18.84	59.31	7.55	0.0641	1.67	25.35	2.81	498	991	1852	1298
4H-2, 130-131.5	29.78	18.91	67.53	8.11	0.0681	1.69	21.91	2.18	413	1161	2480	917
4H-3, 0-1.5	29.98	20.30	71.36	7.84	0.1898	2.05	7.70	1.33	283	971	2421	118
4H-3, 40-41.5	30.38	22.35	76.53	9.36	0.0762	1.82	6.79	1.33	213	963	2800	138
4H-3, 60-61.5	30.58	22.37	75.07	10.26	0.1256	1.68	12.54	2.40	503	939	2793	995
4H-3, 80-81.5	30.78	19.59	71.69	8.76	0.1162	1.51	32.75	3.63	390	907	1744	1249
4H-3, 100-101.5	30.98	23.79	77.44	9.48	0.0793	1.93	6.91	1.31	471	937	2905	149
4H-3, 105-106.5	31.03	23.86	78.49	9.29	0.1014	2.15	13.34	1.32	791	1077	3194	156
4H-3, 120-121.5	31.18	20.87	72.85	8.89	0.0952	2.50	14.23	1.39	510	955	2983	360
4H-3, 140-141.5	31.38	21.95	80.63	9.15	0.1324	1.54	15.84	1.87	340	1055	2486	573
4H-4, 10-11.5	31.58	23.65	81.76	7.92	0.1424	1.60	11.26	2.17	243	1114	2117	515
4H-4, 30-31.5	31.78	19.38	59.54	6.69	0.0645	2.26	19.20	3.67	635	769	2030	1678
4H-4, 50-51.5	31.98	19.48	51.77	6.44	0.0562	1.54	29.55	5.17	406	638	841	2202
4H-4, 70-71.5	32.18	20.67	44.81	6.57	0.0484	1.25	39.05	5.88	370	557	650	2861
4H-4, 90-91.5	32.28	20.60	40.57	5.94	0.0386	1.29	46.35	6.90	493	602	684	3239
4H-4, 110-111.5	32.58	20.22	52.16	7.67	0.1031	1.07	34.64	6.12	542	731	1013	3019
4H-4, 130-131.5	32.78	19.82	63.09	7.92	0.1094	1.21	17.37	4.17	527	759	1621	1723
4H-5, 0-1.5	32.98	18.88	64.80	6.62	0.1107	1.26	17.78	3.96	357	853	1284	1479
4H-5, 20-21.5	33.18	21.52	63.04	7.59	0.0667	2.69	12.89	2.82	201	1329	2684	262
4H-5, 40-41.5	33.38	18.62	59.37	7.69	0.1199	1.28	28.69	4.31	463	759	1024	2196
177-1089B-												
4H-3, 115-116.5	33.55	18.50	50.96	7.09	0.0472	1.52	36.87	4.80	532	651	1176	2128
4H-4, 9-10.5	33.99	21.28	68.34	7.73	0.0614	1.88	10.46	2.47	411	824	2009	913
4H-4, 29-30.5	34.19	20.47	72.76	8.75	0.1207	1.52	13.06	2.66	562	995	2664	1146
4H-4, 49-50.5	34.39	21.84	66.62	7.43	0.0739	2.09	11.12	2.37	479	905	2237	1026
4H-4, 69-70.5	34.59	15.67	55.24	6.88	0.1010	1.51	10.70	2.09	353	883	1907	882

Table T1 (continued).

Core, section, interval (cm)	Depth (mcd)	P (µmol/g)	Ti (µmol/g)	Ba (µmol/g)	Cd (µmol/g)	Zn (µmol/g)	Mn (µmol/g)	Sr (µmol/g)	Mg (µmol/g)	Fe (µmol/g)	Al (µmol/g)	Ca (µmol/g)
4H-4, 90-91.5	34.8	19.37	65.63	7.87	0.1193	1.19	9.01	3.18	367	948	1641	1255
4H-4, 109-110.5	34.99	19.31	58.72	7.48	0.1111	1.11	18.61	5.68	343	668	769	2278
4H-4, 129-130.5	35.19	14.61	36.41	5.83	0.0291	1.13	22.23	4.92	536	651	779	2882
4H-4, 0-1.5	35.4	17.17	37.84	4.87	0.0168	1.25	31.90	6.47	458	562	568	3268
4H-5, 19-20.5	35.59	19.02	31.62	3.01	0.0226	1.62	43.38	8.79	412	456	250	4718
4H-5, 40-41.5	35.8	17.78	31.09	3.79	0.0890	0.65	37.01	8.44	391	630	368	4957
4H-5, 59-60.5	35.99	16.94	36.60	4.94	0.0938	0.89	40.17	8.42	394	498	588	4789
4H-5, 79-80.5	36.19	16.10	35.39	4.22	0.0252	1.28	39.77	7.76	423	435	237	3340
4H-5, 99-100.5	36.39	17.92	43.42	5.29	0.0485	1.39	27.51	6.02	515	615	846	2952
4H-5, 119-120.5	36.59	14.14	32.81	4.21	0.0236	1.40	34.60	6.22	512	586	656	3739
4H-5, 140-141.5	36.8	14.54	40.16	4.70	0.0109	1.59	25.67	4.88	544	672	920	2515
4H-6, 9-10.5	36.99	16.21	44.70	5.44	0.0454	1.80	29.12	6.53	458	535	683	2743
4H-6, 29-30.5	37.19	17.37	40.68	5.17	0.0386	1.46	30.79	6.58	552	637	711	3356
4H-6, 49-50.5	37.39	16.35	34.61	4.52	0.0307	1.38	33.84	7.12	471	591	324	3985
177-1089C-												
5H-1, 125-126.5	37.57	16.58	36.65	4.93	0.1028	0.85	39.47	7.95	435	534	636	5087
5H-1, 145-146.5	37.77	15.75	38.71	5.54	0.1039	0.89	41.79	7.78	312	432	582	3589
5H-2, 15-16.5	37.97	16.42	34.41	5.11	0.1027	0.98	40.94	7.58	487	590	508	5150
5H-2, 35-36.5	38.17	18.58	38.46	5.47	0.1040	0.86	40.74	8.36	418	465	646	4872
5H-2, 55-56.5	38.37	16.93	33.88	5.64	0.0971	0.71	41.55	8.40	377	410	405	4407
5H-2, 75-76.5	38.57	19.11	37.42	5.59	0.1020	0.85	46.08	8.67	403	544	783	5091
5H-2, 95-96.5	38.77	17.48	40.80	6.36	0.1064	0.99	47.30	8.04	415	559	767	4407
5H-2, 115-116.5	38.97	18.68	52.36	6.86	0.1148	1.38	31.02	6.39	440	683	793	2812
5H-2, 135-136.5	39.17	17.51	57.95	7.55	0.0491	1.96	16.66	3.49	552	804	1772	1296
177-1089B-												
5H-2, 15-16.5	39.41	19.09	61.37	7.86	0.0605	1.85	11.32	2.04	520	992	2554	792
5H-2, 34-35.5	39.6	20.82	69.00	8.77	0.0802	2.78	14.66	2.36	413	1043	2756	1077
5H-2, 55-56.5	39.81	18.73	61.14	8.35	0.0595	1.91	19.01	2.61	546	918	2346	1130
5H-2, 74-75.5	40	21.22	76.45	9.81	0.1312	1.89	13.03	2.30	481	971	2906	801
5H-2, 94-95.5	40.2	20.87	73.27	9.05	0.0787	1.97	8.55	1.55	464	1073	3148	365
5H-2, 114-115.5	40.4	22.33	79.28	9.21	0.1330	1.62	9.39	1.60	289	1087	2647	183
5H-2, 134-135.5	40.6	23.43	80.48	8.68	0.0649	2.05	8.59	1.49	365	926	2804	239
5H-3, 5-6.5	40.81	18.66	67.85	8.66	0.0593	4.86	13.80	2.13	395	844	2170	677
5H-3, 24-25.5	41	20.57	75.19	9.35	0.1635	2.02	14.68	1.54	377	1130	2753	427
5H-3, 44-45.5	41.2	19.80	75.67	8.59	0.1314	1.45	10.28	2.37	537	936	2773	984
5H-3, 64-65.5	41.4	18.82	73.67	9.00	0.1275	1.47	15.01	2.30	390	1015	2298	881
5H-3, 84-85.5	41.6	15.87	54.23	7.55	0.0522	1.40	13.93	2.45	343	939	1171	796
5H-3, 105-106.5	41.81	17.42	56.55	8.29	0.0401	3.89	27.06	4.00	550	706	1418	1678
5H-3, 124-125.5	42	18.23	44.86	7.98	0.0366	1.47	62.87	6.65	555	625	896	3188
5H-3, 144-146.5	42.2	19.06	41.18	7.56	0.0967	1.99	80.34	8.11	381	561	404	3650
5H-4, 14-15.5	42.4	26.63	55.29	8.83	0.1075	1.90	28.40	4.21	863	1097	2862	2456
5H-4, 34-35.5	42.6	19.17	62.31	9.41	0.0609	1.85	24.72	4.46	530	794	1635	1760
5H-4, 55-56.5	42.81	23.37	67.19	8.94	0.0725	2.07	13.86	2.51	393	834	2134	995
5H-4, 74-75.5	43	19.15	66.89	9.61	0.0794	2.07	28.86	3.14	562	955	2471	1436
5H-4, 94-95.5	43.2	20.75	68.82	8.77	0.0491	1.88	8.76	1.55	451	943	2815	430
5H-4, 114-115.5	43.4	19.16	66.20	8.87	0.0575	1.77	11.15	1.95	585	991	3071	713
5H-4, 134-135.5	43.6	20.60	68.72	9.00	0.0926	2.22	11.43	1.87	706	1127	3127	716
5H-5, 4-5.5	43.8	18.06	68.81	9.50	0.0566	1.93	11.05	1.79	436	845	2482	535
5H-5, 24-25.5	44	18.26	67.16	7.88	0.0453	1.72	10.51	1.95	368	900	2632	759
5H-5, 44-45.5	44.2	15.84	55.62	3.18	0.0402	1.48	25.14	3.24				
5H-5, 64-65.5	44.4	15.90	52.56	8.22	0.0500	1.44	24.28	3.10	464	942	1702	1429
5H-5, 84-85.5	44.6	19.36	70.17	9.70	0.0585	1.84	9.78	1.85	535	1066	3139	796
5H-5, 105-106.5	44.81	18.63	58.88	8.88	0.0475	1.66	17.57	3.11	680	847	2483	1487
5H-5, 124-125.5	45	14.67	46.78	5.51	0.0549	1.57	15.66	2.44		848	1431	1663
5H-5, 144-145.5	45.2	29.47	72.30	11.48	0.1503	2.75	21.41	3.80		1035	3416	2275
5H-6, 20-21.5	45.46	27.79	78.23	11.97	0.1414	2.78	14.74	3.13		929	2198	1128
177-1089C-												
6H-1, 120-121.5	45.66	29.51	80.05	11.83	0.1581	3.18	19.00	2.34		1409	3162	834
6H-1, 140-141.5	45.86	23.59	86.14	8.40	0.1921	2.60	6.07	1.31		1461	4468	143
6H-2, 10-11.5	46.06	31.98	91.62	10.97	0.1626	3.36	6.50	1.75		1255	3854	154
6H-2, 30-31.5	46.26	27.77	75.25	11.26	0.1613	2.84	12.75	1.62		1770	2911	67
6H-2, 50-51.5	46.46	30.06	85.59	10.51	0.1612	3.37	6.63	1.66		1179	3483	106
6H-2, 70-71.5	46.66	31.95	85.91	10.67	0.1507	2.99	7.81	1.85		1494	4002	403
6H-2, 90-91.5	46.86	30.72	84.50	9.42	0.1447	2.79	7.24	2.45		1005	2719	767
6H-2, 110-111.5	47.06	31.82	86.42	10.55	0.1520	3.40	9.77	2.12		1405	3548	802
6H-2, 130-131.5	47.26	33.45	79.17	10.55	0.1582	3.96	10.70	3.68		1113	3781	2068
6H-2, 148.5-150	47.44	32.88	67.87	11.12	0.1503	10.00	13.93	4.16		961	3115	2149
6H-3, 20-21.5	47.66	33.98	73.60	9.54	0.1511	3.96	17.62	4.70		735	2204	1823

Table T1 (continued).

Core, section, interval (cm)	Depth (mcd)	P (µmol/g)	Ti (µmol/g)	Ba (µmol/g)	Cd (µmol/g)	Zn (µmol/g)	Mn (µmol/g)	Sr (µmol/g)	Mg (µmol/g)	Fe (µmol/g)	Al (µmol/g)	Ca (µmol/g)
6H-3, 40-41.5	47.86	31.64	67.79	8.38	0.1395	2.94	19.44	6.03		790	2300	2423
6H-3, 60-61.5	48.06	30.03	46.03	7.89	0.1361	1.83	38.31	9.45		683	851	4180
6H-3, 80-81.5	48.26	30.22	34.62	5.86	0.1155	1.35	49.89	11.15		526	598	6709
6H-3, 100-101.5	48.46	30.09	34.94	6.55	0.1238	1.90	48.78	11.79		556	659	6930
6H-3, 120-121.5	48.66	28.17	36.05	5.88	0.1133	1.87	41.62	10.86		617	663	6622
6H-3, 140-141.5	48.86	30.30	40.90	9.13	0.1236	2.45	39.95	10.58		557	643	5644
6H-4, 10-11.5	49.06	28.79	45.06	11.22	0.1339	2.51	29.63	9.34		779	1093	5068
6H-4, 30-31.5	49.26	27.87	50.52	11.78	0.1369	2.75	23.86	7.87		885	1400	4423
6H-4, 50-51.5	49.46	27.36	55.46	14.36	0.1373	3.03	19.66	7.16		799	1709	3559
6H-4, 70-71.5	49.66	27.66	55.83	11.16	0.1368	2.75	16.84	6.31		848	1876	3288
6H-4, 91-91.5	49.86	27.31	53.87	12.87	0.1481	3.46	23.53	8.00		501	750	2960
6H-4, 110-111.5	50	24.33	50.89	12.87	0.1339	3.32	24.93	8.40		970	1336	5199
6H-4, 130-131.5	50.26	26.23	53.24	10.42	0.1459	4.32	25.56	7.95		1004	1375	4155
6H-4, 148.5-150	50.44	31.77	67.85	5.80	0.1322	3.34	25.55	4.78		655	915	3884
177-1089B-												
6H-2, 15-16.5	50.65	27.10	54.51	11.50	0.1371	4.95	19.19	7.10		485	1151	2866
6H-2, 35-36.5	50.85	27.14	50.76	11.20	0.1389	3.76	23.81	8.18		780	1119	4266
6H-2, 55-56.5	51.05	26.21	51.36	9.96	0.1345	3.46	25.28	8.22		846	1184	4840
6H-2, 75-76.5	51.25	26.55	50.23	9.83	0.1297	4.28	27.82	8.95		290	446	2384
6H-2, 95-96.5	51.45	25.13	47.12	9.27	0.1236	4.74	28.08	9.03		657	823	4556
6H-2, 115-116.5	51.65	25.02	45.81	11.53	0.1229	2.54	30.66	9.44		795	998	6276
6H-2, 135-136.5	51.85	24.02	49.13	9.19	0.1225	2.25	29.12	9.06		714	1051	5000
6H-3, 4-5.5	52.04	24.12	42.15	9.54	0.1179	2.39	34.01	10.35		640	660	5579
6H-3, 25-26.5	52.25	23.27	41.64	10.06	0.1215	2.40	34.02	10.26		533	577	5244
6H-3, 45-46.5	52.45	26.07	38.41	10.76	0.1187	2.06	41.19	10.80		549	493	5961
6H-3, 65-66.5	52.65	24.85	44.20	8.91	0.1264	2.40	33.88	9.70		371	471	3354
6H-3, 85-86.5	52.85	27.83	48.40	8.61	0.1280	2.82	32.21	9.21		726	1030	4726
6H-3, 105-106.5	53.05	26.55	55.08	6.03	0.1295	2.89	26.51	7.98		816	1527	4506
6H-3, 125-126.5	53.25	27.02	60.35	6.03	0.1255	3.00	26.81	7.88		650	1247	3235
6H-3, 145-146.5	53.45	20.70	52.96	4.57	0.1725	2.65	17.08	4.99		786	1337	2473
6H-4, 10-11.5	53.6	23.57	55.22	5.44	0.1765	3.63	21.59	5.55		786	1353	2503
6H-4, 30-31.5	53.79	23.79	61.52	6.79	0.1819	3.66	16.98	4.96		727	1771	1918
6H-4, 49-50.5	53.99	23.66	67.48	6.62	0.1922	3.40	12.70	3.90		771	2412	1621
6H-4, 69-70.5	54.19	22.24	62.07	6.03	0.1863	2.71	13.08	3.62		975	2098	2010
6H-4, 89-90.5	54.39	22.38	60.89	5.57	0.1781	3.03	24.15	5.20		733	1845	2292
6H-4, 109-110.5	54.59	22.08	56.00	7.02	0.1777	2.75	24.42	5.41		838	2067	3108
6H-4, 129-130.5	54.79	22.91	58.07	4.45	0.1828	3.06	27.15	5.90		785	1791	2952
6H-5, 0-1.5	55	22.58	62.44	6.01	0.1784	2.96	22.14	4.54		661	1983	2170
6H-5, 20-21.5	55.2	20.52	59.45	6.33	0.1803	2.96	18.78	4.13		624	1934	1747
6H-5, 40-41.5	55.4	19.32	59.30	4.34	0.1941	2.82	19.29	4.23		949	2163	2351
6H-5, 60-61.5	55.6	20.07	55.33	4.26	0.1686	2.36	19.84	4.14		830	1786	2855
6H-5, 80-81.5	55.8	21.55	54.18	5.12	0.1753	2.47	25.55	4.80		780	1589	2539
6H-5, 100-101.5	56	20.45	67.15	7.17	0.1946	3.15	10.14	2.64		1267	3978	2290
6H-5, 120-121.5	56.2	19.73	49.13	3.73	0.1752	2.95	24.59	4.61		1043	2172	3701
177-1089C-												
7H-1, 95-96.5	56.37	21.97	67.25	7.36	0.1945	3.18	13.85	3.07		870	2896	1825
7H-1, 115-116.5	56.57	18.74	51.24	4.34	0.1841	2.27	11.16	2.03		579	2068	1090
7H-1, 135-136.5	56.77	21.08	57.25	5.16	0.1829	2.94	48.86	4.19		644	1793	1844
7H-2, 25-26.5	57.17	20.72	68.92	4.62	0.1797	2.89	24.19	4.42		1054	2296	2536
7H-2, 45-46.5	57.37	22.39	63.13	4.97	0.1885	2.78	31.21	5.30		1016	1955	2999
7H-2, 65-66.5	57.57	24.05	60.25	3.79	0.1777	2.56	38.09	6.04		1115	2030	3893
7H-2, 85-86.5	57.77	23.28	67.06	4.60	0.1881	2.70	25.74	4.12		657	1780	1605
7H-2, 105-106.5	57.97	24.56	83.24	7.22	0.1865	3.15	8.93	1.82		1540	4584	936
7H-2, 125-126.5	58.17	20.06	66.31	6.93	0.1990	2.70	18.50	2.50		927	2454	1202
7H-2, 145-146.5	58.37	22.75	72.52	6.68	0.1953	2.83	17.23	3.00		1120	2900	1571
7H-3, 15-16.5	58.57	23.69	69.02	6.29	0.1920	2.63	22.06	3.72		719	2465	1883
7H-3, 35-36.5	58.77	25.11	80.41	8.40	0.1914	3.10	13.42	2.87		1040	3532	1690
7H-3, 55-56.5	58.97	24.54	70.49	6.05	0.1945	2.73	32.82	3.66		859	2785	1998
7H-3, 75-76.5	59.17	23.91	71.85	6.60	0.1912	2.58	21.14	3.51		1010	3084	2084
7H-3, 95-96.5	59.37	26.46	78.97	6.91	0.1971	2.81	9.10	1.77		832	2914	718
7H-3, 115-116.5	59.57	25.75	68.10	6.15	0.1904	2.67	24.51	4.29		980	2564	2482
7H-3, 135-136.5	59.77	24.39	65.12	4.84	0.1871	2.80	30.25	5.27		1015	3449	396
7H-4, 5-6.5	59.97	27.63	86.61	9.25	0.2091	3.04	7.99	1.63				
7H-4, 25-26.5	60.17	26.68	74.45	8.58	0.2005	2.82	8.87	1.82		924	3257	774
7H-4, 45-46.5	60.37	26.23	85.06	10.47	0.1924	3.16	11.01	2.08		1037	3697	1244
7H-4, 65-66.5	60.57	25.81	69.93	12.25	0.1893	2.93	7.04	1.79		1154	3517	582
7H-4, 85-86.5	60.77	25.22	76.14	8.20	0.2034	2.80	9.32	2.04		1471	4515	1470
7H-4, 105-106.5	60.97	26.63	76.60	8.52	0.1917	2.72	16.26	2.77		735	2517	1068

Table T1 (continued).

Core, section, interval (cm)	Depth (mcd)	P (µmol/g)	Ti (µmol/g)	Ba (µmol/g)	Cd (µmol/g)	Zn (µmol/g)	Mn (µmol/g)	Sr (µmol/g)	Mg (µmol/g)	Fe (µmol/g)	Al (µmol/g)	Ca (µmol/g)
7H-4, 125-126.5	61.17	25.68	68.49	6.61	0.1954	2.51	19.17	3.45		1054	3497	2464
7H-4, 145-146.5	61.37	26.27	73.58	6.33	0.1925	2.66	13.30	2.88		1199	4029	1944
7H-5, 15-16.5	61.57	28.80	79.09	6.65	0.2010	3.15	12.56	3.49		1078	2547	1703
7H-5, 35-36.5	61.77	25.24	68.48	6.69	0.1905	3.01	10.64	3.48		656	2086	1411
7H-5, 55-56.5	61.97	27.58	70.77	8.10	0.1949	2.76	9.70	3.25		739	2208	1500
7H-5, 75-76.5	62.17	29.10	70.17	6.70	0.2031	2.56	10.31	3.57		826	2350	1486
7H-5, 95-96.5	62.37	26.48	66.89	6.30	0.2002	2.78	9.32	4.21		897	2754	2418
7H-5, 115-116.5	62.57	25.78	60.83	6.32	0.1805	2.37	10.29	4.70		793	1789	2352
7H-5, 135-136.5	62.77	22.66	46.45	3.74	0.1923	2.38	14.22	6.02		1220	1333	3960
7H-6, 5-6.5	62.97	19.96	38.13	5.25	0.1733	1.92	19.03	8.14		811	847	6020
7H-6, 25-26.5	63.17	21.14	35.47	4.57	0.1773	1.80	23.04	8.93		496	125	2630
7H-6, 45-46.5	63.37	26.87	38.72	7.94	0.1788	1.88	31.89	12.66		591	166	7281
7H-6, 65-66.5	63.57	20.57	26.37	5.44	0.1696	1.57	28.93	12.18		312	172	6518
177-1089B-												
7H-3, 125-126.5	63.97	21.11	24.00	5.21	0.1735	1.62	25.96	11.77		400	289	8042
7H-4, 15-16.5	64.37	23.02	30.80	5.33	0.1640	1.68	19.77	9.41		706	515	7560
7H-4, 55-56.5	64.77	17.50	28.32	3.64	0.1647	1.98	18.03	7.53		551	600	6147
7H-4, 95-76.5	65.17	15.43	33.47	3.94	0.1622	1.96	17.34	6.40		920	1129	6533
7H-4, 135-136.5	65.57	13.78	29.15	3.85	0.1512	1.94	21.62	6.85		575	762	5945
7H-5, 25-26.5	65.97	10.80	30.66	3.12	0.1487	1.66	21.52	5.82		527	374	4959
177-1089C-												
8H-1, 110-111.5	66.37	16.39	41.73	4.14	0.1576	2.17	16.79	4.99		911	1535	4113
8H-1, 131-132.5	66.58	14.09	39.29	2.84	0.0587	1.83	9.85	2.94		710	1432	2870
8H-2, 0-1.5	66.77	16.81	45.43	3.88	0.1634	2.18	12.70	3.95		882	1756	3671
8H-2, 20-21.5	66.97	13.82	35.08	2.84	0.0577	1.74	18.42	3.73		419	250	2179
8H-2, 40-41.5	67.17	20.04	48.29	4.18	0.1719	2.71	19.65	5.89		786	1434	4041
8H-2, 60-61.5	67.37	14.43	38.38	3.15	0.0675	2.02	13.48	3.61		425	403	1995
8H-2, 80-81.5	67.57	13.63	40.31	2.77	0.1571	1.99	15.35	4.59		699	1098	3361
8H-2, 100-101.5	67.77	12.83	35.91	2.60	0.0548	1.65	13.70	3.56		1001	528	2650
8H-2, 120-121.5	67.97	28.06	70.22	8.40	0.1730	3.10	29.95	8.16		1270	683	4327
8H-2, 140-141.5	68.17	13.21	25.19	2.48	0.0598	1.55	15.65	4.40		338	364	2766
8H-3, 10-11.5	68.37	15.90	38.39	5.14	0.1621	1.80	19.00	5.49		770	1339	4934
8H-3, 30-31.5	68.57	12.99	32.86	3.76	0.0552	2.75	16.02	4.61		292	214	2329
8H-3, 50-51.5	68.77	13.25	37.31	3.55	0.1564	2.02	19.00	5.98		658	710	3617
8H-3, 70-71.5	68.97	13.73	26.25	3.25	0.0624	1.71	17.18	4.93		421	431	3473
8H-3, 90-91.5	69.17	19.26	39.01	4.64	0.1799	2.32	25.38	7.47		771	930	5823
8H-3, 110-111.5	69.37	12.35	27.87	4.03	0.0541	1.46	19.67	5.32		315	334	3226
8H-3, 130-131.5	69.57	13.06	29.91	4.25	0.1604	1.59	23.49	7.17		1118	1008	7985
8H-4, 0-1.5	69.77	11.51	22.28	3.14	0.0525	1.19	24.56	6.46		245	75	4408
8H-4, 20-21.5	69.97	12.37	24.90	4.53	0.1585	1.34	27.69	8.34		473	536	6489
8H-4, 40-41.5	70.17	12.62	25.02	3.00	0.0684	1.36	20.47	5.52		284	241	3416
8H-4, 60-61.5	70.37	13.88	34.52	3.48	0.1547	2.18	22.41	6.17		619	648	4477
8H-4, 80-81.5	70.57	13.09	31.47	2.87	0.0527	1.47	17.81	4.65		357	214	3033
8H-4, 100-101.5	70.77	14.25	36.32	3.94	0.1536	1.66	26.29	6.56		731	1041	5272
8H-4, 140-141.5	71.17	16.98	48.69	4.17	0.1550	1.96	13.89	3.82		878	2321	3160
8H-5, 30-31.5	71.57	15.51	53.36	4.90	0.1588	2.15	10.30	3.09		1104	2620	2862
8H-5, 70-71.5	71.97	20.05	49.45	4.71	0.1741	2.30	32.67	6.51		1106	1423	5082
8H-5, 110-111.5	72.37	13.93	33.70	5.29	0.1562	1.44	32.39	6.00		471	685	3200
177-1089B-												
8H-2, 140-141.5	72.75	21.50	59.93	5.14	0.1809	2.81	15.13	3.60		583	1709	1693
8H-3, 30-31.5	73.15	20.76	59.58	4.57	0.1785	2.43	21.74	3.58		1182	2768	3201
8H-3, 50-51.5	73.35	13.83	41.71	3.71	0.0523	1.75	18.97	2.95		791	766	1865
8H-3, 50-51.5	73.55	15.32	51.06	4.28	0.1622	2.27	20.66	3.73		1260	2547	3282
8H-3, 70-71.5	73.75	27.23	63.04	5.73	0.1400	3.32	34.87	5.69		999	2093	3378
8H-3, 90-91.5	73.95	28.09	61.97	6.07	0.1371	3.17	38.06	6.13		705	1764	3083
8H-3, 110-111.5	74.05	25.96	58.47	8.11	0.1272	3.08	56.48	7.41		997	1885	4586
8H-3, 130-131.5	74.15	26.74	52.40	6.59	0.1408	2.75	57.99	7.97		1090	1335	4454
8H-4, 0-1.5	74.35	28.26	65.69	5.78	0.1317	3.37	26.52	4.90		1035	2535	3040
8H-4, 20-21.5	74.55	33.25	70.83	6.98	0.1365	3.30	23.34	4.62		1083	2567	3128
8H-4, 39-41.5	74.74	25.58	51.87	9.75	0.1302	2.67	24.88	8.57		834	2139	2694
8H-4, 60-61.5	74.95	31.56	65.25	6.24	0.1313	3.14	30.63	4.98		1214	2538	3885
8H-4, 80-81.5	75.15	31.04	56.26	5.20	0.1212	2.77	49.16	6.89		505	1316	2936
8H-4, 99-101.5	75.34	26.92	79.94	8.68	0.1384	3.69	10.51	2.41		951	2828	866
8H-4, 120-121.5	75.55	15.37	54.38	7.83	0.0742	2.19	5.24	1.19		1047	2979	456
8H-4, 140-141.5	75.75	14.60	54.99	5.54	0.0749	2.10	4.53	1.01		729	2536	351
8H-5, 10-11.5	75.95	14.76	54.34	7.48	0.0687	2.03	3.93	0.97		787	2218	379
8H-5, 30-31.5	76.15	22.37	68.74	10.12	0.1881	2.52	13.19	2.58		1322	3720	1716
8H-5, 50-51.5	76.35	26.24	93.86	9.49	0.0780	2.93	14.65	2.61		1400	3089	1005

Table T1 (continued).

Core, section, interval (cm)	Depth (mcd)	P (µmol/g)	Ti (µmol/g)	Ba (µmol/g)	Cd (µmol/g)	Zn (µmol/g)	Mn (µmol/g)	Sr (µmol/g)	Mg (µmol/g)	Fe (µmol/g)	Al (µmol/g)	Ca (µmol/g)
8H-5, 70-71.5	76.55	18.21	70.86	9.34	0.1838	2.49	6.45	1.60		1088	3228	496
8H-5, 110-111.5	76.95	21.62	69.71	7.36	0.2007	2.87	15.52	2.47		1516	3924	2066
177-1089C-												
9H-2, 55-56.5	77.33	16.95	63.89	5.29	0.1696	2.36	8.52	1.68		1282	4164	1205
9H-2, 75-76.5	77.53	14.99	50.37	4.92	0.1669	1.83	9.31	2.37		1069	2297	1690
9H-2, 95-96.5	77.73	13.11	44.69	3.55	0.1574	1.82	20.99	3.79		790	863	2575
9H-2, 115-116.5	77.93	14.90	44.64	4.22	0.1611	1.83	23.99	4.25		978	1351	3525
9H-2, 135-136.5	78.13	22.03	64.87	10.62	0.1816	2.69	24.24	4.74		1166	2353	3259
9H-3, 10-11.5	78.38	16.19	58.77	5.53	0.1638	1.95	10.50	2.38		916	1586	1107
9H-3, 30-31.5	78.58	23.38	71.36	6.03	0.1852	2.66	11.91	3.17		1320	3256	2226
9H-3, 50-51.5	78.78	15.57	57.28	5.96	0.1724	2.02	9.79	2.52		1453	2730	1920
9H-3, 70-71.5	78.98	16.13	58.29	5.03	0.1714	2.00	9.67	2.63		919	2090	1512
9H-3, 90-91.5	79.18	21.80	72.35	8.25	0.1863	2.57	9.48	2.71		1423	3484	2162
9H-3, 110-111.5	79.38	14.73	51.60	4.38	0.1610	1.89	11.30	3.39		1180	1719	2936
9H-3, 130-131.5	79.58	22.44	56.73	3.97	0.1734	2.60	17.33	5.05		912	1384	3209
9H-4, 0-1.5	79.78	13.59	40.96	3.82	0.1508	1.43	18.63	4.97		829	832	4566
9H-4, 20-21.5	79.98	14.90	43.69	4.38	0.1558	1.79	18.38	5.02		1166	1045	5056
9H-4, 40-41.5	80.18	16.14	50.22	4.74	0.1617	1.78	10.31	3.47		1004	1505	2410
9H-4, 60-61.5	80.38	19.74	46.01	4.08	0.1799	2.06	20.57	6.20		498	767	2511
9H-4, 80-81.5	80.58	15.47	42.62	4.54	0.1591	1.83	12.74	4.61		1004	1441	4884
9H-4, 100-101.5	80.78	20.72	48.67	4.87	0.1701	2.11	17.74	6.24		827	1151	4348
9H-4, 120-121.5	80.98	13.97	43.41	4.91	0.1634	1.66	12.71	4.03		909	866	3050
9H-4, 140-141.5	81.18	14.81	37.03	3.85	0.1657	1.47	13.48	5.23		700	1125	3897
9H-5, 10-11.5	81.38	14.10	37.03	4.46	0.1568	1.53	13.77	5.24		919	984	5675
9H-5, 30-31.5	81.58	19.68	43.77	4.51	0.1728	1.87	17.55	6.81		655	1035	4742
9H-5, 50-51.5	81.78	12.28	28.89	4.28	0.1526	2.59	19.25	6.65		644	799	6375
9H-5, 90-91.5	81.98	12.91	28.79	4.79	0.1503	1.59	20.62	7.63		495	579	5879
9H-5, 110-111.5	82.18	13.79	28.28	3.92	0.1571	1.28	18.75	7.04		513	580	6201
9H-5, 130-131.5	82.41	14.16	29.05	4.84	0.1545	1.26	19.48	6.98		457	338	4984
177-1089B-												
9H-2, 99-101.5	83.16	11.98	20.93	4.39	0.1471	1.17	24.69	7.85		463	368	7099
9H-2, 120-121.5	83.37	20.00	34.89	5.59	0.1614	2.01	30.54	10.06		616	716	8297
9H-2, 140-141.5	83.57	14.90	39.50	4.07	0.1592	1.63	17.83	6.00		822	842	5197
9H-3, 10-11.5	83.77	20.01	49.80	4.01	0.1744	2.32	20.78	5.73		956	1670	4487
9H-3, 30-31.5	83.97	12.15	42.95	2.83	0.1558	2.04	14.00	3.83		725	643	2667
9H-3, 50-51.5	84.17	13.67	45.46	3.37	0.1647	2.29	17.46	3.94		1238	1934	4293
9H-3, 70-71.5	84.37	12.56	37.13	3.70	0.1517	2.05	20.78	5.38		864	601	5353
9H-3, 90-91.5	84.57	12.71	30.98	2.49	0.0567	1.58	21.46	5.12		382	346	3754
9H-3, 110-111.5	84.77	13.43	32.89	3.08	0.0696	1.53	22.53	4.81		363	294	2934
9H-3, 130-131.5	84.97	13.01	33.76	4.05	0.0567	1.57	20.75	4.48		419	457	3153
9H-4, 0-1.5	85.17	13.92	45.34	4.36	0.0722	1.94	11.50	2.79		636	1051	2311
9H-4, 20-21.5	85.37	13.67	53.65	4.27	0.1660	2.03	12.33	3.06		757	1783	1481
9H-4, 60-61.5	85.77	21.37	69.05	7.76	0.1931	3.22	10.46	2.52		1261	3307	1700
9H-4, 80-81.5	85.97	12.28	46.34	3.93	0.0581	1.94	8.53	1.70		936	2704	1641
9H-4, 99-101.5	86.16	15.16	61.90	4.93	0.1664	2.53	9.97	2.18		1052	2396	1318
9H-4, 140-141.5	86.57	21.94	69.62	8.43	0.1991	3.10	8.95	1.54		1227	3339	373
9H-5, 30-31.5	86.97	16.52	63.33	6.08	0.1734	2.25	6.23	1.44		1043	2699	780
9H-5, 50-51.5	87.17	14.44	51.61	5.95	0.1666	2.02	13.42	2.76		934	1521	1633
9H-5, 70-71.5	87.37	23.18	68.88	9.54	0.1900	2.80	12.11	2.54		1047	3382	1324
9H-5, 90-91.5	87.57	15.79	61.61	11.04	0.1741	2.00	4.16	1.16		1308	2741	60
9H-5, 110-111.5	87.77	18.09	71.80	9.39	0.1892	2.37	5.52	1.23		1345	3790	145
9H-6, 0-1.5	88.17	24.04	72.28	11.72	0.2015	2.97	5.11	1.48		1630	3951	127
9H-6, 20-21.5	88.37	18.19	65.12	7.39	0.1618	1.95	6.42	1.10		1621	3688	368
9H-6, 40-41.5	88.57	23.27	79.54	7.81	0.1854	2.69	13.29	2.32		1486	4718	1791
177-1089C-												
10H-2, 60-61.5	88.99	21.18	66.20	7.07	0.1947	2.75	23.50	2.78		1009	2421	1465
10H-2, 80-81.5	89.19	16.15	64.20	9.09	0.1706	2.41	7.12	1.26		1458	3223	394
10H-2, 100-101.5	89.39	22.49	81.17	8.46	0.1845	2.86	7.82	1.36		976	2388	27
10H-2, 120-121.5	89.59	24.76	85.12	10.91	0.1954	2.89	6.35	1.53		1641	4483	207
10H-2, 140-141.5	89.79	23.26	74.07	11.93	0.1968	3.22	7.52	1.58		1584	4293	298
10H-3, 8-9.5	89.97	17.67	69.16	9.95	0.1806	2.21	4.89	1.18		944	2821	72

Notes: Average relative standard deviations: P = 5.3%, Ti = 1.3%, Ba = 1.6%, Cd = 13.4%, Zn = 2.5%, Sr = 0.7%, Mn = 1.6%, Mg = 2.2%, Fe = 3.8%, Al = 6.7%, Ca = 2.6%. Mg concentrations were not determined for samples below 45 m. Data are over-specified for calculation purposes. For true analytical precision, please see the text.