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8. Data Report: Chemical Compositions of Secondary Minerals from Site 1256 Basement, ODP Leg 206[1]

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INTRODUCTION

Two basement holes were drilled during Ocean Drilling Program (ODP) Leg 206. Hole 1256C penetrates 88.5 m into basement and Hole 1256D, ~30 m to the south, penetrates 502 m into basement (Wilson, Teagle, Acton, et al., 2003). Recovered cores consist of basalts exhibiting the effects of low-temperature alteration by seawater. As part of a larger study of alteration effects, a study of the secondary mineralogy was undertaken. This data report presents the major and some minor element compositions of secondary minerals. Analyses focus on the major secondary phases, phyllosilicates, and less abundant feldspars, but also include limited analyses of carbonates and apatite. Different occurrences of secondary minerals are included (e.g., veins and vesicles replacing olivine and plagioclase) as well as variations with depth.

METHODS

Chemical analyses were performed on polished thin sections by electron microprobe and were carried out in three laboratories:

1. Analyses labeled M in Tables **T1**, **T2**, **T3**, and **T4** were performed at the University of Michigan (USA) using an automated Cameca CAMEBAX MBX microbeam instrument with four wavelength-dispersive spectrometers. Operating conditions were 15-kV ac-

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celerating voltage, 10-nA specimen current, 10-s counting times, and the electron beam was rastered over a 6 µm × 6 µm square. Natural and synthetic mineral standards were used for calibration. Analytical precision is <5% (2 σ) of reported values.

2. Laboratory analyses labeled B1 to B5 in Tables T1, T2, T3, and T4 were performed at Institut Français de Recherche pour l'Exploitation de la Mer (France) on a Cameca SX50 microprobe with ZAF correction program (Pouchou and Pichoir, 1985). Operating conditions were 15-kV accelerating voltage, 15-nA specimen current, 1-µm spot size, and 6-s counting time. The precision of the method used is <0.5% of the measured concentration.
3. Laboratory analyses P1 to P3 were performed at Paris VII University on an SX50 instrument (runs P1 and P2) and SX100 (run P3). Operating conditions were 15-kV accelerating voltage, 10-nA specimen current, 10-µm spot size, and 10-s counting time.

Because sample preparation and analyses were performed separately in different laboratories, color and occurrence were not recorded the same in every case, but these data are included where available. Schiffman and Day (1999) discuss difficulties associated with the analysis of hydrous minerals in low-grade metamorphic rocks. A focused beam (1-µm spot size) can lead to dehydration and consequent increased silica counts, but a defocused beam and larger spot size decreases count rates, requiring longer counting times that can lead to sample damage. Shiffman and Day (1999), however, report that trioctahedral Ca-rich saponite, like that in our samples, is stable under a fully focused electron beam at 10 nA for up to 180 s, and that Na-montmorillonite analyzed with a 10-µm spot size and 10-nA beam current was stable for up to 90-s analysis times. Because of the varying spot sizes used in the different laboratories of this study, it is thus possible that such effects may be present in our data, however, no evaluation of this possible effect in our study has been made.

RESULTS

Phyllosilicate analyses were first divided according to contents of K_2O, FeO, and MgO and classified as saponitic or celadonitic phyllosilicates, which are the most common types in oceanic basalts altered at low temperatures (e.g., Alt, 2004). Chemical formulas were calculated for phyllosilicates based on a layer charge of 22 (10 oxygens and 2 hydroxyls). Because the trace elements Cl, F, P, and Cr were not analyzed in all samples, for uniformity these elements were not included in the calculated formulas. For saponitic minerals, all iron was assumed to be ferrous (Andrews et al., 1983), and for celadonitic phyllosilicates, all iron was calculated as ferric. Analyses were screened for low oxide totals and for charge balance in calculated formulas. Results are grouped by mineralogy in Tables T1 and T2.

Table T1 presents analyses of celadonitic phyllosilicates, which range from pure celadonite compositions to mixtures or mixed layers with di-octahedral and trioctahedral smectites, as indicated by a broad range of formula K contents (0.2–0.8 per layer charge of 22) at slightly varying Fe contents (0.71–1.75) and widely varying octahedral totals (1.84–2.86). Table T2 presents data for saponitic phyllosilicates. These range from saponite compositions (Mg-rich trioctahedral) to beidellite compositions (Al-rich di-trioctahedral). In addition to compositional data,

structural information (e.g, by X-ray diffraction) is required for conclusive identification of mixed-layer phyllosilicates. Schiffman and Fridleifsson (1991) show that when formulas are calculated as chlorites (layer charge = 56), mixed-layer chlorite-smectite can be distinguished from smectite on a plot of Si + Al + Mg + Fe vs. total Al. Such an analysis of the data in Table T2 shows the presence of smectite-chlorite in two samples. Because of the lack of structural information, however, it is not known whether these comprise mixtures or mixed-layering.

Compositions of secondary feldspars are presented in Table T3, along with data for primary feldspars for comparison. Primary plagioclase compositions mostly fall in the range An_{58}–An_{83} but range to An_{21}. The cores of plagioclase phenocrysts apparently have higher An content than phenocryst rims, but only a few analyses of these zones were performed, so no reliable generalizations can be made regarding compositional zoning.

Below Core 206-1256D-55R, secondary feldspars are locally present replacing primary plagioclase phenocrysts and rarely replacing microlites. These secondary feldspars are mainly albite ($Ab_{95–99}$), although one analysis is oligoclase (Ab_{86}). K-feldspar replaces primary plagioclase in highly altered rocks from Core 206-1256D-57R. These secondary plagioclases have compositions of $Or_{81–100}$ and contain small amounts of an albite component ($Ab_{0–18}$). Also present in these rocks are celadonite, iron oxyhydroxides, chalcedony, and calcite (Wilson, Teagle, Acton, et al., 2003).

Table T4 presents compositional data for calcite and apatite. The few calcite analyses indicate variable Mn and Fe contents (as much as 7 and 1 mol%, respectively). One apatite analysis contains significant Cl, but because fluorine and trace elements (e.g., rare earth elements) were not analyzed, the analyses in Table T4 can be considered incomplete.

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Table T1. Celadonitic phylosilicates. (See table notes. Continued on next five pages.)

Core, section, interval (cm)	Lab	Analysis number	Depth (mbsf)	Mineral	Color	Occurrence	Major elements (wt%)														
							SiO_2	Al_2O_3	MgO	FeO	MnO	TiO_2	CaO	Na_2O	K_2O	P_2O_5	Cl	F	ZnO	Cr_2O_3	Total
206-1256C-																					
8R-3, 136–143	P1	158		Celad		Ves	49.34	1.23	5.16	28.26	0.00	0.00	0.77	0.24	6.48	0.00	0.00				91.48
8R-3, 136–143	P1	160		Celad		Ves	50.95	0.91	5.05	27.72	0.00	0.00	0.59	0.19	6.91	0.00	0.01				92.34
8R-3, 136–143	P1	164		Celad		Ves	50.14	1.74	5.28	26.52	0.00	0.09	0.61	0.13	6.98	0.00	0.00				91.47
8R-3, 136–143	P1	165		Celad		Ves	51.32	1.11	5.46	26.23	0.16	0.04	0.55	0.08	7.19	0.00	0.01				92.13
8R-3, 136–143	P1	166		Celad		Ol	50.79	1.39	5.67	26.43	0.06	0.09	0.70	0.11	6.67	0.03	0.03				91.96
8R-3, 136–143	P1	167		Celad		Ol	52.30	1.36	6.20	26.32	0.12	0.00	0.74	0.04	6.68	0.00	0.01				93.76
206-1256D-																					
13R-3, 60–63	B4	266	351.22		Gr	Ves	50.20	3.67	5.56	24.81	0.00	0.04	0.81	0.10	7.17	0.00				0.00	92.37
13R-3, 60–63	B4	262	351.22		Gr	Ol	52.07	2.02	4.83	26.89	0.01	0.00	0.68	0.09	7.03	0.02				0.12	93.77
13R-3, 60–63	B4	263	351.22		Gr	Ol	49.54	3.08	3.72	27.99	0.04	0.18	0.70	0.15	7.09	0.00				0.00	92.48
13R-1, 92–96	B4	179	351.22		Br		48.11	3.86	5.18	26.94	0.02	0.07	1.32	0.20	5.94	0.00				0.00	91.63
13R-1, 92–96	B4	180	351.22		Br		48.07	3.21	5.27	27.29	0.00	0.17	1.56	0.23	5.51	0.03				0.00	91.33
13R-1, 92–96	B4	181	351.22		Br		48.87	2.54	5.00	28.49	0.00	0.19	1.45	0.16	5.30	0.05				0.00	92.05
13R-3, 60–63	B4	268	351.22			Ves	49.83	4.64	12.99	17.89	0.03	0.03	1.94	0.23	1.14	0.00				0.00	88.72
14R-1, 23–28	M	76/1	359.73			Vn	49.18	5.17	3.79	25.52	0.01	0.11	0.43	0.06	7.16						91.41
14R-1, 23–28	M	75/1	359.73			Vn	48.68	5.16	3.73	25.70	0.01	0.09	0.37	0.07	7.21						91.02
14R-1, 23–28	M	77/1	359.73			Vn	48.55	5.26	3.82	25.75	0.01	0.09	0.44	0.05	7.24						91.20
19R-1, 36–38	B2	37	383.06			Vn	52.55	3.83	2.80	25.56	0.00	0.22	0.67	0.13	6.15	0.00	0.01		0.01	0.07	91.99
19R-1, 36–38	B2	36	383.06			Vn	52.28	3.36	2.90	24.98	0.02	0.06	0.64	0.04	5.97	0.00	0.04		0.00	0.00	90.26
19R-1, 36–38	B2	42	383.06			Ves	53.00	2.90	3.82	24.20	0.03	0.04	0.64	0.05	6.85	0.00	0.00		0.00	0.00	91.54
19R-1, 36–38	B2	43	383.06			Ves	52.47	2.86	3.76	24.23	0.04	0.00	0.51	0.05	6.93	0.00	0.01		0.00	0.00	90.86
19R-1, 36–38	B2	32	383.06			Int	52.17	2.88	4.02	23.34	0.09	0.27	0.88	0.03	6.49	0.02	0.01		0.00	0.00	90.20
19R-1, 36–38	B2	38	383.06			Vn	52.55	3.63	3.07	25.24	0.06	0.22	0.64	0.07	5.94	0.04	0.00		0.04	0.11	91.61
19R-1, 36–38	B2	33	383.06			Int	53.51	1.93	4.09	24.25	0.17	0.00	0.94	0.03	5.68	0.04	0.04		0.25	0.00	90.94
19R-1, 36–38	B2	34	383.06		Pale br		53.15	4.76	5.82	17.30	0.07	0.38	2.90	0.11	3.14	0.00	0.00		0.00	0.00	87.63
19R-1, 36–38	B2	35	383.06		Pale br		54.55	5.34	9.42	16.72	0.00	0.39	1.84	0.06	1.99	0.03	0.00		0.00	0.00	90.34
23R-1, 83–85	P1	10	411.13		Br gr	Int	50.35	1.50	4.12	24.91	0.11	0.22	1.13	0.18	3.68	0.04	0.04				86.27
23R-1, 83–85	P1	8	411.13		Br gr	Int	52.65	1.55	4.35	26.55	0.14	0.22	1.08	0.17	3.67	0.00	0.00				90.38
23R-1, 83–85	P1	4	411.13			Vn	51.27	0.58	4.29	26.69	0.01	0.05	0.51	0.06	6.70	0.08	0.03				90.28
23R-1, 83–85	P1	5	411.13			Vn	51.44	0.41	3.83	28.16	0.05	0.00	0.33	0.07	7.50	0.00	0.00				91.78
23R-1, 83–85	P1	3	411.13			Vn	53.17	0.61	4.92	27.16	0.04	0.00	0.63	0.06	5.88	0.05	0.00				92.54
23R-1, 83–85	P1	1	411.13			Vn	52.52	0.67	5.01	27.38	0.09	0.12	0.62	0.04	5.85	0.04	0.00				92.34
23R-1, 83–85	P1	2	411.13			Vn	51.32	0.69	4.93	27.96	0.03	0.00	0.52	0.08	5.59	0.00	0.03				91.14
27R-2, 105–108	M	86/1	447.89			Vn	53.72	1.30	3.83	26.19	0.01	0.02	0.31	0.10	4.83						90.30
27R-2, 105–108	M	84/1	447.89			Vn	53.61	1.33	4.01	26.48	0.03	0.01	0.31	0.09	5.00						90.87
27R-2, 105–108	M	85/1	447.89			Vn	53.08	1.27	3.89	27.06	0.03	0.01	0.28	0.10	5.32						91.02
27R-2, 105–108	M	88/1	447.89			Ves	53.02	1.62	3.83	26.67	0.04	0.02	0.32	0.06	2.77						88.35
27R-2, 105–108	M	90/1	447.89			Ves	52.78	2.28	4.53	26.41	0.03	0.06	0.54	0.09	3.62						90.33
27R-2, 105–108	M	87/1	447.89			Ves	52.24	1.65	3.94	27.04	0.02	0.04	0.32	0.07	2.96						88.29
27R-2, 105–108	M	89/1	447.89			Ves	51.36	2.05	4.46	27.44	0.04	0.09	0.52	0.10	3.34						89.41
27R2, 105–108	M	91/1	447.89			Ves	50.49	1.64	5.54	28.84	0.10	0.27	0.71	0.10	2.50						90.19
34R-4, 37–40	B4	201	488.87		Pale br	Vn	50.95	2.65	7.81	24.40	0.05	0.05	1.12	0.21	5.38	0.00				0.00	92.61
34R-4, 37–40	B4	205	488.87		Pale br	Vn	50.56	3.27	8.39	23.49	0.06	0.06	1.76	0.23	2.76	0.02				0.02	90.61
34R-4, 37–40	B4	202	488.87		Pale br	Vn	50.84	3.05	8.68	23.73	0.00	0.12	1.38	0.24	4.37	0.00				0.00	92.41
34R-4, 37–40	B4	210	488.87		Pale br	Vn	49.38	3.21	8.85	24.64	0.01	0.21	1.39	0.35	4.15	0.00				0.01	92.21
34R-4, 37–40	B4	208	488.87		Pale br	Vn	48.15	4.09	9.42	24.46	0.07	0.25	1.40	0.34	3.68	0.00				0.00	91.87
34R-4, 37–40	B4	203	488.87		Pale br	Vn	48.74	3.36	9.68	24.64	0.00	0.18	1.63	0.26	3.35	0.00				0.06	91.89

Table T1 (continued).

Core, section, interval (cm)	Lab	Analysis number	Depth (mbsf)	Mineral	Color	Occurrence	Formula*											
							Si	Al (IV)	Al total	Al (VI)	Mg	Fe	Mn	Ti	Ca	Na	K	VI total
206-1256C-																		
8R-3, 136–143	P1	158		Celad		Ves	3.640	0.107	0.107	0	0.567	1.739	0.000	0.000	0.061	0.034	0.610	2.307
8R-3, 136–143	P1	160		Celad		Ves	3.713	0.078	0.078	0	0.549	1.685	0.000	0.000	0.046	0.027	0.642	2.234
8R-3, 136–143	P1	164		Celad		Ves	3.684	0.150	0.150	0	0.578	1.625	0.000	0.005	0.048	0.018	0.653	2.208
8R-3, 136–143	P1	165		Celad		Ves	3.739	0.095	0.095	0	0.592	1.594	0.010	0.002	0.043	0.012	0.668	2.198
8R-3, 136–143	P1	166		Celad		Ol	3.704	0.120	0.120	0	0.616	1.608	0.004	0.005	0.055	0.015	0.621	2.233
8R-3, 136–143	P1	167		Celad		Ol	3.727	0.114	0.114	0	0.658	1.565	0.007	0.000	0.056	0.006	0.607	2.230
206-1256D-																		
13R-3, 60–63	B4	266	351.22		Gr	Ves	3.638	0.313	0.313	0	0.600	1.500	0.000	0.002	0.063	0.014	0.663	2.102
13R-3, 60–63	B4	262	351.22		Gr	Ol	3.722	0.170	0.170	0	0.515	1.604	0.001	0.000	0.052	0.013	0.641	2.119
13R-3, 60–63	B4	263	351.22		Gr	Ol	3.615	0.264	0.264	0	0.404	1.704	0.003	0.010	0.055	0.021	0.660	2.121
13R-1, 92–96	B4	179	351.22		Br		3.529	0.333	0.333	0	0.566	1.648	0.001	0.004	0.104	0.028	0.556	2.219
13R-1, 92–96	B4	180	351.22		Br		3.539	0.278	0.278	0	0.578	1.676	0.000	0.009	0.123	0.032	0.517	2.263
13R-1, 92–96	B4	181	351.22		Br		3.569	0.219	0.219	0	0.544	1.736	0.000	0.011	0.113	0.022	0.493	2.290
13R-3, 60–63	B4	268	351.22			Ves	3.590	0.394	0.394	0	1.394	1.075	0.002	0.001	0.150	0.032	0.105	2.473
14R-1, 23–28	M	76/1	359.73			Vn	3.600	0.400	0.446	0.046	0.413	1.558	0.001	0.006	0.033	0.008	0.669	2.023
14R-1, 23–28	M	75/1	359.73			Vn	3.585	0.415	0.447	0.033	0.409	1.579	0.001	0.005	0.029	0.010	0.677	2.027
14R-1, 23–28	M	77/1	359.73			Vn	3.571	0.429	0.455	0.027	0.418	1.580	0.001	0.005	0.035	0.008	0.679	2.031
19R-1, 36–38	B2	37	383.06			Vn	3.777	0.223	0.325	0.102	0.300	1.532	0.000	0.012	0.052	0.018	0.564	1.946
19R-1, 36–38	B2	36	383.06			Vn	3.817	0.183	0.289	0.106	0.315	1.521	0.001	0.003	0.050	0.005	0.556	1.946
19R-1, 36–38	B2	42	383.06			Ves	3.829	0.171	0.247	0.076	0.411	1.458	0.002	0.002	0.050	0.007	0.631	1.949
19R-1, 36–38	B2	43	383.06			Ves	3.823	0.177	0.246	0.069	0.409	1.473	0.002	0.000	0.040	0.007	0.644	1.953
19R-1, 36–38	B2	32	383.06			Int	3.823	0.177	0.249	0.072	0.439	1.426	0.005	0.015	0.069	0.005	0.606	1.957
19R-1, 36–38	B2	38	383.06			Vn	3.790	0.210	0.308	0.099	0.330	1.519	0.004	0.012	0.050	0.010	0.546	1.963
19R-1, 36–38	B2	33	383.06			Int	3.881	0.119	0.165	0.046	0.442	1.467	0.011	0.000	0.073	0.004	0.525	1.965
19R-1, 36–38	B2	34	383.06		Pale br		3.879	0.121	0.409	0.288	0.633	1.053	0.004	0.021	0.227	0.016	0.292	1.999
19R-1, 36–38	B2	35	383.06		Pale br		3.816	0.184	0.440	0.256	0.982	0.976	0.000	0.021	0.138	0.008	0.177	2.234
23R-1, 83–85	P1	10	411.13		Br gr	Int	3.827	0.134	0.134	0	0.466	1.579	0.007	0.012	0.092	0.027	0.356	2.065
23R-1, 83–85	P1	8	411.13		Br gr	Int	3.816	0.132	0.132	0	0.470	1.605	0.008	0.012	0.084	0.023	0.339	2.096
23R-1, 83–85	P1	4	411.13			Vn	3.803	0.051	0.051	0	0.474	1.652	0.001	0.003	0.041	0.008	0.634	2.129
23R-1, 83–85	P1	5	411.13			Vn	3.778	0.036	0.036	0	0.419	1.725	0.003	0.000	0.026	0.009	0.702	2.147
23R-1, 83–85	P1	3	411.13			Vn	3.816	0.052	0.052	0	0.526	1.626	0.002	0.000	0.049	0.009	0.538	2.154
23R-1, 83–85	P1	1	411.13			Vn	3.786	0.057	0.057	0	0.538	1.646	0.005	0.006	0.048	0.006	0.538	2.196
23R-1, 83–85	P1	2	411.13			Vn	3.753	0.060	0.060	0	0.537	1.706	0.002	0.000	0.041	0.011	0.522	2.244
27R-2, 105–108	M	86/1	447.89			Vn	3.894	0.106	0.111	0.006	0.414	1.584	0.000	0.001	0.024	0.013	0.446	2.004
27R-2, 105–108	M	84/1	447.89			Vn	3.872	0.113	0.113	0	0.432	1.595	0.002	0.001	0.024	0.013	0.460	2.029
27R-2, 105–108	M	85/1	447.89			Vn	3.845	0.109	0.109	0	0.419	1.635	0.002	0.000	0.022	0.013	0.491	2.056
27R-2, 105–108	M	88/1	447.89			Ves	3.883	0.117	0.140	0.023	0.418	1.629	0.002	0.001	0.025	0.009	0.258	2.074
27R-2, 105–108	M	90/1	447.89			Ves	3.809	0.191	0.193	0.002	0.487	1.590	0.002	0.003	0.042	0.013	0.333	2.083
27R-2, 105–108	M	87/1	447.89			Ves	3.845	0.143	0.143	0.000	0.432	1.660	0.001	0.002	0.026	0.010	0.278	2.095
27R-2, 105–108	M	89/1	447.89			Ves	3.760	0.177	0.177	0.000	0.487	1.676	0.002	0.005	0.041	0.014	0.312	2.170
27R2, 105–108	M	91/1	447.89			Ves	3.677	0.140	0.000	0.000	0.601	1.752	0.006	0.015	0.055	0.014	0.233	2.374
34R-4, 37–40	B4	201	488.87		Pale br	Vn	3.647	0.223	0.223	0	0.833	1.457	0.003	0.003	0.086	0.029	0.491	2.295
34R-4, 37–40	B4	205	488.87		Pale br	Vn	3.641	0.277	0.277	0	0.900	1.411	0.004	0.003	0.136	0.032	0.253	2.317
34R-4, 37–40	B4	202	488.87		Pale br	Vn	3.624	0.256	0.256	0	0.921	1.411	0.000	0.006	0.105	0.033	0.397	2.339
34R-4, 37–40	B4	210	488.87		Pale br	Vn	3.546	0.272	0.272	0	0.946	1.476	0.001	0.011	0.107	0.048	0.380	2.435
34R-4, 37–40	B4	208	488.87		Pale br	Vn	3.469	0.347	0.347	0	1.011	1.470	0.004	0.014	0.108	0.047	0.338	2.499
34R-4, 37–40	B4	203	488.87		Pale br	Vn	3.504	0.285	0.285	0	1.037	1.478	0.000	0.010	0.125	0.036	0.307	2.524

Table T1 (continued).

Core, section, interval (cm)	Lab	Analysis number	Depth (mbsf)	Mineral	Color	Occurrence	Major elements (wt%)														
							SiO_2	Al_2O_3	MgO	FeO	MnO	TiO_2	CaO	Na_2O	K_2O	P_2O_5	Cl	F	ZnO	Cr_2O_3	Total
35R-2, 108–111	M	29/1	491.33			Ves	53.10	4.48	4.22	25.14	0.02	0.14	0.55	0.07	5.02						92.75
35R-2, 108–111	M	28/1	491.33			Ves	52.16	4.48	4.38	25.87	0.05	0.20	0.61	0.12	4.64						92.49
35R-2, 108–111	M	31/1	491.33			Ves	52.31	3.52	4.55	25.84	0.07	0.25	0.61	0.12	4.05						91.32
35R-2, 108–111	M	21/1	491.33			Vn	50.93	5.81	6.57	22.06	0.10	0.09	0.52	0.08	5.54						91.70
35R-2, 108–111	M	20/1	491.33			Vn	50.58	5.87	6.51	22.55	0.03	0.06	0.50	0.07	5.72						91.89
35R-2, 108–111	M	19/1	491.33			Vn	50.59	6.27	7.91	18.21	0.01	0.10	0.67	0.07	4.41						88.23
35R-2, 108–111	M	17/1	491.33			Vn	49.32	6.41	7.72	18.70	0.08	0.14	0.66	0.09	4.77						87.89
35R-2, 108–111	M	18/1	491.33			Vn	49.02	6.43	7.90	18.51	0.04	0.08	0.69	0.09	4.72						87.49
47R-2, 141–144	M	37/1	573.91			Ves	49.50	4.01	6.57	23.55	0.05	0.09	0.58	0.07	6.83						91.24
47R-2, 141–144	M	39/1	573.91			Ves	50.37	4.02	6.73	23.91	0.03	0.13	0.58	0.07	6.64						92.48
47R-2, 141–144	M	40/1	573.91			Ves	48.72	3.90	6.77	23.04	0.06	0.06	0.57	0.07	6.75						89.94
47R-2, 141–144	M	38/1	573.91			Ves	48.98	3.91	6.69	24.10	0.01	0.11	0.58	0.08	6.77						91.23
57R-3, 0–1	B1	67	648.25				51.36	6.24	6.09	11.77	0.07	0.13	0.67	0.05	9.28	0.01	0.12		0.25	0.16	86.21
57R-3, 0–1	B1	68	648.25				49.17	6.32	5.96	10.95	0.05	0.08	0.32	0.11	9.49	0.02	0.11		0.20	0.02	82.80
57R-3, 0–1	B1	78	648.25			Ol	49.42	5.99	7.53	11.93	0.05	0.03	1.19	0.20	8.66	0.00	0.11		0.00	0.00	85.11
57R-3, 0–1	B1	66	648.25				53.60	5.89	7.80	13.02	0.00	0.07	0.49	0.01	9.47	0.02	0.07		0.08	0.00	90.55
57R-3, 5–8	B4	305	648.25		Gr	Ol	53.27	6.74	7.92	11.84	0.00	0.03	0.22	0.03	9.48	0.00				0.00	89.55
57R-3-3, 5–8	B4	322	648.25		Gr	Ol	53.45	6.67	8.72	12.20	0.00	0.08	0.24	0.07	8.82	0.00				0.04	90.29
57R-3-3, 5–8	B4	307	648.25		Gr	Int	51.77	6.37	9.16	11.73	0.10	0.03	0.10	0.18	7.89	0.00				0.02	87.36
57R-3, 0–1	B1	79	648.25			Ol	49.11	5.83	9.23	11.60	0.00	0.01	0.50	0.26	7.41	0.00	0.19		0.00	0.00	84.14
57R-3, 0–1	B1	81	648.25			Ol	47.29	5.77	9.78	10.68	0.00	0.13	0.53	0.05	6.63	0.00	0.18		0.00	0.22	81.26
57R3-3, 5–8	B4	341	648.25		Gr		46.73	6.24	9.68	11.99	0.07	0.10	0.57	0.01	6.70	0.03				0.06	82.19
60R-1, 35–38	M	58/1	668.95			Ves	48.52	3.80	11.42	22.96	0.08	0.08	0.70	0.17	4.26						91.99
60R-1, 35–38	M	57/1	668.95			Ves	48.51	4.02	11.94	23.44	0.04	0.07	0.62	0.25	3.89						92.77
60R-1, 35–38	M	38/1	668.95			Vn	48.16	4.82	12.07	23.66	0.13	0.03	0.89	0.45	2.53						92.73
60R-1, 35–38	M	42/1	668.95			Vn	48.07	4.77	11.93	24.21	0.06	0.05	0.91	0.46	2.47						92.93
60R-1, 35–38	M	56/1	668.95			Ves	47.92	3.93	12.01	23.48	0.06	0.07	0.68	0.25	3.99						92.40
60R-1, 35–38	M	37/1	668.95			Vn	47.06	5.15	12.19	23.51	0.07	0.04	0.70	0.37	2.90						91.98
61R-1, 139–143	B4	237	679.39			Ol	49.17	5.43	4.47	18.36	0.03	0.00	0.46	0.15	7.91	0.01				0.00	86.00
61R-1, 139–143	B4	242	679.39		Gr	Vn	52.79	4.94	5.55	19.52	0.00	0.01	0.58	0.07	7.92	0.00				0.00	91.39
61R-1, 139–143	B4	245	679.39		Gr	Vn	51.59	4.36	6.07	18.89	0.00	0.05	0.71	0.05	7.73	0.01				0.00	89.46
61R-1, 139–143	B4	248	679.39		Gr	Vn	51.18	3.75	7.36	19.13	0.00	0.02	0.66	0.12	7.38	0.06				0.00	89.65
65R-1, 105–109	B5	49	706.75		Y gr	Int	45.49	4.58	2.73	21.18	0.04	1.07	2.12	0.18	6.33	0.00	0.19	0.12		0.10	84.12
65R-1, 105–109	B4	147	706.75		Dk gr	Ol/int	53.21	2.44	3.27	25.10	0.00	0.09	0.56	0.07	8.21	0.00				0.00	92.97
65R-1, 105–109	B4	146	706.75		Dk gr	Ol/int	53.72	2.40	4.18	22.88	0.00	0.04	0.56	0.06	8.67	0.00				0.05	92.57
65R-1, 105–109	B4	143	706.75		Dk gr	Vn	52.89	2.56	3.30	25.16	0.04	0.00	0.43	0.18	8.20	0.00				0.00	92.76
65R-1, 105–109	B5	19	706.75		Dk gr	Ol/int	54.90	2.69	3.97	23.96	0.05	0.06	0.34	0.06	8.97	0.00	0.07	0.00		0.00	95.07
65R-1, 105–109	B4	159	706.75		Dk gr	Vn	53.39	3.94	3.18	23.72	0.05	0.09	0.47	0.08	7.89	0.00				0.00	92.81
65R-1, 105–109	B4	156	706.75		Dk gr	Ol/int	52.68	3.48	3.31	23.55	0.00	0.14	0.41	0.18	7.82	0.00				0.04	91.62
65R-1, 105–109	B4	153	706.75		Dk gr	Ol/int	55.98	2.69	4.66	22.46	0.00	0.04	0.40	0.06	8.85	0.04				0.00	95.20
65R-1, 105–109	B4	158	706.75		Y gr	Rep pl	52.25	4.31	3.12	24.16	0.02	0.13	0.63	0.28	7.73	0.00				0.04	92.68
65R-1, 105–109	B4	152	706.75		Dk gr	Ol/int	54.73	2.97	4.64	22.02	0.00	0.00	0.33	0.06	8.80	0.01				0.00	93.56
65R-1, 105–109	B4	144	706.75		Dk gr	Vn	54.75	2.83	4.72	22.74	0.00	0.04	0.40	0.11	8.91	0.01				0.00	94.52
65R-1, 105–109	B5	20	706.75		Dk gr	Ol/int	48.08	2.46	3.94	19.77	0.04	0.07	0.28	0.02	7.42	0.01	0.05	0.00		0.00	82.14
65R-1, 105–109	B5	12	706.75		Y gr	Int	49.54	4.93	3.92	20.64	0.00	0.23	1.74	0.41	5.96	0.00	0.14	0.00		0.00	87.51
65R-1, 105–109	B4	134	706.75		Gr	Int	46.31	4.86	4.51	19.10	0.01	0.12	0.90	0.10	6.08	0.00				0.00	82.00
65R-1, 105–109	B5	15	706.75		Y gr	Int	46.26	4.78	4.81	18.71	0.00	0.09	0.91	0.24	6.15	0.01	0.23	0.00		0.00	82.19
65R-1, 105–109	B5	14	706.75		Y gr	Int	46.52	4.79	5.00	19.32	0.00	0.08	0.98	0.29	5.88	0.00	0.20	0.29		0.00	83.36
65R-1, 105–109	B4	140	706.75		Gr	Int	47.69	5.09	5.22	18.53	0.00	0.14	1.02	0.23	5.83	0.00				0.10	83.86

Table T1 (continued).

Core, section, interval (cm)	Lab	Analysis number	Depth (mbsf)	Mineral	Color	Occurrence	Formula*											
							Si	Al (IV)	Al total	Al (VI)	Mg	Fe	Mn	Ti	Ca	Na	K	VI total
35R-2, 108–111	M	29/1	491.33			Ves	3.747	0.253	0.372	0.119	0.444	1.480	0.001	0.007	0.042	0.010	0.452	2.051
35R-2, 108–111	M	28/1	491.33			Ves	3.699	0.301	0.374	0.073	0.463	1.530	0.003	0.010	0.046	0.016	0.419	2.080
35R-2, 108–111	M	31/1	491.33			Ves	3.745	0.255	0.297	0.043	0.485	1.543	0.004	0.013	0.047	0.017	0.370	2.088
35R-2, 108–111	M	21/1	491.33			Vn	3.641	0.359	0.489	0.130	0.700	1.315	0.006	0.005	0.040	0.011	0.505	2.156
35R-2, 108–111	M	20/1	491.33			Vn	3.618	0.382	0.494	0.112	0.694	1.346	0.002	0.003	0.038	0.010	0.522	2.157
35R-2, 108–111	M	19/1	491.33			Vn	3.697	0.303	0.539	0.236	0.861	1.110	0.000	0.005	0.053	0.009	0.411	2.213
35R-2, 108–111	M	17/1	491.33			Vn	3.643	0.357	0.557	0.201	0.850	1.152	0.005	0.007	0.053	0.012	0.449	2.215
35R-2, 108–111	M	18/1	491.33			Vn	3.636	0.364	0.562	0.198	0.873	1.145	0.003	0.005	0.055	0.013	0.446	2.224
47R-2, 141–144	M	37/1	573.91			Ves	3.618	0.345	0.345	0	0.715	1.436	0.003	0.005	0.045	0.009	0.636	2.159
47R-2, 141–144	M	39/1	573.91			Ves	3.624	0.340	0.340	0	0.722	1.435	0.002	0.007	0.045	0.010	0.609	2.165
47R-2, 141–144	M	40/1	573.91			Ves	3.613	0.340	0.340	0	0.748	1.425	0.004	0.003	0.045	0.010	0.639	2.180
47R-2, 141–144	M	38/1	573.91			Ves	3.589	0.337	0.337	0	0.730	1.473	0.001	0.006	0.045	0.012	0.633	2.209
57R-3, 0–1	B1	67	648.25				3.912	0.088	0.559	0.471	0.691	0.748	0.005	0.008	0.055	0.008	0.901	1.922
57R-3, 0–1	B1	68	648.25				3.899	0.101	0.590	0.490	0.704	0.724	0.003	0.005	0.027	0.017	0.960	1.926
57R-3, 0–1	B1	78	648.25			Ol	3.812	0.188	0.544	0.355	0.866	0.767	0.003	0.002	0.098	0.029	0.851	1.993
57R-3, 0–1	B1	66	648.25				3.874	0.126	0.501	0.376	0.840	0.785	0.000	0.004	0.038	0.001	0.873	2.005
57R-3, 5–8	B4	305	648.25		Gr	Ol	3.870	0.130	0.576	0.447	0.858	0.718	0.000	0.002	0.017	0.005	0.878	2.023
57R-3-3, 5–8	B4	322	648.25		Gr	Ol	3.843	0.157	0.565	0.408	0.934	0.732	0.000	0.004	0.018	0.010	0.808	2.078
57R-3-3, 5–8	B4	307	648.25		Gr	Int	3.833	0.167	0.556	0.389	1.010	0.724	0.007	0.002	0.008	0.025	0.745	2.132
57R-3, 0–1	B1	79	648.25			Ol	3.796	0.204	0.531	0.327	1.063	0.748	0.000	0.000	0.042	0.039	0.730	2.138
57R-3, 0–1	B1	81	648.25			Ol	3.778	0.222	0.543	0.321	1.164	0.712	0.000	0.008	0.045	0.008	0.675	2.204
57R3-3, 5–8	B4	341	648.25		Gr		3.699	0.301	0.582	0.280	1.141	0.791	0.005	0.006	0.049	0.002	0.677	2.224
60R-1, 35–38	M	58/1	668.95			Ves	3.482	0.321	0.321	0.000	1.221	1.374	0.005	0.004	0.054	0.024	0.390	2.604
60R-1, 35–38	M	57/1	668.95			Ves	3.449	0.337	0.337	0.000	1.264	1.390	0.002	0.004	0.047	0.034	0.353	2.661
60R-1, 35–38	M	38/1	668.95			Vn	3.405	0.401	0.401	0.000	1.271	1.396	0.008	0.002	0.067	0.061	0.228	2.676
60R-1, 35–38	M	42/1	668.95			Vn	3.395	0.397	0.397	0.000	1.255	1.426	0.004	0.003	0.069	0.063	0.222	2.688
60R-1, 35–38	M	56/1	668.95			Ves	3.430	0.331	0.331	0.000	1.280	1.402	0.004	0.004	0.052	0.035	0.364	2.690
60R-1, 35–38	M	37/1	668.95			Vn	3.365	0.434	0.434	0.000	1.298	1.402	0.004	0.002	0.054	0.051	0.264	2.707
61R-1, 139–143	B4	237	679.39			Ol	3.775	0.225	0.491	0.266	0.511	1.176	0.002	0.000	0.038	0.022	0.775	1.955
61R-1, 139–143	B4	242	679.39		Gr	Vn	3.802	0.198	0.419	0.220	0.596	1.173	0.000	0.000	0.045	0.010	0.727	1.989
61R-1, 139–143	B4	245	679.39		Gr	Vn	3.800	0.200	0.379	0.178	0.666	1.160	0.000	0.003	0.056	0.007	0.726	2.007
61R-1, 139–143	B4	248	679.39		Gr	Vn	3.767	0.233	0.325	0.093	0.807	1.175	0.000	0.001	0.052	0.016	0.693	2.075
65R-1, 105–109	B5	49	706.75		Y gr	Int	3.643	0.357	0.432	0.075	0.326	1.415	0.003	0.064	0.182	0.027	0.647	1.883
65R-1, 105–109	B4	147	706.75		Dk gr	Ol/int	3.825	0.175	0.207	0.032	0.351	1.505	0.000	0.005	0.043	0.010	0.752	1.892
65R-1, 105–109	B4	146	706.75		Dk gr	Ol/int	3.868	0.132	0.203	0.071	0.449	1.374	0.000	0.002	0.043	0.009	0.796	1.896
65R-1, 105–109	B4	143	706.75		Dk gr	Vn	3.812	0.188	0.217	0.030	0.354	1.513	0.003	0.000	0.033	0.025	0.754	1.900
65R-1, 105–109	B5	19	706.75		Dk gr	Ol/int	3.854	0.146	0.222	0.076	0.416	1.403	0.003	0.003	0.026	0.008	0.803	1.901
65R-1, 105–109	B4	159	706.75		Dk gr	Vn	3.816	0.184	0.332	0.148	0.338	1.414	0.003	0.005	0.036	0.011	0.719	1.908
65R-1, 105–109	B4	156	706.75		Dk gr	Ol/int	3.821	0.179	0.297	0.118	0.358	1.425	0.000	0.008	0.032	0.025	0.723	1.908
65R-1, 105–109	B4	153	706.75		Dk gr	Ol/int	3.899	0.101	0.221	0.120	0.484	1.305	0.000	0.002	0.030	0.008	0.786	1.910
65R-1, 105–109	B4	158	706.75		Y gr	Rep pl	3.755	0.245	0.365	0.121	0.334	1.448	0.001	0.007	0.049	0.039	0.708	1.912
65R-1, 105–109	B4	152	706.75		Dk gr	Ol/int	3.880	0.120	0.248	0.127	0.490	1.302	0.000	0.000	0.025	0.008	0.795	1.919
65R-1, 105–109	B4	144	706.75		Dk gr	Vn	3.854	0.146	0.235	0.089	0.495	1.335	0.000	0.002	0.030	0.015	0.800	1.922
65R-1, 105–109	B5	20	706.75		Dk gr	Ol/int	3.881	0.119	0.234	0.115	0.474	1.331	0.002	0.004	0.024	0.003	0.763	1.926
65R-1, 105–109	B5	12	706.75		Y gr	Int	3.738	0.262	0.438	0.176	0.441	1.299	0.000	0.013	0.141	0.060	0.573	1.929
65R-1, 105–109	B4	134	706.75		Gr	Int	3.721	0.279	0.460	0.180	0.540	1.280	0.001	0.007	0.078	0.016	0.623	2.008
65R-1, 105–109	B5	15	706.75		Y gr	Int	3.721	0.279	0.453	0.174	0.576	1.255	0.000	0.005	0.078	0.038	0.631	2.010
65R-1, 105–109	B5	14	706.75		Y gr	Int	3.700	0.300	0.449	0.149	0.593	1.282	0.000	0.005	0.084	0.045	0.597	2.028
65R-1, 105–109	B4	140	706.75		Gr	Int	3.733	0.267	0.470	0.202	0.609	1.210	0.000	0.008	0.086	0.035	0.582	2.029

Table T1 (continued).

Core, section, interval (cm)	Lab	Analysis number	Depth (mbsf)	Mineral	Color	Occurrence	Major elements (wt%)													
							SiO_2	Al_2O_3	MgO	FeO	MnO	TiO_2	CaO	Na_2O	K_2O	P_2O_5	Cl	F	ZnO	Cr_2O_3	Total
65R-1, 105–109	B5	22	706.75		Y gr	Ol/int	46.05	4.99	5.32	17.26	0.08	0.08	0.89	0.39	5.57	0.01	0.29	0.22		0.00	81.15
65R-1, 105–109	B5	21	706.75		Y gr	Ol/int	45.89	5.12	5.01	17.68	0.04	0.10	0.89	0.30	5.33	0.01	0.16	0.00		0.02	80.54
65R-1, 105–109	B5	25	706.75		Y gr	Ol/int	47.41	5.19	5.56	17.89	0.00	0.13	0.80	0.27	5.49	0.00	0.25	0.00		0.00	83.00
67R-1, 47–50	B4	197	715.27		Gr	Rep ol	51.58	4.44	3.17	22.39	0.00	0.07	2.35	0.07	7.33	0.03				0.00	91.43
67R-1, 47–50	B4	187	715.27		Dk gr	Vn	54.41	1.75	3.44	24.61	0.00	0.02	0.37	0.09	8.45	0.05				0.00	93.21
67R-1, 47–50	B4	186	715.27		Dk gr	Vn	53.24	2.24	3.72	23.85	0.03	0.00	0.37	0.19	8.35	0.00				0.00	92.01
67R-1, 47–50	B4	185	715.27		Dk gr	Vn	53.46	2.14	3.66	24.29	0.00	0.05	0.28	0.11	8.43	0.00				0.00	92.42
67R-1, 47–50	B5	37	715.27			Vn	54.41	2.01	3.58	24.93	0.00	0.01	0.22	0.09	8.01	0.01	0.15	0.00		0.04	93.46
67R-1, 47–50	B5	36	715.27			Vn	53.42	1.81	3.39	25.84	0.02	0.00	0.27	0.08	8.32	0.00	0.20	0.00		0.02	93.37
67R-1, 47–50	B5	38	715.27			Vn	50.02	2.92	3.90	21.20	0.00	0.16	0.43	0.20	7.39	0.03	0.29	0.17		0.00	86.70
67R-1, 47–50	B5	30	715.27			Ol	50.47	4.15	3.38	23.11	0.00	0.08	0.63	0.21	7.55	0.00	0.34	0.21		0.04	90.18
67R-1, 47–50	B4	193	715.27		Gr	Ves	50.88	4.25	3.41	22.11	0.00	0.04	0.65	0.08	7.25	0.00				0.00	88.68
67R-1, 47–50	B5	32	715.27			Int	51.15	4.39	3.31	22.87	0.01	0.12	0.68	0.07	7.32	0.04	0.33	0.00		0.02	90.31
67R-1, 47–50	B4	195	715.27		Gr	Ves	50.20	4.39	3.46	21.82	0.00	0.03	0.66	0.10	7.25	0.00				0.00	87.89
67R-1, 47–50	B4	194	715.27		Gr	Ves	51.08	4.24	3.61	21.90	0.00	0.14	0.59	0.14	7.31	0.00				0.06	89.08
67R-1, 47–50	B5	31	715.27			Int	51.08	4.25	4.08	23.04	0.01	0.08	0.77	0.04	7.50	0.02	0.10	0.22		0.00	91.19
70R-2, 8–12	M	69/1	730.24			Vn	52.84	4.51	4.03	22.40	0.05	0.00	0.22	0.05	8.14						92.24
70R-2, 8–12	M	70/1	730.24			Vn	50.80	4.24	4.04	22.78	0.02	0.02	0.16	0.05	7.76						89.87
70R-2, 8–12	M	71/1	730.24			Vn	52.82	4.72	4.38	22.51	–0.01	0.04	0.22	0.04	7.88						92.59
70R-2, 8–12	M	68/1	730.24			Vn	51.00	4.65	4.48	22.52	0.05	0.05	0.19	0.02	7.70						90.64
70R-2, 8–12	M	76/1	730.24			Ves	51.00	6.62	4.77	21.08	0.01	0.07	0.42	0.06	6.67						90.70
70R-2, 8–12	M	75/1	730.24			Ves	49.81	6.74	4.63	21.07	0.02	0.05	0.43	0.05	6.70						89.50
70R-2, 8–12	M	74/1	730.24			Ves	50.88	6.59	5.14	21.47	0.01	0.05	0.43	0.07	6.45						91.10
70R-2, 8–12	M	79/1	730.24			Pl	41.97	10.77	12.74	24.38	0.03	0.00	0.83	0.09	2.40						93.22
70R-2, 8–12	M	80/1	730.24			Pl	40.35	10.48	12.05	25.30	0.02	0.00	0.79	0.10	2.13						91.22
70R-2, 8–12	M	81/1	730.24			Pl	41.16	10.37	13.02	24.50	0.03	0.00	0.75	0.12	2.63						92.57
71R-1, 95–99	B5	86	734.25		Lt gr	Vn	43.67	4.33	2.90	21.12	0.00	0.09	1.25	0.18	7.17	0.08	0.37	0.21		0.00	81.38
71R-1, 95–99	B4	346	734.25		Gr	Vn	44.04	4.54	3.22	21.41	0.00	0.08	1.04	0.13	6.99	0.00				0.00	81.46
71R-1, 95–99	B5	89	734.25		Lt gr	Vn	45.71	4.69	3.21	23.73	0.05	0.15	1.24	0.10	7.26	0.00	0.40	0.00		0.03	86.57
72R-1, 111–115	P3	92	739.01			Ol	46.60	4.60	3.59	18.61	0.00	0.09	1.07	0.20	6.77		0.31		0.04		81.89
72R-1, 111–115	P3	82	739.01			Vn	50.42	3.00	4.44	21.54	0.00	0.06	0.40	0.05	8.32		0.12		0.00		88.36
72R-1, 111–115	P3	83	739.01			Vn	52.07	3.02	4.73	21.78	0.02	0.08	0.39	0.04	8.25		0.04		0.01		90.44
72R-1, 111–115	P3	84	739.01			Vn	50.37	3.50	4.86	21.14	0.00	0.08	0.48	0.06	8.00		0.04				88.53

Notes: Lab: B = Institut Français de Recherche pour l'Exploitation de la Mer (France), M = University of Michigan, P = Paris VII University. Color: br = brown, or = orange, ol = olive, bl = blue, gr = green, y = yellow, lt = light. Mineral: celad = celadonitic. Occurrence: rep = replacing, vn = vein, ves = vesicle, int = Interstitial, ol = olivine, pl = plagioclase. * Layer charge = 22, all Fe as Fe^{3+}.

Table T1 (continued).

Core, section, Interval (cm)	Lab	Analysis number	Depth (mbsf)	Mineral	Color	Occurrence	Formula*											
							Si	Al (IV)	Al total	Al (VI)	Mg	Fe	Mn	Ti	Ca	Na	K	VI total
65R-1, 105–109	B5	22	706.75		Y gr	Ol/int	3.739	0.261	0.477	0.216	0.643	1.169	0.006	0.005	0.078	0.061	0.577	2.039
65R-1, 105–109	B5	21	706.75		Y gr	Ol/int	3.734	0.266	0.490	0.225	0.607	1.200	0.002	0.006	0.077	0.048	0.553	2.040
65R-1, 105–109	B5	25	706.75		Y gr	Ol/int	3.740	0.260	0.482	0.223	0.653	1.177	0.000	0.008	0.068	0.040	0.553	2.061
67R-1, 47–50	B4	197	715.27		Gr	Rep ol	3.755	0.245	0.380	0.136	0.344	1.360	0.000	0.004	0.184	0.010	0.681	1.844
67R-1, 47–50	B4	187	715.27		Dk gr	Vn	3.893	0.107	0.148	0.041	0.366	1.469	0.000	0.001	0.029	0.013	0.771	1.877
67R-1, 47–50	B4	186	715.27		Dk gr	Vn	3.859	0.141	0.192	0.051	0.402	1.442	0.002	0.000	0.028	0.026	0.772	1.896
67R-1, 47–50	B4	185	715.27		Dk gr	Vn	3.859	0.141	0.182	0.041	0.394	1.462	0.000	0.003	0.022	0.015	0.776	1.900
67R-1, 47–50	B5	37	715.27			Vn	3.878	0.122	0.169	0.046	0.380	1.482	0.000	0.001	0.017	0.013	0.728	1.909
67R-1, 47–50	B5	36	715.27			Vn	3.838	0.153	0.153	0	0.363	1.548	0.001	0.000	0.021	0.011	0.762	1.912
67R-1, 47–50	B5	38	715.27			Vn	3.846	0.154	0.264	0.110	0.447	1.360	0.000	0.009	0.035	0.029	0.724	1.925
67R-1, 47–50	B5	30	715.27			Ol	3.751	0.249	0.364	0.114	0.375	1.433	0.000	0.004	0.050	0.031	0.716	1.926
67R-1, 47–50	B4	193	715.27		Gr	Ves	3.795	0.205	0.373	0.169	0.379	1.376	0.000	0.002	0.052	0.012	0.689	1.926
67R-1, 47–50	B5	32	715.27			Int	3.771	0.229	0.381	0.153	0.363	1.406	0.001	0.007	0.054	0.009	0.688	1.929
67R-1, 47–50	B4	195	715.27		Gr	Ves	3.781	0.219	0.389	0.170	0.388	1.371	0.000	0.002	0.053	0.014	0.696	1.930
67R-1, 47–50	B4	194	715.27		Gr	Ves	3.796	0.204	0.371	0.167	0.400	1.358	0.000	0.008	0.047	0.020	0.693	1.932
67R-1, 47–50	B5	31	715.27			Int	3.738	0.262	0.366	0.104	0.445	1.406	0.001	0.004	0.060	0.006	0.700	1.961
70R-2, 8–12	M	69/1	730.24			Vn	3.794	0.206	0.381	0.176	0.431	1.342	0.003	0.000	0.017	0.007	0.745	1.951
70R-2, 8–12	M	70/1	730.24			Vn	3.755	0.245	0.369	0.124	0.445	1.405	0.001	0.001	0.013	0.007	0.731	1.976
70R-2, 8–12	M	71/1	730.24			Vn	3.773	0.227	0.397	0.170	0.466	1.341	-0.001	0.002	0.017	0.006	0.718	1.979
70R-2, 8–12	M	68/1	730.24			Vn	3.733	0.267	0.401	0.133	0.488	1.375	0.003	0.003	0.015	0.003	0.719	2.003
70R-2, 8–12	M	76/1	730.24			Ves	3.690	0.310	0.564	0.254	0.514	1.272	0.001	0.004	0.033	0.008	0.615	2.045
70R-2, 8–12	M	75/1	730.24			Ves	3.661	0.339	0.583	0.245	0.507	1.292	0.001	0.003	0.034	0.007	0.628	2.048
70R-2, 8–12	M	74/1	730.24			Ves	3.667	0.333	0.559	0.226	0.552	1.291	0.001	0.003	0.033	0.010	0.593	2.072
70R-2, 8–12	M	79/1	730.24			Pl	2.979	0.900	0.900	0.000	1.347	1.443	0.002	0.000	0.063	0.012	0.217	2.792
70R-2, 8–12	M	80/1	730.24			Pl	2.937	0.898	0.898	0.000	1.306	1.536	0.001	0.000	0.062	0.014	0.198	2.844
70R-2, 8–12	M	81/1	730.24			Pl	2.953	0.876	0.876	0.000	1.392	1.466	0.002	0.000	0.058	0.017	0.241	2.860
71R-1, 95–99	B5	86	734.25		Lt gr	Vn	3.641	0.359	0.425	0.066	0.361	1.469	0.000	0.005	0.112	0.029	0.763	1.901
71R-1, 95–99	B4	346	734.25		Gr	Vn	3.629	0.371	0.440	0.070	0.395	1.472	0.000	0.005	0.092	0.021	0.735	1.942
71R-1, 95–99	B5	89	734.25		Lt gr	Vn	3.580	0.420	0.433	0.013	0.375	1.550	0.003	0.009	0.104	0.015	0.725	1.949
72R-1, 111–115	P3	92	739.01			Ol	3.777	0.223	0.439	0.216	0.434	1.258	0.000	0.006	0.093	0.031	0.700	1.913
72R-1, 111–115	P3	82	739.01			Vn	3.810	0.190	0.267	0.077	0.500	1.358	0.000	0.004	0.033	0.007	0.802	1.938
72R-1, 111–115	P3	83	739.01			Vn	3.829	0.171	0.262	0.091	0.518	1.336	0.001	0.005	0.031	0.005	0.773	1.950
72R-1, 111–115	P3	84	739.01			Vn	3.785	0.215	0.310	0.095	0.544	1.325	0.000	0.005	0.038	0.009	0.766	1.969

Table T2. Saponite and saponitic phyllosilicates. (This table is available in an **oversized format.**)

Table T3. Feldspars. (**See table notes.** Continued on next three pages.)

Core, section, interval (cm)	Lab	Analysis number	Depth (mbsf)	Occurrence	Other	Oxides (%)													
						SiO_2	Al_2O_3	MgO	FeO	MnO	TiO_2	CaO	Na_2O	K_2O	P_2O_5	Cl	F	ZnO	Cr_2O_3	Total
206-1256C-																			
5R-1, 24–27	B4	253	252.57	1		54.83	26.5	0.14	1.06	0	0.12	11.06	5.25	0.09	0.03				0	99.09
5R-1, 24–27	B4	255	252.57	1		53.12	27.67	0.21	1.12	0	0.14	12.53	4.25	0	0				0	99.05
8R-3, 136–143	P1	175	279.55	1		49.54	31.06	0.22	0.6	0	0.11	15.26	2.64	0	0	0.04				99.46
13R-1, 12–15	B1	6	322.12	1		51.03	29.2	0.27	0.91	0.18	0	14.09	3.54	0	0.03	0		0	0.1	99.34
206-1256D-																			
23R-1, 83–85	P1	11	411.13	1		49.52	30.77	0.28	0.66	0.09	0	15.16	2.75	0.06	0	0				99.28
23R-1, 83–85	P1	12	411.13	1		49.3	31.02	0.27	0.72	0	0.2	15.23	2.64	0.05	0.03	0.01				99.46
26R-2, 22–25	B1	49	440	1		62.04	21.28	1.14	1.28	0.11	0.05	4.24	8.65	0.14	0	0.09		0.06	0	99.08
26R-2, 22–25	B1	52	440	1	Rim	62.07	23.19	0.03	0.5	0	0.04	5	9.22	0.13	0	0.34		0.11	0.02	100.65
26R-2, 22–25	B1	54	440	1	Rim	62.52	23.01	0.33	0.52	0	0.04	5.06	8.73	0.04	0	0		0	0	100.26
26R-6, 18–21	B5	75	445.6	1		64.77	17.52	0.02	0.02	0	0.01	0.02	0.55	16.91	0	0		0	0	99.84
26R-6, 18–21	B4	271	445.6	1		52.59	28.94	0.24	0.81	0	0.03	13.21	4.13	0.05	0				0	100.01
26R-6, 18–21	B4	272	445.6	1		55.7	26.12	0.08	1.26	0	0.09	10.32	5.55	0.01	0				0.02	99.16
26R-6, 18–21	B4	279	445.6	1		55.51	26.38	0.14	1.21	0	0.11	10.53	5.55	0.06	0				0	99.5
26R-6, 18–21	B4	283	445.6	1		52.7	28.82	0.24	0.8	0	0.11	13.42	4.04	0.03	0				0	100.16
34R-4, 37–40	B4	206	488.87	1		52.02	29.19	0.23	0.65	0	0.06	13.8	3.81	0	0.02				0.01	99.81
34R-4, 37–40	B4	206	488.87	1		52.02	29.19	0.23	0.65	0	0.06	13.8	3.81	0	0.02				0.01	99.81
34R-4, 37–40	B4	214	488.87	1		52.35	28.5	0.2	0.78	0	0	13.31	3.95	0.03	0				0	99.12
34R-4, 37–40	B4	214	488.87	1		52.35	28.5	0.2	0.78	0	0	13.31	3.95	0.03	0				0	99.12
34R-4, 37–40	B4	215	488.87	1		55.48	26.57	0.13	1.36	0	0.16	10.67	5.49	0.05	0				0	99.92
34R-4, 37–40	B4	215	488.87	1		55.48	26.57	0.13	1.36	0	0.16	10.67	5.49	0.05	0				0	99.92
34R-4, 37–40	B4	219	488.87	1	Micr	52.48	28.86	0.23	0.77	0	0.03	13.45	4.03	0	0				0	99.85
34R-4, 37–40	B4	219	488.87	1		52.48	28.86	0.23	0.77	0	0.03	13.45	4.03	0	0				0	99.85
34R-4, 37–40	B4	220	488.87	1		54.45	27.86	0.17	1.09	0	0.1	12	4.67	0.03	0				0	100.37
34R-4, 37–40	B4	220	488.87	1	Micr	54.45	27.86	0.17	1.09	0	0.1	12	4.67	0.03	0				0	100.37
34R-4, 37–40	B4	222	488.87	1		53.44	28.33	0.21	0.71	0	0.16	13.04	4.25	0.02	0				0	100.16
34R-4, 37–40	B4	222	488.87	1		53.44	28.33	0.21	0.71	0	0.16	13.04	4.25	0.02	0				0	100.16
34R-4, 37–40	B4	228	488.87	1		52.97	27.98	0.15	0.96	0	0.06	12.7	4.44	0.02	0				0.01	99.29
34R-4, 37–40	B4	228	488.87	1		52.97	27.98	0.15	0.96	0	0.06	12.7	4.44	0.02	0				0.01	99.29
54R-1, 41–43	B5	54	618.51	1		51.05	29.01	0.3	0.56	0	0.03	14.12	3.65	0.03	0.01	0	0		0.04	98.81
54R-1, 41–43	B5	58	618.51	1		51.26	29.52	0.24	0.76	0	0.08	14.3	3.5	0.01	0.01	0	0		0	99.69
54R-1, 41–43	B5	59	618.51	1		51.3	29.55	0.27	1.13	0.04	0.03	14.22	3.51	0.02	0	0	0		0	100.07
54R-1, 41–43	B5	68	618.51	1		55.86	26.23	0.07	1.35	0.09	0.12	10.66	5.61	0.1	0	0.01	0		0	100.11
54R-1, 41–43	B4	286	618.51	1		51.25	29.07	0.29	0.76	0.05	0.09	14.2	3.53	0.02	0				0	99.26
54R-1, 41–43	B4	286	618.51	1		51.25	29.07	0.29	0.76	0.05	0.09	14.2	3.53	0.02	0				0	99.26
54R-1, 41–43	B4	290	618.51	1		53.12	27.85	0.25	1.01	0	0.05	12.3	4.56	0.01	0				0.05	99.2
54R-1, 41–43	B4	290	618.51	1		53.12	27.85	0.25	1.01	0	0.05	12.3	4.56	0.01	0				0.05	99.2
54R-1, 41–43	B4	297	618.51	1		51.19	29.62	0.3	0.67	0	0.02	14.33	3.31	0.08	0				0	99.52
54R-1, 41–43	B4	297	618.51	1		51.19	29.62	0.3	0.67	0	0.02	14.33	3.31	0.08	0				0	99.52
54R-1, 41–43	B4	298	618.51	1		51.85	29.02	0.29	0.74	0.04	0.05	13.79	3.89	0.03	0.02				0	99.73
54R-1, 41–43	B4	298	618.51	1		51.85	29.02	0.29	0.74	0.04	0.05	13.79	3.89	0.03	0.02				0	99.73
55R-1, 118–122	M	50/1	628.58	2		67.76	20.44	0	0.25	0	0	0.05	11.49	0.1						100.08
55R-1, 118–122	M	51/1	628.58	2		67.94	20.23	0	0.17	0.03	0.03	0.06	11.51	0.05						100.03
55R-1, 118–122	M	54/1	628.58	2		68.11	20.53	0.01	0.11	0	0.02	0.05	11.75	0.06						100.63
55R-1, 118–122	M	52/1	628.58	1		51.29	30.53	0.33	0.98	0.04	0.09	13.41	3.79	0.06						100.53
55R-1, 118–122	M	53/1	628.58	1		51.72	29.8	0.31	1.15	0.03	0.08	12.75	4.15	0.06						100.05
55R-1, 118–122	M	55/1	628.58	1		50.83	31.03	0.37	0.84	0	0.04	13.91	3.51	0.02						100.56

Table T3 (continued).

Core, section, interval (cm)	Lab	Analysis number	Depth (mbsf)	Occurrence	Other	Formula											
						Si	Al	Mg	Fe^{2+}	Mn	Ti	Ca	Na	K	An	Ab	Or
206-1256C-																	
5R-1, 24–27	B4	253	252.57	1		2.511	1.429	0.010	0.040	0.000	0.004	0.543	0.464	0.005	0.54	0.46	0.01
5R-1, 24–27	B4	255	252.57	1		2.441	1.498	0.014	0.043	0.000	0.005	0.618	0.377	0.000	0.62	0.38	0.00
8R-3, 136–143	P1	175	279.55	1		2.280	1.684	0.015	0.023	0.000	0.004	0.753	0.234	0.000	0.76	0.24	0.00
13R-1, 12–15	B1	6	322.12	1		2.353	1.586	0.019	0.035	0.007	0.000	0.697	0.315	0.000	0.69	0.31	0.00
206-1256D-																	
23R-1, 83–85	P1	11	411.13	1		2.285	1.672	0.019	0.025	0.004	0.000	0.750	0.245	0.004	0.75	0.25	0.00
23R-1, 83–85	P1	12	411.13	1		2.273	1.684	0.019	0.028	0.000	0.007	0.753	0.235	0.003	0.76	0.24	0.00
26R-2, 22–25	B1	49	440	1		2.795	1.129	0.077	0.048	0.004	0.002	0.205	0.752	0.008	0.21	0.78	0.01
26R-2, 22–25	B1	52	440	1	Rim	2.759	1.214	0.002	0.019	0.000	0.001	0.238	0.791	0.007	0.23	0.76	0.01
26R-2, 22–25	B1	54	440	1	Rim	2.770	1.201	0.022	0.019	0.000	0.001	0.240	0.746	0.002	0.24	0.75	0.00
26R-6, 18–21	B5	75	445.6	1		3.015	0.960	0.001	0.001	0.000	0.000	0.001	0.049	1.004	0.00	0.05	0.95
26R-6, 18–21	B4	271	445.6	1		2.397	1.553	0.016	0.031	0.000	0.001	0.646	0.363	0.003	0.64	0.36	0.00
26R-6, 18–21	B4	272	445.6	1		2.543	1.404	0.005	0.048	0.000	0.003	0.505	0.489	0.001	0.51	0.49	0.00
26R-6, 18–21	B4	279	445.6	1		2.528	1.415	0.009	0.046	0.000	0.004	0.514	0.488	0.003	0.51	0.49	0.00
26R-6, 18–21	B4	283	445.6	1		2.399	1.545	0.016	0.030	0.000	0.004	0.655	0.355	0.002	0.65	0.35	0.00
34R-4, 37–40	B4	206	488.87	1		2.378	1.571	0.016	0.025	0.000	0.002	0.676	0.336	0.000	0.67	0.33	0.00
34R-4, 37–40	B4	206	488.87	1		2.378	1.571	0.016	0.025	0.000	0.002	0.676	0.336	0.000	0.67	0.33	0.00
34R-4, 37–40	B4	214	488.87	1		2.406	1.542	0.014	0.030	0.000	0.000	0.656	0.350	0.002	0.65	0.35	0.00
34R-4, 37–40	B4	214	488.87	1		2.406	1.542	0.014	0.030	0.000	0.000	0.656	0.350	0.002	0.65	0.35	0.00
34R-4, 37–40	B4	215	488.87	1		2.519	1.421	0.009	0.052	0.000	0.005	0.520	0.481	0.003	0.52	0.48	0.00
34R-4, 37–40	B4	215	488.87	1		2.519	1.421	0.009	0.052	0.000	0.005	0.520	0.481	0.003	0.52	0.48	0.00
34R-4, 37–40	B4	219	488.87	1	Micr	2.395	1.551	0.016	0.029	0.000	0.001	0.658	0.355	0.000	0.65	0.35	0.00
34R-4, 37–40	B4	219	488.87	1		2.395	1.551	0.016	0.029	0.000	0.001	0.658	0.355	0.000	0.65	0.35	0.00
34R-4, 37–40	B4	220	488.87	1		2.464	1.485	0.011	0.041	0.000	0.003	0.582	0.408	0.002	0.59	0.41	0.00
34R-4, 37–40	B4	220	488.87	1	Micr	2.464	1.485	0.011	0.041	0.000	0.003	0.582	0.408	0.002	0.59	0.41	0.00
34R-4, 37–40	B4	222	488.87	1		2.428	1.516	0.014	0.027	0.000	0.005	0.635	0.372	0.001	0.63	0.37	0.00
34R-4, 37–40	B4	222	488.87	1		2.428	1.516	0.014	0.027	0.000	0.005	0.635	0.372	0.001	0.63	0.37	0.00
34R-4, 37–40	B4	228	488.87	1		2.430	1.512	0.010	0.037	0.000	0.002	0.625	0.393	0.001	0.61	0.39	0.00
34R-4, 37–40	B4	228	488.87	1		2.430	1.512	0.010	0.037	0.000	0.002	0.625	0.393	0.001	0.61	0.39	0.00
54R-1, 41–43	B5	54	618.51	1		2.361	1.580	0.021	0.022	0.000	0.001	0.700	0.326	0.002	0.68	0.32	0.00
54R-1, 41–43	B5	58	618.51	1		2.350	1.594	0.016	0.029	0.000	0.003	0.703	0.310	0.001	0.69	0.31	0.00
54R-1, 41–43	B5	59	618.51	1		2.347	1.592	0.018	0.043	0.002	0.001	0.698	0.310	0.001	0.69	0.31	0.00
54R-1, 41–43	B5	68	618.51	1		2.533	1.401	0.005	0.051	0.003	0.004	0.518	0.491	0.006	0.51	0.48	0.01
54R-1, 41–43	B4	286	618.51	1		2.360	1.577	0.020	0.029	0.002	0.003	0.701	0.314	0.001	0.69	0.31	0.00
54R-1, 41–43	B4	286	618.51	1		2.360	1.577	0.020	0.029	0.002	0.003	0.701	0.314	0.001	0.69	0.31	0.00
54R-1, 41–43	B4	290	618.51	1		2.438	1.505	0.017	0.039	0.000	0.002	0.605	0.404	0.001	0.60	0.40	0.00
54R-1, 41–43	B4	290	618.51	1		2.438	1.505	0.017	0.039	0.000	0.002	0.605	0.404	0.001	0.60	0.40	0.00
54R-1, 41–43	B4	297	618.51	1		2.349	1.601	0.021	0.026	0.000	0.001	0.705	0.293	0.005	0.70	0.29	0.00
54R-1, 41–43	B4	297	618.51	1		2.349	1.601	0.021	0.026	0.000	0.001	0.705	0.293	0.005	0.70	0.29	0.00
54R-1, 41–43	B4	298	618.51	1		2.375	1.565	0.020	0.028	0.002	0.002	0.677	0.344	0.002	0.66	0.34	0.00
54R-1, 41–43	B4	298	618.51	1		2.375	1.565	0.020	0.028	0.002	0.002	0.677	0.344	0.002	0.66	0.34	0.00
55R-1, 118–122	M	50/1	628.58	2		2.962	1.052	0.000	0.009	0.000	0.000	0.002	0.969	0.006	0.00	0.99	0.01
55R-1, 118–122	M	51/1	628.58	2		2.970	1.041	0.000	0.006	0.001	0.001	0.003	0.971	0.003	0.00	0.99	0.00
55R-1, 118–122	M	54/1	628.58	2		2.961	1.051	0.001	0.004	0.000	0.001	0.002	0.985	0.003	0.00	0.99	0.00
55R-1, 118–122	M	52/1	628.58	1		2.331	1.634	0.022	0.037	0.002	0.003	0.654	0.332	0.003	0.66	0.34	0.00
55R-1, 118–122	M	53/1	628.58	1		2.360	1.601	0.021	0.044	0.001	0.003	0.624	0.365	0.003	0.63	0.37	0.00
55R-1, 118–122	M	55/1	628.58	1		2.309	1.660	0.025	0.032	0.000	0.001	0.678	0.308	0.001	0.69	0.31	0.00

Table T3 (continued).

Core, section, interval (cm)	Lab	Analysis number	Depth (mbsf)	Occurrence	Other	Oxides (%)														
						SiO_2	Al_2O_3	MgO	FeO	MnO	TiO_2	CaO	Na_2O	K_2O	P_2O_5	Cl	F	ZnO	Cr_2O_3	Total
57R-3, 0–1	B1	60	648.25	1		52.48	28.08	0.12	1.02	0.04	0.05	12.4	4.15	0.04	0	0		0	0.12	98.51
57R-3, 0–1	B1	62	648.25	1		50.1	29.26	0.25	0.8	0	0	14.58	3.22	0.02	0	0		0	0	98.25
57R-3, 0–1	B1	70	648.25	1		50.63	28.96	0.19	1.03	0.08	0	13.94	3.57	0.03	0	0		0	0.08	98.52
57R-3, 0–1	B1	72	648.25	1		50.33	29.74	0.18	0.95	0	0	14.22	3.21	0.03	0	0		0.19	0.03	98.89
57R-3, 0–1	B1	73	648.25	1		50.85	29.61	0.14	0.85	0.02	0.04	14.49	3.1	0	0.04	0		0.08	0.13	99.34
57R-3, 0–1	B1	74	648.25	1		49.51	29.98	0.24	0.52	0	0.03	15.02	2.93	0.22	0.05	0		0	0.11	98.61
57R-3, 0–1	B1	75	648.25	2		55.3	26.44	0.1	1.23	0	0.09	10.85	5.24	0.08	0	0	0		0.03	99.35
57R-3, 0–1	B1	76	648.25	2		65.7	17.55	0	0.08	0.09	0	0.04	2.21	14.42	0.04	0		0	0.04	100.19
57R-3, 0–1	B1	77	648.25	2		65.24	17.61	0	0.07	0	0	0	0.72	15.84	0	0		0	0	99.49
57R-3, 5–8	B4	314	648.25	1		48.79	30.66	0.23	0.59	0.02	0.05	15.58	2.72	0	0.09				0.04	98.77
57R-3, 5–8	B4	315	648.25	2		65.02	17.4	0.01	0.01	0.13	0	0	0.03	17.07	0				0	99.67
57R-3, 5–8	B4	317	648.25	1		50.31	29.31	0.17	0.93	0	0	14.13	3.54	0.06	0.02				0.01	98.49
57R-3, 5–8	B4	319	648.25	1		49.73	30.01	0.26	0.57	0	0.02	14.75	3.05	0.05	0				0	98.44
57R-3, 5–8	B4	320	648.25	1		50.86	29.22	0.36	0.69	0	0.06	14.36	3.45	0	0				0	99.01
57R-3, 5–8	B4	321	648.25	1		49.74	30.04	0.17	1.03	0	0	14.86	3.33	0	0				0	99.17
57R-3, 5–8	B4	326	648.25	1		50.09	30.04	0.16	0.86	0	0.03	14.76	3.21	0.1	0				0	99.24
57R-3, 5–8	B4	327	648.25	1		50.71	29.48	0.2	1.12	0	0.01	14.05	3.28	0.21	0				0	99.05
57R-3, 5–8	B4	328	648.25	1		49.07	30.6	0.19	0.94	0.01	0.02	15.53	2.7	0.05	0				0	99.11
61R-1, 139–143	B4	231	679.39	1		53.42	27.51	0.26	1.02	0.02	0.07	12.05	4.69	0.03	0.04				0	99.11
61R-1, 139–143	B4	232	679.39	1		50.81	29.82	0.25	0.5	0	0.05	14.02	3.54	0.03	0.01				0	99.03
61R-1, 139–143	B4	233	679.39	1		52.76	28.24	0.3	0.89	0	0.04	12.9	4.13	0.03	0				0	99.29
61R-1, 139–143	B4	239	679.39	1	Rim	53.53	27.6	0.2	0.99	0.02	0.09	12.3	4.55	0.02	0.04				0.06	99.41
61R-1, 139–143	B4	243	679.39	1	Rim	53.55	28.69	0.23	0.5	0	0.01	12.98	4.4	0	0				0	100.36
63R-1, 81–83	B2	12	697.31	1		53.24	27.09	0.45	0.9	0	0.01	12.98	3.94	0.03	0	0.03		0	0.07	98.73
63R-1, 81–83	B2	44	697.31	1		46.59	31.94	0.26	0.51	0	0	16.94	1.82	0.05	0.01	0		0.25	0	98.37
63R-1, 81–83	B2	47	697.31	2	Core	67.56	18.82	0.03	0.1	0.12	0	0.35	11.08	0.09	0.02	0		0	0.01	98.18
65R-1, 105–109	B5	42	706.75	1		54.18	27.8	0.27	1.04	0.04	0.06	12.41	4.4	0.1	0	0	0		0.07	100.38
65R-1, 105–109	B4	145	706.75	1		50.94	29.48	0.3	0.78	0	0	14.37	3.39	0.01	0.02				0	99.3
65R-1, 105–109	B4	157	706.75	1		52.34	28.26	0.33	0.78	0	0.08	13.13	3.95	0	0.04				0	98.91
67R-1, 47–54	B5	28	715.27	2		68.82	20.31	0.02	0.37	0	0.02	0.5	10.6	0.05	0.04	0.01	0.2		0	100.94
67R-1, 47–50	B4	188	715.27	1	Core	50.09	30.37	0.3	0.56	0.01	0.02	15.45	2.9	0	0.01				0	99.71
71R-1, 95–99	B5	84	734.25	1		54.15	26.94	0.24	1.34	0	0.11	12.11	4.8	0.04	0	0	0		0	99.72
71R-1, 95–99	B5	90	734.25	1		52.64	27.81	0.29	1.08	0	0	12.55	4.21	0.06	0	0.02	0		0	98.68
71R-1, 95–99	B5	91	734.25	1		52.41	27.9	0.32	0.8	0.03	0.09	13.25	4.02	0	0	0	0.06		0	98.88
71R-1, 95–99	B5	96	734.25	1		53.2	27.96	0.38	0.94	0	0.04	12.84	4.25	0	0	0	0		0.02	99.63
71R-1, 95–99	B4	349	734.25	1		53.41	26.96	0.3	1.04	0	0.04	11.9	4.38	0.28	0.01				0.04	98.37
71R-1, 95–99	B4	350	734.25	2		65.38	21.23	0.04	0.5	0	0.17	2.56	9.17	0.08	0.08				0	99.23
71R-1, 95–99	B4	351	734.25	1		53.35	27.8	0.27	1.18	0	0.08	12.47	4.4	0.02	0				0	99.57
74R-1, 111–112	B1	97	748.31	2		69.08	19.09	0.01	0.03	0	0	0.1	11.69	0.05	0	0		0	0	100.05
74R-1, 111–112	B1	98	748.31	2		68.77	19.4	0.01	0.07	0	0.05	0.16	11.89	0.01	0.03	0.01		0	0.15	100.56
74R-1, 111–112	B1	99	748.31	2		68.58	19.12	0	0.07	0.02	0	0.03	11.73	0.05	0	0.04		0	0	99.64
74R-1, 111–112	B1	100	748.31	2	Micr	67.24	18.06	0.96	0.8	0	0.08	0.95	10.92	0.04	0.04	0.01		0	0	99.1

Notes: Lab: B = Institut Français de Recherche pour l'Exploitation de la Mer (France), M = University of Michigan (USA), P = Paris VII University (France). Occurrence: 1 = primary mineral, 2 = secondary mineral. All analyses are of phenocrysts, except where noted. Micr = microlite. An = anorthite, Ab = albite, Or = orthoclase.

Table T3 (continued).

Core, section, interval (cm)	Lab	Analysis number	Depth (mbsf)	Occurrence	Other	Formula											
						Si	Al	Mg	Fe^{2+}	Mn	Ti	Ca	Na	K	An	Ab	Or
57R-3, 0–1	B1	60	648.25	1		2.427	1.529	0.008	0.039	0.002	0.002	0.615	0.370	0.002	0.62	0.37	0.00
57R-3, 0–1	B1	62	648.25	1		2.335	1.606	0.017	0.031	0.000	0.000	0.729	0.289	0.001	0.71	0.28	0.00
57R-3, 0–1	B1	70	648.25	1		2.354	1.586	0.013	0.040	0.003	0.000	0.695	0.320	0.002	0.68	0.31	0.00
57R-3, 0–1	B1	72	648.25	1		2.332	1.623	0.012	0.037	0.000	0.000	0.707	0.287	0.002	0.71	0.29	0.00
57R-3, 0–1	B1	73	648.25	1		2.344	1.608	0.010	0.033	0.001	0.001	0.717	0.276	0.000	0.72	0.28	0.00
57R-3, 0–1	B1	74	648.25	1		2.304	1.643	0.017	0.020	0.000	0.001	0.750	0.263	0.013	0.73	0.26	0.01
57R-3, 0–1	B1	75	648.25	2		2.523	1.421	0.007	0.047	0.000	0.003	0.531	0.461	0.005	0.53	0.46	0.00
57R-3, 0–1	B1	76	648.25	2		3.022	0.951	0.000	0.003	0.004	0.000	0.002	0.196	0.846	0.00	0.19	0.81
57R-3, 0–1	B1	77	648.25	2		3.027	0.962	0.000	0.003	0.000	0.000	0.000	0.064	0.937	0.00	0.06	0.94
57R-3, 5–8	B4	314	648.25	1		2.270	1.680	0.016	0.023	0.001	0.002	0.777	0.244	0.000	0.76	0.24	0.00
57R-3, 5–8	B4	315	648.25	2		3.027	0.954	0.001	0.000	0.005	0.000	0.000	0.003	1.013	0.00	0.00	1.00
57R-3, 5–8	B4	317	648.25	1		2.340	1.605	0.012	0.036	0.000	0.000	0.705	0.318	0.004	0.69	0.31	0.00
57R-3, 5–8	B4	319	648.25	1		2.311	1.642	0.018	0.022	0.000	0.001	0.735	0.273	0.003	0.73	0.27	0.00
57R-3, 5–8	B4	320	648.25	1		2.349	1.589	0.025	0.027	0.000	0.002	0.711	0.307	0.000	0.70	0.30	0.00
57R-3, 5–8	B4	321	648.25	1		2.303	1.638	0.012	0.040	0.000	0.000	0.738	0.297	0.000	0.71	0.29	0.00
57R-3, 5–8	B4	326	648.25	1		2.313	1.634	0.011	0.033	0.000	0.001	0.731	0.286	0.006	0.71	0.28	0.01
57R-3, 5–8	B4	327	648.25	1		2.344	1.604	0.014	0.043	0.000	0.000	0.696	0.292	0.012	0.70	0.29	0.01
57R-3, 5–8	B4	328	648.25	1		2.275	1.670	0.013	0.036	0.000	0.001	0.772	0.241	0.003	0.76	0.24	0.00
61R-1, 139–143	B4	231	679.39	1		2.453	1.487	0.018	0.039	0.001	0.002	0.593	0.415	0.002	0.59	0.41	0.00
61R-1, 139–143	B4	232	679.39	1		2.341	1.618	0.017	0.019	0.000	0.002	0.693	0.315	0.002	0.69	0.31	0.00
61R-1, 139–143	B4	233	679.39	1		2.419	1.525	0.020	0.034	0.000	0.001	0.634	0.365	0.002	0.63	0.36	0.00
61R-1, 139–143	B4	239	679.39	1	Rim	2.452	1.489	0.014	0.038	0.001	0.003	0.604	0.402	0.001	0.60	0.40	0.00
61R-1, 139–143	B4	243	679.39	1	Rim	2.424	1.530	0.016	0.019	0.000	0.000	0.630	0.384	0.000	0.62	0.38	0.00
63R-1, 81–83	B2	12	697.31	1		2.455	1.471	0.031	0.035	0.000	0.000	0.642	0.350	0.002	0.65	0.35	0.00
63R-1, 81–83	B2	44	697.31	1		2.188	1.766	0.018	0.020	0.000	0.000	0.853	0.165	0.003	0.84	0.16	0.00
63R-1, 81–83	B2	47	697.31	2	Core	3.007	0.987	0.002	0.004	0.005	0.000	0.017	0.952	0.005	0.02	0.98	0.01
65R-1, 105–109	B5	42	706.75	1		2.456	1.484	0.018	0.039	0.002	0.002	0.603	0.385	0.006	0.61	0.39	0.01
65R-1, 105–109	B4	145	706.75	1		2.346	1.599	0.021	0.030	0.000	0.000	0.710	0.301	0.001	0.70	0.30	0.00
65R-1, 105–109	B4	157	706.75	1		2.410	1.533	0.023	0.030	0.000	0.003	0.648	0.351	0.000	0.65	0.35	0.00
67R-1, 47–54	B5	28	715.27	2		2.981	1.036	0.001	0.013	0.000	0.001	0.023	0.886	0.003	0.03	0.97	0.00
67R-1, 47–50	B4	188	715.27	1	Core	2.301	1.643	0.021	0.021	0.000	0.001	0.761	0.257	0.000	0.75	0.25	0.00
71R-1, 95–99	B5	84	734.25	1		2.474	1.449	0.016	0.051	0.000	0.004	0.593	0.423	0.002	0.58	0.42	0.00
71R-1, 95–99	B5	90	734.25	1		2.430	1.512	0.020	0.042	0.000	0.000	0.621	0.375	0.004	0.62	0.38	0.00
71R-1, 95–99	B5	91	734.25	1		2.417	1.515	0.022	0.031	0.001	0.003	0.655	0.358	0.000	0.65	0.35	0.00
71R-1, 95–99	B5	96	734.25	1		2.431	1.505	0.026	0.036	0.000	0.001	0.629	0.375	0.000	0.63	0.37	0.00
71R-1, 95–99	B4	349	734.25	1		2.470	1.468	0.021	0.040	0.000	0.001	0.590	0.391	0.017	0.59	0.39	0.02
71R-1, 95–99	B4	350	734.25	2		2.897	1.108	0.003	0.018	0.000	0.006	0.122	0.784	0.005	0.13	0.86	0.00
71R-1, 95–99	B4	351	734.25	1		2.440	1.497	0.018	0.045	0.000	0.003	0.612	0.388	0.001	0.61	0.39	0.00
74R-1, 111–112	B1	97	748.31	2		3.014	0.981	0.001	0.001	0.000	0.000	0.005	0.984	0.003	0.00	0.99	0.00
74R-1, 111–112	B1	98	748.31	2		2.997	0.996	0.001	0.003	0.000	0.002	0.007	1.000	0.001	0.01	0.99	0.00
74R-1, 111–112	B1	99	748.31	2		3.008	0.988	0.000	0.003	0.001	0.000	0.001	0.993	0.003	0.00	1.00	0.00
74R-1, 111–112	B1	100	748.31	2	Micr	2.986	0.944	0.064	0.030	0.000	0.003	0.045	0.936	0.002	0.05	0.95	0.00

Table T4. Other minerals.

Core, section, interval (cm)	Lab	Analysis number	Depth (mbsf)	Mineral	Occurrence	Major elements (%)													
						SiO_2	Al_2O_3	MgO	FeO	MnO	TiO_2	CaO	Na_2O	K_2O	P_2O_5	Cl_2O	ZnO	Cr_2O_3	Total
206-1256C-																			
10R-3, 13–19	B1	106	296.93	Apatite		0.32	0.02	0.06	0.90	0.32	0.00	54.11	0.06	0.00	41.93	1.30	0.00	0.00	99.02
12R-3, 60–63	P1	62	316.38	Carbonate		0.05	0.00	0.66	0.63	5.05	0.00	48.74	0.01	0.00	0.17	0.01			55.33
12R-3, 60–63	P1	64	316.38	Carbonate		0.13	0.00	0.77	0.75	4.83	0.00	48.07	0.02	0.00	0.10	0.01			54.68
13R-1, 12–15	B1	7	322.12	Carbonate	Vn	0.00	0.02	0.01	0.04	0.04	0.00	56.32	0.02	0.00	0.11	0.04	0.00	0.00	56.60
13R-1, 12–15	B1	12	322.12	Carbonate	Vn	0.00	0.01	0.01	0.06	0.00	0.00	56.32	0.00	0.00	0.03	0.01	0.00	0.02	56.47
206-1256D-																			
2R-1, 37–40	P3	63	276.47	Carbonate	In pyrite	0.00	0.00	0.16	0.16	2.38	0.00	52.96	0.00	0.00		0.03			55.69
4R-1, 89–92	B3	154	285.99	Apatite		0.35	0.02	0.05	0.88	0.16	0.00	54.98	0.01	0.00	43.01			0.07	99.54
4R-1, 89–92	B3	155	285.99	Apitite		0.24	0.01	0.08	0.76	0.10	0.00	55.26	0.03	0.03	43.15			0.05	99.73

Notes: Lab: B = Institut Français de Recherche pour l'Exploitation de la Mer (France), P = Paris VII University (France). Occurrence: vn = vein.

Table T4 (continued).

Core, section, interval (cm)	Lab	Analysis number	Depth (mbsf)	Mineral	Occurrence	Formula										
						Si	Al	Mg	Fe	Mn	Ti	Ca	Na	K	P	Cl
206-1256C-																
10R-3, 13–19	B1	106	296.93	Apatite		0.027	0.002	0.008	0.063	0.023	0.000	4.882	0.009	0.000	2.985	0.370
12R-3, 60–63	P1	62	316.38	Carbonate		0.001	0.000	0.017	0.009	0.074	0.000	0.899	0.000	0.000		
12R-3, 60–63	P1	64	316.38	Carbonate		0.002	0.000	0.020	0.011	0.071	0.000	0.893	0.001	0.000		
13R-1, 12–15	B1	7	322.12	Carbonate	Vn	0.000	0.000	0.000	0.001	0.001	0.000	0.998	0.001	0.000		
13R-1, 12–15	B1	12	322.12	Carbonate	Vn	0.000	0.000	0.000	0.001	0.000	0.000	0.999	0.000	0.000		
206-1256D-																
2R-1, 37–40	P3	63	276.47	Carbonate	In pyrite	0.000	0.000	0.004	0.002	0.034	0.000	0.960	0.000	0.000		
4R-1, 89–92	B3	154	285.99	Apatite		0.029	0.002	0.007	0.061	0.011	0.000	4.860	0.002	0.000	3.000	0.000
4R-1, 89–92	B3	155	285.99	Apitite		0.020	0.001	0.010	0.052	0.007	0.000	4.875	0.005	0.004	3.004	0.000