Volume 129SR

Chapter 5

Tables 1–6

Table 1. Comparison of petrographic features in Cretaceous and Miocene volcaniclastites from Sites 800, 801, and 802.

Hole-Core-section,	Interval(cm)	Depth (mbsf)	ROCK DESCRIPTION	NATURE OF MATRIX	MATRIX GRAIN-SIZE	LARGE CLASTS	VITRIC MATERIAL	VITRIC ALTERATION	LITHIC MATERIAL	CRYSTAL MATERIAL	BIOGENIC MATERIAL	OTHER CLASTS
Cretaceous Volcaniclastites												
800A-26R-01,	85-90	229.45	fine-grained sst			some	Degradation to clay mineral mosaic renders identification of shards very difficult.	Usually highly altered to brown smectite groundmass		Mostly Cpx (Titanaugite), some plag., occas. ore, usually fresh	Microfossils, mostly radiolarians, usually present in small quantity.	
800A-26R-02,	48-53	230.58	microfossil bearing ooze	clay mineral								
800A-26R-02,	67-73	230.77										
800A-26R-03,	65-68	232.45	sst									
800A-27R-01,	36-39	238.36						If present, completely altered to brown smectite	Basalt clasts below 0.1 mm dia. Uncommon confined to very thin lenses 0.5-2 mm long.	Uncommon tiny crystal fragments below 0.1 mm, confined to very thin lenses 0.5 - 2 mm long.		
800A-27R-01,	83-87	238.83	siliceous radiolarian micritic limestones with light dustings of volcaniclastic material in lenses	SiO2 replacing carbonate	Average grain-size 0.5 mm or below		Abundant clay material, possibly degraded f/g vitric shards.					
800A-27R-02,	4-7	239.54										
800A-28R-01,	1-5	247.21		clay mineral					Both fresh and altered clasts occur. Clasts occur where marked.			Abundant ooids and shell fragments.
800A-28R-01,	78-82	247.98						Usually highly altered to brown groundmass.		Mostly Cpx (Titanaugite), some plag., occas. ore, usually fresh		pellets
800A-28R-02,	143-146	250.13	fine-grained ssts often rich in calcareous material									
800A-28R-03,	66-70	250.86		carbonate								
800A-28R-03,	136-141	251.56		clay mineral								
800A-28R-04,	112-117	252.82				occasional						
800A-28R-05,	95-100	254.15										
800A-29R-03,	34-37	259.84	siliceous radiolarian micritic limestone	silica/carbonate							Rad.s, forams.	
800A-30R-CC,	4-8	268.92							Always present, sometimes abundant, occasionally the dominant component. Fresh basalt material almost totally absent particularly in the lower horizons.	Many crystal fragments altered to clay minerals and carbonate. Cpx (titanaugite) is the fresh crystal phase. Usually plag. is found sporadically. Amphibole occurs particularly towards the top	Usually some biogenic material, but not common.	ooids, c/g crystalline calcite.
800A-31R-02,	45-50	273.95				Indurated fine-grained claystone or siltstone, often with a recognizable volcaniclastic component, ie. crystals or lithic clasts. Normally the same grain-size as matrix reach 15 mm or more. Usually faintly laminated						
800A-31R-02,	125-130	274.75		Matrix material essentially clay-mineral except where indicated. where carbonate or carbonate - clay-mineral aggregate								
800A-32R-01,	94-99	279.04	Mixed group of volcaniclastic sandstones and limestones, usually c/g., showing a transition from vitric-dominated to lithic-dominant compositions towards the top.									Rounded to sub-rounded clasts and ooids sometimes abundant.
800A-32R-02,	76-80	280.36			Average grain-size 0.25 to 1 mm dia.		Always present but abundance varies.					
800A-33R-02,	117-122	290.17						Mostly highly altered.				
800A-33R-04,	146-150	293.46									Bryozoans.	
800A-33R-06,	37-43	295.37										
800A-34R-02,	0-9	298.50										
800A-34R-03,	46-51	300.46										
800A-35R-02,	82-87	308.72										
800A-36R-01,	79-83	316.69										
800A-37R-02,	137-141	327.97										c/g calcite fragments
800A-37R-CC,	8-12	328.09										
800A-39R-01,	78-80	344.58										
800A-40R-01,	28-30	353.38	Coarse-grained volcaniclastic sandstones very rich in vitric material, some of it fresh glass. Occasional horizons rich in subrounded tuffaceous claystone or siltstone clasts form breccias.		Average grainsize between 0.5 and 1.5 mm. Maximum grain-size 3 mm		Vitric material very abundant. Shards often quite vesicular. Large highly vesicular scoriae do occur.			Cpx with, more rarely, plag., both usually fresh		
800A-41R-01,	60-66	363.10										
800A-44R-01,	70-74	384.40										
800A-45R-01,	53-57	393.63				Fine-grained laminated tuffaceous siltstone			Basaltic clasts, abundance variable but often virtually absent			c/g calcite
800A-46R-03,	5-11	405.55										
800A-46R-03,	27-31	405.77										
800A-48R-02,	31-34	423.21	Reworked hyaloclastites									
800A-49R-03,	123-127	435.13										
Cretaceous Volcaniclastites												
801A- 16R-01	108-112	138.68	Coarse-grained mixed volcaniclastic sandstone	Highly calcoreous	c.1mm dia.	one or two	Vitric shards dominant	dominant	Minor quenched basalt occas. vesic. tachylite	Minor Cpx	Numerous microfossils	Clastic fragments
801A- 18R-01	25-30	157.25					Alteration makes identification difficult	Highly altered to brown smectite				
801A- 18R-01	138-142	158.38										
801B- 1R-02	26-31	187.76			0.1 to 0.5 mm, but can reach 3 mm	Occurence of fine-grained tuffaceous clasts up to 5 mm at marked horizons	Towards base, simple spalling and bubble shards dominant, but upwards increase in compound irregular shaped shards, highly vesicular occasional tubular scoriae and multi-chambered vesicles often contain large phenocrysts of Cpx, Oliv. Up to 3 mm dia. Very abundant to dominant.	Simple shards usually pale palagonite altering to smectite. Spherulitic alteration to brown smectite in larger shards.				Very little carbonate material
801B- 1R-03	145-150	190.45	Medium to coarse-grained volcaniclastic sandstones and redeposited hyaloclastites									
801B- 1R-04	72-77	191.22										
801B- 2R-01	96-104	196.46										
801B- 3R-01	16-21	205.06										
801B- 6R-04	90-95	238.70										
801B- 9R-02	144-150	255.64	Volcaniclastic silty claystone to fine-grained sandstone					Highly altered	None Identifiable	Minor Cpx	Abundant nannofossils	
801B- 8R-05	29-34	258.99										
801B- 13R-01	94-99	301.94	Fine-grained smectite-rich sandstone				None identifiable		minor basalt clasts	Minor Cpx	Abundant microfossils	
Cretaceous Volcaniclastites												
802A- 40R-02	122-129	360.82	Fine-grained tuffaceous		0.2 to 0.75 mm	F/g tuffaceous clasts to 2.5 mm long, often well-rounded, elongate Dark rims towards top	Mostly angular spalling shards but occasional highly vesicular scoriae Simple spalling shards where still identifiable but not common.	Diminishes in intensity upwards. Towards top is pale palagonite altering to smectite Completely altered to clay minerals	Occasional clasts of a wide variety of basaltic types, highly angular mostly fresh Tachylite, some hypo crystalline basalt rounded quenched basalt, highly altered	Cpx, plag., both fresh, often plag. exceeds cpx. Some identifiable fragments of Cpx. Some altered to ?zeolite	Occasional nannofossils, radiolaria, forams, carbonate spheroids.	Minor carbonate component of f/g micrite, c/g crystal mosaics, with occasional ooids.
802A- 43R-02	52-56	384.12										
802A- 56R-03	23-29	500.33	Fine-grained well-sorted tuffaceous sandstones									
Miocene Volcaniclastites												
802A- 3R-01	75-80	15.35	Lapilli-Tuff with numerous clasts of claystone/siltstone	Heavily carbonated groundmass, patchy towards base with clay mineral		Common occurrence of f/g tuffaceous claystone or siltstone clasts, sub-rounded to sub-angular, often slightly elongated						
802A- 4R-01	111-115	25.41			Average grain-size 0.2 - 0.5 mm dia, with maximum above 1 mm							
802A- 4R-02	14-19	25.94	Vitric shard dominated volcaniclastic sandstones approaching hyaloclastites in composition and appearance									
802A- 4R-02	144-149	27.24										
802A- 5R-01	88-93	34.58									Occasional nannofossil debris	
802A- 5R-02	38-43	35.58							Basaltic clasts rarely exceed 5%			
802A- 6R-02	54-60	44.94										
802A- 7R-01	64-69	53.04	F/g laminated tuff, highly altered		0.1 - 0.3 mm		None recognizable	Highly altered to clay mineral	Minor tachylite	Rare. Cpx, Ore, Plag.		
802A- 8R-01	35-41	62.25	C/g badly sorted volcaniclastic sandstones, almost hyaloclastites		0.2 - 0.5 mm dia, with maximum above 1 mm		Large highly vesicular scoriae to 2 mm dia but not abundant.		Small basaltic clasts, but not abundant.	Small, not abundant Cpx only		
802A- 8R-CC	0-6	64.85										
802A- 10R-03	7-13	83.47	Hyaloclastites							Cpx and Plag. only, rare.		
802A- 11R-01	76-80	90.36										
				CLAYSTONE		HORIZON						
802A- 14R-02	81-85	116.71	C/g volcaniclastic sandstones. All reworked vitric-crystal-lithic tuffs almost clast supported		Average grain-size between 0.2 mm and 1.5 or 2.0 mm. May reach 3 mm	Subrounded to subangular, slightly laminated volcanic ash with grain-size between 0.01 and 0.5 mm. Indurated hyaloclastite	Dominant matrix compnt. Large irregular shards, many with olivine phenocrysts, a few with plag. Shardic outlines controlled by vesicles. Some highly vesicular scoriae, most not.	Fresh sideromelane present as cores to shards, marginally altered to pale golden-brown palagonite. Some spheroidal alteration to smectite		Very prominent throughout, mostly large fractured euhedral olivine, some plag., Fe-ore. Cpx very rare.		
802A- 15R-01	19-24	122.29										
802A- 16R-01	128-133	123.38										
802A- 17R-02	54-61	142.44										
802A- 23R-01	60-64	197.00	F/g laminated volcaniclastic sandstone redeposited hyaloclastite			Rounded f/g tuffaceous clasts to 0.75 mm long	Dominant. Simple spalling and bubble shards	Some fresh glass, but most palagonitized	Essentially quenched basalt	Mostly Cpx, but some fresh plag., up to 10%.	Abundant nannofossils forams and radiolarians	
802A- 27R-02	66-73	237.26	C/g volcaniclastic sandstone				Mostly blocky shards, some vesicle controlled shapes, a few highly vesicular. Probably dominant compnt.	Highly altered to brown smectite	Wide variety of basaltic types subordinate to vitric material.	Fresh Cpx and lesser plag. Occas. Fe-ore and olivine pseudomorphs. Not abundant.	Abundant bioclastic material, c.25% of mode.	Occasional small glauconite pellets.

Table 2. X-ray powder diffraction data for phases identified in Cretaceous (Holes 800A, 801A, 801B, and 802A) and Miocene (Hole 802A) volcaniclastites.

Core	Interval	Smectite								
section	(cm)	d(001)A Untreated	d(001)A Glycolated	d(002)A	d(001)A Heated	Celadonite	Zeolite	Silica polymorphs	Carbonate
Cretaceous Volcaniclastic Rocks									
129-800A									
26R-1,	85-90	12.42	17.0	8.5	9.65	+	Clpt		
26R-1,	85-90	14.1	16.8	8.5			Clpt		
26R-2,	48-53	13.6	16.8	8.4		+	Clpt		
26R-2,	48-53	14.2	16.8	8.4	9.7		Clpt		
26R-2,	67-73	12.8	16.7	8.4	9.6		Clpt		
26R-3,	65-68	12.42	16.7	8.4					
27R-1,	36-39	No Clay Detected						+ Opal-CT	
27R-1,	83-87	No Clay Detected						+ Opal-CT	+
27R-2,	4-7	No Clay Detected						+ Opal-CT	
28R-1,	1-5	13.6	16.7	8.5		+	Clpt		+
28R-1,	78-82	13.6	16.7	8.5	9.6		Clpt		
28R-2,	143-146	12.6(12.3)	16.7	8.5			Clpt		
28R-3,	66-70	14.0	17.0	8.5			Clpt		+
28R-3,	136-141	13.0	16.7	8.5	9.6		Clpt		
28R-4,	112-117	13.0	16.7	8.4			Clpt		
28R-5,	95-100	13.0	16.7	8.5			Clpt		
29R-3,	34-37	No Clay Detected						+ Opal-CT	
30R-CC,	4-8	14.2	17.0	8.5		+	Clpt	+ Opal-CT	+
31R-2,	45-50	14.5	17.0	8.5				+ Opal-CT	
31R-2,	125-130	12.8(13.4)	17.0	8.5	9.9	+	Clpt		+
32R-1,	94-99	14.2	17.0	8.5			Clpt		+
32R-2,	76-80	15.0	17.0	8.5			Clpt		
33R-2,	117-122	15.0	17.0	8.5	9.9	+			+
33R-4,	146-150	13.6	16.7	8.3					
33R-6,	37-43	13.6	16.7	8.4					
34R-2,	0-9	15.0(14.5)	17.0	8.4	9.7				+
34R-3,	46-51	14.7	16.7	8.4					+
35R-2,	82-87	15.0	17.0	8.4					+
36R-1,	79-83	14.7	17.0	8.5	9.6	+			?
37R-2,	137-141	14.5	17.0	8.4					?
37R-CC,	8-12	14.7	16.7	8.3			Anal		+
39R-4,	78-80	14.0	16.7	8.4	9.6	+			
39R-1,	59-63	14.7	16.7	8.4		+			
40R-1,	28-30	Insufficient recovery							
41R-1,	60-66	14.7	16.7	8.5		+			+
44R-1,	70-74	14.1	17.0	8.4	9.7	+	Anal		
45R-1,	51-57	14.5	16.7	8.3		+			
46R-3,	5-11	14.7	17.0	8.5		+			
48R-3,	27-31	13.4(13.8)	16.8	8.4	9.6	+			
48R-2,	31-34	13.8	16.8	8.3			Clpt, Phlp		
49R-3,	123-127	13.4(13.9)	16.8	8.4					
50R-2,	60-64	Insufficient recovery							
129-801A									
16R-1,	108-112	13.5	17.0	8.5	9.6				
18R-1,	25-30	14.1	17.0	8.4		+	Clpt, Phlp		+
18R-1,	138-142	13.0(13.4)	17.0	8.5		+	Phlp		
129-801B									
1R-2,	28-31	12.4	16.8	8.4	9.8	+	Phlp		
1R-3,	145-150	12.4	17.0	8.4			Phlp		
1R-4,	72-77	12.4	17.0	8.4			Phlp		
2R-1,	98-104	12.5	17.0	8.4	9.6		Phlp		
3R-1,	16-21	12.3	17.0	8.4	9.6		Phlp		
6R-4,	90-95	13.0	16.8	8.4		+	?Clpt		
8R-2,	144-150	14.7	16.8	8.4		+	Clpt		+
8R-5,	29-34	14.5	17.0	8.5	9.7	+	Clpt		
13R-1,	94-99	13.6	17.0	8.5	9.8	+	Clpt		
129-802A									
40R-2,	122-129	14.7	17.0	8.5		+	Clpt		
42R-1,	103-107	Insufficient recovery							
43R-2,	52-56	14.7	17.0	8.4		+	Clpt		
56R-3,	23-29	13.5	16.8	8.4	9.9	+		?+	
Miocene Volcaniclastic Rocks									
129-802A									
3R-1,	75-80	13.9	16.1		10.1		Phlp		+
4R-1,	111-115	14.0	16.7	8.6			Phlp		+
4R-2,	14-19	12.8(13.4)	16.6	8.5			Phlp		
4R-2,	144-149	13.0(13.6)	15.2		9.9		Phlp		
5R-1,	88-93	13.3(14.1)	16.8	8.6			Phlp		
5R-2,	38-43	14.7(15.0)	16.7				Phlp		
6R-2,	54-60	12.8(13.7)	16.7	8.5	10.0	+	Phlp		+
7R-1,	44-49	Insufficient recovery							
8R-1,	35-41	12.8(13.3)	16.4	8.5			Phlp		
8R-CC,	0-6	Insufficient recovery					Phlp		
10R-3,	7-13	14.2			9.9		Phlp		+
11R-1,	76-80	Insufficient recovery							
14R-2	81-85	Insufficient recovery							
15R-1,	19-24	15.20	16.7				Phlp		
15R-1,	128-133	15.10	16.7				Phlp		
16R-1,	119-123	Insufficient recovery							
17R-2,	54-61	15.20	16.7		9.9		?Phlp		
23R-1,	60-64	13.60	16.7	8.4			Phlp		+
27R-2,	66-73	13.70	16.7	8.4					

Footnote:

Clpt - Clinoptilolite

Phlt - Phillipsite

Anal - Analcite

Table 3. Chemical variation in smectites from different locations within one sample (Sample 129-800A-33R-4, 146–150 cm).

Site of alteration	Fe/Mg	Al	Ex*	Interlayer cation sequence
Plagioclase phenocryst	0.764	2.255	0.318	Na >> Ca > K
Olivine pseudomorph	0.321	2.439	0.182	Ca = Na >> K
Vesicle rim	0.568	2.378	0.379	Ca = Na > K
Vesicle core	0.189	1.521	0.675	Na >> Ca > K
Matrix (yellow-brown)	0.279	1.534	0.599	Na > Ca > K
Matrix (olive-green)	0.622	2.170	0.620	Na >> Ca > K

Table 4. Chemical analyses of Cretaceous volcaniclastites from Site 800 (Unit IV).

Sample: Hole	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-	800A-
Core-Section	26R-1,	26R-2,	26R-2,	26R-3,	27R-1,	27R-1,	27R-2,	28R-1,	28R-1,	28R-2,	28R-3,	28R-3,	28R-4,	28R-5,	29R-3,	30R-CC,	31R-2,	31R-2,	32R-1,	32R-2,	33R-2,	33R-4,	33R-6,	34R-2,	34R-3,	35R-2,	36R-1,	37R-2,	37R-CC,	39R-1,	40R-1,	41R-1,	44R-1,	45R-1,	46R-3,	46R-3,	48R-2,	49R-3,
Interval(cm)	85-90	48-53	67-73	65-68	36-39	83-87	4-7	1-5	78-82	143-146	66-70	136-141	112-117	95-100	34-37	4-8	45-50	125-130	94-99	76-80	117-122	146-150	37-43	0-9	46-51	82-87	79-83	137-141	8-12	78-80	28-30	60-66	70-74	53-57	5-11	27-31	31-34	123-127	
Depth (mbsf)	229.45	230.58	230.77	232.45	238.36	238.83	239.54	247.21	247.98	250.13	250.86	251.56	252.82	254.15	259.84	268.92	273.95	274.75	279.04	280.36	290.17	293.46	295.37	298.50	300.46	308.72	316.69	327.97	328.09	344.58	353.38	363.10	384.40	393.63	405.55	405.77	423.21	435.13	
Major Element Oxides																																							
SiO_2	55.38	52.51	53.19	54.41	88.83	79.35	82.85	38.40	52.31	51.32	38.66	53.11	52.95	53.19	91.54	55.00	48.99	50.90	25.51	54.08	35.46	43.22	44.31	36.47	42.89	41.33	42.66	42.06	43.95	52.32	49.50	35.00	49.43	46.46	52.20	50.13	45.40	47.11	
TiO_2	1.65	1.73	1.80	2.14	0.35	0.37	0.41	1.14	2.22	1.54	0.74	1.66	2.12	1.46	0.21	1.45	1.74	1.62	0.58	1.71	1.15	1.72	1.91	1.08	1.40	1.30	1.86	1.83	1.94	1.99	1.76	1.01	1.93	1.88	1.77	2.11	2.34	1.95	
Al_2O_3	9.79	9.41	10.52	11.10	2.62	2.94	4.08	7.50	12.88	10.26	5.75	10.99	12.75	10.18	1.96	9.88	11.75	11.09	4.62	13.24	7.58	10.83	11.52	7.14	9.06	8.53	10.72	9.93	10.69	9.43	9.59	6.74	10.60	10.54	11.27	11.85	11.49	11.47	
Fe_2O_3T	9.52	11.14	10.41	10.14	2.59	2.60	4.36	5.67	9.14	9.51	4.98	9.63	8.99	9.61	1.47	7.67	9.53	7.63	2.86	6.90	8.68	10.93	9.61	7.72	8.08	8.54	11.01	11.90	12.01	10.37	9.83	6.40	12.49	13.20	8.61	8.92	8.92	9.50	
MnO	0.21	0.23	0.22	0.22	0.05	0.09	0.10	0.23	0.15	0.18	0.23	0.15	0.14	0.15	0.04	0.16	0.15	0.12	0.16	0.12	0.19	0.28	0.29	0.21	0.19	0.15	0.33	0.31	0.28	0.14	0.20	0.52	0.19	0.20	0.14	0.14	0.20	0.14	
MgO	9.08	10.84	9.79	8.06	1.05	1.50	1.86	8.01	9.77	12.01	6.70	11.89	10.29	11.54	0.66	4.78	7.36	5.47	2.62	7.23	6.36	17.80	14.03	10.61	10.79	8.79	15.46	13.26	13.27	13.33	12.69	8.94	12.00	12.73	14.16	15.35	19.23	18.38	
CaO	4.60	5.23	6.00	5.27	1.00	5.46	0.89	18.97	6.06	5.50	20.93	4.25	5.04	4.61	0.48	9.14	10.91	10.52	33.77	6.36	20.98	4.60	6.68	17.36	12.41	16.36	6.51	8.34	6.38	3.09	5.88	20.16	3.22	3.16	1.74	2.16	2.28	1.57	
Na_2O	2.47	2.27	2.26	2.48	0.67	0.78	0.89	1.91	2.79	2.54	1.78	2.62	2.52	2.51	0.56	2.39	2.18	2.52	1.65	2.54	2.00	2.38	2.70	1.67	2.03	2.04	1.72	1.83	2.31	2.02	2.02	1.77	2.01	1.28	1.80	2.34	1.46	1.71	
K_2O	0.74	0.52	0.45	0.50	0.57	0.71	1.17	0.27	0.57	0.61	0.75	0.61	0.42	0.78	0.56	1.20	0.62	0.86	0.51	0.67	0.84	0.40	0.56	1.30	1.07	0.51	1.05	0.93	0.89	1.03	0.94	0.55	1.60	2.51	2.43	1.22	0.21	1.19	
P_2O_5	0.27	0.32	0.37	0.35	0.13	0.14	0.17	0.14	0.15	0.19	0.17	0.20	0.17	0.22	0.05	0.36	0.34	0.32	0.14	0.22	0.26	0.22	0.32	0.19	0.20	0.12	0.26	0.31	0.27	0.24	0.18	0.11	0.55	0.23	0.16	0.32	0.27	0.23	
LOI	5.41	5.58	4.64	5.04	1.96	5.92	2.97	18.02	4.04	6.18	19.44	4.65	4.18	5.43	2.11	8.45	6.43	9.44	27.67	6.89	16.68	7.59	7.92	16.31	11.55	12.24	8.23	9.49	7.82	6.37	7.44	18.85	6.05	7.54	5.81	5.93	8.01	6.58	
Total	99.84	99.78	99.75	100.25	99.81	99.86	99.75	100.25	100.08	99.84	100.13	99.76	99.56	99.69	99.64	100.48	100.00	100.50	100.10	99.96	100.17	99.98	99.84	100.08	99.66	99.92	99.81	100.19	99.79	100.32	100.02	100.04	100.11	99.73	100.13	100.47	99.80	99.90	
Trace Elements																																							
Ba	141	66	67	124	50	275	57	42	161	100	102	86	67	110	32	134	163	132	66	98	41	778	423	31	52	45	72	38	44	21	52	22	26	41	30	41	36	21	
Ce	64	54	57	51	26	16	25	14	33	26	5	44	14	17	12	74	81	60	15	40	34	34	52	26	33	14	56	54	62	62	36	9	65	44	41	59	59	63	
Cl	3387	2761	1009	861	8811	22506	9035	2176	4234	19138	36069	3564	2439	3812	1538	2935	1406	2270	2137	2407	1563	822	762	1375	984	1062	1565	1354	2035	3335	1281	777	1086	876	2226	1439	1367	2261	
Cr	214	211	239	275	39	55	31	129	1020	644	175	703	945	538	29	118	154	107	89	287	258	527	557	449	774	596	653	717	696	771	563	333	551	626	452	645	839	809	
Cu	107	108	105	95	26	35	17	51	76	72	46	69	70	65	37	70	74	118	38	111	32	87	158	58	83	84	94	59	58	84	94	101	33	26	112	120	106	101	
Ga	13	11	12	14	5	5	9	10	15	13	8	15	12	14	2	11	10	9	5	15	10	13	11	10	10	11	12	12	13	10	10	9	15	17	17	14	12	15	
La	12	26	32	30	10	10	4	0	1	5	3	4	0	7	4	28	27	33	10	7	11	9	19	3	2	5	20	17	14	18	11	5	10	13	3	13	6	16	
Nb	46	40	47	52	6	7	8	15	21	17	13	19	19	16	5	47	51	52	22	40	21	27	29	19	22	21	30	29	30	28	27	15	27	27	24	27	30	26	
Nd	35	20	21	32	15	6	24	18	27	18	12	28	10	5	14	33	37	22	10	30	15	17	27	18	20	13	39	33	28	37	18	9	32	28	24	23	37	38	
Ni	106	104	101	102	23	31	42	62	251	292	123	300	216	303	19	58	82	59	32	104	172	389	341	287	389	364	368	380	375	293	247	267	239	197	257	245	441	383	
Pb	2	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	4	0	5	0	2	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	
Rb	12	12	9	8	21	22	35	7	8	13	13	9	5	13	17	20	14	14	11	14	17	8	5	17	15	16	15	13	12	18	11	8	25	47	34	15	6	14	
S	223	231	236	242	520	431	241	240	202	186	218	165	179	172	236	191	175	202	212	185	166	124	198	149	133	150	148	152	142	178	155	157	160	189	172	171	142	186	
Sr	352	530	266	424	69	97	94	322	312	309	382	365	265	346	51	455	335	483	333	331	198	115	455	110	181	183	157	108	119	134	145	125	132	99	122	118	118	109	
Th	6	4	4	3	10	7	8	2	3	4	1	6	7	6	12	8	7	9	1	10	5	5	5	6	5	2	8	9	5	6	6	4	8	2	4	10	8	9	
V	243	253	271	280	46	47	38	146	319	206	90	238	316	216	68	151	208	161	52	400	180	290	301	133	282	154	259	172	161	206	222	138	174	209	286	292	429	337	
Y	19	16	23	21	12	13	17	12	16	14	15	14	13	15	12	21	25	22	13	15	17	20	22	15	15	20	22	20	23	24	16	12	26	20	15	22	21	21	
Zn	74	70	81	92	25	33	30	49	78	75	49	7	65	77	21	63	139	119	43	146	80	76	75	60	72	75	86	86	86	79	78	69	82	77	103	81	88	81	
Zr	126	106	135	150	41	45	53	70	155	118	57	118	152	113	33	120	139	148	74	136	89	119	121	80	98	107	140	133	142	146	131	76	139	137	125	144	154	137	

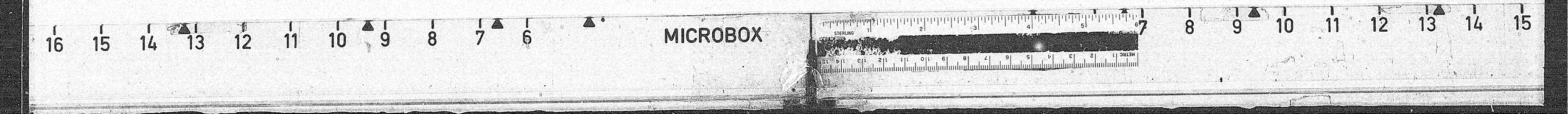

Table 5. Chemical analyses of Cretaceous volcaniclastites from Site 801 (Unit III) and Site 802 (Units VIII to IX).

Sample: Hole	801A-	801A-	801A-	801B-	801B-	801B-	801B-	801B-	801B-	801B-	801B-	801B-	802A-	802A-	802A-
Core-Section	16R-1,	18R-1,	18R-1,	1R-2,	1R-3,	1R-4,	2R-1,	3R-1,	6R-4,	8R-2,	8R-5,	13R-1,	40R-2,	43R-2,	56R-3,
Interval(cm)	108-112	25-30	138-142	26-31	145-150	72-77	96-104	16-21	90-95	144-150	29-34	94-99	122-129	52-56	23-29
Depth (mbsf)	138.68	157.25	158.38	187.76	190.45	191.22	196.46	205.06	238.70	255.64	258.99	301.94	360.82	384.12	500.33
Major Element Oxides															
SiO_2	51.01	37.03	50.23	45.82	44.80	44.93	48.19	47.24	49.59	56.16	58.20	54.40	48.13	52.75	56.46
TiO_2	3.10	1.61	2.21	3.15	3.19	3.20	2.41	2.50	2.61	1.75	1.94	1.08	2.57	3.04	1.22
Al_2O_3	8.71	8.06	11.35	9.02	9.30	9.12	10.47	10.50	9.97	8.82	9.02	11.45	10.24	10.33	13.70
Fe_2O_3T	10.20	7.50	9.99	11.53	11.76	11.98	10.94	11.11	10.46	9.38	9.05	9.66	9.77	10.64	7.52
MnO	0.15	0.37	0.18	0.19	0.19	0.20	0.21	0.25	0.21	0.17	0.19	0.12	0.20	0.13	0.07
MgO	11.01	6.26	8.95	12.64	11.88	12.30	13.92	13.84	9.76	5.93	8.07	10.72	6.43	7.27	5.96
CaO	7.63	18.34	5.55	6.98	7.63	8.06	3.97	4.31	4.18	4.52	2.66	2.07	9.32	4.70	2.49
Na_2O	2.10	2.32	2.91	2.84	3.50	3.28	3.15	3.39	3.79	2.28	2.76	2.12	2.35	2.59	2.05
K_2O	0.59	1.27	1.23	1.93	1.58	1.25	0.95	1.13	1.90	2.56	1.34	2.60	1.22	2.13	4.99
P_2O_5	0.39	0.23	0.33	0.45	0.46	0.46	0.34	0.35	0.36	0.25	0.26	0.07	0.28	0.38	0.03
LOI	4.91	16.95	6.91	5.67	5.77	5.21	5.42	5.51	7.01	8.30	6.72	5.75	9.25	6.27	5.39
Total	99.79	99.94	99.84	100.22	100.07	99.98	99.97	100.14	99.86	100.10	100.18	100.04	99.76	100.22	99.88
Trace Elements															
Ba	101	168	92	969	992	934	298	275	121	118	104	26	106	95	12
Ce	110	40	51	110	126	98	62	73	97	50	55	4	51	81	11
Cl	2014	1914	2680	1521	2504	1766	1208	1051	5582	3782	7604	2483	3205	4876	2279
Cr	629	172	251	536	565	621	585	601	375	209	252	321	226	535	163
Cu	204	48	60	80	88	85	53	48	85	63	55	117	78	106	186
Ga	12	11	14	15	14	14	14	16	12	12	12	11	17	15	13
La	48	10	21	45	48	39	21	29	32	13	9	3	21	31	0
Nb	51	27	35	53	54	54	29	28	35	22	22	5	29	28	5
Nd	40	31	21	44	61	42	34	37	53	32	24	12	20	53	11
Ni	150	92	110	177	192	208	284	293	145	118	113	119	147	228	188
Pb	0	2	0	4	3	3	0	0	0	1	0	1	0	0	0
Rb	8	16	14	20	16	12	6	8	16	36	16	24	19	30	43
S	261	235	273	200	215	201	176	159	227	217	211	153	199	207	161
Sr	187	174	184	116	140	138	187	114	959	234	355	133	326	338	82
Th	6	1	5	5	4	3	5	5	0	5	4	5	0	3	6
V	326	161	258	307	307	285	269	232	217	165	217	243	237	275	232
Y	23	17	23	21	22	23	23	22	24	18	19	14	23	30	13
Zn	94	67	81	91	94	96	97	93	91	68	74	155	99	104	92
Zr	240	129	171	255	261	261	193	207	185	135	146	66	195	196	67