

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)										Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total	
MSH04A20_10_16	1-1	57.69		27.13	0.43	0.02	9.19	5.94	0.22			100.62
MSH04A20_10_16	1-2	56.60		27.71	0.52	0.04	9.98	5.44	0.27			100.56
MSH04A20_10_16	1-3	56.22		28.14	0.27	0.03	10.22	5.32	0.18			100.38
MSH04A20_10_16	1-4	57.78		27.44	0.24	0.02	9.27	5.82	0.16			100.73
MSH04A20_10_16	1-5	56.05		28.13	0.55	0.09	10.52	5.09	0.23			100.66
MSH04A20_10_16	1-6	56.54		28.10	0.30	0.02	10.27	5.32	0.13			100.68
MSH04A20_10_16	1-7	56.72		27.52	0.55	0.09	10.01	5.48	0.31			100.68
MSH04A20_10_16	2-2	48.62		33.11	0.54	0.02	16.23	2.19	0.08			100.79
MSH04A20_10_16	3-1	54.09		29.27	0.51	0.08	12.11	4.29	0.15			100.50
MSH04A20_10_16	3-1	55.89		28.65	0.26	0.01	10.57	4.98	0.39			100.75
MSH04A20_10_16	3-3	55.53		28.43	0.59	0.05	10.83	4.96	0.25			100.64
MSH04A20_10_16	3-4	50.65		32.05	0.39	0.02	14.95	2.94	0.07			101.07
MSH04A20_10_16	3-5	58.43		27.14	0.31	0.03	8.95	6.26	0.16			101.28
MSH04A20_10_16	4-1	53.35		30.14	0.29	0.02	12.57	4.13	0.07			100.57
MSH04A20_10_16	4-2	55.66		29.07	0.35	0.02	11.14	4.86	0.13			101.23
MSH04A20_10_16	4-3	55.61		28.65	0.51	0.08	10.99	4.93	0.19			100.96
MSH04A20_10_16	1	58.85	0.03	26.90	0.30	0.00	8.56	6.47	0.19			101.30
MSH04A20_10_16	2	57.96	0.03	27.50	0.36	0.00	9.12	6.05	0.32			101.34
MSH04A20_10_16	3	54.47	0.08	29.38	0.27	0.01	11.51	4.85	0.13			100.70
MSH04A20_10_16	4	57.91	0.01	27.56	0.27	0.00	9.14	6.19	0.16			101.24
MSH04A20_10_16	5	56.87	0.02	28.08	0.28	0.00	9.91	5.84	0.14			101.14
MSH04A20_10_16	6	53.36	0.02	30.60	0.34	0.00	12.54	4.27	0.10			101.23
MSH04A20_10_16	7	54.75	0.03	29.44	0.56	0.05	11.67	4.85	0.16			101.51
MSH04A20_10_16	8	57.86	0.03	27.62	0.40	0.00	9.11	6.08	0.20			101.30
MSH04A20_10_16	9	59.72	0.01	26.34	0.25	0.11	7.64	6.90	0.26			101.23
MSH04A20_10_16	10	54.93	0.03	29.71	0.51	0.00	11.87	4.61	0.23			101.89
MSH04A20_10_16	11	58.93	0.00	27.25	0.20	0.00	8.66	6.40	0.17			101.61
MSH04A20_10_16	12	52.41	0.00	31.25	0.29	0.01	13.71	3.83	0.08			101.58
MSH04A20_10_16	13	53.76	0.01	30.35	0.41	0.00	12.37	4.49	0.10			101.49
MSH04A20_10_16	14	57.42	0.02	27.59	0.37	0.00	9.53	5.91	0.17			101.01
MSH04A20_10_16	15	55.05	0.07	29.10	0.61	0.00	11.38	4.94	0.20			101.35
MSH04A20_10_16	16	55.44	0.01	29.21	0.34	0.00	11.24	5.14	0.16			101.54
MSH04A20_10_16	17	57.27	0.03	27.85	0.52	0.00	9.74	5.79	0.20			101.40
MSH04A20_10_16	18	58.37	0.14	26.58	0.93	0.07	8.95	5.92	0.35			101.31

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)											Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total		
MSH04A21_10_20	1	57.58		27.73	0.27	0.00	9.42	5.92	0.20	0.00	101.12		
MSH04A21_10_20	2	53.54		30.21	0.78	0.00	12.60	4.11	0.18	0.04	101.46		
MSH04A21_10_20	3	57.78		27.89	0.26	0.14	9.41	5.81	0.15	0.07	101.51		
MSH04A21_10_20	4	56.70		28.53	0.34	0.00	10.25	5.26	0.32	0.00	101.40		
MSH04A21_10_20	5	56.19		28.58	0.40	0.00	10.47	5.33	0.13	0.03	101.13		
MSH04A21_10_20	6	58.32		27.16	0.48	0.00	8.92	5.83	0.22	0.03	100.96		
MSH04A21_10_20	7	56.97		28.00	0.41	0.00	9.85	5.60	0.16	0.01	101.00		
MSH04A21_10_20	8	55.63		29.30	0.35	0.00	11.21	4.84	0.19	0.00	101.52		
MSH04A21_10_20	9	56.65		28.83	0.21	0.00	10.30	5.56	0.13	0.03	101.71		
MSH04A21_10_20	10	57.01		28.15	0.49	0.00	10.17	5.26	0.18	0.00	101.26		
MSH04A21_10_20	11	57.43		27.95	0.34	0.00	9.62	5.65	0.15	0.01	101.15		
MSH04A21_10_20	12	58.12		27.79	0.31	0.00	9.29	5.35	0.22	0.00	101.08		
MSH04A21_10_20	13	55.65		28.58	0.29	0.06	10.67	5.22	0.13	0.00	100.60		
MSH04A21_10_20	14	54.67		29.65	0.43	0.13	11.80	4.59	0.12	0.02	101.41		
MSH04A21_10_20	15	57.23		27.74	0.31	0.00	9.76	5.63	0.15	0.06	100.88		
MSH04A21_10_20	16	55.41		28.81	0.79	0.00	11.00	4.87	0.23	0.00	101.11		
MSH04A21_10_20	17	53.76		30.23	0.47	0.00	12.44	4.31	0.08	0.00	101.29		
MSH04A21_10_20	18	57.58		27.36	0.62	0.06	9.29	5.22	0.41	0.07	100.61		
MSH04A21_10_20	19	58.17		27.58	0.26	0.00	8.97	6.21	0.19	0.00	101.38		
MSH04A21_10_20	20	52.25		31.37	0.64	0.14	13.90	3.58	0.11	0.00	101.99		
MSH04A21_10_20	21	55.19		29.58	0.39	0.00	11.40	4.89	0.12	0.01	101.58		
MSH04A21_10_20	22	55.53		28.90	0.70	0.04	11.24	4.81	0.19	0.02	101.43		
MSH04A21_10_20	23	57.03		28.16	0.52	0.04	10.01	5.73	0.18	0.00	101.67		
MSH04A04_11_2	1	56.77		28.76	0.20	0.00	10.33	5.32	0.17	0.00	101.55		
MSH04A04_11_2	2	56.29		28.68	0.51	0.02	10.94	5.13	0.16	0.00	101.73		
MSH04A04_11_2	3	57.88		27.87	0.56	0.00	9.87	5.04	0.25	0.00	101.47		
MSH04A04_11_2	4	55.80		29.66	0.15	0.00	11.27	5.04	0.13	0.00	102.05		
MSH04A04_11_2	5	55.32		29.42	0.76	0.00	11.43	4.76	0.21	0.01	101.91		
MSH04A04_11_2	7	58.80		27.16	0.41	0.09	8.56	5.53	0.37	0.05	100.97		
MSH04A04_11_2	8	56.83		28.76	0.34	0.00	10.32	5.45	0.13	0.00	101.83		
MSH04A04_11_2	9	61.63		26.06	0.22	0.00	6.93	5.16	0.25	0.00	100.25		
MSH04A04_11_2	12	58.59		27.42	0.30	0.00	9.21	5.96	0.15	0.03	101.66		
MSH04A04_11_2	13	56.51		28.83	0.36	0.08	10.67	4.76	0.13	0.01	101.35		

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)										Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total	
MSH04A04_11_2	14	56.45		28.39	0.50	0.08	10.67	5.33	0.24	0.04	101.70	
MSH04A04_11_2	16	57.10		28.43	0.40	0.00	10.31	5.58	0.14	0.00	101.96	
MSH04A04_11_2	17	57.80		28.07	0.52	0.00	9.56	4.86	0.21	0.00	101.02	
MSH04A04_11_2	18	57.20		28.23	0.49	0.00	9.94	5.81	0.16	0.06	101.89	
MSH04A04_11_2	19	56.35		28.56	0.53	0.00	10.51	5.21	0.19	0.00	101.35	
MSH04A04_11_2	20	55.69		29.51	0.38	0.00	11.04	5.07	0.11	0.00	101.80	
MSH04A04_11_2	21	58.45		27.36	0.49	0.00	8.96	5.59	0.23	0.02	101.10	
MSH04A04_11_2	22	58.51		27.18	0.41	0.03	8.85	6.23	0.26	0.08	101.55	
MSH04A04_11_2	23	58.13		27.55	0.47	0.00	9.33	4.93	0.18	0.03	100.62	
MSH04A04_11_2	24	56.67		28.61	0.33	0.00	10.34	5.50	0.15	0.00	101.60	
MSH04A04_11_2	25	57.71		28.21	0.53	0.00	9.71	4.96	0.17	0.07	101.36	
MSH04A04_11_2	26	56.61		28.86	0.38	0.04	10.62	5.35	0.13	0.00	101.99	
MSH04A04_11_2	27	58.05		27.73	0.34	0.00	9.23	5.25	0.17	0.04	100.81	
MSH04A04_11_2	28	57.22		28.09	0.34	0.07	9.90	5.65	0.13	0.04	101.44	
MSH04A04_11_2	29	55.16		29.37	0.51	0.09	11.43	4.82	0.12	0.07	101.57	
MSH04A04_11_2	30	56.82		28.79	0.43	0.07	10.47	5.55	0.13	0.00	102.26	
MSH04A04_11_2	32	58.11		27.92	0.27	0.00	9.24	5.93	0.44	0.08	101.99	
MSH04A04_11_2	33	57.86		27.52	0.83	0.09	9.31	5.16	0.33	0.01	101.11	
MSH04A04_11_2	34	57.93		28.02	0.25	0.10	9.49	6.11	0.20	0.04	102.14	
MSH04A04_11_2	35	56.56		28.82	0.25	0.09	10.47	4.98	0.14	0.00	101.31	
MSH04A04_11_2	36	57.58		28.17	0.33	0.00	9.83	5.90	0.15	0.00	101.96	
MSH04A04_11_2	37	62.34		25.97	0.58	0.05	7.79	4.22	0.49	0.09	101.53	
MSH04A04_11_2	38	59.25		27.32	0.30	0.06	8.81	6.42	0.18	0.06	102.40	
MSH04A04_11_2	39	57.18		28.54	0.38	0.06	9.97	5.31	0.33	0.03	101.80	
MSH04A04_11_2	40	59.98		26.78	0.24	0.02	8.01	6.78	0.26	0.04	102.11	
MSH04MR_11_4	1	57.33		28.23	0.28	0.09	9.86	5.42	0.22	0.00	101.43	
MSH04MR_11_4	2	57.84		28.03	0.31	0.06	9.71	5.92	0.16	0.00	102.03	
MSH04MR_11_4	3	55.61		29.55	0.37	0.00	11.23	4.90	0.12	0.01	101.79	
MSH04MR_11_4	4	56.05		28.87	0.52	0.00	10.88	5.15	0.21	0.00	101.68	
MSH04MR_11_4	5	55.95		29.30	0.33	0.06	10.97	4.96	0.30	0.00	101.87	
MSH04MR_11_4	6	56.63		28.96	0.42	0.02	10.58	5.40	0.18	0.05	102.24	
MSH04MR_11_4	7	55.77		28.88	0.68	0.01	11.13	4.83	0.21	0.03	101.54	
MSH04MR_11_4	8	58.06		28.08	0.34	0.00	9.49	5.96	0.19	0.00	102.12	

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)										Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total	
MSH04MR_11_4	9	55.70		29.35	0.38	0.03	11.13	5.07	0.11	0.03	101.80	
MSH04MR_11_4	10	55.45		29.67	0.41	0.00	11.46	4.89	0.11	0.02	102.01	
MSH04MR_11_4	11	56.36		28.40	0.75	0.00	10.52	5.30	0.25	0.03	101.61	
MSH04MR_11_4	12	56.67		28.72	0.46	0.00	10.17	5.51	0.15	0.00	101.68	
MSH04MR_11_4	13	58.19		27.62	0.38	0.00	9.06	5.03	0.37	0.04	100.69	
MSH04MR_11_4	14	57.26		28.18	0.33	0.00	9.86	5.74	0.29	0.00	101.66	
MSH04MR_11_4	15	57.24		28.61	0.28	0.00	9.85	5.29	0.16	0.01	101.44	
MSH04MR_11_4	16	57.03		28.53	0.28	0.09	9.72	5.77	0.29	0.00	101.71	
MSH04MR_11_4	17	57.64		27.80	0.40	0.00	9.48	5.76	0.30	0.01	101.39	
MSH04MR_11_4	18	58.39		27.83	0.32	0.01	9.10	6.07	0.44	0.08	102.24	
MSH04MR_11_4	19	58.43		27.71	0.12	0.00	9.42	5.79	0.25	0.01	101.73	
MSH04MR_11_4	20	57.72		27.99	0.45	0.00	9.61	5.90	0.23	0.02	101.92	
MSH04MR_11_4	21	58.34		27.46	0.30	0.00	8.99	5.56	0.20	0.00	100.85	
MSH04MR_11_4	22	55.79		29.17	0.38	0.15	11.10	5.14	0.11	0.00	101.84	
MSH04MR_11_4	23	58.05		27.90	0.37	0.00	9.38	5.51	0.40	0.02	101.63	
MSH04MR_11_4	24	52.81		31.49	0.44	0.00	13.53	3.84	0.07	0.02	102.20	
MSH04MR_11_4	25	54.34		30.40	0.50	0.04	12.35	4.53	0.11	0.00	102.27	
MSH04MR_11_4	26	58.92		27.43	0.24	0.00	8.83	6.30	0.18	0.00	101.90	
MSH04MR_11_4	27	54.98		29.98	0.33	0.11	11.75	4.74	0.13	0.00	102.02	
MSH04MR_11_4	28	57.53		28.35	0.41	0.00	9.85	5.75	0.36	0.04	102.29	
MSH04MR_11_4	29	57.10		28.21	0.58	0.13	10.35	5.10	0.21	0.02	101.70	
MSH04MR_11_4	30	56.54		28.83	0.48	0.00	10.67	5.33	0.33	0.06	102.24	
MSH04MR_11_4	31	55.51		29.16	0.50	0.17	11.16	4.63	0.27	0.06	101.46	
MSH04MR_11_4	32	57.43		28.01	0.33	0.00	9.40	5.89	0.39	0.00	101.45	
MSH04MR_11_4	33	57.58		28.22	0.43	0.00	9.69	5.51	0.17	0.00	101.60	
MSH04MR_11_4	34	55.48		29.20	0.78	0.03	11.44	4.88	0.16	0.00	101.97	
MSH04MR_11_4	35	54.77		29.31	0.69	0.05	11.90	4.63	0.17	0.03	101.55	
MSH04MR_11_4	36	55.16		29.71	0.48	0.02	11.54	4.92	0.12	0.03	101.98	
MSH04MR_11_4	37	56.19		29.13	0.52	0.00	10.98	4.72	0.30	0.01	101.85	
MSH04MR_11_4	38	54.42		29.63	0.64	0.18	12.14	4.56	0.17	0.00	101.74	
MSH04MR_11_4	39	56.97		28.41	0.34	0.05	10.03	5.15	0.15	0.01	101.11	
MSH04MR_11_4	40	54.40		29.71	0.67	0.06	12.07	4.49	0.17	0.02	101.59	
MSH05JP_1_14A	2	58.07		26.90	0.30	0.00	8.31	5.93	0.25	0.02	99.78	

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)										Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total	
MSH05JP_1_14A	8	59.17		26.57	0.46	0.01	7.72	6.84	0.37	0.01	101.15	
MSH05JP_1_14A	12	52.68		30.51	0.32	0.08	12.31	4.30	0.09	0.02	100.31	
MSH05JP_1_14A	13	57.74		28.42	0.39	0.03	9.31	5.46	0.17	0.00	101.52	
MSH05JP_1_14A	14	56.04		28.06	0.63	0.00	9.88	5.52	0.17	0.00	100.30	
MSH05JP_1_14A	15	54.89		30.02	0.37	0.00	11.04	4.32	0.12	0.02	100.78	
MSH05JP_1_14A	16	56.87		27.21	0.44	0.00	8.81	6.20	0.53	0.00	100.06	
MSH05JP_1_14A	18	57.81		26.78	0.28	0.00	8.45	5.72	0.57	0.04	99.65	
MSH05JP_1_14A	19	68.40		22.75	0.40	0.00	4.63	4.87	1.06	0.07	102.18	
MSH05JP_1_14A	21	58.65		27.89	0.20	0.00	8.73	5.76	0.23	0.00	101.46	
MSH05JP_1_14A	22	60.69		25.98	0.39	0.08	6.80	6.50	0.38	0.08	100.90	
MSH05JP_1_14A	23	59.35		27.96	0.31	0.00	8.66	6.01	0.19	0.03	102.51	
MSH05JP_1_14A	24	55.36		28.99	0.70	0.00	10.38	4.73	0.40	0.00	100.56	
MSH05JP_1_14A	26	55.92		27.99	0.19	0.00	9.97	4.79	0.19	0.00	99.05	
MSH05JP_1_14A	28	59.83		26.76	0.42	0.00	7.93	6.96	0.48	0.01	102.39	
MSH05JP_1_14A	29	56.71		28.94	0.26	0.00	10.01	5.69	0.18	0.03	101.82	
MSH05JP_1_14A	30	55.61		28.39	0.57	0.54	10.19	5.48	0.26	0.00	101.04	
MSH05JP_1_14A	31	52.13		29.34	0.39	0.02	11.86	4.73	0.23	0.01	98.71	
MSH05JP_1_14A	32	60.23		25.13	0.37	0.00	6.87	7.07	0.63	0.05	100.35	
MSH05JP_1_14A	33	54.35		30.63	0.44	0.19	12.05	4.77	0.14	0.00	102.57	
MSH05JP_1_14A	34	58.96		27.01	0.35	0.00	8.17	6.03	0.26	0.02	100.80	
MSH05JP_1_14A	35	61.03		27.90	0.26	0.00	7.84	5.61	0.31	0.00	102.95	
MSH05JP_1_14A	36	59.08		26.36	0.19	0.00	7.97	6.36	0.22	0.03	100.21	
MSH05JP_1_14A	38	59.68		26.78	0.25	0.00	7.59	6.60	0.26	0.01	101.17	
MSH05JP_1_14A	39	57.54		28.85	0.50	0.20	9.55	5.72	0.37	0.00	102.73	
MSH05JP_1_14A	40	55.46		29.65	0.37	0.00	10.85	5.21	0.10	0.00	101.64	
MSH05JP_1_14A	41	63.52		25.31	0.45	0.00	6.28	6.42	0.84	0.05	102.87	
MSH05JP_1_14A	42	53.87		30.34	0.41	0.00	11.94	4.50	0.09	0.00	101.15	
MSH05JP_1_14A	43	56.62		29.03	0.45	0.00	9.93	5.50	0.13	0.00	101.66	
MSH05JP_1_14A	44	54.23		29.50	0.48	0.05	11.51	4.90	0.16	0.02	100.85	
MSH05JP_1_14A	46	57.21		28.64	0.31	0.00	9.76	5.91	0.16	0.01	102.00	
MSH05JP_1_14A	48	57.91		26.98	0.51	0.00	8.50	5.62	0.39	0.00	99.91	
MSH05JV_1_19	F1	52.17		30.93	0.44	0.00	13.14	4.36	0.08	0.00	101.12	
MSH05JV_1_19	F2	56.40		28.73	0.33	0.00	10.35	5.68	0.18	0.00	101.67	

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)											Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total		
MSH05JV_1_19	F3	57.55		27.89	0.18	0.00	9.29	6.16	0.16	0.02	101.25		
MSH05JV_1_19	F4	57.95		28.05	0.44	0.00	9.36	6.14	0.18	0.01	102.13		
MSH05JV_1_19	F5	58.32		27.18	0.39	0.00	8.59	6.47	0.23	0.07	101.25		
MSH05JV_1_19	F6	53.37		30.18	0.38	0.06	12.50	4.36	0.10	0.05	101.00		
MSH05JV_1_19	F7	57.13		28.05	0.32	0.00	10.00	5.21	0.15	0.07	100.93		
MSH05JV_1_19	F8	59.87		26.40	0.26	0.00	7.72	6.87	0.34	0.12	101.58		
MSH05JV_1_19	F9	61.45		25.28	0.36	0.02	6.72	6.50	0.28	0.08	100.69		
MSH05JV_1_19	F10	57.71		26.83	0.64	0.07	9.19	5.91	0.23	0.07	100.65		
MSH05JV_1_19	F11	54.41		30.55	0.39	0.00	12.29	4.42	0.15	0.11	102.32		
MSH05JV_1_19	F12	56.26		28.14	0.56	0.43	10.30	4.84	0.25	0.02	100.80		
MSH05JV_1_19	F13	59.28		26.75	0.32	0.12	8.27	6.81	0.28	0.03	101.86		
MSH05JV_1_19	F14	59.01		26.96	0.44	0.00	8.39	6.54	0.30	0.07	101.71		
MSH05JV_1_19	F16	54.38		30.52	0.58	0.00	12.31	4.51	0.08	0.06	102.44		
MSH05JV_1_19	F17	56.89		28.62	0.48	0.07	10.26	5.82	0.16	0.05	102.35		
MSH05JV_1_19	F18	54.81		29.52	0.39	0.00	11.40	5.16	0.13	0.02	101.43		
MSH05JV_1_19	F19	56.60		27.89	0.42	0.00	10.01	5.53	0.16	0.06	100.67		
MSH05JV_1_19	F20	55.90		29.25	0.55	0.00	10.81	5.84	0.14	0.09	102.58		
MSH05JV_1_19	F21	56.74		27.84	0.35	0.00	9.75	6.20	0.16	0.03	101.07		
MSH05JV_1_19	F22	56.49		29.01	0.25	0.04	10.63	4.86	0.21	0.00	101.49		
MSH05JV_1_19	F23	56.82		28.18	0.49	0.00	10.10	5.86	0.19	0.12	101.76		
MSH05JV_1_19	F24	56.04		28.28	0.38	0.00	10.53	5.34	0.15	0.08	100.80		
MSH05JV_1_19	F25	58.18		27.49	0.44	0.07	9.14	6.71	0.22	0.17	102.42		
MSH05DRS_3_9_4	1	59.27	0.01	26.93	0.24	0.00	8.14	6.52	0.22		101.33		
MSH05DRS_3_9_4	2	59.81	0.02	25.64	0.23	0.03	7.37	6.94	0.34		100.38		
MSH05DRS_3_9_4	3	54.64	0.01	29.16	0.48	0.00	11.25	4.88	0.14		100.56		
MSH05DRS_3_9_4	4	55.79	0.05	28.59	0.29	0.02	10.64	5.28	0.29		100.95		
MSH05DRS_3_9_4	5	56.00	0.02	27.56	0.27	0.00	9.84	5.55	0.15		99.39		
MSH05DRS_3_9_4	6	55.02	0.01	29.45	0.47	0.00	11.42	4.75	0.10		101.22		
MSH05DRS_3_9_4	7	59.04	0.11	25.81	0.93	0.08	8.17	6.15	0.39		100.68		
MSH05DRS_3_9_4	8	54.05	0.00	30.38	0.33	0.00	12.23	4.45	0.23		101.67		
MSH05DRS_3_9_4	9	59.62	0.01	26.52	0.27	0.00	7.97	6.72	0.23		101.34		
MSH05DRS_3_9_4	10	56.34	0.00	27.03	0.21	0.00	8.74	5.94	0.21		98.47		
MSH05DRS_3_9_4	11	56.00	0.01	28.93	0.23	0.00	10.78	5.33	0.14		101.42		

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)										Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total	
MSH05DRS_3_9_4	12	55.00	0.01	29.98	0.37	0.00	11.74	4.76	0.09			101.95
MSH05DRS_3_9_4	13	58.49	0.02	27.21	0.22	0.00	8.63	6.30	0.33			101.20
MSH05DRS_3_9_4	14	58.31	0.02	27.58	0.21	0.13	8.97	6.34	0.17			101.73
MSH05DRS_3_9_4	15	55.27	0.06	28.85	0.67	0.01	11.26	4.81	0.21			101.14
MSH05DRS_3_9_4	16	55.50	0.02	28.83	0.24	0.10	10.86	5.13	0.12			100.80
MSH05DRS_3_9_4	17	56.36	0.08	28.44	0.67	0.11	10.88	5.20	0.19			101.93
MSH05DRS_3_9_4	18	55.86	0.04	25.81	0.39	0.00	9.42	5.78	0.41			97.71
MSH05DRS_3_9_4	19	58.35	0.03	27.19	0.41	0.00	8.73	6.07	0.42			101.20
MSH05DRS_3_9_4	20	56.28	0.05	28.37	0.58	0.00	10.48	5.34	0.26			101.36
MSH05DRS_3_9_4	21	54.64	0.01	28.67	0.38	0.01	10.90	5.02	0.15			99.78
MSH05DRS_3_9_4	22	58.18	0.01	27.59	0.23	0.02	8.95	6.26	0.21			101.45
MSH05DRS_3_9_4	23	55.66	0.02	29.56	0.29	0.11	11.23	4.93	0.18			101.98
MSH05DRS_3_9_4	24	53.35	0.02	30.02	0.37	0.03	12.29	4.37	0.10			100.55
MSH05DRS_3_9_4	25	57.13	0.02	27.12	0.30	0.00	10.23	5.30	0.14			100.24
MSH05DRS_3_9_4	26	55.61	0.05	28.57	0.59	0.03	10.79	5.28	0.23			101.15
MSH05DRS_3_9_4	27	51.81	0.02	30.53	0.36	0.00	13.27	4.00	0.07			100.06
MSH05DRS_3_9_4	28	55.04	0.05	28.34	0.63	0.07	10.94	5.00	0.22			100.29
MSH05DRS_3_9_4	29	54.66	0.07	28.45	0.76	0.05	11.39	4.80	0.17			100.35
MSH05DRS_3_9_4	30	56.11	0.05	27.68	0.57	0.07	10.18	5.44	0.20			100.30
MSH05DRS_3_9_4	31	56.77	0.02	28.13	0.41	0.00	10.18	5.52	0.34			101.37
MSH05DRS_3_9_4	32	56.86	0.02	28.09	0.39	0.08	9.90	5.66	0.14			101.14
MSH05DRS_3_9_4	33	54.17	0.02	29.18	0.28	0.08	11.37	4.83	0.10			100.03
MSH05DRS_3_9_4	34	58.73	0.01	26.56	0.19	0.00	7.93	6.57	0.21			100.20
SH100	SH100-1	54.55		29.64	0.27	0.02	11.9	4.65	0.1			101.14
SH100	SH100-4	54.66		29.28	0.26	0.02	11.43	4.77	0.1			100.51
SH100	SH100-5-1	55.94		28.38	0.36	0.03	10.37	5.25	0.15			100.47
SH100	SH100-5-2	56.62		28	0.33	0.03	10.06	5.53	0.16			100.73
SH100	SH100-6	53.66		29.96	0.23	0.02	12.22	4.35	0.1			100.54
SH100	SH100-8	56.62		27.97	0.35	0.01	10.02	5.52	0.17			100.67
SH100	SH100-10	57.77		26.75	0.28	0.01	9	6.14	0.17			100.13
SH100	SH100-12	58.73		26.55	0.19	0.02	8.39	6.43	0.2			100.5
SH141	SH141-1	52.69		30.32	0.27	0.02	13.12	4.09	0.08			100.59

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)											Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total		
SH141	SH141-2-1	53.75		29.74	0.25	0.03	12.41	4.43	0.13			100.74	
SH141	SH141-2-2	55.59		28.4	0.41	0.03	10.94	5.08	0.15			100.61	
SH141	SH141-2-3	57.92		27.05	0.32	0.02	9.18	6.07	0.14			100.7	
SH141	SH141-3	51.2		31.62	0.36	0.02	14.22	3.35	0.04			100.81	
SH141	SH141-4-1	47.58		38.06	0.31	0.02	11.8	3.08	0.21			101.06	
SH141	SH141-4-2	54.89		29.08	0.26	0.02	11.4	4.91	0.1			100.66	
SH141	SH141-5-1	54.95		28.82	0.5	0.04	11.25	4.87	0.15			100.59	
SH141	SH141-5-2	53.78		30.02	0.26	0.02	12.44	4.35	0.07			100.95	
SH141	SH141-6-1	57		27.39	0.32	0.02	9.64	5.82	0.18			100.38	
SH141	SH141-6-2	54.42		29.51	0.29	0.03	11.79	4.64	0.12			100.79	
SH141	SH141-6-3	53.76		29.89	0.26	0.03	12.17	4.38	0.12			100.61	
SH187	SH187-1-1	56.6		27.94	0.36	0.03	10.08	5.55	0.2			100.74	
SH187	SH187-1-2	55.86		28.34	0.42	0.04	10.79	5.2	0.2			100.85	
SH187	SH187-2	52.3		31.06	0.36	0.02	13.77	3.71	0.09			101.3	
SH187	SH187-3	55.42		28.71	0.2	0.02	10.83	5.18	0.11			100.47	
SH187	SH187-4	54.91		29.25	0.28	0.02	11.6	4.79	0.08			100.95	
SH187	SH187-6-1	55.04		29.37	0.18	0.01	11.6	4.78	0.18			101.16	
SH187	SH187-6-2	58.96		26.17	0.46	0.04	8.32	6.58	0.23			100.76	
SH187	SH187-7-1	55.74		28.14	0.36	0.02	10.68	5.2	0.17			100.31	
SH187	SH187-7-2	56.68		28.49	0.47	0.03	10.37	5.46	0.17			101.68	
SH187	SH187-8-1	58.15		27.02	0.29	0.03	8.96	6.16	0.19			100.79	
SH187	SH187-8-2	60.91		25.6	0.03	0	6.89	7.3	0.21			100.93	
SH187	SH187-9	55.55		28.75	0.16	0	10.83	5.17	0.14			100.6	
SH300-1A	10-20-1Asmall-20-1	55.98		28.33	0.28	0.02	10.65	5.42	0.16			100.84	
SH300-1A	10-20-1Asmall-20-2	53.92		30.11	0.3	0.01	12.45	4.28	0.11			101.18	
SH300-1A	10-20-1Asmall-20-3	57.91		27.37	0.22	0.02	9.31	6.02	0.17			101.02	
SH300-1A	10-20-1Asmall-8-1	52.3		30.57	0.43	0.03	13.51	3.84	0.07			100.75	
SH300-1A	10-20-1Asmall-7-1	53.66		30.13	0.22	0.02	12.66	4.3	0.1			101.08	
SH300-1A	10-20-1Asmall-7-2	52.72		30.4	0.37	0.03	13.14	3.96	0.04			100.66	
SH300-1A	10-20-1Asmall-10-1	54.28		29.65	0.29	0.03	12.21	4.59	0.09			101.15	
SH300-1A	10-20-1Asmall-10-2	55.42		29.38	0.24	0.03	11.61	4.82	0.1			101.59	
SH300-1A	10-20-1Asmall-11-1	54.04		29.81	0.29	0.02	12.18	4.48	0.09			100.91	

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)										Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total	
SH300-1A	10-20-1Asmall-11-2	57.31		27.79	0.35	0.03	9.86	5.72	0.19		101.26	
SH300-1A	10-20-1Asmall-11-3	58.4		26.8	0.29	0.02	8.93	6.15	0.2		100.79	
SH300-1A	10-20-1Asmall-12-1	56.13		28.09	0.38	0.02	10.64	5.4	0.19		100.85	
SH300-1A	10-20-1Asmall-12-2	53.46		30.23	0.28	0.02	12.53	4.24	0.1		100.86	
SH300-1A	10-20-1Asmall-12-3	58.1		27.11	0.26	0.03	9.17	6.18	0.15		101	
SH300-1A	10-20-1Asmall-12-4	53.72		29.87	0.2	0.02	12.34	4.43	0.06		100.65	
SH300-1A	10-20-1Asmall-15a-1	55.67		28.48	0.2	0.02	10.87	5.28	0.19		100.72	
SH300-1A	10-20-1Asmall-15a-2	55.61		28.64	0.49	0.03	10.79	5.15	0.17		100.87	
SH300-1A	10-20-1Asmall-15b-1	52.57		30.72	0.32	0.02	13.25	3.87	0.08		100.84	
SH300-1A	10-20-1Asmall-16-1	54.86		28.61	0.31	0.02	10.78	5.03	0.11		99.72	
SH300-1A	10-20-1Asmall-20-1	57.56		27.53	0.26	0.03	9.6	5.96	0.14		101.08	
SH300-1lithic	10-20-1lithic-1-1	57		28.26	0.24	0.02	10.15	5.43	0.17		101.26	
SH300-1lithic	10-20-1lithic-1-2	59.03		26.59	0.22	0.02	8.53	6.36	0.2		100.95	
SH300-1lithic	10-20-1lithic-1-3	56.65		27.73	0.37	0.03	10.32	5.61	0.17		100.88	
SH300-1lithic	10-20-1lithic-1-4	54.24		29.43	0.28	0.02	12.13	4.52	0.1		100.73	
SH300-1lithic	10-20-1lithic-2-1	57.86		27.09	0.26	0.03	9.15	6.05	0.16		100.59	
SH300-1lithic	10-20-1lithic-2-2	55.88		28.74	0.28	0.03	10.95	5.15	0.13		101.18	
SH300-1lithic	10-20-1lithic-2-3	54.36		29.66	0.22	0.03	11.93	4.59	0.12		100.91	
SH300-1lithic	10-20-1lithic-2-4	53.32		30.06	0.26	0.02	12.85	4.14	0.09		100.73	
SH300-1lithic	10-20-1lithic-2-5	56.31		27.96	0.3	0.03	10.19	5.51	0.2		100.49	
SH300-1lithic	10-20-1lithic-3	53.42		30.36	0.18	0.02	12.91	4.13	0.08		101.09	
SH300-1lithic	10-20-1lithic-18	56.13		28.25	0.36	0.04	10.61	5.3	0.17		100.85	
SH300-1lithic	10-20-1lithic-17	54.21		30.12	0.22	0.02	12.25	4.35	0.11		101.28	
SH300-1lithic	10-20-1lithic-16-1	55.12		29.98	0.22	0.02	12.06	4.8	0.13		102.33	
SH300-1lithic	10-20-1lithic-16-2	57.98		27.14	0.41	0.04	9.23	5.99	0.27		101.05	
SH300-1lithic	10-20-1lithic-15	55.2		28.94	0.29	0.02	11.15	4.93	0.15		100.68	
SH300-1lithic	10-20-1lithic-12	58.31		26.79	0.35	0.03	8.97	6.06	0.2		100.7	
SH300-1lithic	10-20-1lithic-10-2	57.97		27.18	0.3	0.03	9.21	5.92	0.19		100.79	
SH300-1lithic	10-20-1lithic-10-3	54.07		29.76	0.26	0.02	12.13	4.42	0.11		100.77	
SH300-1lithic	10-20-1lithic-10-4	58.93		26.76	0.26	0.01	8.68	6.35	0.16		101.16	
SH304-2A	11-4-2A1-1-1	54.39		29.5	0.36	0.02	11.72	4.73	0.08		100.81	
SH304-2A	11-4-2A1-1-2	55.45		28.62	0.38	0.03	11.03	5.12	0.14		100.78	
SH304-2A	11-4-2A1-1-3	59.18		26.66	0.14	0	8.45	6.45	0.19		101.07	

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)										Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total	
SH304-2A	11-4-2A1-1-4	54.56		29.51	0.29	0.03	11.86	4.63	0.1			100.98
SH304-2A	11-4-2A1-1-5	54.69		28.99	0.28	0.03	11.5	4.94	0.09			100.52
SH304-2A	11-4-2A1-2	55.41		28.52	0.31	0.05	11.06	5.14	0.13			100.62
SH304-2A	11-4-2A1-3-1	54.42		29.82	0.3	0.02	12.01	4.65	0.08			101.31
SH304-2A	11-4-2A1-3-2	54.83		29.62	0.24	0.03	11.77	4.7	0.09			101.27
SH304-2A	11-4-2A1-3-3	57.62		27.72	0.29	0.03	9.66	5.79	0.14			101.25
SH304-2A	11-4-2A1-5-1	55.53		28.88	0.07	0.01	11.08	5.13	0.19			100.9
SH304-2A	11-4-2A1-5-2	58.47		26.86	0.31	0.03	8.97	6.19	0.18			101
SH304-2A	11-4-2A1-5-3	54.88		29.43	0.24	0.02	11.65	4.88	0.1			101.2
SH304-2A	11-4-2A1-5-4	55.47		28.97	0.28	0.02	11.33	5.04	0.1			101.21
SH304-2A	11-4-2A1-6	53.88		30.05	0.27	0.03	12.53	4.31	0.07			101.15
SH304-2A	11-4-2A1-7-1	53.7		30.3	0.25	0.03	12.94	4.2	0.07			101.49
SH304-2A	11-4-2A1-7-2	54.59		29.8	0.38	0.02	12.18	4.58	0.12			101.67
SH304-2A	11-4-2A1-8	56.97		27.94	0.33	0.03	10.1	5.62	0.16			101.15
SH304-2A	11-4-2A1-9	56.38		28.44	0.2	0.03	10.41	5.37	0.13			100.95
SH304-x	1/1.	54.4		29.3	0.37	-0.03	11.34	4.85	0.11	0.02		100.41
SH304-x	1/2.	58.13		27.65	0.37	-0.02	8.84	6.26	0.19	0.03		101.48
SH304-x	1/3.	57.98		27.24	0.42	-0.07	8.91	6.15	0.21	0.1		101
SH304-x	1/4.	59.15		26.53	0.31	-0.11	7.94	6.65	0.24	0.01		100.82
SH304-x	1/5.	56.25		28.27	0.39	-0.06	10.18	5.53	0.13	-0.05		100.75
SH304-x	1/6.	58.14		27.29	0.28	-0.06	8.82	6.22	0.19	0.02		100.96
SH304-x	1/7.	61.6		24.4	0.47	-0.08	5.94	5.77	0.36	0.09		98.64
SH304-x	1/8.	58.02		27.31	0.45	0	8.78	6.25	0.18	-0.01		101
SH304-x	1/9.	58.25		27.01	0.31	0.01	8.69	6.15	0.21	0.13		100.76
SH304-x	1/10.	57.83		27.47	0.29	-0.04	8.78	6.25	0.2	-0.02		100.82
SH304-x	1/11.	54.16		29.57	0.44	0.01	11.72	4.59	0.13	-0.09		100.63
SH304-x	1/12.	59.03		26.94	0.34	-0.04	8.23	6.56	0.23	-0.05		101.33
SH304-x	1/13.	57.37		27.83	0.2	-0.03	9.4	6.05	0.16	0.05		101.06
SH304-x	1/14.	54.47		29.22	0.43	0.11	11.4	4.89	0.13	0.04		100.68
SH304-x	1/15.	60.83		24.95	0.3	-0.03	6.6	6.37	0.28	0.02		99.35
SH304-x	1/16.	56.07		28.52	0.21	-0.07	10.44	5.36	0.16	-0.01		100.75
SH304-x	1/17.	57.3		27.38	0.26	0.03	9.14	6.05	0.21	0		100.37
SH304-x	1/18.	55.95		28.17	0.33	-0.03	10.18	5.38	0.13	0.01		100.15

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)										Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO		
SH304-x	1/19.	60.45		25.65	0.35	0.01	7.11	6.64	0.31	0.08	100.6	
SH304-x	1/20.	59.29		26.3	0.17	-0.02	7.91	6.82	0.25	0.02	100.75	
SH304-x	1/21.	55.91		28.48	0.22	-0.13	10.38	5.44	0.14	0.03	100.6	
SH304-x	1/22.	59.17		26.54	0.28	0.04	7.97	6.61	0.22	0.08	100.85	
SH304-x	1/23.	59.11		26.28	0.28	0	7.84	6.23	0.22	0.04	100.05	
SH304-x	1/24.	57.46		27.57	0.23	-0.01	9.11	6.23	0.19	0.02	100.8	
SH304-x	1/25.	54.44		29.51	0.55	0.03	11.58	4.83	0.13	-0.12	101.09	
SH304-x	1/26.	56.65		27.93	0.22	0	9.86	5.61	0.38	0.02	100.67	
SH304-x	1/27.	57.13		27.78	0.29	-0.05	9.48	5.7	0.38	0	100.76	
SH304-x	1/28.	55.25		28.9	0.31	0	10.99	4.96	0.32	-0.03	100.72	
SH304-x	1/29.	55.14		28.87	0.25	-0.05	10.89	5.11	0.35	-0.01	100.61	
SH305-1	04-066-1.1-rim	58.07		26.55	0.44	0.02	8.39	6.16	0.2		99.86	
SH305-1	04-066-1.3	57.2		26.75	0.49	0.02	8.58	6.08	0.25		99.41	
SH305-1	04-066-1.5	56.26		27.37	0.32	0.01	9.35	5.67	0.18		99.24	
SH305-1	04-066-1.7	60.26		25.18	0.33	0.01	6.73	6.99	0.29		99.8	
SH305-1	04-066-1.9	60.28		25.49	0.34	0.02	6.97	6.93	0.3		100.32	
SH305-1	04-066-2.1-rim	54.34		28.38	0.3	0.02	10.39	5.02	0.14		98.66	
SH305-1	04-066-2.3	56.04		27.71	0.48	0.03	9.68	5.35	0.18		99.48	
SH305-1	04-066-2.5	60.5		25.53	0.36	0	6.81	7.07	0.27		100.54	
SH305-1	04-066-3.1	54.63		28.76	0.29	0.02	10.79	5	0.1		99.7	
SH305-1	04-066-3.3	60.33		25.69	0.4	0.02	7.15	6.77	0.35		100.72	
SH305-1	04-066-3.4	55.41		28.89	0.26	0.02	10.51	5.14	0.13		100.39	
SH305-1	04-066-3.6	56.4		28.44	0.55	0.04	10.07	5.36	0.15		101.04	
SH305-1	04-066-4.2	60.51		25.2	0.32	0.01	6.56	7.17	0.4		100.17	
SH305-1	04-066-4.3	53.42		29.06	0.4	0.07	11.65	4.55	0.15		99.3	
SH305-1	04-066-4.4	54.58		29.33	0.37	0.02	11.11	4.77	0.09		100.34	
SH305-1	04-066-4.7	58.86		26.51	0.28	0.01	7.97	6.47	0.23		100.4	
SH305-1	04-066-5.1-rim	61.23		25.68	0.32	0.01	6.72	7.02	0.28		101.26	
SH305-1	04-066-5.2	54.9		29.13	0.38	0.02	10.68	4.89	0.11		100.14	
SH305-1	04-066-5.4	58.61		26.81	0.42	0.03	8.13	6.38	0.22		100.68	
SH305-1	04-066-6.3	55.32		29.82	0.61	0.04	11.47	4.62	0.1		101.99	
SH305-1	04-066-6.4	54.9		29.53	0.35	0.03	11.17	4.69	0.09		100.83	
SH305-1	04-066-6.5	54.54		29.92	0.44	0.03	11.51	4.65	0.08		101.18	

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)										Total	
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total		
SH305-1	04-066-7.4	56.85		27.27	0.31	0.02	9.49	5.26	0.18				99.42
SH305-1	04-067-1.2	60.66		26.65	0.35	0.01	7.54	6.53	0.24				101.98
SH305-1	04-067-1.3	58.9		26.99	0.58	0.03	8.24	6.23	0.21				101.18
SH305-1	04-067-1.5	59.14		26.7	0.24	0	7.89	6.55	0.22				100.74
SH305-1	04-067-1.6	54.81		29.57	0.3	0.02	11.06	4.79	0.1				100.73
SH305-1	04-067-2.1-core	54.94		29.68	0.3	0.03	11.3	4.76	0.1				101.18
SH305-1	04-067-2.1-rim	56.5		27.69	0.41	0.03	9.5	5.51	0.16				99.88
SH305-1	04-067-2.2	55.62		29.28	0.41	0.03	10.73	4.91	0.1				101.12
SH305-1	04-067-2.3	54.44		29.98	0.47	0.04	11.57	4.41	0.08				101
SH305-1	04-067-2.4	59.66		26.59	0.23	0.01	7.67	6.65	0.22				101.05
SH305-1	04-067-2.6	59.44		26.4	0.42	0.02	7.52	6.71	0.24				100.76
SH305-1	04-067-3.2	60.15		27.21	0.34	0.03	7.94	6.46	0.24				102.41
SH305-1	04-067-3.4	59.5		27.05	0.29	0.01	7.81	6.5	0.33				101.5
SH305-1	04-067-3.8	59.5		27.24	0.33	0.01	8.1	6.4	0.22				101.8
SH305-1	04-067-3.9	56.66		29.2	0.3	0.01	10.34	5.29	0.11				101.94
SH305-1	04-067-4.1-rim	58.98		26.61	0.37	0	7.93	6.51	0.38				100.81
SH305-1	04-068-1.2	59.83		26	0.37	0.01	7.25	6.77	0.24				100.48
SH305-1	04-068-2.2	59.56		26.62	0.26	0.01	7.88	6.45	0.22				101.08
SH305-1	04-068-3.2	56.36		28.47	0.53	0.04	10.15	5.33	0.17				101.12
SH305-1	04-068-3.3	54.9		29.29	0.27	0.03	11.04	4.84	0.09				100.46
SH305-1	04-068-3.4	55.2		29.1	0.41	0.02	10.63	4.9	0.12				100.41
SH305-2X	3/1.	55.89		28.79	0.19	-0.03	10.39	5.39	0.23				100.94
SH305-2X	3/2.	55.61		28.86	0.13	-0.04	10.47	5.37	0.23				100.68
SH305-2X	3/3.	55.41		28.71	0.18	0.03	10.48	5.35	0.2				100.36
SH305-2X	3/4.	55.36		28.85	0.15	0.06	10.44	5.38	0.21				100.48
SH305-2X	3/5.	55.95		28.51	0.08	-0.02	10.22	5.43	0.23				100.42
SH305-2X	3/6.	54.8		29.57	0.22	-0.11	11.34	4.97	0.17				101.13
SH305-2X	3/7.	54.88		29.07	0.2	-0.08	10.84	5.18	0.21				100.39
SH305-2X	3/8.	56		28.94	0.17	-0.01	10.59	5.26	0.18				101.13
SH305-2X	3/9.	55.97		28.96	0.29	-0.07	10.52	5.38	0.22				101.34
SH305-2X	3/10.	55.64		29.15	0.31	0.01	10.63	5.46	0.17				101.37
SH305-2X	3/11.	57.56		27.79	0.2	0	9.22	6.18	0.16				101.21
SH305-2X	3/12.	55.56		28.89	0.32	-0.01	10.73	5.13	0.12				100.75

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)										Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total	
SH305-2x	3/13.	56.6		28.06	0.55	0.01	9.89	5.78	0.19	0.1	101.17	
SH305-2x	3/14.	56.75		28.12	0.38	0.07	9.9	5.41	0.14	0.02	100.79	
SH305-2x	3/15.	59.41		26.61	0.18	-0.08	7.79	6.93	0.24	0.08	101.25	
SH305-2x	3/16.	55.37		28.46	0.37	0	11.23	4.32	0.11	0.04	99.9	
SH305-2x	3/17.	53.8		30.46	0.31	-0.01	12.25	4.54	0.08	0.05	101.49	
SH305-2x	3/18.	56.1		28.76	0.21	-0.11	10.21	5.66	0.12	0.03	101.1	
SH305-2x	3/19.	52.92		30.91	0.26	0.01	12.97	3.99	0.1	0.04	101.2	
SH305-2x	3/20.	58.37		27.46	0.25	-0.08	8.92	6.2	0.15	-0.02	101.36	
SH305-2x	3/21.	58.15		27.56	0.21	-0.04	8.92	6.43	0.13	0.02	101.42	
SH305-2x	3/22.	58.85		26.93	0.22	-0.06	8.08	6.43	0.21	0.06	100.78	
SH305-2x	3/23.	56.16		28.65	0.3	-0.12	10.1	5.67	0.14	0	101.03	
SH305-2x	3/24.	56.51		28.44	0.23	-0.03	10.02	5.67	0.15	0	101.02	
SH306A	4/1.	55.49	0.03	28.32	0.15	-0.03	10.1	5.32	0.28		99.68	
SH306A	4/2.	55.93	0	27.82	0.22	0.13	9.89	5.5	0.29		99.77	
SH306A	4/3.	54.72	0.02	28.15	0.17	0.02	10.25	5.18	0.27		98.78	
SH306A	4/4.	57.69	0	26.76	0.17	-0.09	8.57	6.21	0.33		99.73	
SH306A	4/5.	57.14	0.02	27.3	0.16	-0.02	9.18	5.78	0.35		99.93	
SH306A	4/6.	55.21	0.02	28.26	0.18	-0.05	10.4	5.2	0.24		99.51	
SH306A	4/7.	54.42	0.02	28.52	0.17	-0.21	10.68	5.06	0.26		99.13	
SH306A	4/8.	54.99	0.04	28.86	0.21	0.01	10.76	5.18	0.25		100.31	
SH306A	4/9.	54.15	-0.01	28.98	0.11	0.03	10.77	4.81	0.34		99.18	
SH306A	4/10.	53.77	0.04	29.21	0.11	-0.15	11.49	4.57	0.26		99.45	
SH306A	4/11.	59.3	0.02	25.96	0.15	0.07	7.34	6.91	0.23		99.98	
SH306A	4/12.	58.45	0.01	26.45	0.16	0.09	8.06	6.37	0.24		99.83	
SH306A	4/13.	53.47	0.01	29.67	0.28	-0.05	11.6	4.68	0.11		99.82	
SH306A	4/14.	52.55	0.02	29.81	0.29	0.06	12.14	4.4	0.1		99.36	
SH306A	4/15.	54.25	0.01	29.03	0.26	0.08	11.16	5.01	0.11		99.92	
SH306A	4/16.	57.05	0.01	26.91	0.21	-0.15	8.75	6.07	0.21		99.22	
SH306A	4/17.	58.04	0.01	26.27	0.35	-0.05	7.85	6.43	0.27		99.22	
SH306B	3/1.	58.15	0	26.75	0.18	0.04	8.69	6.19	0.33		100.33	
SH306B	3/2.	52.75	0.02	30.24	0.16	-0.14	12.54	4.22	0.16		100.09	
SH306B	3/3.	53.78	0.04	29.54	0.15	0.08	11.93	4.59	0.18		100.29	

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)										Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total	
SH306B	3/4.	55	0.01	28.64	0.1	-0.09	10.71	5.08	0.27			99.81
SH306B	3/5.	54.88	0.03	29.12	0.11	0.03	11.21	4.87	0.22			100.48
SH306B	3/6.	53.82	0.04	29.65	0.13	-0.11	11.95	4.63	0.18			100.41
SH306B	3/7.	52.98	0.02	30.44	0.24	0.11	12.66	4.12	0.16			100.73
SH306B	3/8.	53.2	0.04	29.87	0.08	-0.1	11.94	4.4	0.17			99.7
SH306B	3/9.	55.41	0.01	28.54	0.15	-0.07	10.54	5.18	0.17			100
SH306B	3/10.	54.74	0.02	28.98	0.19	0.04	11.32	4.84	0.28			100.4
SH306B	3/11.	55.57	0.01	28.81	0.3	-0.23	10.66	5.24	0.16			100.75
SH306B	3/12.	59.51	0.01	25.78	0.25	0.02	7.61	6.67	0.27			100.14
SH306B	3/13.	58.3	0.01	26.96	0.24	-0.1	8.4	6.42	0.24			100.56
SH306B	3/14.	54.19	0.03	29.99	0.31	-0.11	11.75	4.79	0.1			101.16
SH306B	3/15.	57.14	0.01	27.39	0.22	0.02	9.23	5.92	0.18			100.1
SH306B	3/16.	55.11	0.01	28.85	0.27	-0.21	10.8	5.19	0.15			100.38
SH306B	3/17.	53.25	0.02	30.24	0.4	0.04	12.18	4.36	0.1			100.58
SH306B	3/18.	60.47	0	25.12	0.25	-0.07	6.71	7.22	0.29			100.07
SH306B	3/19.	55.15	0.04	28.65	0.52	-0.08	10.65	5.16	0.17			100.35
SH306B	3/20.	58.37	0.01	26.85	0.13	0.05	8.42	6.36	0.18			100.37
SH306C	2/1.	55.18		29.3	0.32	0.01	11.11	5.21	0.1	-0.03		101.23
SH306C	2/2.	55.3		27.46	0.25	-0.09	11.06	5.53	0.17	-0.02		99.78
SH306C	2/3.	57.3		27.76	0.26	-0.04	9.34	6.12	0.17	0.03		100.99
SH306C	2/4.	54.12		29.37	0.4	-0.04	11.53	4.85	0.11	0.02		100.4
SH306C	2/5.	54.49		29.41	0.31	0.04	11.57	4.94	0.1	-0.04		100.86
SH306C	2/6.	56.91		28.08	0.47	0.04	9.72	5.96	0.18	0.02		101.37
SH306C	2/7.	60.55		26.16	0.28	-0.04	7.32	7.15	0.24	-0.05		101.71
SH306C	2/8.	54.61		29.72	0.32	0.02	11.6	4.84	0.12	-0.07		101.24
SH306C	2/9.	55.95		28.89	0.15	-0.01	10.47	5.47	0.24	-0.05		101.17
SH306C	2/10.	56.05		28.66	0.32	-0.03	10.48	5.53	0.13	-0.03		101.18
SH306C	2/11.	54.62		29.67	0.22	0.09	10.61	5.15	0.12	0.01		100.5
SH306C	2/12.	53.79		30.31	0.32	-0.08	12.16	4.58	0.09	-0.04		101.26
SH306C	2/13.	59.25		26.43	0.12	0.06	7.46	7.09	0.26	-0.01		100.67
SH306C	2/14.	58.57		27.08	0.2	0.06	8.29	6.59	0.23	-0.02		101.01
SH306C	2/15.	57.76		27.29	0.56	0.02	8.99	6.07	0.21	0.11		101.01
SH306C	2/16.	58.62		27.13	0.17	-0.06	8.42	5.76	0.22	-0.06		100.32

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)										Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total	
SH306C	2/17.	53.75		30.38	0.43	-0.06	12.27	4.44	0.11	0.02	101.39	
SH306C	2/18.	58.05		27.33	0.31	-0.09	8.77	6.23	0.21	0.06	100.95	
SH311-1b	2/6.	56.36	0	26.85	0.22	0.04	8.52	6.18	0.19		98.38	
SH311-1b	2/7.	58.94	0.01	25.87	0.18	-0.19	7.14	6.91	0.5		99.54	
SH311-1b	2/8.	54.72	0.03	28.59	0.31	-0.08	10.65	5.2	0.1		99.6	
SH311-1b	2/9.	56.37	0.03	27.52	0.3	-0.07	9.17	5.99	0.13		99.51	
SH311-1b	2/10.	57.19	0	27.09	0.19	-0.04	8.81	5.88	0.19		99.35	
SH311-1b	2/11.	59.15	0.01	25.75	0.1	-0.08	7.32	6.76	0.27		99.35	
SH311-1b	2/12.	55.27	0	28.2	0.35	0.06	10.14	5.3	0.13		99.46	
SH311-1b	2/13.	55.5	-0.02	28.31	0.25	-0.02	10.29	5.43	0.13		99.91	
SH311-1b	2/14.	54.25	0.02	28.72	0.34	0.02	11.07	4.97	0.15		99.54	
SH311-1b	2/15.	56.61	0.01	27.93	0.25	-0.02	9.37	5.84	0.16		100.16	
SH311-1b	2/16.	56.95	0.02	27.09	0.37	-0.06	9.15	5.92	0.19		99.68	
SH311-1b	2/17.	57.6	0	27.25	0.18	-0.13	8.64	6.24	0.19		100.1	
SH311-1b	2/18.	55.54	0.03	27.87	0.43	0.04	10.28	5.35	0.16		99.69	
SH311-1b	2/19.	57.41	0	27.17	0.21	0.23	8.82	6.1	0.14		100.08	
SH311-1b	2/20.	55.31	0.02	27.97	0.42	-0.04	10.25	5.37	0.13		99.46	
SH311-1b	2/21.	57.7	0.02	27.17	0.17	0.03	8.83	6.22	0.2		100.33	
SH311-1b	2/22.	56.09	0.02	28.29	0.26	-0.02	10.03	5.5	0.13		100.32	
SH307-1gouge	1/1.	54.99		29.72	0.38	0.01	11.87	4.35	0.28	-0.02	101.60	
SH307-1gouge	1/2.	56.73		28.41	0.49	0.03	10.15	5.36	0.16	-0.10	101.34	
SH307-1gouge	1/3.	59.96		26.45	0.32	0.02	8.05	6.31	0.53	0.00	101.66	
SH307-1gouge	1/4.	60.13		26.78	0.54	0.02	8.05	6.25	0.57	0.05	102.39	
SH307-1gouge	1/5.	58.64		25.86	0.42	0.03	8.47	5.92	0.59	0.01	99.94	
SH307-1gouge	1/6.	59.01		27.44	0.43	0.02	8.74	5.98	0.48	0.02	102.13	
SH307-1gouge	1/7.	59.11		25.38	0.39	0.02	7.61	6.41	0.54	-0.02	99.45	
SH307-1gouge	1/8.	59.53		27.21	0.35	0.01	8.38	6.41	0.23	0.03	102.16	
SH307-1gouge	1/9.	61.50		24.64	0.31	0.01	6.66	5.72	0.50	0.09	99.43	
SH307-1gouge	1/10.	58.35		27.72	0.24	0.01	9.08	5.92	0.22	-0.03	101.54	
SH307-1gouge	1/11.	59.08		26.34	0.55	0.00	8.42	6.16	0.45	0.10	101.10	
SH307-1gouge	1/12.	54.55		29.08	0.35	0.01	11.54	4.59	0.23	0.05	100.42	
SH307-1gouge	1/13.	57.13		27.02	0.43	0.05	9.41	5.61	0.21	0.08	99.94	

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)										Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total	
SH307-1gouge	1/14.	59.31		27.25	0.37	0.02	8.61	6.07	0.35	0.05	102.03	
SH307-1gouge	1/15.	58.39		26.38	0.39	0.02	8.55	6.02	0.54	-0.02	100.29	
SH307-1gouge	1/16.	61.21		24.93	0.20	0.02	6.68	6.71	0.67	-0.01	100.42	
SH307-1gouge	1/17.	58.55		25.59	0.45	0.02	7.86	6.31	0.57	0.03	99.38	
SH307-1gouge	1/18.	55.77		28.71	0.50	0.05	10.99	4.94	0.15	-0.03	101.11	
SH307-1gouge	1/19.	59.30		25.40	0.25	0.00	7.33	6.55	0.59	0.06	99.48	
SH307-1gouge	1/20.	58.43		27.04	0.53	0.02	8.95	5.81	0.53	0.04	101.35	
SH307-1gouge	1/21.	59.54		24.62	0.33	0.02	6.75	6.66	0.49	0.02	98.43	
SH307-1gouge	1/22.	59.14		25.85	0.29	0.02	7.61	6.48	0.38	0.09	99.86	
SH307-1gouge	1/23.	54.18		28.29	0.37	0.02	10.95	4.65	0.18	0.00	98.68	
SH307-1gouge	1/24.	58.65		26.26	0.56	0.02	8.06	6.38	0.60	-0.01	100.53	
SH307-1gouge	1/25.	57.02		26.69	0.16	0.00	8.69	6.09	0.25	0.00	98.89	
SH307-1gouge	1/26.	53.22		29.14	0.68	0.04	11.76	4.31	0.18	0.07	99.39	
SH307-1gouge	1/27.	54.86		27.73	0.42	0.03	10.27	5.20	0.27	0.07	98.88	
SH307-1gouge	1/28.	59.23		26.26	0.45	0.01	7.59	6.45	0.55	0.12	100.66	
SH307-1gouge	1/29.	57.29		25.58	0.46	0.02	7.95	5.95	0.49	0.00	97.73	
SH307-1gouge	1/30.	59.26		25.88	0.29	0.00	7.56	6.46	0.64	0.02	100.10	
SH307-1gouge	1/31.	56.99		25.44	0.45	0.02	8.19	5.60	0.44	0.04	97.18	
SH307-1gouge	1/32.	59.35		24.96	0.29	0.01	6.65	6.63	0.79	0.02	98.71	
SH307-1gouge	1/33.	56.14		26.33	0.35	0.03	9.15	5.43	0.22	0.01	97.66	
SH307-1gouge	1/34.	53.76		29.27	0.28	0.00	11.39	4.73	0.10	0.02	99.57	
SH307-1gouge	1/35.	55.93		28.59	0.31	0.02	10.82	5.15	0.22	0.06	101.11	
SH307-1gouge	1/36.	61.66		26.04	0.27	0.01	7.13	7.03	0.46	0.03	102.64	
SH307-1gouge	1/37.	60.95		24.62	0.27	0.02	6.29	6.66	1.05	0.04	99.89	
SH307-1gouge	1/38.	58.56		26.84	0.37	0.02	8.70	6.19	0.19	0.06	100.92	
SH307-1gouge	1/39.	57.78		27.15	0.46	0.01	8.97	5.89	0.41	0.09	100.77	
JP11/4-1gouge	2/1.	55.91		28.89	0.95	0.06	11.08	4.95	0.26	0.04	102.14	
JP11/4-1gouge	2/2.	59.31		26.36	0.42	0.02	8.35	6.03	0.24	0.08	100.80	
JP11/4-1gouge	2/3.	55.38		29.16	0.70	0.07	11.60	4.73	0.18	0.00	101.83	
JP11/4-1gouge	2/4.	57.35		27.67	0.67	0.04	9.63	5.47	0.34	0.12	101.29	
JP11/4-1gouge	2/5.	55.84		28.86	0.78	0.06	11.02	4.96	0.25	0.02	101.79	
JP11/4-1gouge	2/6.	56.18		28.02	0.72	0.07	10.56	5.03	0.29	0.02	100.88	
JP11/4-1gouge	2/7.	56.29		28.81	0.91	0.06	10.88	5.09	0.31	-0.04	102.35	

Table B5: Continued.

Sample	Analysis #	Major element oxides (wt%)										Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MgO	CaO	Na ₂ O	K ₂ O	BaO	Total	
JP11/4-1gouge	2/8.	54.72		28.69	0.89	0.04	11.28	4.71	0.25	0.04	100.63	
JP11/4-1gouge	2/9.	58.40		27.68	0.63	0.05	9.52	5.92	0.21	0.02	102.42	
JP11/4-1gouge	2/10.	55.16		28.85	0.92	0.06	11.27	4.61	0.27	0.04	101.18	
JP11/4-1gouge	2/11.	55.33		29.20	0.77	0.03	11.42	4.77	0.25	-0.06	101.77	
JP11/4-1gouge	2/12.	55.06		28.78	0.81	0.05	11.37	4.75	0.24	0.01	101.08	
JP11/4-1gouge	2/13.	57.78		28.21	0.59	0.03	9.63	5.64	0.28	0.06	102.22	
JP11/4-1gouge	2/14.	60.00		26.44	0.35	0.01	8.09	5.54	0.58	0.05	101.06	
JP11/4-1gouge	2/15.	52.43		30.45	0.93	0.08	13.29	3.67	0.18	0.04	101.07	
JP11/4-1gouge	2/16.	64.70		20.09	2.67	0.26	3.36	4.61	2.70	0.02	98.41	
JP11/4-1gouge	2/17.	55.70		28.68	0.73	0.06	10.85	5.01	0.21	0.05	101.29	
JP11/4-1gouge	2/18.	55.61		28.96	0.39	0.01	10.86	4.91	0.13	0.10	101.29	
JP11/4-1gouge	2/19.	56.75		28.36	0.88	0.04	10.49	5.07	0.31	-0.03	101.88	
JP11/4-1gouge	2/20.	54.56		29.53	0.82	0.05	11.83	4.44	0.20	-0.03	101.43	
JP11/4-1gouge	2/21.	56.33		28.60	0.87	0.03	10.54	5.19	0.33	0.03	101.93	
JP11/4-1gouge	2/22.	55.33		28.93	0.94	0.09	11.50	4.66	0.24	0.04	101.73	
JP11/4-1gouge	2/23.	56.35		28.55	0.73	0.06	10.74	5.02	0.25	0.00	101.69	
JP11/4-1gouge	2/24.	55.56		28.54	0.72	0.05	11.08	4.72	0.25	0.05	100.97	
JP11/4-1gouge	2/25.	58.15		27.78	0.75	0.03	9.66	5.68	0.37	0.13	102.55	
JP11/4-1gouge	2/26.	56.22		28.45	0.84	0.04	10.66	4.90	0.29	0.07	101.48	
JP11/4-1gouge	2/27.	57.37		28.23	0.88	0.03	10.01	5.55	0.32	0.12	102.51	
JP11/4-1gouge	2/28.	59.17		26.16	0.78	0.06	8.33	5.80	0.42	0.07	100.78	
JP11/4-1gouge	2/29.	55.90		29.25	0.78	0.04	10.98	4.92	0.26	-0.01	102.13	
JP11/4-1gouge	2/30.	58.43		26.31	1.12	0.30	9.01	5.14	0.40	0.05	100.77	
JP11/4-1gouge	2/31.	57.16		28.72	0.76	0.05	10.44	5.26	0.25	0.05	102.69	
JP11/4-1gouge	2/32.	51.93		31.22	0.44	0.03	14.16	3.44	0.15	0.07	101.45	
JP11/4-1gouge	2/33.	54.95		29.59	0.72	0.06	11.80	4.47	0.23	0.04	101.86	
JP11/4-1gouge	2/34.	55.88		28.49	0.73	0.04	10.98	4.85	0.24	0.00	101.22	

Table B6: Major element compositions of mafic phases in Mt. St. Helens ash, measured by electron microprobe.

Sample	Analysis #	Phase ¹	Major element oxides (wt%)										Total
			SiO ₂	TiO ₂	Al ₂ O ₃	Cr ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	
MSH04E1DZ_1	5	amph	46.98	1.62	6.88	0.01	15.52	0.23	13.55	9.65	1.77	0.41	96.62
MSH04E1DZ_1	9	amph	60.13	2.47	13.60	0.02	11.12	0.15	1.96	4.61	0.57	0.70	95.33
MSH04E1DZ_1	11	amph	43.58	2.16	11.01	0.01	14.49	0.24	13.29	9.47	2.25	0.26	96.76
MSH04E1DZ_1	3	cpx	51.57	0.70	1.94	0.02	12.92	0.37	13.52	17.29	0.27	0.01	98.61
MSH04E1DZ_1	6	cpx	51.81	0.73	2.17	0.00	9.45	0.28	15.40	18.21	0.30	0.01	98.36
MSH04E1DZ_1	16	cpx	51.83	0.25	0.59	0.03	14.57	0.36	12.14	17.88	0.34	0.02	98.01
MSH04E1DZ_1	21	cpx	51.86	1.04	1.67	0.36	8.66	0.24	16.18	17.49	0.27	0.01	97.78
MSH04E1DZ_1	1	hyp	53.63	0.32	1.16	0.00	18.53	0.52	24.40	1.24	0.03	0.00	99.83
MSH04E1DZ_1	4	hyp	52.80	0.24	1.77	0.01	20.56	0.53	23.52	0.88	0.01	0.01	100.33
MSH04E1DZ_1	7	hyp	53.79	0.07	0.69	0.02	21.08	0.72	23.42	0.48	0.02	0.00	100.29
MSH04E1DZ_1	8	hyp	51.81	0.16	0.80	0.00	26.56	1.01	18.69	1.02	0.03	0.00	100.08
MSH04E1DZ_1	10	hyp	52.20	0.63	1.10	0.00	20.92	0.54	19.38	4.44	0.10	0.10	99.41
MSH04E1DZ_1	12	hyp	51.85	0.66	0.97	0.01	21.14	0.50	19.35	4.60	0.08	0.01	99.17
MSH04E1DZ_1	13	hyp	52.04	0.67	1.06	0.00	21.43	0.54	19.38	4.58	0.09	0.02	99.81
MSH04E1DZ_1	14	hyp	51.85	0.59	1.33	0.01	21.83	0.55	18.95	4.10	0.12	0.02	99.35
MSH04E1DZ_1	15	hyp	53.10	0.17	1.06	0.02	21.16	0.62	23.28	0.82	0.02	0.01	100.26
MSH04E1DZ_1	17	hyp	51.33	0.23	0.29	0.00	29.00	0.65	16.87	1.37	0.03	0.01	99.78
MSH04E1DZ_1	18	hyp	52.93	0.14	1.11	0.02	21.47	0.70	23.07	0.59	0.03	0.01	100.07
MSH04E1DZ_1	22	hyp	53.78	0.44	1.61	0.00	16.18	0.36	26.11	1.55	0.05	0.01	100.09
MSH04E1DZ_1	23	hyp	53.63	0.17	1.13	0.01	20.94	0.66	23.08	0.84	0.03	0.00	100.49
MSH04E2A03_A1	3	amph	45.22	1.63	10.82	0.01	13.24	0.19	14.23	9.91	2.08	0.26	97.59
MSH04E2A03_A1	4	amph	45.90	2.24	9.43	0.03	13.29	0.23	14.20	9.92	1.91	0.27	97.42
MSH04E2A03_A1	7	amph	44.47	2.21	12.42	0.00	11.82	0.13	14.51	9.52	2.29	0.30	97.67
MSH04E2A03_A1	8	amph	45.60	2.22	9.49	0.01	13.57	0.20	13.73	9.88	1.92	0.27	96.89
MSH04E2A03_A1	10	amph	44.22	2.60	10.69	0.00	15.04	0.21	12.48	9.95	2.23	0.30	97.72
MSH04E2A03_A1	12	amph	46.01	2.23	9.62	0.00	14.92	0.22	14.24	8.57	1.77	0.20	97.78
MSH04E2A03_A1	17	amph	43.37	2.43	12.46	0.01	13.29	0.17	13.36	10.04	2.16	0.28	97.57
MSH04E2A03_A1	15	cpx	52.38	0.82	2.36	0.00	9.54	0.26	15.23	18.33	0.37	0.01	99.30
MSH04E2A03_A1	19	cpx	52.57	0.61	2.00	0.01	8.99	0.25	15.52	18.20	0.31	0.00	98.46
MSH04E2A03_A1	1	hyp	53.95	0.19	1.02	0.00	20.95	0.66	23.26	0.88	0.00	0.00	100.91
MSH04E2A03_A1	2	hyp	54.32	0.18	0.70	0.00	20.78	0.61	23.24	0.96	0.01	0.01	100.81
MSH04E2A03_A1	5	hyp	53.05	0.42	0.53	0.00	21.83	0.50	19.64	3.72	0.08	0.00	99.77

Table B6: Continued

Sample	Analysis #	Phase ¹	Major element oxides (wt%)										Total
			SiO ₂	TiO ₂	Al ₂ O ₃	Cr ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	
MSH04E2A03_A1	6	hyp	53.76	0.52	1.39	0.00	18.91	0.52	21.49	3.14	0.38	0.11	100.22
MSH04E2A03_A1	9	hyp	54.24	0.11	0.49	0.00	21.20	0.67	22.88	0.84	0.01	0.01	100.45
MSH04E2A03_A1	11	hyp	54.78	0.17	0.65	0.00	18.90	0.46	24.58	1.37	0.00	0.01	100.92
MSH04E2A03_A1	13	hyp	53.42	0.40	0.63	0.00	22.08	0.57	21.09	1.74	0.04	0.03	100.00
MSH04E2A03_A1	14	hyp	52.66	0.84	1.51	0.00	21.17	0.53	21.05	1.91	0.12	0.11	99.90
MSH04E2A03_A1	16	hyp	53.38	0.26	0.90	0.00	22.38	0.53	21.25	1.35	0.03	0.02	100.10
MSH04E2A03_A1	18	hyp	53.76	0.22	0.91	0.01	21.23	0.57	22.85	1.17	0.01	0.00	100.73
MSH04E2A03_A1	20	hyp	53.70	0.13	0.90	0.00	21.14	0.80	23.14	0.73	0.01	0.01	100.56
MSH04E3RANDLE_2	3	amph	38.73	0.03	24.87	0.00	10.84	0.12	0.07	21.44	0.00	0.01	96.11
MSH04E3RANDLE_2	9	amph	59.91	2.04	15.61	0.00	9.22	0.15	2.62	5.53	0.15	0.33	95.56
MSH04E3RANDLE_2	10	amph	53.83	2.46	15.75	0.00	9.94	0.14	4.75	7.18	0.35	0.26	94.66
MSH04E3RANDLE_2	13	amph	49.08	2.03	5.24	0.06	8.32	0.25	13.93	19.15	0.55	0.01	98.62
MSH04E3RANDLE_2	14	amph	60.32	2.45	13.57	0.00	10.49	0.16	2.26	4.79	0.94	1.68	96.66
MSH04E3RANDLE_2	15	amph	59.14	1.81	16.04	0.00	8.87	0.15	2.85	5.45	0.56	1.46	96.33
MSH04E3RANDLE_2	16	amph	46.41	1.08	9.36	0.01	13.80	0.33	14.01	8.90	1.44	0.18	95.52
MSH04E3RANDLE_2	1	cpx	51.26	0.52	0.84	0.00	17.98	0.48	11.40	15.34	0.26	0.01	98.09
MSH04E3RANDLE_2	2	cpx	52.80	0.33	1.48	0.04	9.66	0.30	14.17	19.22	0.28	0.01	98.29
MSH04E3RANDLE_2	7	cpx	53.75	0.42	1.39	0.02	11.35	0.33	20.34	11.82	0.14	0.00	99.56
MSH04E3RANDLE_2	8	cpx	53.55	0.19	0.63	0.00	8.54	0.37	14.79	19.88	0.36	0.01	98.32
MSH04E3RANDLE_2	11	cpx	51.89	0.80	2.24	0.02	10.29	0.48	14.54	17.74	0.44	0.03	98.47
MSH04E3RANDLE_2	20	cpx	52.53	0.76	2.19	0.15	8.54	0.23	15.89	18.35	0.27	0.01	98.92
MSH04E3RANDLE_2	4	hyp	51.72	0.28	0.44	0.00	27.21	0.59	15.75	3.35	0.04	0.00	99.38
MSH04E3RANDLE_2	6	hyp	54.29	0.14	1.70	0.00	19.62	0.66	19.19	1.20	0.21	0.00	97.01
MSH04E3RANDLE_2	12	hyp	53.03	0.37	0.87	0.01	20.17	0.45	20.02	4.02	0.05	0.13	99.12
MSH04E3RANDLE_2	17	hyp	54.10	0.53	1.55	0.00	16.23	0.47	25.48	1.78	0.03	0.00	100.17
MSH04E3RANDLE_2	18	hyp	52.59	0.26	1.14	0.00	19.60	0.52	22.60	2.66	0.02	0.01	99.40
MSH04E3RANDLE_2	19	hyp	53.51	0.18	0.74	0.00	21.59	0.61	22.19	1.27	0.02	0.00	100.11
MSH04A20_10_11	2	amph	45.02	2.16	11.05	0.01	12.00	0.14	14.13	10.10	2.12	0.27	97.00
MSH04A20_10_11	4	amph	46.02	1.52	10.80	0.12	11.77	0.17	14.78	10.29	2.21	0.34	98.02
MSH04A20_10_11	5	amph	60.59	2.67	12.62	0.00	11.17	0.18	1.75	3.99	0.58	1.05	94.60
MSH04A20_10_11	9	amph	45.16	1.68	10.74	0.04	14.19	0.21	13.16	9.95	2.04	0.31	97.48

Table B6: Continued

Sample	Analysis #	Phase ¹	Major element oxides (wt%)										Total
			SiO ₂	TiO ₂	Al ₂ O ₃	Cr ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	
MSH04A20_10_11	12	amph	42.70	2.36	13.22	0.07	12.86	0.21	13.19	10.00	2.28	0.30	97.19
MSH04A20_10_11	13	amph	44.84	2.14	11.95	0.10	10.33	0.15	15.33	9.79	2.21	0.27	97.11
MSH04A20_10_11	16	amph	63.21	2.34	14.45	0.00	8.09	0.12	0.91	3.65	1.21	0.84	94.82
MSH04A20_10_11	17	amph	45.15	2.31	9.76	0.00	13.66	0.20	13.62	9.87	1.95	0.29	96.81
MSH04A20_10_11	18	amph	43.37	2.46	12.57	0.00	11.86	0.11	14.09	9.80	2.30	0.27	96.83
MSH04A20_10_11	6	cpx	52.37	0.72	2.08	0.09	10.50	0.27	15.82	16.64	0.28	0.00	98.77
MSH04A20_10_11	1	hyp	53.17	0.11	1.16	0.00	23.03	0.73	21.58	0.47	0.01	0.00	100.26
MSH04A20_10_11	3	hyp	53.48	0.45	1.37	0.01	19.50	0.49	23.43	1.89	0.05	0.00	100.67
MSH04A20_10_11	7	hyp	54.57	0.13	0.47	0.01	19.43	0.65	24.11	1.02	0.01	0.00	100.40
MSH04A20_10_11	8	hyp	52.79	0.25	1.59	0.01	21.10	0.57	22.29	1.17	0.01	0.01	99.79
MSH04A20_10_11	10	hyp	53.59	0.27	1.32	0.00	19.25	0.53	23.50	1.28	0.03	0.01	99.78
MSH04A20_10_11	11	hyp	53.85	0.17	0.93	0.01	20.30	0.61	23.46	0.87	0.02	0.00	100.22
MSH04A20_10_11	14	hyp	54.50	0.25	1.39	0.05	16.48	0.35	25.35	1.56	0.02	0.00	99.95
MSH04A20_10_11	15	hyp	52.19	0.61	1.21	0.00	20.25	0.54	18.66	4.67	0.18	0.14	98.45
MSH04A20_10_11	20	hyp	53.75	0.17	0.83	0.00	20.01	0.52	23.39	1.02	0.04	0.01	99.74
MSH04A20_10_11	21	hyp	54.15	0.39	1.58	0.01	17.05	0.45	25.15	1.56	0.01	0.00	100.35
MSH04A20_10_16	2	amph	61.94	2.40	13.53	0.00	10.19	0.14	1.41	3.06	0.40	1.57	94.64
MSH04A20_10_16	6	amph	44.12	2.25	11.48	0.00	13.15	0.21	13.86	9.83	2.21	0.27	97.38
MSH04A20_10_16	9	amph	44.77	1.64	11.56	0.00	14.92	0.20	13.03	9.83	2.07	0.27	98.29
MSH04A20_10_16	2-1	cpx	52.20	0.44	1.45	0.00	12.60	0.32	13.62	17.86	0.32	0.01	98.82
MSH04A20_10_16	2-3	cpx	52.45	0.26	1.18	0.02	11.38	0.37	13.72	18.83	0.38	0.00	98.59
MSH04A20_10_16	4-1	cpx	52.31	0.63	1.81	0.00	9.49	0.26	15.65	18.39	0.34	0.00	98.88
MSH04A20_10_16	1-1	hyp	52.93	0.19	0.78	0.01	21.84	0.52	21.84	1.12	0.02	0.01	99.26
MSH04A20_10_16	1-2	hyp	53.69	0.18	1.14	0.01	21.44	0.68	23.49	0.58	0.01	0.00	101.22
MSH04A20_10_16	1-3	hyp	53.44	0.14	0.98	0.00	21.05	0.75	23.49	0.65	0.03	0.02	100.55
MSH04A20_10_16	1-4	hyp	54.91	0.27	0.80	0.00	16.21	0.38	26.00	1.70	0.03	0.01	100.31
MSH04A20_10_16	2-2	hyp	53.37	0.17	0.88	0.03	21.49	0.60	23.00	0.86	0.01	-0.01	100.40
MSH04A20_10_16	3-1	hyp	53.74	0.08	0.46	0.01	21.38	0.64	23.54	0.51	0.01	0.00	100.37
MSH04A20_10_16	4-2	hyp	54.06	0.12	0.48	0.03	21.04	0.61	23.61	0.85	0.02	0.01	100.83
MSH04A20_10_16	1	hyp	54.04	1.03	4.59	0.00	18.00	0.49	15.90	4.01	0.13	0.37	98.56
MSH04A20_10_16	3	hyp	52.28	0.21	0.81	0.00	26.59	0.72	18.94	1.12	0.03	0.02	100.72
MSH04A20_10_16	4	hyp	53.31	0.16	0.81	0.01	22.77	0.72	22.00	0.78	0.03	0.00	100.59

Table B6: Continued

Sample	Analysis #	Phase ¹	Major element oxides (wt%)										Total
			SiO ₂	TiO ₂	Al ₂ O ₃	Cr ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	
MSH04A20_10_16	5	hyp	55.45	0.18	0.51	0.00	18.50	0.58	24.17	1.34	0.04	0.00	100.77
MSH04A20_10_16	7	hyp	53.39	0.18	0.69	0.00	22.55	0.64	22.04	1.11	0.04	0.02	100.66
MSH04A20_10_16	8	hyp	53.36	0.18	0.49	0.00	23.65	0.84	20.55	1.12	0.02	0.02	100.23
MSH04A20_10_16	10	hyp	54.21	0.17	0.74	0.00	20.82	0.62	23.78	0.90	0.01	0.00	101.25
MSH04A09_10_12	1	amph	46.91	1.82	8.01	0.02	14.56	0.22	14.19	9.90	1.99	0.26	97.88
MSH04A09_10_12	12	amph	45.07	2.21	10.79	0.01	13.23	0.24	13.91	9.84	2.15	0.26	97.71
MSH04A09_10_12	16	amph	43.23	1.94	13.04	0.00	14.43	0.20	12.77	9.99	2.60	0.34	98.54
MSH04A09_10_12	18	amph	46.70	1.36	8.61	0.00	16.44	0.27	12.27	9.65	1.69	0.19	97.18
MSH04A09_10_12	19	amph	43.00	2.22	12.74	0.03	12.84	0.20	13.65	10.10	2.78	0.28	97.84
MSH04A09_10_12	6	cpx	52.93	0.56	1.73	0.00	9.34	0.30	15.66	18.36	0.30	0.00	99.18
MSH04A09_10_12	10	cpx	52.72	0.65	2.04	0.00	9.59	0.26	15.60	18.27	0.35	0.01	99.49
MSH04A09_10_12	2	hyp	53.92	0.14	0.77	0.00	21.65	0.67	22.67	0.93	0.02	0.00	100.77
MSH04A09_10_12	3	hyp	53.67	0.20	1.08	0.02	20.73	0.59	23.06	0.92	0.01	0.01	100.29
MSH04A09_10_12	4	hyp	52.89	0.13	0.41	0.00	21.69	0.67	21.69	2.22	0.01	0.00	99.71
MSH04A09_10_12	5	hyp	54.58	0.12	0.55	0.00	20.47	0.59	23.61	0.82	0.02	0.00	100.76
MSH04A09_10_12	7	hyp	53.67	0.19	1.02	0.00	22.16	0.74	22.44	0.88	0.02	0.02	101.14
MSH04A09_10_12	8	hyp	54.68	0.12	0.50	0.00	20.43	0.58	23.79	0.98	0.01	0.01	101.10
MSH04A09_10_12	9	hyp	54.75	0.21	0.97	0.01	19.51	0.36	24.16	1.30	0.03	0.01	101.31
MSH04A09_10_12	11	hyp	53.17	0.30	0.87	0.00	23.74	0.62	20.49	1.41	0.03	0.00	100.63
MSH04A09_10_12	13	hyp	53.07	0.26	1.85	0.27	21.60	0.55	22.29	1.22	0.02	0.00	101.13
MSH04A09_10_12	14	hyp	52.59	0.14	0.39	0.00	21.21	0.62	21.56	2.50	0.02	0.01	99.04
MSH04A09_10_12	15	hyp	53.99	0.18	1.27	0.00	19.78	0.60	23.80	0.94	0.00	0.01	100.57
MSH04A09_10_12	1	hyp	53.69	0.11	0.61	0.00	22.60	0.98	22.02	0.49	0.00	0.00	100.50
MSH04A09_10_12	20	hyp	54.42	0.42	1.52	0.00	16.71	0.37	26.02	1.58	0.04	0.00	101.08
MSH04A21_10_20	7	amph	43.59	2.58	11.70	0.00	13.85	0.17	13.67	9.97	2.50	0.26	98.29
MSH04A21_10_20	17	amph	63.11	2.19	13.58	0.00	9.54	0.13	1.36	3.80	0.95	1.14	95.80
MSH04A21_10_20	1	cpx	52.50	0.74	2.14	0.01	9.85	0.29	15.19	18.32	0.32	0.02	99.38
MSH04A21_10_20	8	cpx	51.66	0.90	1.37	0.01	15.35	0.45	13.32	15.79	0.29	0.01	99.15
MSH04A21_10_20	15	cpx	51.94	0.87	1.94	0.00	11.55	0.34	14.71	17.04	0.31	0.03	98.73
MSH04A21_10_20	2	hyp	54.60	0.11	0.49	0.01	21.48	0.56	21.58	0.84	0.02	0.02	99.71
MSH04A21_10_20	3	hyp	54.90	0.23	1.09	0.00	19.09	0.60	24.70	1.22	0.03	0.01	101.87

Table B6: Continued

Sample	Analysis #	Phase ¹	Major element oxides (wt%)										Total
			SiO ₂	TiO ₂	Al ₂ O ₃	Cr ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	
MSH04A21_10_20	5	hyp	53.45	0.14	0.78	0.00	23.70	0.74	21.18	0.84	0.02	0.02	100.87
MSH04A21_10_20	6	hyp	54.01	0.40	1.78	0.00	17.44	0.40	24.82	1.70	0.02	0.00	100.57
MSH04A21_10_20	9	hyp	53.88	0.32	0.76	0.01	20.28	0.46	22.89	1.69	0.02	0.01	100.32
MSH04A21_10_20	10	hyp	54.36	0.53	1.04	0.00	16.97	0.36	24.98	2.08	0.05	0.01	100.38
MSH04A21_10_20	11	hyp	53.73	0.18	1.36	0.00	20.85	0.61	23.31	0.89	0.01	0.01	100.95
MSH04A21_10_20	12	hyp	53.75	0.39	1.48	0.03	17.10	0.45	25.13	1.86	0.04	0.01	100.24
MSH04A21_10_20	13	hyp	53.71	0.11	0.73	0.02	21.93	0.73	21.94	0.75	0.02	0.01	99.95
MSH04A21_10_20	14	hyp	53.48	0.24	1.17	0.00	21.90	0.66	21.91	1.15	0.05	0.03	100.59
MSH04A21_10_20	16	hyp	54.10	0.41	0.55	0.00	19.72	0.55	22.81	1.84	0.06	0.03	100.07
MSH04A04_11_2	16	amph	44.32	2.36	10.30	0.04	18.21	0.28	10.74	9.59	2.72	0.46	99.02
MSH04A04_11_2	20	amph	49.48	1.44	6.91	0.00	13.07	0.21	15.64	9.95	1.58	0.21	98.49
MSH04A04_11_2	1	hyp	53.49	0.20	1.07	0.00	22.64	0.66	21.87	1.27	0.02	0.01	101.23
MSH04A04_11_2	2	hyp	54.56	0.10	0.65	0.00	22.52	0.74	22.41	0.63	0.02	0.01	101.64
MSH04A04_11_2	3	hyp	54.01	0.13	0.62	0.00	23.32	0.72	21.96	0.66	0.01	0.01	101.44
MSH04A04_11_2	4	hyp	54.18	0.16	1.05	0.00	21.19	0.65	23.49	0.89	0.01	0.01	101.63
MSH04A04_11_2	6	hyp	52.93	0.14	0.46	0.01	23.17	0.75	20.89	1.95	0.01	0.01	100.32
MSH04A04_11_2	7	hyp	54.65	0.37	1.35	0.00	17.67	0.40	25.29	1.52	0.03	0.01	101.29
MSH04A04_11_2	8	hyp	54.32	0.12	0.58	0.02	21.15	0.68	23.35	0.76	0.02	0.00	101.00
MSH04A04_11_2	9	hyp	54.30	0.20	0.63	0.01	21.73	0.65	22.65	1.22	0.02	0.00	101.41
MSH04A04_11_2	11	hyp	54.16	0.15	0.90	0.01	21.08	0.63	23.23	0.89	0.02	0.00	101.07
MSH04A04_11_2	12	hyp	54.06	0.28	0.88	0.01	20.69	0.51	23.02	1.45	0.04	0.00	100.94
MSH04A04_11_2	13	hyp	54.85	0.27	0.64	0.02	18.74	0.46	24.42	1.52	0.02	0.01	100.95
MSH04A04_11_2	14	hyp	54.75	0.12	0.53	0.02	19.65	0.62	24.20	0.98	0.02	0.02	100.91
MSH04A04_11_2	15	hyp	54.36	0.15	0.61	0.01	21.64	0.57	23.13	1.08	0.05	0.01	101.61
MSH04A04_11_2	17	hyp	54.01	0.24	0.85	0.00	21.71	0.61	22.43	1.22	0.03	0.00	101.10
MSH04A04_11_2	18	hyp	53.93	0.32	1.62	0.00	18.97	0.49	23.82	2.00	0.02	0.01	101.18
MSH04A04_11_2	19	hyp	54.11	0.09	0.33	0.00	23.60	0.75	21.61	0.78	0.02	0.00	101.29
MSH04MR_11_4	2	amph	44.29	2.75	11.54	0.00	12.97	0.15	14.22	10.15	2.25	0.28	98.60
MSH04MR_11_4	6	amph	43.85	2.58	11.38	0.00	12.64	0.15	14.13	10.00	2.17	0.26	97.16
MSH04MR_11_4	19	amph	59.77	1.92	15.58	0.00	9.04	0.12	2.22	4.52	1.85	0.67	95.69
MSH04MR_11_4	20	amph	43.85	2.31	12.25	0.00	13.32	0.18	13.80	10.11	2.27	0.25	98.34

Table B6: Continued

Sample	Analysis #	Phase ¹	Major element oxides (wt%)										Total
			SiO ₂	TiO ₂	Al ₂ O ₃	Cr ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	
MSH04MR_11_4	21	amph	59.48	2.44	14.64	0.00	11.56	0.16	2.08	4.20	1.11	0.84	96.51
MSH04MR_11_4	1	hyp	53.47	0.16	0.85	0.00	24.10	0.84	21.51	0.61	0.03	0.00	101.57
MSH04MR_11_4	3	hyp	53.57	0.11	0.57	0.01	23.31	0.74	21.54	0.65	0.02	0.01	100.53
MSH04MR_11_4	4	hyp	53.23	0.21	1.44	0.00	22.47	0.67	22.20	0.92	0.03	0.03	101.20
MSH04MR_11_4	5	hyp	52.16	0.14	0.66	0.00	23.66	0.72	20.30	2.30	0.04	0.01	99.99
MSH04MR_11_4	8	hyp	53.90	0.14	0.52	0.00	23.48	0.73	21.83	0.61	0.01	0.01	101.23
MSH04MR_11_4	9	hyp	53.75	0.16	1.11	0.00	21.33	0.72	23.20	0.77	0.02	0.00	101.06
MSH04MR_11_4	10	hyp	52.49	0.08	0.26	0.00	22.82	0.76	20.93	2.08	0.02	0.01	99.45
MSH04MR_11_4	11	hyp	54.98	0.39	1.34	0.00	16.71	0.41	25.91	1.56	0.04	0.01	101.35
MSH04MR_11_4	12	hyp	54.45	0.08	0.73	0.00	21.08	0.75	23.56	0.56	0.02	0.00	101.23
MSH04MR_11_4	14	hyp	54.45	0.15	0.57	0.00	21.85	0.69	22.86	1.15	0.01	0.01	101.74
MSH04MR_11_4	15	hyp	53.49	0.20	0.75	0.00	23.51	0.72	21.15	1.11	0.02	0.01	100.96
MSH04MR_11_4	16	hyp	53.83	0.15	1.19	0.01	22.42	0.82	22.14	0.63	0.00	0.01	101.20
MSH04MR_11_4	17	hyp	51.86	0.12	0.48	0.00	23.35	0.73	20.17	2.62	0.03	0.00	99.36
MSH04MR_11_4	18	hyp	53.75	0.16	0.99	0.02	22.38	0.68	22.70	0.55	0.03	0.01	101.27
MSH04MR_11_4	7	olivine	40.45	0.02	0.04	0.02	18.32	0.25	41.98	0.16	0.00	0.01	101.25
MSH05JP_1_14A	11	amph	63.40	0.14	8.37	0.02	12.42	0.36	11.95	0.70	2.57	1.44	101.37
MSH05JP_1_14A	16	amph	48.07	1.56	6.72	0.00	13.60	0.20	17.10	9.70	1.59	0.23	98.77
MSH05JP_1_14A	18	amph	44.17	2.78	11.37	0.00	12.07	0.12	15.93	9.66	2.36	0.35	98.81
MSH05JP_1_14A	27	amph	44.90	2.71	11.12	0.00	14.76	0.24	14.83	8.64	2.13	0.26	99.59
MSH05JP_1_14A	29	amph	41.22	2.85	12.59	0.00	13.40	0.15	14.38	9.80	2.46	0.35	97.20
MSH05JP_1_14A	38	amph	47.29	2.29	13.72	0.01	15.10	0.28	12.80	6.33	2.02	0.22	100.06
MSH05JP_1_14A	43	amph	44.36	2.43	10.92	0.01	12.36	0.16	16.18	9.85	2.15	0.27	98.69
MSH05JP_1_14A	1	hyp	53.71	0.11	0.22	0.00	21.41	0.68	22.22	0.76	0.00	0.01	99.12
MSH05JP_1_14A	2	hyp	52.42	0.10	0.42	0.00	23.02	0.74	23.75	0.69	0.12	0.01	101.27
MSH05JP_1_14A	14	hyp	51.40	0.28	1.08	0.02	23.63	0.62	22.41	2.06	0.00	0.04	101.54
MSH05JP_1_14A	17	hyp	52.31	0.26	1.21	0.00	23.40	0.67	23.03	0.84	0.00	0.02	101.74
MSH05JP_1_14A	24	hyp	52.18	0.21	1.89	0.00	21.13	0.55	25.02	0.93	0.02	0.02	101.95
MSH05JP_1_14A	26	hyp	53.80	0.17	0.73	0.02	23.09	0.78	21.44	0.67	0.00	0.02	100.72
MSH05JP_1_14A	32	hyp	52.57	0.12	0.86	0.01	23.72	0.70	23.30	0.54	0.00	0.02	101.84
MSH05JP_1_14A	35	hyp	52.33	0.20	1.02	0.00	23.35	0.66	22.68	1.05	0.00	0.03	101.32
MSH05JP_1_14A	39	hyp	52.65	0.21	1.22	0.02	21.52	0.57	24.53	1.08	0.03	0.01	101.84

Table B6: Continued

Sample	Analysis #	Phase ¹	Major element oxides (wt%)										Total
			SiO ₂	TiO ₂	Al ₂ O ₃	Cr ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	
MSH05JP_1_14A	44	hyp	52.66	0.13	0.42	0.02	23.55	0.76	23.37	0.68	0.00	0.03	101.62
MSH05JP_1_14A	45	hyp	52.17	0.19	0.42	0.00	24.11	0.65	22.39	1.29	0.07	0.02	101.31
MSH05JP_1_14A	47	hyp	52.30	0.27	0.47	0.00	24.00	0.70	22.20	1.40	0.06	0.01	101.41
MSH05JV_1_19	6	amph	45.47	2.23	10.32	0.00	14.05	0.24	14.05	9.78	2.38	0.30	98.82
MSH05JV_1_19	8	amph	45.79	1.94	8.40	0.03	16.16	0.19	12.01	10.35	1.38	1.07	97.32
MSH05JV_1_19	10	amph	45.13	1.54	11.03	0.01	14.28	0.18	13.69	9.89	2.06	0.39	98.20
MSH05JV_1_19	12	amph	44.39	2.17	11.87	0.03	12.42	0.16	14.78	9.88	2.34	0.31	98.35
MSH05JV_1_19	25	amph	62.62	0.33	8.48	0.00	9.53	0.27	8.57	6.82	0.83	0.49	97.94
MSH05JV_1_19	26	amph	67.36	0.35	8.04	0.00	10.44	0.30	10.01	0.91	1.70	1.12	100.23
MSH05JV_1_19	31	amph	45.54	2.21	8.73	0.02	16.26	0.30	12.68	9.56	1.67	0.34	97.31
MSH05JV_1_19	32	amph	51.39	2.35	12.00	0.01	12.23	0.30	11.65	3.01	2.96	0.54	96.44
MSH05JV_1_19	1	hyp	53.65	0.22	1.03	0.00	20.82	0.61	23.95	0.88	0.00	0.01	101.17
MSH05JV_1_19	3	hyp	53.43	0.12	0.81	0.01	21.26	0.68	23.19	0.59	0.00	0.02	100.11
MSH05JV_1_19	4	hyp	54.21	0.17	0.45	0.00	22.67	0.68	22.18	1.03	0.00	0.01	101.40
MSH05JV_1_19	11	hyp	53.41	0.18	0.41	0.01	21.49	0.68	23.88	0.81	0.02	0.01	100.90
MSH05JV_1_19	18	hyp	51.96	0.21	0.66	0.01	23.60	0.65	20.64	1.12	0.00	0.01	98.86
MSH05JV_1_19	19	hyp	51.20	0.11	0.31	0.00	22.71	0.68	21.84	2.06	0.00	0.01	98.92
MSH05JV_1_19	20	hyp	52.43	0.14	0.49	0.01	20.83	0.67	22.56	1.06	0.00	0.02	98.21
MSH05JV_1_19	21	hyp	53.24	0.25	1.76	0.03	21.40	0.62	22.93	1.21	0.00	0.02	101.46
MSH05JV_1_19	22	hyp	52.74	0.24	0.75	0.00	22.64	0.61	21.92	1.22	0.10	0.02	100.24
MSH05JV_1_19	27	hyp	53.69	0.19	1.61	0.00	21.89	0.66	23.11	0.62	0.10	0.01	101.88
MSH05JV_1_19	28	hyp	52.24	0.36	1.34	0.01	22.11	0.55	20.28	1.61	0.15	0.02	98.67
MSH05JV_1_19	30	hyp	50.73	0.23	0.79	0.01	20.77	0.63	23.17	3.98	0.21	0.08	100.60
MSH05JV_1_19	33	hyp	52.44	0.18	0.77	0.01	21.50	0.54	23.83	1.18	0.13	0.07	100.65
MSH05DRS_3_9_4	2	amph	50.30	2.81	16.47	0.01	9.76	0.18	4.68	6.99	0.83	2.18	94.21
MSH05DRS_3_9_4	6	amph	45.29	2.58	10.12	0.01	14.59	0.22	14.36	9.69	2.20	0.18	99.24
MSH05DRS_3_9_4	8	amph	44.78	2.41	11.84	0.00	10.76	0.12	15.42	9.83	2.25	0.26	97.67
MSH05DRS_3_9_4	10	amph	42.95	2.51	13.05	0.00	12.38	0.07	13.70	10.12	2.36	0.31	97.45
MSH05DRS_3_9_4	12	amph	48.87	1.44	6.78	0.00	13.31	0.29	15.38	9.84	1.67	0.23	97.81
MSH05DRS_3_9_4	14	amph	45.39	1.98	9.37	0.00	16.09	0.23	12.45	9.88	2.00	0.27	97.66
MSH05DRS_3_9_4	16	amph	61.12	0.84	12.74	0.04	9.11	0.23	7.52	2.29	1.74	1.38	97.01

Table B6: Continued

Sample	Analysis #	Phase ¹	Major element oxides (wt%)										Total
			SiO ₂	TiO ₂	Al ₂ O ₃	Cr ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	
MSH05DRS_3_9_4	17	amph	44.16	1.62	11.67	0.00	15.93	0.30	12.69	8.99	1.98	0.22	97.56
MSH05DRS_3_9_4	1	hyp	54.25	0.30	0.79	0.02	20.77	0.47	23.20	1.44	0.02	0.00	101.26
MSH05DRS_3_9_4	3	hyp	52.97	0.20	0.70	0.00	24.21	0.77	21.00	1.00	0.03	0.00	100.88
MSH05DRS_3_9_4	4	hyp	52.65	0.14	0.64	0.00	23.60	0.74	21.04	0.71	0.02	0.01	99.55
MSH05DRS_3_9_4	5	hyp	53.80	0.16	1.90	0.02	19.67	0.63	23.57	1.26	0.02	0.01	101.04
MSH05DRS_3_9_4	7	hyp	53.50	0.40	1.94	0.01	16.66	0.39	25.30	1.53	0.03	0.01	99.77
MSH05DRS_3_9_4	9	hyp	52.90	0.15	0.98	0.01	25.03	0.75	20.85	0.63	0.02	0.00	101.32
MSH05DRS_3_9_4	11	hyp	52.13	0.44	1.83	0.00	22.98	0.74	20.59	1.53	0.04	0.00	100.28
MSH05DRS_3_9_4	13	hyp	52.98	0.16	1.07	0.01	23.28	0.77	21.58	0.64	0.02	0.01	100.52
MSH05DRS_3_9_4	15	hyp	53.12	0.11	0.80	0.00	24.17	0.73	21.16	0.61	0.01	0.01	100.72

Notes: ¹Phase abbreviations are for amphibole (amph), clinopyroxene (cpx), and hypersthene (hyp)

APPENDIX C

LA-ICP-MS DATA

Laser ablation ICP-MS analyses are provided within appendix C. Table C1 includes all LA-ICP-MS data for melt inclusions from the Oregon Cascades (averages presented in Table 9). Beam size and pulse rate for each analysis is provided in Table C1. Trace element concentrations of scoria glass from sample QV04-3b (glassy equivalent to QV03-1) is presented in Table C2, see appendix A for complete analytical procedures. All trace element concentrations of Mount St. Helens feldspars are presented in Table C3. Sample identifications (without the MSH04 and MSH05 prefixes) correspond to Table 11 while analysis numbers correspond to microprobe analysis numbers presented in Table B5. As with microprobe analyses in Appendix B, images and an electronic version of the appendix is available upon request.

Table C1: Trace element analyses for Cascades melt inclusions by LA-ICP-MS

Sample	MRQV03-1	MRQV03-1	MRQV03-1	MRQV03-1	MRQV03-1	MRQV03-1	MRQV04-3b	MRQV04-3b	MRQV04-3b	MRQV04-3b	MRQV04-3b
Plug/Inclusion	03-038-14.1	03-042-5.1	03-043-15.1	03-063-5.1	03-061-3.1	04-036-1-1	04-053-2-1	04-053-2-1	04-053-5-1	04-053-6-1	04-053-6-1
Beam size (µm)	40	40	40	40	50	50	40	40	40	40	40
Pulse Rate (Hz)	4	4	4	3	3	3	3	3	3	3	3
Concentration (ppm)											
Sc	15.7	16.7	18.2	20.4	14.9	59.5	17.4	10.3	19.0		
Ti	8336.4	6868.7	7248.0	7116.0	6542.0	13908.5	9969.5	8381.8	9428.5		
V	159.5	336.8	157.9								
Rb	38.4	91.2	36.8	27.5	26.3	53.5	42.9	41.1	39.1		
Sr	4131.8	2406.2	4147.2	2862.7	2890.9	4170.3	3659.2	3750.2	3871.3		
Y	22.3	24.7	20.4	14.8	14.6	28.7	18.9	16.6	19.6		
Zr	435.7	366.3	396.5	276.7	284.4	527.9	336.7	330.4	345.4		
Nb	9.7	14.2	9.1	6.9	7.3	13.3	8.9	8.7	8.7		
Cs				0.3	0.3						
Ba	2684.3	1955.4	2638.0	2140.2	1928.3	8399.8	2536.9	2456.3	2495.8		
La	91.8	117.1	88.7	64.8	67.1	132.4	90.7	82.7	90.8		
Ce	224.8	298.4	236.4	185.9	183.4	306.2	241.8	214.1	235.9		
Pr	29.8	36.7	31.2	23.4	23.6	45.5	30.8	26.2	30.2		
Nd	114.6	141.2	118.2	83.6	90.0	161.6	122.6	103.1	117.6		
Sm	17.4	23.2	20.9	12.8	14.2	25.5	18.6	15.7	17.8		
Eu	4.7	5.5	5.9	3.3	3.9	6.3	4.5	3.8	4.2		
Gd	9.7	10.4	8.8	8.1	7.7	14.3	9.4	8.3	10.3		
Dy	4.2	5.9	4.4	3.3	3.5	4.6	4.4	3.5	3.8		
Er	1.3	1.4	2.0	1.0	1.2	3.0	1.5	1.2	1.7		
Yb				0.8	0.8	1.5	1.0	1.0	1.1		
Hf	9.5	6.9	8.2	6.9	6.6						
Ta		0.4		0.3	0.4	0.6	0.4	0.3	0.3		
Pb	13.8	9.6	19.1	13.9	14.8	30.8	19.1	18.5	20.2		
Th	8.3	10.4	9.5	6.5	6.9	12.1	8.8	8.8	9.0		
U	4.5	3.4	2.8	2.3	2.4	5.1	2.9	2.7	3.1		

Table C1: Continued

Sample	MRQV04-3b	MRQV04-3b	MRQV04-3b	MRQV04-3b	MRQV04-3b	MRQV04-3b	MRCC02-2	MRCC02-2	MRCC02-2
Plug/Inclusion	04-053-9-2	04-053-10-1	04-053-10-1	04-053-10-1	04-050-17-1	04-050-20-1	03-015-26-1	03-015-47-1	03-041-8-1
Beam size (µm)	40	40	40	40	40	50	40	40	40
Pulse Rate (Hz)	3	3	3	3	3	4	3	3	3
Concentration (ppm)									
Sc	18.3	25.9	25.3	19.0	18.7		25.9	27.5	29.4
Ti	9420.2	10815.1	9957.7	11195.8	9367.5		6318.1	6438.8	6169.9
V									
Rb	43.9	53.3	52.3	55.9	38.4		10.8	11.6	11.2
Sr	3519.6	4503.6	4135.2	4308.4	4054.6		439.9	484.7	452.2
Y	17.7	23.7	23.4	22.4	20.6		17.1	19.1	19.5
Zr	331.9	461.3	408.8	412.1	346.7		84.4	93.9	91.5
Nb	8.3	10.4	8.2	10.5	8.3		7.0	7.4	7.3
Cs									
Ba	2549.1	2704.8	3065.7	4182.3	2427.8		200.4	206.8	206.1
La	84.1	107.7	104.8	106.5	92.2		8.0	9.4	8.0
Ce	227.8	292.2	325.7	323.4	241.9		21.6	22.3	23.9
Pr	28.9	36.8	34.6	37.6	31.3		2.8	3.2	2.8
Nd	111.6	144.2	127.7	138.2	122.9		12.0	11.7	12.3
Sm	17.9	22.3	23.3	22.3	19.0		2.6	3.1	3.1
Eu	4.5	6.4	3.5	6.0	4.7		1.2	1.3	0.9
Gd	8.4	11.5	14.0	11.5	10.3		2.9	2.9	2.5
Dy	4.3	3.7	3.4	6.2	4.7		2.6	3.8	2.8
Er	1.4	1.6	2.0	1.3	1.5		1.9	2.5	1.6
Yb	1.0	1.7	2.0	1.5	1.2		1.5	2.5	1.8
Hf									
Ta	0.3	0.3		0.7	0.3		0.3	0.5	
Pb	18.6	24.1	27.6	28.8	20.6		2.8	3.3	2.8
Th	8.7	11.5	9.5	11.7	8.7		1.1	0.8	1.2
U	2.9	3.3	5.3	4.0	2.9		0.4	0.3	0.5

Table C1: Continued

Sample	MRCC02-2	MRCC02-2	MRCC02-2	MRCC02-2	MRCC02-2	MRCC02-2	MRCC02-2	MRCC02-2	MRCC02-2	MRCC02-2	MRCC02-2	MRCC02-2	MRCC02-2
Plug/Inclusion	03-041-9-1	03-041-13-1	03-001.-15.1	03-001.-15.1	03-001.-15.2	03-008-1.2	03-008-14.1	03-008-17.2	03-008-17.3				
Beam size (µm)	40	40	40	40	40	40	40	40	40	40	40	40	40
Pulse Rate (Hz)	3	3	4	4	4	4	4	4	4	4	4	4	4
Concentration (ppm)													
Sc	41.6	24.0	27.2	27.1	24.8	37.2	30.1	52.6	43.1				
Ti	6764.5	6189.1	6304.8	6624.2	5804.9	6631.1	7312.8	6148.9	6016.5				
V													
Rb	11.5	10.0	9.1	9.5	8.1	11.4	12.6	8.7	10.8				
Sr	486.2	448.9	524.8	528.9	471.5	497.8	501.6	450.1	467.9				
Y	21.0	18.2	20.8	22.0	18.8	19.2	24.7	17.1	20.1				
Zr	96.0	87.7	97.0	99.9	85.1	90.5	115.7	88.5	94.3				
Nb	7.3	7.1	7.2	7.7	6.7	7.0	10.7	6.8	6.0				
Cs				0.4			0.5						
Ba	215.0	195.6	247.3	189.0	172.3	204.1	258.5	179.9	192.4				
La	8.0	8.5	8.8	8.4	7.3	8.1	11.4	6.5	7.6				
Ce	23.8	20.1	19.3	19.8	17.1	21.6	27.5	18.2	18.7				
Pr	2.8	2.8	2.8	2.7	2.2	2.5	3.8	1.6	2.9				
Nd	12.3	11.8	11.7	13.1	9.4	11.0	16.1	8.4	10.2				
Sm		3.8	3.0	3.2	3.3	3.7	4.7	1.9	4.6				
Eu	1.0	1.0	1.2	1.3	0.8	1.1	1.7	4.8	1.8				
Gd	2.7	3.5	3.7	3.4	4.0	3.7	4.0	3.1	2.4				
Dy	3.2	3.6	2.8	3.9	2.6	3.7	4.2	2.9	2.2				
Er	2.2	2.1	2.0	1.6	1.6	1.5	2.5	2.9					
Yb	2.5	1.9	1.6	2.1	1.8	1.3	2.3	4.0					
Hf			2.4	2.5	1.6	2.2	2.5						
Ta	0.4	0.4	0.4	0.5	0.4	0.5	0.5						
Pb	3.3	2.7	2.6	2.1	2.3	2.5	0.9	3.1	2.8				
Th	1.2	1.2	1.5	1.6	1.0	1.1	1.9		1.5				
U	0.5	0.5	0.5	0.4	0.5	0.5	0.6		0.6				

Table C1: Continued

Sample	MRCM02-2	MRCM02-2	MRCM02-2	MRCM02-2	MRCM02-2	MRCM02-2	MRCM02-2	MRCM02-2	MRCM02-2	MRCM02-2
Plug/Inclusion	03-002.-6.1	03-002.-10.1	03-002.-12.1	03-007-6.1	03-007-14.1	03-013-17.1	03-013-20.1	03-013-46.1	03-013-47.1	
Beam size (µm)	40	40	40	40	40	40	40	40	40	40
Pulse Rate (Hz)	4	4	4	4	4	4	4	4	4	4
Concentration (ppm)										
Sc	27.5	35.3	37.4	23.2	39.4	27.4	24.2	31.2	26.1	
Ti	7329.2	7429.2	9013.7	8013.9	6997.7	7051.0	7306.4	6728.0	7843.7	
V										
Rb	6.0	5.3	7.6	5.1	6.1	5.8	4.1	4.2	4.8	
Sr	2323.2	2532.5	1433.9	2309.4	2186.6	1959.3	2089.8	2394.2	1910.1	
Y	24.3	22.5	29.8	25.2	23.6	22.9	25.4	20.9	23.0	
Zr	120.5	121.5	131.8	128.5	125.4	111.5	131.7	120.0	109.1	
Nb	4.1	3.9	5.7	4.1	3.1	4.2	3.5	3.9	3.3	
Cs			3.3							
Ba	1011.7	1081.3	1645.1	1015.7	970.4	971.0	1426.3	1116.5	935.5	
La	29.2	28.3	33.8	28.9	27.0	25.8	31.4	27.7	25.7	
Ce	70.4	74.7	99.8	80.5	75.2	68.4	91.9	74.8	71.4	
Pr	10.1	10.7	13.7	11.5	9.9	9.8	14.2	10.6	11.0	
Nd	43.1	44.0	59.9	48.6	42.0	39.7	64.5	48.2	43.5	
Sm	6.6	7.1	11.7	7.8	8.5	7.7	8.7	4.8	8.1	
Eu	2.1	2.2	3.6	2.6	2.1	2.5	2.8	2.5	2.4	
Gd	5.9	4.8	6.0	6.1	3.8	6.3	7.7	3.8	6.9	
Dy	4.5	4.5	5.8	4.0	6.1	4.5	4.2	1.4	3.3	
Er	2.9	1.8	2.6	2.6	1.4	2.1	2.3	2.0	1.8	
Yb	1.3	2.0	2.6	2.6	2.6	1.7	2.7	1.4	2.1	
Hf	3.3	2.2	3.4	2.5	5.2	2.8	2.6	2.2	3.7	
Ta	0.3					0.4	0.3		0.3	
Pb	14.1	9.2	15.9	7.6	9.6	7.5	8.5	9.1	15.0	
Th	1.0	1.1	1.1	0.6		0.6	1.2		0.5	
U		0.4		0.5			0.2		0.3	

Table C1: Continued

Sample	MRFLR03-1	DB04-1	DB04-1	DB04-1	DB04-1	DB04-1	DB04-1	DB04-1	MRHL03-1	MRHL03-1
Plug/Inclusion	05-017-12	04-054-1	04-054-9	04-054-10	04-054-10	05-054-12	03-044-6.1	03-045-7.1		
Beam size (µm)	50	50	50	50	50	50	40	40		
Pulse Rate (Hz)	4	4	4	4	4	4	4	4		
Concentration (ppm)										
Sc	24.8	27.4	30.4	29.4	28.3	28.3	23.3	31.3		
Ti	9565.3	8276.8	7948.3	8399.9	7654.5	7654.5	12705.0	15388.8		
V							267.6	513.7		
Rb	7.3	8.5	7.7	7.6	7.5	7.5	12.2	6.5		
Sr	412.4	453.6	437.6	444.5	413.0	413.0	760.0	593.7		
Y	25.8	25.0	26.7	26.7	24.0	24.0	27.4	34.3		
Zr	120.6	123.6	123.8	133.8	122.0	122.0	176.1	190.8		
Nb	9.0	8.1	7.5	8.0	7.4	7.4	22.1	15.1		
Cs										
Ba	242.3	211.6	207.4	226.0	201.5	201.5	320.1	218.1		
La	9.4	10.5	9.8	10.9	9.8	9.8	18.3	16.9		
Ce	26.7	27.1	27.7	29.2	27.1	27.1	52.4	58.7		
Pr	3.6	3.6	3.6	3.9	3.5	3.5	6.3	6.3		
Nd	16.2	15.7	15.8	16.6	15.7	15.7	23.8	31.2		
Sm	4.2	4.2	3.3	4.0	3.7	3.7	6.0	6.8		
Eu	1.5	1.3	1.5	1.5	1.6	1.6	1.8	2.0		
Gd	3.7	4.4	4.2	4.6	4.4	4.4	4.3			
Dy	4.3	4.5	4.5	4.6	4.5	4.5	4.9	7.6		
Er	2.4	2.4	2.3	2.3	2.3	2.3	3.2	1.7		
Yb	2.4	2.4	2.5	2.4	2.4	2.4	1.7	2.8		
Hf							4.1	4.4		
Ta	0.6	0.4	0.4	0.5	0.4	0.4	1.4	1.3		
Pb	3.0	3.2	3.1	3.0	2.8	2.8	2.7	3.4		
Th	0.7	0.8	0.6	0.8	0.7	0.7	1.4			
U	0.4	0.3	0.3	0.5	0.3	0.3				

Table C1: Continued

Sample	MRL02-2	ELK02-1	ELK02-1	ELK02-1	ELK02-1	ELK02-1	BLW03-1	BLW03-1
Plug/Inclusion	03-047-23.1	elk.hom.ol.3.A.2 (02-022)	elk.hom.ol.4.B.1(02-(ELK-hom-02-11.J.1	40	40	40	03-048-11.1	03-048-13.1
Beam size (µm)	40	40	40	40	40	40	40	40
Pulse Rate (Hz)	4	4	4	4	4	4	4	4
Concentration (ppm)								
Sc	25.4	95.4	36.9	52.1		33.3		25.2
Ti	11560.5					9739.1		9986.6
V	291.3	134.3	188.7	233.4		264.9		247.1
Rb	11.3	23.8	14.7	15.7		7.7		9.1
Sr	798.0	195.2	482.5	301.8		310.7		316.8
Y	26.8	20.8	34.8	31.6		27.1		28.6
Zr	162.0	103.2	165.9	134.6		134.3		143.5
Nb	17.6	6.3	10.0	7.1		15.8		20.1
Cs								
Ba	432.9	152.2	754.4	231.5		143.7		152.5
La	19.3	7.2	12.6	10.2		9.0		11.6
Ce	51.1	16.8	30.8	26.7		28.2		32.1
Pr	6.6	2.4	4.0	3.2		3.4		4.0
Nd	26.8	8.1	19.4	13.0		15.5		15.8
Sm	6.9	3.1	4.9	5.0		4.6		3.7
Eu	1.6	1.3	2.0	1.5		1.2		1.6
Gd	6.7	12.1	5.7	7.5				3.6
Dy	4.3	3.1	5.6	5.4		5.8		6.2
Er	2.9	1.8	3.4	3.8		3.4		2.7
Yb	1.9	1.4	3.3	3.5		3.2		2.4
Hf	4.1	3.4	4.1	3.5		2.2		2.5
Ta	1.1							1.1
Pb	6.4	3.0	0.2	1.9		2.1		1.5
Th	2.4	0.8	1.4	1.1				
U		0.5	0.4	0.4				

Table C1: Continued

Sample	LTB02-2	BB03-1	BB03-1	BB03-1	BB03-1	KWB03-1	KWB03-1	KWB03-1	KWB03-1	KWB03-1	NEF03-1	NEF03-1	NEF03-1
Plug/Inclusion	03-074-18-1	03-065-3-2	03-065-16-2	03-067-2-1	03-067-11-1	03-067-27-1	03-067-2-1	03-067-11-1	03-067-27-1	013-3	013-22	013-29	
Beam size (µm)	50	50	50	50	50	50	50	50	50	40	40	40	
Pulse Rate (Hz)	3	3	3	3	3	3	3	3	3	3	3	3	
Concentration (ppm)													
Sc	24.1	29.4	28.6	21.5	22.8	27.4	26.3	29.6					
Ti	10280.8	10532.4	9716.9	7132.4	8573.3	8040.9	10922.2	11206.3	10852.6				
V													
Rb	9.5	9.5	26.5	13.5	17.3	13.3	8.8	10.9	14.8				
Sr	455.4	532.5	404.7	521.9	446.3	491.6	320.3	320.7	290.6				
Y	17.1	32.0	26.5	16.6	24.7	22.0	28.7	31.2	33.7				
Zr	81.1	140.8	118.1	84.5	113.5	101.0	123.6	142.2	148.5				
Nb	9.6	9.5	7.4	6.4	7.7	7.3	11.0	12.3	10.6				
Cs		0.5	0.8	0.4	0.5								
Ba	270.0	242.4	381.6	298.3	358.1	376.7	149.0	170.5	186.0				
La	9.0	11.3	11.4	9.1	11.7	11.0	9.2	10.8	9.6				
Ce	27.0	31.0	31.3	23.2	29.4	32.2	25.5	27.9	32.8				
Pr	3.2	4.3	3.9	2.9	4.1	3.6	3.3	3.8	3.8				
Nd	12.2	20.2	16.7	13.8	17.6	14.3	14.1	17.7					
Sm	3.2	4.9	4.2	2.8	4.4	3.1	4.1	3.6					
Eu	1.3	1.7	1.5	1.1	1.4	1.1							
Gd	3.3	5.0	4.6	2.7	4.8	3.3		6.3					
Dy	3.4	4.9	4.6	2.5	4.4	4.5	4.1	5.1					
Er	1.5	3.1	2.6	1.5	2.6	1.6	1.9	3.3					
Yb	1.7	3.0	2.6	1.4	1.9	1.9	1.8	3.1					
Hf	1.7	2.9	2.6	2.0	2.5	1.9							
Ta	0.5	0.5	0.4	0.3	0.3	0.5	0.4	0.6					
Pb	2.9	3.4	5.0	3.7	5.1	3.5	2.0	1.8					
Th	0.6	0.8	2.0	1.0	1.4	1.1	0.6	1.0					
U	0.5	0.4	0.9	0.4	0.6	0.7	0.4	0.3					

Table C1: Continued

Sample	NEF03-1	NEF03-1
Plug/Inclusion	05-013-14	05-013-7
Beam size (μm)	50	50
Pulse Rate (Hz)	4	4
Concentration (ppm)		
Sc	39.6	58.9
Ti	10935.5	10096.2
V		
Rb	8.0	6.2
Sr	330.5	308.7
Y	30.4	34.3
Zr	132.4	142.9
Nb	10.9	9.3
Cs		
Ba	147.3	141.7
La	9.5	9.3
Ce	28.7	27.5
Pr	3.6	3.7
Nd	16.6	16.4
Sm	4.1	4.9
Eu	1.6	1.5
Gd	4.6	6.5
Dy	3.7	6.0
Er	2.8	3.5
Yb	2.1	2.2
Hf		
Ta	0.6	0.6
Pb	1.8	2.9
Th	0.9	1.1
U	0.5	0.4

Table C2: Trace element analyses for Quartzville glass by LA-ICP-MS

Sample	MRQV04-3b	MRQV04-3b	MRQV04-3b	MRQV04-3b	MRQV04-3b	MRQV04-3b	MRQV04-3b	MRQV04-3b	MRQV04-3b	MRQV04-3b	MRQV04-3b
Plug/Inclusion	SCORIA_1	SCORIA_2	SCORIA_3	SCORIA_4	SCORIA_5	SCORIA_6	SCORIA_7	SCORIA_8	SCORIA_9	SCORIA_10	SCORIA_10
Beam size (μm)	80	80	80	80	80	80	80	80	80	80	80
Pulse Rate (Hz)	4	4	4	4	4	4	4	4	4	4	4
Concentration (ppm)											
Sc	9.3	10.1	9.5	10.3	12.6	10.0	9.0	10.0	9.9	9.0	9.0
Ti	7947.3	7909.1	7841.9	7860.0	7529.4	7904.9	8108.9	8144.5	7795.5	8239.2	8239.2
V	170.5	164.2	167.5	166.6	150.0	167.9	173.5	169.1	162.6	178.1	178.1
Cr	5.6	7.0	9.8	12.1	20.0	8.5	3.3	3.7	5.2	2.8	2.8
Mn	658.8	636.8	633.1	654.9	613.1	669.1	655.3	646.8	619.2	675.1	675.1
Ni	13.8	13.9	12.0	15.6	18.7	13.8	12.0	13.5	11.3	14.8	14.8
Cu	22.7	17.9	17.6	18.3	26.2	40.1	23.4	18.2	13.6	21.9	21.9
Zn	84.7	81.6	84.5	86.3	80.2	88.3	88.5	88.0	82.1	90.8	90.8
Rb	32.3	32.8	34.1	34.5	31.8	33.8	34.6	34.9	33.0	35.8	35.8
Sr	3235.0	3425.8	3448.5	3243.0	2873.5	3127.0	3409.0	3296.4	3170.3	3522.0	3522.0
Y	14.7	16.2	15.5	15.0	14.6	14.6	15.3	15.4	15.0	15.7	15.7
Zr	286.0	311.0	300.0	288.2	270.4	279.3	302.2	301.2	288.9	312.6	312.6
Nb	7.9	8.4	8.4	7.8	7.3	7.9	8.4	8.3	7.9	8.7	8.7
Ba	2015.9	2163.8	2190.7	2109.0	1962.4	2178.7	2255.2	2293.9	2131.7	2320.3	2320.3
La	71.3	78.2	77.2	74.2	70.1	77.0	80.2	81.1	78.1	82.3	82.3
Ce	178.4	190.7	193.9	187.2	181.8	197.2	199.9	204.3	194.8	204.7	204.7
Pr	23.6	25.5	25.5	24.5	24.1	25.8	25.9	26.8	25.5	26.4	26.4
Nd	91.8	99.0	98.4	94.4	94.4	97.6	98.6	102.6	98.6	101.3	101.3
Sm	14.0	15.0	15.1	14.3	14.7	14.8	15.1	15.0	14.8	14.9	14.9
Eu	3.7	4.0	3.9	3.8	3.9	3.9	4.0	4.1	3.8	3.9	3.9
Gd	8.0	8.6	8.5	8.1	8.1	8.2	8.4	8.7	8.3	8.3	8.3
Dy	3.2	3.5	3.6	3.3	3.4	3.4	3.5	3.6	3.5	3.4	3.4
Er	1.2	1.3	1.2	1.2	1.2	1.1	1.2	1.2	1.2	1.2	1.2
Yb	0.8	0.9	0.9	0.8	0.8	0.9	0.9	0.8	0.9	0.9	0.9
Pb	14.6	14.8	15.2	14.7	14.0	15.1	15.9	15.7	14.6	16.0	16.0
Th	7.5	8.2	8.1	7.4	6.9	7.7	8.4	8.2	7.9	8.5	8.5
U	2.4	2.6	2.6	2.5	2.2	2.5	2.7	2.6	2.5	2.7	2.7

Table C3: Trace element concentrations of Mt. St. Helens feldspars by LA-ICP-MS.

Sample	E1DZ_1	E1DZ_1	E1DZ_1	E1DZ_1	E1DZ_1	E1DZ_1	E1DZ_1	E1DZ_1	E1DZ_1	E1DZ_1
Analysis #	2	5	8	15	30	33	37	39		
Trace element concentrations (µg/g)										
Li	34.2	28.3		21.0	8.8	45.3	18.5	24.7		
Si	271197	279860	271636	278072	261250	277215	283882	276505		
Ca	66547	55687	66016	57994	78024	59088	50372	59989		
Ti	133	46	289	103	184	82	51	74		
V			0.6		0.4					
Rb			1.0							
Sr	890	928	988	899	1014	1037	871	889		
Sr	902	949	1014	917	1042	1056	889	916		
Y	0.1		0.1			0.1				
Zr			0.3							
Nb										
Cs										
Ba	83	99	102	114	59	116	155	101		
La	2.6	3.8	2.2	3.4	1.7	3.2	5.1	3.5		
Ce	3.9	6.7	3.9	5.6	3.2	5.2	7.5	6.0		
Pr	0.3	0.6	0.4	0.5	0.3	0.5	0.5	0.6		
Nd	1.0	2.0	1.4	1.4	1.1	1.6	1.5	1.6		
Sm	0.2									
Eu	0.7	0.8	0.9	1.0	0.6	1.3	1.2	0.8		
Pb	2.3	3.4	1.0	2.7	1.4	2.9	4.3	3.2		
Th										
U										

Notes: ¹Sample prefix of MSH04 and MSH05 have been removed, see Table 13.

Table C3: Continued

Sample Analysis #	E1DZ_1 54	E1DZ_1 55	E1DZ_1 56	E1DZ_1 58	E1DZ_1 59	E1DZ_1 1-F1	E1DZ_1 1-F2
Trace element concentrations (µg/g)							
Li	12.1		22.4	24.2	25.9	28.1	23.9
Si	286663	278332	276852	286118	279759	275696	288987
Ca	46596	57661	59549	47342	55819	61007	43377
Ti	87	108	79	44	84	103	35
V							
Rb			0.9	3.1			1.4
Sr	727	832	966	807	914	939	792
Sr	735	851	985	822	918	958	809
Y							0.2
Zr				0.7			0.6
Nb							
Cs							
Ba	182	114	106	113	106	106	120
La	4.2	3.5	4.2	2.9	4.0	3.4	2.7
Ce	6.6	4.7	6.3	4.8	6.7	5.6	4.7
Pr	0.6	0.4	0.6	0.5	0.5	0.5	0.5
Nd	2.1	1.7	1.5	1.4	1.6	1.5	1.2
Sm							
Eu	1.3	0.8	0.9	0.8	0.8	0.8	0.8
Pb	3.4	2.2	3.4	4.1	3.0	3.3	4.9
Th							
U							0.1

Table C3: Continued

Sample Analysis #	E2A03_A1_1	E2A03_A1_2	E2A03_A1_3	E2A03_A1_6	E2A03_A1_7	E2A03_A1_8	E2A03_A1_10
Trace element concentrations (µg/g)							
Li	18.5		25.4		19.3		
Si	269697	258714	260295	269920	264949	280827	262469
Ca	68345	80781	79070	68079	73880	54425	76674
Ti	223	134	189	156	152	43	127
V	0.4	0.3	0.4	0.5			
Rb	1.1		0.9				
Sr	1073	1021	1184	1024	1030	931	1108
Sr	1091	1042	1210	1030	1039	939	1115
Y		4.3	0.3	0.3			
Zr		3.4	2.6				
Nb		0.1	0.2				
Cs							
Ba	127	83	77	131	79	140	88
La	3.5	7.3	2.3	4.1	2.7	5.5	3.0
Ce	5.0	16.9	3.8	5.5	3.9	7.7	4.6
Pr	0.5	2.2	0.5	0.5	0.4	0.8	0.5
Nd	1.6	9.8	1.1	1.9	1.5	2.6	1.5
Sm		1.5				0.3	
Eu	1.3	1.0	0.8	1.1	0.9	1.3	0.8
Pb	1.7	2.1	1.7	2.1	1.9	4.4	2.8
Th							
U		0.1					

Table C3: Continued

Sample Analysis #	E2A03_A1_11	E2A03_A1_12	E2A03_A1_13	E2A03_A1_16	E2A03_A1_18	E2A03_A1_19	E2A03_A1_20
Trace element concentrations (µg/g)							
Li	11.8	33.9	34.6		15.2	12.8	41.8
Si	271959	274199	266410	262146	257639	272741	267660
Ca	65623	62875	72202	77034	81928	64670	70750
Ti	129	126	137	118	109	118	148
V						0.3	
Rb							
Sr	956	946	980	1058	1058	1020	1026
Sr	973	952	997	1071	1079	1030	1041
Y		0.3	0.2		0.2		
Zr		0.2			0.8		
Nb							
Cs							
Ba	105	126	90	41	64	116	96
La	3.4	3.9	2.9	1.8	2.4	3.2	2.7
Ce	4.6	5.3	3.7	2.8	3.8	4.3	3.8
Pr	0.5	0.5	0.4	0.3	0.5	0.4	0.4
Nd	1.6	1.8	1.2	0.9	1.3	1.4	1.7
Sm							
Eu	0.9	1.2	0.7	0.5	0.6	1.0	0.6
Pb	2.1	2.7	1.7	1.4	1.7	2.4	1.9
Th							
U							

Table C3: Continued

Sample Analysis #	E2A03_A1_21	E2A03_A1_22	E2A03_A1_24	E2A03_A1_25	E2A03_A1_26	E2A03_A1_29	E2A03_A1_30
Trace element concentrations (µg/g)							
Li		16.6	40.6	14.9	19.7		20.7
Si	260490	278568	262989	260950	275099	272777	279017
Ca	78857	57358	76094	78354	61755	64625	56779
Ti	117	200	104	106	152	100	186
V		0.7			0.4		
Rb					0.9		
Sr	1080	623	1101	1056	928	971	803
Sr	1090	625	1107	1067	941	980	815
Y		0.4					
Zr					1.9		
Nb							
Cs							
Ba	66	126	49	38	102	96	128
La	2.3	9.3	2.0	1.6	3.3	3.1	3.7
Ce	3.6	12.4	3.3	2.7	4.9	4.4	4.8
Pr	0.4	1.1	0.3	0.2	0.5	0.5	0.6
Nd	1.2	3.1	1.1	0.9	1.8	1.2	1.8
Sm		0.4			0.2		
Eu	0.6	1.2	0.6	0.4	0.9	1.0	0.9
Pb	2.1	6.3	1.7	1.4	2.0	2.4	2.3
Th							
U							

Table C3: Continued

Sample Analysis #	E2A03_A1_32	E2A03_A1_33	E2A03_A1_34	E2A03_A1_36	E3RANDLE_2_4	E3RANDLE_2_7
Trace element concentrations (µg/g)						
Li	8.3	15.5	46.8	19.1		24.9
Si	273673	282126	282617	276932	224134	275823
Ca	63525	52715	52062	59447	111495	60847
Ti	153	109	116	132	156	214
V	0.5				14.5	2.0
Rb			0.9			
Sr	926	938	869	930	482	661
Sr	946	939	877	953	475	671
Y	0.2			0.2	0.7	0.5
Zr	1.3				1.3	1.0
Nb						
Cs						
Ba	92	156	117	113	20	209
La	2.7	3.9	3.5	2.9	0.9	5.0
Ce	4.0	5.4	4.7	4.5	1.5	7.5
Pr	0.4	0.5	0.4	0.4	0.2	0.9
Nd	1.5	1.2	1.6	1.6	0.8	3.0
Sm						
Eu	0.6	1.0	0.9	1.0	0.3	2.4
Pb	2.2	2.5	2.2	2.1	4.9	3.9
Th						
U						

Table C3: Continued

Sample Analysis #	E3RANDLE_2 12	E3RANDLE_2 15	E3RANDLE_2 16	E3RANDLE_2 17	E3RANDLE_2 18	E3RANDLE_2 21
Trace element concentrations (µg/g)						
Li						
Si	294676	275784	298239	276737	295587	262894
Ca	35251	60897	29987	59694	33919	76200
Ti	266	115	125	55	65	196
V	6.5		1.3			1.4
Rb	3.3		3.6		2.7	
Sr	610	933	765	874	517	912
Sr	614	934	765	872	524	915
Y	0.8				0.4	
Zr	1.5		0.5		1.6	
Nb	0.5					
Cs						
Ba	532	85	474	162	624	161
La	11.8	2.3	8.5	7.5	10.8	3.7
Ce	12.4	3.9	11.2	10.1	12.6	5.6
Pr	1.3	0.3	1.0	0.8	0.9	0.5
Nd	3.7	1.3	2.4	2.1	3.2	2.1
Sm	0.6					
Eu	1.3	0.6	0.9	1.2	1.7	1.5
Pb	5.3	1.8	3.0	3.5	6.8	1.4
Th					0.5	
U						

Table C3: Continued

Sample Analysis #	E3RANDLE_2 22	E3RANDLE_2 25	E3RANDLE_2 28	A20_10_11 1	A20_10_11 3	A20_10_11 4
Trace element concentrations (µg/g)						
Li			40.3	13.0	17.0	17.7
Si	234023	277161	280795	261844	260584	282770
Ca	104019	59156	54467	77368	78754	51860
Ti	138	139	159	269	125	40
V	4.1	0.5	4.7	2.1	0.4	
Rb		1.3	1.6	1.1		
Sr	454	880	953	1216	964	897
Sr	462	899	969	1235	977	911
Y			0.8	0.7	0.3	
Zr			2.0	3.6	0.5	
Nb			0.2	0.2		
Cs						
Ba	13	269	164	109	72	145
La	1.0	8.5	4.7	3.4	2.0	5.1
Ce	0.8	10.6	6.6	4.2	3.3	7.0
Pr		0.9	0.7	0.5	0.3	0.6
Nd	0.5	2.6	2.9	1.6	1.1	2.2
Sm			0.5			
Eu		1.5	1.6	0.9	0.7	1.3
Pb	0.3	3.3	26.3	2.4	1.7	5.0
Th				0.1		
U						

Table C3: Continued

Sample Analysis #	A20_10_11_6	A20_10_11_7	A20_10_11_8	A20_10_11_9	A20_10_11_10	A20_10_11_11	A20_10_11_15
Trace element concentrations (µg/g)							
Li	11.7	14.1	23.2	12.0	15.3	17.4	19.1
Si	267335	267671	277796	258759	270381	278162	262078
Ca	71129	70736	58347	80732	67527	57879	77109
Ti	260	134	182	114	145	104	106
V	0.5						
Rb							
Sr	990	1063	1051	1083	1010	953	1055
Sr	1002	1087	1065	1087	1015	962	1078
Y		0.2	0.8				0.2
Zr							
Nb							
Cs							
Ba	114	97	175	43	97	126	65
La	2.7	3.4	6.4	1.2	3.1	4.2	2.0
Ce	4.2	4.4	10.1	2.4	4.4	5.8	3.6
Pr	0.4	0.5	1.1	0.2	0.5	0.5	0.4
Nd	1.5	1.3	3.6	0.7	1.4	1.6	1.2
Sm			0.5				
Eu	1.1	0.9	1.2	0.3	0.9	1.2	0.7
Pb	1.6	1.9	4.8	1.1	1.9	2.8	1.8
Th							
U							

Table C3: Continued

Sample Analysis #	A20_10_11_16	A20_10_11_18	A20_10_11_19	A20_10_11_20	A20_10_11_25	A20_10_11_31	A20_10_11_34
Trace element concentrations (µg/g)							
Li	12.9	17.3	8.3			16.9	22.4
Si	272434	272943	248867	260870	279528	276710	274532
Ca	65046	64423	90831	78441	56118	59729	62461
Ti	116	127	168	143	114	122	143
V		0.3	0.8	0.7		0.5	
Rb			0.9				
Sr	1045	959	1128	1169	1013	895	968
Sr	1067	977	1148	1187	1027	910	983
Y		0.2	0.4			0.3	
Zr			2.6	0.2		0.5	
Nb			0.1				
Cs							
Ba	108	104	44	53	180	133	115
La	3.3	3.3	1.7	2.0	4.6	4.0	3.5
Ce	4.5	4.4	2.7	2.9	6.3	5.4	5.3
Pr	0.5	0.5	0.2	0.4	0.7	0.6	0.5
Nd	1.5	1.4	1.0	1.1	2.0	1.7	1.3
Sm	0.2		0.4				
Eu	1.0	0.9	0.5	0.6	1.3	1.2	0.9
Pb	2.0	2.0	1.2	4.3	2.7	2.4	2.2
Th							
U							

Table C3: Continued

Sample Analysis #	A20_10_11_37	A20_10_11_40	A20_10_11_41	A20_10_11_43	A20_10_11_44	A20_10_16_1-1
Trace element concentrations (µg/g)						
Li	16.8	14.5	17.5	11.6	15.8	8.9
Si	265652	269845	272905	275442	264517	
Ca	73075	68168	64469	61325	74371	
Ti	128	122	116	149	124	
V	0.3			0.3	0.3	1.0
Rb	0.9		0.8	1.3		
Sr	1088	911	972	952	1130	
Sr	1101	927	989	964	1145	801
Y	0.2			0.2	0.2	0.4
Zr	2.0			1.1	0.5	
Nb	0.1			0.1		
Cs						
Ba	92	97	112	122	106	115
La	3.3	2.7	3.3	3.6	3.6	2.3
Ce	4.9	3.8	4.8	5.2	4.7	3.8
Pr	0.5	0.4	0.5	0.6	0.5	0.4
Nd	1.2	1.3	1.8	1.5	1.8	1.3
Sm				0.3	0.3	
Eu	1.0	1.1	1.0	1.0	1.0	
Pb	2.3	2.3	3.4	2.8	2.0	2.3
Th						
U						

Table C3: Continued

Sample Analysis #	A20_10_16 1-2	A20_10_16 1-3	A20_10_16 1-4	A20_10_16 1-5	A20_10_16 1-6	A20_10_16 1-7	A20_10_16 2-2
Trace element concentrations (µg/g)							
Li	12.5	9.5	8.0	9.6	11.9	11.0	9.9
Si							
Ca							
Ti							
V	0.5	0.7		1.7		1.5	0.6
Rb							
Sr							
Sr	875	868		934	1063	1011	1176
Y	0.3						
Zr					0.8		0.7
Nb							
Cs							
Ba	92	105		107	118	123	47
La	2.1	2.1	2.7	2.3	2.7	2.4	1.9
Ce	4.3	3.8	4.2	3.9	4.9	3.5	3.5
Pr	0.3	0.3	0.3	0.4	0.5	0.3	0.3
Nd	1.5			1.5	1.4		
Sm							
Eu							
Pb	1.8	1.6	2.1	1.2	2.4	1.0	1.0
Th							
U							

Table C3: Continued

Sample Analysis #	A20_10_16 4-1	A20_10_16 4-2	A20_10_16 4-3	A20_10_16 1	A20_10_16 2	A20_10_16 4	A20_10_16 5
Trace element concentrations (µg/g)							
Li	18.8	17.0	11.4	21.7	20.0	17.9	41.6
Si				273494	288048	286373	278054
Ca				63745	44684	46993	58018
Ti				107	105	98	127
V		26.9	1.7		0.6	1.3	0.4
Rb				1.4	1.2		
Sr				842	579	679	825
Sr	1165	890	973	868	594	695	851
Y							
Zr		1.4					
Nb							
Cs							
Ba	118	109	111	64	125	114	101
La	2.9	2.6	2.5	1.9	3.1	2.9	2.3
Ce	5.5	5.7	4.6	3.6	5.7	4.8	4.0
Pr	0.4	0.5	0.4	0.3	0.5	0.4	0.3
Nd				1.1	1.3	1.4	1.1
Sm							
Eu				0.5	0.8	0.8	0.7
Pb	3.0	2.7	1.2	2.2	3.5	3.1	2.3
Th							
U							

Table C3: Continued

Sample Analysis #	A20_10_16_6	A20_10_16_7	A20_10_16_8	A20_10_16_9	A20_10_16_10	A20_10_16_11	A20_10_16_12
Trace element concentrations (µg/g)							
Li	20.3	24.8	29.1	9.2	21.1	19.2	13.6
Si	263279	282267	271083	286429	274499	286499	280853
Ca	75769	52527	66684	46917	62503	46820	54391
Ti	115	247	137	38	174	39	74
V		1.0			2.5		
Rb	1.2		2.7	1.3	1.2	0.9	
Sr	925	676	823	792	705	806	780
Sr	955	685	846	816	726	827	804
Y					0.3		
Zr			1.0				
Nb							
Cs							
Ba	35	107	47	112	70	132	86
La	1.0	2.0	1.3	3.7	1.6	3.8	3.1
Ce	1.9	3.6	2.6	6.3	3.2	6.1	5.9
Pr	0.2	0.3	0.3	0.6	0.3	0.5	0.5
Nd	0.6	0.9	0.8	1.2	1.0	1.6	1.3
Sm		0.2					
Eu	0.3	0.7	0.4	1.0	0.6	1.0	0.6
Pb	1.2	2.5	2.2	3.2	2.6	4.6	3.3
Th							
U							

Table C3: Continued

Sample Analysis #	A21_10_20_8	A21_10_20_9	A21_10_20_10	A21_10_20_11	A21_10_20_12	A21_10_20_13	A21_10_20_17
Trace element concentrations (µg/g)							
Li	16.2	17.2	9.6	14.5	9.5	11.5	17.2
Si	259910	274754	270016	263166	272328	263093	244149
Ca	79489	62185	67965	75896	65174	75978	95279
Ti	141	84	274	121	101	115	150
V			0.6			0.3	1.3
Rb							
Sr	1296	1024	905	1100	948	1014	1232
Sr	1304	1041	914	1116	953	1032	1264
Y	0.2		0.2		0.3		0.2
Zr	0.3				3.7		1.5
Nb							0.1
Cs							
Ba	73	118	101	56	83	68	57
La	2.8	3.0	2.4	1.5	3.2	2.1	2.0
Ce	4.0	5.0	4.0	2.6	5.3	3.5	3.4
Pr	0.4	0.5	0.3	0.2	0.5	0.2	0.4
Nd	1.4	1.2	1.1	0.8	1.5	0.8	1.3
Sm							
Eu	0.9	1.4	0.7	0.5	0.8	0.6	0.6
Pb	2.6	2.9	1.8	1.5	2.9	3.2	2.7
Th					0.3		
U					0.1		

Table C3: Continued

Sample Analysis #	A21_10_20_19	A21_10_20_21	A04_11_2_1	A04_11_2_3	A04_11_2_4	A04_11_2_7	A04_11_2_8
Trace element concentrations (µg/g)							
Li	21.1	7.6	7.2	6.5	14.6	11.1	11.0
Si	277029	280096	278287	267927	272031	277771	272616
Ca	59324	55380	57718	70437	65536	58379	64823
Ti	78	112	54	86	70	173	132
V				0.4		0.4	
Rb						1.6	
Sr	999	1037	1005	892	1126	857	931
Sr	1001	1041	1035	914	1149	866	958
Y		0.5		0.6	0.3	0.2	
Zr						0.3	
Nb							
Cs							
Ba	128	187	96	105	67	173	105
La	4.3	4.4	4.4	4.7	2.6	3.8	3.1
Ce	7.3	7.2	6.0	6.5	4.1	5.4	4.4
Pr	0.7	0.7	0.6	0.7	0.5	0.5	0.4
Nd	1.7	2.2	1.9	2.9	1.5	1.6	1.5
Sm				0.3	0.4		
Eu	1.1	1.1	1.0	0.8	0.6	1.1	1.0
Pb	3.1	3.6	2.6	1.7	2.8	2.8	2.2
Th							
U							

Table C3: Continued

Sample Analysis #	A04_11_2_9	A04_11_2_12	A04_11_2_13	A04_11_2_15	A04_11_2_17	A04_11_2_18	A04_11_2_25	A04_11_2_26
Trace element concentrations (µg/g)								
Li	17.0	15.8	7.6	9.5	17.3	14.2	13.9	31.5
Si	283745	270845	274216	254490	268319	270901	272280	263553
Ca	50555	66970	62853	85220	69977	66903	65232	75461
Ti	27	113	135	130	139	220	133	155
V			0.3		0.5	0.8	0.2	0.2
Rb						2.0		
Sr	963	1059	912	1195	1056	907	993	1067
Sr	981	1086	926	1228	1081	925	1010	1097
Y	0.1	0.2		0.2		1.0		0.2
Zr					0.6	6.8		
Nb					0.1	0.2		
Cs								
Ba	92	126	96	53	110	121	108	95
La	4.3	4.5	2.6	2.0	3.1	3.5	2.7	3.1
Ce	6.1	5.6	4.2	2.9	4.1	5.0	4.1	3.8
Pr	0.7	0.7	0.4	0.4	0.4	0.6	0.4	0.4
Nd	2.1	2.0	1.0	1.3	1.3	2.1	1.1	1.5
Sm								
Eu	0.8	1.0	0.8	0.7	0.9	0.7	0.8	1.0
Pb	5.9	3.1	2.2	2.2	2.2	3.2	2.5	1.8
Th						0.2		
U						0.0		

Table C3: Continued

Sample	A04_11_2	MR_11_4	MR_11_4	MR_11_4	MR_11_4	MR_11_4	MR_11_4	MR_11_4	MR_11_4
Analysis #	40	1	2	3	5	6	10		
Trace element concentrations (µg/g)									
Li	7.7	27.3	14.3	19.8	23.4	17.3			
Si	286006	275732	273512	265420	273282	271316	263656		
Ca	47496	60963	63724	73342	64007	66403	75345		
Ti	41	103	100	141	116	184	101		
V						1.3			
Rb						0.9			
Sr	927	1032	1170	1034	1084	997	995		
Sr	934	1052	1184	1069	1104	1019	1010		
Y	0.2	0.2				1.2			
Zr						0.9			
Nb									
Cs									
Ba	157	100	85	65	109	129	85		
La	5.8	3.6	4.1	2.3	4.0	5.9	2.9		
Ce	7.9	5.6	5.9	3.0	5.6	9.2	5.1		
Pr	0.9	0.6	0.5	0.3	0.5	1.0	0.5		
Nd	2.3	1.9	1.8	0.9	1.7	3.4	1.2		
Sm					0.3				
Eu	1.5	0.8	0.8	0.7	0.9	1.1	0.8		
Pb	4.3	2.7	2.9	1.6	2.7	2.6	2.5		
Th									
U						0.5			

Table C3: Continued

Sample Analysis #	MR_11_4_24	MR_11_4_26	MR_11_4_31	MR_11_4_32	MR_11_4_36	JP_1_14A_1	JP_1_14A_9
Trace element concentrations (µg/g)							
Li	10.3	27.6	18.1	23.3	17.4	8.6	
Si	255570	285578	271505	278304	270741	266884	286440
Ca	84102	48080	66174	57697	67096	67470	44163
Ti	141	116	88	123	158	85	110
V		0.4		0.5	0.4		
Rb		1.8		1.2	1.2		
Sr	1174	830	1148	919	1049	1070	577
Sr	1214	847	1174	928	1081	1113	592
Y		0.2		0.3	0.3		0.2
Zr		0.6			0.3		0.3
Nb							
Cs							
Ba	46	192	109	132	122	70	235
La	1.5	5.4	4.1	4.5	3.3	2.1	4.7
Ce	2.5	7.6	6.1	6.8	5.2	3.6	7.7
Pr	0.3	0.6	0.6	0.6	0.5	0.4	0.6
Nd	1.2	2.1	1.7	2.3	1.7	1.2	1.7
Sm							
Eu	0.4	1.2	0.9	1.3	0.9	0.5	1.2
Pb	1.0	3.6	2.4	3.7	2.2	2.2	4.6
Th							
U							

Table C3: Continued

Sample Analysis #	JP_1_14A_10	JP_1_14A_29	JP_1_14A_36	JP_1_14A_40	JP_1_14A_45	JP_1_14A_46	JP_1_14A_47
Trace element concentrations (µg/g)							
Li	15.1	8.8	14.3			11.8	14.1
Si	288894	266220	280780	264563	278205	275073	271699
Ca	40966	68194	51306	69980	54448	58181	62090
Ti	245	122	46	104	154	64	149
V	0.4				0.7		
Rb	13.5				2.8		
Sr	602	1001	905	1023	828	979	892
Sr	615	1042	923	1068	856	1011	915
Y	0.9				0.3	0.2	0.2
Zr	14.3				0.6		
Nb	0.7						
Cs							
Ba	188	55	123	53	136	80	126
La	5.7	1.5	4.4	1.6	3.4	3.1	2.9
Ce	9.5	2.5	7.0	2.6	5.8	5.4	4.5
Pr	0.8	0.3	0.6	0.2	0.5	0.5	0.4
Nd	2.7	0.6	1.5	0.8	1.7	1.4	1.5
Sm	0.3						
Eu	1.0	0.3	0.9	0.4	1.0	0.8	0.8
Pb	5.6	1.5	5.0	1.7	3.1	3.4	2.5
Th	0.4						
U	0.2						

