

Table B3: Continued.

Label	Plug/Spinel	Major element oxides (wt%)											Total
		SiO ₂	TiO ₂	Al ₂ O ₃	Cr ₂ O ₃	FeO*	NiO	MnO	MgO	CaO	ZnO	V ₂ O ₃	
QV03-1	4-048-35-1	0.13	0.57	8.01	46.46	30.72	0.41	-0.42	12.27	0.00	0.14	0.04	98.75
QV03-1	4-048-35-2	0.13	0.57	7.81	38.80	38.49	0.51	-0.27	11.50	-0.01	0.10	0.02	97.93
QV03-1	4-048-36-1	0.11	0.79	8.78	37.09	38.73	0.46	-0.25	11.61	-0.01	0.10	0.10	97.78
QV03-1	4-048-37-1	0.89	0.55	2.29	27.82	51.51	0.59	-0.08	11.23	0.01	0.12	0.02	95.05
QV03-1	4-048-37-2	0.10	0.56	2.20	35.04	46.43	0.53	-0.23	11.67	0.00	0.21	0.01	96.77
QV03-1	4-048-38-1	0.10	0.73	9.14	39.38	35.32	0.34	-0.29	12.64	0.01	0.14	0.02	97.83
QV03-1	4-048-38-2	0.11	0.75	7.22	30.76	45.34	0.51	-0.22	10.87	0.00	0.13	0.01	95.72
QV03-1	04-048-19-2(i)	0.19	2.60	6.19	0.36	74.39	0.56	0.14	8.90	0.01	0.14	0.03	93.51
QV03-1	04-044-2magt(i)	0.25	3.53	7.74	0.29	73.52	0.85	0.13	8.21	0.08	0.00	0.03	94.64
QV03-1	04-044-4magt(i)	0.16	1.94	3.77	1.48	78.16	0.56	0.11	7.41	0.01	0.05	0.05	93.71
QV03-1	04-045-10Cr2(i)	0.21	0.86	6.27	42.86	33.69	0.49	-0.26	12.37	0.06	0.28	-0.02	97.09
QV03-1	04-045-10Cr3(i)	0.17	0.84	6.17	40.07	36.06	0.48	-0.26	12.84	0.05	0.05	0.02	96.74
QV03-1	04-045-10-3magt(i)	0.43	4.18	9.42	2.53	66.77	0.92	0.09	9.32	0.11	0.12	0.05	93.93
QV03-1	04-045-11magt(i)	0.16	2.09	3.63	3.10	76.60	0.93	0.08	6.54	0.03	0.11	0.04	93.32
QV03-1	04-047-19magt(i)	0.16	1.57	5.37	7.03	69.40	0.84	0.02	8.86	0.04	-0.11	0.02	93.30
QV03-1	4-048-38magtinclu3(i)	0.19	2.89	4.25	0.18	75.84	0.61	0.40	7.77	0.15	0.14	0.05	92.47
QV03-1	4-048-28magtinclu(i)	0.16	1.95	4.08	0.26	76.60	0.67	0.11	7.48	0.04	-0.08	0.09	91.44
QV03-1	4-048-29magtinclu(i)	0.18	2.67	2.59	0.27	77.40	1.02	0.40	7.62	0.01	0.12	0.06	92.34
QV03-1	4-048-31magtinclu1(i)	0.17	2.15	3.71	0.89	77.57	0.94	0.13	6.87	0.00	0.01	0.05	92.48
QV03-1	04-048-15.1magtinclu(i)	0.17	2.51	2.99	1.64	75.60	0.45	0.25	7.88	0.03	0.10	0.04	91.67
QV03-1	04-048-18.2magtinclu(i)	0.21	1.84	4.70	0.90	76.51	0.93	0.14	7.98	0.06	-0.14	-0.01	93.29
QV03-1	4-048-30magtext(gm)	0.12	2.30	7.15	16.29	57.26	0.44	0.24	11.06	0.06	0.14	0.02	95.09

Table B4: Mt. St. Helens glass major element compositions measured by electron microprobe.

Sample	Analysis #	Major element oxides (wt%)											Total	
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₂		Cl
MSH04E1DZ_1	16	73.08	0.42	15.72	2.72	0.05	0.55	2.33	4.38	1.74	0.10	0.01	0.11	101.21
MSH04E1DZ_1	17	70.89	0.34	14.58	2.07	0.03	0.51	2.00	3.44	2.01	0.09	0.02	0.09	96.07
MSH04E2A03_A1	1	74.80	0.41	14.99	1.82	0.03	0.18	1.90	3.99	2.70	0.07	0.00	0.07	100.96
MSH04E2A03_A1	2	73.30	0.47	14.72	1.19	0.05	0.22	1.40	4.37	2.75	0.09	0.01	0.14	98.71
MSH04E2A03_A1	3	75.73	0.40	13.63	1.80	0.07	0.30	1.33	3.77	2.55	0.06	0.00	0.09	99.73
MSH04E2A03_A1	4	69.19	0.27	19.05	1.59	0.02	0.49	3.80	4.35	2.92	0.06	0.00	0.06	101.80
MSH04E2A03_A1	6	75.28	0.42	14.26	2.35	0.06	0.38	1.51	4.59	2.80	0.09	0.00	0.10	101.84
MSH04E2A03_A1	7	74.00	0.27	15.91	0.89	0.00	0.06	2.09	4.28	2.83	0.07	0.00	0.04	100.44
MSH04E2A03_A1	10	72.68	0.42	15.09	3.13	0.12	1.39	2.34	4.28	2.19	0.07	0.00	0.08	101.79
MSH04E2A03_A1	11	72.91	0.39	15.50	2.36	0.04	0.58	2.19	4.12	3.15	0.09	0.00	0.10	101.43
MSH04E2A03_A1	13	73.52	0.39	15.19	2.28	0.05	0.46	1.92	4.73	3.04	0.10	0.00	0.09	101.77
MSH04E2A03_A1	14	74.64	0.44	13.96	2.18	0.07	0.40	1.43	3.90	4.14	0.08	0.01	0.11	101.36
MSH04E2A03_A1	16	68.31	0.52	16.70	4.11	0.08	0.60	3.21	4.69	2.23	0.10	0.01	0.01	100.57
MSH04E3RANDLE_2	1	75.56	0.16	14.78	1.29	0.07	0.37	1.62	3.91	2.04	0.06	0.02	0.11	99.99
MSH04E3RANDLE_2	4	68.55	0.34	15.12	2.75	0.09	0.84	2.61	3.67	1.84	0.17	0.03	0.16	96.17
MSH04E3RANDLE_2	5	71.62	0.41	14.77	1.84	0.06	0.46	1.42	4.85	2.74	0.06	0.02	0.18	98.43
MSH04E3RANDLE_2	6	60.90	1.71	15.42	8.06	0.18	2.17	4.46	3.40	1.96	0.40	0.03	0.06	98.75
MSH04E3RANDLE_2	8	76.82	0.24	14.28	1.50	0.03	0.35	1.51	3.99	2.44	0.04	0.00	0.10	101.30
MSH04A20_10_11	2	71.22	0.43	15.78	2.48	0.04	0.75	2.44	3.87	2.83	0.13	0.00	0.11	100.08
MSH04A20_10_11	3	71.11	0.43	15.93	2.63	0.02	0.69	2.51	4.49	2.82	0.14	0.00	0.15	100.92
MSH04A20_10_11	5	73.33	0.43	15.44	2.16	0.03	0.53	2.05	3.84	2.36	0.09	0.00	0.09	100.35
MSH04A20_10_11	8	73.26	0.40	14.70	2.12	0.05	0.44	2.06	3.08	4.50	0.25	0.00	0.11	100.97
MSH04A20_10_11	11	72.32	0.26	15.02	1.21	0.04	0.09	1.66	4.77	2.28	0.08	0.01	0.12	97.86
MSH04A20_10_11	13	73.85	0.28	15.16	1.93	0.05	0.51	1.90	4.54	1.84	0.07	0.00	0.08	100.21
MSH04A20_10_11	14	73.69	0.37	15.47	1.57	0.04	0.26	2.10	4.56	2.33	0.10	0.01	0.08	100.58
MSH04A09_10_12	2	78.05	0.30	13.64	0.79	0.02	0.27	1.49	5.44	1.46	0.03	0.00	0.01	101.50
MSH04A09_10_12	4	77.11	0.35	13.50	1.78	0.05	0.31	1.19	3.86	2.67	0.03	0.01	0.08	100.94
MSH04A09_10_12	5	74.65	0.24	15.63	1.08	0.04	0.18	1.82	5.39	2.11	0.06	0.01	0.03	101.24
MSH04A09_10_12	6	77.24	0.36	12.35	1.52	0.03	0.26	0.87	4.34	2.19	0.05	0.00	0.07	99.28
MSH04A09_10_12	10	74.27	0.54	13.74	1.79	0.03	0.54	1.21	3.39	4.88	0.07	0.00	0.02	100.48
MSH04A09_10_12	11	76.68	0.35	13.48	1.07	0.03	0.30	1.38	3.40	5.09	0.05	0.00	0.02	101.85
MSH04A09_10_12	12	75.27	0.38	13.50	2.24	0.06	1.51	1.35	3.13	4.42	0.22	0.00	0.01	102.09
MSH04A09_10_12	14	75.12	0.44	14.36	2.21	0.05	0.31	1.66	3.19	4.27	0.10	0.00	0.08	101.79

Table B4: Continued

Sample	Analysis #	Major element oxides (wt%)											Total	
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₂		Cl
MSH04A20_10_16	2	76.81	0.24	13.79	1.42	0.02	0.16	0.52	2.92	4.52	0.04	0.00	0.09	100.53
MSH04A20_10_16	4	77.63	0.34	12.64	0.97	0.00	0.05	0.57	3.15	4.21	0.03	0.00	0.02	99.61
MSH04A20_10_16	5	72.91	0.35	14.83	2.10	0.08	0.59	1.82	3.83	2.79	0.07	0.00	0.10	99.47
MSH04A20_10_16	8	73.17	0.39	15.07	2.92	0.07	0.59	2.10	3.18	2.19	0.11	0.00	0.10	99.89
MSH04A20_10_16	10	74.50	0.42	14.13	1.91	0.01	0.38	1.55	3.67	2.98	0.07	0.02	0.10	99.74
MSH04A21_10_20	4	75.55	0.69	13.06	3.36	0.10	0.93	1.19	2.56	3.32	0.20	0.00	0.15	101.11
MSH04A21_10_20	11	72.45	1.27	13.13	4.78	0.08	0.61	0.57	5.52	4.71	0.25	0.02	0.23	103.62
MSH04A21_10_20	14	74.75	0.34	14.24	0.53	0.00	0.02	1.24	3.97	3.41	0.07	0.01	0.01	98.59
MSH04A21_10_20	15	77.94	0.29	13.49	0.96	0.08	0.11	1.34	3.89	2.97	0.09	0.00	0.02	101.18
MSH04A04_11_2	3	75.33	0.44	14.21	2.20	0.02	0.61	1.56	4.28	2.81	0.11	0.00	0.09	101.66
MSH04A04_11_2	4	75.77	0.42	14.27	1.97	0.05	0.40	1.56	3.73	2.73	0.08	0.01	0.10	101.09
MSH04A04_11_2	7	77.63	0.32	14.23	1.12	0.03	0.24	1.18	5.79	2.09	0.09	0.00	0.02	102.74
MSH04A04_11_2	8	76.78	0.30	14.56	0.99	0.02	0.22	1.31	4.39	3.68	0.07	0.00	0.03	102.35
MSH04A04_11_2	9	73.96	0.34	16.22	1.83	0.07	0.33	2.36	4.77	2.73	0.08	0.00	0.08	102.77
MSH04A04_11_2	10	74.02	0.39	15.37	2.25	0.03	0.59	2.09	4.24	2.07	0.08	0.00	0.09	101.22
MSH04A04_11_2	15	74.06	0.39	15.78	1.77	0.05	0.35	1.95	3.41	3.88	0.11	0.00	0.10	101.85
MSH04A04_11_2	16	71.52	0.22	18.38	0.97	0.00	0.06	2.70	4.26	3.28	0.06	0.00	0.00	101.45
MSH04A04_11_2	19	75.96	0.35	11.88	3.42	0.09	1.68	1.07	3.06	2.60	0.08	0.01	0.09	100.29
MSH04MR_11_4	1	73.38	0.35	15.58	2.24	0.08	0.59	2.11	4.60	2.03	0.10	0.00	0.09	101.15
MSH04MR_11_4	2	79.62	0.17	13.27	0.40	0.00	0.03	1.04	4.97	2.96	0.02	0.02	0.01	102.51
MSH04MR_11_4	3	77.22	0.18	14.02	0.35	0.01	0.13	1.31	4.42	1.98	0.06	0.01	0.00	99.69
MSH04MR_11_4	6	75.23	0.46	14.19	2.21	0.05	0.35	1.67	4.16	3.36	0.09	0.00	0.09	101.86
MSH04MR_11_4	9	73.19	0.41	15.44	2.28	0.03	0.59	2.14	4.35	2.55	0.09	0.00	0.10	101.17
MSH04MR_11_4	10	72.63	0.36	15.68	2.42	0.05	0.67	2.24	4.64	2.00	0.09	0.01	0.10	100.89
MSH04MR_11_4	11	74.08	0.41	12.99	3.91	0.11	2.16	1.54	3.44	3.30	0.06	0.00	0.09	102.09
MSH04MR_11_4	13	76.69	0.39	13.98	1.57	0.03	0.27	1.30	4.46	2.82	0.05	0.01	0.01	101.58
MSH04MR_11_4	14	78.38	0.28	13.03	0.91	0.00	0.10	0.76	3.20	4.22	0.03	0.00	0.02	100.93
MSH04MR_11_4	16	74.06	0.42	15.40	2.20	0.05	0.56	2.10	4.21	2.79	0.08	0.00	0.09	101.96
MSH04MR_11_4	18	79.33	0.22	13.65	0.48	0.00	0.08	1.21	4.45	1.93	0.06	0.01	0.01	101.43
MSH04MR_11_4	19	76.53	0.42	14.49	2.12	0.05	0.32	1.55	4.29	2.28	0.09	0.01	0.09	102.24
MSH05JP_1_14A	1	75.49	0.22	14.00	0.47	0.00	0.10	1.00	4.47	4.12	0.05	0.01	0.05	99.98
MSH05JP_1_14A	2	76.06	0.23	12.60	1.32	0.00	0.00	0.33	5.49	3.19	0.18	0.01	0.05	99.46
MSH05JP_1_14A	3	73.83	0.18	15.34	0.63	0.02	0.04	1.70	4.45	4.49	0.03	0.01	0.01	100.73
MSH05JP_1_14A	6	76.01	0.22	13.78	0.53	0.00	0.09	1.22	2.77	5.33	0.23	0.01	0.03	100.22
MSH05JP_1_14A	7	67.12	1.69	13.97	5.64	0.10	1.19	2.27	1.91	5.15	0.52	0.00	0.03	99.59

Table B4: Continued

Sample	Analysis #	Major element oxides (wt%)														Total
		SiO ₂	TiO ₂	Al ₂ O ₃	FeO	MnO	MgO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅	SO ₂	Cl	0.03		
MSH05JP_1_14A	9	78.38	0.16	12.69	0.64	0.01	0.03	1.29	1.62	5.01	0.04	0.00	0.00	0.03	99.90	
MSH05WS_1_19	GM1-1	73.50	0.39	15.33	2.31	0.05	0.58	2.15	4.07	2.17	0.10	0.00	0.00	0.08	100.73	
MSH05JV_1_19	G1	73.35	0.38	15.44	2.69	0.07	0.35	2.01	4.87	2.26	0.10	0.02	0.02	0.12	101.66	
MSH05JV_1_19	G3	74.96	0.52	13.84	2.09	0.04	0.27	1.31	3.83	4.43	0.06	0.01	0.01	0.14	101.50	
MSH05JV_1_19	G4	74.14	0.26	16.05	1.44	0.05	0.07	1.50	5.54	3.03	0.09	0.00	0.00	0.02	102.19	
MSH05JV_1_19	G8	71.17	0.09	16.05	0.42	0.01	0.03	1.68	4.55	2.28	0.05	0.02	0.02	0.03	96.38	
MSH05DRS_3_9_4	1	74.33	0.42	15.33	1.84	0.07	0.33	2.35	4.38	2.17	0.07	0.00	0.00	0.08	101.37	
MSH05DRS_3_9_4	4	52.91	2.77	17.44	10.26	0.14	4.70	5.22	5.29	2.23	0.61	0.05	0.09	0.09	101.71	
MSH05DRS_3_9_4	5	53.85	2.47	15.80	10.18	0.18	4.58	8.05	3.88	1.28	0.50	0.02	0.06	0.06	100.84	
MSH05DRS_3_9_4	7	74.02	0.36	15.46	2.47	0.07	0.54	2.38	4.46	2.09	0.10	0.01	0.01	0.08	102.03	
MSH05DRS_3_9_4	8	74.38	0.40	15.32	2.36	0.02	0.55	2.25	4.37	1.94	0.06	0.00	0.00	0.09	101.74	
MSH05DRS_3_9_4	9	77.32	0.30	13.75	1.38	0.05	0.14	1.45	4.37	2.41	0.03	0.00	0.00	0.07	101.28	
MSH05DRS_3_9_4	10	71.04	0.37	15.59	2.44	0.02	0.52	2.60	4.66	1.92	0.11	0.00	0.00	0.09	99.34	

Table B5: Mt. St. Helens feldspar major element compositions measured by electron microprobe.

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	
MSH04E1DZ_1	1	57.14		27.69	0.43	0.17	9.11	6.13	0.42	0.10	101.19	
MSH04E1DZ_1	2	55.44		27.82	0.75	0.05	10.26	4.75	0.25	0.09	99.41	
MSH04E1DZ_1	3	54.27		29.40	0.51	0.00	11.22	4.71	0.10	0.00	100.21	
MSH04E1DZ_1	5	57.35		27.14	0.22	0.10	8.69	6.04	0.24	0.00	99.78	
MSH04E1DZ_1	6	57.02		27.50	0.43	0.00	8.96	5.77	0.39	0.07	100.14	
MSH04E1DZ_1	7	48.85		32.70	0.52	0.06	15.42	2.84	0.08	0.03	100.50	
MSH04E1DZ_1	8	54.08		29.20	0.54	0.07	11.13	4.83	0.18	0.00	100.03	
MSH04E1DZ_1	9	54.58		28.74	0.79	0.00	10.99	5.44	0.20	0.00	100.74	
MSH04E1DZ_1	10	61.78		25.11	0.03	0.00	5.83	7.19	0.33	0.00	100.27	
MSH04E1DZ_1	11	54.91		28.02	0.79	0.07	10.07	5.57	0.31	0.00	99.74	
MSH04E1DZ_1	12	55.58		28.53	0.50	0.08	10.10	5.39	0.15	0.00	100.33	
MSH04E1DZ_1	14	54.12		29.17	0.71	0.07	11.28	4.84	0.21	0.00	100.40	
MSH04E1DZ_1	15	56.79		27.48	0.36	0.05	8.93	5.76	0.35	0.00	99.72	
MSH04E1DZ_1	16	56.75		27.49	0.58	0.00	8.88	6.17	0.43	0.00	100.30	
MSH04E1DZ_1	17	56.65		27.09	0.77	0.15	9.08	5.84	0.39	0.03	100.00	
MSH04E1DZ_1	18	55.22		28.37	0.43	0.08	10.23	5.72	0.13	0.00	100.18	
MSH04E1DZ_1	19	55.39		28.14	0.74	0.07	10.26	5.38	0.21	0.00	100.19	
MSH04E1DZ_1	20	56.20		27.69	0.38	0.01	9.43	5.05	0.19	0.01	98.96	
MSH04E1DZ_1	21	57.86		26.56	0.56	0.00	7.90	6.79	0.57	0.07	100.31	
MSH04E1DZ_1	22	53.49		29.47	0.67	0.00	11.39	4.53	0.16	0.00	99.71	
MSH04E1DZ_1	24	55.69		28.76	0.32	0.02	10.37	5.09	0.14	0.00	100.39	
MSH04E1DZ_1	26	54.29		29.68	0.43	0.00	11.20	4.71	0.16	0.03	100.50	
MSH04E1DZ_1	27	55.68		28.79	0.33	0.00	10.29	5.60	0.15	0.00	100.84	
MSH04E1DZ_1	28	59.44		25.32	1.44	0.00	7.66	5.85	0.50	0.04	100.25	
MSH04E1DZ_1	29	56.26		28.26	0.40	0.07	9.87	5.50	0.14	0.07	100.57	
MSH04E1DZ_1	30	51.29		31.79	0.54	0.01	13.89	3.63	0.08	0.00	101.23	
MSH04E1DZ_1	31	57.75		27.23	0.27	0.00	8.50	5.93	0.22	0.04	99.94	
MSH04E1DZ_1	32	55.50		28.75	0.44	0.00	10.43	5.42	0.15	0.00	100.69	
MSH04E1DZ_1	33	57.16		27.67	0.29	0.00	9.01	5.74	0.18	0.10	100.15	
MSH04E1DZ_1	34	60.15		26.33	0.31	0.03	6.98	6.61	0.44	0.10	100.95	
MSH04E1DZ_1	35	55.27		28.52	0.57	0.00	10.36	5.12	0.24	0.05	100.13	
MSH04E1DZ_1	36	57.71		27.50	0.29	0.00	8.69	6.73	0.22	0.00	101.14	
MSH04E1DZ_1	37	58.60		26.56	0.29	0.00	8.15	6.74	0.23	0.08	100.65	
MSH04E1DZ_1	38	58.41		27.00	0.42	0.02	8.22	6.36	0.22	0.00	100.65	

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			
MSH04E1DZ_1	39	56.14		28.31	0.27	0.00	9.92	4.94	0.32	0.00	99.90		
MSH04E1DZ_1	40	54.10		29.36	0.68	0.05	11.60	4.27	0.19	0.07	100.32		
MSH04E1DZ_1	41	55.88		28.04	0.76	0.02	10.22	5.24	0.23	0.00	100.39		
MSH04E1DZ_1	42	53.95		29.14	1.17	0.14	11.27	4.64	0.19	0.00	100.50		
MSH04E1DZ_1	43	54.89		29.28	0.31	0.00	10.89	5.10	0.14	0.00	100.61		
MSH04E1DZ_1	45	52.76		30.71	0.46	0.00	12.52	4.19	0.08	0.01	100.73		
MSH04E1DZ_1	46	56.70		28.14	0.51	0.00	9.50	5.72	0.24	0.01	100.82		
MSH04E1DZ_1	47	56.89		27.64	0.30	0.00	9.35	5.21	0.35	0.03	99.77		
MSH04E1DZ_1	48	56.08		28.06	0.58	0.09	10.11	5.35	0.19	0.04	100.50		
MSH04E1DZ_1	49	52.22		30.84	0.60	0.14	13.09	4.27	0.15	0.00	101.31		
MSH04E1DZ_1	50	53.94		30.03	0.38	0.04	11.86	4.64	0.15	0.00	101.04		
MSH04E1DZ_1	51	57.74		27.37	0.27	0.11	8.88	6.17	0.29	0.02	100.85		
MSH04E1DZ_1	52	52.11		30.93	0.47	0.02	12.88	3.74	0.11	0.07	100.33		
MSH04E1DZ_1	53	55.18		28.65	0.71	0.04	10.93	5.17	0.22	0.00	100.90		
MSH04E1DZ_1	54	57.83		27.35	0.33	0.14	8.80	6.29	0.19	0.00	100.93		
MSH04E1DZ_1	56	57.13		27.84	0.40	0.00	9.36	5.90	0.36	0.00	100.99		
MSH04E1DZ_1	57	54.83		28.70	0.64	0.02	11.00	5.18	0.17	0.01	100.55		
MSH04E1DZ_1	58	57.54		27.62	0.23	0.00	9.02	5.55	0.38	0.01	100.35		
MSH04E1DZ_1	59	57.20		27.47	0.33	0.04	9.06	5.49	0.34	0.00	99.93		
MSH04E1DZ_1	60	57.71		27.78	0.15	0.00	9.01	5.86	0.17	0.00	100.68		
MSH04E1DZ_1	1-F1	56.01		28.00	0.35	0.00	10.02	5.51	0.28	0.08	100.25		
MSH04E1DZ_1	1-F2	61.02		26.49	0.22	0.00	7.17	7.35	0.29	0.04	102.58		
MSH04E2A03_A1	1	56.08		28.37	0.44	0.00	10.24	5.35	0.36	0.01	100.85		
MSH04E2A03_A1	2	55.10		29.42	0.30	0.00	11.30	4.84	0.12	0.08	101.16		
MSH04E2A03_A1	3	56.10		28.76	0.46	0.00	10.62	5.23	0.12	0.02	101.31		
MSH04E2A03_A1	4	53.94		29.61	0.51	0.00	11.84	4.40	0.15	0.00	100.45		
MSH04E2A03_A1	5	51.68		30.97	0.54	0.00	13.77	3.59	0.10	0.06	100.71		
MSH04E2A03_A1	6	57.29		27.78	0.35	0.00	9.66	5.86	0.15	0.02	101.11		
MSH04E2A03_A1	7	55.90		28.49	0.43	0.00	10.46	5.37	0.13	0.00	100.78		
MSH04E2A03_A1	8	60.16		26.31	0.34	0.00	7.52	6.85	0.27	0.02	101.47		
MSH04E2A03_A1	9	57.38		27.88	0.29	0.01	9.50	5.76	0.45	0.03	101.30		
MSH04E2A03_A1	10	57.90		27.49	0.28	0.00	9.02	6.17	0.18	0.00	101.04		
MSH04E2A03_A1	11	58.45		27.14	0.26	0.00	8.84	6.18	0.20	0.02	101.09		

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	
MSH04E2A03_A1	12	56.44		28.38	0.32	0.00	10.05	5.47	0.13	0.01	100.80	
MSH04E2A03_A1	13	56.69		27.89	0.35	0.00	9.84	5.71	0.14	0.00	100.62	
MSH04E2A03_A1	14	53.72		29.52	0.61	0.03	12.11	4.31	0.13	0.00	100.43	
MSH04E2A03_A1	16	55.32		28.87	0.32	0.00	11.03	5.11	0.12	0.00	100.77	
MSH04E2A03_A1	17	55.84		28.25	0.47	0.12	10.39	5.43	0.20	0.00	100.70	
MSH04E2A03_A1	18	54.63		29.61	0.30	0.00	11.37	4.84	0.11	0.00	100.86	
MSH04E2A03_A1	19	56.50		28.08	0.36	0.00	9.86	5.64	0.13	0.00	100.57	
MSH04E2A03_A1	20	54.97		28.96	0.34	0.00	11.28	5.05	0.11	0.01	100.72	
MSH04E2A03_A1	21	54.25		29.73	0.35	0.00	11.93	4.70	0.11	0.01	101.08	
MSH04E2A03_A1	22	57.87		26.95	0.27	0.00	8.71	6.04	0.31	0.05	100.20	
MSH04E2A03_A1	23	53.93		29.84	0.49	0.00	11.87	4.65	0.12	0.01	100.91	
MSH04E2A03_A1	24	54.21		29.86	0.31	0.10	11.72	4.64	0.08	0.00	100.92	
MSH04E2A03_A1	25	55.26		28.81	0.34	0.01	10.78	5.15	0.14	0.02	100.51	
MSH04E2A03_A1	26	57.13		27.85	0.34	0.04	9.74	5.72	0.14	0.00	100.96	
MSH04E2A03_A1	27	57.67		27.56	0.38	0.01	9.25	6.03	0.16	0.00	101.06	
MSH04E2A03_A1	28	55.68		28.22	0.60	0.08	10.55	5.13	0.25	0.02	100.53	
MSH04E2A03_A1	29	66.26		20.23	1.10	0.13	5.31	4.64	1.84	0.06	99.57	
MSH04E2A03_A1	30	56.80		28.21	0.41	0.00	9.93	5.57	0.18	0.16	101.26	
MSH04E2A03_A1	31	57.16		27.65	0.57	0.19	9.64	5.69	0.27	0.02	101.19	
MSH04E2A03_A1	32	55.07		29.43	0.42	0.18	11.33	4.89	0.11	0.01	101.44	
MSH04E2A03_A1	33	58.44		27.12	0.30	0.06	8.63	6.29	0.18	0.02	101.04	
MSH04E2A03_A1	34	56.19		28.40	0.38	0.00	10.27	5.57	0.16	0.02	100.99	
MSH04E2A03_A1	35	56.96		28.21	0.42	0.08	9.73	5.77	0.19	0.08	101.44	
MSH04E2A03_A1	36	56.93		27.98	0.47	0.00	9.90	5.60	0.16	0.02	101.06	
MSH04E2A03_A1	37	56.80		28.06	0.35	0.00	9.91	5.62	0.16	0.00	100.90	
MSH04E2A03_A1	38	54.19		29.95	0.34	0.03	12.10	4.65	0.10	0.01	101.37	
MSH04E2A03_A1	39	57.78		27.52	0.45	0.00	9.13	6.24	0.17	0.00	101.29	
MSH04E2A03_A1	40	53.26		30.37	0.39	0.00	12.22	4.38	0.06	0.06	100.74	
MSH04E3RANDLE_2	2	57.93		27.25	0.27	0.00	8.99	5.92	0.24	0.00	100.60	
MSH04E3RANDLE_2	4	46.43		34.70	0.51	0.03	17.79	1.35	0.02	0.01	100.84	
MSH04E3RANDLE_2	5	57.20		27.32	0.55	0.02	9.27	5.92	0.34	0.10	100.72	
MSH04E3RANDLE_2	7	58.00		27.14	0.40	0.07	9.00	6.04	0.29	0.02	100.96	
MSH04E3RANDLE_2	8	53.00		29.83	0.50	0.14	12.89	3.94	0.18	0.03	100.51	

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	
MSH04E3RANDLE_2	9	51.63		30.77	0.92	0.08	13.55	3.49	0.13	0.00	100.57	
MSH04E3RANDLE_2	10	58.18		26.91	0.47	0.09	8.84	5.86	0.41	0.05	100.81	
MSH04E3RANDLE_2	11	60.12		25.28	0.42	0.00	7.15	6.60	0.88	0.07	100.52	
MSH04E3RANDLE_2	12	61.66		24.43	0.37	0.00	5.66	6.48	0.46	0.00	99.06	
MSH04E3RANDLE_2	13	65.28		19.10	0.30	0.00	0.25	1.95	13.36	0.00	100.24	
MSH04E3RANDLE_2	14	65.92		18.98	0.38	0.03	0.23	3.47	11.22	0.04	100.27	
MSH04E3RANDLE_2	15	56.45		28.18	0.41	0.00	10.21	5.39	0.14	0.04	100.82	
MSH04E3RANDLE_2	16	62.17		24.00	0.40	0.00	5.26	6.85	0.80	0.04	99.52	
MSH04E3RANDLE_2	17	57.39		27.76	0.23	0.00	9.21	6.07	0.19	0.03	100.88	
MSH04E3RANDLE_2	18	61.61		24.83	0.36	0.00	6.05	5.87	0.69	0.11	99.52	
MSH04E3RANDLE_2	19	61.50		24.63	0.32	0.00	5.67	7.63	0.60	0.19	100.54	
MSH04E3RANDLE_2	20	54.61		29.27	0.73	0.07	11.95	4.56	0.20	0.02	101.41	
MSH04E3RANDLE_2	21	55.48		28.39	0.51	0.00	10.63	5.15	0.22	0.03	100.41	
MSH04E3RANDLE_2	22	47.38		34.24	0.54	0.00	17.55	1.53	0.02	0.05	101.31	
MSH04E3RANDLE_2	23	53.52		30.46	0.41	0.00	12.52	4.22	0.10	0.01	101.24	
MSH04E3RANDLE_2	24	54.83		28.96	0.82	0.12	11.41	4.75	0.18	0.00	101.07	
MSH04E3RANDLE_2	25	58.02		26.90	0.56	0.00	8.72	6.25	0.36	0.04	100.85	
MSH04E3RANDLE_2	26	49.05		32.93	0.77	0.00	16.13	2.27	0.03	0.00	101.18	
MSH04E3RANDLE_2	28	59.43		26.22	0.17	0.42	7.88	6.52	0.21	0.02	100.87	
MSH04E3RANDLE_2	29	54.99		26.90	0.73	0.03	11.27	5.10	0.32	0.01	99.35	
MSH04E3RANDLE_2	30	58.40		26.76	0.49	0.00	8.34	6.18	0.34	0.02	100.53	
MSH04A20_10_11	1	56.61		28.33	0.41	0.00	9.97	5.50	0.12	0.02	100.96	
MSH04A20_10_11	2	60.07		25.87	0.38	0.00	7.35	6.69	0.49	0.02	100.87	
MSH04A20_10_11	3	51.98		31.25	0.34	0.00	13.66	3.55	0.11	0.00	100.89	
MSH04A20_10_11	4	58.49		27.15	0.17	0.05	8.49	6.37	0.21	0.00	100.93	
MSH04A20_10_11	5	56.81		27.93	0.39	0.10	9.91	5.65	0.18	0.03	101.00	
MSH04A20_10_11	6	54.69		29.14	0.51	0.07	11.48	4.73	0.15	0.00	100.77	
MSH04A20_10_11	7	52.62		30.85	0.39	0.00	13.02	3.95	0.07	0.00	100.90	
MSH04A20_10_11	8	57.42		28.03	0.16	0.02	9.51	5.80	0.15	0.02	101.11	
MSH04A20_10_11	9	55.84		28.87	0.38	0.13	10.74	5.15	0.19	0.01	101.31	
MSH04A20_10_11	10	56.67		28.01	0.34	0.03	9.88	5.51	0.15	0.00	100.59	
MSH04A20_10_11	11	57.70		27.56	0.33	0.03	9.34	5.96	0.20	0.05	101.17	
MSH04A20_10_11	12	58.14		27.40	0.33	0.06	9.08	5.99	0.17	0.00	101.17	

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_11	15	54.02		29.98	0.39	0.00	11.97	4.54	0.11	0.01	101.02		
MSH04A20_10_11	16	55.59		28.75	0.34	0.10	10.80	5.19	0.12	0.05	100.94		
MSH04A20_10_11	17	54.43		28.84	0.75	0.10	11.43	4.76	0.24	0.04	100.59		
MSH04A20_10_11	18	57.04		27.62	0.30	0.14	9.62	5.83	0.16	0.03	100.74		
MSH04A20_10_11	19	52.04		30.95	0.37	0.09	13.45	3.70	0.07	0.00	100.67		
MSH04A20_10_11	20	54.82		29.20	0.42	0.00	11.08	5.02	0.26	0.01	100.81		
MSH04A20_10_11	22	53.42		30.46	0.38	0.08	12.62	4.20	0.10	0.02	101.28		
MSH04A20_10_11	23	57.41		27.28	0.48	0.00	9.01	5.86	0.42	0.00	100.46		
MSH04A20_10_11	24	53.83		29.66	0.36	0.00	11.83	4.58	0.14	0.00	100.40		
MSH04A20_10_11	25	58.77		26.19	0.62	0.45	8.27	6.35	0.18	0.05	100.88		
MSH04A20_10_11	26	53.41		30.30	0.41	0.00	12.40	4.18	0.08	0.01	100.79		
MSH04A20_10_11	27	52.08		31.03	0.50	0.00	13.43	3.70	0.09	0.00	100.83		
MSH04A20_10_11	28	54.86		29.33	0.35	0.03	10.99	5.09	0.12	0.05	100.82		
MSH04A20_10_11	29	56.00		28.61	0.45	0.00	10.43	5.31	0.20	0.00	101.00		
MSH04A20_10_11	30	54.77		29.62	0.34	0.08	11.57	4.85	0.12	0.00	101.35		
MSH04A20_10_11	31	58.24		26.82	0.39	0.02	8.64	6.23	0.18	0.06	100.58		
MSH04A20_10_11	32	57.36		28.08	0.39	0.06	10.01	5.49	0.21	0.00	101.60		
MSH04A20_10_11	33	56.77		27.90	0.51	0.00	9.96	5.59	0.15	0.00	100.88		
MSH04A20_10_11	34	58.43		27.11	0.28	0.00	8.79	5.69	0.17	0.00	100.47		
MSH04A20_10_11	35	57.57		27.68	0.37	0.03	9.38	5.78	0.32	0.03	101.16		
MSH04A20_10_11	36	55.25		28.68	0.86	0.00	11.25	4.73	0.21	0.00	100.98		
MSH04A20_10_11	37	55.33		29.31	0.33	0.00	11.08	5.07	0.13	0.00	101.25		
MSH04A20_10_11	38	53.92		29.46	0.70	0.06	11.96	4.30	0.19	0.06	100.65		
MSH04A20_10_11	39	56.32		28.26	0.48	0.00	10.25	5.46	0.14	0.00	100.91		
MSH04A20_10_11	40	54.08		30.12	0.37	0.00	12.14	4.44	0.13	0.05	101.33		
MSH04A20_10_11	41	56.71		28.22	0.38	0.00	10.15	5.48	0.22	0.04	101.20		
MSH04A20_10_11	42	55.84		28.54	0.45	0.00	10.51	5.34	0.18	0.01	100.87		
MSH04A20_10_11	43	56.95		27.97	0.39	0.00	9.87	5.62	0.16	0.07	101.03		
MSH04A20_10_11	44	55.28		29.11	0.26	0.00	10.93	4.88	0.13	0.02	100.61		
MSH04A09_10_12	1	57.02		28.42	0.38	0.00	10.05	5.65	0.17	0.00	101.69		
MSH04A09_10_12	3	57.54		28.19	0.32	0.08	9.73	5.91	0.17	0.00	101.94		
MSH04A09_10_12	4	56.81		28.53	0.43	0.00	10.37	4.72	0.23	0.00	101.09		
MSH04A09_10_12	5	57.32		28.45	0.37	0.06	9.99	5.71	0.15	0.05	102.10		

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		
MSH04A09_10_12	6	54.20		30.13	0.40	0.06	12.07	4.41	0.11	0.00	101.38		
MSH04A09_10_12	7	54.71		29.73	0.39	0.00	11.69	4.80	0.09	0.01	101.42		
MSH04A09_10_12	8	57.80		27.80	0.36	0.09	9.32	4.87	0.18	0.00	100.42		
MSH04A09_10_12	9	58.22		27.55	0.38	0.00	9.18	5.99	0.16	0.00	101.48		
MSH04A09_10_12	10	56.58		28.77	0.25	0.00	10.27	4.73	0.12	0.00	100.72		
MSH04A09_10_12	11	56.44		28.30	0.41	0.00	10.33	5.60	0.14	0.01	101.23		
MSH04A09_10_12	12	56.93		28.40	0.40	0.02	10.18	4.43	0.16	0.00	100.52		
MSH04A09_10_12	13	53.81		30.29	0.34	0.00	12.28	4.36	0.10	0.13	101.31		
MSH04A09_10_12	14	54.97		29.49	0.57	0.14	11.63	4.54	0.20	0.00	101.54		
MSH04A09_10_12	15	56.19		28.51	0.36	0.07	10.50	5.32	0.17	0.03	101.15		
MSH04A09_10_12	16	57.17		28.13	0.32	0.00	9.61	5.12	0.15	0.02	100.52		
MSH04A09_10_12	17	57.26		28.19	0.37	0.12	9.99	5.78	0.17	0.00	101.88		
MSH04A09_10_12	18	57.57		28.04	0.40	0.06	9.84	5.25	0.35	0.01	101.52		
MSH04A09_10_12	19	59.25		27.02	0.38	0.00	8.63	6.48	0.17	0.00	101.93		
MSH04A09_10_12	20	53.53		30.85	0.32	0.12	12.84	4.17	0.09	0.03	101.95		
MSH04A09_10_12	21	58.85		27.05	0.33	0.00	8.47	6.34	0.20	0.09	101.33		
MSH04A09_10_12	22	58.02		27.61	0.42	0.07	9.09	4.55	0.30	0.01	100.07		
MSH04A09_10_12	23	57.51		27.70	0.66	0.00	9.47	5.87	0.23	0.00	101.44		
MSH04A09_10_12	24	57.75		27.92	0.34	0.09	9.61	5.42	0.21	0.00	101.34		
MSH04A09_10_12	25	56.91		28.05	0.36	0.06	10.10	5.56	0.18	0.05	101.27		
MSH04A09_10_12	26	59.49		26.68	0.41	0.10	8.15	4.41	0.48	0.00	99.72		
MSH04A09_10_12	27	55.39		29.29	0.34	0.02	11.00	5.16	0.11	0.06	101.37		
MSH04A09_10_12	28	57.72		27.83	0.33	0.03	9.40	5.30	0.18	0.04	100.83		
MSH04A09_10_12	29	56.80		28.36	0.38	0.00	10.16	5.66	0.22	0.03	101.61		
MSH04A09_10_12	30	57.54		27.87	0.32	0.00	9.76	5.20	0.31	0.03	101.03		
MSH04A09_10_12	31	56.28		28.72	0.34	0.13	10.53	5.18	0.30	0.00	101.48		
MSH04A09_10_12	32	53.55		30.38	0.45	0.02	12.49	4.28	0.10	0.01	101.28		
MSH04A09_10_12	33	57.24		28.34	0.53	0.10	10.09	5.73	0.18	0.00	102.21		
MSH04A09_10_12	34	56.99		28.00	0.34	0.00	9.84	4.84	0.31	0.00	100.32		
MSH04A09_10_12	35	57.97		27.49	0.41	0.03	9.34	6.00	0.31	0.00	101.55		
MSH04A09_10_12	36	54.50		29.80	0.32	0.05	11.86	4.61	0.17	0.03	101.34		
MSH04A09_10_12	38	55.17		29.88	0.25	0.00	11.58	4.53	0.11	0.00	101.52		
MSH04A09_10_12	39	54.10		30.15	0.46	0.14	12.27	4.54	0.12	0.00	101.78		
MSH04A09_10_12	40	57.62		28.25	0.36	0.00	9.83	4.70	0.14	0.00	100.90		