Table DR1

Compositions of rocks of the calc-alkaline intermediate-felsic suite recalculated volatile-free.

	Porphyric rhyodacites			Calc-alkaline andesitic rocks		HREE-rich rhyolite	HREE-poor monzonites			
	RLH-37	RLH-87A	R299-30	GLEN-78	GLEN-80A	GLEN-52	RJ-13	RJ-22	RJ-26	GLEN-70
Lat.	48°16'35''	48°16'28''	48°16'21''	48°10'21''	48°10'21''	48°10'33''	48°17'3''	48°17'1''	48°17'1''	48°10'21''
Long.	65°51'16''	65°51'31''	65°53'10''	66°3'53''	66°3'53''	66°5'35''	65°52'8''	65°52'1''	65°52'1''	66°3'53''
SiO_2	71.62	73.55	69.53	54.46	52.83	74.98	58.30	59.32	62.68	58.44
TiO_2	0.23	0.22	0.23	1.81	1.84	0.33	0.55	0.61	0.50	0.57
Al_2O_3	14.08	11.46	13.71	16.63	17.41	10.75	15.08	14.65	14.43	15.70
Fe_2O_3	3.89	2.83	2.54	9.70	9.55	3.10	8.00	7.65	6.95	7.30
MnO	0.08	0.05	0.10	0.17	0.14	0.06	0.10	0.13	0.11	0.10
MgO	1.15	0.29	1.17	4.27	3.61	0.42	4.34	3.75	3.87	5.60
CaO	1.47	1.26	4.05	7.94	8.08	0.66	6.11	4.86	4.05	6.85
Na_2O	3.17	4.83	3.28	1.57	3.23	0.25	2.87	3.40	4.02	2.44
K_2O	4.42	2.41	2.60	3.75	1.36	8.30	3.02	3.64	1.19	3.05
P_2O_5	0.06	0.04	0.05	0.42	0.41	0.09	0.18	0.21	0.11	0.13
Total*	100.43	97.17	97.66	100.97	98.75	99.23	98.96	98.63	98.17	100.49
Loi	1.32	1.42	5.19	1.16	2.77	1.12	2.22	2.86	2.11	1.28
Ba	1315	662.7	852.3	445.0	484.2	1167	1561	1630	633.0	720.0
Co	b.d.	b.d.	b.d.	25.6	31.8	b.d.	28.6	26.3	23.6	23.8
Cr	116.0	195.8	106.2	130.0	99.0	214.4	168.7	134.4	184.9	215.0
Cu	34.2	16.9	b.d.	274.0	30.1	b.d.	24.3	b.d.	b.d.	46.6
Ni	b.d.	b.d.	b.d.	42.90	66.50	b.d.	38.40	b.d.	44.30	66.90
Sc	11.00	7.20	12.19	29.20	23.46	17.34	24.55	21.28	19.79	27.20
Sr	384.0	110.7	422.6	551.0	745.2	150.2	615.5	578.2	593.9	481.0
V	60.1	39.4	48.5	218.0	209.7	b.d.	210.6	197.7	164.4	221.0
Zn	40.9	25.0	73.0	95.5	79.7	89.3	35.3	45.7	23.9	20.3
Rb	50.99	30.11	45.30	40.12	25.67	172.40	53.43	66.21	26.72	37.96
Cs	0.63	0.06	0.69	0.60	2.57	1.09	0.66	0.57	0.83	0.51
Y	11.87	14.74	11.76	38.55	29.48	81.49	15.86	17.59	17.34	15.65
Zr	73.31	83.51	80.48	249.46	199.75	345.64	129.06	166.25	144.85	100.22
Nb	2.40	2.33	2.09	18.35	14.38	14.10	8.08	10.19	6.25	4.65
La	7.63	5.59	7.72	47.67	34.69	51.94	36.43	43.87	24.75	19.00
Ce	16.93	12.04	15.23	98.33	67.94	109.95	70.18	85.75	50.46	37.13
Pr	2.04	1.66	1.90	11.56	8.49	14.24	8.00	9.79	5.92	4.26
Nd	8.21	7.23	7.72	45.71	34.89	59.75	29.66	35.12	21.80	17.22
Sm	1.95	1.90	1.56	8.66	6.22	14.11	4.44	5.47	3.63	3.27
Eu	0.50	0.41	0.42	2.37	2.06	1.52	1.07	1.03	0.83	0.91
Gd	1.80	1.62	1.89	7.97	6.04	13.33	3.40	3.90	3.00	2.92
Tb	0.28	0.31	0.27	1.18	0.83	2.18	0.48	0.59	0.47	0.43
Dy	2.06	2.18	1.66	7.26	5.41	13.62	2.77	3.02	2.57	2.46
Ho	0.45	0.49	0.35	1.32	1.01	2.92	0.49	0.54	0.51	0.46
Er	1.41	1.69	1.14	3.56	3.00	8.56	1.45	1.94	1.62	1.38
Tm	0.23	0.24	0.20	0.56	0.37	1.19	0.26	0.29	0.21	0.26
Yb	1.51	1.73	1.25	3.44	2.40	7.54	1.31	1.58	1.43	1.60
Lu	0.25	0.28	0.23	0.52	0.34	1.04	0.20	0.23	0.22	0.24
Hf	2.20	2.18	2.30	6.55	5.23	9.57	3.85	4.24	3.74	2.53
Ta	0.20	0.19	0.17	1.14	1.01	1.01	0.46	0.58	0.46	0.30
Th	2.29	1.52	2.09	9.45	6.87	15.81	9.74	11.60	7.00	4.14
U	0.76	0.43	0.62	2.47	2.54	5.89	1.97	2.78	1.75	1.27

* Total of original measured compositions.

Table DR1 – continued

	HREE-poor rhyolites		Trachy-andesite	Miguasha bore volcanic rocks		
	RLH-48	LSF-94	RLH-49A	1265-1270	1340-1345	1415-1420
Lat.	48°16'28''	48°14'56''	48°16'28''			
Long.	65°51'33''	66°8'51''	65°51'33''			
SiO_2	75.51	70.33	53.24	54.10	57.26	67.76
TiO_2	0.16	0.39	0.52	1.88	1.63	0.56
Al_2O_3	11.62	15.48	15.52	16.03	16.24	14.19
Fe_2O_3	1.30	1.65	6.72	8.41	8.98	5.99
MnO	0.03	0.03	0.19	0.28	0.12	0.09
MgO	0.33	0.82	2.72	4.13	2.33	1.34
CaO	0.43	0.90	10.22	7.57	5.58	2.21
Na_2O	2.99	6.59	5.71	1.15	1.19	3.93
K_2O	4.81	3.73	2.60	6.02	6.63	4.26
P_2O_5	0.00	0.23	0.74	0.28	0.44	0.06
Total*	97.58	100.47	98.68	100.07	100.53	100.57
Loi	0.71	0.91	7.79	5.18	3.86	2.58
Ba	2208	1624	1499	168.0	224.0	384.0
Co	b.d.	b.d.	34.7	24.2	15.0	b.d.
Cr	223.4	172.0	175.2	55.4	47.7	64.9
Cu	b.d.	30.0	189.9	50.9	32.4	101.0
Ni	b.d.	37.5	154.7	44.0	b.d.	b.d.
Sc	1.40	2.43	22.29	27.10	18.70	6.17
Sr	192.9	755.0	334.0	399.0	317.0	125.0
V	b.d.	22.1	207.3	235.0	129.0	32.9
Zn	5.2	23.6	95.0	443.0	85.4	104.0
Rb	73.78	102.69	24.93	21.40	24.30	111.64
Cs	0.28	0.55	0.17	0.51	0.80	2.72
Y	8.90	6.90	20.42	34.68	40.25	80.26
Zr	103.16	156.36	90.93	202.15	234.65	639.97
Nb	7.39	13.27	30.20	10.89	13.13	32.46
La	41.11	34.33	52.57	19.32	23.99	47.52
Ce	72.17	84.66	106.48	45.63	54.72	103.91
Pr	7.21	9.70	12.86	5.97	7.02	13.32
Nd	22.39	35.85	49.57	25.45	31.00	52.96
Sm	2.89	5.51	8.27	6.00	6.65	11.89
Eu	0.63	1.49	1.70	1.74	1.96	2.15
Gd	2.25	3.17	5.56	7.00	7.00	12.85
Tb	0.22	0.35	0.69	1.05	1.12	2.11
Dy	1.27	1.58	3.47	6.47	7.41	13.69
Ho	0.27	0.24	0.66	1.25	1.33	2.88
Er	0.83	0.59	1.75	3.48	4.14	8.35
Tm	0.13	0.06	0.23	0.55	0.63	1.32
Yb	1.18	0.41	1.45	3.27	3.72	7.91
Lu	0.21	0.09	0.23	0.53	0.64	1.27
Hf	3.23	4.77	2.03	5.11	5.79	15.85
Ta	0.69	0.66	1.18	0.71	0.90	2.15
Th	13.69	10.71	8.95	3.66	4.75	12.96
U	1.93	4.94	5.92	1.47	1.53	2.45

* Total of original measured compositions.

Table DR2
Compositions of rocks of the transitional-alkaline suite recalculated volatile-free.

	Basaltic andesite	Diabase
	RJ-24	RLH-34
Lat.	48°17'1''	48°16'35''
Long.	65°52'1''	65°51'16''
SiO_2	53.47	49.09
TiO_2	1.91	3.48
Al_2O_3	16.75	13.52
Fe_2O_3	9.41	13.27
MnO	0.10	0.31
MgO	4.64	5.14
CaO	9.72	7.89
Na_2O	2.63	4.25
K_2O	0.40	0.78
P_2O_5	0.29	0.60
Total*	99.53	98.64
Loi	6.96	2.58
Ba	143.2	308.3
Co	30.7	39.2
Cr	116.3	86.6
Cu	33.4	72.1
Ni	103.4	63.5
Sc	25.92	28.94
Sr	294.9	333.0
V	227.1	359.3
Zn	90.2	75.6
Rb	6.73	9.99
Cs	0.60	0.16
Y	30.72	42.98
Zr	182.65	296.40
Nb	11.35	29.59
La	17.20	26.11
Ce	39.30	63.73
Pr	5.53	9.08
Nd	24.19	39.08
Sm	5.33	8.92
Eu	1.74	2.82
Gd	5.48	8.59
Tb	0.84	1.21
Dy	5.19	7.17
Ho	1.01	1.42
Er	3.14	4.47
Tm	0.43	0.55
Yb	2.88	3.50
Lu	0.39	0.49
Hf	4.64	6.70
Ta	0.91	2.19
Th	2.68	1.94
U	0.57	0.78

* Total of original measured compositions.

Table DR3
Compositions of rocks of the mafic-intermediate suite recalculated volatile-free.

	Basaltic rocks				Tholeiitic gabbros			Andesitic rocks			Andesites	
	RLH-41	RLH-33	RLH-35	GLEN-56	GLEN-75	RJ-25	RJ-14	LSF-01	RLH-83	RLH-50	RJ-18	RLH-86
Lat.	48°16'28''	48°15'1''	48°16'35''	48°10'33''	48°10'21''	48°17'1''	48°17'3''	48°15'32''	48°16'28''	48°16'28''	48°16'49''	48°16'28''
Long.	65°51'33''	65°50'22''	65°51'16''	66°5'35''	66°3'53''	65°52'1''	65°52'8''	66°8'55''	65°51'31''	65°51'33''	65°51'33''	65°51'31''
SiO_2	48.84	51.07	53.18	48.02	52.24	50.23	48.09	50.86	51.54	55.01	58.54	58.34
TiO_2	1.62	1.71	0.80	2.45	0.63	0.59	0.67	0.61	0.75	1.05	0.58	0.43
Al_2O_3	17.43	16.95	16.58	15.35	15.59	15.18	16.68	20.46	11.00	16.16	13.45	12.17
Fe_2O_3	11.35	14.62	9.47	15.37	8.24	9.85	9.13	9.03	15.27	11.34	7.73	9.63
MnO	0.19	0.17	0.17	0.30	0.16	0.18	0.22	0.22	0.18	0.21	0.12	0.16
MgO	8.76	4.73	7.34	7.60	11.41	8.42	8.90	5.39	8.28	5.65	3.19	7.11
CaO	5.14	3.13	7.55	7.52	7.68	9.34	8.64	3.70	7.26	4.24	9.23	7.93
Na_2O	3.23	6.20	1.62	0.09	2.21	2.30	2.07	2.51	2.76	2.18	4.61	0.90
K_2O	0.81	0.03	4.17	3.85	2.72	1.74	2.31	4.74	3.28	4.30	0.94	3.70
P_2O_5	0.14	0.19	0.10	0.20	0.05	0.05	0.06	0.08	0.13	0.14	0.09	0.06
Total*	97.91	98.99	101.11	100.92	101.22	98.18	97.42	98.27	100.73	100.49	98.73	100.70
Loi	6.47	5.28	5.89	2.96	3.58	3.05	5.08	4.02	2.96	2.48	7.38	7.22
Ba	353.4	47.7	474.0	22.1	590.0	866.8	1480	3384	1157	757.0	180.2	804.0
Co	44.8	49.5	29.2	39.2	33.5	43.4	35.2	33.0	37.4	28.5	26.6	29.9
Cr	313.8	31.3	269.0	252.0	905.0	41.7	223.3	62.0	265.0	51.7	84.9	670.0
Cu	68.7	b.d.	76.6	292.0	78.0	10.7	62.3	104.6	71.0	90.8	b.d.	45.7
Ni	109.0	b.d.	81.9	63.1	198.0	48.7	79.5	43.1	97.0	b.d.	b.d.	196.0
Sc	41.80	33.05	39.10	47.10	35.20	41.53	42.36	25.26	37.80	34.80	29.23	33.60
Sr	237.6	71.7	249.0	214.0	384.0	237.7	1727.2	618.4	234.0	248.0	328.0	309.0
V	269.8	413.0	277.0	433.0	208.0	237.2	254.2	185.8	325.0	355.0	220.3	232.0
Zn	87.6	104.8	73.2	129.0	59.8	59.8	52.2	49.0	65.6	98.4	49.9	58.4
Rb	16.25	0.61	38.44	1.56	52.56	48.13	66.33	156.69	53.26	46.72	20.46	10.50
Cs	0.18	0.47	0.82	0.09	1.55	0.77	0.78	4.78	0.64	0.50	0.35	0.06
Y	26.02	27.92	18.71	48.50	12.20	14.57	14.35	13.69	16.50	23.82	12.73	10.91
Zr	91.94	73.73	47.22	134.49	30.51	30.07	29.33	44.65	40.75	77.04	29.14	25.11
Nb	4.04	3.31	4.31	2.28	1.07	0.51	1.59	1.77	1.50	2.30	0.66	2.89
La	5.69	6.91	5.34	5.22	2.29	2.75	3.86	5.77	11.37	10.42	5.04	6.16
Ce	15.57	16.80	12.48	16.15	6.22	6.50	8.18	13.37	24.77	24.44	10.01	13.17
Pr	2.59	2.42	1.59	2.75	0.84	1.02	1.25	1.86	3.12	3.07	1.48	1.52
Nd	12.30	11.40	7.95	16.20	5.19	4.96	5.54	8.19	14.50	14.05	6.95	7.09
Sm	3.84	2.97	2.23	5.44	1.73	1.36	1.62	1.95	3.09	3.16	1.70	1.43
Eu	1.27	1.08	0.77	1.54	0.52	0.56	0.58	0.57	0.81	1.02	0.51	0.41
Gd	4.45	3.72	3.22	8.09	2.29	2.10	2.57	1.95	2.84	3.69	1.85	2.08
Tb	0.71	0.71	0.53	1.25	0.35	0.36	0.42	0.35	0.53	0.67	0.30	0.28
Dy	4.58	5.16	3.47	8.52	2.22	2.10	2.36	2.21	2.98	4.20	1.75	1.95
Ho	0.93	1.03	0.64	1.79	0.46	0.49	0.50	0.48	0.55	0.90	0.45	0.42
Er	2.74	3.27	1.85	5.15	1.19	1.40	1.46	1.47	1.67	2.66	1.31	1.24
Tm	0.39	0.45	0.26	0.80	0.17	0.21	0.24	0.19	0.26	0.42	0.16	0.17
Yb	2.29	3.04	1.92	4.87	1.13	1.65	1.57	1.32	1.61	2.69	1.09	1.02
Lu	0.31	0.43	0.28	0.79	0.18	0.20	0.20	0.19	0.22	0.39	0.15	0.20
Hf	2.70	2.24	1.52	3.79	0.86	0.78	1.00	1.29	1.41	2.33	1.05	0.91
Ta	0.29	0.21	0.26	0.16	0.07	0.03	0.12	0.13	0.10	0.12	0.03	0.18
Th	0.44	0.93	0.77	0.36	0.44	0.37	0.73	1.45	2.45	2.28	0.55	0.97
U	0.14	0.42	0.25	0.12	0.14	0.08	0.14	0.78	0.43	0.52	0.12	0.16

* Total of original measured compositions.

Table DR4

Ar-Ar age data: GAB-5-3 Hornblende; J=.002987±0.6% Pabos Sill (Z8572).

Power[a]	Volume ^{39}Ar x10^{-11} cc	$^{36}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{38}Ar/^{39}Ar$	$^{40}Ar/^{39}Ar$	%^{40}Ar ATM	*$^{40}Ar/^{39}Ar$	f_{39}[b] (%)	Apparent Age Ma[c]
Aliquot 1									
2,8	0,0053	2.5986±0.6856	7.625±19.954	1.279±0.299	1204.280±210.142	63,8	436.400±177.567	0,2	1505.41±416.77
3.0	0,0178	0.4608±0.1572	2.734±5.903	0.207±0.057	250.417±17.174	54,4	114.241±48.284	0,7	529.67±194.17
3,5	0,0057	2.0175±0.5975	18.287±18.755	1.596±0.278	715.690±97.035	83,3	119.516±166.858	0,2	550.74±667.86
4,2	0,0744	0.1093±0.0368	29.730±1.805	8.367±0.196	172.343±5.034	18,7	140.037±11.741	2,7	630.44±44.61
5.0	0,4861	0.0204±0.0069	24.175±0.596	6.979±0.087	111.566±1.441	5,4	105.552±2.457	17,7	494.41±10.07
5,5	0,356	0.0089±0.0083	22.808±0.604	6.569±0.071	107.595±1.208	2,5	104.952±2.733	13	491.95±11.21
6.0	0,1063	0.0120±0.0256	23.277±1.187	6.982±0.132	109.116±2.927	3,2	105.574±8.110	3,9	494.50±33.23
13.0	0,4388	0.0081±0.0073	25.100±0.583	6.988±0.073	106.309±1.179	2,3	103.910±2.452	16	487.67±10.09
Aliquot 2									
2,8	0,001	7.6753±4.9478	98.617±135.446	7.193±4.314	5805.984±3426.855	39,1	3537.919±2179.606	0	4416.88±1035.99
3.0	0,0016	4.6616±1.9103	61.120±74.750	2.061±0.810	1901.603±582.125	72,4	524.104±441.872	0,1	1699.73±944.22
3,5	0,0044	3.4386±0.7209	26.513±25.892	1.219±0.265	1166.578±191.772	87,1	150.481±149.712	0,2	669.69±560.37
4,2	0,0065	1.6577±0.3940	46.317±21.154	3.440±0.332	616.832±62.766	79,4	126.996±115.106	0,2	580.20±451.35
5.0	0,028	0.3198±0.0778	37.429±4.532	7.010±0.203	300.794±10.935	31,4	206.284±24.835	1	866.07±82.82
5,5	0,132	0.0687±0.0166	30.013±1.230	7.553±0.144	143.532±2.995	14,1	123.238±5.605	4,8	565.46±22.08
6.0	0,2726	0.0297±0.0096	32.838±0.834	8.058±0.078	112.910±1.317	7,8	104.139±3.109	10	488.61±12.78
6,5	0,1548	0.0130±0.0148	35.478±1.794	7.956±0.329	106.767±4.521	3,6	102.930±6.178	5,7	483.64±25.47
7.0	0,1892	0.0172±0.0120	28.433±1.043	6.547±0.090	109.428±1.836	4,6	104.359±3.979	6,9	489.52±16.35
13.0	0,4598	0.0082±0.0066	28.693±0.731	6.368±0.054	105.909±0.950	2,3	103.497±2.165	16,8	485.97±8.91

a: As measured by laser in % of full nominal power (10W)

b: Fraction ^{39}Ar as percent of total run

c: Errors are analytical only and do not reflect error in irradiation parameter J

d: Nominal J, referenced to FCT-SAN=28.03 Ma (Renne et al., 1994)

All uncertainties quoted at 2σ level

Table DR5

U-Pb zircon age data for porphyritic rhyodacite/dacite RLH-87 and monzonite RJ-27.

Spot name	U (ppm)	Th (ppm)	Th/U	Pb* (ppm)	^{204}Pb (ppb)	Apparent Ages (Ma) ^{206}Pb/^{238}U	± ^{206}Pb/^{238}U	^{207}Pb/^{235}U	± ^{207}Pb/^{235}U	Disc. (%)
RLH-87										
9015-20.1	310	161	0,54	24	18	460	8	463	18	3,8
9015-21.1	360	291	0,84	31	6	469	8	469	11	0,6
9015-28.1	*185*	*92*	*0,51*	*13*	*4*	*421*	9	432	35	13,5
9015-33.1	332	332	1,03	29	7	464	9	458	16	-8,1
9015-36.1	331	233	0,73	27	22	466	8	469	16	3,8
9015-39.1	175	70	0,41	13	3	467	8	476	17	10,8
9015-40.1	268	130	0,50	21	6	464	8	472	15	8,8
9015-42.1	168	94	0,58	13	6	455	8	456	23	1,0
9015-44.1	207	112	0,56	16	4	460	9	483	18	22,8
9015-48.1	130	41	0,33	10	6	463	9	459	23	-5,4
9015-5.1	151	45	0,31	11	7	462	9	439	34	-46,1
9015-51.1	221	111	0,52	18	14	483	9	445	22	-87,1
9015-52.1	108	33	0,32	8	7	475	13	491	30	16,4
9015-54.1	*2093*	*3764*	*1,86*	*235*	*4*	~~*492*~~	~~8~~	491	8	-1,1
9015-56.1	*1096*	*744*	*0,70*	*93*	*5*	~~*482*~~	~~8~~	480	8	-2,7
9015-58.1	216	80	0,38	16	2	469	9	475	21	7,2
RJ-27										
9016-17.1	943	1862	2,04	104	5	468	8	467	8	-1,2
9016-23.1	500	557	1,15	46	8	466	8	455	11	-15,9
9016-25.1	795	1000	1,30	75	2	466	8	472	9	7,3
9016-27.1	497	595	1,24	46	5	457	9	462	12	5,9
9016-28.1	318	330	1,07	29	4	466	8	465	15	-1,8
9016-29.1	627	762	1,25	59	6	467	8	463	9	-5,8
9016-30.1	908	1243	1,41	88	3	467	8	468	9	0,7
9016-32.1	879	1224	1,44	85	6	467	8	458	9	-12,7
9016-33.1	452	596	1,36	43	5	465	8	458	10	-9,1
9016-36.1	494	472	0,99	43	6	469	58	471	53	2,2
9016-38.1	762	436	0,59	61	6	465	8	471	9	7,1
9016-4.1	328	328	1,03	29	0	464	8	484	8	20,0
9016-40.1	821	1004	1,26	76	4	463	8	469	9	6,2
9016-41.1	869	1179	1,40	86	4	476	15	480	18	4,8
9016-46.1	824	1172	1,47	81	5	467	8	470	9	4,0
9016-5.1	519	597	1,19	48	2	462	8	466	10	4,6
9016-59.1	1020	1558	1,58	104	3	472	9	473	9	2,1

Spot name follows the convention x-y.z; where x = sample number, y = grain number and z = spot number.

Uncertainties reported at 1s (absolute) and are calculated by numerical propagation of all known sources of error

* refers to radiogenic Pb (corrected for common Pb)

Discordance relative to origin = 100 * (1-(206Pb/238U age)/(207Pb/206Pb age))

Calibration standard 6266; U = 910 ppm; Age = 559 Ma; 206Pb/238U = 0.09059

Error in 206Pb/238U calibration 1.2%

Th/U calibration: F = 0.03900*UO + 0.85600

Analyses in italics excluded from age calculations.