Table 14. Major and trace element compositions of plutonic rocks from the Mbé – Sassa-Mbersi area.

Sample SM13 SM13 NB14 SM13 L14 NG14 NB14 CK13 NB14

3b 1a 12 3c 03 02 08a 6c 20

Type me me me me ton ton trond hb-gr hb-gr

SiO2 49.14 52.49 54.16 65.63 60.71 66.22 74.05 56.70 57.21

Al2O3 15.24 18.62 16.56 14.96 16.26 16.19 14.66 15.72 14.55

Fe2O3tot 11.12 8.04 7.57 4.26 7.36 3.48 1.53 7.21 6.70

FeOtot 10.01 7.23 6.81 3.83 6.62 3.13 1.38 6.49 6.03

MnO 0.17 0.13 0.11 0.06 0.13 0.06 0.03 0.11 0.14

MgO 6.19 2.87 4.61 1.55 3.16 1.72 0.60 4.96 2.89

CaO 8.90 5.62 6.38 3.14 4.68 4.27 1.97 6.23 11.04

Na2O 3.00 4.32 3.93 3.51 3.21 4.55 5.04 3.77 2.19

K2O 1.94 3.87 2.03 4.20 1.29 1.84 1.76 2.14 3.16

TiO2 1.83 1.00 1.11 0.65 0.68 0.46 0.18 1.01 0.73

P2O5 0.51 0.64 0.43 0.27 0.24 0.13 0.05 0.39 0.15

LOI 1.17 1.05 2.38 0.72 2.01 0.57 0.99 0.93 1.27

Total 99.21 98.64 99.26 98.94 99.73 99.49 100.84 99.18 100.02

Ba 1624 2520 1276 1633 572 413 931 1103 620

Be 1.4 2.2 1.1 2.4 1.8 1.0 0.6 2.0 2.4

Co 34.0 14.9 26.8 9.9 20.9 9.6 3.6 25.7 21.9

Cr 83 53 104 96 355 18 17 215 411

Cs 1.4 2.0 0.3 1.9 1.5 0.6 0.2 1.8 1.1

Ga 22.0 25.2 22.7 21.8 21.9 18.5 17.1 21.1 20.5

Hf 6.0 9.0 2.2 5.7 5.0 3.7 1.9 4.5 4.7

Mo 1.5 1.0 ld 5.6 31.5 0.8 ld 3.1 39.0

Nb 14.8 16.0 5.7 12.3 7.0 2.4 1.4 8.4 12.3

Ni 18.2 17.0 52.7 47.3 193.6 13.4 7.5 104.9 239.6

Rb 61 127 37 114 64 38 28 52 116

Sc 34.2 12.1 16.9 7.8 17.5 6.6 3.3 17.3 16.2

Sn 2.4 2.8 1.3 4.3 2.2 0.7 0.7 1.9 5.0

Sr 1013 1541 1039 696 575 525 644 918 884

Ta 1.1 1.2 0.4 1.2 0.4 0.2 0.0 0.6 1.0

Th 6.3 15.8 1.2 21.1 11.1 3.2 0.2 1.4 13.1

U 1.4 2.2 0.2 3.0 1.7 0.8 0.3 2.5 3.4

V 280.0 104.7 155.4 66.6 103.8 54.9 16.2 147.0 115.1

W 0.3 0.3 0.4 0.5 0.9 ld ld 0.4 2.6

Y 36.7 31.3 16.5 18.7 19.3 8.4 3.6 19.4 30.3

Zn 116 119 98 57 114 56 32 96 99

Zr 240 386 75 215 190 128 59 184 158

La 42.10 94.11 32.54 60.76 40.08 9.95 6.54 31.06 33.31

Ce 99.81 178.70 67.39 112.60 81.95 22.59 12.41 67.47 69.25

Pr 12.85 20.12 8.21 12.39 9.50 3.21 1.42 8.39 8.03

Nd 54.35 73.82 32.57 43.74 35.69 13.48 5.31 34.40 30.30

Sm 11.12 12.92 6.15 7.63 6.40 2.75 0.97 6.52 6.11

Eu 2.91 3.33 1.98 1.58 1.45 0.83 0.45 1.74 1.29

Gd 8.65 9.26 4.48 5.29 4.79 2.10 0.79 4.86 5.26

Tb 1.25 1.22 0.60 0.70 0.65 0.29 0.12 0.66 0.83

Dy 6.81 6.22 3.31 3.63 3.71 1.59 0.67 3.64 5.23

Ho 1.29 1.09 0.64 0.63 0.74 0.31 0.13 0.67 1.12

Er 3.48 2.94 1.61 1.71 1.95 0.78 0.34 1.80 3.11

Tm 0.51 0.41 0.22 0.24 0.27 0.11 0.05 0.26 0.47

Yb 3.37 2.68 1.41 1.59 1.86 0.77 0.32 1.75 3.19

Lu 0.50 0.41 0.21 0.23 0.28 0.13 0.05 0.27 0.51

Table 14. (Continued)

Sample M13 NB14 M13 L14 NB14 MM14

1c 04 3c 01 40 07

Type hb-gr hb-gr bt gr bt gr bt gr bt gr

SiO2 59.45 65.81 68.84 68.88 72.22 72.44

Al2O3 16.75 14.38 14.02 15.17 13.83 14.18

Fe2O3tot 5.83 4.81 3.53 3.03 1.87 1.76

FeOtot 5.25 4.33 3.18 2.73 1.68 1.58

MnO 0.09 0.09 0.04 0.03 0.03 0.03

MgO 2.50 2.06 0.66 0.73 0.42 0.37

CaO 4.34 3.15 1.66 2.11 1.36 1.36

Na2O 4.32 2.86 2.79 3.33 3.10 3.20

K2O 3.51 3.77 6.05 5.56 5.28 5.52

TiO2 0.93 0.61 0.63 0.52 0.27 0.24

P2O5 0.42 0.16 0.22 0.17 0.07 0.08

PF 0.88 2.36 0.48 1.16 1.09 0.37

Total 99.02 100.07 98.92 100.69 99.53 99.54

Ba 1463 1132 1143 1519 1101 976

Be 3.3 1.3 1.7 2.0 1.4 1.5

Co 14.4 14.5 4.5 8.1 4.0 3.1

Cr 51 77 58 507 149 115

Cs 3.5 0.4 0.7 0.9 0.5 0.5

Ga 24.6 19.6 25.8 22.2 18.2 19.7

Hf 8.1 5.0 14.4 10.9 6.1 4.7

Mo 2.8 0.6 3.2 55.5 17.4 16.5

Nb 16.4 10.7 25.3 10.3 9.0 11.8

Ni 26.7 35.0 27.5 290.0 86.2 68.2

Rb 110 122 228 182 185 199

Sc 9.6 10.0 4.0 3.7 3.1 3.0

Sn 2.9 1.9 6.5 3.6 2.1 1.4

Sr 989 408 273 365 226 241

Ta 2.1 0.9 1.3 0.4 0.5 0.7

Th 11.6 12.1 82.7 41.3 31.0 37.5

U 4.0 1.3 2.2 2.7 1.3 2.2

V 94.6 64.8 24.4 28.8 18.0 14.0

W 0.7 0.4 ld 1.7 0.7 0.5

Y 29.4 13.6 21.3 10.7 11.9 11.5

Zn 99 95 105 57 49 47

Zr 339 177 592 437 223 151

La 48.10 40.90 193.60 137.10 62.55 86.11

Ce 115.50 83.60 383.40 259.60 127.20 157.50

Pr 14.93 9.43 42.29 26.03 13.24 16.24

Nd 59.15 33.57 143.10 82.94 43.91 53.35

Sm 10.95 5.75 21.08 10.64 6.79 8.08

Eu 2.42 1.19 1.88 1.36 0.85 0.92

Gd 7.64 4.11 11.99 6.09 4.32 4.83

Tb 1.06 0.54 1.34 0.63 0.52 0.58

Dy 5.56 2.85 5.61 2.72 2.60 2.69

Ho 1.01 0.53 0.76 0.42 0.45 0.44

Er 2.65 1.30 1.98 1.10 1.15 1.10

Tm 0.40 0.17 0.23 0.14 0.15 0.14

Yb 2.53 1.11 1.37 0.93 1.01 0.93

Lu 0.37 0.17 0.19 0.16 0.16 0.14

me = microgranular enclave; ton = tonalite; trond = trondhjemite; hb gr = hornblende-biotite granite; bt gr = biotite granite; lgr = leucogranite.