**Supplement 3**

*Ledneva G.V., Bazylev B.A., Layer P., Kuzmin D.V., Kononkova N.N.* **“**Mesozoic island- arc massif of cumulative dunite-wehrlite-olivine clinopyroxenite-gabbro, Eastern Chukotka”

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**Table 3**. Bulk-rock geochemistry and calculated modal composition.

|  |  |
| --- | --- |
| Sample | LU9-31 LU9-38 LU9-37 LU9-26 LU9-28 LU9-39 LU9-24 LU9-33 |
| SiO2, wt. % TiO2Al2O3FeO MnO MgO CaO Na2O K2O P2O5Cr2O3LOI Total | 39.70 41.70 38.26 45.61 47.43 47.62 47.41 45.980.024 0.013 0.036 0.184 0.225 0.096 0.142 0.4750.74 0.69 2.05 2.63 3.08 26.64 24.04 18.726.55 9.19 11.69 9.04 7.05 2.72 4.02 7.300.127 0.202 0.143 0.164 0.154 0.073 0.077 0.14640.16 39.21 34.31 27.70 24.13 3.75 5.45 8.922.42 2.02 4.71 10.66 15.11 14.47 14.75 14.610.02 0.09 0.10 0.22 0.25 2.13 1.97 1.390.01 0.01 0.01 0.01 0.00 0.11 0.12 0.090.012 0.014 0.012 0.014 0.024 0.017 0.014 0.0730.876 0.558 0.500 0.214 0.377 0.019 0.013 0.0289.08 5.57 7.35 2.82 1.75 1.94 1.21 1.7399.71 99.27 99.17 99.25 99.57 99.59 99.21 99.46 |
| Mg# rock | 91.6 88.4 84.0 84.5 85.9 71.0 70.7 68.5 |
| Ol, wt. modeOpx Cpx Hbl Pl | - - - 0.40 0.28 0 0 -- - - 0.13 0.05 0.1 0.15 -- - - 0.41 0.63 0.05 0.12 -- - - 0.06 0.04 0.04 0.03 -- - - 0 0 0.81 0.70 - |
| S, ppmLi Sc Ti V Co Ni Cu Zn Rb Sr Y Zr Nb Ba La Ce Pr Nd Sm Eu | 420 700 3050 820 280 190 180 1601.1 1.9 1.1 1.6 2.3 12.8 16.1 9.217.4 2.2 10.1 60.9 62.8 15.3 23.0 42.4177 90 211 931 1110 600 798 280744 26 57 144 171 47 72 218157 143 162 103 74 15 23 381286 1487 1537 698 547 34 46 661.6 4.0 66 2.2 1.1 2.5 16.6 6.311 75 78 33 41 24 22 100.042 0.175 0.631 0.208 0.161 3.080 6.990 1.1451.98 0.93 4.56 8.13 17.00 893.60 705.87 569.440.904 0.139 0.38 2.579 2.724 1.360 2.236 5.1421.45 0.94 0.55 0.96 1.03 1.62 2.63 3.020.168 b.d.l. 0.058 0.023 0.020 0.033 0.048 0.0392.94 16.5 1.95 2.2 3.9 106 75 770.164 0.098 0.093 0.169 0.177 0.741 0.850 1.0030.339 0.200 0.228 0.536 0.606 1.644 1.878 2.8900.048 0.019 0.029 0.121 0.125 0.224 0.278 0.5280.252 0.074 0.153 0.803 0.871 1.105 1.432 3.0990.084 0.014 0.054 0.323 0.379 0.314 0.422 1.0970.050 0.056 0.025 0.118 0.163 0.243 0.308 0.509 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Gd | 0.130 | 0.028 | 0.068 | 0.464 | 0.514 | 0.331 | 0.419 | 1.120 |
| Tb | 0.025 | 0.002 | 0.011 | 0.092 | 0.090 | 0.058 | 0.072 | 0.182 |
| Dy | 0.164 | 0.018 | 0.072 | 0.526 | 0.559 | 0.335 | 0.479 | 1.083 |
| Ho | 0.034 | 0.005 | 0.014 | 0.105 | 0.102 | 0.060 | 0.106 | 0.221 |
| Er | 0.102 | 0.014 | 0.042 | 0.326 | 0.323 | 0.181 | 0.291 | 0.564 |
| Tm | 0.014 | 0.0017 | 0.008 | 0.040 | 0.038 | 0.024 | 0.034 | 0.073 |
| Yb | 0.092 | 0.034 | 0.051 | 0.298 | 0.251 | 0.175 | 0.215 | 0.457 |
| Lu | 0.013 | 0.003 | 0.008 | 0.037 | 0.031 | 0.022 | 0.041 | 0.069 |
| Hf | 0.032 | b.d.l. | 0.013 | 0.048 | 0.071 | 0.080 | 0.114 | 0.152 |
| Ta | 0.0084 | 0.0088 | 0.004 | b.d.l. | b.d.l. | 0.0041 | 0.0084 | 0.0048 |
| W | 0.793 | b.d.l. | b.d.l. | 0.112 | 0.148 | 0.152 | 0.117 | 0.173 |
| Pb | 0.036 | 8.87 | 8.77 | 0.64 | 0.77 | 2.49 | 1.84 | 0.08 |
| Th | 0.019 | 0.006 | 0.009 | 0.007 | 0.005 | 0.015 | 0.021 | 0.011 |
| U | 0.007 | 0.007 | 0.004 | 0.008 | 0.005 | 0.006 | 0.005 | 0.003 |

Note. b.d.l. – below detection limit; " - " – not calculated. Mg#rock=100Mg/(Mg+Fetotal).

The contents of major elements and sulfur were determined in pressed powders by X-ray fluorescence using a PANalitical AXIOS Advanced spectrometer (Netherlands) with a scanning channel at the Vernadsky Institute. The instrument was calibrated using international, Russian and internal standards. Trace elements were analyzed in glasses, which were obtained by welding rock powders, by laser-ablation mass spectrometry with inductively coupled plasma on an ELEMENT-2, Thermo Scientific mass spectrometer (GB) with a UP-213 New Wave Research solid-phase laser (GB) at the Max Planck Institute for Chemistry (Mainz, Germany), with reference to the KL-2G and NIST 612 standard samples and normalization to Ca. The analytical accuracy was ±5 % (2σ) relative at a component content of 1 ppm and ±10 % relative at a component content of ~0.1 ppm. Details of the method are presented in [56]. Trace element contents are recalculated to real water contents in rocks.