附表1 代表性矿物电子探针成分分析结果（%）

Appendix Table 1 Representative mineral compositions (%)

| 样品 | 石板墩花岗岩 | | | | | | |  | 石板墩闪长岩 | |  | 白墩子石英闪长岩 | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 矿物 | Or | Or | Or | Pl | Bt | Bt | Ms |  | Pl | Amp |  | Pl | Pl | Bt | Amp |
| SiO2 | 65.86 | 66.86 | 64.91 | 60.38 | 36.19 | 38.51 | 49.34 |  | 63.82 | 47.74 |  | 54.21 | 61.62 | 36.59 | 47.46 |
| TiO2 | 0.01 | - | 0.02 | - | 2.09 | 0.11 | 0.02 |  | 0.03 | 0.82 |  | 0.05 | 0.00 | 2.73 | 0.88 |
| Al2O3 | 18.85 | 19.35 | 17.88 | 24.93 | 17.04 | 21.84 | 30.00 |  | 21.26 | 5.73 |  | 29.19 | 24.53 | 17.22 | 6.78 |
| Cr2O3 | 0.02 | 0.03 | 0.03 | 0.05 | 0.12 | 0.11 | 0.04 |  | 0.01 | 0.14 |  | 0.03 | 0.06 | 0.10 | - |
| FeO | 0.03 | 0.03 | - | 0.10 | 20.62 | 21.33 | 3.10 |  | 0.80 | 15.54 |  | 0.01 | 0.02 | 21.11 | 19.47 |
| MnO | 0.03 | 0.02 | 0.02 | - | 0.30 | 0.20 | 0.06 |  | 0.01 | 0.49 |  | 0.03 | 0.02 | 0.24 | 0.43 |
| NiO | 0.03 | - | 0.01 | 0.02 | - | 0.01 | 0.05 |  | 0.01 |  |  | 0.00 | 0.01 | - |  |
| MgO | - | 0.01 | - | 0.01 | 9.30 | 7.94 | 2.31 |  | 0.04 | 12.80 |  | 0.01 | 0.01 | 8.94 | 10.27 |
| CaO | 0.11 | 0.25 | 0.02 | 5.97 | 0.81 | 0.13 | 0.02 |  | 4.62 | 11.80 |  | 10.80 | 5.47 | - | 11.78 |
| Na2O | 4.18 | 7.53 | 0.22 | 7.63 | 0.04 | 0.08 | 0.20 |  | 8.87 | 0.77 |  | 4.87 | 8.12 | 0.11 | 0.71 |
| K2O | 10.08 | 5.22 | 16.13 | 0.17 | 8.49 | 4.55 | 11.00 |  | 0.13 | 0.60 |  | 0.07 | 0.16 | 9.57 | 0.53 |
| Total | 99.19 | 99.29 | 99.23 | 99.26 | 95.00 | 94.80 | 96.14 |  | 99.59 | 96.45 |  | 99.26 | 100.03 | 96.59 | 98.32 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Si | 3.00 | 2.99 | 3.02 | 2.70 | 2.77 | 2.85 | 3.29 |  | 2.84 | 7.08 |  | 2.46 | 2.73 | 2.77 | 7.01 |
| Ti | - | - | - | - | 0.12 | 0.01 | - |  | - | 0.09 |  | 0.00 | 0.00 | 0.16 | 0.10 |
| Al | 1.01 | 1.02 | 0.98 | 1.31 | 1.54 | 1.90 | 2.36 |  | 1.12 | 1.00 |  | 1.56 | 1.28 | 1.54 | 1.18 |
| Cr | - | - | - | - | 0.01 | 0.01 | - |  | - | 0.02 |  | 0.00 | 0.00 | 0.01 | - |
| Fe+2 | - | - | - | - | 1.32 | 1.32 | 0.17 |  | 0.03 | 1.36 |  | 0.00 | 0.00 | 1.34 | 1.82 |
| Fe+3 |  |  |  |  |  |  |  |  |  | 0.57 |  |  |  |  | 0.58 |
| Mn | - | - | - | - | 0.02 | 0.01 | - |  | - | 0.06 |  | 0.00 | 0.00 | 0.02 | 0.05 |
| Ni | - | - | - | - | - | - | - |  | - |  |  | 0.00 | 0.00 | - |  |
| Mg | - | - | - | - | 1.06 | 0.87 | 0.23 |  | - | 2.83 |  | 0.00 | 0.00 | 1.01 | 2.26 |
| Ca | 0.01 | 0.01 | - | 0.29 | 0.07 | 0.01 | - |  | 0.22 | 1.87 |  | 0.52 | 0.26 | - | 1.86 |
| Na | 0.37 | 0.65 | 0.02 | 0.66 | 0.01 | 0.01 | 0.03 |  | 0.77 | 0.22 |  | 0.43 | 0.70 | 0.02 | 0.20 |
| K | 0.59 | 0.30 | 0.96 | 0.01 | 0.83 | 0.43 | 0.93 |  | 0.01 | 0.11 |  | 0.00 | 0.01 | 0.92 | 0.10 |
| Cations | 4.97 | 4.98 | 4.98 | 4.98 | 7.75 | 7.41 | 7.01 |  | 4.99 | 15.21 |  | 4.98 | 4.98 | 7.77 | 15.17 |
| Or | 0.61 | 0.31 | 0.98 | 0.01 |  |  |  |  | 0.01 |  |  | 0.00 | 0.01 |  |  |
| An | 0.01 | 0.01 | 0.00 | 0.30 |  |  |  |  | 0.22 |  |  | 0.55 | 0.27 |  |  |
| Ab | 0.38 | 0.68 | 0.02 | 0.69 |  |  |  |  | 0.77 |  |  | 0.45 | 0.72 |  |  |

附表2 锆石U-Pb同位素定年结果

Appendix Table 2 LA-ICP-MS zircon U-Pb dating results

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 分析点 | Th | U | | Th/U | |  | |  | | U-Pb同位素比值 | | | | |  | |  |  | | 年龄（Ma） | | | | |  |
| ppm | |  | |  | | 207Pb/206Pb | | ± 1σ | | 207Pb/235U | ± 1σ | 206Pb/238U | ± 1σ | |  | | 207Pb/206Pb | ± 1σ | | 207Pb/235U | ± 1σ | 206Pb/238U | ± 1σ | |
| 石板墩花岗岩 | | |  | |  | |  | |  | |  |  |  |  | |  | |  |  | |  |  |  |  | |
| X12-10-2-19 | 278 | 493 | 0.57 | |  | | 0.05213 | | 0.00149 | | 0.34609 | 0.01051 | 0.0477 | 0.00047 | |  | | 291 | 67 | | 302 | 8 | 300 | 3 | |
| X12-10-2-15 | 1109 | 1234 | 0.90 | |  | | 0.05739 | | 0.00223 | | 0.37436 | 0.01429 | 0.04731 | 0.00037 | |  | | 507 | 88 | | 323 | 11 | 298 | 2 | |
| X12-10-2-20 | 420 | 471 | 0.89 | |  | | 0.05486 | | 0.00153 | | 0.36604 | 0.01028 | 0.04806 | 0.00045 | |  | | 406 | 64 | | 317 | 8 | 303 | 3 | |
| X12-10-2-03 | 207 | 348 | 0.59 | |  | | 0.05144 | | 0.00135 | | 0.34386 | 0.01107 | 0.04809 | 0.00068 | |  | | 261 | 62 | | 300 | 8 | 303 | 4 | |
| X12-10-2-05 | 77 | 128 | 0.60 | |  | | 0.05392 | | 0.00212 | | 0.35552 | 0.01351 | 0.0481 | 0.00059 | |  | | 368 | 91 | | 309 | 10 | 303 | 4 | |
| X12-10-2-23 | 607 | 771 | 0.79 | |  | | 0.05291 | | 0.00084 | | 0.35289 | 0.00568 | 0.04811 | 0.00030 | |  | | 325 | 37 | | 307 | 4 | 303 | 2 | |
| X12-10-2-07 | 258 | 427 | 0.60 | |  | | 0.05220 | | 0.0012 | | 0.34693 | 0.00892 | 0.04811 | 0.00054 | |  | | 294 | 54 | | 302 | 7 | 303 | 3 | |
| X12-10-2-12 | 112 | 214 | 0.52 | |  | | 0.05593 | | 0.0018 | | 0.37075 | 0.01191 | 0.04814 | 0.00052 | |  | | 450 | 73 | | 320 | 9 | 303 | 3 | |
| X12-10-2-18 | 85 | 139 | 0.61 | |  | | 0.05026 | | 0.00189 | | 0.33378 | 0.01236 | 0.04817 | 0.00047 | |  | | 207 | 89 | | 292 | 9 | 303 | 3 | |
| X12-10-2-09 | 286 | 560 | 0.51 | |  | | 0.05538 | | 0.00099 | | 0.36902 | 0.00731 | 0.04821 | 0.00049 | |  | | 427 | 41 | | 319 | 5 | 304 | 3 | |
| X12-10-2-17 | 330 | 340 | 0.97 | |  | | 0.05303 | | 0.00139 | | 0.35459 | 0.00933 | 0.04824 | 0.00040 | |  | | 330 | 61 | | 308 | 7 | 304 | 2 | |
| X12-10-2-16 | 244 | 518 | 0.47 | |  | | 0.05656 | | 0.00177 | | 0.37551 | 0.01125 | 0.04815 | 0.00042 | |  | | 474 | 71 | | 324 | 8 | 303 | 3 | |
| X12-10-2-10 | 549 | 1018 | 0.54 | |  | | 0.05239 | | 0.00079 | | 0.34956 | 0.00546 | 0.04831 | 0.00038 | |  | | 302 | 35 | | 304 | 4 | 304 | 2 | |
| X12-10-2-08 | 96 | 131 | 0.73 | |  | | 0.04934 | | 0.00207 | | 0.32709 | 0.01317 | 0.04833 | 0.00061 | |  | | 164 | 98 | | 287 | 10 | 304 | 4 | |
| X12-10-2-21 | 481 | 774 | 0.62 | |  | | 0.05185 | | 0.00082 | | 0.34802 | 0.00595 | 0.04843 | 0.00047 | |  | | 279 | 37 | | 303 | 4 | 305 | 3 | |
| X12-10-2-02 | 117 | 172 | 0.68 | |  | | 0.06134 | | 0.00318 | | 0.40201 | 0.02045 | 0.04753 | 0.00047 | |  | | 651 | 114 | | 343 | 15 | 299 | 3 | |
| X12-10-2-13 | 72 | 233 | 0.31 | |  | | 0.06795 | | 0.00111 | | 1.37237 | 0.02565 | 0.14612 | 0.00150 | |  | | 867 | 35 | | 877 | 11 | 879 | 8 | |
| X12-10-2-11 | 81 | 231 | 0.35 | |  | | 0.06729 | | 0.00095 | | 1.35964 | 0.02043 | 0.14626 | 0.00113 | |  | | 847 | 30 | | 872 | 9 | 880 | 6 | |
| X12-10-2-14 | 111 | 165 | 0.67 | |  | | 0.06815 | | 0.00109 | | 1.38176 | 0.0229 | 0.14666 | 0.00115 | |  | | 873 | 34 | | 881 | 10 | 882 | 6 | |
| X12-10-3-09 | 324 | 411 | 0.79 | |  | | 0.05303 | | 0.00302 | | 0.34644 | 0.01941 | 0.04738 | 0.00048 | |  | | 330 | 132 | | 302 | 15 | 298 | 3 | |
| X12-10-3-13 | 74 | 1522 | 0.05 | |  | | 0.05396 | | 0.00139 | | 0.3585 | 0.00864 | 0.04818 | 0.00043 | |  | | 369 | 59 | | 311 | 6 | 303 | 3 | |
| X12-10-3-21 | 260 | 377 | 0.69 | |  | | 0.05230 | | 0.00164 | | 0.34836 | 0.01055 | 0.04814 | 0.00049 | |  | | 298 | 73 | | 303 | 8 | 303 | 3 | |
| X12-10-3-26 | 115 | 466 | 0.25 | |  | | 0.05834 | | 0.00115 | | 0.38965 | 0.00826 | 0.04812 | 0.00048 | |  | | 543 | 44 | | 334 | 6 | 303 | 3 | |
| X12-10-3-07 | 136 | 186 | 0.73 | |  | | 0.05502 | | 0.00152 | | 0.3675 | 0.01049 | 0.04824 | 0.00053 | |  | | 413 | 63 | | 318 | 8 | 304 | 3 | |
| X12-10-3-08 | 481 | 808 | 0.59 | |  | | 0.05367 | | 0.00083 | | 0.35882 | 0.00589 | 0.04827 | 0.0004 | |  | | 357 | 36 | | 311 | 4 | 304 | 2 | |
| X12-10-3-10 | 498 | 788 | 0.63 | |  | | 0.05568 | | 0.00094 | | 0.37244 | 0.006 | 0.04836 | 0.00037 | |  | | 440 | 38 | | 321 | 4 | 304 | 2 | |
| X12-10-3-14 | 199 | 293 | 0.68 | |  | | 0.05771 | | 0.00166 | | 0.38647 | 0.0111 | 0.04832 | 0.00043 | |  | | 519 | 65 | | 332 | 8 | 304 | 3 | |
| X12-10-3-25 | 243 | 429 | 0.57 | |  | | 0.05316 | | 0.00135 | | 0.35669 | 0.00985 | 0.04836 | 0.00055 | |  | | 336 | 59 | | 310 | 7 | 304 | 3 | |
| X12-10-3-05 | 174 | 196 | 0.88 | |  | | 0.05101 | | 0.00142 | | 0.34162 | 0.00967 | 0.04845 | 0.00047 | |  | | 241 | 66 | | 298 | 7 | 305 | 3 | |
| X12-10-3-17 | 186 | 278 | 0.67 | |  | | 0.05101 | | 0.00151 | | 0.34127 | 0.0104 | 0.04838 | 0.00052 | |  | | 241 | 70 | | 298 | 8 | 305 | 3 | |
| X12-10-3-19 | 493 | 431 | 1.15 | |  | | 0.05372 | | 0.00105 | | 0.35941 | 0.00695 | 0.0484 | 0.00038 | |  | | 359 | 45 | | 312 | 5 | 305 | 2 | |
| X12-10-3-16 | 338 | 519 | 0.65 | |  | | 0.05424 | | 0.00164 | | 0.36246 | 0.01001 | 0.04855 | 0.00044 | |  | | 381 | 70 | | 314 | 7 | 306 | 3 | |
| X12-10-3-22 | 71 | 280 | 0.25 | |  | | 0.06921 | | 0.0011 | | 1.40352 | 0.02257 | 0.14638 | 0.00124 | |  | | 905 | 34 | | 890 | 10 | 881 | 7 | |
| X12-10-3-01 | 69 | 208 | 0.33 | |  | | 0.06723 | | 0.00099 | | 1.36717 | 0.02886 | 0.14671 | 0.00213 | |  | | 845 | 31 | | 875 | 12 | 883 | 12 | |
| X12-10-3-11 | 66 | 203 | 0.33 | |  | | 0.10724 | | 0.00145 | | 5.14967 | 0.07593 | 0.34607 | 0.00289 | |  | | 1753 | 25 | | 1844 | 13 | 1916 | 14 | |
| X12-11-3-04 | 79 | 53.1 | 1.50 | |  | | 0.05387 | | 0.00654 | | 0.34753 | 0.04171 | 0.04679 | 0.00088 | |  | | 366 | 279 | | 303 | 31 | 295 | 5 | |
| X12-11-3-25 | 44 | 50.3 | 0.88 | |  | | 0.05331 | | 0.0091 | | 0.33458 | 0.05512 | 0.0473 | 0.00142 | |  | | 342 | 354 | | 293 | 42 | 298 | 9 | |
| X12-11-3-29 | 88 | 365 | 0.24 | |  | | 0.05199 | | 0.00271 | | 0.33927 | 0.01725 | 0.04733 | 0.00054 | |  | | 285 | 122 | | 297 | 13 | 298 | 3 | |
| X12-11-3-30 | 62 | 40.8 | 1.51 | |  | | 0.04619 | | 0.00528 | | 0.29475 | 0.03371 | 0.04753 | 0.00094 | |  | | 8 | 227 | | 262 | 26 | 299 | 6 | |
| X12-11-3-05 | 68 | 70.2 | 0.96 | |  | | 0.0578 | | 0.0061 | | 0.37195 | 0.03633 | 0.04768 | 0.00094 | |  | | 522 | 239 | | 321 | 27 | 300 | 6 | |
| X12-11-3-07 | 104 | 76.3 | 1.37 | |  | | 0.05388 | | 0.00299 | | 0.35052 | 0.01883 | 0.04763 | 0.00059 | |  | | 366 | 128 | | 305 | 14 | 300 | 4 | |
| X12-11-3-06 | 64 | 45.0 | 1.41 | |  | | 0.05913 | | 0.00701 | | 0.3874 | 0.04273 | 0.04775 | 0.00111 | |  | | 572 | 268 | | 332 | 31 | 301 | 7 | |
| X12-11-3-09 | 66 | 144 | 0.45 | |  | | 0.05401 | | 0.00261 | | 0.35675 | 0.01782 | 0.04788 | 0.00054 | |  | | 372 | 112 | | 310 | 13 | 301 | 3 | |
| X12-11-3-17 | 222 | 175 | 1.27 | |  | | 0.05074 | | 0.00194 | | 0.33431 | 0.01271 | 0.04772 | 0.00052 | |  | | 229 | 90 | | 293 | 10 | 301 | 3 | |
| X12-11-3-21 | 157 | 318 | 0.50 | |  | | 0.05532 | | 0.00161 | | 0.36593 | 0.01096 | 0.04774 | 0.0004 | |  | | 425 | 66 | | 317 | 8 | 301 | 2 | |
| X12-11-3-01 | 340 | 373 | 0.91 | |  | | 0.05285 | | 0.00195 | | 0.34936 | 0.0126 | 0.04789 | 0.00045 | |  | | 323 | 86 | | 304 | 9 | 302 | 3 | |
| X12-11-3-03 | 133 | 90.2 | 1.47 | |  | | 0.05657 | | 0.00298 | | 0.37465 | 0.02089 | 0.04795 | 0.0007 | |  | | 475 | 120 | | 323 | 15 | 302 | 4 | |
| X12-11-3-19 | 69 | 52.5 | 1.31 | |  | | 0.06853 | | 0.00685 | | 0.44081 | 0.04187 | 0.04798 | 0.00093 | |  | | 885 | 215 | | 371 | 30 | 302 | 6 | |
| X12-11-3-27 | 142 | 295 | 0.48 | |  | | 0.05148 | | 0.00167 | | 0.34032 | 0.01096 | 0.04792 | 0.0004 | |  | | 262 | 76 | | 297 | 8 | 302 | 2 | |
| X12-11-3-28 | 105 | 251 | 0.42 | |  | | 0.04904 | | 0.00216 | | 0.32372 | 0.01396 | 0.04792 | 0.00047 | |  | | 150 | 102 | | 285 | 11 | 302 | 3 | |
| X12-11-3-11 | 240 | 304 | 0.79 | |  | | 0.05341 | | 0.00208 | | 0.35402 | 0.01418 | 0.04817 | 0.00061 | |  | | 346 | 90 | | 308 | 11 | 303 | 4 | |
| X12-11-3-20 | 45 | 33.9 | 1.33 | |  | | 0.05524 | | 0.00622 | | 0.36246 | 0.04012 | 0.0483 | 0.00112 | |  | | 422 | 257 | | 314 | 30 | 304 | 7 | |
| X12-11-3-14 | 216 | 386 | 0.56 | |  | | 0.05641 | | 0.00295 | | 0.37922 | 0.01983 | 0.04852 | 0.00055 | |  | | 469 | 119 | | 326 | 15 | 305 | 3 | |
| X12-11-3-15 | 476 | 770 | 0.62 | |  | | 0.05433 | | 0.00408 | | 0.36407 | 0.0271 | 0.0486 | 0.00047 | |  | | 385 | 173 | | 315 | 20 | 306 | 3 | |
| X12-11-3-02 | 463 | 523 | 0.89 | |  | | 0.06779 | | 0.00098 | | 1.02288 | 0.01564 | 0.10885 | 0.00072 | |  | | 862 | 31 | | 715 | 8 | 666 | 4 | |
| X12-11-3-22 | 80 | 635 | 0.13 | |  | | 0.06659 | | 0.00079 | | 1.15799 | 0.01559 | 0.12552 | 0.00102 | |  | | 825 | 25 | | 781 | 7 | 762 | 6 | |
| X12-11-3-24 | 78 | 533 | 0.15 | |  | | 0.06822 | | 0.001 | | 1.19269 | 0.0197 | 0.12621 | 0.001 | |  | | 875 | 31 | | 797 | 9 | 766 | 6 | |
| X12-11-3-26 | 128 | 604 | 0.21 | |  | | 0.0653 | | 0.00134 | | 1.14378 | 0.02094 | 0.12703 | 0.00117 | |  | | 784 | 44 | | 774 | 10 | 771 | 7 | |
| X12-11-3-12 | 75 | 716 | 0.11 | |  | | 0.06566 | | 0.00139 | | 1.22878 | 0.02404 | 0.13573 | 0.00108 | |  | | 795 | 45 | | 814 | 11 | 820 | 6 | |
| X12-11-3-18 | 160 | 297 | 0.54 | |  | | 0.08206 | | 0.00146 | | 1.67585 | 0.03323 | 0.14646 | 0.00134 | |  | | 1247 | 36 | | 999 | 13 | 881 | 8 | |
| 石板墩闪长岩 | | |  | |  | |  | |  | |  |  |  |  | |  | |  |  | |  |  |  |  | |
| X12-12-3-01 | 124 | 258 | 0.48 | |  | | 0.0534 | | 0.0035 | | 0.3401 | 0.0229 | 0.0460 | 0.0007 | |  | | 346 | 150 | | 297 | 17 | 290 | 5 | |
| X12-12-3-02 | 126 | 267 | 0.47 | |  | | 0.0573 | | 0.0023 | | 0.3659 | 0.0151 | 0.0460 | 0.0006 | |  | | 506 | 89 | | 317 | 11 | 290 | 3 | |
| X12-12-3-03 | 176 | 332 | 0.53 | |  | | 0.0518 | | 0.0018 | | 0.3307 | 0.0119 | 0.0464 | 0.0005 | |  | | 280 | 86 | | 290 | 9 | 292 | 3 | |
| X12-12-3-04 | 77 | 135 | 0.57 | |  | | 0.0523 | | 0.0023 | | 0.3296 | 0.0147 | 0.0461 | 0.0006 | |  | | 298 | 100 | | 289 | 11 | 290 | 4 | |
| X12-12-3-05 | 147 | 264 | 0.56 | |  | | 0.0527 | | 0.0017 | | 0.3357 | 0.0109 | 0.0460 | 0.0004 | |  | | 317 | 72 | | 294 | 8 | 290 | 3 | |
| X12-12-3-06 | 71 | 165 | 0.43 | |  | | 0.0492 | | 0.0022 | | 0.3142 | 0.0134 | 0.0464 | 0.0006 | |  | | 167 | 103 | | 277 | 10 | 292 | 4 | |
| X12-12-3-07 | 142 | 233 | 0.61 | |  | | 0.0493 | | 0.0027 | | 0.3076 | 0.0159 | 0.0453 | 0.0006 | |  | | 161 | 127 | | 272 | 12 | 286 | 4 | |
| X12-12-3-08 | 122 | 272 | 0.45 | |  | | 0.0517 | | 0.0018 | | 0.3298 | 0.0117 | 0.0462 | 0.0006 | |  | | 333 | 81 | | 289 | 9 | 291 | 3 | |
| X12-12-3-09 | 137 | 311 | 0.44 | |  | | 0.0518 | | 0.0015 | | 0.3328 | 0.0103 | 0.0464 | 0.0005 | |  | | 280 | 67 | | 292 | 8 | 292 | 3 | |
| X12-12-3-10 | 203 | 381 | 0.53 | |  | | 0.0524 | | 0.0012 | | 0.3327 | 0.0076 | 0.0460 | 0.0005 | |  | | 302 | 50 | | 292 | 6 | 290 | 3 | |
| X12-12-3-11 | 209 | 442 | 0.47 | |  | | 0.0525 | | 0.0011 | | 0.3374 | 0.0076 | 0.0464 | 0.0004 | |  | | 309 | 53 | | 295 | 6 | 292 | 3 | |
| X12-12-3-12 | 124 | 250 | 0.49 | |  | | 0.0536 | | 0.0018 | | 0.3419 | 0.0113 | 0.0463 | 0.0005 | |  | | 354 | 76 | | 299 | 9 | 292 | 3 | |
| X12-12-3-13 | 98 | 229 | 0.43 | |  | | 0.0511 | | 0.0017 | | 0.3276 | 0.0109 | 0.0465 | 0.0005 | |  | | 243 | 76 | | 288 | 8 | 293 | 3 | |
| X12-12-3-14 | 108 | 217 | 0.50 | |  | | 0.0588 | | 0.0024 | | 0.3803 | 0.0186 | 0.0462 | 0.0006 | |  | | 561 | 89 | | 327 | 14 | 291 | 4 | |
| X12-12-3-15 | 84 | 206 | 0.41 | |  | | 0.0537 | | 0.0018 | | 0.3431 | 0.0114 | 0.0464 | 0.0005 | |  | | 367 | 76 | | 300 | 9 | 292 | 3 | |
| X12-12-3-16 | 142 | 209 | 0.68 | |  | | 0.0493 | | 0.0022 | | 0.3151 | 0.0149 | 0.0464 | 0.0006 | |  | | 161 | 104 | | 278 | 11 | 292 | 4 | |
| X12-12-3-17 | 177 | 322 | 0.55 | |  | | 0.0485 | | 0.0015 | | 0.3097 | 0.0092 | 0.0463 | 0.0005 | |  | | 124 | 70 | | 274 | 7 | 292 | 3 | |
| X12-12-3-18 | 92 | 209 | 0.44 | |  | | 0.0529 | | 0.0017 | | 0.3352 | 0.0105 | 0.0462 | 0.0005 | |  | | 324 | 72 | | 294 | 8 | 291 | 3 | |
| X12-12-3-19 | 52 | 117 | 0.44 | |  | | 0.0450 | | 0.0025 | | 0.2874 | 0.0167 | 0.0461 | 0.0007 | |  | | error |  | | 257 | 13 | 291 | 4 | |
| X12-12-3-20 | 93 | 203 | 0.46 | |  | | 0.0491 | | 0.0018 | | 0.3144 | 0.0118 | 0.0464 | 0.0005 | |  | | 150 | 87 | | 278 | 9 | 292 | 3 | |
| X12-12-3-21 | 75 | 161 | 0.47 | |  | | 0.0527 | | 0.0022 | | 0.3348 | 0.0137 | 0.0466 | 0.0006 | |  | | 317 | 96 | | 293 | 10 | 293 | 4 | |
| X12-12-3-22 | 181 | 387 | 0.47 | |  | | 0.0525 | | 0.0014 | | 0.3349 | 0.0094 | 0.0463 | 0.0005 | |  | | 306 | 61 | | 293 | 7 | 292 | 3 | |
| X12-12-3-23 | 52 | 380 | 0.14 | |  | | 0.0500 | | 0.0011 | | 0.3190 | 0.0070 | 0.0462 | 0.0004 | |  | | 195 | 55 | | 281 | 5 | 291 | 3 | |
| X12-12-3-24 | 64 | 132 | 0.48 | |  | | 0.0540 | | 0.0023 | | 0.3456 | 0.0150 | 0.0464 | 0.0005 | |  | | 372 | 66 | | 301 | 11 | 292 | 3 | |
| 白墩子石英闪长岩 | | |  | |  | |  | |  | |  |  |  |  | |  | |  |  | |  |  |  |  | |
| X12-7-1-01 | 518 | 1010 | 0.51 | |  | | 0.0520 | | 0.0010 | | 0.3084 | 0.0061 | 0.0429 | 0.0005 | |  | | 287 | 43 | | 273 | 5 | 271 | 3 | |
| X12-7-1-02 | 37 | 418 | 0.09 | |  | | 0.0532 | | 0.0013 | | 0.3149 | 0.0078 | 0.0429 | 0.0004 | |  | | 345 | 56 | | 278 | 6 | 271 | 3 | |
| X12-7-1-03 | 416 | 840 | 0.49 | |  | | 0.0528 | | 0.0012 | | 0.3117 | 0.0068 | 0.0428 | 0.0003 | |  | | 320 | 18 | | 276 | 5 | 270 | 2 | |
| X12-7-1-04 | 488 | 853 | 0.57 | |  | | 0.0521 | | 0.0012 | | 0.3093 | 0.0071 | 0.0430 | 0.0004 | |  | | 300 | 54 | | 274 | 6 | 271 | 2 | |
| X12-7-1-05 | 165 | 403 | 0.41 | |  | | 0.0517 | | 0.0017 | | 0.3050 | 0.0106 | 0.0428 | 0.0004 | |  | | 333 | 76 | | 270 | 8 | 270 | 3 | |
| X12-7-1-06 | 71 | 227 | 0.31 | |  | | 0.0526 | | 0.0022 | | 0.3129 | 0.0141 | 0.0429 | 0.0006 | |  | | 322 | 96 | | 276 | 11 | 271 | 4 | |
| X12-7-1-07 | 59 | 285 | 0.21 | |  | | 0.0502 | | 0.0021 | | 0.2980 | 0.0124 | 0.0432 | 0.0006 | |  | | 206 | 98 | | 265 | 10 | 273 | 4 | |
| X12-7-1-08 | 299 | 648 | 0.46 | |  | | 0.0526 | | 0.0011 | | 0.3114 | 0.0068 | 0.0428 | 0.0003 | |  | | 322 | 53 | | 275 | 5 | 270 | 2 | |
| X12-7-1-09 | 726 | 1252 | 0.58 | |  | | 0.0535 | | 0.0009 | | 0.3164 | 0.0057 | 0.0428 | 0.0004 | |  | | 350 | 39 | | 279 | 4 | 270 | 2 | |
| X12-7-1-10 | 62 | 210 | 0.30 | |  | | 0.0523 | | 0.0020 | | 0.3074 | 0.0118 | 0.0427 | 0.0005 | |  | | 298 | 87 | | 272 | 9 | 270 | 3 | |
| X12-7-1-11 | 340 | 761 | 0.45 | |  | | 0.0535 | | 0.0010 | | 0.3162 | 0.0062 | 0.0426 | 0.0003 | |  | | 350 | 43 | | 279 | 5 | 269 | 2 | |
| X12-7-1-13 | 211 | 465 | 0.45 | |  | | 0.0538 | | 0.0015 | | 0.3193 | 0.0098 | 0.0429 | 0.0006 | |  | | 361 | 68 | | 281 | 8 | 271 | 4 | |
| X12-7-1-14 | 432 | 996 | 0.43 | |  | | 0.0526 | | 0.0009 | | 0.3123 | 0.0058 | 0.0428 | 0.0003 | |  | | 309 | 8 | | 276 | 5 | 270 | 2 | |
| X12-7-1-15 | 437 | 981 | 0.45 | |  | | 0.0533 | | 0.0010 | | 0.3190 | 0.0067 | 0.0431 | 0.0005 | |  | | 343 | 41 | | 281 | 5 | 272 | 3 | |
| X12-7-1-16 | 82 | 333 | 0.25 | |  | | 0.0554 | | 0.0019 | | 0.3280 | 0.0115 | 0.0427 | 0.0004 | |  | | 428 | 78 | | 288 | 9 | 269 | 3 | |
| X12-7-1-17 | 166 | 399 | 0.42 | |  | | 0.0528 | | 0.0017 | | 0.3134 | 0.0108 | 0.0426 | 0.0004 | |  | | 320 | 68 | | 277 | 8 | 269 | 3 | |
| X12-7-1-18 | 639 | 1081 | 0.59 | |  | | 0.0527 | | 0.0011 | | 0.3147 | 0.0067 | 0.0431 | 0.0004 | |  | | 322 | 14 | | 278 | 5 | 272 | 2 | |
| X12-7-1-19 | 453 | 941 | 0.48 | |  | | 0.0506 | | 0.0010 | | 0.3001 | 0.0063 | 0.0427 | 0.0003 | |  | | 233 | 81 | | 266 | 5 | 270 | 2 | |
| X12-7-1-20 | 339 | 791 | 0.43 | |  | | 0.0522 | | 0.0011 | | 0.3089 | 0.0065 | 0.0427 | 0.0004 | |  | | 295 | 44 | | 273 | 5 | 270 | 2 | |
| X12-7-1-21 | 414 | 697 | 0.59 | |  | | 0.0525 | | 0.0010 | | 0.3105 | 0.0057 | 0.0428 | 0.0003 | |  | | 309 | 43 | | 275 | 4 | 270 | 2 | |
| X12-7-1-22 | 498 | 688 | 0.72 | |  | | 0.0533 | | 0.0011 | | 0.3167 | 0.0068 | 0.0429 | 0.0004 | |  | | 339 | 44 | | 279 | 5 | 271 | 2 | |
| X12-7-1-23 | 516 | 1002 | 0.51 | |  | | 0.0529 | | 0.0009 | | 0.3135 | 0.0055 | 0.0428 | 0.0004 | |  | | 324 | 37 | | 277 | 4 | 270 | 2 | |

附表3 研究样品的锆石Hf同位素组成

Appendix Table 3 Zircon Hf isotope compositions of the studied samples

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 分析点 | 年龄 (Ma) | 176Hf/177Hf | 2σ | 176Lu/177Hf | 176Yb/177Hf |  | (176Hf/177Hf)i | *ε*Hf(t) | 2σ | *T*DM (Ga) | *T*DM2 (Ga) |
| 石板墩花岗岩 |  |  |  |  |  |  |  |  |  |  |  |
| X12-10-2 03 | 303 | 0.282662 | 0.000024 | 0.002691 | 0.129150 |  | 0.282647 | 1.8 | 0.9 | 0.88 | 1.18 |
| X12-10-2 05 | 303 | 0.282655 | 0.000025 | 0.001486 | 0.063960 |  | 0.282647 | 1.9 | 0.9 | 0.86 | 1.18 |
| X12-10-2 07 | 303 | 0.282624 | 0.000024 | 0.002318 | 0.107000 |  | 0.282611 | 0.6 | 0.8 | 0.92 | 1.26 |
| X12-10-2 08 | 303 | 0.282646 | 0.000028 | 0.001988 | 0.091752 |  | 0.282635 | 1.4 | 1.0 | 0.88 | 1.21 |
| X12-10-2 09 | 303 | 0.282750 | 0.000025 | 0.001657 | 0.074458 |  | 0.282741 | 5.2 | 0.9 | 0.72 | 0.97 |
| X12-10-2 10 | 303 | 0.282720 | 0.000021 | 0.002169 | 0.087674 |  | 0.282708 | 4.0 | 0.7 | 0.78 | 1.04 |
| X12-10-2 12 | 303 | 0.282782 | 0.000024 | 0.002340 | 0.114624 |  | 0.282768 | 6.1 | 0.8 | 0.69 | 0.91 |
| X12-10-2 16 | 303 | 0.282781 | 0.000024 | 0.002071 | 0.098148 |  | 0.282769 | 6.2 | 0.8 | 0.69 | 0.91 |
| X12-10-2 17 | 303 | 0.282649 | 0.000024 | 0.001937 | 0.089899 |  | 0.282638 | 1.6 | 0.8 | 0.88 | 1.20 |
| X12-10-2 18 | 303 | 0.282723 | 0.000026 | 0.001388 | 0.059287 |  | 0.282715 | 4.3 | 0.9 | 0.76 | 1.03 |
| X12-10-2 19 | 303 | 0.282645 | 0.000021 | 0.001301 | 0.060802 |  | 0.282638 | 1.5 | 0.7 | 0.87 | 1.20 |
| X12-10-2 21 | 303 | 0.282759 | 0.000021 | 0.001470 | 0.067672 |  | 0.282750 | 5.5 | 0.7 | 0.71 | 0.95 |
| X12-10-2 13 | 879 | 0.282086 | 0.000020 | 0.001549 | 0.078037 |  | 0.282060 | -6.0 | 0.7 | 1.67 | 2.14 |
| X12-10-2 11 | 880 | 0.282204 | 0.000021 | 0.001659 | 0.066160 |  | 0.282177 | -1.9 | 0.7 | 1.51 | 1.88 |
| X12-10-2 14 | 882 | 0.282188 | 0.000025 | 0.001327 | 0.066614 |  | 0.282166 | -2.2 | 0.9 | 1.51 | 1.90 |
| X12-10-3 02 | 304 | 0.282644 | 0.000021 | 0.002418 | 0.118263 |  | 0.282630 | 1.3 | 0.7 | 0.90 | 1.22 |
| X12-10-3 03 | 304 | 0.282714 | 0.000017 | 0.001966 | 0.100130 |  | 0.282703 | 3.9 | 0.6 | 0.78 | 1.05 |
| X12-10-3 04 | 304 | 0.282700 | 0.000017 | 0.002156 | 0.104807 |  | 0.282688 | 3.3 | 0.6 | 0.81 | 1.09 |
| X12-10-3 05 | 304 | 0.282803 | 0.000025 | 0.004667 | 0.179537 |  | 0.282777 | 6.5 | 0.9 | 0.71 | 0.89 |
| X12-10-3 07 | 304 | 0.282740 | 0.000021 | 0.002194 | 0.104526 |  | 0.282727 | 4.7 | 0.7 | 0.75 | 1.00 |
| X12-10-3 08 | 304 | 0.282779 | 0.000018 | 0.002061 | 0.097255 |  | 0.282767 | 6.1 | 0.6 | 0.69 | 0.91 |
| X12-10-3 09 | 304 | 0.282681 | 0.000021 | 0.001818 | 0.085776 |  | 0.282671 | 2.7 | 0.7 | 0.83 | 1.13 |
| X12-10-3 17 | 304 | 0.282746 | 0.000019 | 0.001667 | 0.074692 |  | 0.282737 | 5.1 | 0.7 | 0.73 | 0.98 |
| X12-10-3 19 | 304 | 0.282879 | 0.000020 | 0.003673 | 0.144804 |  | 0.282859 | 9.4 | 0.7 | 0.57 | 0.70 |
| X12-10-3 29 | 304 | 0.282731 | 0.000017 | 0.001924 | 0.092488 |  | 0.282720 | 4.5 | 0.6 | 0.76 | 1.02 |
| X12-10-3 22 | 881 | 0.282129 | 0.000018 | 0.001417 | 0.069866 |  | 0.282105 | -4.4 | 0.6 | 1.60 | 2.04 |
| X12-10-3 01 | 883 | 0.282180 | 0.000019 | 0.001243 | 0.066239 |  | 0.282159 | -2.4 | 0.7 | 1.52 | 1.91 |
| X12-10-3 11 | 1753 | 0.282099 | 0.000016 | 0.000964 | 0.049341 |  | 0.282067 | 14.2 | 0.6 | 1.62 | 1.54 |
| X12-11-3 03 | 302 | 0.282549 | 0.000026 | 0.002014 | 0.091827 |  | 0.282538 | -2.0 | 0.9 | 1.02 | 1.43 |
| X12-11-3 09 | 302 | 0.282890 | 0.000019 | 0.000977 | 0.041689 |  | 0.282884 | 10.2 | 0.7 | 0.51 | 0.64 |
| X12-11-3 10 | 302 | 0.282688 | 0.000024 | 0.001940 | 0.080589 |  | 0.282677 | 2.9 | 0.8 | 0.82 | 1.11 |
| X12-11-3 11 | 302 | 0.282599 | 0.000017 | 0.002095 | 0.092435 |  | 0.282587 | -0.3 | 0.6 | 0.95 | 1.32 |
| X12-11-3 14 | 302 | 0.282805 | 0.000023 | 0.001718 | 0.073906 |  | 0.282795 | 7.1 | 0.8 | 0.65 | 0.85 |
| X12-11-3 17 | 302 | 0.282684 | 0.000020 | 0.001981 | 0.084278 |  | 0.282673 | 2.7 | 0.7 | 0.83 | 1.12 |
| X12-11-3 20 | 302 | 0.282877 | 0.000020 | 0.000828 | 0.033978 |  | 0.282872 | 9.8 | 0.7 | 0.53 | 0.67 |
| X12-11-3 25 | 302 | 0.282749 | 0.000023 | 0.001702 | 0.071033 |  | 0.282740 | 5.1 | 0.8 | 0.73 | 0.97 |
| X12-11-3 27 | 302 | 0.282632 | 0.000020 | 0.001075 | 0.043563 |  | 0.282626 | 1.1 | 0.7 | 0.88 | 1.23 |
| X12-11-3 30 | 302 | 0.282559 | 0.000025 | 0.002041 | 0.083730 |  | 0.282548 | -1.7 | 0.9 | 1.01 | 1.41 |
| X12-11-3 02 | 666 | 0.282291 | 0.000025 | 0.001184 | 0.053643 |  | 0.282276 | -3.1 | 0.9 | 1.36 | 1.79 |
| X12-11-3 22 | 762 | 0.282012 | 0.000020 | 0.001157 | 0.051300 |  | 0.281996 | -10.9 | 0.7 | 1.75 | 2.35 |
| X12-11-3 24 | 766 | 0.282174 | 0.000016 | 0.001246 | 0.057989 |  | 0.282156 | -5.1 | 0.6 | 1.53 | 1.99 |
| X12-11-3 26 | 771 | 0.282105 | 0.000022 | 0.001710 | 0.077943 |  | 0.282080 | -7.7 | 0.8 | 1.65 | 2.16 |
| X12-11-3 18 | 881 | 0.282220 | 0.000019 | 0.001215 | 0.055707 |  | 0.282200 | -1.0 | 0.7 | 1.46 | 1.82 |
| 石板墩闪长岩 |  |  |  |  |  |  |  |  |  |  |  |
| X12-12-3 03 | 291 | 0.282875 | 0.000025 | 0.000961 | 0.042946 |  | 0.282870 | 9.5 | 0.9 | 0.53 | 0.68 |
| X12-12-3 04 | 291 | 0.282894 | 0.000026 | 0.000971 | 0.043286 |  | 0.282889 | 10.2 | 0.9 | 0.51 | 0.64 |
| X12-12-3 05 | 291 | 0.282923 | 0.000027 | 0.001215 | 0.051728 |  | 0.282916 | 11.1 | 0.9 | 0.47 | 0.58 |
| X12-12-3 06 | 291 | 0.282920 | 0.000020 | 0.000973 | 0.039425 |  | 0.282915 | 11.1 | 0.7 | 0.47 | 0.58 |
| X12-12-3 08 | 291 | 0.282909 | 0.000026 | 0.001284 | 0.051825 |  | 0.282902 | 10.6 | 0.9 | 0.49 | 0.61 |
| X12-12-3 09 | 291 | 0.282896 | 0.000023 | 0.001641 | 0.073947 |  | 0.282887 | 10.1 | 0.8 | 0.51 | 0.65 |
| X12-12-3 10 | 291 | 0.282886 | 0.000022 | 0.001472 | 0.066047 |  | 0.282878 | 9.8 | 0.8 | 0.53 | 0.66 |
| X12-12-3 11 | 291 | 0.282844 | 0.000023 | 0.001817 | 0.082818 |  | 0.282834 | 8.2 | 0.8 | 0.59 | 0.77 |
| X12-12-3 12 | 291 | 0.282748 | 0.000019 | 0.000944 | 0.041838 |  | 0.282743 | 5.0 | 0.7 | 0.71 | 0.97 |
| X12-12-3 13 | 291 | 0.282760 | 0.000024 | 0.001368 | 0.062403 |  | 0.282753 | 5.3 | 0.8 | 0.70 | 0.95 |
| X12-12-3 14 | 291 | 0.282838 | 0.000023 | 0.001020 | 0.046031 |  | 0.282833 | 8.2 | 0.8 | 0.59 | 0.77 |
| X12-12-3 15 | 291 | 0.282757 | 0.000024 | 0.000858 | 0.038898 |  | 0.282753 | 5.3 | 0.8 | 0.70 | 0.95 |
| X12-12-3 16 | 291 | 0.282752 | 0.000025 | 0.001249 | 0.061916 |  | 0.282745 | 5.1 | 0.9 | 0.71 | 0.97 |
| X12-12-3 19 | 291 | 0.282861 | 0.000025 | 0.001219 | 0.054951 |  | 0.282854 | 8.9 | 0.9 | 0.56 | 0.72 |
| X12-12-3 21 | 291 | 0.282813 | 0.000025 | 0.000996 | 0.042600 |  | 0.282808 | 7.3 | 0.9 | 0.62 | 0.82 |
| 白墩子石英闪长岩 | |  |  |  |  |  |  |  |  |  |  |
| X12-7-1 01 | 270 | 0.282988 | 0.000039 | 0.007629 | 0.375060 |  | 0.282949 | 11.8 | 1.3 | 0.45 | 0.52 |
| X12-7-1 03 | 270 | 0.282958 | 0.000025 | 0.001585 | 0.071732 |  | 0.282950 | 11.8 | 0.9 | 0.42 | 0.52 |
| X12-7-1 04 | 270 | 0.282975 | 0.000028 | 0.002749 | 0.132611 |  | 0.282961 | 12.2 | 1.0 | 0.41 | 0.49 |
| X12-7-1 05 | 270 | 0.283000 | 0.000021 | 0.001636 | 0.072938 |  | 0.282992 | 13.3 | 0.7 | 0.36 | 0.42 |
| X12-7-1 06 | 270 | 0.283079 | 0.000034 | 0.004236 | 0.206260 |  | 0.283058 | 15.7 | 1.2 | 0.27 | 0.27 |
| X12-7-1 07 | 270 | 0.283056 | 0.000033 | 0.003550 | 0.172508 |  | 0.283039 | 15.0 | 1.1 | 0.30 | 0.31 |
| X12-7-1 08 | 270 | 0.282940 | 0.000030 | 0.002504 | 0.115348 |  | 0.282928 | 11.0 | 1.1 | 0.46 | 0.57 |
| X12-7-1 09 | 270 | 0.282903 | 0.000033 | 0.004930 | 0.240331 |  | 0.282878 | 9.3 | 1.1 | 0.55 | 0.68 |
| X12-7-1 10 | 270 | 0.282962 | 0.000026 | 0.000833 | 0.035536 |  | 0.282958 | 12.1 | 0.9 | 0.41 | 0.50 |
| X12-7-1 11 | 270 | 0.282966 | 0.000024 | 0.003464 | 0.161800 |  | 0.282949 | 11.8 | 0.8 | 0.43 | 0.52 |
| X12-7-1 13 | 270 | 0.282894 | 0.000022 | 0.001344 | 0.065744 |  | 0.282887 | 9.6 | 0.8 | 0.51 | 0.66 |
| X12-7-1 16 | 270 | 0.282941 | 0.000024 | 0.002600 | 0.100306 |  | 0.282928 | 11.1 | 0.9 | 0.46 | 0.57 |
| X12-7-1 17 | 270 | 0.282898 | 0.000034 | 0.003299 | 0.128016 |  | 0.282881 | 9.4 | 1.2 | 0.54 | 0.67 |
| X12-7-1 18 | 270 | 0.282979 | 0.000036 | 0.006123 | 0.300392 |  | 0.282948 | 11.8 | 1.3 | 0.45 | 0.52 |
| X12-7-1 20 | 270 | 0.282973 | 0.000028 | 0.003007 | 0.146428 |  | 0.282958 | 12.1 | 1.0 | 0.42 | 0.50 |

附表4 锆石微量元素分析结果（10-6）

Appendix Table 4 Trace element compositions of zircon from the studied samples (10-6)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 点位 | La | Ce | Pr | Nd | Sm | Eu | Gd | Tb | Dy | Ho | Er | Tm | Yb | Lu | Ti | Hf | T(°C) | △FMQ |
| 石板墩花岗岩 | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| X12-10-2-02 | 2.78 | 30 | 1.96 | 13.8 | 8.83 | 2.06 | 28.7 | 8.78 | 96.2 | 36.6 | 168 | 38.3 | 386 | 77.5 |  | 8759 |  |  |
| X12-10-2-03 |  | 27.2 | 0.04 | 1.27 | 3.07 | 1.14 | 20.1 | 8.23 | 112 | 46 | 225 | 53.1 | 544 | 104 | 6.69 | 10353 | 741 | 5.5 |
| X12-10-2-05 | 0.22 | 11.6 | 0.18 | 2.05 | 2.49 | 0.97 | 14.8 | 5.47 | 71.8 | 30.2 | 148 | 34.3 | 350 | 69.5 | 10.1 | 8345 | 781 | 1.8 |
| X12-10-2-07 | 0.04 | 25.3 | 0.11 | 1.45 | 3.74 | 1.26 | 26.7 | 11 | 145 | 59.8 | 282 | 64.9 | 637 | 117 | 1.58 | 10307 | 623 | 0.9 |
| X12-10-2-08 | 0.02 | 10.4 | 0.09 | 2.16 | 4.38 | 1.54 | 21.6 | 7.4 | 89.5 | 34.5 | 161 | 37.2 | 376 | 72.2 | 8.12 | 8389 | 760 | -0.8 |
| X12-10-2-09 | 0.07 | 34.9 | 0.12 | 1.82 | 4.02 | 1.13 | 27.7 | 12 | 164 | 68.7 | 338 | 79.5 | 790 | 145 | 6.97 | 10726 | 745 | 5.4 |
| X12-10-2-10 | 0.11 | 38.6 | 0.06 | 1.01 | 3.19 | 0.8 | 30.3 | 12.7 | 176 | 72.4 | 335 | 74.6 | 698 | 124 | 3.08 | 11617 | 674 | 5.5 |
| X12-10-2-11 |  | 1.15 | 0.07 | 1.67 | 5.18 | 0.08 | 39.2 | 16.1 | 197 | 74.4 | 325 | 67.7 | 603 | 101 | 9.42 | 12154 |  |  |
| X12-10-2-12 | 2.18 | 28.2 | 1.71 | 11.6 | 7.16 | 1.3 | 19.8 | 5.88 | 70.8 | 26.9 | 125 | 29.2 | 297 | 57.6 | 2.42 | 11498 |  |  |
| X12-10-2-13 |  | 1.11 | 0.06 | 1.5 | 4.9 | 0.07 | 35.2 | 14.1 | 185 | 72.9 | 330 | 71.1 | 653 | 112 | 8.22 | 12152 |  |  |
| X12-10-2-14 | 0.02 | 2.74 | 0.13 | 2.89 | 5.78 | 0.23 | 37.4 | 13.1 | 157 | 57.6 | 248 | 51.7 | 469 | 80.3 | 12.3 | 10956 |  |  |
| X12-10-2-15 | 1.77 | 87 | 1.59 | 13.9 | 19.9 | 4.61 | 90.6 | 33 | 428 | 174 | 826 | 188 | 1854 | 360 |  | 7056 |  |  |
| X12-10-2-16 | 1.64 | 38.1 | 1.45 | 9.84 | 7.35 | 1.4 | 27.9 | 10.2 | 130 | 52.2 | 249 | 57.5 | 573 | 107 | 6.24 | 12094 |  |  |
| X12-10-2-17 | 0.16 | 32.6 | 0.48 | 5.93 | 11 | 3.22 | 55.7 | 17.8 | 211 | 77.2 | 337 | 72.9 | 687 | 125 | 4.28 | 9387 | 702 | -2.7 |
| X12-10-2-18 |  | 11.5 | 0.07 | 1.25 | 2.05 | 0.99 | 15.4 | 5.58 | 72.5 | 30.2 | 145 | 34.5 | 353 | 70.1 | 6.92 | 8584 | 745 | 2.6 |
| X12-10-2-19 |  | 39.2 | 0.03 | 0.65 | 2.89 | 0.93 | 23.9 | 9.69 | 133 | 55.7 | 266 | 60 | 593 | 112 | 3.63 | 10449 | 688 | 7.4 |
| X12-10-2-20 | 0.41 | 38.2 | 0.12 | 1.64 | 4.21 | 1.34 | 26.8 | 10.2 | 133 | 53.3 | 250 | 55.8 | 546 | 106 | 16.8 | 8730 | 835 | 7.4 |
| X12-10-2-21 |  | 49.4 | 0.04 | 1.22 | 4.74 | 1.46 | 37.9 | 15.2 | 208 | 85.5 | 407 | 91.6 | 891 | 163 | 4.32 | 11012 | 702 | 6.3 |
| X12-10-2-23 |  | 61.7 | 0.09 | 1.55 | 4.63 | 1.52 | 35.7 | 14.3 | 189 | 76.1 | 348 | 76.1 | 716 | 130 | 3.74 | 11381 | 690 | 5.6 |
| X12-10-3-01 |  | 2.26 | 0.07 | 1.17 | 3.88 | 0.13 | 27.2 | 10.8 | 138 | 53.3 | 239 | 52.5 | 476 | 80.5 | 8.9 | 10863 |  |  |
| X12-10-3-05 | 0.04 | 21 | 0.21 | 3.77 | 7.19 | 2.82 | 38.1 | 13 | 152 | 58.3 | 259 | 59 | 587 | 104 | 8.73 | 8015 | 767 | -0.3 |
| X12-10-3-07 | 0.11 | 21.1 | 0.1 | 1.32 | 3.79 | 1.36 | 23.7 | 8.35 | 108 | 43.2 | 200 | 45.5 | 454 | 82.3 | 11.4 | 8363 | 794 | 4.7 |
| X12-10-3-08 | 0.01 | 53.2 | 0.06 | 1.42 | 5.79 | 1.87 | 43.7 | 17.2 | 231 | 93.7 | 434 | 99.9 | 954 | 165 | 5.03 | 9883 | 716 | 6.0 |
| X12-10-3-09 | 0.22 | 44.7 | 0.19 | 2.3 | 6.08 | 1.83 | 34.9 | 13 | 167 | 67.2 | 312 | 72.3 | 714 | 127 | 14.7 | 9126 | 821 | 6.2 |
| X12-10-3-10 | 0.15 | 61.4 | 0.19 | 2.08 | 5.37 | 1.52 | 39.3 | 16 | 216 | 88.7 | 415 | 95.2 | 917 | 160 | 3.29 | 11273 | 680 | 4.6 |
| X12-10-3-11 | 0.01 | 2.39 | 0.07 | 2.17 | 5.12 | 0.38 | 31.7 | 12.1 | 153 | 58.9 | 265 | 56.7 | 531 | 91.6 | 6.94 | 9978 |  |  |
| X12-10-3-13 | 0.32 | 6.43 | 0.31 | 1.82 | 1.81 | 0.34 | 10.2 | 5.27 | 84.8 | 38.9 | 219 | 63.1 | 740 | 143 | 2.9 | 17965 | 669 | -0.3 |
| X12-10-3-14 | 0.49 | 28.4 | 0.55 | 3.95 | 4.97 | 1.56 | 23.4 | 8.52 | 106 | 42.8 | 200 | 47.6 | 478 | 90.1 | 8.23 | 8854 | 761 | 1.5 |
| X12-10-3-16 | 0.04 | 43.6 | 0.11 | 2.12 | 4.74 | 1.82 | 31.9 | 12.1 | 161 | 65.2 | 305 | 71.5 | 731 | 132 | 7.39 | 9500 | 751 | 5.3 |
| X12-10-3-17 | 0 | 25.3 | 0.1 | 1.6 | 3.84 | 1.48 | 25.6 | 9.31 | 122 | 48 | 225 | 52.2 | 521 | 94.2 | 7.35 | 8930 | 750 | 3.9 |
| X12-10-3-19 | 0.17 | 40 | 0.73 | 10.6 | 18.8 | 7.2 | 87.8 | 26.7 | 300 | 108 | 469 | 103 | 989 | 178 | 10.5 | 7910 | 785 | -2.1 |
| X12-10-3-21 | 0 | 29.2 | 0.08 | 1.44 | 3.56 | 1.24 | 20.6 | 7.63 | 95.4 | 37.3 | 178 | 41.3 | 406 | 72.2 | 4.91 | 10011 | 714 | 3.6 |
| X12-10-3-22 | 0 | 1 | 0.06 | 1.34 | 3.87 | 0.08 | 33.1 | 14.3 | 189 | 75.8 | 347 | 77.3 | 712 | 118 | 8.51 | 11818 |  |  |
| X12-10-3-25 | 0.01 | 27.4 | 0.05 | 1.25 | 3.25 | 1.13 | 23.3 | 9.07 | 119 | 48.6 | 234 | 55.9 | 559 | 101 | 2.76 | 10398 | 665 | 3.1 |
| X12-10-3-26 | 0.67 | 7.58 | 0.74 | 4.2 | 4.15 | 0.69 | 17.4 | 8.12 | 125 | 57.8 | 301 | 74.5 | 755 | 139 | 2.52 | 15241 | 658 | -4.7 |
| X12-11-3-01 |  | 39.1 | 0.11 | 3.09 | 7.41 | 2.18 | 44.4 | 16.1 | 203 | 78.2 | 367 | 78.1 | 736 | 149 | 9.69 | 8943 | 777 | 3.3 |
| X12-11-3-02 | 0.34 | 11.1 | 0.46 | 5.22 | 7.75 | 0.48 | 43.2 | 15.3 | 180 | 66.7 | 280 | 55.2 | 473 | 85.2 | 18.2 | 11092 |  |  |
| X12-11-3-03 | 0.51 | 22.1 | 0.35 | 3.89 | 7.39 | 1.35 | 43.7 | 15.1 | 191 | 75.3 | 341 | 73.7 | 684 | 134 | 5.84 | 10620 | 729 | -0.9 |
| X12-11-3-04 |  | 15 | 0.08 | 0.76 | 3.59 | 0.96 | 26.2 | 9.88 | 130 | 52.8 | 250 | 54.9 | 523 | 106 | 5.8 | 9462 | 728 | 3.8 |
| X12-11-3-05 |  | 14.5 | 0.01 | 1.25 | 2.55 | 0.33 | 17.7 | 6.77 | 86.8 | 34.7 | 159 | 34 | 321 | 62 | 6.15 | 10861 | 734 | 2.3 |
| X12-11-3-06 |  | 14.3 | 0.02 | 0.7 | 2.8 | 0.52 | 16.5 | 6.12 | 77.7 | 31.4 | 147 | 31.9 | 305 | 61.7 | 3.18 | 9374 | 677 | 2.2 |
| X12-11-3-07 | 0.03 | 20.6 | 0.02 | 0.69 | 2.64 | 0.39 | 18.9 | 7.48 | 96.1 | 36.8 | 168 | 35.2 | 324 | 61.8 | 4.94 | 11828 | 714 | 4.6 |
| X12-11-3-09 | 0.01 | 9.85 | 0 | 0.43 | 1.08 | 0.04 | 7.62 | 3.17 | 40.5 | 16.6 | 80.3 | 18.1 | 178 | 35.7 | 6.87 | 11890 | 744 | 5.6 |
| X12-11-3-11 | 5.13 | 46.6 | 2.52 | 15 | 12 | 1.35 | 62.5 | 23.7 | 309 | 123 | 564 | 119 | 1089 | 201 | 3.3 | 12942 | 680 | -3.8 |
| X12-11-3-12 | 0.68 | 5.1 | 0.53 | 3.33 | 4.32 | 0.33 | 29.2 | 13.1 | 173 | 65.6 | 287 | 61.3 | 553 | 101 | 7.71 | 13466 |  |  |
| X12-11-3-14 | 0.1 | 11.8 | 0.18 | 3.04 | 7.48 | 1.57 | 44.6 | 15.8 | 184 | 70.8 | 308 | 65.5 | 598 | 118 | 5.02 | 9999 | 715 | -3.3 |
| X12-11-3-15 | 25.7 | 77.2 | 8.66 | 43.9 | 19.3 | 2.2 | 72.2 | 22.8 | 264 | 94.5 | 391 | 76.2 | 656 | 117 | 9.64 | 9399 |  |  |
| X12-11-3-17 |  | 38.8 | 0.07 | 1.08 | 4.95 | 0.72 | 35 | 14.4 | 194 | 82.5 | 398 | 89.4 | 861 | 171 | 4.36 | 11779 | 703 | 5.8 |
| X12-11-3-18 | 5.9 | 16.1 | 1.69 | 9.11 | 8.05 | 0.47 | 40.7 | 16.2 | 198 | 73.2 | 323 | 67.1 | 595 | 110 | 11 | 12863 |  |  |
| X12-11-3-19 | 0.07 | 18 | 0.05 | 1.04 | 2.66 | 0.6 | 16.8 | 6.75 | 86.2 | 36.4 | 175 | 39.1 | 375 | 76.5 | 4.56 | 10372 | 707 | 3.3 |
| X12-11-3-20 | 0.03 | 8.76 | 0.08 | 1.45 | 3.08 | 0.57 | 15.8 | 4.54 | 49.6 | 16.5 | 66.3 | 13.1 | 113 | 23 | 9.15 | 11624 | 772 | -1.8 |
| X12-11-3-21 | 0.02 | 9.92 | 0.09 | 1.77 | 3.95 | 0.75 | 23.7 | 8.67 | 109 | 44.1 | 204 | 44.5 | 427 | 85.5 | 3.92 | 9706 | 694 | -1.7 |
| X12-11-3-22 | 0.02 | 0.83 | 0.04 | 0.98 | 3.72 | 0.07 | 33.4 | 14.8 | 176 | 60.9 | 251 | 50.9 | 440 | 78.7 | 5.75 | 13458 |  |  |
| X12-11-3-24 | 0.07 | 0.97 | 0.1 | 1.56 | 4.02 | 0.12 | 31.9 | 13.3 | 159 | 56.2 | 238 | 47.9 | 419 | 75 | 5.11 | 13743 |  |  |
| X12-11-3-25 | 1.79 | 17 | 0.63 | 3.07 | 4.75 | 0.65 | 21.1 | 6.92 | 93.5 | 39.5 | 190 | 43.5 | 429 | 88.2 | 8.18 | 9015 |  |  |
| X12-11-3-26 | 0.55 | 2.6 | 0.42 | 3.34 | 6.82 | 0.12 | 48 | 19.8 | 248 | 93.9 | 405 | 83 | 729 | 131 | 6.83 | 12888 |  |  |
| X12-11-3-27 |  | 9.19 | 0.1 | 2.22 | 5.13 | 1.16 | 30.9 | 10.4 | 126 | 49.3 | 225 | 49.2 | 463 | 91.2 | 4.76 | 9235 | 711 | -2.9 |
| X12-11-3-28 | 0.01 | 14.8 | 0.02 | 0.55 | 1.39 | 0.18 | 12.2 | 4.87 | 64.9 | 26.1 | 122 | 27.5 | 254 | 48.9 | 3.9 | 11225 | 694 | 4.8 |
| X12-11-3-29 | 0.09 | 8.17 | 0.04 | 0.43 | 1.36 | 0.2 | 13.3 | 5.6 | 74.7 | 27.6 | 120 | 25 | 223 | 39.7 | 4.75 | 13127 | 711 | 3.1 |
| X12-11-3-30 | 0.33 | 16.9 | 0.32 | 2.7 | 3.04 | 0.58 | 19.9 | 7.04 | 91.4 | 38 | 180 | 40.7 | 391 | 77.3 | 3.67 | 9438 | 688 | -0.6 |
| 石板墩闪长岩 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| X12-12-3-01 | 122 | 252 | 26.7 | 105 | 16.9 | 2 | 22.4 | 4.88 | 55.5 | 22.6 | 112 | 26.3 | 287 | 66.9 | 2.9 | 10528 |  |  |
| X12-12-3-02 | 14.2 | 44 | 3.94 | 16.9 | 4.24 | 0.64 | 11.8 | 4.03 | 52.5 | 21.8 | 117 | 28.1 | 304 | 69.3 | 3.65 | 10830 |  |  |
| X12-12-3-03 | 0.02 | 12.7 | 0.06 | 0.85 | 1.85 | 0.56 | 11.7 | 4.46 | 61.7 | 27.5 | 143 | 34.6 | 372 | 84.9 | 6.37 | 10564 | 737 | 4.8 |
| X12-12-3-04 | 0.01 | 6.62 | 0.03 | 0.81 | 2.26 | 0.63 | 12 | 4.06 | 49.8 | 20.3 | 97.1 | 22.4 | 224 | 48.7 | 5.06 | 10735 | 716 | 0.2 |
| X12-12-3-05 |  | 11.3 | 0.01 | 0.5 | 1.4 | 0.44 | 9.34 | 3.38 | 44.6 | 18.7 | 95.9 | 23.2 | 245 | 55 | 4.81 | 11024 | 712 | 5.0 |
| X12-12-3-06 |  | 7.67 | 0 | 0.19 | 0.96 | 0.38 | 7.33 | 2.94 | 39.2 | 16.9 | 87.1 | 21.7 | 235 | 54.4 | 4.62 | 10671 | 708 | 7.2 |
| X12-12-3-07 | 0.01 | 10.1 | 0.05 | 1.37 | 3.01 | 0.66 | 14.9 | 5.55 | 68.7 | 28.3 | 136 | 31.6 | 326 | 69.4 | 2.82 | 11414 | 667 | -1.2 |
| X12-12-3-08 |  | 10.3 | 0.04 | 0.68 | 1.59 | 0.58 | 10.2 | 3.84 | 54.5 | 24.4 | 128 | 31.4 | 338 | 78.4 | 7.71 | 9873 | 755 | 5.4 |
| X12-12-3-09 | 2.96 | 18.6 | 0.81 | 3.91 | 2.24 | 0.48 | 11.3 | 4.59 | 61 | 26.8 | 141 | 34.7 | 369 | 81.8 | 5.15 | 10946 |  |  |
| X12-12-3-10 | 1.79 | 19.3 | 0.75 | 4.21 | 2.31 | 0.53 | 12.3 | 4.47 | 60.6 | 26.2 | 136 | 32.9 | 348 | 76.3 | 5.05 | 11120 |  |  |
| X12-12-3-11 | 0.07 | 15.3 | 0.08 | 0.62 | 2.1 | 0.45 | 12 | 4.86 | 68.8 | 30.4 | 160 | 39.9 | 431 | 98.6 | 4.22 | 11462 | 700 | 5.5 |
| X12-12-3-12 | 0.01 | 12.1 | 0.02 | 0.31 | 1.42 | 0.5 | 10.6 | 4.32 | 57.8 | 24.9 | 130 | 31.3 | 333 | 71.8 | 5.51 | 10582 | 724 | 7.4 |
| X12-12-3-13 |  | 9.22 | 0.04 | 0.39 | 1.04 | 0.44 | 8.72 | 3.16 | 42.7 | 18.6 | 95.2 | 24 | 254 | 57.5 | 6.03 | 10810 | 732 | 6.3 |
| X12-12-3-14 | 49.1 | 126 | 14.8 | 67.6 | 15.1 | 2.12 | 22.5 | 5.67 | 62.2 | 25.4 | 127 | 30.7 | 322 | 70.9 | 10.15 | 9888 |  |  |
| X12-12-3-15 | 0.04 | 9.14 | 0.02 | 0.97 | 1.83 | 0.36 | 11.7 | 4.56 | 60.1 | 25.8 | 131 | 30.7 | 309 | 65.8 | 3.53 | 9956 | 685 | 1.2 |
| X12-12-3-16 |  | 8.68 | 0.14 | 2.25 | 4.2 | 1.11 | 22.9 | 7.39 | 90.9 | 35.7 | 167 | 37.8 | 372 | 76.2 | 6.73 | 10109 | 742 | -2.0 |
| X12-12-3-17 |  | 11.6 | 0.03 | 0.84 | 1.65 | 0.48 | 8.82 | 3.51 | 46.3 | 19.7 | 101 | 24 | 257 | 57.1 | 5.31 | 11016 | 720 | 3.7 |
| X12-12-3-18 |  | 9.52 | 0.04 | 0.61 | 1.36 | 0.36 | 11.1 | 4.15 | 54.7 | 23.2 | 118 | 28.7 | 299 | 64.8 | 3.31 | 10722 | 680 | 3.1 |
| X12-12-3-19 | 0.03 | 6.33 | 0.04 | 0.24 | 1.03 | 0.34 | 5.82 | 2.14 | 29 | 12.3 | 61.3 | 15.1 | 159 | 35 | 7.06 | 9396 | 747 | 6.0 |
| X12-12-3-20 |  | 8.28 | 0.04 | 0.99 | 2.8 | 0.52 | 15.6 | 6.11 | 79.9 | 32.5 | 154 | 35.1 | 345 | 69.3 | 4.32 | 10092 | 702 | 0.2 |
| X12-12-3-21 | 0.02 | 7.65 | 0.03 | 0.64 | 1.3 | 0.42 | 7.98 | 2.83 | 36.8 | 15.3 | 76.8 | 18.4 | 198 | 43.1 | 5.43 | 10103 | 722 | 2.9 |
| X12-12-3-22 |  | 11.6 | 0.04 | 0.28 | 1.44 | 0.46 | 7.64 | 3.25 | 44.3 | 19.3 | 100 | 24.8 | 269 | 58.9 | 3.54 | 11216 | 685 | 6.4 |
| X12-12-3-23 | 0.1 | 8.32 |  | 0.06 | 0.5 | 0.12 | 4.12 | 1.68 | 25.9 | 11.8 | 67.8 | 18.4 | 210 | 46.6 | 2.46 | 11039 | 656 | 11.0 |
| X12-12-3-24 | 0.02 | 7.89 | 0.01 | 0.49 | 1.93 | 0.38 | 13.7 | 5.15 | 65.9 | 26.6 | 124 | 27.6 | 269 | 51.9 | 3.69 | 10045 | 689 | 1.9 |
| 白墩子石英闪长岩 | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| X12-7-1-01 | 0.05 | 12.7 | 0.28 | 6.77 | 15.5 | 2.51 | 109 | 39.5 | 489 | 185 | 811 | 167 | 1522 | 277 | 6.29 | 7365 | 750 | -4.9 |
| X12-7-1-02 |  | 1.02 | 0.02 | 0.51 | 0.67 | 0.12 | 5.1 | 2.08 | 31.5 | 14.1 | 74.6 | 18.9 | 205 | 45.1 | 0.97 | 14551 | 599 | -5.9 |
| X12-7-1-03 | 0.53 | 7.78 | 0.51 | 5.7 | 8.05 | 1.32 | 46.4 | 16 | 203 | 79.6 | 366 | 78.3 | 754 | 149 | 2.34 | 7730 | 664 | -7.8 |
| X12-7-1-04 | 0.12 | 12.4 | 0.69 | 13.3 | 24.1 | 3.94 | 127 | 43.2 | 505 | 187 | 819 | 170 | 1543 | 284 | 5.81 | 6890 | 743 | -8.1 |
| X12-7-1-05 | 0.01 | 5.75 | 0.09 | 2.72 | 6.92 | 1.24 | 46.6 | 16.9 | 203 | 74.3 | 322 | 66.7 | 611 | 110 | 5.07 | 8813 | 730 | -5.3 |
| X12-7-1-06 |  | 3.1 | 0.07 | 2.2 | 4.66 | 0.67 | 26.7 | 9.19 | 113 | 40.7 | 179 | 37.9 | 354 | 64.6 | 3.39 | 10268 | 695 | -7.8 |
| X12-7-1-07 | 0.19 | 4.33 | 0.24 | 2.19 | 2.42 | 0.39 | 11.5 | 4.19 | 59.3 | 24.6 | 121 | 28.2 | 283 | 55.3 | 0.26 | 14209 | 516 | -10.8 |
| X12-7-1-08 | 0.04 | 8.19 | 0.17 | 3.48 | 9.29 | 1.64 | 64.2 | 22.9 | 284 | 106 | 461 | 95.6 | 872 | 160 | 3.66 | 8804 | 701 | -5.6 |
| X12-7-1-09 |  | 16.1 | 0.29 | 6.84 | 19.4 | 3.24 | 132 | 46.8 | 587 | 226 | 991 | 206 | 1856 | 331 | 6.61 | 7143 | 755 | -4.1 |
| X12-7-1-10 |  | 2.93 | 0.04 | 1.1 | 3.26 | 0.5 | 17.6 | 6.56 | 78.4 | 29 | 125 | 26.5 | 245 | 45.4 | 3.68 | 12209 | 702 | -5.4 |
| X12-7-1-11 | 0.76 | 12.5 | 0.72 | 7.32 | 12.7 | 1.93 | 74 | 26 | 320 | 123 | 553 | 117 | 1080 | 200 | 4.96 | 7619 | 728 | -5.7 |
| X12-7-1-13 | 0.02 | 7.17 | 0.16 | 4.05 | 9.83 | 1.57 | 57.9 | 19.4 | 221 | 78.1 | 327 | 67.4 | 613 | 108 | 4.69 | 9904 | 723 | -6.8 |
| X12-7-1-14 | 0.01 | 10.8 | 0.19 | 4.07 | 12.6 | 2.09 | 88.1 | 32 | 401 | 156 | 698 | 148 | 1367 | 249 | 5.18 | 7046 | 732 | -4.1 |
| X12-7-1-15 | 0.77 | 10.4 | 0.58 | 6.98 | 13.2 | 2.09 | 83.5 | 29.9 | 368 | 141 | 613 | 130 | 1188 | 215 | 4.39 | 7701 | 717 | -6.6 |
| X12-7-1-16 | 0.04 | 2.87 | 0.11 | 1.17 | 3.68 | 0.63 | 24.3 | 9.2 | 113 | 43.9 | 199 | 43 | 414 | 80.8 | 0.63 | 8947 | 571 | -9.4 |
| X12-7-1-17 | 0.02 | 5.26 | 0.25 | 4.09 | 9.92 | 1.54 | 59.2 | 20.6 | 242 | 90.5 | 393 | 83.1 | 780 | 144 | 4.09 | 7137 | 711 | -7.8 |
| X12-7-1-18 |  | 14.4 | 0.39 | 8.05 | 20.7 | 3.66 | 132 | 46.2 | 573 | 219 | 968 | 200 | 1813 | 329 | 11.7 | 6434 | 813 | -3.8 |
| X12-7-1-19 | 0.02 | 10.9 | 0.24 | 4.45 | 13 | 2.19 | 89.6 | 33.3 | 407 | 156 | 689 | 143 | 1305 | 238 | 5.69 | 7508 | 741 | -4.3 |
| X12-7-1-20 | 0.14 | 8.4 | 0.16 | 3.87 | 8.94 | 1.36 | 59.8 | 21.9 | 274 | 105 | 461 | 97.9 | 912 | 166 | 3.41 | 9855 | 695 | -5.7 |
| X12-7-1-21 | 0.15 | 11.9 | 0.94 | 15.7 | 28 | 4.24 | 134 | 43 | 474 | 165 | 677 | 136 | 1197 | 205 | 5.61 | 7372 | 739 | -9.9 |
| X12-7-1-22 | 2.11 | 20.2 | 1.95 | 22.6 | 31.6 | 4.26 | 139 | 42.3 | 453 | 155 | 620 | 122 | 1059 | 181 | 6.92 | 7357 |  |  |
| X12-7-1-23 | 0.04 | 13.2 | 0.28 | 5.75 | 16 | 2.47 | 111 | 39.4 | 488 | 186 | 808 | 169 | 1523 | 269 | 6.87 | 7205 | 759 | -4.2 |

注：锆石Ti温度计和氧逸度采用Li et al. (2019)的计算软件，La含量>1 ppm锆石和继承锆石未参与计算

附表5研究样品的主量元素(%)和微量元素(10-6)分析结果

Appendix Table 5 Major (%) and trace element (10-6) composition of the studied samples

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 样品 | X12-10-2 | X12-10-3 | X12-11-2 | X12-11-3 |  | X12-12-3 |  | X12-7-1 |
| 岩性 | 石板墩花岗岩 | | | |  | 石板墩  闪长岩 |  | 白墩子  石英闪长岩 |
| 主量元素 | | | | | | | | |
| SiO2 | 69.77 | 75.88 | 75.61 | 76.6 |  | 58.47 |  | 62.03 |
| TiO2 | 0.41 | 0.08 | 0.07 | 0.13 |  | 0.73 |  | 1.16 |
| Al2O3 | 14.61 | 12.67 | 12.75 | 12.21 |  | 16.97 |  | 17.2 |
| TFeO | 2.88 | 0.49 | 0.66 | 0.88 |  | 5.55 |  | 5.42 |
| MnO | 0.05 | 0.01 | 0.01 | 0.02 |  | 0.12 |  | 0.08 |
| MgO | 1.06 | 0.19 | 0.17 | 0.25 |  | 3.45 |  | 1.93 |
| CaO | 2.92 | 1.34 | 1.02 | 1.09 |  | 5.98 |  | 4.92 |
| Na2O | 3.42 | 2.46 | 2.85 | 3.04 |  | 4.05 |  | 4.63 |
| K2O | 2.7 | 5.78 | 5.83 | 4.78 |  | 1.65 |  | 1.55 |
| P2O5 | 0.18 | 0.02 | 0.02 | 0.03 |  | 0.2 |  | 0.23 |
| LOI | 1.87 | 0.97 | 0.86 | 0.83 |  | 2.18 |  | 0.69 |
| 总量 | 99.87 | 99.89 | 99.85 | 99.86 |  | 99.35 |  | 99.84 |
| A/CNK | 1.05 | 0.99 | 0.99 | 1.00 |  | 0.88 |  | 0.94 |
| 微量元素 | | | | | | | | |
| V | 39.4 | 5.82 | 4.77 | 5 |  | 128 |  | 57.5 |
| Cr | 13.3 | 4.42 | 15.1 | 10.7 |  | 63.3 |  | 10.1 |
| Ni | 6.68 | 1.71 | 4.01 | 5.09 |  | 34.7 |  | 5.1 |
| Ga | 16.4 | 10.9 | 11 | 12.1 |  | 18 |  | 17.9 |
| Rb | 104 | 125 | 132 | 108 |  | 62 |  | 42.6 |
| Sr | 314 | 123 | 180 | 108 |  | 573 |  | 609 |
| Zr | 158 | 52.4 | 62.2 | 86.7 |  | 207 |  | 197 |
| Nb | 8.01 | 0.88 | 2.2 | 8.45 |  | 5.2 |  | 4.36 |
| Ba | 282 | 273 | 514 | 557 |  | 243 |  | 165 |
| Hf | 4.28 | 1.75 | 2.4 | 2.62 |  | 4.76 |  | 4.23 |
| Ta | 0.52 | 0.06 | 0.17 | 0.62 |  | 0.35 |  | 0.31 |
| Pb | 16.9 | 34 | 32.7 | 28.2 |  | 10.2 |  | 7.26 |
| Th | 11.4 | 16 | 10.9 | 6.31 |  | 0.86 |  | 3.49 |
| U | 0.9 | 0.67 | 0.67 | 0.72 |  | 0.81 |  | 0.92 |
| Y | 21.8 | 14.9 | 13.5 | 27.2 |  | 36 |  | 19.2 |
| La | 29.8 | 21.8 | 16.5 | 22.3 |  | 12.4 |  | 16 |
| Ce | 59.5 | 46.5 | 34.5 | 46 |  | 33.5 |  | 36.5 |
| Pr | 6.73 | 5.37 | 4.03 | 5.31 |  | 4.95 |  | 4.45 |
| Nd | 24.5 | 19.6 | 15.1 | 19.9 |  | 22.9 |  | 19 |
| Sm | 4.93 | 4.1 | 3.22 | 4.27 |  | 5.77 |  | 4.07 |
| Eu | 1.04 | 0.67 | 1.07 | 0.76 |  | 1.31 |  | 1.28 |
| Gd | 4.5 | 3.54 | 2.99 | 4.13 |  | 6.13 |  | 3.98 |
| Tb | 0.75 | 0.55 | 0.45 | 0.75 |  | 1.05 |  | 0.62 |
| Dy | 4.23 | 2.7 | 2.49 | 4.57 |  | 6.32 |  | 3.59 |
| Ho | 0.81 | 0.52 | 0.47 | 0.95 |  | 1.32 |  | 0.7 |
| Er | 2.34 | 1.48 | 1.45 | 3.03 |  | 4.06 |  | 2 |
| Tm | 0.31 | 0.2 | 0.18 | 0.43 |  | 0.52 |  | 0.28 |
| Yb | 1.93 | 1.17 | 1.14 | 2.98 |  | 3.56 |  | 1.81 |
| Lu | 0.3 | 0.16 | 0.17 | 0.47 |  | 0.55 |  | 0.25 |
| Eu/Eu\* | 0.66 | 0.53 | 1.04 | 0.55 |  | 0.67 |  | 0.96 |

注：A/CNK=Al2O3/(CaO+Na2O+K2O) (mol.%); Eu/Eu\*=2EuN/(SmN+GdN)