

ANEXO 4.1.1. Muestras de roca. Espectrografía de emisión con plasma acoplado (ICP) y masas

| Muestra  | V   | Cr  | Co | Ni  | Cu  | Zn  | Ga | Ge | As | Rb  | Sr    | Y   | Zr    | Nb | Mo | Ag   | In   | Sn | Sb   | Cs   | Ba    | La   | Ce   | Pr   | Nd   | Sm   | Eu   | Gd   | Tb   | Dy    | Ho  | Er   | Tm   | Yb   | Lu   | Hf   | Ta   | W  | Ti   | Pb | Bi   | Th   | U    |
|----------|-----|-----|----|-----|-----|-----|----|----|----|-----|-------|-----|-------|----|----|------|------|----|------|------|-------|------|------|------|------|------|------|------|------|-------|-----|------|------|------|------|------|------|----|------|----|------|------|------|
| C205     | 110 | -20 | 6  | -20 | 208 | 84  | 20 | 1  | -5 | 116 | 944   | 28  | 236   | 7  | -2 | 0.9  | -0.2 | 3  | -0.5 | 0.7  | 1.850 | 34.9 | 64.9 | 7.58 | 30.2 | 6.0  | 1.78 | 5.1  | 0.8  | 4.1   | 0.8 | 2.5  | 0.37 | 2.3  | 0.36 | 5.3  | 0.4  | -1 | 0.3  | 19 | -0.4 | 8.1  | 2.8  |
| D016E    | 48  | -20 | 8  | -20 | 96  | 81  | 18 | 2  | -5 | 40  | 851   | 26  | 179   | 6  | -2 | 0.5  | -0.2 | 7  | -0.5 | -0.5 | 630   | 27.3 | 52.6 | 6.00 | 23.3 | 4.4  | 1.32 | 3.6  | 0.6  | 3.1   | 0.6 | 2.0  | 0.30 | 1.9  | 0.31 | 4.2  | 0.4  | -1 | 0.3  | 11 | -0.4 | 3.7  | 1.0  |
| D175     | 217 | 28  | 31 | -20 | 59  | 124 | 16 | 2  | -5 | 107 | 199   | 19  | 83    | 4  | -2 | -0.5 | -0.2 | 2  | 0.7  | 1.4  | 720   | 17.7 | 36.9 | 4.84 | 22.0 | 5.2  | 1.56 | 4.6  | 0.7  | 3.4   | 0.6 | 1.9  | 0.25 | 1.5  | 0.23 | 2.3  | 0.2  | 15 | 0.8  | 23 | -0.4 | 2.8  | 1.6  |
| D217     | 32  | 55  | 44 | 359 | 103 | 62  | 14 | 1  | -5 | 23  | 949   | 5   | 27    | 2  | -2 | -0.5 | -0.2 | 5  | -0.5 | -0.5 | 386   | 13.3 | 26.2 | 2.87 | 10.7 | 1.7  | 0.61 | 1.1  | 0.2  | 0.8   | 0.1 | 0.4  | 0.06 | 0.4  | 0.06 | 0.7  | -0.1 | -1 | 0.3  | -5 | -0.4 | 0.7  | 0.2  |
| D221     | 123 | 131 | 15 | 34  | 11  | 31  | 18 | 1  | -5 | 75  | 66    | 36  | 265   | 11 | -2 | -0.5 | -0.2 | 2  | -0.5 | 31.0 | 69    | 38.8 | 82.5 | 9.65 | 38.5 | 7.5  | 1.99 | 6.7  | 1.0  | 5.1   | 1.0 | 2.9  | 0.42 | 2.5  | 0.40 | 5.2  | 0.7  | -1 | 0.3  | -5 | -0.4 | 3.1  | 0.9  |
| D741     | 331 | 132 | 45 | 46  | 61  | 212 | 26 | 2  | -5 | 31  | 304   | 42  | 214   | 15 | -2 | -0.5 | -0.2 | 3  | -0.5 | 2.3  | 207   | 20.7 | 50.1 | 6.68 | 30.8 | 7.8  | 2.44 | 7.9  | 1.3  | 7.3   | 1.4 | 4.0  | 0.56 | 3.5  | 0.53 | 5.2  | 1.0  | -1 | 0.3  | 7  | -0.4 | 1.4  | 0.8  |
| D919B    | 74  | 35  | 15 | -20 | 67  | 101 | 18 | 2  | -5 | 20  | 315   | 29  | 171   | 13 | -2 | -0.5 | -0.2 | 3  | -0.5 | -0.5 | 353   | 22.9 | 48.5 | 5.93 | 24.3 | 5.2  | 1.41 | 4.7  | 0.8  | 4.2   | 0.9 | 2.5  | 0.37 | 2.3  | 0.36 | 4.1  | 0.8  | -1 | 0.2  | 6  | -0.4 | 0.8  | 0.6  |
| D948B    | 52  | 27  | 10 | -20 | 17  | 72  | 19 | -1 | -5 | 12  | 439   | 20  | 121   | 5  | 3  | -0.5 | -0.2 | 2  | -0.5 | -0.5 | 298   | 12.9 | 25.9 | 3.10 | 13.1 | 3.0  | 0.90 | 2.6  | 0.4  | 2.1   | 0.4 | 1.0  | 0.15 | 0.9  | 0.12 | 2.7  | 0.1  | -1 | 0.1  | 6  | -0.4 | 0.1  | -0.1 |
| E246     | 137 | 108 | 25 | 47  | 145 | 163 | 23 | 1  | -5 | 16  | 430   | 25  | 131   | 7  | -2 | -0.5 | -0.2 | 2  | -0.5 | -0.5 | 346   | 15.2 | 37.8 | 5.21 | 24.6 | 6.3  | 1.04 | 5.7  | 0.9  | 4.3   | 0.8 | 2.1  | 0.28 | 1.6  | 0.23 | 3.2  | 0.2  | -1 | 0.1  | -5 | -0.4 | 0.6  | -0.1 |
| E641     | 162 | 85  | 23 | 43  | 35  | 67  | 33 | 2  | -5 | 204 | 52    | 40  | 242   | 16 | -2 | -0.5 | -0.2 | 2  | -0.5 | 0.9  | 804   | 64.7 | 126  | 14.7 | 57.0 | 11.0 | 2.22 | 9.2  | 1.4  | 6.6   | 1.2 | 3.6  | 0.51 | 3.3  | 0.51 | 6.2  | 1.1  | -1 | 1.2  | -5 | -0.4 | 20.9 | 2.9  |
| G317     | 9   | -20 | 1  | -20 | 19  | 61  | 17 | 1  | -5 | 241 | 86    | 42  | 155   | 10 | -2 | -0.5 | -0.2 | 3  | -0.5 | 1.3  | 439   | 38.6 | 65.1 | 7.95 | 28.9 | 5.4  | 0.79 | 4.8  | 0.8  | 4.7   | 1.1 | 3.5  | 0.57 | 3.5  | 0.59 | 4.4  | 0.2  | 1  | 2.4  | 32 | -0.4 | 23.8 | 2.8  |
| J258     | -5  | -20 | 3  | -20 | -10 | -30 | 22 | 2  | -5 | 364 | 152   | 243 | 77    | 5  | -2 | -0.5 | -0.2 | -1 | -0.5 | 4.8  | 1.160 | 4.3  | 10.1 | 1.46 | 8.1  | 3.9  | 1.06 | 9.2  | 2.7  | 21.6  | 5.7 | 21.5 | 3.67 | 23.4 | 3.93 | 4.3  | 0.2  | -1 | 2.4  | 41 | -0.4 | 16.7 | 6.3  |
| J613a    | 9   | -20 | 2  | -20 | 14  | 38  | 13 | 1  | -5 | 162 | 191   | 16  | 299   | 3  | -2 | -0.5 | -0.2 | 2  | -0.5 | -0.5 | 575   | 15.2 | 24.8 | 2.41 | 8.8  | 1.6  | 0.90 | 1.3  | 0.2  | 1.0   | 0.2 | 0.6  | 0.09 | 0.7  | 0.13 | 10.0 | -0.1 | -1 | 1.6  | 20 | -0.4 | 1.1  | 1.4  |
| J 678    | -5  | -20 | -1 | -20 | -10 | -30 | 14 | 1  | -5 | 309 | 128   | 17  | 38    | 2  | -2 | -0.5 | -0.2 | 31 | -0.5 | 1.8  | 443   | 1.0  | 1.2  | 0.15 | 0.6  | 0.2  | 0.49 | 0.2  | -0.1 | 0.4   | 0.1 | 0.4  | 0.06 | 0.4  | 0.06 | 1.3  | 0.1  | -1 | 2.4  | 53 | -0.4 | 0.9  | 0.5  |
| L007     | 66  | -20 | 12 | -20 | 17  | 222 | 27 | 2  | -5 | 101 | 597   | 70  | 1.920 | 36 | 2  | 0.7  | -0.2 | 5  | -0.5 | -0.5 | 3.030 | 208  | 431  | 54.2 | 216  | 37.3 | 6.30 | 26.7 | 3.3  | 14.4  | 2.3 | 6.0  | 0.72 | 4.0  | 0.57 | 37.9 | 1.7  | -1 | 1.0  | 24 | -0.4 | 3.4  | 0.8  |
| L230     | 10  | -20 | 2  | -20 | -10 | 56  | 15 | 2  | -5 | 191 | 251   | 24  | 180   | 24 | -2 | -0.5 | -0.2 | 2  | -0.5 | 1.5  | 739   | 39.5 | 73.6 | 9.10 | 34.7 | 7.2  | 1.43 | 5.4  | 0.8  | 3.9   | 0.7 | 2.0  | 0.28 | 1.8  | 0.29 | 5.1  | 0.4  | -1 | 1.2  | 21 | -0.4 | 12.2 | 1.2  |
| L252     | 244 | 482 | 54 | 289 | 74  | 147 | 18 | 2  | -5 | 72  | 1.280 | 32  | 425   | 55 | -2 | -0.5 | -0.2 | 4  | -0.5 | 1.0  | 1.220 | 84.0 | 171  | 20.1 | 79.4 | 14.0 | 3.95 | 10.6 | 1.4  | 6.3   | 1.0 | 2.7  | 0.31 | 1.8  | 0.26 | 9.2  | 4.2  | -1 | 0.2  | 52 | -0.4 | 9.2  | 2.8  |
| L290     | 48  | -20 | 2  | -20 | 15  | 56  | 18 | 1  | -5 | 4   | 528   | 53  | 331   | 30 | -2 | -0.5 | -0.2 | 4  | -0.5 | -0.5 | 37    | 54.4 | 111  | 12.9 | 50.5 | 10.5 | 0.78 | 9.3  | 1.5  | 8.2   | 1.6 | 4.9  | 0.75 | 4.7  | 0.75 | 8.7  | 1.8  | -1 | -0.1 | -5 | -0.4 | 14.1 | 4.6  |
| L354     | 7   | -20 | 2  | -20 | 17  | 31  | 18 | 1  | -5 | 37  | 397   | 30  | 155   | 11 | -2 | -0.5 | -0.2 | 2  | -0.5 | -0.5 | 341   | 22.4 | 41.1 | 4.78 | 19.3 | 4.5  | 0.70 | 4.5  | 0.8  | 4.5   | 0.9 | 2.5  | 0.35 | 2.0  | 0.28 | 4.7  | 0.2  | -1 | 0.3  | -5 | -0.4 | 0.5  | 0.4  |
| L610     | 42  | -20 | 10 | -20 | -10 | 131 | 21 | 2  | -5 | 119 | 166   | 68  | 379   | 18 | -2 | -0.5 | -0.2 | 5  | -0.5 | 2.0  | 752   | 47.2 | 98.0 | 11.7 | 46.1 | 10.2 | 1.82 | 10.2 | 1.8  | 10.4  | 2.1 | 6.7  | 1.02 | 6.2  | 0.95 | 9.5  | 1.1  | 1  | 1.4  | 12 | -0.4 | 18.0 | 1.9  |
| MMS1419  | 5   | -20 | -1 | -20 | 13  | 37  | 20 | 1  | -5 | 181 | 39    | 69  | 710   | 16 | -2 | -0.5 | -0.2 | 4  | -0.5 | 0.9  | 776   | 91.9 | 144  | 23.7 | 93.6 | 20.2 | 3.44 | 18.0 | 2.9  | 13.7  | 2.4 | 6.4  | 0.88 | 4.9  | 0.73 | 17.8 | 0.7  | -1 | 1.4  | 7  | -0.4 | 12.4 | 2.6  |
| MMS1421  | 11  | -20 | 2  | -20 | -10 | 62  | 17 | -1 | -5 | 200 | 457   | 14  | 145   | 5  | -2 | -0.5 | -0.2 | -1 | -0.5 | 0.7  | 2.010 | 32.6 | 53.0 | 7.09 | 25.5 | 4.0  | 1.87 | 2.8  | 0.3  | 1.4   | 0.2 | 0.5  | 0.07 | 0.4  | 0.07 | 3.2  | -0.1 | -1 | 1.9  | 30 | -0.4 | 15.6 | 0.4  |
| MMS1423B | 300 | 171 | 56 | 70  | 123 | 179 | 20 | 2  | -5 | 21  | 191   | 40  | 168   | 7  | -2 | -0.5 | -0.2 | 2  | -0.5 | 0.9  | 170   | 12.3 | 28.6 | 3.96 | 18.2 | 5.1  | 1.75 | 6.0  | 1.2  | 6.8   | 1.4 | 4.4  | 0.66 | 4.0  | 0.61 | 4.2  | 0.3  | -1 | 0.5  | -5 | 1.5  | 1.7  | 0.8  |
| MSS1437  | 239 | 194 | 42 | 77  | 31  | 94  | 19 | 2  | -5 | 22  | 251   | 31  | 108   | 5  | -2 | -0.5 | -0.2 | 1  | -0.5 | -0.5 | 122   | 14.0 | 27.2 | 3.94 | 16.3 | 4.1  | 1.63 | 4.6  | 0.9  | 5.1   | 1.0 | 3.1  | 0.46 | 2.9  | 0.42 | 2.8  | 0.2  | -1 | 0.2  | 7  | -0.4 | 2.1  | 1.0  |
| R 055 A  | 34  | -20 | 5  | -20 | 12  | 87  | 23 | 2  | -5 | 171 | 314   | 57  | 497   | 19 | -2 | -0.5 | -0.2 | 3  | -0.5 | 1.3  | 1.090 | 126  | 245  | 26.7 | 92.7 | 16.5 | 3.29 | 12.2 | 2.0  | 9.6   | 1.8 | 4.9  | 0.68 | 4.1  | 0.56 | 11.5 | 1.8  | -1 | 1.4  | 19 | -0.4 | 19.8 | 1.5  |
| R059     | 36  | 27  | 5  | -20 | -10 | 54  | 14 | 2  | -5 | 136 | 261   | 18  | 415   | 8  | -2 | -0.5 | -0.2 | 2  | -0.5 | -0.5 | 1.130 | 48.1 | 76.2 | 7.46 | 25.1 | 3.5  | 1.53 | 2.3  | 0.3  | 1.3   | 0.2 | 0.7  | 0.11 | 0.7  | 0.14 | 10.4 | 0.3  | -1 | 1.3  | 12 | -0.4 | 1.0  | 0.8  |
| R266     | -5  | -20 | -1 | -20 | -10 | -30 | 18 | 2  | -5 | 223 | 35    | 54  | 157   | 6  | -2 | -0.5 | -0.2 | -1 | -0.5 | 0.5  | 1.81  | 42.8 | 101  | 12.9 | 53.1 | 15.2 | 0.48 | 13.8 | 2.1  | 9.9   | 1.8 | 5.2  | 0.70 | 4.0  | 0.56 | 5.6  | -0.1 | -1 | 2.2  | 27 | -0.4 | 46.6 | 7.3  |
| R287     | 10  | -20 | 1  | -20 | 16  | 38  | 16 | 2  | -5 | 120 | 100   | 28  | 327   | 6  | -2 | -0.5 | -0.2 | 1  | -0.5 | -0.5 | 410   | 185  | 336  | 33.5 | 108  | 12.5 | 1.94 | 7.1  | 0.8  | 3.6   | 0.6 | 1.5  | 0.19 | 1.2  | 0.20 | 8.9  | 0.2  | -1 | 1.2  | 20 | -0.4 | 25.3 | 1.0  |
| R292     | 163 | 131 | 17 | 47  | 61  | 218 | 27 | 3  | -5 | 232 | 79    | 48  | 319   | 19 | -2 | -0.5 | -0.2 | 5  | -0.5 | 11.2 | 983   | 68.3 | 141  | 15.8 | 59.0 | 11.8 | 2.21 | 10.0 | 1.6  | 8.6   | 1.7 | 5.0  | 0.74 | 4.5  | 0.68 | 7.9  | 1.7  | 1  | 1.9  | 18 | 1.0  | 19.0 | 3.9  |
| R363     | 165 | 87  | 22 | 40  | 52  | 113 | 19 | 2  | -5 | 22  | 704   | 25  | 179   | 9  | -2 | -0.5 | -0.2 | 2  | -0.5 | -0.5 | 465   | 29.4 | 61.7 | 7.59 | 32.3 | 6.5  | 2.01 | 5.6  | 0.8  | 4.4   | 0.9 | 2.6  | 0.35 | 2.1  | 0.33 | 4.2  | 0.3  | -1 | 0.2  | 13 | -0.4 | 1.3  | 0.5  |
| R368     | 119 | 32  | 17 | 21  | 70  | 80  | 18 | 2  | -5 | 132 | 494   | 36  | 485   | 20 | 2  | -0.5 | -0.2 | 6  | -0.5 | 1.4  | 1.170 | 64.4 | 121  | 13.2 | 47.9 | 8.6  | 1.79 | 6.9  | 1.1  | 5.6   | 1.1 | 3.3  | 0.50 | 3.1  | 0.50 | 10.5 | 1.2  | -1 | 0.6  | 12 | -0.4 | 14.8 | 3.6  |
| R384     | 10  | -20 | 2  | -20 | 39  | 31  | 26 | 3  | -5 | 338 | 83    | 78  | 258   | 15 | 3  | -0.5 | -0.2 | 2  | -0.5 | 1.1  | 536   | 239  | 213  | 44.3 | 14.6 | 25.5 | 3.74 | 21.0 | 3.4  | 18.0  | 3.4 | 9.5  | 1.36 | 7.4  | 0.99 | 7.6  | 0.6  | -1 | 3.5  | 34 | -0.4 | 18.8 | 5.2  |
| R405     | 119 | -20 | 9  | -20 | 17  | 107 | 21 | 2  | -5 | 80  | 476   | 74  | 286   | 13 | -2 | -0.5 | -0.2 | 1  | -0.5 | -0.5 | 952   | 69.7 | 102  | 16.8 | 66.7 | 13.8 | 3.22 | 12.7 | 2.0  | 10.7  | 2.1 | 6.4  | 0.88 | 5.2  | 0.77 | 6.5  | 0.6  | -1 | 0.6  | 12 | -0.4 | 3.7  | 1.2  |
| R475A    | 231 | 171 | 42 | 87  | 25  | 137 | 19 | 2  | -5 | 21  | 576   | 34  | 148   | 11 | -2 | -0.5 | -0.2 | 5  | -0.5 | -0.5 | 205   | 32.3 | 71.0 | 8.14 | 31.0 | 6.6  | 1.99 | 6.2  | 1.1  | 5.8   | 1.2 | 3.5  | 0.52 | 3.3  | 0.49 | 3.8  | 0.6  | -1 | 0.2  | 7  | -0.4 | 3.7  | 1.6  |
| R480     | 22  | -20 | 3  | -20 | 44  | 56  | 17 | 1  | -5 | 66  | 443   | 31  | 152   | 9  | -2 | -0.5 | -0.2 | 3  | -0.5 | -0.5 | 797   | 38.4 | 75.3 | 8.17 | 29.1 | 5.4  | 1.13 | 4.1  | 0.7  | 3.4</ |     |      |      |      |      |      |      |    |      |    |      |      |      |