Table 5:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Upstream zone | | | | | | |  | Central zone | | | | | | Downstream zone | | | | | | | | | |
| d.l. | ELA3 | Dou2 | ELA11 | Dou1 | MAO | NKO | TAD | MA | Pat | Dj | MAY | NS30 | Kg | LMG | SN | MBE | MBA | LiM | DjA | DjS | MB | Bi | NKE | BB |
| La | 0.1 | >1380 | 203.62 | 1245.96 | 394.62 | 25.91 | 314.60 | 70.12 | 22.26 | 68.74 | 25.45 | 42.39 | 47.56 | 293.26 | 4.09 | 62.59 | 140.36 | 94.88 | 247.10 | 33.65 | 115.40 | 9.08 | 14.55 | 48.31 | 23.87 |
| Ce | 0.12 | 2420 | 407.15 | 2420 | 796.90 | 51.99 | 638.83 | 141.96 | 44.48 | 137.81 | 51.05 | 83.96 | 94.23 | 589.26 | 11.02 | 125.73 | 273.20 | 191.14 | 503.59 | 71.94 | 235.24 | 18.59 | 30.21 | 100.49 | 48.16 |
| Pr | 0.014 | >240 | 49.30 | >240 | 92.05 | 6.04 | 74.42 | 16.27 | 5.31 | 16.10 | 6.14 | 9.80 | 10.95 | 69.24 | 0.93 | 15.04 | 31.78 | 22.08 | 57.34 | 8.62 | 27.07 | 2.15 | 3.39 | 11.71 | 5.64 |
| Nd | 0.06 | >760 | 187.25 | >760 | 345.20 | 22.47 | 284.15 | 61.61 | 19.86 | 60.38 | 22.90 | 35.61 | 41.40 | 262.48 | 3.51 | 56.48 | 115.72 | 82.67 | 215.19 | 32.24 | 102 | 8.14 | 12.94 | 45.35 | 21.10 |
| Sm | 0.026 | >128 | 33.43 | >128 | 61.42 | 4.04 | 50.71 | 10.87 | 3.81 | 11.07 | 4.40 | 6.81 | 7.35 | 46.41 | 0.78 | 10.23 | 20.65 | 14.67 | 38.25 | 6.30 | 17.66 | 1.60 | 2.47 | 8.17 | 4.14 |
| Eu | 0.003 | 14.64 | 3.43 | 12 | 6.11 | 0.57 | 5.47 | 1.29 | 0.69 | 1.83 | 0.88 | 1.16 | 1.04 | 4.69 | 0.14 | 1.33 | 3.29 | 1.96 | 4.38 | 1.10 | 2 | 0.56 | 0.66 | 1.42 | 0.78 |
| Gd | 0.009 | 99.62 | 19.77 | 82.84 | 36.69 | 2.76 | 30.85 | 7.07 | 3.07 | 8.33 | 5.26 | 6.11 | 5.42 | 28.35 | 1 | 7.72 | 12.99 | 8.88 | 24.75 | 5.01 | 11.55 | 1.73 | 2.17 | 5.58 | 4.73 |
| Tb | 0.002 | 7.33 | 1.75 | 6.21 | 2.99 | 0.31 | 2.84 | 0.76 | 0.54 | 1.10 | 1.46 | 1.06 | 0.78 | 2.55 | 0.23 | 1.12 | 1.15 | 0.80 | 2.55 | 0.75 | 1.29 | 0.39 | 0.35 | 0.70 | 1.09 |
| Dy | 0.009 | 23.88 | 6.74 | 21.05 | 9.35 | 1.56 | 11.25 | 4.09 | 4.66 | 6.62 | 14.18 | 7.48 | 5.60 | 9.90 | 1.89 | 7.81 | 4.48 | 3.24 | 13.16 | 4.71 | 6.89 | 3.33 | 2.75 | 4.64 | 9.29 |
| Ho | 0.002 | 3.25 | 1 | 2.99 | 1.12 | 0.31 | 1.68 | 0.87 | 1.21 | 1.32 | 3.76 | 1.61 | 1.44 | 1.48 | 0.46 | 1.83 | 0.79 | 0.56 | 2.80 | 0.93 | 1.33 | 0.83 | 0.71 | 1.07 | 2.19 |
| Er | 0.007 | 8.80 | 2.74 | 8.46 | 2.54 | 0.95 | 4.51 | 3.24 | 4.41 | 4.10 | 13.61 | 5.20 | 5.53 | 3.96 | 1.52 | 6.08 | 2.44 | 1.86 | 10.28 | 2.89 | 4.05 | 2.98 | 2.61 | 3.72 | 7.52 |
| Tm | 0.001 | 1.41 | 0.40 | 1.35 | 0.35 | 0.17 | 0.66 | 0.60 | 0.76 | 0.62 | 2.27 | 0.83 | 1 | 0.58 | 0.25 | 0.98 | 0.41 | 0.34 | 1.87 | 0.44 | 0.60 | 0.51 | 0.44 | 0.64 | 1.20 |
| Yb | 0.009 | 10.89 | 2.89 | 10.47 | 2.51 | 1.26 | 4.53 | 4.86 | 5.58 | 4.35 | 16.73 | 5.88 | 7.60 | 3.97 | 1.73 | 6.83 | 3.16 | 2.96 | 15.09 | 2.90 | 4.03 | 3.87 | 3.14 | 4.84 | 8.63 |
| Lu | 0.002 | 2.10 | 0.47 | 1.98 | 0.43 | 0.23 | 0.73 | 0.97 | 0.91 | 0.70 | 2.67 | 0.96 | 1.29 | 0.65 | 0.28 | 1.08 | 0.58 | 0.61 | 2.94 | 0.43 | 0.62 | 0.66 | 0.49 | 0.85 | 1.40 |
| REE | - | - | 920 | - | 1752 | 119 | 1425 | 325 | 118 | 323 | 171 | 209 | 231 | 1317 | 28 | 305 | 611 | 427 | 1139 | 172 | 530 | 54 | 77 | 237 | 140 |
| LREE | - | - | 884 | - | 1696 | 111 | 1368 | 302 | 96 | 296 | 111 | 180 | 203 | 1265 | 20 | 271 | 585 | 407 | 1066 | 154 | 499 | 40 | 64 | 215 | 104 |
| HREE | - | - | 36 | - | 56 | 8 | 57 | 22 | 21 | 27 | 60 | 29 | 29 | 51 | 7 | 33 | 26 | 19 | 73 | 18 | 30 | 14 | 13 | 22 | 36 |
| LREE/HREE | - | - | 24.73 | - | 30.30 | 14.70 | 23.98 | 13.45 | 4.56 | 10.90 | 1.85 | 6.17 | 7.07 | 24.60 | 2.78 | 8.11 | 22.50 | 21.16 | 14.51 | 8.52 | 16.45 | 2.81 | 5.07 | 9.78 | 2.88 |
| Ce/Ce\* | - | - | 0.94 | - | 0.97 | 0.96 | 0.97 | 0.98 | 0.95 | 0.96 | 0.95 | 0.96 | 0.96 | 0.96 | 1.31 | 0.95 | 0.95 | 0.97 | 0.98 | 0.98 | 0.98 | 0.98 | 1.00 | 0.98 | 0.96 |
| Eu/Eu\* | - | - | 0.63 | - | 0.61 | 0.80 | 0.65 | 0.69 | 0.95 | 0.90 | 0.86 | 0.85 | 0.78 | 0.61 | 0.75 | 0.70 | 0.95 | 0.81 | 0.67 | 0.92 | 0.66 | 1.58 | 1.34 | 0.99 | 0.83 |
| (La/Yb)N | - | - | 5.20 | 8.78 | 11.61 | 1.52 | 5.13 | 1.07 | 0.29 | 1.17 | 0.11 | 0.53 | 0.46 | 5.45 | 0.17 | 0.68 | 3.28 | 2.37 | 1.21 | 0.86 | 2.11 | 0.17 | 0.34 | 0.74 | 0.20 |
| a | - | - | 0.98 | - | 0.97 | 0.79 | 0.89 | 1.19 | 6.76 | 4.74 | 14.10 | 4.58 | 5.44 | 1.73 | 3.44 | 4.34 | 2.56 | 2.45 | 2.32 | 2.14 | 1.74 | 17.54 | 9.25 | 2.81 | 14.69 |
| b | - | - | 4.66 | 2.59 | 2.53 | 7.64 | 4.18 | 15.02 | 106.24 | 44.14 | 237.09 | 53.26 | 83.63 | 7.83 | 56.18 | 51.74 | 17.58 | 21.84 | 27.78 | 21.16 | 13.60 | 290 | 137.94 | 37.19 | 211.50 |

d.l.: detection limits.

Ce/Ce\* = (Cesample/CePAAS)/(Lasample/LaPAAS)1/2(Prsample/PrPAAS)1/2.

Eu/Eu\* = (Eusample/EuPAAS)/(Smsample /SmPAAS)1/2(Gdsample/GdPAAS)1/2.

(La/Yb)N= (Lasample/LaPAAS)/(Ybsample/YbPAAS).

a= TiO2/(LREE/HREE).

b= TiO2/((La/Yb)N).