Table 6S. Compositions of PGE minerals from borehole **PH-401**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Depth | Formula | Ag | As | Au | Bi | Fe | Ni | Cu | Pd | Pt | Rh | S | Sb | Sn | Pb | Te | Total |
| 1 | 365.0 | (Pd4.60Ag0.40)5.00Pb3.00 | 2.75 |  |  |  |  |  |  | 30.90 |  |  |  |  |  | 39.24 |  | 72.89\* |
| 2 | 365.0 | (Pd1.83Ni0.07)2.00(As0.84Sn0.16Te)1.01 |  | 21.49 |  |  |  | 3.45 |  | 66.69 |  |  |  |  | 6.31 |  | 0.28 | 98.22 |
| 3 | 365.0 | (Pd2.46Pt0.54)3.00(Sn0.73As0.15Sb0.05Te0.05Pb0.02)1.00 |  | 2.04 |  |  |  |  |  | 48.87 | 19.75 |  |  | 1.19 | 16.25 | 0.63 | 1.24 | 89.97 |
| 4 | 365.0 | (Pd3.96Au0.06)4.02As0.99Sn0.99 |  | 11.90 | 1.82 |  |  |  |  | 67.46 |  |  |  |  | 18.81 |  |  | 99.99 |
| 5 | 365.0 | (Pd3.95Au0.05Pt0.03)4.03As0.99(Sn0.95Te0.03)0.98 |  | 11.80 | 1.64 |  |  |  |  | 67.10 | 1.04 |  |  |  | 18.06 |  | 0.52 | 100.16 |
| 6 | 380.0 | (Pd1.57Pt1.27Au0.12)2.96(Sn1.02Pb0.02)1.04 |  |  | 4.06 |  |  |  |  | 29.31 | 43.51 |  |  |  | 21.19 | 0.80 |  | 98.87 |
| 7 | 388.8 | (Pd0.94Ag0.04Ni0.03)1.01(Te0.58Bi0.40)0.98 | 1.66 |  |  | 31.23 |  | 0.68 |  | 37.36 |  |  |  |  |  |  | 27.52 | 98.45 |
| 8 | 390.0 | Pd4.97As2.03 |  | 21.71 |  |  |  |  |  | 75.64 |  |  |  |  |  |  |  | 97.35 |
| 9 | 390.0 | Pd8.02(Sb2.40As0.58)2.98 |  | 3.63 |  |  |  |  |  | 71.11 |  |  |  | 24.34 |  |  |  | 99.08 |
| 10 | 390.0 | Pd8.02(Sb2.93As0.05)2.98 |  | 0.30 |  |  |  |  |  | 69.68 |  |  |  | 29.17 |  |  |  | 99.15 |
| 11 | 390.0 | Pt1.00(As1.94S0.06)2.00 |  | 41.97 |  |  |  |  |  |  | 56.25 |  | 0.53 |  |  |  |  | 98.75 |
| 12 | 392.2 | (Pd1.84Pt0.13)1.97(Sb0.58As0.45)1.03 |  | 10.28 |  |  |  |  |  | 60.09 | 7.92 |  |  | 21.58 |  |  |  | 99.87 |
| 13 | 392.2 | (Pt1.40Pd0.59)1.99(As2.90Sb0.00)3.01 |  | 38.35 |  |  |  |  |  | 11.05 | 48.18 |  |  | 2.41 |  |  |  | 99.99 |
| 14 | 392.2 | (Pd7.79Ag0.19)7.98(Sb2.55As0.46)3.01 | 1.72 | 2.86 |  |  |  |  |  | 68.16 |  |  |  | 25.58 |  |  |  | 98.32 |
| 15 | 392.2 | (Pt0.99Pd0.02)1.01As1.99 |  | 42.43 |  |  |  |  |  | 0.57 | 55.00 |  |  |  |  |  |  | 98.00 |
| 16 | 392.6 | (Pd5.00Ag0.07)5.07(Sb1.56As0.37)1.97 | 0.98 | 3.64 |  |  |  |  |  | 70.30 |  |  |  | 25.09 |  |  |  | 99.98 |
| 17 | 392.6 | Pt1.00(As1.88S0.12)2.00 |  | 41.33 |  |  |  |  |  |  | 57.54 |  | 1.11 |  |  |  |  | 100.00 |
| 18 | 393.6 | (Pd1.90Pt1.09)2.99Sn1.01 |  |  |  |  |  |  |  | 37.40 | 39.11 |  |  |  | 22.16 |  |  | 98.67 |
| 19 | 394.8 | (Pd0.99Au0.01)1.00(Te0.59Pb0.41)1.00 |  |  | 0.58 |  |  |  |  | 38.56 |  |  |  |  |  | 31.03 | 27.55 | 97.72 |
| 20 | 394.8 | Pt0.68(Fe0.28Cu0.03Ni0.01)0.32 |  |  |  |  | 10.19 | 0.48 | 1.30 |  | 88.00 |  |  |  |  |  |  | 99.97\*\* |
| 21 | 395.9 | (Pd1.88Pt0.11)1.99(Sb0.56As0.45)1.01 |  | 10.44 |  |  |  |  |  | 61.69 | 6.32 |  |  | 20.92 |  |  |  | 99.37 |
| 22 | 395.9 | Pd5.03(Sb1.61As0.37)1.98 |  | 3.61 |  |  |  |  |  | 70.23 |  |  |  | 25.69 |  |  |  | 99.53 |
| 23 | 397.7 | (Pd1.75Pt1.26)3.01Sn0.99 |  |  |  |  |  |  |  | 33.57 | 44.28 |  |  |  | 21.13 |  |  | 98.98 |
| 24 | 397.7 | Pd5.01(Sb1.14As0.35Sn0.30Te0.20)1.99 |  | 3.47 |  |  |  |  |  | 70.74 |  |  |  | 18.50 | 4.68 |  | 3.38 | 100.77 |
| 25 | 397.7 | (Pd2.78Pt0.18)2.96(Sn0.58As0.38Te0.07)1.03 |  | 6.58 |  |  |  |  |  | 67.59 | 7.97 |  |  |  | 15.69 |  | 2.11 | 99.94 |
| 26 | 397.7 | (Pt0.68Pd0.03)0.71Fe0.28Sn0.01 |  |  |  |  | 10.33 |  |  | 2.28 | 86.81 |  |  |  | 0.58 |  |  | 100.00 |
| 27 | 406.8 | (Pt1.28Pd0.72)2.00(Te2.71Sn0.29)3.00 |  |  |  |  |  |  |  | 10.76 | 34.90 |  |  |  | 4.76 |  | 48.53 | 98.95 |
| 28 | 406.8 | (Pd1.99Pt0.02)2.01Sn0.98 |  |  |  |  |  |  |  | 62.27 | 1.28 |  |  |  | 34.22 |  |  | 97.77 |
| 29 | 412.8 | Pt1.00(Te1.81Bi0.17Pb0.02)2.00 |  |  |  | 7.50 |  |  |  |  | 41.04 |  |  |  |  | 0.87 | 48.81 | 98.22 |
| 30 | 418.5 | Pd1.00(Te0.98Bi0.01Pb0.01)1.00 |  |  |  | 1.11 |  |  |  | 45.01 |  |  |  |  |  | 0.67 | 52.94 | 99.73 |
| 31 | 420.0 | Pd1.01(Te0.66Bi0.33)0.99 |  |  |  | 26.44 |  |  |  | 41.01 |  |  |  |  |  |  | 32.20 | 99.65 |
| 32 | 420.0 | Pt0.99(As1.92S0.09)2.01 |  | 41.31 |  |  |  |  |  |  | 55.23 |  | 0.82 |  |  |  |  | 97.36 |
| 33 | 427.0 | Pd1.01(Bi0.91As0.09)1.00(Te0.94Sb0.05)0.99 |  | 1.36 |  | 38.83 |  |  |  | 21.79 |  |  |  | 1.13 |  |  | 24.45 | 87.56 |
| 34 | 427.0 | (Rh1.62Pd0.37)1.99(As2.33Bi0.37Te0.31)3.01 |  | 25.31 |  | 11.32 |  |  |  | 5.71 |  | 24.13 |  |  |  |  | 5.65 | 72.12 |
| 35 | 430.6 | Pd1.99Sn1.01 |  |  |  |  |  |  |  | 63.01 |  |  |  |  | 32.62 |  |  | 98.63 |
| 36 | 433.7 | (Ni0.79Pd0.22Ag0.01)1.02As0.98 | 0.49 | 50.49 |  |  |  | 31.70 |  | 16.29 |  |  |  |  |  |  |  | 98.97 |
| 37 | 433.7 | Pd1.02(Sb0.82Bi0.17)0.99 |  |  |  | 13.94 |  |  |  | 43.62 |  |  |  | 40.31 |  |  |  | 97.87 |
| 38 | 433.7 | Pd3.01Ni2.00(As2.97Sb0.02)2.99 |  | 33.17 |  |  |  | 17.47 |  | 47.77 |  |  |  | 0.42 |  |  |  | 98.83 |
| 39 | 445.0 | (Pd2.00Ag0.06)2.06(Sn0.55Sb0.34As0.05)0.94 | 2.05 | 1.11 |  |  |  |  |  | 63.63 |  |  |  | 12.49 | 19.46 |  |  | 98.74 |

Note. No. 1-28– picritic g-d; 29-39 – olivine g-d. 16,22,24 – Stibiopalladinite Pd5Sb3 and Pd5(Sb,As,Sn,Te)2; 7,19,30,31 – Кotulskite Pd(Te,Bi) and Pd(Te,Pb); 9,10,14 – Mertieite II Pd8(Sb,As)3; 1 – Unnamed Pd5Pb3; 2 – Palladoarsenide Pd2As; 3,6,18,23,25 – Atokite (Pd,Pt)3Sn; 4,5 – Unnamed Pd4AsSn or As-paolovite Pd2(Sn,As); 8 – Unnamed Pd5As2; 11,13,15,17,32 – Sperrylite PtAs2; 12,21 – Naldrettite Pd2Sb; 20,26 – ferrous platinum; 27 – Unnamed (Pt, Pd)2(Te,Sn)3; 28,35,39 – Paolovite Pd2Sn; 29– Moncheite PtTe2; 33 – Michenirite PdBiTe; 34 – Unnamed (Rh,Pd)2(As,Bi)3; 36 – Pd-bearing nickeline (Ni,Pd)As; 38 – Menshikovite Pd3Ni2As3.