**Tables**

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| Table 1. Characterization of study soils by source, primary and secondary arsenic phases, total arsenic, reactive iron, relative bioavailable arsenic and in vitro bioaccessible As by OSU-IVG and CAB methods.  |
| Soil | Source | Primary As Phase\* (%) | Secondary As Phase (%) | Total As | Reactive Fe | RBA | OSU IVG | CAB |
| mg/kg | g/kg | --------------------%------------------- |
| 1 | Copper Smelting | G (47) | B (32) | 162 | 4.99 | 54.9 | 28.4 | 59.5 |
| 2 | Residential Area Near Gold Mining | A (74)  | D (14) | 203 | 2.11 | 11.8 | 1.92 | 5.10 |
| 3 | Silver Mining | +NA | NA | 205 | 0.560 | 8.2 | 25.5 | 21.2 |
| 4 | Residential Area Near Iron Mining | C (51) | A (38) | 249 | 34.8 | 60.0 | 35.2 | 73.6 |
| 5 | Lead Arsenate Pesticide | B (66) | E (25) | 283 | 2.37 | 31.0 | 24.6 | 39.0 |
| 6 | Gold Mining | A (72) | D (10) | 302 | 6.30 | 23.7 | 9.36 | 25.1 |
| 7 | Lead Arsenate Pesticide | B (71) | E (16) | 332 | 4.59 | 52.3 | 35.0 | 67.3 |
| 8 | Lead Arsenate Pesticide | B (71) | E (23) | 353 | 5.73 | 41.0 | 23.0 | 40.7 |
| 9 | Gold Mining | A (73) | B (20) | 370 | 2.33 | 11.7 | 1.52 | 6.07 |
| 10 | Lead Arsenate Pesticide | B (71) | E (23) | 375 | 7.23 | 53.0 | 29.1 | 50.1 |
| 11 | Lead Arsenate Pesticide | B (86) | E (15) | 391 | 5.97 | 49.0 | 21.1 | 41.4 |
| 12 | Tailings from Mine Site | C (56) | A (44) | 521 | 0.770 | 14.0 | 10.8 | 20.5 |
| 13 | Gold Mining | NA | NA | 603 | 1.43 | 1.30 | 3.54 | 2.86 |
| 14 | Residential Area Near Gold Mining | A (65) | D (19) | 610 | 4.36 | 12.4 | 3.0 | 16.1 |
| 15 | Gold Mining | A (53) | B (24) | 633 | 18.5 | 19.2 | 4.6 | 12.4 |
| 16 | Gold Mining | NA | NA | 641 | 4.39 | 9.2 | 12.8 | 11.0 |
| 17 | Iron, silver, gold Mining  | NA | NA | 731 | 10.8 | 5.90 | 3.88 | 3.95 |
| 18 | Gold Mining | NA | NA | 753 | 14.5 | 37.6 | 52.3 | 46.8 |
| 19 | Gold Mining | B (74) | A (14) | 839 | 5.01 | 41.7 | 9.7 | 45.8 |
| 20 | Slag from Copper Mining | C (78) | B (13) | 1236 | 54.5 | 39.7 | 29.7 | 48.0 |
| Table 1 Continued. Characterization of study soils by source, primary and secondary arsenic phases, total arsenic, reactive iron, relative bioavailable arsenic and in vitro bioaccessible As by OSU-IVG and CAB methods. |
| Soil | Source | Primary As Phase\* (%) | Secondary As Phase (%) | Total As | Reactive Fe | RBA | OSU IVG GE | CAB |
| 21 | Gold Mining | A (84) | H (8) | 1237 | 1.15 | 12.5 | 2.22 | 6.22 |
| 22 | SRM 2710A | C (82) | A (10) | 1540 | 12.7 | 41.8 | 25.2 | 83.0 |
| 23 | Gold Mining | A (70) | D (20) | 1906 | 17.3 | 15.30 | 3.66 | 21.8 |
| 24 | Gold Mining | A (70) | B (19) | 2541 | 23.1 | 15.30 | 3.70 | 22.7 |
| 25 | Tailing from Mine or Smelter | C (57) | A (33) | 3913 | 36.2 | 19.0 | 5.4 | 47.1 |
| 26 | Residential Area Near Glass Manufacturing | A (100) |  | 3996 | 3.70 | 26.0 | 21.9 | 39.1 |
| 27 | Glass Manufacturing | A (100) |  | 4553 | 4.97 | 48.0 | 49.1 | 76.7 |
| 28 | Gold Mining | A (66) | B (29) | 5647 | 25.1 | 22.7 | 8.05 | 46.51 |
| 29 | Gold Mining | NA | NA | 6681 | 8.99 | 14.2 | 20.1 | 19.9 |
| 30 | Gold Mining | F (52) | A (21) | 10482 | 26.0 | 4.0 | 1.8 | 12.0 |
| 31 | Gold Mining | A (69) | D (8) | 12041 | 32.5 | 23.0 | 9.68 | 50.10 |
| 32 | Gold Mining | A (66) | B (17) | 12095 | 36.3 | 19.7 | 3.50 | 44.38 |
| 33 | Calcine Material from Copper Mining | B (67) | A (33) | 12483 | 120 | 7.9 | 0.8 | 26.5 |
|  |  |  | Min  | 162 | 0.560 | 1.300 | 0.802 | 2.861 |
|  |  |  | Mean | 2694 | 16.3 | 25.7 | 15.8 | 34.3 |
|  |  |  | Median | 731 | 6.302 | 19.700 | 9.722 | 39.023 |
|  |  |  | Max | 12483 | 119.540 | 60.000 | 52.315 | 82.969 |
| \*As(V) ads Hydrous Ferric Oxide - AAs(V) ads Al/Fe/Mn Oxides - BHydrous Ferric Arsenate - CArsenatian Jarosite - DLead Arsenate - E | Arsenopyrite - FAs(III) ads Fe/Al Oxides or Aluminosilicate - GCa and Ca-Fe Arsenates - H+Data not available |