Supplemental Material

Estimation of the Relative Abundance of Quartz to Clay Minerals Using the Visible–Near-Infrared–Shortwave-Infrared Spectral Region

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Table S1. The selected samples and their measured values for the analyzed properties.

| Soil sample | Quartz (%) | Quartz-to-clay mineral ratio | SQCMI | Clay minerals (%) |
|-------------|------------|------------------------------|-------|-------------------|
| A1          | 35         | 0.74                         | 1.01  | 47                |
| A2          | 30         | 0.53                         | 1.00  | 57                |
| A3          | 35         | 0.60                         | 1.01  | 58                |
| A4          | 35         | 0.64                         | 1.00  | 55                |
| A5          | 34         | 0.65                         | 1.00  | 52                |
| B1          | 27         | 0.90                         | 1.01  | 30                |
| B10         | 24         | 0.53                         | 1.00  | 45                |
| B11         | 58         | 5.80                         | 1.01  | 10                |
| B2          | 20         | 0.50                         | 1.00  | 40                |
| B3          | 38         | 0.95                         | 1.01  | 40                |
| B4          | 40         | 1.14                         | 1.01  | 35                |
| B5          | 40         | 2.35                         | 1.00  | 17                |
| B6          | 50         | 2.78                         | 1.00  | 18                |
| B7          | 31         | 0.62                         | 1.00  | 50                |
| B8          | 30         | 0.75                         | 1.00  | 40                |
| B9          | 20         | 1.67                         | 1.01  | 12                |
| C1          | 20         | 1.43                         | 1.01  | 14                |
|   |   |   |   |   |
|---|---|---|---|---|
| C10 | 10 | 0.40 | 1.01 | 25 |
| C11 | 51 | 2.55 | 1.00 | 20 |
| C12 | 43 | 2.87 | 1.01 | 15 |
| C2  | 60 | 6.00 | 1.04 | 10 |
| C3  | 55 | 1.83 | 1.03 | 30 |
| C4  | 17 | 1.13 | 1.02 | 15 |
| C5  | 26 | 1.04 | 1.01 | 25 |
| C6  | 28 | 0.80 | 1.01 | 35 |
| C8  | 7  | 0.25 | 1.01 | 28 |
| C9  | 19 | 0.66 | 1.00 | 29 |
| E1  | 85 | 8.50 | 1.05 | 10 |
| E2  | 90 | 18.00 | 1.07 | 5  |
| E3  | 70 | 3.50 | 1.04 | 20 |
| E4  | 80 | 5.71 | 1.03 | 14 |
| E5  | 1  | 0.01 | 1.02 | 85 |
| E6  | 80 | 5.33 | 1.02 | 15 |
| E7  | 75 | 5.00 | 1.03 | 15 |
| EC1 | 90 | 22.50 | 1.10 | 4  |
| H1  | 34 | 0.76 | 1.02 | 45 |
| H10 | 23 | 0.77 | 1.01 | 30 |
| H11 | 36 | 3.60 | 1.02 | 10 |
| H12 | 24 | 0.53 | 1.01 | 45 |
| H13 | 41 | 0.91 | 1.00 | 45 |
| H14 | 25 | 0.56 | 0.99 | 45 |
| H2  | 4  | 0.06 | 0.98 | 67 |
| H3  | 41 | 1.03 | 1.00 | 40 |
| H4  | 30 | 1.00 | 1.01 | 30 |
| H5  | 40 | 1.33 | 1.00 | 30 |
| H6  | 15 | 0.29 | 1.00 | 52 |
| H7  | 10 | 0.15 | 0.99 | 65 |
| H8 | 43 | 1.72 | 1.01 | 25  |
| H9 | 42 | 1.68 | 1.01 | 25  |
| J1 | 20 | 0.49 | 1.00 | 41  |
| J2 | 20 | 0.33 | 0.99 | 60  |
| J3 | 37 | 1.85 | 1.01 | 20  |
| K1 | 18 | 0.60 | 1.02 | 30  |
| K3 | 15 | 1.00 | 1.00 | 15  |
| K4 | 10 | 0.67 | 1.01 | 15  |
| K5 | 10 | 0.56 | 1.01 | 18  |
| K6 | 20 | 1.33 | 1.00 | 15  |
| K7 | 10 | 0.83 | 1.00 | 12  |
| K8 | 25 | 1.00 | 1.00 | 25  |
| O1 | 10 | 0.31 | 1.01 | 32  |
| O2 | 5  | 1.00 | 1.01 | 5   |
| O3 | 25 | 2.50 | 1.00 | 10  |
| O4 | 30 | 6.00 | 1.01 | 5   |
| P1 | 20 | 0.61 | 1.01 | 33  |
| P2 | 5  | 0.19 | 1.00 | 27  |
| P3 | 25 | 3.57 | 1.02 | 7   |
| S1 | 67 | 8.38 | 1.02 | 8   |
| S10| 58 | 4.46 | 1.02 | 13  |
| S11| 45 | 4.09 | 1.02 | 11  |
| S12| 61 | 10.17| 1.03 | 6   |
| S13| 62 | 8.86 | 1.02 | 7   |
| S14| 60 | 10.00| 1.02 | 6   |
| S15| 63 | 5.25 | 1.01 | 12  |
| S16| 55 | 3.67 | 1.02 | 15  |
| S17| 58 | 6.44 | 1.02 | 9   |
| S18| 55 | 4.58 | 1.01 | 12  |
| S19| 47 | 4.70 | 1.01 | 10  |
| S2  | 70  | 7.78 | 1.02 | 9 |
|-----|-----|------|------|---|
| S3  | 75  | 15.00| 1.02 | 5 |
| S4  | 85  | 42.50| 1.03 | 2 |
| S6  | 77  | 15.40| 1.02 | 5 |
| S7  | 73  | 10.43| 1.01 | 7 |
| S8  | 60  | 10.00| 1.01 | 6 |
| S9  | 73  | 18.25| 1.02 | 4 |
| W1  | 70  | 5.83 | 1.03 | 12 |