SUPPLEMENTARY MATERIAL TO

**Properties of humic acids from copper tailings 20 years after reclamation**

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Fig. S-1. Study area: Aerial view of Bor Copper Mine (PFT: post-flotation tailings) and Bor town with soil sampling locations: TCs-Technosols (lines - direction of taking TC soil samples), CBs-control arable soils.

Table S-I. General properties of Technosols (TC1-6) and control natural soils: arable soil near Bor town (CB7-9) and Chernozem (CCH)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Soil | Depth, cm | Sand, % | Silt, % | Clay, % | MWDa | pH in H2O | *TOC*b / % |
| TC1 | 0-25 | 65.15 | 16.39 | 18.46 | 0.82 | 4.71 | 1.01 |
| TC2 | 0-25 | 56.28 | 19.69 | 24.03 | 0.67 | 4.64 | 0.74 |
| TC3 | 0-25 | 61.59 | 15.92 | 22.49 | 0.98 | 5.43 | 0.74 |
| TC4 | 0-25 | 49.90 | 22.76 | 27.34 | 1.32 | 6.48 | 1.14 |
| TC5 | 0-25 | 51.28 | 24.11 | 25.61 | 1.37 | 7.24 | 1.24 |
| TC6 | 15-50 | 40.00 | 34.60 | 25.40 | 0.82 | 4.17 | 0.39 |
| CB7 | 0-25 | 51.60 | 28.20 | 20.20 | 2.74 | 4,96 | 3.46 |
| CB8 | 0-25 | 31.12 | 30.32 | 38.55 | 3.65 | 7.46 | 2.12 |
| CB9 | 0-25 | 44.00 | 25.56 | 30.44 | 1.99 | 5.00 | 3.44 |
| CCH | 0-25 | 33.76 | 34.24 | 32.00 | NDc | 7.83 | 1.89 |

aMWD - mean weight diameter of soil aggregates; bTOC - total organic carbon; cND - not detected



Fig. S-2. PCA score plots of HAs from Technosols (TC1-6) and control natural soils:

arable soils near Bor town (CB7-9), Chernozem (CCH) and standard Elliot Soil (CES).



Fig. S-3. PCA score plots of HAs from Technosols (TC1-6) and control arable soils near Bor town (CB7-9).



Fig. S-4. PCA score plots of HAs from Technosols (TC1-6).