

ESI

Table ESI1: Soil parameters at T₀ and T₄: water content, pH, redox potential.

	compartment A (spiked with Sb)	compartment B (spiked with Ti)
T ₀		
water content (vol%)	44.0	44.0
pH	8	8
redox potential	315 ± 7	290 ± 7
T ₄		
water content (vol%)	35.8	38.4
pH	8	8
redox potential	237 ± 6	240 ± 9

Table ESI2: Soil parameters: C/N.

N [%]	C [%]	H [%]	S [%]	C/N
0.34 ± 0.01	6.51 ± 0.21	0.94 ± 0.03	0.11 ± 0.03	19

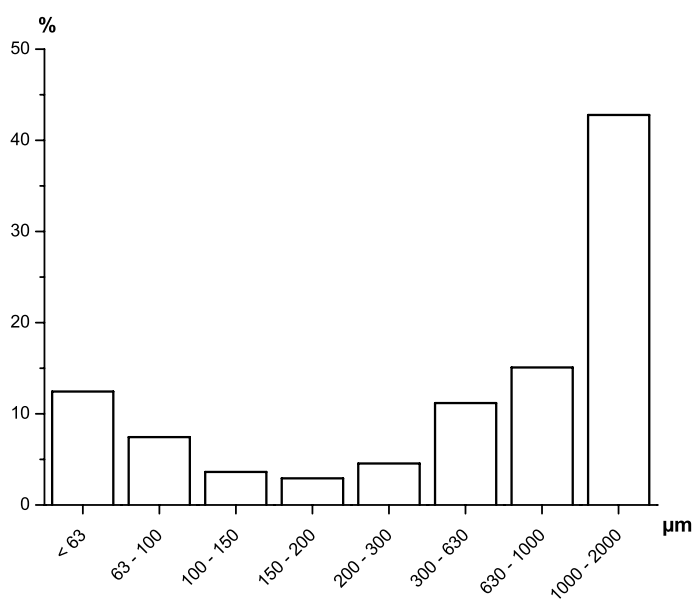


Figure ESI1: The particle size distribution of the stagnic cambisol. The particle sizes were determined by sieving according to DIN 66165-1.

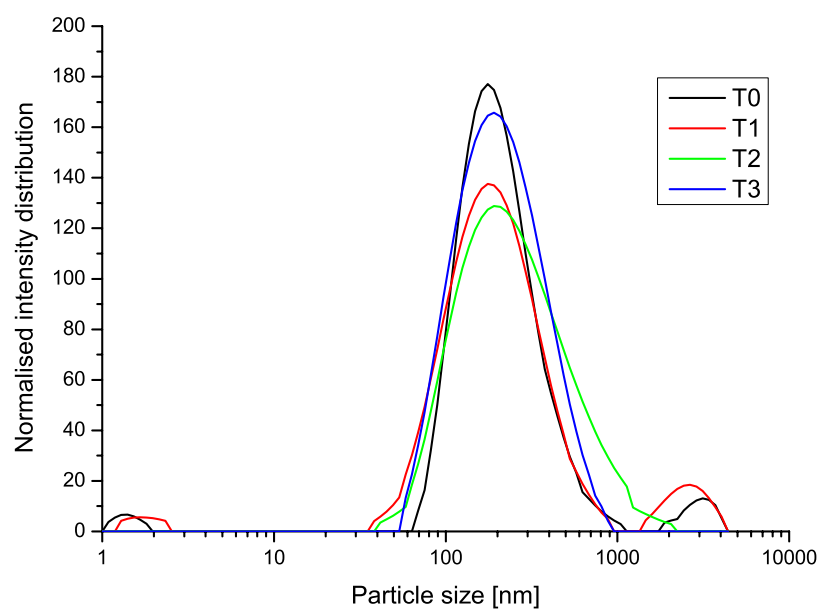


Figure ESI2: The particle sizes distribution of pore water by PCS at T₀-T₃; sampling depth 6 cm (Delsa Nano C, Beckman Coulter).

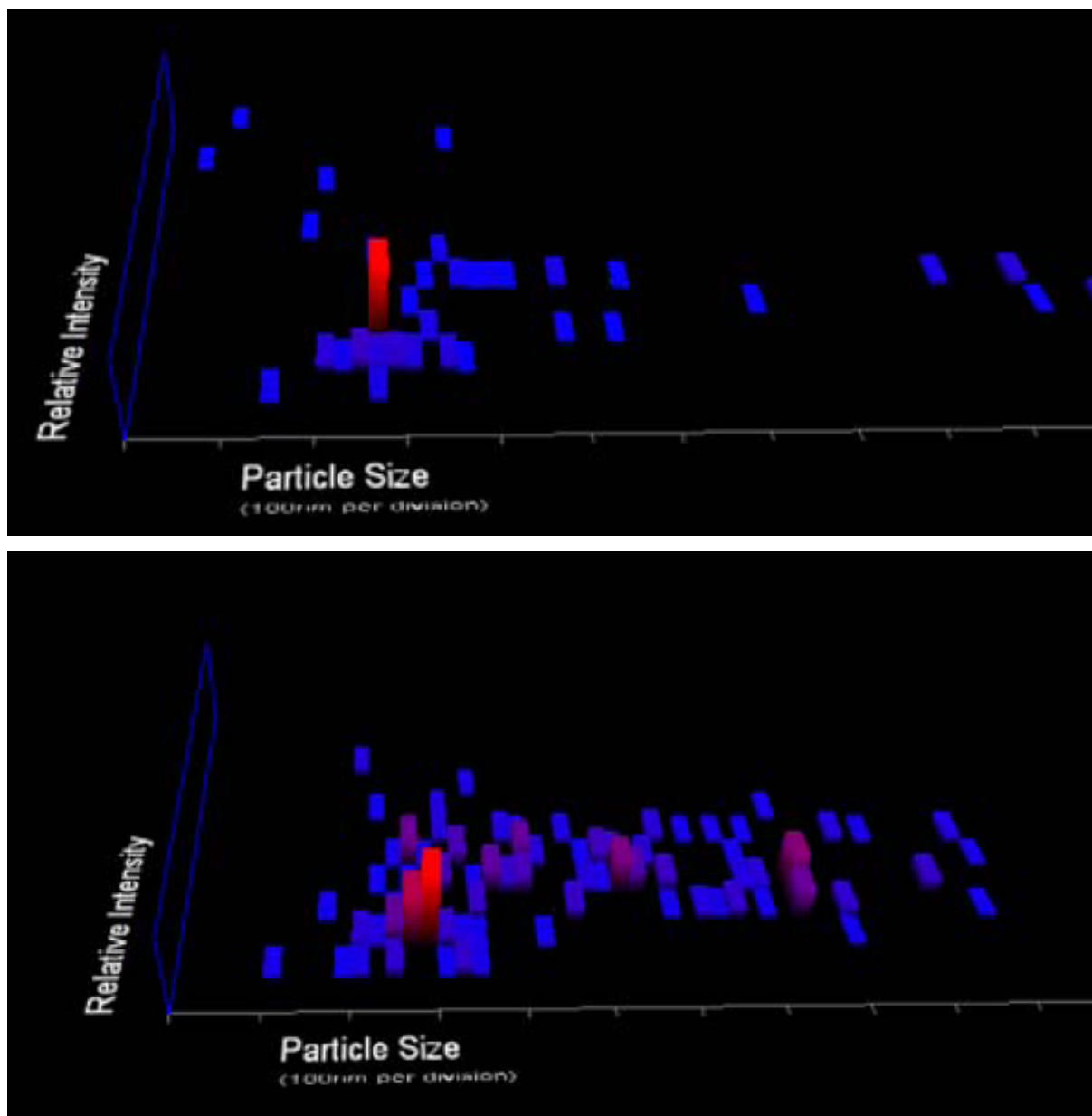


Figure ESI3: Particle size distribution of pore water at T₀ (below) and T₂₄ (on top) at depth 11 – 11.5 cm. X = size [100 nm steps]; Y = relative scattering intensity; Z = relative concentration. The distribution of scatter is comparable with exception of strong scatter in the size range < 100 nm of the T₂₄ sample.

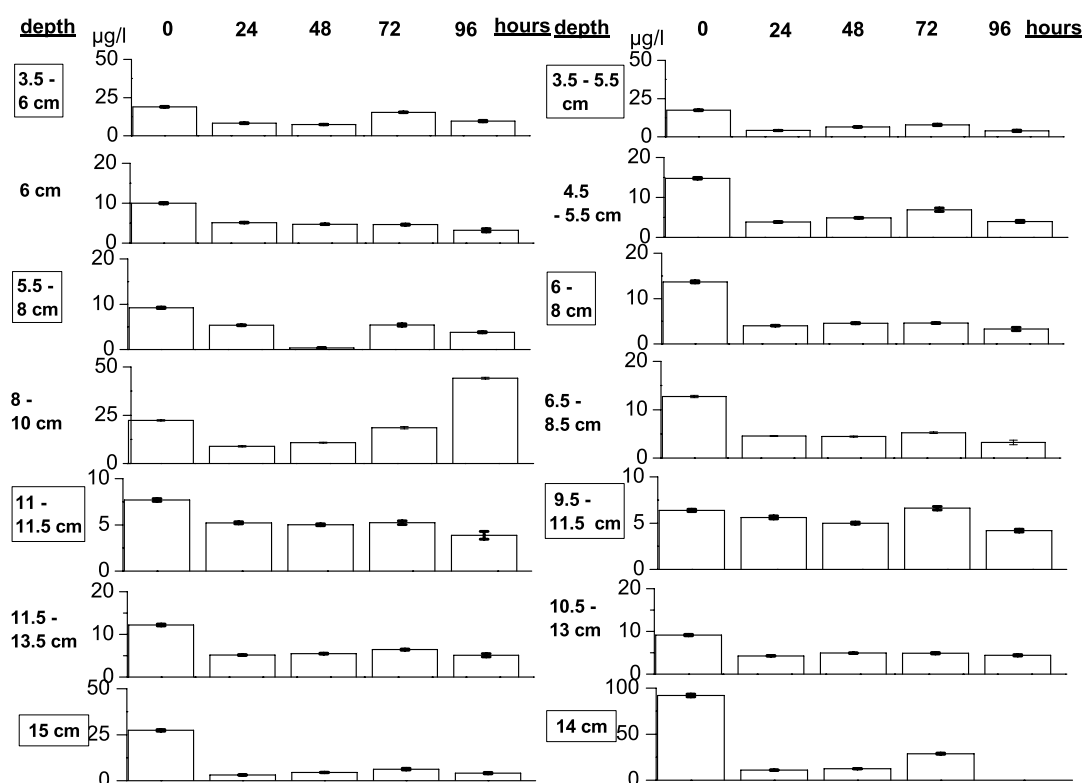


Figure ESI4: Depth dependent pore water concentrations of As in $\mu\text{g/l}$ during 7 days of incubation of a) cell spiked with Sb and b) cell spiked with Ti. Numbers in boxes display the 450 nm filtered pore water, those without boxes the 100 nm filtered pore water.



Figure ESI5: TiO_2 agglomerates (white powder) in SOFIE cell.