Supporting Information

Table S1. Basic characteristics of the raw soil given as mean (n = 3).

pH	O.M.[a]	CEC[b]	Particle size distribution (%)			Bulk chemical composition (mg/kg)		
	%	mmol/kg	Sand	Silt	Clay	As	Fe	Mn
8.3	2.5	1.2	1.4	84.1	14.5	21.1	27200.0	550.0

[a] Organic matter. [b] Cation exchange capacity.

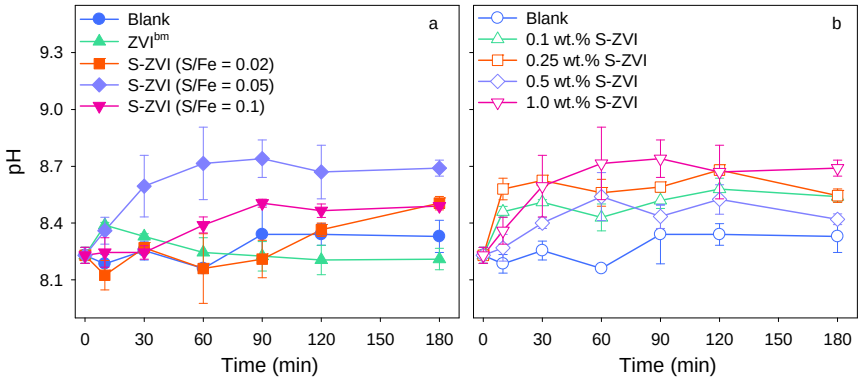

Fig. S1. Change of pH during the process of the desorption and immobilization of As by ZVI[bm] or S-ZVI.

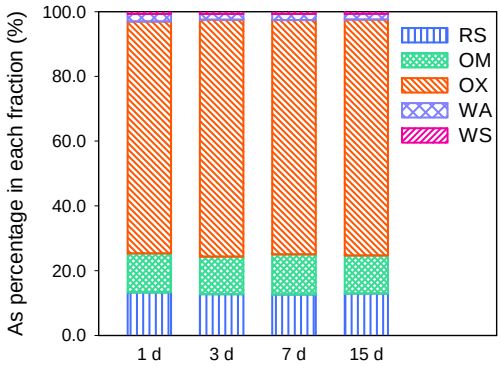

Fig. S2. The fractions of different As forms after S-ZVI treatment for different times (soil/solution = 2 g/10 mL, S/Fe molar ratio = 0.05, S-ZVI = 5 g/kg (0.5 wt.%), T = 25 ℃).

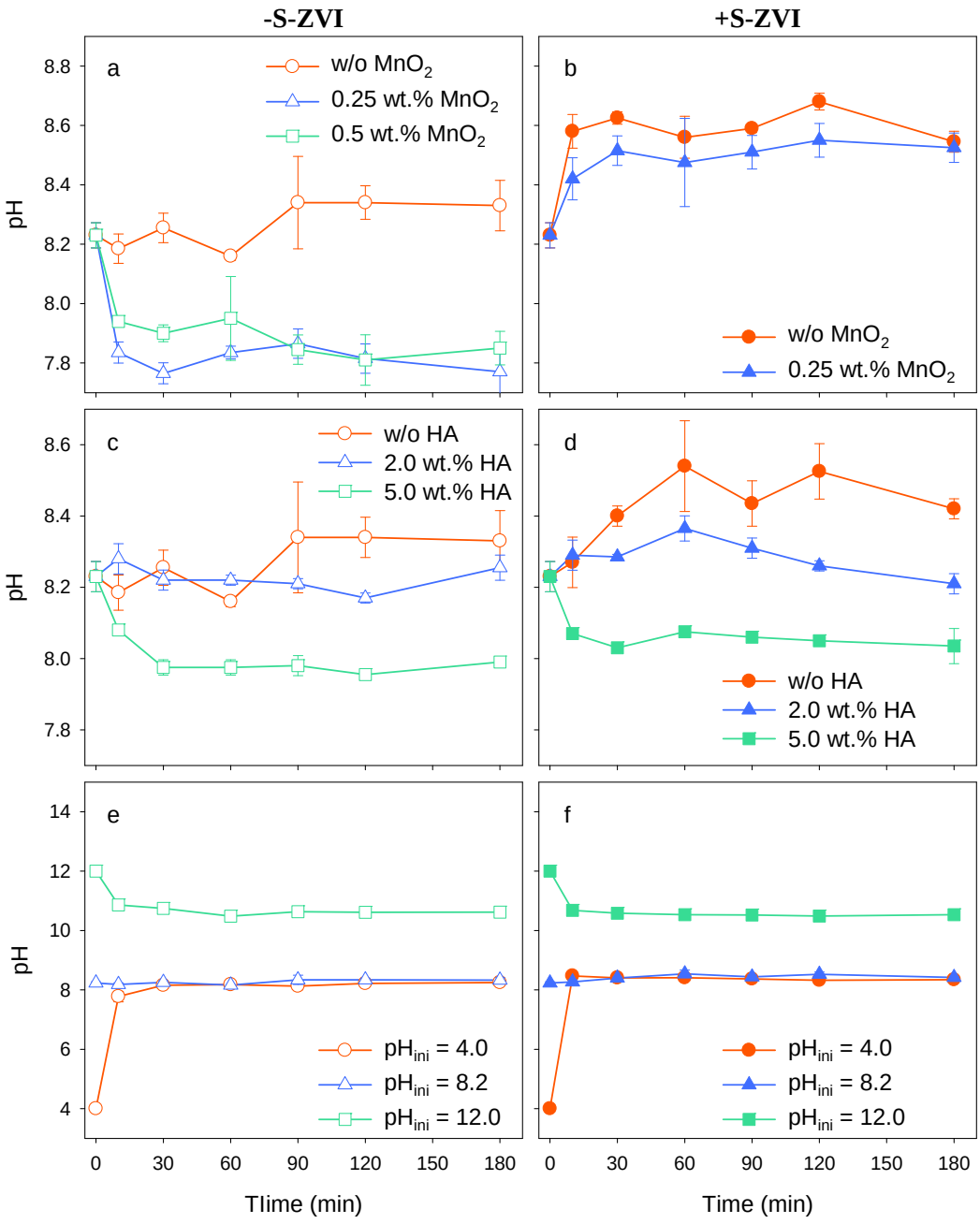

Fig. S3. The change of pH during the process of the desorption and immobilization of As by S-ZVI under different conditions.

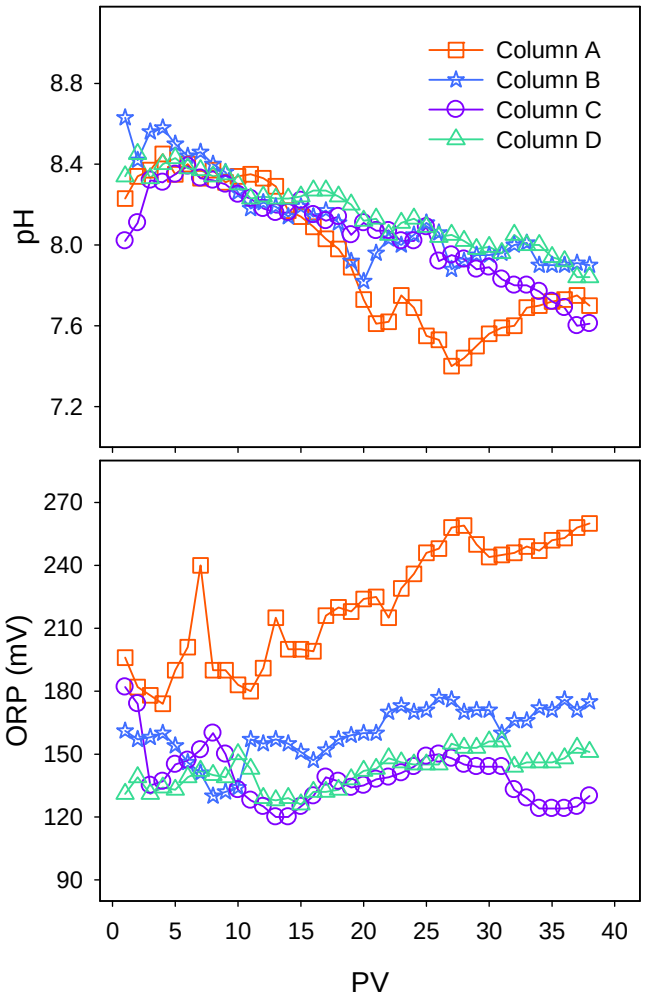

Fig. S4. The variation of pH and ORP during the column tests. Reaction conditions: the flow rate of pure water = 0.75–0.90 mL/h; S-ZVI = 3 g; soil dosage = 60 g; T = 25 ℃.

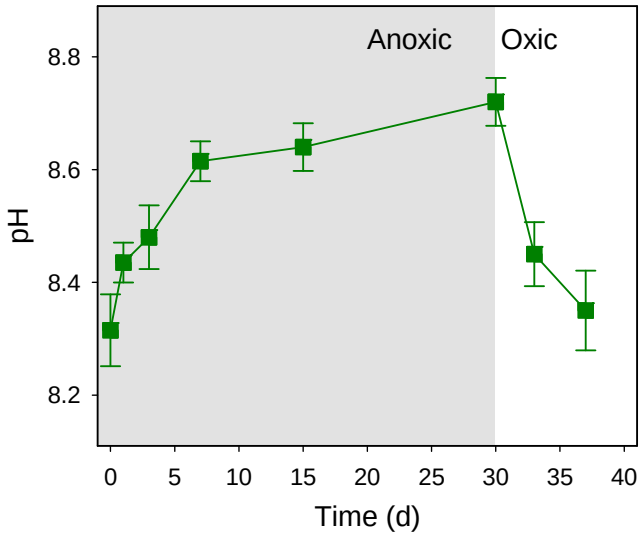

Fig. S5. Change of pH during the long-term incubation tests of S-ZVI treated soils.

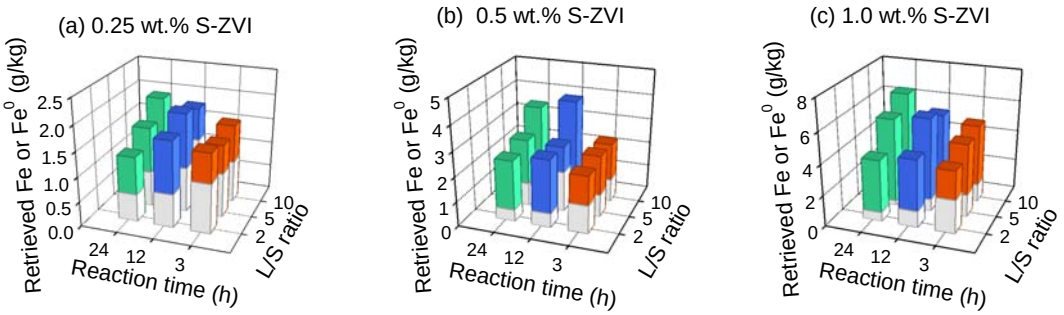

Fig. S6. Effect of operating conditions on the recovery of Fe from S-ZVI treated soils by magnetic separation. White bars represent the contents of retrieved Fe^0.