

Supplementary material

Table S1. Precautionary values according to the German Federal Soil Protection Ordinance (mg kg⁻¹).

Texture	As	Cd	Cr	Cu	Fe	Hg	Mn	Ni	Pb	V	Zn
Sand	-	0.4	30	20	-	0.1	-	15	40	-	60
Silt or Loam	-	1.0	60	40	-	0.5	-	50	70	-	150
Clay	-	1.5	100	60	-	1	-	70	100	-	200

¹ The application on arable land requires that the metal concentrations of the applied material do not exceed 70% of the precautionary values.

Table S2. Rotated component matrix of the three analyzed components (EV: Eigen value; Vt (%): percentage of total variance; Vc (%): cumulative percentage of variance).

Comp.	1	2	3
Cr	.942	.156	-.051
Al	.905	.096	-.021
V	.903	.229	.026
Fe	.854	.333	-.173
As	.784	.215	.049
CN	-.536	-.349	.454
Zn	.478	.803	.130
Cd	.244	.762	.447
pH	.167	.756	-.274
Ni	.561	.727	.000
Mn	.135	.654	-.007
Pb	.012	.463	.328
TOC	-.156	-.030	.957
N _t	.068	.180	.925
EV	4.83	3.37	2.42
V _t (%)	34.5	24.0	17.2
V _c (%)	34.5	58.5	75.8

Table S3. Percentage of easily extractable trace metal concentrations on the aqua regia soluble concentrations of air-dried reservoir sediments (RS).

	As	Cd	Cr	Fe	Mn	Ni	Pb	V	Zn
Mean	1.26	10.9	0.07	0.02	62.1	4.41	0.19	0.03	2.93
Median	0.59	7.17	0.06	0.01	71.2	3.30	0.06	0.02	0.67
SD	1.92	9.61	0.03	0.02	36.8	5.43	0.29	0.02	4.87
Min	0.20	0.88	0.02	0.00	0.73	0.28	0.01	0.01	0.13
Max	9.31	38.1	0.15	0.06	100	20.5	1.13	0.13	19.4

Table S4. The variability of the median values of the element-specific enrichment factors (EF) illustrated by the example of the Breitenbach, Obernau and Bitburg reservoirs (RS: reservoir sediment; SS: stream sediment; CS: catchment soil).

		As	Cd	Cr	Fe	Mn	Ni	Pb	V	Zn
Breitenbach	RS	4.3	10.2	2.8	5.3	40.5	8.9	21.2	3.0	10.4
	SS	7.1	13.9	3.7	8.9	19.0	20.9	42.6	4.0	14.0
	CS	6.3	2.4	3.5	5.2	3.1	3.9	36.2	4.1	3.3
Obernau	RS	3.0	8.2	3.2	4.2	27.6	7.4	6.0	3.2	6.4
	SS	3.8	2.2	3.2	4.9	7.6	6.5	4.7	2.4	3.5
	CS	3.9	2.5	3.1	4.3	4.4	3.9	6.2	3.0	2.9
Bitburg	RS	2.9	2.5	2.8	3.9	3.5	4.9	8.9	3.0	4.1
	SS	4.7	1.7	3.4	5.4	6.0	5.8	3.5	2.9	3.3
	CS	2.9	1.1	2.7	4.0	5.9	4.2	2.4	2.4	2.5