

Supplementary material

Geochemical distribution of selected elements in flotation tailings and soils/sediments from the dam spill at the abandoned antimony mine Stolice, Serbia

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Fraction	Mean	Std.Dev.	Median	rev Box-Cox
FT1				
As 1	158	57	170	148
As 2	4201	888	4034	4124
As 3	1836	539	2027	1719
As 4	1427	596	1308	1311
Cd 1	4.34	2.03	3.72	3.85
Cd 2	22.9	3.14	22.7	22.8
Cd 3	2.02	1.01	1.59	1.83
Cd 4	6.19	3.37	4.82	5.35
Pb 1	2.32	1.39	2.52	1.99
Pb 2	551	78	541	547
Pb 3	183	491	26.1	36.1
Pb 4	57.2	21	53.6	54.5
Sb 1	41.6	27.8	31.4	36.5
Sb 2	282	60.2	282	276
Sb 3	43.7	17.1	39.4	40.9
Sb 4	448	190	375	424
Zn 1	841	247	886	800
Zn 2	453	97.9	444	445
Zn 3	217	112	161	200
Zn 4	715	402	578	634
FT2				
As 1	37.1	44.4	22.6	16.5
As 2	1140	1149	674	707
As 3	967	1273	362	406
As 4	465	365	391	362
Cd 1	1.25	1.72	0.62	0.62
Cd 2	5.36	5.37	2.81	2.84
Cd 3	1.33	1.57	0.48	0.70
Cd 4	3.08	3.35	1.24	1.25
Pb 1	2.10	2.30	1.72	1.35
Pb 2	222	213	129	152
Pb 3	45.5	63.5	12.7	16.9
Pb 4	99.8	116	34.7	50.3
Sb 1	40.1	38	31.6	28.2

Sb 2	180	79.5	164	166
Sb 3	86.6	108	36.5	55.1
Sb 4	881	969	485	644
Zn 1	232	285	103	107
Zn 2	207	213	101	131
Zn 3	158	162	71.6	113
Zn 4	289	297	153	177
R1				
As 1	16.8	32.64	2.83	4.21
As 2	128	282	13.5	13.9
As 3	83.1	185	10.7	14.1
As 4	137	142	79.3	89.8
Cd 1	0.29	0.34	0.16	0.19
Cd 2	0.34	0.21	0.28	0.29
Cd 3	0.22	0.23	0.15	0.16
Cd 4	0.67	0.38	0.57	0.61
Pb 1	0.86	1.08	0.47	0.43
Pb 2	57.6	53.2	42.1	41.1
Pb 3	14.5	7.62	12.4	12.6
Pb 4	5.49	7.26	3.50	3.16
Sb 1	5.69	9.65	1.62	1.94
Sb 2	7.62	3.63	6.44	7.13
Sb 3	17.8	55.3	1.14	2.00
Sb 4	145	258	64.2	75.08
Zn 1	27	38.7	12.5	14.6
Zn 2	36	38.3	19.6	25.5
Zn 3	58.6	68.3	32.2	41.3
Zn 4	67.7	47.6	53.5	61.1
R2				
As 1	23	41.3	2.55	5.19
As 2	232	432	32.9	27.8
As 3	233	440	25.5	25.1
As 4	319	472	129	153
Cd 1	0.47	0.44	0.35	0.28
Cd 2	0.43	0.34	0.36	0.26
Cd 3	0.45	0.55	0.26	0.27
Cd 4	1.62	2.18	0.68	0.92
Pb 1	1.41	1.9	0.50	0.81
Pb 2	70.9	72.2	46.8	47.1
Pb 3	19.4	21.6	12.4	12.6
Pb 4	31.1	56.4	9.74	11.5
Sb 1	15.3	28.2	4.41	4.54

Sb 2	10.3	12.6	6.54	6.15
Sb 3	32.5	93.8	3.31	4.06
Sb 4	252	303	151	142
Zn 1	52.4	74.5	22.4	20.7
Zn 2	54.7	60.4	32.6	31.1
Zn 3	72.1	66	48.8	49.3
Zn 4	178	241	74.5	110
R3				
As 1	38	35.1	35.97	18.7
As 2	488	435	348	230
As 3	585	709	364	172
As 4	432	334	372	269
Cd 1	1.11	0.78	1.15	0.71
Cd 2	0.84	0.65	0.76	0.57
Cd 3	0.78	0.54	0.76	0.55
Cd 4	2.5	1.88	2.49	1.40
Pb 1	2.43	1.63	2.44	1.92
Pb 2	105	64.9	108	79
Pb 3	34.4	41.7	24.2	22.5
Pb 4	46.4	37.1	44.4	35
Sb 1	34.5	32.6	28.4	20.8
Sb 2	15.4	15.4	10.1	12.06
Sb 3	123	170	41.5	32.9
Sb 4	417	267	426	290
Zn 1	132	99	115	82.5
Zn 2	120	80.9	121	88.4
Zn 3	82.6	84.3	52.5	34.7
Zn 4	291	208	304	183
CON				
As 1	0.76	1.53	0.13	0.10
As 2	2.5	3.78	1.10	1.19
As 3	0.74	1.52	0.06	0.16
As 4	34.6	8.98	35.8	33.6
Cd 1	0.07	0.04	0.08	0.06
Cd 2	0.19	0.09	0.24	0.17
Cd 3	0.03	0.02	0.04	0.02
Cd 4	0.76	0.09	0.75	0.76
Pb 1	0.27	0.09	0.27	0.26
Pb 2	21.6	10.56	20.2	20.1
Pb 3	4.91	2.21	5.3	4.29
Pb 4	1.38	1.14	1.41	0.67
Sb 1	0.49	0.81	0.19	0.15

Sb 2	3.47	0.87	3.17	3.38
Sb 3	0.001	n.d.	0.0010	0.001
Sb 4	17.9	12.35	13.7	15.25
Zn 1	7.52	11.2	2.32	3.03
Zn 2	20.8	27.6	9.11	13.3
Zn 3	14.4	8.64	9.56	13.2
Zn 4	59.8	11.4	60	59.1

Table B: Results of PCA models

PCA model	No of PCs with eigenvalue >1	% of variance captured by PC1	% of variance captured by PC2	% of variance captured by PC3	% of variance captured by PC4
Pseudo-total	3	49.8	14.7	10	8.3
I BCR phase	4	44.9	14.4	11.3	9.9
II BCR phase	4	52.4	15.9	9.9	9.6
III BCR phase	4	39.2	15.2	11.6	9.1
IV BCR phase	3	45.8	16.9	10	7.3

Table C: Results of chemical analysis of minerals (in weight%)

Mineral	O	Mg	Al	Si	S	K	Ca	Mn	Fe	Zn	As	Sb
Lim	46.02		1.37	18.19		0.59	0.83		22.79	3.4	4.71	2.1
Lim + MM	33.56		2	14.46	3.66	0.61	3.02	0.89	26.66	5.44	9.71	
Qtz	47.36		1.75	48.62		0.61			1.66			
Dol	11.09	53.79	10.21	0.96	2.58		0.31	18.87		2.02		

Table D: Results of chemical analysis of minerals (in weght%)

Mineral	O	Si	S	K	Ca	Fe	Zn	As
MM	32.48	6.77	12.18	0.4	1.12	20.98	2.59	23.47
Qtz	36.24	63.76						

Table E: Results of chemical analyses of minerals (in weight%)

Mineral	O	F	Mg	Al	Si	P	S	Cl	K	Ca	Fe	As	La	Ce	Nd	Th
Py	18.52			1.65	2.38		39.56		0.39	0.59	31.62	5.29				
Apy	37.15	6.16		0.8	1.12	19.05		0.41		35.31						
Mnz	27.96			1.76	2.12	13.12				1.27			15.73	27.7	7.5	2.85
Qtz	63.57			1.39	34.7				0.34							
Ap	21.29			1.52	3		17.76		0.38	0.79	28.84	26.42				
Scd	54.19			9.75												
Ms	51.32		0.78	15.68	23.82				6.91		1.48					

Table F: Results of chemical analysis of minerals (in weight %)

Mineral	O	Mg	Al	Si	K	Ca	Fe	Sb
Ox(Sb)+Fld	45.33	0.61	9.01	14.96	3.25	8.71	2.55	15.58
Cal	57.58		3.65	5.35	0.94	30.58	1.9	
Qtz	54.55		0.75	44.17			0.53	