

**Table S1.** Oxide composition for mixtures of reactive materials from systems analyzed after field tests.

<b>Compound (%)</b>	<b>System 1</b>	<b>System 2</b>	<b>System 3</b>
Na <sub>2</sub> O	0	2.599	0
MgO	1.566	0.161	1.543
Al <sub>2</sub> O <sub>3</sub>	1.308	3.918	0.996
SiO <sub>2</sub>	1.467	29.693	1.742
P <sub>2</sub> O <sub>5</sub>	0	0.386	0
SO <sub>3</sub>	0.225	0.512	0.262
Cl	0.105	0.294	0.222
K <sub>2</sub> O	0.072	1.236	0.057
CaO	16.117	1.158	27.952
TiO <sub>2</sub>	0.071	0.104	0.086
V <sub>2</sub> O <sub>5</sub>	0.006	0.005	0.007
Cr <sub>2</sub> O <sub>3</sub>	0.298	0.117	0.176
MnO	0.373	0.261	0.27
Fe <sub>2</sub> O <sub>3</sub>	65.257	45.874	48.586

**Table S2.** Varimax rotated factor matrix for the whole data set.

Variable	System 1			System 2					System 3				
	VF1	VF2	VF3	VF1	VF2	VF3	VF4	VF5	VF1	VF2	VF3	VF4	VF5
Cd (mg/L)	-0.22	0.22	<b>0.68</b>	0.00	0.13	<b>0.73</b>	-0.40	0.23	0.265	-0.124	-0.122	0.137	<b>0.895</b>
Ni (mg/L)	<b>0.80</b>	-0.34	0.13	<b>0.89</b>	0.02	-0.06	-0.14	-0.07	<b>-0.774</b>	-0.351	-0.209	0.063	0.004
Zn (mg/L)	<b>0.88</b>	0.10	-0.24	0.11	-0.10	-0.07	<b>0.88</b>	0.16	-0.129	0.304	0.497	-0.233	<b>0.690</b>
COD (mg/L)	<b>-0.65</b>	0.30	-0.63	0.01	<b>0.76</b>	-0.25	-0.26	-0.35	<b>0.889</b>	-0.003	0.317	0.030	0.090
NH <sub>4</sub> (mg/L)	-0.38	0.00	<b>0.81</b>	-0.05	<b>-0.82</b>	-0.25	-0.21	0.00	0.456	0.069	<b>0.709</b>	0.243	0.055
NO <sub>3</sub> (mg/L)	-0.21	<b>0.45</b>	-0.03	0.12	-0.12	-0.07	0.10	<b>0.88</b>	0.434	0.868	0.043	-0.020	0.084
NO <sub>2</sub> (mg/L)	0.10	<b>0.88</b>	0.04	<b>0.91</b>	0.18	0.03	0.07	-0.12	0.503	<b>0.708</b>	-0.164	-0.279	0.080
Fe (mg/L)	0.05	-0.57	<b>0.63</b>	-0.31	-0.11	<b>0.78</b>	0.17	-0.29	0.200	-0.012	0.087	<b>0.946</b>	0.030
SO <sub>4</sub> (mg/L)	<b>0.92</b>	0.20	-0.29	<b>0.90</b>	-0.24	-0.14	0.08	0.29	-0.324	<b>0.887</b>	-0.119	-0.204	0.023
pH	<b>-0.78</b>	-0.05	-0.41	-0.15	0.36	<b>0.65</b>	0.00	-0.57	0.506	<b>-0.724</b>	0.199	-0.292	0.078
EC (mS/C)	<b>-0.85</b>	-0.27	0.24	<b>-0.86</b>	0.13	0.16	-0.12	-0.21	<b>0.880</b>	-0.195	0.093	0.196	0.111
Eh (mV)	0.24	<b>0.56</b>	0.38	-0.04	<b>0.81</b>	0.05	-0.14	-0.06	-0.196	0.310	<b>-0.847</b>	0.006	0.027
T (°C)	0.21	<b>0.91</b>	-0.06	0.07	<b>-0.65</b>	-0.05	0.19	0.63	-0.051	<b>0.965</b>	-0.002	0.105	-0.054
k (m/s)	<b>0.90</b>	0.01	-0.28	<b>0.96</b>	0.04	-0.12	0.10	0.15	<b>-0.906</b>	0.113	-0.067	-0.233	-0.092
Eigenvalue	5.31	2.98	2.25	5.02	3.24	1.46	1.06	1.02	4.803	3.890	1.417	1.216	1.122
Variability (%)	37.03	20.20	18.12	30.41	18.82	12.57	8.48	13.96	29.742	27.707	12.361	9.579	9.525
Cumulative (%)	37.03	57.23	75.3	30.41	49.23	61.80	70.28	84.24	29.742	57.448	69.809	79.387	88.912