Supplementary data for

Long-term performance of cement stabilized/solidified Pb contaminated soil under simulated erosive environment

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Table S1. Extraction media used in the modified BCR sequential extraction.

Extraction step	Extraction medium	Fraction obtained*
1	0.11 mol/L CH_3COOH, pH 2.85	F1, acid soluble fraction
2	0.5 mol/L $NH_2OH \cdot HCl$, pH 1.5	F2, reducible fraction
3	8.8 mol/L H_2O_2 + 1 mol/L CH_3COONH_4, pH 2	F3, oxidizable fraction

Note:

* - The residual fraction (F4) was obtained from total digestion of the final residue after the three extraction steps.

Table S2. Model prediction Error Analysis

Curing time (d)	pH=5，relative error (%)	pH=6.86，relative error (%)	pH=10，relative error (%)
1	1.67	2.78	0.55
7	6.20	4.41	3.63
15	0.16	2.22	4.43
28	3.31	0.04	2.18
60	1.88	31.46	31.87
90	0.74	0.07	1.22
150	2.02	1.53	0.94
360	2.86	1.19	1.68
450	3.43	0.95	3.76
720	4.54	4.00	6.72
1080	2.86	4.97	7.67

Supplementary materials：

Based on the principle of least squares, taking the observation data of pH = 5 as an example, the nonlinear fitting function is called to solve the parameters. The matlab program is as follows:

```
function GRDM model
clc
xi=[1,7,15,28,60,90]; % x data
yi=[6.8,9.3,10.6,13.2,15,16.2]; % y data
abc0=[0.05,10,18]; % initial values
abc = lsqcurvefit(@fun, abc,xi,yi)
% target function
function y = fun(abc,x)
y = (-abc(1)*e^ (abc(2)x)+ abc(3);
abc =
0.03835    9.9401    16.5138
```

Figure S1. Fitting curves of hydraulic conductivity in different scenarios

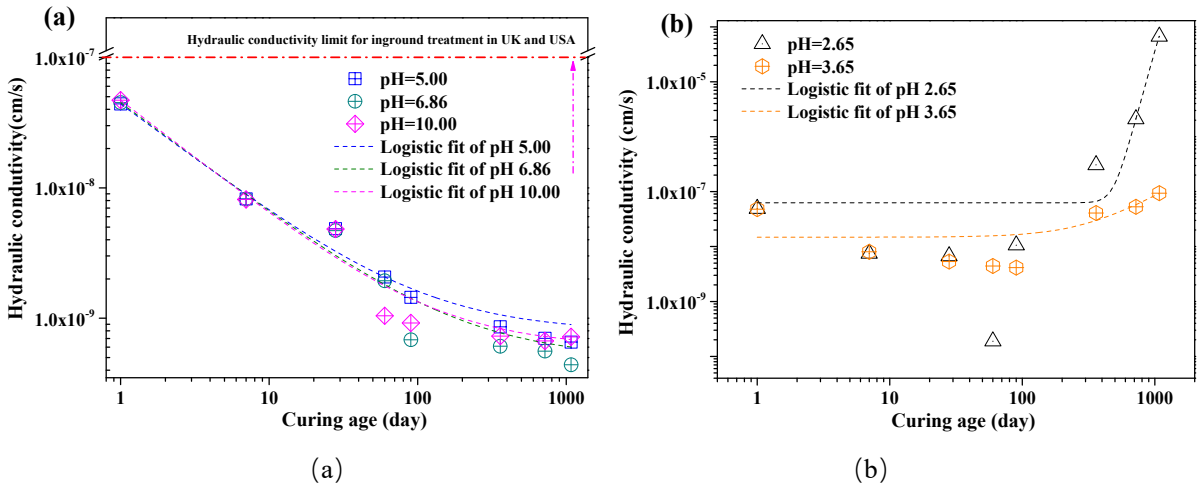

Figure 2-9 Fitting curves of hydraulic conductivity with logistic model: (a) acid condition; (b)weak acid and weak alkaline condition