Supplementary Materials

Hydrochemical Characteristics and Evolution of Groundwater in the Alluvial Plain (Anqing Section) of the Lower Yangtze River Basin: Multivariate Statistical and Inversion Model Analyses

Qiaohui Che [1,2], **Xiaosi Su** [1,2,*], **Shixiong Wang** [3], **Shida Zheng** [1,2] and **Yunfeng Li** [4]

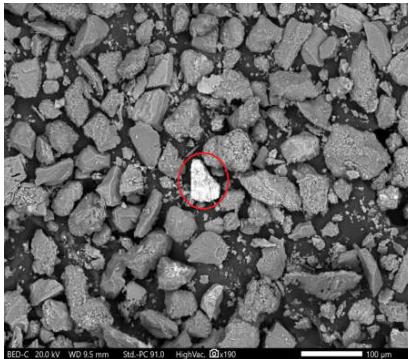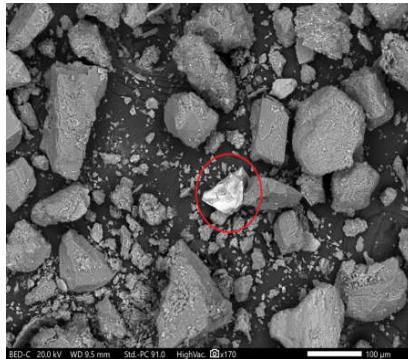|			
SEM photos			
Mineral name	Hematite	Siderite	Pyrite
Molecular formula	Fe_2O_3	$FeCO_3$	FeS_2

Figure S1. SEM photos of aqueous media.

Table S1. Chemical component concentrations of lake water and precipitation.

Sample	$\varrho(Cl^-)$	$\varrho(NO_3^-)$	$\varrho(SO_4^{2-})$	$\varrho(HCO_3^-)$	$\varrho(Na^+)$	$\varrho(K^+)$	$\varrho(Ca^{2+})$	$\varrho(Mg^{2+})$
Precipitation	0.64	0.08	0.15	0.31	0.09	0.07	0.46	0.03
Lake water	0.09	0.05	0.27	1.53	0.98	0.05	0.50	0.37

The unit is mmol/L.

Table S2. According to the ¹⁸O values of lake water, precipitation and samples, the mixing concentration of each ion component is calculated. It is assumed that the ion concentration is only affected by mixing.

Sample ID	$\delta^{18}O_L$	$\delta^{18}O_P$	Sample $\delta^{18}O_S$	Mix Pro. $\delta^{18}O_L/\delta^{18}O_P$	Mix Con. Cl⁻	Mix Con. NO₃⁻	Mix Con. SO₄²⁻	Mix Con. HCO₃⁻	Mix Con. Na⁺	Mix Con. K⁺	Mix Con. Ca²⁺	Mix Con. Mg²⁺
11	−5.90	−2.63	−3.46	0.25/0.75	0.496	0.069	0.102	0.617	0.319	0.063	0.469	0.116
12	−5.90	−2.63	−4.96	0.71/0.29	0.244	0.057	0.208	1.178	0.725	0.057	0.488	0.272
16	−5.90	−2.63	−4.68	0.63/0.37	0.291	0.059	0.188	1.073	0.649	0.058	0.485	0.243
18	−5.90	−2.63	−3.97	0.41/0.59	0.412	0.065	0.137	0.805	0.455	0.061	0.476	0.168
48	−5.90	−2.63	−4.28	0.50/0.50	0.359	0.063	0.159	0.922	0.540	0.059	0.480	0.201
52	−5.90	−2.63	−2.00	-0.19/1.19	0.743	0.081	0.000	0.069	-0.078	0.069	0.451	-0.036
54	−5.90	−2.63	−3.75	0.34/0.66	0.448	0.067	0.122	0.723	0.396	0.061	0.473	0.146
55	−5.90	−2.63	−4.74	0.65/0.35	0.281	0.059	0.192	1.096	0.665	0.057	0.485	0.249
58	−5.90	−2.63	−1.88	-0.23/1.23	0.764	0.082	0.000	0.023	-0.111	0.069	0.449	-0.049
60	−5.90	−2.63	−4.80	0.66/0.34	0.271	0.058	0.196	1.117	0.681	0.057	0.486	0.255
62	−5.90	−2.63	−4.28	0.50/0.50	0.360	0.063	0.159	0.921	0.539	0.059	0.480	0.200
68	−5.90	−2.63	−4.54	0.59/0.41	0.315	0.060	0.178	1.021	0.611	0.058	0.483	0.228
69	−5.90	−2.63	−5.14	0.77/0.23	0.214	0.056	0.220	1.245	0.773	0.056	0.491	0.290
70	−5.90	−2.63	−5.41	0.85/0.15	0.169	0.053	0.239	1.343	0.845	0.055	0.494	0.317
71	−5.90	−2.63	−5.16	0.77/0.23	0.211	0.055	0.222	1.251	0.778	0.056	0.491	0.292
73	−5.90	−2.63	−2.61	-0.01/1.01	0.640	0.076	0.041	0.297	0.087	0.066	0.458	0.027
74	−5.90	−2.63	−6.48	1.18/-0.18	-0.012	0.045	0.315	1.746	1.136	0.050	0.507	0.429
78	−5.90	−2.63	−5.27	0.81/0.19	0.193	0.055	0.229	1.291	0.806	0.055	0.492	0.303
83	−5.90	−2.63	−4.90	0.69/0.31	0.255	0.058	0.203	1.152	0.706	0.057	0.487	0.264
86	−5.90	−2.63	−5.73	0.95/0.05	0.114	0.051	0.262	1.465	0.933	0.053	0.498	0.351

The subscript S represents the sample. Subscript L stands for lake water. Subscript P stands for precipitation. Mix Pro. stands for Mix proportion. Mix Con. stands for Mix concentration. The unit of $\delta^{18}O$ is ‰. The unit of concentration is mmol/L.