

Table S1 Mössbauer parameters of the sludge.

Sample	Component	IS (mm/s)	QS (mm/s)	H_{in} (KOe)	HWHM (mm/s)	Area (%)
The mud	FeOOH	0.28 ± 0.01	0.72 ± 0.01		0.15 ± 0.01	100
KFeS ₂ - bearing particles	FeOOH	0.26 ± 0.03	0.71 ± 0.01		0.32 ± 0.01	15.8
	KFeS ₂	0.21 ± 0.02	0.53 ± 0.02		0.18 ± 0.01	74.6
	Hematite	0.38 ± 0.02	0.21 ± 0.03	510.2 ± 1	0.25 ± 0.03	9.6

IS : isomer shift; QS : quadruple split; H_{in} : hyperfine field; HWHM: half width at half maximum; Area: relative absorption area.