

Table 1

Concentrations of REE in Coal Seam 5 from Gequan Mine ($\mu\text{g/g}$).

Element	GQR	GQT	GQM	GQB	GQF	Chondrite
Y	23.90	3.90	4.52	32.70	29.60	
La	59.80	4.86	23.40	70.70	62.10	0.315
Ce	96.70	4.99	44.00	125.00	112.00	0.813
Pr	11.20	1.26	4.77	16.40	14.10	0.115
Nd	35.10	4.45	17.40	59.90	50.90	0.597
Sm	4.74	0.92	3.11	10.70	8.84	0.192
Eu	0.95	0.16	0.59	2.50	2.28	0.0722
Gd	4.46	0.87	2.47	8.77	7.79	0.259
Tb	0.74	0.13	0.33	1.11	1.01	0.0473
Dy	5.04	0.79	1.76	6.50	5.73	0.325
Ho	1.04	0.16	0.31	1.27	1.10	0.0723
Er	3.18	0.44	0.77	3.72	3.35	0.213
Tm	0.46	0.06	0.10	0.53	0.47	0.0333
Yb	3.17	0.37	0.54	3.43	3.07	0.208
Lu	0.47	0.06	0.07	0.53	0.49	0.0323

Table 2

REE geochemistry parameters of Coal Seam 5 from Gequan Mine.

Parameter	GQR	GQT	GQM	GQB	GQF	AVE
$\sum\text{REE}(\mu\text{g/g})$	250.95	23.41	104.13	343.76	302.83	205.02
LREE($\mu\text{g/g}$)	232.39	20.53	97.79	317.90	279.82	189.69
HREE($\mu\text{g/g}$)	18.56	2.87	6.34	25.86	23.01	15.33
LREE/HREE	12.52	7.15	15.43	12.29	12.16	11.91
δEu	0.20	0.13	0.21	0.26	0.27	0.21
δCe	3.73	1.83	4.17	3.67	3.78	3.44

The values of δEu are 0.13-0.27 $\mu\text{g/g}$, and 0.21 $\mu\text{g/g}$ in average. It shows a clear Eu depletion. Some reports have proved that the anomaly of Eu is inherited by the source rock (Birk and White, 1991; Cullers *et al.*, 1975; Eskenazy, 1987). The Late Palaeozoic sediments in Gequan Mine are located in the middle of North China Platform. The geochemistry of REE in Late Palaeozoic

sediments have been studied by lots of researchers. Liu (1986) studied geochemistry of trace elements and REE on Kaolinite rocks in Late-Palaeozoic Measures North China. He found that the Eu values of 22 samples in total 25 samples were influenced by volcanism and had negative anomaly, with a value of 0.41-0.88 $\mu\text{g/g}$, and 0.6345 in average. Their distribution patterns are "V-shape" curves.