

## **Geochemistry of trace elements in Neogene lignite from the Mengtuo of Lincang, western Yunnan, China**

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The Mengtuo village of Boshang town in Lincang is adjacent to the Dazhai coal-hosted Ge deposit. To investigate the geochemistry of Mengtuo Neogene lignite and compare it to the Dazhai Ge-rich coal, 11 bump coal samples were collected from the one illegal mine operated by local residents. The trace elements were determined by ICP-MS and ICP-CCT-MS (As and Se).

Compared to the geochemical feature of the Dazhai coals[1], beryllium (44.5×), Ge (1147×), As (14.2×), Nb (6.0×), W (15.9×), Tl (5.0×), Th (12.2×) in the Mengtuo lignite indicates a different geochemical composition.

With respect to the common Chinese coals [2], the Mengtuo lignite are significantly enriched in Rb (96.1 mg/kg), Sb (15.3 mg/kg), and Cs (25.9 mg/kg); enriched in W (10.6 mg/kg) and U (20.2 mg/kg); slightly enriched in Be (7.84 mg/kg), Ga (16.1 mg/kg), As (11.6 mg/kg), Cd (0.67mg/kg), In (0.10 mg/kg), Sn (6.66 mg/kg), Pb (34.6 mg/kg), Bi (3.86 mg/kg), and Th (28.2 mg/kg), differentiating all coal-hosted Ge deposits (enriched in Be, As, Ge, Sb, Cs, W, Hg, and Tl).

A significant geochemical characteristic of the Mengtuo lignite is the typical UCC-normalized REY distribution pattern, significantly positive Ce anomaly and negative Eu anomaly, suggesting a different REY origin and/or post-diagenetic conditions to the hydrothermal solutions influenced Dazhai coals.

[1]Dai S., Wang P., Ward C.R., Tang Y., Song X., Jiang J., Hower J.C., Li T., Seredin V.V., Wagner N.J., Jiang Y., Wang X., Liu J., (2015). *International Journal of Coal Geology* 152, 19-46. [2]Dai S., Ren D., Chou C.-L., Finkelman R.B., Seredin V.V., Zhou Y., (2012). *International Journal of Coal Geology* 94, 3-21.