

Geochemical and mineralogical study of Eplény Mn-deposit, Hungary

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The early Toarcian Oceanic Anoxic Event related manganese mineralization has resulted significant deposits in Hungary, with a still operating mine at Úrkút, and an already closed one at Eplény. Nowadays in the area of Eplény sample collecting is restricted, but there are few still available drill cores from which we could select 14 samples for mineralogical and geochemical measurements.

We can divide the Eplény deposit to Western and Eastern part in virtue of different geochemical and geological conditions. In the Eastern part reworked secondary manganese ore was found but in the Western part the ore was 'Csárdahegy-type' (Úrkút) primary manganese ore.

In the reworked zone we have found high, positive Eu anomaly (Fig. 1.) and enrichment in As, Co, Cu, Mo, Ni, Se and V, which corresponds with the reworked manganese ores of the Hungarian Bükk Mts. [1]. The samples from the Western part show enrichment in Ce, Pb, and Rb which are similar to the primary manganese ores of the Úrkút deposit.

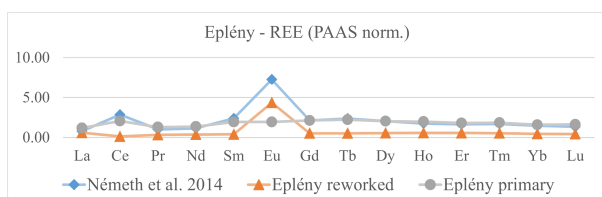


Figure 1: PAAS normalized REE content of the samples [2].

In the reworked zone there are at least three types of texture shown by Mn minerals (diagenetic Mn precipitation from porewater; vein filling texture with elongated masses of fibrous todorokite and angular pyrolusite crystals, or vein filling with elongated todorokite and detrital pyrolusite-todorokite aggregates) within one sample which was formed by the fragments of the eroded ore. On the other hand each sample from the Western part has its own, well-defined, but very different texture (botryoidal texture crossed with parallel cryptomelane veins, infiltration texture with pseudomorphic replacement of carbonate fossils by cryptomelane).

[1] Németh *et al.* (2014) *Földtani Közlemény* **144/2**, 155–164. [2] Taylor & McLennan (1995) *Rev. Geophys.* **33**, 241–265.