
Secondary mineralization

Supergene minerals feature strongly at a number of the GCR sites in Wales described above. Some, such as the Machen Quarry, Dolyhir Quarry and Eaglebrook Mine GCR sites, are as important for their secondary as for their primary mineralization. The Turf Copper Mine GCR site, with a dominantly supergene context, has been described as part of the Coed y Brenin network, for it is best considered in that context.

Three further GCR sites are, however, of prime importance for the understanding of the genetic processes responsible for the supergene mineral deposits in Wales. At the Llechweddhelyg Mine GCR site, the deep leaching of both ore deposits and their host rocks has produced an assemblage of base-metal supergene minerals in quantity. At the Mynydd Nodol Mine GCR site, leaching of Ordovician volcanic rocks was accompanied by the deposition of complex botryoidal manganese oxides in joints and fault-fractures. At both of these sites the intensity of the supergene leaching and mineralization is interpreted as being due to Tertiary sub-tropical weathering.

At the Frongoch Mine GCR site, a deep leaching-related supergene assemblage is accompanied by complex, post-mining mineralization of great diversity. Interestingly, secondary mineralization at Frongoch contributes to the ongoing debate, in the mineralogical world, as to what defines a true mineral; at Frongoch and elsewhere, certain crystalline solids have been generated by weathering processes affecting material with a significant anthropogenic input.

[References](#)