Models of polygenic and polychronous ore deposits within andesitic volcano-plutonic belt (VPB) in the Middle Urals

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The VPB is composed of andesite volcanic and gabbro-diorite-granodiorite plutonogenic formations containing numerous Fe, Cu and Au deposits . The main orebodies are controlled by the roof of the carbonate sequence traced for several dozen kilometres and show some evidences of syngenetic development. Iron deposits traditionally being considered as of skarn type were identified as being of effusive origin according to the El Paco deposit model (Chile) including metamorphic impact on host rocks. These ores underwent metamorphism and partial destruction under the influence of later intrusions. Some of them , probably , belonging to restite melts bear abundant hysteromagmatic impregnations of magnetite. Stratiform chalcopyrite-pyrite ores (sometimes, sphalerite-bearing) recognized at several levels are partially metamorphosed by diorite and gabbro-diorite bearing regenerated disseminated copper ore and the similar gold veins . Stratiform gold-mercury-arsenic ore controlled by limestone roof underwent partial re-distribution of metals under the influence of multiphase dikes. Part of them is accompanied by gold-bearing veins which we attribute to the regenerated ones. A complex combination of syngenetic, metamorphogenous and regenerating ore-forming processes caused spatial coincidence of Fe,Cu, Zn, Au ores in unconventional associations.