



## **Main types of gold ore forming systems and their relationship with the paleogeodynamic settings on the Taimyr Peninsula and the Severnaya Zemlya Archipelago**

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Within the Taimyr – Severnaya Zemlya mineragenic province, the Late Paleozoic – Early Mesozoic Kara rare-metal – gold and Byrrangsky coal-bearing – polymetallic mineragenic areas are distinguished. Main geological commercial types of the Kara mineragenic area include manifestations of gold-quartz, gold sulphide-quartz (proper gold ore), and gold-rare metal, gold-bearing copper-molybdenum-porphyry formations. The Riphean – Vendian subduction – collisional and Late Paleozoic – Early Mesozoic repeated collisional (deutero-genic) ore-forming systems play a leading role in their formation.

Regardless of the age and formation features, manifestations of proper gold ore formations are controlled by a common factor, the degree of metamorphism of host rocks - not above the sericite-biotite subfacies of the greenschist facies, and belong to the group of hydrothermal-metasomatic ore forming systems conditioned by alkali-acid differentiation of matter in temperature gradient field with ore concentration in mesozone.

Depending on the host Precambrian formations, Kara Late Paleozoic – Early Mesozoic mineragenic area is subdivided into Mininsky-Bolshevistsky flysch-terrigenous carbonaceous zone with manifestation of zonal regional metamorphism of the andalusite-sillimanite type (Arctida passive margin) and Shrenk-Faddey volcanogenic-carbonate-terrigenous carbonaceous zone with ophiolites (accretion prism of Siberia).

For the Riphean – Early Vendian endogenous manifestations, the following main types of gold ore forming systems are distinguished: in the passive marginal Mininsky-Bolshevistsky zone – early collisional metamorphic-hydrothermal in terrigenous carbonaceous complexes (Valterovsky, Voskresensky, Litkensky ore zones) and late collisional plutonic-hydrothermal in allochthonous granitoids of S-type (Martovsky-Nikitinsky ore cluster); in the accretionary Shrenck-Faddey zone – subduction-collisional plutonic-metamorphic-hydrothermal (Zhilninsky, Leningradsky ore zones) in carbonate-terrigenous carbonaceous deposits and tectonic-hydrothermal (propylite-beresite) in plutonic-volcanic complexes (Malinovsky, Gagarinsky, Svetlinsky ore zones).

Late Paleozoic – Early Mesozoic manifestations of plutonic – hydrothermal ore-forming systems are associated: for gold - (sulphide) - quartz formation – with development of early deutero-genic diorite- granitoids of the diorite-granodiorite formation (I - type) and confinement to the remote from granites exocontact areas of greenschist facies (Osnovnoy Creek, Lagerninsky ore zones); for gold-bearing copper-molybdenum-porphyry formation – with development of late deutero-genic subalkaline granites of A-type and confinement to the apical areas of massifs (Oleninsky, Shirokinsky, Uboyninsky ore clusters).