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APPLICATION OF SYSTEMS APPROACH TO PROGNOSTICATION OF ORE FIELDS IN LOCAL AURIFEROUS NIDALSTRUCTURES (on the example of Vera-Char - Baladzhalnidal structure in West-Kalbinsk gold-bearing area of East Kazakhstan)

Abstract. Vera-Char - Baladzhalnidal structure (NS) of the rank of the ore site is identified by the author as a promising regional research level, the estimated gold resources in it are estimated at 574,361 kg. As a result of a detailed study, to which this article is devoted, the prospective areas are localized to the rank of ore fields and deposits.

Based on the paradigm of a systemic approach to the formation of gold deposits, the Vera-Char-Baladzhal focal structure was reconstructed, regularities in the location of deposits were established in its boundaries and three promising areas for the formation of large fields were identified: the Baladzhal predicted ore field, Vera-Char forecast ore field and the Marinovsko-Kyzyltas predicted ore field. Their total area is 37.5 km^2 or 5.8% of the area of predictive research.

Keywords: prognosis researches, gold deposits, nidal structure, magmatic formation, metasomatic changes, Western – Kalbinskgold-field.

The topicality of expanding raw material base of the gold mining industry of Kazakhstan is beyond doubt. Obviously, the solution to this problem is impossible without highly effective predictive studies. This article is devoted to the results of the use of the system approach in forecasting gold deposits in the West Kalbinsky gold-bearing area in the East Kazakhstan region, one of the oldest gold mining areas in the Republic.

The West Kalbinsky gold-bearing region, located on the northwestern flank of the West Kalba-Koksentau structural zone, is extended in the north-west direction by more than 300 km and a width of 80 to 150 km. The features of its geological structure are described by previous researchers [1, etc.]. Gold ore deposits have been studied by V.A. Narseyev and others [2]; B.A. Dyachkov and others [3]; M.S. Rafailovich [4], V.A. Globa [5, 6] and other specialists. According to their ideas, they belong to gold-arsenic-carbon type (Bakyrchik, Bolshevik); gold-sulfide-quartz vein type (Zhumba, Kulujun, etc.); complex gold-quartz-beresite (Baladzhal) types.

In the territory of the described region, forecasting studies were carried out by B.A. Dyachkov, A.A. Malygin, V.V. Potylitsyn, A.P. Sitnikov and others in the 1950s-1990s. Lithologic-stratigraphic, magmatic, metamorphic, structural-tectonic, mineralogical-geochemical and geophysical factors were considered as the main factors of the localization of gold mineralization.

In 2000, [1] the forecast of different types of gold ore deposits was carried out on the basis of bulk modeling methods by the staff of authors. The advantage of these studies is the development of typical models of ore-forming systems (ROS) of gold deposits. The main components of the ROS model are the magmatic focus, caused by its development of small intrusions and ore-bearing fluids that gravitate toward the above-intrusive zone. The developed geological and geophysical model of the Bakyrchik ore field [7], is similar. According to their ideas, the connection with magmatic-ore systems is characteristic for all gold ore objects of the West Kalbinsky region.

The presentations of these authors on the uniformity of ore control structures are consistent with the data [8, 9] that the local areas of the development of endogenous mineralization are controlled by similarly