

CONDITIONS OF FORMATION OF THE GOLD-BEARING STOCKWORK-TYPE BODIES OF THE BEREGOVE ORE FIELD (TRANSCARPATHIANS, UKRAINE)

NAUMKO, I., KOVALYSHYN, Z. & MATVIISHYN, Z.

Institute of Geology and Geochemistry of Combustible Minerals of the Ukrainian Academy of Sciences and National Joint-Stock Company "Naftogaz of Ukraine", Naukova st. 3a, UA-79053 Lviv, Ukraine.

E-mail: iggk@ah.ipm.lviv.ua

The search and estimation of new gold-bearing ore bodies are acquiring great significance for the Beregove ore region in the Ukrainian Transcarpathians where famous gold deposits of industrial importance are known. They are the most perspective within the limits of the north zone of the (s.s) Muzhieve deposit (Kuklia ore occurrence), in its southern and eastern flanks, and in zones of transition from quartz vein (lower horizons) to stockwork-type (upper horizons) formations. Here stockwork-type ore bodies developed where Au is found as quartz-clay gold ores.

The deposits of this type in the Ukrainian Transcarpathians belong, together with the similar deposits of Hungary, Slovakia and especially Romania, to a single metallogenic province of epithermal gold-polymetallic mineralization. There is a need for the investigation of the genetic peculiarities of these ore-bearing parageneses.

Thermometrical and geochemical fluid inclusion research was carried out on minerals of one of the typical stockwork ore bodies. This formed the basis of specific criteria for the estimation of the perspective of their gold content. These data are supplemented by data from geological-structural analysis (with our participation) which showed that several additional factors can be used in the localisation of such ore

bodies (bends of joints; superposition of various age gold-bearing fluids; zones of brecciation; increased content of the main associated elements of native gold (As, Sb, Ag, Ba, Mo)).

The generalisation of the results of investigations of parageneses with minerals of native gold, their typomorphism, especially of fluid inclusions, follows. The solutions in the period of forming of gold-bearing stockwork-type bodies were characterised by sulfate-bicarbonate salt composition with the predominance of calcium and magnesium ions. The gaseous phase of inclusions in minerals is enriched by nitrogen (64.5–41.4 vol%) compared to CO₂ (24.0–12.5 vol%). The optimal temperature interval of ore (gold) forming comes to 250–170 °C. The ore bodies were formed when the gold-bearing hydrothermal systems intensively boiled and fluids of different origin (deep-seated and surface) mixed in zones of mineral forming. The movement of mineral forming fluids from a depth in the direction from northwest to southeast was traced in a prevalent increase of temperatures of homogenisation of fluid inclusions in the same direction. The precise regional temperature zonality with predominance of lateral over vertical is observed.