

ABSTRACT

The Bělčice ore district is located 80 km south of Prague, between the towns of Bělčice and Lnáře. The district can be separated into the northern (Újezdec u Bělčic, Kněžská hora and adit Barbora), central (Borek and Hory) and southern (Na Skřipici) parts. The Bělčice ore district and the adjacent Kasejovice ore district to the west were sometimes featured as a single Kasejovice-Bělčice ore district. Although gold exploration in the Bělčice district can be traced back to the 14th century, the most intense mining and exploration commenced at the beginning of the 20th century. The heart of the mining activity was in the Kněžská hora area. Barbora exploration adit (1907-1917) is about 340 m long. The largest vein (vein No. 39) was selectively mined (average vein thickness 0,23 m, mined vein area 268 m²) and yielded about 154 t of quartz gangue with an average gold content of 13,3 g/t Au and 2054 kg of total gold production.

The Bělčice ore district is built by the magmatic rocks of the Central Bohemian Plutonic Complex, namely by granodiorite of Blatná type. Ore veins strike NE-SW. Quartz veins, lenticular in form, contains besides gold elevated contents of tungsten (as scheelite).

Fluid inclusions were studied in the quartz only. Quartz-I denotes massive quartz gangue, while quartz-II denotes quartz crystals that grew up in open fractures or that precipitated on the walls of massive quartz-I.

The quartz gangue precipitated from aqueous-carbonic fluids (3-7 wt. % NaCl eq.) with minor methane admixture (up to 15 mol. % of CH₄) at 350-400 °C and 200-400 MPa. The ore stage including gold precipitation occurred at lower temperatures (250 to 300°C) and pressures (~100MPa) from aqueous fluids.

Isothermal mixing trends in aqueous fluids is documented by salinity variations of two fluid end members (from 0 to 5,5 wt. % NaCl eq.).