

## On subtle vertical zonation of the Berezovsk gold deposit, Central Urals, Russia

KUDRYAVTSEVA, O.E., BAKSHEEV, I.A. Lomonosov Moscow State University, Moscow, Russia.

Mesothermal Berezovsk gold deposit is generated by beresitization-listwanitization processes, i.e. mid-temperature CO<sub>2</sub>-alteration (Zaraisky, 1989), therefore carbonates are characteristic minerals of these gold ores and their altered wall-rocks (beresite and listwanite). The size of carbonate grains in the altered wall-rocks ranges from several microns to 0.5 mm. In addition carbonates form late small pockets and thin carbonate-quartz veinlets. Carbonates of beresite are low Mn Sr-containing

dolomites to Fe dolomites and with the  $\frac{Fe + Mn}{Fe + Mn + Mg} \times 100\%$  ratio

(f) ranging from 4 to 36%, and calcite. Carbonates of listwanite are Ni-, Zn-, and Mn-containing Fe magnesite (f 1-18%), and later Ni-, Zn-, Mn-, Sr-containing dolomite-I (f 6-17%). Carbonates of beresite/listwanite are Mn-, and Zn-containing breunnerite (f 12-50%) and Mn-, Sr-containing Fe dolomite (f 34-36%). Dolomite-II (f 25-52%) composing pockets and veinlets is Sr-free Fe dolomite to ankerite. Vertical zonation of Berezovsk based on magnesite and dolomite chemistry from gold-bearing beresite/listwanite is probable. In the lower levels Fe magnesite, dolomite and Fe dolomite occur, in the upper ones breunnerite, dolomite and ankerite occur. Thus the values of f and their ranges are wider in the upper levels. This is direct vertical zonation possibly resulted from a temperature decrease upward at low fugacity of H<sub>2</sub>S. Reverse vertical zonation based on chemistry of dolomite-II is possible in Berezovsk i.e. f of the carbonate decreases upward.