

## **METAMORPHOGENIC - HYDROTHERMAL MINERALIZATION IN THE URAL SUPERDEEP WELL CROSS-SECTION (THE MIDDLE URALS)**

DOKUCHAYEV, A. Ya. Scientific-Industrial Center for Superdeep Drilling and Comprehensive Studies of the Earth's Interior Nedra, Yaroslavl, Russia

Metamorphogenic - hydrothermal mineralization in the Ural Superdeep Well cross-section (the Middle Urals) DOKUCHAYEV, A. YA. Scientific-Industrial Center for Superdeep Drilling and Comprehensive Studies of the Earth's Interior Nedra, Yaroslavl, Russia. The Ural Superdeep well with a target depth of 15 km is located in Kabansko-Krasnouralsk copper ore-bearing area of the Taguil Trough. The materials obtained from the well helped to study a continuous 5,1 km long volcanic-sedimentary section of the Imennovian suite (S1l3-S2ld) which contains basalt and andesite lavas and is interrupted by picrite and picrobasalt dykes. Below there were penetrated volcanic formations of the Kabanian suite (S1l1-2) with expected thickness of 2 km, ore-bearing on copper-zink-pyrite mineralization. In the Imennovian suite a certain type of metamorphogenic gold-sulphide mineralization was found which is new for this region. A direct progressive zonality of ore mineralization is observed (from the bottom upwards): [sphalerite+ chalcopyrite+ pyrrhotite] - [chalcopyrite+ pyrrhotite+ pyrite] - [galena+ marcasite+ pyrite]. Due to the mentioned above dykes the relict sedimentary-diagenetic mineralization of a pyrite type (a globular pyrite with chalcopyrite inclusions) is overprinted by a hydrothermal-metasomatic mineralization (gold-bearing pyrrhotite, chalcopyrite and pyrite). A later metamorphogenic-hydrothermal mineralization is represented by polymetallic associations in veins and fine-dispersed mixture with quartz, calcite, chlorite, prehnite, zeolite and highly metamorphized anthraxolite. Highly gold-bearing pyrite dominates among sulphides and there are virgin metals (Au, Ag, Sn, Ni, Bi, electrum, platinoids). The metamorphogenic mineralization formed under reduction conditions in the upper and lower intervals of the section at temperatures of 180-240 and 250-300 centigrade respectively.