PROJECT THE URAL SUPERDEEP WELL - 15000 M - DEEP STRUCTURE AND EVOLUTION OF THE EART'S CRUST OF THE URALS

KHAKHAEV, B.N., BASHTA, K.G., GORBUNOV, V.A., DOKUCHAYEV, A.YA., NOSOVA, A.A., PEVZNER, L.A. SEGALOVICH, V.I. Scientific Industrial Center Nedra, Yaroslavl, Russia

Project The Ural Superdeep Well - 15000 m - Deep Structure and Evolution of the Eart's Crust of the UralsKHAKHAEV, B.N., BASHTA, K.G., GORBUNOV, V.A., DOKUCHAYEV, A.YA., NOSOVA, A.A., PEVZNER, L.A. SEGALOVICH, V.I. Scientific Industrial Center Nedra, Yaroslavl, Russia.The objective of Project The Ural Superdeep Well - 15000 m which is carried out in Russia is to study a deep structure of the Urals as one of the-largest-in-the-world minerogenetic provinces and a standard fold belt.The well is located in the center of the Taguil synform - an axial zone of the Urals which is of a key importance to understand the Ural geodynamics. To a depth of 5.5 km it penetrated volcanic-sedimentary formations O3-D1.Within the Project the following fundamental problems were studied: evolution of sedimentation in the Taguil paleobasin; formation and evolution of the Paleozoic magmatic series; evolution of hydrothermal paleosystems and metamorphism in volcanic sequences of the Taguil symform; a modern heat flow and circulation of ground fluids; a microbilogical activity of rocks and fluids.A deep structure of the Earth's crust in the Ural Superdeep Well area was studied through a number of surface and borehole methods and 3-D modelling based on gravimetric and magnetic data.We developed a model of tectonic matching of two volcanic arcs (Imennovian - S1-2 and Kabanian - O3) and an interarc basin (Preimennovian - S1). They formed in the Early Silurian-Devonian above a zone of subduction of the Ural paleoocean (The Main Ural Fault).The model allowed to understand the basic regularities of distribution of ore-bearing systems of uralides (Fe, V, Cr, Ti, Cu, Au etc.).