

Our Mineral Exploration Expedition in Mongolia had the task for 1975 to investigate the Dzan-Sire tin-silver-copper-lead deposit by integrated geological-geophysical methods. The occurrence is a tourmaline type of cassiterite-silicate formation with transition to the arsenopyrite-pyrhotite type of the cassiterite sulfidic formation. It contains – beside the main metals – significant concentration of wolfram, bismuth and molybdenum. The best known types of such mineralization are in Bolivia and by analogy the Dzan-Sire occurrence was considered to be promising. The quarry is situated on the top of a rocky hill of about 250 m relative height, creating especially hard conditions in the transfer of equipment and in water- and energy supply.

The results of geological, geophysical, drilling and mining exploration were negative. In the lower Cretaceous volcanic chimney, filled by rhyolites and rhyolitic tuffs one quartz-tourmaline body of significant size could be found only. Its mineralization is concentrated in thin veins not reaching the lowest standard for industrial exploitation.

The Erdenin-Sanda ore deposit, also investigated in 1975 is connected to aluminosilicates of new Paleozoic or old Mesozoic granites, with disseminated and vein molybdenum-copper metallogenesis. After the integrated geological-geochemical-geophysical investigations of 1973–74, the site was prepared for trenching and drilling. The main task of the drilling was to expose the cementation belt, but because of the poor recovery of cores, no definite conclusions could be drawn. Interpretation of surface sampling of drilling rubble, induced polarization measurements and trenching data proves that the mineralization is concentrated in sparse thin veins, without any possibility for primary metallogenesis of industrial quantity. The thickness of the oxidation zone is promising for secondary copper mineralization.

*

The Hydrogeological-geophysical Expedition in Mongolia investigated the underground water supply possibilities of a big industrial project. The tasks were: explorations of water-bearing layers and their structures by surface geophysical surveys, locating of drillings, investigation of aquifers, estimation of resources.

The *regional survey* by gravity, electric and seismic refraction methods and by drillings of the cca. 4500 km² area was completed in 1974. The followings could be concluded:

- the upper Cretaceous sediments consist mainly of impermeable clays. Basaltic blankets of significant thickness are also present;
- on certain places the porous layers are situated near the surface with thickness not more than 20 m, therefore unsuitable for water conservation;
- locations of thick permeable lower Cretaceous sediments could be contoured. On such places, as promising water production areas, *detailed geophysical surveys* were carried out.

The applied geophysical methods were, in succession: gravity, for the determination of the main features of basin morphology and structure; telluric measurements and vertical electric soundings for depth, morphology and resistivity informations; electric soundings and reflection seismic measurements for investigating reservoirs in the basin fill and on the basin floor. By the detailed geophysical surveys several reservoirs of the extent of 100-500 km² could be determined. The first wells gave 1500-1600 l/min water discharge with 6-7 m industrial water level depression. Due to the static conditions and the relatively small size of the reservoirs the water resources are limited.

*

Publications: Annual Report 1974; Geophysical Transactions Vol. 23; Annual Report 1973, 1974, Geophysical Observatory Tihany. Edited for printing: Geophysical Transactions Vol. 24.

*

The Library provides the latest literature for all branches of science connected with the research of the ELGI. The stock-increase in books is 448, in periodical numbers 2329, in catalogues and other manuals 1367. The number of new periodicals is 21.