

The pollution of the environment in areas with geological and mining activities

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From geological point of view, the researched area is characterised by the existence of volcanic mountains which contain native elements (Au, Ag) and a great variety of Pb, Cu, Zn, Mn, Co, Ni, Ti, V, Cd minerals.

There are taking place activities of geological prospecting, ore extraction, their enrichment in useful components and processing of these concentrations. From each of these activities there reach into the air, soil and water, sedimentable dusts or dusts in suspension, which contain Pb, Cu, Zn, Mn, Ni, Cd, Co, As and which affect the health of people, plants and animals.

The estimation of the polluting level is done on the basis of collecting samples of soil and of sedimentable dusts and dusts in suspension from a polluted area and analysing them by the method of inductively coupled plasma atomic emission spectroscopy (ICP-AES) and atomic absorption spectroscopy (AAS), these analyses being done also on geological samples and ore samples. The concentrations for Pb, determined experimentally, are: 0.1 - 0.5% in ores; 419.2 - 53397 ppm in sedimentable dusts from the air; 1.5 - 5.8 $\mu\text{g}/\text{m}^3$ in dusts in suspension from the air; 0.08 - 0.65% in soils.

The Pb concentrations from the air and the soil exceed the maximal concentrations allowed in these environments. Because of this, the frequency of the diseases determined by the pollutants is higher with 80% than in the unpolluted areas, the agricultural productions are less with 60-70% and the quality of the wood mass is also affected.