

Heavy Metal Pollution of the Soils around the Mining Area near Shamlugh Town (Armenia) and Related Risks to the Environment

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Abstract : The heavy metal pollution of the soils around the mining area near Shamlugh town and related risks to human health were assessed. The investigations showed that the soils were polluted with heavy metals that can be ranked by anthropogenic pollution degree as follows: Cu>Pb>As>Co>Ni>Zn. The main sources of the anthropogenic metal pollution of the soils were the copper mining area near Shamlugh town, the Chochkan tailings storage facility and the trucks transferring are from the mining area. Copper pollution degree in some observation sites was unallowable for agricultural production. The total non-carcinogenic chronic hazard index (THI) values in some places, including observation sites in Shamlugh town, were above the safe level (THI<1) for children living in this territory. Although the highest heavy metal enrichment degree in the soils was registered in case of copper, the highest health risks to humans especially children were posed by cobalt which is explained by the fact that heavy metals have different toxicity levels and penetration characteristics.

Keywords : Armenia, copper mine, heavy metal pollution of soil, health risks

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