

INVESTIGATION OF HEAVY METALS ON THE WATER SAMPLES FROM KURA AND ARAKS RIVERS

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The Kura and Araks rivers are main water artery of Azerbaijan Republic. In republic, the Kura and Araks rivers water are widely used for drinking and industrial water supply of a number of cities and large occupied items, irrigation pisciculture and fishery, cultural - improving purposes. The basic part of need of branches of a national economy of republic is satisfied with water of the Transit Rivers, main of which the Kura and her inflows are. On territory of republic, water the Kura and her inflows act from the polluted territories of the next republics, Armenia and Georgia. The pollution of waters the Kura in territories of Georgia is mainly carried out by large industrial cities, which dump industrial and domestic-household drains (chemical combine, metallurgical and cement factory).

The most intensive sources are located in territory of Armenia and pollution of waters basically is carried out running in Araks by the rivers Axuryan, Sevdjur, Kasaka, Razdan etc., where industrial cities and the village occupied items dump(reset) industrial and domestic-household drains. All these polluting factors are reflected in chemical structure of water the Kura and Araks, which are widely used at life of the Azerbaijan people.

The above listed factors and increased risk of pollution of waters pool the Kura-Araks realizes by the large economic project, such as the construction oil pipe line to a Baku - Supsa, Baku -Tbilisi-Ceyhan in connection with constant growth of a level oil producing shows, that the basic research of an ecological condition the Kura and Araks, is a urgent task now. The decision of some of these tasks was one of the purposes of the international project “Monitoring of the rivers of Southern Caucasus” under the program of NATO - OSCE « a Science for Peace », one participant, from which is of Azerbaijan on behalf of Institute of Radiation Problem NAS of Azerbaijan.

In the present work the concentrations of some heavy metals in the dissolved form and its concentrations in suspended particulate matter are investigated. The samples were collected by the special equipment «DURA BULL» intended for these purposes. After rinsing several times with river water of vessel of this equipment, the samples have collected on 15-20 sm of a below of surface of water. Suspended particulate matter was separated by filtering water samples through 0.45-m preweighed Millipore filters, sealed in petri dishes and stored deep frozen. Filtered solutions were acidified to 0.2% (v/v) using concentrated nitric acid.

The analysis: the analysis of heavy metals, carried out in AAS with Zeeman background corrector of firm “Perkin Elmer” - AAnalyst 800, electrothermal atomization. Basic cations (Na^+ , K^+ , Ca^{2+} and Mg^{2+}) defined in the device AAS - SpectrAA 220 FS with flame atomization.

The protocol of the control of qualities carried out by measurement of blank solutions, analytical duplicate, and solutions received with Matrix spike and certificated reference by a material for surface waters, received from Kingdoms of Norway.

It has been sown that trace metals in rivers Kura and Araks are predominantly carried by suspended particles and only small fraction is transported in soluble form.

More wide spans we have discovered for As and Mn. Most of elevated concentration of As were registered in Araks River – with mean value 11.82 $\mu\text{g/L}$, in the meantime mean concentration of as in Kura <1 $\mu\text{g/L}$