

GROUNDWATER OF ALLUVIAL AQUIFERS IN URBAN AREAS OF SERBIA (YUGOSLAVIA)

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Alluvial aquifers are the principal sources of water supply to most towns and cities in Serbia. These aquifers are found in valleys of most important rivers, and, in the same time, are frequently located near urban areas where industrial facilities have been developed. Since the water bearing layer is relatively shallow, there is a significant risk of water polluting by the industrial and domestic waste water. Depending on the processes encountered in the factories, some dangerous and toxic chemicals can penetrate the aquifers such as heavy metals, phenols, fats and grease, aminoproducts, synthetic detergents and others. These pollutants can require that use of the aquifer for water supply be suspended or even terminated, which has already been experienced in Yugoslavia. For that reason, water quality protection in urban areas, based on a permanent monitoring and pollution control, has an enormous importance. Numerous investigations prove that there is a significant correlation between quality of water in alluvial aquifers and in surface streams. This is due to the fact that untreated municipal and industrial effluents are frequently conveyed by open channels which sometimes penetrate the water bearing layer enabling infiltration of the pollution into an inadequately protected aquifer. In addition, large rivers, being recipients of the effluent, can additionally contribute to the aquifer contamination. In view of the difficulties related to protection of the alluvial aquifers located within urban areas, it is recommended that the water from those aquifers can be tapped for industrial and other purposes, but should not be used as drinking water.