



Zones of abnormal high concentrations of radon in groundwater of Leningrad region

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Radon is the fine indicator for the decision of various problems. The basic source of radon is the geological environment. Groundwater is one of the basic ways of migration of radon. In hydrogeology the radon with radium is used for an estimation of time of stay of water in water-exchange systems, for an estimation of genesis of groundwater, studying of interrelation of ground and superficial waters and another, in oceanology - for an estimation of hashing of sea and oceanic waters and gas exchange of the last with an atmosphere. The department of hydrogeology of the Sankt-Peterburg state university is engaged in studying of radon in groundwater of Leningrad region within several years. Great volume of a material about the concentrations of radon in groundwater of Leningrad region is collected. On the basis of these data some zones of the raised concentrations of radon in groundwater in Leningrad region have been revealed. These zones are Northern and southern parts of Karelian isthmus, areas of Krasnoe selo and Lopuhinka. In Russia the norms of radiation safety regulate concentration of radon in waters for economic-drinking purpose, it should not exceed 60 Bq/l. A plenty, both natural sources and wells in the given territories has been tested. By the received results it is possible to draw a conclusion, that values of concentrations of radon in groundwater are changeable and vary in greater limits for all these areas. To territories of northern part of the Karelian isthmus the aquifer it is widespread which blocked by a small cover by Quarterian sedimentary rocks. Water-containing rocks are sour magmatic rocks of the crystal base archean-proterozoic age which possess

the raised content of uranium. As a result groundwater of given aquifer have concentration of radon up to 1700 Bq/l. In a southern part of the Karelian isthmus the Vendian aquifer it is widespread, groundwater of the given aquifer have concentration of radon up to 300 Bq/l, cause it has a contact with the crystal base. To the south from St.-Petersburg Izhora plateau is, combined by sedimentary rocks Cambrian and Ordovician age. Groundwater of Izhora plateau in area of Krasnoe selo have concentration of radon up to 200 Bq/l. Presence of radon is defined by presence dictionema slate which possesses the raised content of uranium. In the north of Izhora plateau in area Lopuhinka of concentration of radon in groundwater reach 705 Bq/l, that also depends from dictionema slate. Thus, concentration of radon in groundwater reflect geological conditions. Interpretation of data on concentration of radon in groundwater allows to reveal tectonic infringements, to track a underground drain to Baltic sea, and also to solve problems of geoecology.