THE CONCENTRATIONS OF COPPER AND ZINC IN WATER, SEDIMENTS AND COAST SOILS OF VOLGOGRAD RESERVOIR NEAR VOLZHSKY

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In the paper we study the distribution of the different forms of copper and zinc in water, sediments and soils of the coastal zone of the Volgograd reservoir near the Volzhskiy city. The comparative analysis of two different points on the hydrological conditions of the study: the Osadniy Gulf and the open part of the reservoir near the village Krasnooktjabrskiy. The content of the gross form of copper decreased in the direction «soil - to - pore water - water surface» for the both sampling points. However, the total content of copper in the soils of the coastal slope was even higher than in the sediments (35% of the content in the soils). The mobile form of copper in the UP was much higher than in the soil. When we compared to the soil and we can be noted that if the total and soluble forms of copper accumulated mainly in the soils, in the sediments dominated the mobile form. The content of water-soluble form of copper in the soils of both points was no different, and in the bottom sediments of the Osadniy Gulf is accumulated. The content of the gross forms of zinc decreased in the direction of «soil - to - surface water» for the both sampling points. The concentrations of water-soluble and mobile forms of zinc to the Osadniy Gulf were much higher than in the soils, indicating that the contaminated sediment zinc compounds.

О ВЛИЯНИИ СТРУКТУРЫ АЛЛЮВИАЛЬНЫХ КРУПНООБЛОМОЧНЫХ ГРУНТОВ НА ИХ ИНЖЕНЕРНО-ГЕОЛОГИЧЕСКИЕ СВОЙСТВА

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Рассмотрены методы дробного гранулометрического анализа аллювиальных отложений и способы обработки результатов. Описаны основные особенности детальной структуры крупнообломочного аллювия и ее влияния на инженерно-геологические свойства грунтов. Анализируются критерии, характеризующие изменение детальной структуры аллювия в направлении от гор к равнинам. Показано, что большую роль в формировании структуры аллювия и инженерно-геологических свойств играет блоковая тектоника и неотектоника, которая проявляется через различную геодинамическую (неотектоническую) активность. Установлено, что в пределах активно поднимающихся блоков земной коры (антиклинории, своды, поднятия), приуроченных к участкам высокой геодинамической активности, возрастают уклоны и скорость водного потока в руслах рек и формируется более крупный по размерам обломков галечно-валунный аллювий. При пересечении относительно опускающихся блоков (синклинории, впадины), приуроченных к участкам низкой геодинамической активности, уклоны и скорости течения уменьшаются, аллювий становится менее крупнообломочным гравийно-галечным.

ABOUT THE INFLUENCE OF THE STRUCTURE OF ALLUVIAL COARSE DISINTEGRATED ROCK GROUNDS ON THEIR ENGINEERING-GEOLOGICAL PROPERTIES

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The methods of fractional granulometric analysis of alluvial deposits and ways of result processing are considered. The main features of a detailed framework of a macrofragmental alluvium and its impact on geotechnical properties of soils are described. The criteria characterizing the change of the detailed structure of alluvium in the direction of the mountains to the plains are analyzed. It is shown that a large role in shaping the structure of alluvium and engineering-geological properties plays block tectonics and neotectonics, which is manifested through different geodynamic (neotectonic) activity. It is established that within actively rising blocks of the earth's crust (anticlinoriums, arches, uplifts) associated with the areas with high geodynamic activity, slope and the rate of water flow in the rivers increase and larger in size debris gravel-boulder alluvium is formed. When crossing the relatively falling blocks (synclinoriums, depression), dedicated to areas with low geodynamic activity, slope and speed of flow decreases, creating less of large size debris gravel-pebble alluvium.