EFFECTS OF GROUNDWATER ON UNDERGROUND STRUCTURES

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Abstract: *This article provides detailed information about the effects of groundwater on underground structures.*

Keywords:*underground reserves, water structure, hydrology, water types, urban structure, etc*

When classifying underground waters into types, attention is paid to their formation, underground state, composition, etc. Groundwater is divided into three types, depending on the conditions of its occurrence (meeting in the earth's layers): Surface water (verkhavodka), ground water (siezot), pressurized or artesian water. Surface waters. Water that is formed far above the impermeable layer is called surface water. They accumulate in sand and gravel rocks on clay or silty soil between water-absorbing layers. The thickness of the surface water accumulation layer does not exceed 2-3 m. In Uzbekistan, it is common in the deserts of Kashkadarya, Bukhara region, especially in Kyzylkum. Such underground waters are often fresh, and in steppes and deserts they are used to provide water to the population. Groundwater. It is the water between the earth's surface and the impermeable layer. These waters are usually more common among porous rock (sand, gravel, loess). It is also found among layered and chert rocks. Since there is no impermeable layer above the impermeable layer of ground water, the layer containing the water and the layer supplying it with water are the same. The level of groundwater lies at different depths from the surface of the earth. The surface of the groundwater layer saturated with water is called the groundwater window. A layer saturated with water is called an aquifer. There is no pressure in groundwater because there is no impermeable layer above it. Groundwater seeps to the surface of the ground in low places (river, ravine, ditch). Even when a well is dug in places where the underground water does not come to the surface, the rise from the underground water does not exceed their general level. An example of this is the method of wells (kyariz) connecting the ground water surface in Central Asia. Groundwater moves much slower than river and stream waters. Groundwater often seeps down the slope between the rocks. Groundwater emerges from such areas of the terrain in the form of springs or seeps. Such waters are often found in the newly developed areas of the Syrdarya region. Sizot (ground) water slowly but constantly passes through the rocks. Their speed depends on the water permeability of the rock and the slope of the underground water storage layer. The speed of movement of groundwater, it depends on what gender they pass between. It can move 1-5 m per day among fine sand, 15-20 m in coarse sand, 100 m and even faster in gravel or chert rocks. Artesian waters. Pressurized water usually

accumulates between layers as a result of the tectonic process of the earth's layers. In addition, artesian waters also appear in monoclinal and tectonic faults. Artesian water is formed when a large amount of water accumulates in the permeable layer between the two impermeable layers of the syncline. For the formation of artesian water, the surface part of the aquifer must be higher than the underground part of this layer. When digging the ground water formed in synclinal layers with a borehole, two water bodies the water between the impervious layer is splashed out. Tashkent mineral water comes out from among the Cretaceous sea sand deposits (1800-1850m depth) located in the same synclinal layer.

Chemical composition of groundwater. Water in nature, including underground water, has extremely high solubility. Rain changes its composition by mixing with dust and gases before falling to the ground. Part of the flowing water begins to seep under the earth's layers and, passing through rocks of different composition, partially dissolves them and changes its composition. The composition of the underground water is influenced by the composition of the layers, their depth, the state of lying and other factors. The amount of dissolved substances in the water between the layers of the earth is very different. All underground waters in nature are divided into four large groups in terms of mineralization:

1. Fresh water total mineralization up to 1 g/l;
2. More saline - from 1 g/l to 10 g/l;
3. Saline - from 10 g/l to 50 g/l;
4. Very salty - highly mineralized water, the total mineralization is more than 50 g/l (200-300 g/l).

The above-mentioned groups show that mineralization of groundwater is not uniform. 1 g of salt in 1 groundwater is considered suitable for drinking. Groundwater contains chemical elements consisting of various combinations of substances. Among chemical elements and compounds, more CaSO4, HCO3Na, Sa, Mg, sometimes NH4, Fe and Mn are found. Of the gases, dissolved SO2 is rarely N2S. Mineral waters. Mineral and gas-saturated waters under the ground and on the floors are generally considered to be healing. But not all underground mineral waters are healing. Mineral waters do not contain the same amount of mineral elements necessary for treatment, some contain more and others less. Mineral waters contain iron, arsenic, radium, bromine, there will be iodine and some gas. Mineral waters differ not only in composition, but also in temperature. Mineral waters are mostly found in young mountains and volcanic regions. Mineral waters are associated with cracks in the earth caused by tectonic movements and changes, mixing and pressure of substances there. There are a lot of mineral waters in young mountainous regions, for example, in the Caucasus, Pamir Mountains, Kamchatka and Kuril Islands, and in Uzbekistan. Currently, such mineral waters are widely used in medicine and industry. Mineral waters are associated with cracks in the earth caused by tectonic movements and changes, mixing and pressure of substances there. There are a lot of mineral waters in young

mountainous regions, for example, in the Caucasus, Pamir Mountains, Kamchatka and Kuril Islands, and in Uzbekistan. Currently, such mineral waters are widely used in medicine and industry. Mineral waters are associated with cracks in the earth caused by tectonic movements and changes, mixing and pressure of substances there. There are a lot of mineral waters in young mountainous regions, for example, in the Caucasus, Pamir Mountains, Kamchatka and Kuril Islands, and in Uzbekistan. Currently, such mineral waters are widely used in medicine and industry.

G. O. Mavlonov is a scientist who has carried out work of historical importance in the development of the sciences of hydrogeology and engineering geology in Uzbekistan and in the training of scientists in this field. His colleague and keen hydrogeologist NAKenesarin created many scientific works about the hydrogeological conditions of the irrigated and newly developed areas of the entire territory of Uzbekistan and trained a number of scientific personnel in this field. As a result of his practical and scientific work in the territory of Uzbekistan for many years, Professor NN Khodzhibayev created maps of different scales of ground water grouping in mountainous areas and plains according to the direction of flow, and it is a question of predicting changes in land reclamation conditions in the future. gave his valuable recommendations.

This science teaches the theoretical foundations of studying quantitative changes in the movement of underground water under natural conditions and various man-made effects on the surface of the earth. Searching for underground water, using it as drinking water, technical and irrigation, heating, treatment, studying the quantitative changes in the movement of underground water for the purpose of development of marshy and saline land The laws of motion of water are widely applied. Water is the most active participant in the development of various physical-geographical, geochemical, and geological processes occurring underground and above the ground. It is well known that various sectors of the national economy: manufacturing enterprises, factories, and agriculture cannot develop without water. It is impossible to imagine the life of the inhabitants of cities and villages without clean drinking water. Our ancestors used spring, stream, river and fresh lake water as drinking water. Now, in many districts, cities and villages, only underground water is used as drinking water. Various harmful effects of water can also be observed in the process of providing water to agriculture. As a result of the rise in the level of underground water, a large amount of damage can be caused to the national economy. These include salting out of the irrigated land, soil failure, a sharp decrease in crop yields or no growth of crops at all in some fields, deformation of buildings and structures, collapses in cultivated fields, etc.

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