A PRELIMINARY RESEARCH FOR POTENTIAL EFFECT OF UNDERGROUND ENGINEERING ON GROUNDWATER

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In recent years, underground space has been developed quickly, many cities have their own underground supermarket, parking, subway and other underground engineerings. It is inevitable to produce effects on groundwater in developing underground space. Generally, the effects can be classified into two kinds, one is in the construction period of underground engineering, the other is in the operating period, which is potential and widespread. Unfortunately, the potential effect has not been imposed sufficient emphasis as it should been.

In this paper, taking Nanjing city, Jiangsu province, P.R.C. as a example, the potential effect of Nanjing subway to groundwater environment is studied. Nanjing subway, intersecting Qinghui paleochannel six times in space, blocks the flowout of paleochannel water, like six dams. The paleochannel, running through Nanjing City from east-south to west-north, is the main channel of groundwater. The paleochannel water, with a flow-velocity about 0.027meters per day and a single-well-yield over 2000cubic meters per day, flows into Yangtze River, at last. According to the author's study, the main potential effect of Nanjing subway on groundwater is as follows: blocking the flowout of paleochannel water directly, then, as a result, raising the level of ground water and inducing the interconnection between groundwater and Xuanwu Lake water, which is polluted seriously. All these effects would lead to the aggravation of groundwater contamination and the deterioration of ecological environment.

Underground space, as well as land, is one of valuable resource, which is unregeneratable and unmovable. We must develop underground space cautiously and scientifically.