Fluctuation of Subsurface Environment in the Tokyo lowland - locality and geology-

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Industries in the Tokyo lowland have been developed since the latter half of the 19th century. Urbanization and various human activities have affected surface and subsurface environments of the lowland. For example, decreasing groundwater recharge, drying up of springs, and heat-island phenomenon have been increasingly become problematical. In subsurface part, depletion of hydraulic potential, land subsidence of alluvium and Pleistocene strata, leaking from water pipes and sewerages, and water quality deterioration have occurred. Warming of subsurface temperatures in depths shallower than 50 m has been induced. Additionally, recovery of hydraulic potentials by regulating groundwater pumping brought new problems, such as increase of buoyancy and groundwater leakage to underground structures (e.g. subway stations). That is, urban environment in the lowland became more complicated and more diversified. Therefore, it is necessary to make clear the trend and the process of environmental changes to maintain and manage urban environment. However, only few studies have been available in quantitative and qualitative change of groundwater in the lowland and surrounding areas. The purpose of this study is to fill this gap and clarify the tendency and the process of quantitative and qualitative changes of groundwater in the Tokyo lowland and surrounding areas.