

Characteristics of confined groundwater head in mainly alluvial area of Tokyo and Saitama

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In Tokyo alluvial lowland area, the groundwater head of deep confined aquifers recovered rapidly from the 1970's to the middle of the 1980's because of pumpage regulations. The rising groundwater head has posed a serious risk to deep underground facilities such as railroad stations, because the rising head increases an upward buoyant force on an underground structure. On the other hand, even in recent years in some regions near Tokyo, relatively large amounts of groundwater has been decreasingly pumped for agricultural, industrial and domestic purposes. So the groundwater head in Tokyo lowland area has been still rising gradually. It is necessary to estimate the degree of the rise not only for taking measures against risks such as the buoyancy occurred by the rising groundwater but also for examining the effective use of groundwater.

The following will be shown in this presentation; 1) the spacial distribution of groundwater head both above and below 100m depth in mainly lowland area of Tokyo and Saitama, 2) cross sectional features of groundwater head around there, 3) the relationship between mean annual groundwater levels in Tokyo lowland area and the amount of pumpage in some parts of Saitama and Chiba Prefectures, 4) in addition, some information related to the above mentioned items.