

## **EXPLOITATION & PROTECTION OF GROUNDWATER RESOURCES IN BEIJING**

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Groundwater resources in Beijing city is abundant because, 1) the quaternary aquifer is thick and extensive; 2) the recharge condition of groundwater is good. The multi-year average recharge rate of groundwater is about 40000000000 cubic meters and exploitable amount is about 26330000000 cubic meters. Groundwater over-abstraction long-term in Beijing has caused groundwater level to decrease by an average of 0.5-1.0 meter per year. The area of cone of depression for groundwater level adds up to 1200 square kilometers. The land subsidence has been found in some places. Main reason of these problems is shortage of effective macro-controlling measure on the exploitation and utilization of groundwater resources. Furthermore, the groundwater is polluted by poisonous material such as nitrogen, phenol, cyanogen, mercury, flourine etc. Its hardness is increasing. The environmental quality of groundwater is showing a tendency to decrease increasingly. Now, the water-use amount is approximately 41000000000 cubic meters per year. According to forecast, there will be 8000000000-12000000000 cubic meters water to lack. Therefore, Beijing is a water-shortage city and water resources condition is very serious. Effective measures, including, adjusting groundwater and surface water reasonably, reinforcing unified management of water resources, preventing and remedying pollution of water resource etc, must be adopted to meet the demands of Beijing's sustainable development. To programme reasonable exploitation and protection of Beijing's groundwater resources, it is very necessary to survey and assess the groundwater resources and environment comprehensively.