



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 50027-2024

Replacing GB 50027-2001

Standard for hydrogeological investigation of water-supply

供水水文地质勘察标准

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Foreword

This document was issued on 23 August 2024 by the State Administration for Market Regulation; Standardization Administration of the PRC and takes effect on 1 January 2025.

It is a GB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies.

The document runs to 95 pages in translation. The identification, the dates, the table of contents and the clauses reproduced on this page are taken from the standard itself.

GB/T 50027-2024 Standard for hydrogeological investigation of water-supply

It replaces GB 50027-2001, which is superseded.

1 Scope

GB/T 50027 is the Chinese standard for hydrogeological investigation for water supply: how you find out whether the groundwater under a site can supply a town, a factory or an

irrigation scheme, how much of it there is, and whether taking it will damage anything else. It runs the full sequence of an investigation, from the desk study and the reconnaissance survey, through geophysical exploration, drilling and well construction, pumping tests, water sampling and analysis, to the calculation of the allowable yield, the assessment of the water quality and of the risk of contamination, and the monitoring that follows abstraction. Groundwater over-abstraction and the subsidence it causes are among the more serious environmental problems in northern China, which is what gives this document its weight: it is the basis on which an abstraction is designed and permitted. The 2024 edition, effective 1 January 2025, replaces GB 50027-2001.

1.0.1 This standard is formulated to standardize the hydrogeological investigation of water-supply, correctly reflect hydrogeological condition, reasonably evaluate, develop and protect groundwater resources, ensure the water supply security and maintain the ecological environment.

1.0.2 This standard is applicable to hydrogeological investigations using groundwater as the water supply source.

1.0.3 In addition to this standard, the hydrogeological investigation of water-supply shall also meet the requirements of the current relevant standards of China.

2 Terms and symbols

2.1 Terms

2.1.1 hydrogeological investigation of water-supply

hydrogeological investigation work conducted for the purpose of water supply.

2.1.2 hydrogeological condition

general term for the burial, distribution, recharge, runoff and discharge of groundwater, water quantity and quality, and the geological conditions for its formation

2.1.3 hydrogeological unit

groundwater system with uniform boundaries and recharge, runoff, drainage conditions

2.1.4 hydrogeological parameters

general term for indicators characterizing hydrogeological characteristics of strata, including the permeability coefficient, water release coefficient, water supply degree, precipitation infiltration coefficient, phreatic evaporation coefficient, and overflow parameters

2.1.5 groundwater regime

state of elements of groundwater, such as the water level, water quantity, water temperature, and chemical composition, over time under the comprehensive influence of various factors

2.1.6 hydrogeological exploration borehole

borehole constructed according to the requirements of hydrogeological drilling to identify the hydrogeological conditions or parameters

2.1.7 steady-flow pumping test

pumping test in which the groundwater flow field and various elements can reach a new stable state in the process of pumping

2.1.8 unsteady-flow pumping test

pumping test in which the groundwater flow field and various elements cannot reach a new stable state in the process of pumping

2.1.9 single well pumping test

pumping test in which water is pumped from only one pumping well and no observation well is configured

2.1.10 single well pumping test with observation wells

pumping test in which water is pumped from one pumping well and observation wells are configured

2.1.11 pumping test of well group

pumping test in which water is pumped from two or more pumping wells at the same time, observation wells are configured, and the water level and water quantity of each well have obvious mutual influence

2.1.12 trail-exploitation pumping test

pumping test as required under trail-exploitation conditions or a condition close to such conditions

2.1.13 separate-interval pumping test

pumping test in which pumping and observation are carried out respectively while the target aquifer of the pumping test is isolated from other aquifers

2.1.14 groundwater recharge

volume of water entering an aquifer per unit of time under natural or exploitation conditions

2.1.15 groundwater storage

volume of gravitational water residing in an aquifer

2.1.16 groundwater discharge

volume of water discharged from an aquifer per unit time under natural or exploitation conditions