

**Investigation and Evaluation of groundwater pollution in North China Plain and
Research on Key Technology
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Yasong Li, Shijiazhuang, China

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The North China Plain is one of the important economic zones of China, with a population of 0.13 billion, and its main water source is groundwater. The groundwater has been polluted due to the sewage from industry and municipal life as well as the chemical fertilizer and pesticide from agriculture. Based on the research results and experiences at home and abroad, the sampling equipment of groundwater organic contamination suitable for China has been developed for the first time, along with the remote monitoring system for groundwater detection and groundwater contamination investigation and evaluation information systems. It constructs the technology system of groundwater pollution surveying, sampling, testing & data management and establishes the concept of groundwater quality, pollution detection, furnishing strong support for the investigation of groundwater contamination. It proposes new methods of groundwater quality and pollution evaluation, perfects the method of quantitative evaluation of groundwater contamination risks and zoning, and establishes its evaluation methodology. It provides technical support for the evaluation of groundwater contamination in China. Based on the extensive field survey data and sample test data, it systematically evaluates the groundwater quality and pollution situation in North China Plain. The authors analyzed several methods of groundwater contamination assessment and put forth a new method called Single Factor Standard Index Method which is obtained on the basis of Single Factor Index Method. Field investigation was conducted comprehensively. 6063 groups of groundwater samples were collected and 34 factors of each group were tested. According to the Single Factor Standard Index Method, 35.47% samples have been contaminated by human activities, being mainly slight contamination. Deep groundwater is better than shallow groundwater and uncontaminated deep groundwater accounts for 87.14%. Using the single Factor Standard Index Method, the indexes can be compared and the contamination degree can be showed directly. The results of using Single Factor Standard Index Method provide a basis for groundwater contamination prevention.

