Discussion on Hydrogeology and Environmental Geology Work under the View of Sustainable Development

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Abstract. At this stage, the ecological environment has been severely destroyed in our country; this situation is becoming more and more serious. Under the influence of the complex and severe situation mentioned above, in order to effectively solve the above-mentioned bad development trends, the country proposes the sustainable development strategy, it is expected that through the implementation of this strategy, the previous extensive management mode will gradually be transformed into harmonious development mode between man and nature. This article mainly elaborates on the influence the sustainable development view on current hydrogeological and environmental geological work, this paper deeply explores current status of hydrogeological and environmental geological work, as well as some issues needing attention in China, and put forward some targeted suggestions and measures, through the explanation of this paper, It is hoped that environmental geology and hydrogeology will be better developed on the basis of the view of sustainable development.

Keywords: Sustainable development; hydrogeology; environmental geology.

1. Introduction
Resource dilemma has been a problem that China has been facing for a long time. China's land area ranks third in the world; and the total storage of various natural resources also come out in front in the world. However, due to large population, China's per capita natural resources are far below the world average. In recent years, China's economy has grown rapidly, but behind the rapid development of the economy, a lot of natural resources are wasted. In order to balance the continuous growth of our economy and the use of natural resources, China has proposed a sustainable development strategy. Therefore, we need to carry out research on hydrogeology and environmental geology under the view of sustainable development.

2. Overview of Sustainable Development View
In fact, the sustainable development view is a collective name of the scientific concept which pursues the harmonious development of human and nature, the core principle of this concept is to meet the needs of human survival and development, at the same time, it will not have a bad impact on the survival and development of future generations. In order to realize the sustainable development view, contemporary people must protect the environment, not blindly consume resources or destroy the living environment in order to pursue the maximum interests.
3. Hydrogeology and Environmental Geology Work

Hydrogeology and environmental geology work is an investigation and research activity aiming at water resources and environmental resources, which is of great help to the statistics of total resources and the summary of resource utilization.

3.1. Brief introduction of hydrogeological work

Hydrogeological work is the research work of water resources distribution and related development and utilization. The main research objective of hydrogeological work in China is groundwater resources. Due to the large land area of our country, the distribution of groundwater resources is relatively wide and the reserves are sufficient.

3.2. Brief introduction of environmental geological work

Environmental geological work is mainly aimed at the investigation and research of water sources, trees, some ore resources and geological landforms. In the process of economic development, not only in China, but also in other countries all over the world, there is waste phenomenon of environmental resources more or less. Therefore, at present, the research of environmental geological work is a hot research field in the world. There is obvious imbalance in the distribution of environmental resources in China.

4. Significance of Application of Sustainable Development View to Hydrogeology and Environmental Geology Work

As we all know, there is a close relationship between human development and natural environment, so the harmonious coexistence between the two is of great significance. However, however, human beings will cause different degrees of impact or damage to the environment, especially hydrogeology and environmental geology in the natural environment. The situation of hydrogeology and environmental geology will directly affect human life, so we must attach great importance to the above contents. In the work process related to hydrogeology and environmental geology, it is necessary to take environmental benefits as the fundamental working concept, and guide people to scientifically use and transform hydrogeology and environmental geology through various forms, then on the basis of the above; we strive to achieve a healthy development of economic and environmental benefits. Under the guidance of the scientific concept of sustainable development, it will not only help people strengthen their understanding and attention to hydrogeology and environmental geology, but also effectively promote the harmonious development of society and the environment, therefore, in the process of carrying out our work, we can take sustainable development view as a guide for our work, which is of great significance for promoting the harmonious development of human and nature.

5. Analysis of Hydrogeological Work under the View of Sustainable Development

The general trend of water resources distribution in China is more in south and less in north, which belongs to obviously uneven distribution. Therefore, China's current hydrogeological work is mainly concentrated in the south. With the proposal of China's sustainable development strategy, the hydrogeological work in northern China is also carried out. Therefore, by analyzing the current situation of hydrogeological work in China, we study the methods and characteristics of hydrogeological work under the view of sustainable development.

5.1. Current situation of hydrogeological work in China

At present, the biggest characteristics of hydrogeological work in China are reflected in two aspects: The working places are mainly concentrated in the south. This working status quo is determined by the distribution of water resources in China. There are a large number of rivers and lakes in the south of China, almost the top rivers and lakes in China are in the south. Before the view of sustainable development was put forward, in order to alleviate the shortage of water resources in the north, China
launched the "South-to-North Water Diversion" project. In order to ensure the smooth progress of the project, we need to investigate and summarize the distribution of water resources in South China.

The working object is mainly groundwater. For a long time, people only pay attention to the use of surface water, while the research on groundwater is less. Especially in the south of China, because of its abundant surface water resources, it is convenient and fast to use, so there is no need to develop special equipment and construct buildings to use groundwater resources. In contrast, the research and utilization of groundwater resources in the north of China, especially in Shanxi, Hebei and other regions, the research and utilization of groundwater resources is more prominent. The main reason is that the surface water resources in these areas are relatively small, but they need to supply a large number of people, geologist can only focus on the application and development of groundwater resources.

5.2. Hydrogeological work under the view of sustainable development

In general, there is a serious imbalance in hydrogeological work in China. In order to meet the sustainable development strategy of our country, we summarize the current situation of hydrogeological work and the requirements of sustainable development in our country, and put forward the following suggestions for the future hydrogeological work in our country. Vigorously carrying out water conservancy projects, the water conservancy project here not only refers to the water conservancy project of surface water, but also includes the water conservancy project of groundwater resources. At present, China's water conservancy project is mainly to build dams. At present, China's dams integrate flood control, water storage, power generation and other functions. At present, the biggest problem of water resources utilization in our country is the excessive use of water resources. The investigation and research of groundwater resources in China started relatively late; there are still great deficiencies in comparison with the developed countries. Generally speaking, in allusion to the current situation of hydrogeological work in China, we should actively carry out new hydrogeological activities, use new technology help us realize the hydrogeological work under the view of sustainable development.

6. Examples of Hydrogeology and Environmental Geology Work under the View of Sustainable Development

China's urbanization process is faster and faster, the number of urban residents is larger and larger, and the discharge amount of sewage in the city is more and more. However, the system of sewage treatment in China's cities is not perfect, the efficiency of centralized treatment is low, most of the sewage is directly discharged, and the pollution is very serious. Taking Guiyang as an example, the wastewater discharge from 2005-2009 is shown in Table.1.

Table 1. Overview of wastewater discharge in Guiyang from 2005 to 2009 (10000 tons)

| year | total discharge of wastewater | industrial wastewater | town domestic sewage | COD emission amount of pollutants | ammonia nitrogen discharge |
|------|-------------------------------|-----------------------|---------------------|----------------------------------|----------------------------|
| 2005 | 15960.95                      | 4987.95               | 10973.00            | 5.77                             | 0.46                       |
| 2006 | 15601.21                      | 4456.94               | 11144.27            | 4.99                             | 0.42                       |
| 2007 | 15884.12                      | 3944.60               | 11939.52            | 5.13                             | 0.41                       |
| 2008 | 15198.50                      | 2403.70               | 12794.80            | 5.21                             | 0.40                       |
| 2009 | 15546.60                      | 2356.40               | 13190.20            | 5.02                             | 0.41                       |

It can be seen from table 1 that from 2005 to 2009, the total amount of wastewater discharge in Guiyang city changed from 15198-15960 tons, the highest in 2005 and the lowest in 2008; the industrial wastewater discharge decreased from 49.87 million tons in 2005 to 23.56 million tons in 2009, it shows a downward trend; the urban domestic sewage increased year by year, increased from 10.973 million tons in 2005 to 13.19 million tons in 2009. The COD emission amount of pollutants decreased from
57700 tons in 2005 to 50200 tons in 2009, and ammonia nitrogen discharge decreased from 4600 tons in 2005 to 4100 tons in 2009.

Fig.1 General situation of wastewater discharge in Guiyang from 2005 to 2009

Fig.2 General situation of COD discharge in Guiyang from 2005 to 2009

Fig.3 General situation of ammonia nitrogen discharge in Guiyang from 2005 to 2009

Through the guidance of the view of sustainable development, we can see that the wastewater discharge in Guiyang is decreasing.
7. Analysis of Environmental Geological Work under the View of Sustainable Development

China's environmental geological distribution also shows obvious regional characteristics similar to the hydrogeological distribution. However, due to the different needs of environmental resources in China, there is no obvious difference in the research work on environmental geology in China; corresponding environmental geology research work has been carried out in various regions of China.

7.1. The present situation of environmental geological work in China

The biggest problem in the study of environmental geological is the deviation in our country. As we mentioned above, due to the serious flood disaster in our country, the research on environmental geological work in our country is more focused on the geological and geomorphological research of water flow area. Another problem is that our country has not invested enough in the research of environmental geological work. Environmental geology can be roughly divided into surface geology and shallow geology. Although for a long time, the geological resources on the surface have been stimulating the economic growth in China. However, due to the lack of people's attention, it is easy to ignore the impact of surface geology on us. The biggest impact of this neglect is related research work of hydrogeology. The destruction of the surface geology and the decline of the surface water storage capacity are the major problems that have puzzled the hydrogeological work in the north of China for a long time. In recent years, the study of hydrogeological in South China has been affected by floods and other disasters.

7.2. Environmental geological work under the view of sustainable development

The study of environmental geology in China is mainly focused on the study of shallow stratum geology. At present, China is still facing a very serious hydrogeological disaster. However, in the process of research, we need to change the existing working mode, and adopt the "treatment and prevention" research method for environmental geological work. In addition, in the process of environmental geological work, special attention should be paid to the relationship between man and nature. China should strengthen the study of surface geology and carry out the work as soon as possible, enhance the work effect of shallow geology through the protection of surface geology.

8. Conclusion

The sustainable development strategy plays an important role in hydrogeology and environmental geology work. In order to the further development of hydrogeology and environmental geology work in China, this paper analyzed the current situation of hydrogeology and environmental geology work in China, and studied the working methods of hydrogeology and environmental geology in line with the sustainable development strategy of China, these studies have a good reference significance for improving the research work of hydrogeology and environmental geology in China.

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