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Investigation and Research on Sewage Treatment of Huaihe River Section in Bengbu

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Abstract: "The construction of the Huaihe River Ecological Economic Belt stems from the urgent need for the urgent development of cities along the Huaihe River." Liu Gang, a professor at the School of Economics of Anhui University of Finance and Economics who has long been concerned about the economic development of the Huaihe River Basin, believes that the Huaihe River Ecological Economic Belt can rise to the national level and cannot be separated from the river basin. The provinces and cities have made unremitting efforts for many years. Without their efforts, the "good news" of rising to the national level may have come more slowly.

Keywords: Bengbu Huai River; Sewage Treatment; Rural Revitalization; Ecological Construction.

1. The Current Situation of Comprehensive Utilization of Rural Domestic Sewage in Anhui Province

Huai'an and Bengbu were the first to initiate the research on the Huaihe Ecological Economic Belt. In October 2011, Huai'an and Bengbu jointly launched a research project, and proposed to build the Huaihe Ecological Economic Corridor, with Bengbu and Huai'an as the new growth poles of the dual-core Huaihe Economic Belt, which was included in the national regional development strategy plan.

In the construction of the Huaihe River Ecological Economic Belt, Bengbu's role as the "third pole" of growth is not only a historical choice, but also has a realistic basis. Bengbu has obvious advantages in transportation location, and it is the only city in the entire river basin that is clearly designated as a national comprehensive transportation hub. The Beijing-Shanghai and Beijing-Fuzhou high-speed railways, the Beijing-Taiwan and Ningluo Expressways intersect here, with a road mileage of 9,230 kilometers; from Bengbu, you can directly reach 25 provincial capital cities and three municipalities in China except Chongqing and Haikou, with a railway mileage of 207 km, and its accessibility ranks first in the province.

As an important economic and trade center in the Huaihe River Basin, Bengbu has good location advantages, strong strength and great potential for economic development. It has always been the economic and trade center of the Huaihe River Basin in the past and now. It has good development advantages and prospects. Bengbu, as a material distribution center, business center, service center, transportation, and communication development in the Huaihe River Basin is obvious to all. The central position in the basin remains unshakable.

2. Current Status of the Water Environment of the Buhuai River

The main source of drinking water in Bengbu City is the waters above the Bengbu Sluice of the Huaihe River, and the waters of the Tianhe River are emergency backup waters. Since there are fishing boats stationed in the middle and upper reaches of the water intake point of the waterworks all year round, domestic sewage and other discharges are more, and over time, the migration of Bengbu population, the domestic sewage brought, and the waste water in the farmland, etc., all affect the intake of drinking water. impact everywhere. The main pollutants that will be affected are coliform bacteria and non-ionic ammonia. Bengbu Gate has exceeded the standard of ammonia nitrogen, and Tianhe has exceeded the standard of nitrite nitrogen.

Remove Huaihe Huainan Bengbu Transition Zone and Guohe Qiaocheng Huaiyuan Agricultural Water Zone as buffer zones for upstream and downstream entry, and fail to meet the standards of the Xibakou Sluice on the Huaihong New River and Huaiyuan Wuhe Reserve Area, and Beifei River (lower section) Huaiyuan The main pollutants on the Huangjiadu Sluice in the agricultural water area of Xiao Bengbu and the Mohekou Sluice in the five-river transition zone of Beifei River (lower section) are permanganate and ammonia nitrogen. Among the six major water function zones (lake-reservoir type), the five-river transition zone of Tianjing Lake did not meet the standard, the permanganate index was too high, and the water body was moderately eutrophic.

Permanganate, ammonia nitrogen, etc. are mainly brought by sudden pollution clusters. These pollution clusters have been invading the Bengbu section of the Huaihe River for several years, and records have begun since 1996. According to the investigation, the main reason is that the water stored in the upstream sluice has not flowed for a long time to form a pollution cluster, but once the sluice is opened, it will affect the downstream water quality.

3. Analysis and Causes of Water Pollution in the Huaihe River Basin

Led by the staff of Lvman Jianghuai, we visited the No. 2 Sewage Treatment Plant of Bengbu City, and learned about the relevant situation, sewage treatment process and equipment working status of the No. 2 Sewage Treatment Plant of Bengbu City.

We learned from the staff of Lvman that due to the high cost of sewage treatment, and the sewage treatment plant

itself cannot bear the pressure, the management right of the second sewage treatment plant in Bengbu City has been transferred to Zhonghuan Company to reduce the burden on the sewage treatment plant. pressure.

We learned that sewage treatment is divided into three levels, including physical treatment and biochemical treatment, which is the A2/o process. Primary treatment, the sewage is transported to the sewage treatment plant through the pipe network, the sewage is transported from the pipe network to the sewage treatment plant through the pump room, the sewage is lifted from the pipe network to the surface equipment through the pump room, and the solid waste in the water is removed, and then The solid matter in the water is further precipitated through the grit chamber; after the secondary treatment, there is basically no large solid matter in the water body after the primary treatment, and then the water is passed into the oxidation ditch to allow the sewage to go through anaerobic, anoxic, and oxygen-consuming processes. The three processes carry out biochemical treatment, and after treatment, enter the secondary sedimentation tank for secondary precipitation; the tertiary treatment is mainly filtration and ultraviolet disinfection, the filtration uses sand filtration, and ultraviolet light mainly kills microorganisms such as E. standard. The treated water is directly discharged to the Huaihe River through pipelines. During the subsequent on-site inspection, we were unable to see the operating conditions of the equipment because most of the equipment was installed underground or in large pools.

4. Huaihe River Economy and Sustainable Development Strategy

The Huaihe River should not follow the original mode of destroying the environment, but should follow the road of sustainable development. Sustainable development is the coordinated development of economy, society, resources and environment. For a region, the coordinated development strategy of economy, society, resources and environment should fully consider two basic requirements: one is to fully consider the requirements of sustainable development, starting from this requirement, the regional economy, society, resources, The coordinated development strategy of the environment should be a large-scale system project with long-term vision and involving the overall situation; the second is to fully consider the outstanding contradictions in the economic and social development of the region. Starting from this requirement, the coordinated development of the regional economy, society, resources and environment the strategy should be a tilted strategy that highlights key points and is practically feasible. Combining these two basic requirements, this paper believes that the coordinated development strategy of the Huaihe River Basin's economy, society, resources and environment should be a strategic model of "carrying out two strategies and building a plate". "Two major strategies" are the strategy of controlling the Huaihe River and the strategy of in-depth comprehensive development of pillar industries, and "one sector" is the "economic sector" that gradually integrates the Huaihe River Basin, which is administratively divided into four provinces, under the conditions of a market economy for sustainable development. "Two major strategies" and "one plate" are closely related and indispensable, and together constitute the strategic model for the sustainable development of the Huaihe River Basin. The so-called "Great Huaihe Strategy" is a comprehensive development strategy for the water in the Huaihe River basin, focusing on the sustainable development of the economy of the entire basin. Strategy.

5. Risks and Precautions

5.1. Risk

5.1.1. Direct Effects of Water Pollution

We all know that the most direct impact of the pollution of the Huaihe River is the massive death or even extinction of fish, shrimp and shellfish in the river. The ecology of the entire river and lake has become very fragile. Once destroyed, the microclimate along the river will also change. If there is industry, it will be even worse. The drinking water source and groundwater of residents along the river may also be polluted by heavy metals or carcinogenic and teratogenic organic substances. The river water will be black and smelly, and the surrounding the tourism industry cannot develop. These will have a serious impact on the development of Bengbu's economic system, which will cause troubles to the quality of life of Bengbu residents.

5.1.2. Indirect Effects of Water Pollution

At present, although water pollution control in the Huaihe River Basin has achieved certain results, water pollution has been controlled to a certain extent, and water pollution incidents are also on the decline, the disadvantages of the current water pollution control in the Huaihe River Basin are obvious. First, the current accountability mechanism is not perfect. River water pollution is different from other pollutions in the fluidity of rivers. For example, the pollution caused in the upstream administrative area, it is often difficult for the downstream administrative area to determine responsibility. This cross-administrative responsibility determination is relatively complicated and often requires multi-party coordination. Second, coordination across administrative regions is difficult. The control of water pollution is a long-term and complicated task, and the control of pollution in each river basin belongs to the relevant management agencies of each river basin

5.2. Prevention

Facing the pollution of the Huaihe River in Bengbu, which is related to people's livelihood and people's livelihood, we should not only understand the cause, but more importantly, take action and organize sewage prevention and remedial measures.

5.2.1. Improve Legislation and Strictly Enforce the Law

my country's current laws and regulations on cross-administrative water pollution control and coordination of disputes are mostly guiding opinions, and there is still a lack of implementation rules. In addition, river basin management agencies often have no law enforcement power, and law enforcement in various administrative regions is also lax. To prevent and control transboundary water pollution in the Anhui Basin of the Huaihe River, we should first promote the legal work related to the transboundary water pollution of the Huaihe River, establish a legal system framework for transregional pollution control, unify the watershed pollution prevention and control laws, improve regional environmental standards, local regulations and separate laws, Clarify the legal powers of the Huaihe River Basin Water Environmental Protection Agency in water resource protection and water pollution control.

5.2.2. Promoting the Reform of the Water Rights Management System in the Huaihe River Basin

The Huaihe Water Conservancy Committee is responsible for testing the water quality of the Huaihe River Basin across the board, formulating water pollution plans and coordinating pollution control of the Huaihe River. In fact, as a dispatched agency of the Ministry of Water Resources, it is very difficult to manage and coordinate the affairs of various provinces, and it is also difficult to obtain strong financial and investment support from the governments of various river basins in pollution control. Therefore, it is necessary to further promote the reform of the water rights management system in the Huaihe River Basin. On the basis of adhering to the national ownership of water resources, clearly define the use rights and management rights of water resources in the Huaihe River Basin, so that the river basin management agencies can play their due role in the management of water resources in the Huaihe River Basin. effect etc. Specifically, the Huaihe River Water Conservancy Committee leads the environmental protection and water conservancy departments of various administrative regions to manage water resources in the Anhui River Basin and even the entire Huaihe River Basin, including monitoring, water quality release, inspection, governance, and emergency plans for sudden water pollution incidents. Improve the information sharing mechanism and emergency linkage mechanism.

5.2.3. Establish a Cross-border Joint Inspection Management Mechanism

The higher-level government and the environmental protection department take the lead in setting up a joint agency to monitor and regularly release the water quality at the interface of each region, formulate emergency plans for water pollution, and jointly control cross-border pollution. It is recommended to increase monitoring efforts, increase water quality monitoring indicators, timely grasp and issue water quality reports for key sections; establish a water quality target responsibility system for river basin sections, clarify the specific tasks of each administrative region, and establish a joint prevention and control system among relevant departments in each administrative region. Pollution Control Mechanism. Specifically, we must do a good job in the following aspects: First, we must control the source of pollution, and change the treatment at the end to control at the source. Increase the pollution control of industry and service industries, actively advocate green production, implement the principle of whoever pollutes, whoever controls.

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