Research on technical problems of urban domestic sewage treatment under environmental protection form

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Abstract. The increasing urban scale in China has led to an increase in the water consumption of urban residents. Freshwater resources have become more and more precious. This has increased the pressure on sewage treatment to a certain extent, so in this case it should be Urban sewage treatment issues are researched and improved and strengthened to allow freshwater resources to be recycled. These have very important practical significance for the urban ecological environment protection and the promotion of the scientific development of the city.

1. Introduction

China has a vast territory and relatively abundant water resources, but the per capita water resources share is the lowest in the world. With the development of urban construction, people's demand for water resources is also increasing, which further aggravates China's water resources. [1] The phenomenon of shortage. The growing demand for domestic wastewater treatment is not met. Under such circumstances, the problem of arbitrary discharge of urban domestic sewage is becoming more and more serious. Damage to the surrounding groundwater source and environment, see Table 1.[2]

| Years | Life | Industry | Total |
|-------|------|----------|-------|
| 2014  | 285.2| 230.4    | 515.6 |
| 2015  | 298.2| 245.7    | 543.9 |
| 2016  | 312.6| 266.2    | 578.8 |
| 2017  | 346.7| 267.4    | 614.1 |
| 2018  | 366.5| 288.1    | 654.6 |

2. There are problems in the treatment of urban domestic sewage in China

2.1. Backward sewage treatment technology

Although most cities in China have factories and facilities for treating sewage, there is still a lot of room for improvement in China's sewage treatment technology. Therefore, some factories and equipment cannot operate at high speed. And many cities today are still not perfect and not ideal for sewage treatment work. For a long period of time, China's sewage treatment technology is basically a reference to the traditional European and American sewage treatment technology. However, in the process of carrying out these tasks, China has gradually produced sewage treatment for its own national...
characteristics. Processing technology and working mode. Despite the great progress and breakthroughs in the course of these tasks, China has much room for improvement in this respect compared to the more advanced technologies in foreign countries. As China’s treatment of sewage has always been hampered by inefficiencies, high consumption of resources and high frequency of maintenance, it has also weakened the competitiveness of sewage treatment plants.

2.2. Lack of funding guarantee
In urban domestic wastewater treatment, the normal operation of sewage treatment system and its efficient treatment efficiency are important ways to prevent urban water pollution and ensure the quality of urban water environment, and at the same time ensure sufficient sewage treatment system operation funds to better carry out Urban domestic wastewater treatment work. As is known to all, in the construction and operation of urban domestic wastewater treatment plants, the amount of capital invested is large, and the short-term fund raising is difficult, so the funds are insufficient, the sewage treatment plant is difficult to achieve stable operation, and the expected processing efficiency cannot be obtained.

3. Urban sewage treatment problem method

3.1. Turning wastewater into available resources
In the understanding of urban sewage, people gradually change from shallow to deep. For a long period of time, because of the limitations of understanding and technology, people have always thought that urban sewage is wastewater that cannot be reused. The continuous development of the social economy and the continuous expansion of urbanization have led to the shortage of water resources in cities, and the pressure on urban water supply has become heavier. Most of the sewage is directly discharged into rivers and lakes without treatment, causing different degrees of rivers and lakes in the city. Pollution see Table 2.

| lake          | Nutritional status index | Nutritional status level | Water quality status |
|--------------|-------------------------|--------------------------|---------------------|
| Kunming Lake | 62.1                    | Mild nutrition           | V                   |
| West Lake    | 61.3                    | Mild nutrition           | V                   |
| Xuanwu Lake  | 65.5                    | Moderate nutrition       | V                   |
| East lake    | 68.3                    | Moderate nutrition       | Bad v               |
| da Ming Lake | 69.1                    | Moderate nutrition       | Bad v               |

Therefore, in order to make water resources effectively and sustainable, it is necessary to follow the laws of water movement in nature, and to make rational and scientific use of water resources, so that the water function of downstream waters will not be affected by upstream water recycling.

3.2. Urban sewage biochemical treatment
Due to the different causes of water resources, the treatment of wastewater should also be based on actual conditions. [3] The basic methods of wastewater treatment are physical treatment methods; chemical treatment methods; biochemical treatment methods.

3.2.1. Activated mud treatment method. Active sludge treatment is the most effective and representative method in biochemical treatment technology. The treatment of sewage by activated sludge is mainly through the propagation of microorganisms on the activated mud to form a sludge floc, which can achieve the effect of purifying water by attracting microbial populations. The active sludge treatment method can effectively treat the microorganisms contained in the sewage, and in order to improve the
biochemical ability of the activated sludge, it is usually necessary to assist the hydrolysis acidification tank.

3.2.2. Life film treatment method. The life film treatment method mainly causes microorganisms to propagate on the filler to form biological sludge, which serves as a purifying effect. With the rise of aquaculture, living membrane treatment is widely used in aquaculture and micro-polluted raw water. The life film treatment method should strictly control the distribution of microorganisms. The biofilm in the reaction vessel should be arranged in aerobic, anaerobic and oxygen-containing manners from the outside to the inside to fully ensure the treatment effect of the living membrane.

3.2.3. Anaerobic biological treatment. This treatment method is mainly a treatment method used for the living environment of anaerobic organisms. The gas containing anaerobic substances such as carbon dioxide and methane present in the wastewater is treated. This technology is accompanied by the entire process of sewage treatment, and the degree of interception of biosolids is increasing, so it is widely used in sewage treatment.

3.3. Physical treatment technology of wastewater
The physical treatment method mainly changes the physical properties of the wastewater without changing the chemical properties of the wastewater, that is, filtering the large particles to filter out the suspended matter in the wastewater. In this process, the suspended particles in the water are mainly intercepted by means of drying nets, grids, sand filters, and the like. Some sewage treatment plants also distinguish the pollutants according to the density of pollutants, such as centrifugation, air flotation, sedimentation, etc. These methods can effectively separate the pollutants and lay a good foundation for the next step. The most effective treatment in this process is air flotation, which is excellent for separating fine particles and oil-water mixtures. The air floating method mainly injects air into water to form bubbles, and the bubbles are mixed with the suspended separated matter to form a floating body, and finally the suspended matter in the water is separated.[4]

3.4. Chemical treatment technology for wastewater
The chemical treatment technology of wastewater mainly plays a role in purifying water quality by changing the chemical reaction properties of wastewater. After physical treatment of large particles, the flocculant is placed on the contaminated water, the remaining pollutants in the water are chemically reacted, and then the water-insoluble or insoluble matter is separated again by isolation or filtration. Electrolysis is also an important method of purifying water.

4. Countermeasures for urban sewage treatment problems

4.1. Combination of grants for subsidies and incentives and enhancement of investment in sewage treatment facilities
It is worthy of recognition that in the development of urban sewage treatment projects, the national debt funds have played a significant role in promoting this kind of investment, and the way of this investment is usually very easy to appear with the national money does not matter, to fight for the project and then run the investment, but The efficiency is low and there is a waste of extravagance. In some areas, there are still too high construction standards and unsupported pipe networks. Nowadays, this traditional investment method should continue to be changed, so that the country's investment benefits can be maximized.[5] However, for the vast central and western regions, the state must give financial policy support and set up funds to support the construction of urban sewage treatment facilities, so that the efficiency of urban sewage treatment in the central and western regions will be improved, and ultimately China will be The treatment of urban domestic sewage is balanced.
4.2. *Turning a single into a comprehensive*
Because there is not enough understanding of sewage, not only does the planning of the sewage treatment plant lack certain rationality, but also the technology for treating sewage is not updated in time. In many cities, the technology for treating sewage is divided into primary and secondary. Because the disinfection is not carried out in time, even if the treated water cannot be reused because it is not up to standard, the technology of the sewage treatment plant should be continuously optimized. Upgrade, the actual work process should strictly follow the principle of using sewage as much as possible, remove the monotonous sewage treatment technology, and actively develop the ozonation and membrane separation technology, so that the treated sewage can be reused and improved. Its efficiency of use.[6]

4.3. *Strengthening the regulatory measures for urban sewage treatment*
The government did not fully reflect its own role in the treatment of urban sewage, not only in the supervision is not strong enough, and the means of supervision are relatively backward and single, which are all for the improvement of urban sewage treatment work. No benefit. The government must fully exert its guiding role and regulatory role, and thus lay a good foundation for the sustainable development of sewage treatment in cities.

First, don't always follow the traditional concept of the past. We must attach great importance to the problem of sewage treatment in the city. The method of work should change the traditional method of random sampling. We must continue to innovate, establish a sound supervision system, and introduce more advanced sewage treatment technology. With the help of more advanced equipment, the whole process of supervision and control of urban sewage treatment will be carried out. Secondly, relevant training activities will be carried out to train and improve the overall quality of the relevant supervisors and staff, so that the quality and monitoring level of urban sewage treatment work will be obtained. Great improvement.

4.4. *Mainly changed from government to society*
Promoting the good development of urban sewage treatment and protecting the water environment is an unshakable responsibility of local governments, but it does not mean that all the government should take it. If it is a market or a place where enterprises can play a role, they should be handed over to them. In the past, because of the lack of market development, low socio-economic level and inadequate sewage treatment fees, it is difficult to attract social capital to invest in the urban sewage treatment industry. Nowadays, all the conditions are enough. In order to promote the construction of urban sewage treatment facilities, the level of operational efficiency and management will be improved. The government must not only increase financial input, but also make full use of the market mechanism to improve the operation. The level of efficiency and management can no longer put the government in a leading position in urban sewage treatment construction in the original way. The government should play a guiding role in the investment of sewage treatment construction and encourage all sectors of society to actively participate in the construction of urban sewage treatment.

5. **Conclusion**
In summary, in the urban economic development, domestic wastewater treatment has caused certain negative impacts on environmental protection and provided a driving force for urban environmental protection work. [7]In the process of urbanization construction, we must pay attention to domestic wastewater treatment, correctly understand the relationship between the amount of wastewater and environmental protection work, adopt targeted treatment technology, achieve the goal of green city construction, and give full play to domestic wastewater treatment in urban ecological environment and environmental protection work. effect.
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