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IMPACT OF WASTE WATER ON THE ENVIRONMENT

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ABSTRACT

With the growth of industrial development, the volume of waste water that pollutes the environment increases, which leads to an ecological balance of water systems and has a detrimental effect on the human body. The article describes the methods and methods of wastewater treatment and the use of more modern treatment facilities.

KEYWORDS: *Wastewater, Treatment, Methods, Volume Of Wastewater, Human Body, Environment, Treatment Facilities, Industry, Water System.*

INTRODUCTION

Currently, much attention is paid to the development of the chemical industry.

With the growth of industrial production, the volume of waste water that pollutes the environment, as well as water bodies, increases. The study of wastewater after use, showed a high concentration of organic and inorganic substances, and a shortage of nutrients, which indicate the need to use the latest treatment facilities. [1]

Inorganic and organic substances include heavy metal compounds, petroleum products, pesticides(pesticides), synthetic detergents(detergents), and phenols. They enter reservoirs with industrial waste, household and agricultural wastewater. Many of them either do not decompose at all in the aquatic environment, or they decompose very slowly and can accumulate in food chains. The increase in bottom sediments and their amount in rivers and reservoirs is constantly increasing due to soil erosion as a result of improper farming, as well as the regulation of river flow.

Organic substances-enter the water from domestic, agricultural or industrial wastewater. Their decomposition occurs under the influence of microorganisms and is accompanied by the

consumption of oxygen dissolved in water. If there is enough oxygen in the water and the amount of waste is small, then aerobic bacteria quickly turn them into relatively harmless residues. Otherwise, the activity of aerobic bacteria is suppressed, the oxygen content drops sharply, and rotting processes develop.

Pathogenic microorganisms and viruses are found in poorly treated or completely untreated sewage drains of settlements and industrial facilities. Once in drinking water, pathogenic microbes and viruses cause various epidemics, such as outbreaks of salmonellosis, gastroenteritis, hepatitis, etc. In urban areas, the spread of epidemics through public water supply is now rare. Food products may be contaminated, such as vegetables grown in fields that are fertilized with sludge after domestic wastewater treatment (from German. Schlamme-dirt). With the development of the food, chemical, and agricultural industries, the volume of waste water that pollutes the environment, as well as water bodies, increases [2]

This phenomenon leads to a violation of the ecological balance in water systems, has a detrimental effect on organisms

Such discharges complicate the environmental situation, cause damage to the national economy, and increase the cost of preparing water taken from the water source. Taking into account that more than 1000 harmful substances are normalized in the water of water bodies of economic, drinking and cultural water use, the task of control becomes the construction of treatment facilities.

The main sources of wastewater generation are:

- Various discharges into reservoirs;

- Chemical discharges;

- Emergency drains to the sewer;

- Dilution of various substances with water and discharge them into the sewer.

The total waste water consumption, provided that the emergency drain is discharged into the sewer, is about 446 m3 / day.

Currently, the construction of wastewater treatment plants and wastewater treatment is very relevant.

The use of treatment facilities provides for the averaging of industrial wastewater, the use of separate mechanical and joint biological treatment of industrial, chemical and household wastewater with subsequent post-treatment and treatment of sediments and their further use in production, in everyday life, as well as in agriculture. To improve the quality of wastewater treatment, it is recommended:

- Standard treatment facilities for mechanical treatment of domestic wastewater;

- primary vertical settling tanks of industrial wastewater with a settling time of at least 2 hours and an efficiency of reducing the concentration of suspended substances by 40%;

- Biological post-treatment ponds;

- Facilities for the treatment of sediments, vacuum filters, with a descending web, as well as reserve silt sites with drainage.

The proposed methods of wastewater treatment can increase the efficiency of reducing the concentration of suspended substances.

The study of wastewater after use showed a high concentration of organic and biogenic substances, which indicates the need to use the latest treatment facilities.

Sanitary rules and regulations for the protection of surface water from pollution, oblige water users to systematically monitor the operation of treatment facilities, water in reservoirs or watercourses above the sewage discharge and at the nearest water use points. At the same time, it is indicated that the control procedure is coordinated with the bodies of the Sanitary and Epidemiological Service (SES), depending on the local conditions at the water body and the type of water use. [2]

Therefore, the main task is to ensure reliability both in the treatment of wastewater before discharge into reservoirs, and when reusing them in circulating and closed water management systems.

This is caused not only by the need to ensure the smooth operation of these systems, but also by the need to guarantee the environmental safety of water sources and reservoirs when wastewater is discharged into them.

The choice of means of measuring the component composition of water bodies is determined by the set of controlled ingredients. This, in turn, is due to the methods of analysis adopted by the laboratory, taking into account chemical, physical, or biological properties. Water control of water bodies in the points of economic drinking and cultural and domestic water use in the aspects of hygienic requirements, provided by the simplest laboratory devices produced by the domestic industry.

When determining the quality of a substance, it is necessary to determine the substance that is subject to priority control.

When choosing, it is necessary to take into account the hazard class, i.e. the presence in industrial effluents of the most dangerous substances found in the control regions. Therefore, in the operation of water treatment plants, as well as in the construction of new facilities, along with economic ones, it is necessary to take into account the indicators of their operational reliability. These indicators characterize the safety and maintainability of structures in various operating modes and the maintainability of limiting elements and equipment.

Thus, the material base of the control service can be provided with equipment of domestic production, which will allow to assess the environmental safety, the work of water treatment facilities in wastewater disposal systems.

The operation of many treatment plants and previously treatment facilities provides for their dewatering on vacuum filters, centrifuges, and in most cases storage of liquid sediments in storage tanks is carried out, only in rare cases resort to burning solid sediments. Sometimes the overflow of sludge storage tanks and sludge storage facilities leads to emergency discharges of all biological treatment facilities, showing that they are all overloaded.

In recent years, there has been a huge leap in the field of wastewater treatment and recycling. Precipitation processing is largely determined by the amount of precipitation.

The use and implementation of some methods of processing sewage sludge allow it to be used for production:

- Organic and organ mineral fertilizers for agricultural fields, meadows, gardens, parks;

- To improve the structure of cultivated soils;

- feed additives for animals, birds, fish, fur-bearing animals.

- Production of protein-vitamin silt, amino acids, protein, and technical vitamin B12 from active sludge;

- Commercial products from organic sewage sludge, resin, gasoline, kerosene, wax;

- Crude oil as a liquid fuel with a high calorific value;

- Commercial products from fat-containing waste water waste;

- Technical fats;

- grease lubricants;

- High-quality lanolin soap;

- Mixtures for road surfaces;

As a result of treatment with activated sludge sorbents, activated carbon can be obtained, used for medicinal purposes, and from all organic sediments, crude oil, as a liquid fuel with a high calorific value.

Treated wastewater from biological ponds is fed to agricultural irrigation fields.

Disposal of sewage sludge by pyrolysis processing together with crushed solid household waste is the most relevant solution for today. Mixing these two types of waste brings the moisture content of the mixture to 70-80%, which eliminates mechanical dehydration.

This allows us to solve the problem of eliminating and using household waste and sewage sludge, which, due to the presence of harmful substances, cannot be processed in agriculture.

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