

Biological degradation of wastewater -ways to involve clean water supply

¹ **Nazhmiddinova Nigora Abduvalievna,** ² **Kotova Lyubov Vlentinovna**

¹ Tashkent Institute of Architecture and Civil Engineering

² Tashkent Institute of Architecture and Civil Engineering

Abstract.

Biological degradation of wastewater organic process is undoubtedly possible, but the reduction in the odor of fish oil must also be considered. In biological treatment, it is necessary, first of all, to use biological filters with waste water recirculation. Water-fighting constructions are structures for the withdrawal of water from a source, consisting of a number of major engineering facilities: a water intake device with a first-lift station; a node of water accounting from water meters - meters; water treatment to bring water quality to drinking water standards; A reservoir of clean water.

Key words: cleanest water supply, recycle, hydrogen, clean areas, water use

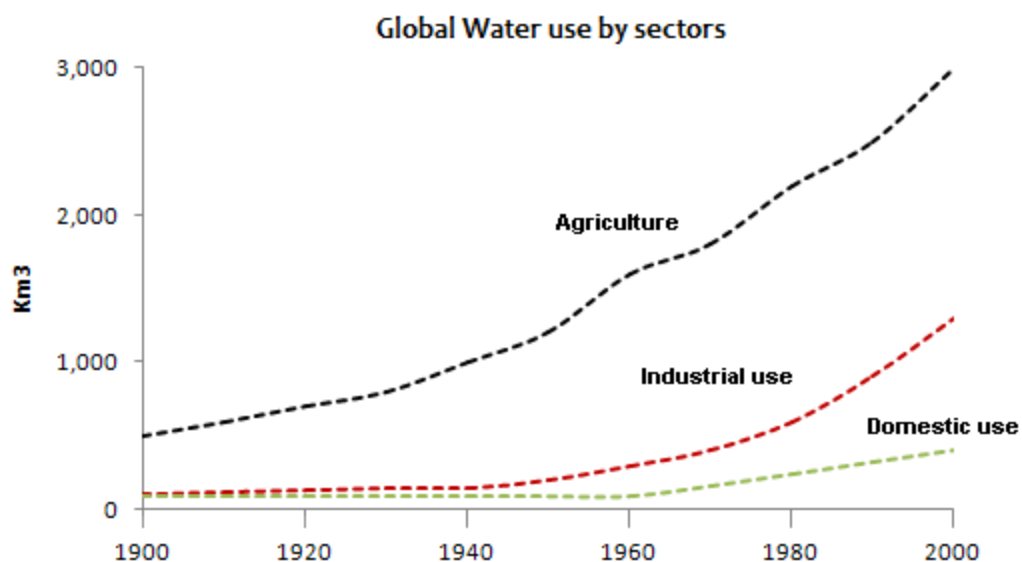
INTRODUCTION

Systems with high load filters use waste water recirculation to increase the flow of liquid through the filter bed. This is done in order to ensure that the increased organic load is treated without filling the pores of the load with biomass, which would impede aeration. Practice has shown that when the load of the VIC exceeds 400 g / (m³-day), the required minimum hydraulic load is 10 m³ / (m²-day) to ensure uncontaminated crushed stone loading. In addition, the efficiency of reducing the MIC increases when the waste water passes through the filter several times. Typical design load for a high-load filter is 750 g / (m³-day). This means that the required load is only one third of the load of the low load filter.

Bubble flotation is carried out with flocculation at 30-40% foam recirculation; pressure flotation - with flocculation at 50% waste water recirculation. The skimmer is designed to stay in it wastewater for 15-20 minutes at an ascending water velocity in the flotation chamber of 2-3 mm / s and 10-15 minutes in the settling zone at a descending speed of 1-3 mm / s.

In fig. 26,27 are given technological schemes of installations of pressure flotation with and without recirculation of waste water. The mixer for a 2-minute stay of water is designed to

evenly distribute the reagents in the treated water. The mixing process must be completed before flocculation begins. The flocculation chamber with a water residence time of 20 minutes serves for the formation of small coagulant flocs into larger ones and for the adsorption of impurities on them. In addition, chemical reactions associated with the hydrolysis of the reagent are completed in the flocculation chamber. The flocculation chamber can be located separately from the skimmer.



In the USA highly, loaded biological filters with waste water recirculation are successfully used.

Reverse osmosis (ultrafiltration) has recently been used to extract inorganic soluble and suspended substances from wastewater. Purification by this method is based on the use of a semi-permeable cellulose acetate membrane. This membrane allows water to pass through, but retains solutes, salts and acids. At a semi-production plant with a capacity of 30 m³ per day of wastewater, this method has achieved a high degree of purification (93.5–99.4%) [64]. The advantages of reverse osmosis over other purification methods are low cost, relatively low energy consumption, waste water recirculation

Wastewater recirculation - the re-return of wastewater during treatment and use.

Wastewater recycling ensures the cleanliness of water bodies and has a beneficial effect on the overall water supply of the plant.

The supply of wastewater to the biofilter can be pressurized using a pumping station or gravity. In the case of gravity flow, the coefficient of unevenness of the flow of wastewater for $Q = 200 \text{ m}^3 / \text{dry gas}$ is 2.6, and for $Q = 1400 \text{ m}^3 / \text{day}$ — 1.4. Therefore, for a uniform supply of wastewater to the biofilter, a control tank should be installed or wastewater recirculation should be provided during the hours of minimum flow.

Purification of waste water from oil products is carried out in bubble columns, contact devices with ozone recirculation or waste water recirculation. The duration of contact in each stage of the apparatus is 0-30 minutes.

Waste water recirculation scheme from diffusers and filter presses using thermal sterilization.

Waste water recirculation scheme from diffusers and filter presses using thermal sterilization.

Scheme of wastewater recirculation $h > t$ of hydro transport and washing of beet chips using chlorination.

Fresh water is essential for the maintenance of human life and is of paramount importance for human health. Fortunately, there is enough fresh water on the planet for every inhabitant. However, a weak economy and lack of infrastructure are causing millions of people, mostly children, to die from diseases associated with inadequate water supply, sanitation and hygiene.

More than 40 percent of the world's population suffers from water scarcity. According to experts, more than 700 million people on the planet are deprived of access to clean water and more than 1.7 billion people living in the territory of river basins need additional sources of

fresh

water.



In addition to vital functions, having access to safe drinking water has a number of other important benefits that are essential for living with dignity and prosperity. These include security, privacy and basic convenience.

LITERATURE REVIEW

UN and water

Overcoming the global crisis caused by an underdeveloped water supply system, which is so necessary to meet basic human needs, has long been one of the most important areas of UN activity. The problem is also exacerbated by the growing demand for water for both domestic use and commercial and agricultural activities.

Water-related issues were the subject of the United Nations Conference on Water (1977), the International Decade for Drinking Water and Sanitation (1981-1990), the International Conference on Water and Environment (1992) and the World Summit Planet Earth (1992). As a result of this work, 1.3 billion people in developing countries gained access to safe drinking water during the Decade.

Role of water resources

To raise public awareness of the importance of water to life, the General Assembly declared 2003 the International Year of Freshwater. In the same year, the UN System Chief Executives

Board for Coordination established a system-wide UN-Water framework that covers all fresh water and sanitation issues.

To further strengthen global action to achieve the water-related Millennium Development Goals, the General Assembly proclaimed the period 2005-2015 as the International Decade for Action “Water for Life”. The Decade started on 22 March 2005 and since then this day has been celebrated annually as World Water Day.

METHODS

Special attention in the activities of the UN system is paid to the maintenance of sources with limited and absent fresh water supplies. The burden on them is constantly increasing due to the increase in population, environmental pollution, and the needs of agriculture and industry.

Achieving the MDGs ahead of schedule

The Millennium Development Goals called for a halving, by 2015, of the proportion of the population without continued access to reliable water supplies. This task was completed five years ahead of schedule in 2010.

According to UNICEF data, 91 percent of the world's population now has access to an improved drinking water source.

Since 1990, 2.6 billion people have gained access to such sources, including 42 per cent of the population in the least developed countries.

Improved drinking water sources are used by 96 percent of the urban population and 84 percent of the rural population. However, as of 2015, the number of the world's inhabitants who were denied access to quality drinking water was 663 million. Moreover, 80 percent of them lived in rural areas.

SDGs and water

The UN Sustainable Development Agenda has identified access to water and sanitation as a separate Goal 6. Goal 6 is inextricably linked to health, food security and climate change, as well as disaster resilience and ecosystem management.

Tasks to be met to achieve Goal 6 include improving water quality, increasing the efficiency of water use and protecting water-related ecosystems such as mountains, forests, swamps, rivers, lakes. Pure water is essential to sustain human life.

Achievement of this objective includes increased international cooperation and support to strengthen the capacity of developing countries to implement activities and programs related to water supply and sanitation. These activities include active involvement of responsible humans.

Hydrometeorological observations and climate projections abound evidence that water resources are vulnerable and can be significantly exposed to impacts of climate change, with widespread impacts on human society and ecosystems.

It is expected that almost all countries of the UNECE will be affected by the impact of the change

Climate. The impact will vary significantly from region to region and even from pool to basin Pool. First assessment of the state of cross-border rivers, lakes and groundwater in the ECE region UN 2 has shown that many basins are already experiencing the impact of climate change.

The socio-economic impacts of climate change are very significant: from 2000 to 2006, the frequency of natural disasters as a result of extreme climatic disasters events on our planet increased by 187 compared to the previous decade.

Percent. Between 2000 and 2008, these events killed 33,000 people and, in the same way as a result of

otherwise, another 1.6 billion global economic damage was suffered by floods and severe storms during the same period are estimated at about \$25 billion.

Increased intensity and variability of precipitation (rain, snow, mixed precipitation) will increase flood and drought risk. During the 21st century, the frequency of heavy rainfall increase, will increase the risk of flooding and intensify erosion. At the same time, the area of the earth's surface, which is prone to excessive drought, is projected to increase.

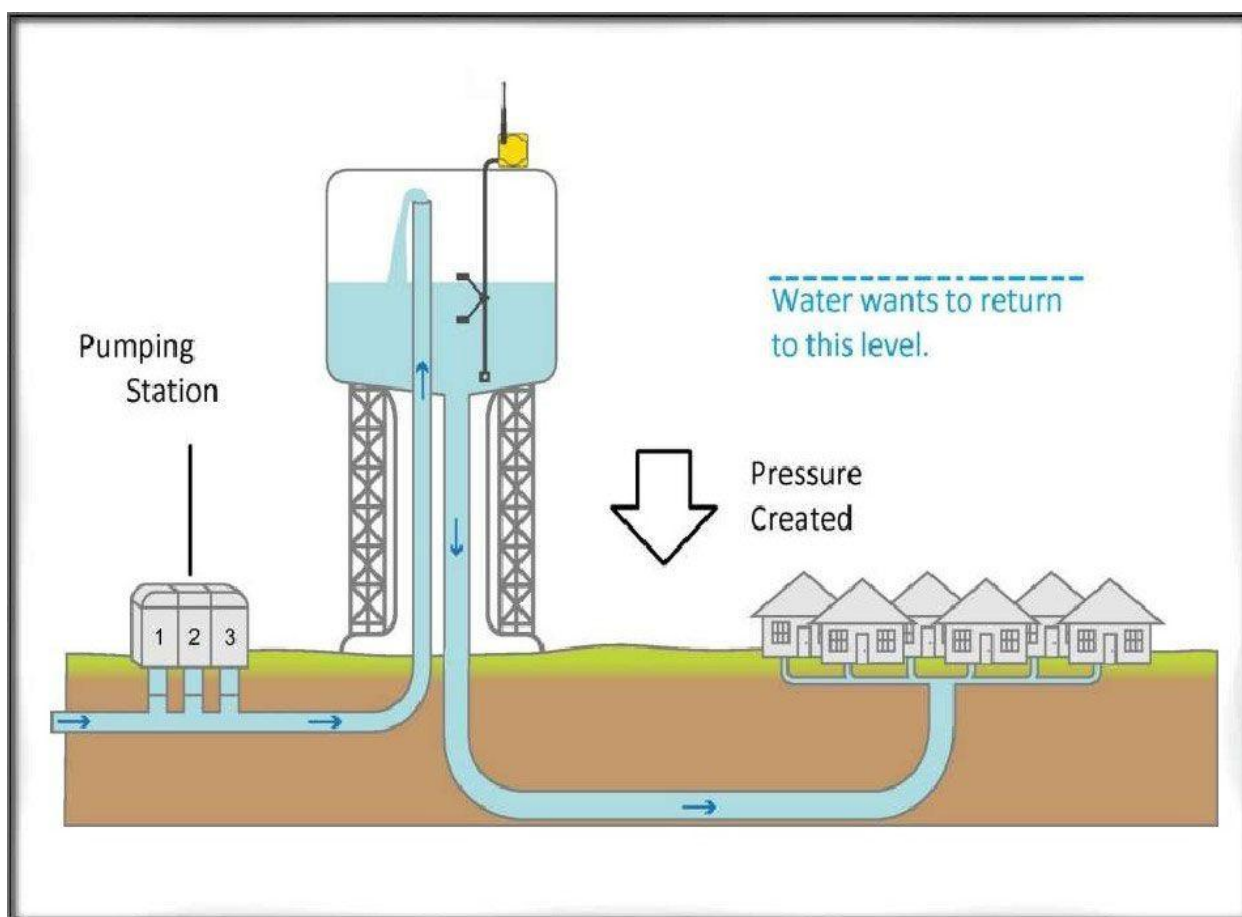
RESULTS

Asian development Banks have 3 Operational plan 3.1 The plan contains guidelines and sets out the main principles. Water policy will remain the cornerstone of operations ADB in the field of water resources. The mutual amplification effect will be achieved through the implementation of programs with other multilateral and bilateral organizations. 3.2 Further

implementation of the Water Financing Program resources (PFVR) during 2011–2020. will allow you to transfer goals of this Plan into the operating plane. At the first stage of the PFVR, completed between 2006 and 2010, the target of doubling water investment in urban, rural and basin water systems up to more than \$ 10 billion over 5 years.

3 Further implementations of the PFVR in 2011–2020. will become the basis for ADB investments in water resources in the amount of \$ 2–2.5 billion.

USD annually, or a total of USD 20-25 billion for 10 years. The execution of the program will be based on the complex decisions ranked by priority according to this Plan, which will be adopted according to the circumstances through the following ADB response: (i) expanding and deepening knowledge and analytical work; (ii) promotion inclusive water policy reforms; (iii) strengthening support for programs and projects in priority areas. Expansion and deepening of knowledge and analytical practice.



3.15 Assistance to water reforms will be multi-sectoral, an inclusive process. If necessary, you will need review and reform government structures. Special the issue of pricing for water services deserves attention.

CONCLUSION

Priority should be given to identifying activities that inhibit or restrict inclusiveness at any level system of public administration, and the introduction of appropriate adjustments. It is also necessary to assess the effectiveness of today's work of ADB with senior management bodies - here will be include an assessment of their ability to promote inclusiveness in water resources management and environmental protection.

The right to water

An important milestone in modern history has been the recognition of the human right to water and sanitation. According to a resolution adopted by the UN General Assembly in July 2010, everyone has the right to access sufficient water for personal and domestic needs (from 50 to 100 liters per day per person). At the same time, the water should be safe, acceptable in quality and price (the cost of water should not exceed three percent of household income), as well as physically accessible (the water source should be within 1000 meters from the house and it should take no more than 30 minutes).

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