World Bulletin of Social Sciences (WBSS)
Available Online at: https://www.scholarexpress.net
Vol. 14, September,2022
ISSN: 2749-361X

ANALYTICAL LABORATORY RESULTS OF CONTINUOUS CONTROL OF DRINKING WATER QUALITY AND WASTEWATER TREATMENT

Alibekova Nazira Nazarovna
Jizzakh Polytechnic Institute

Article history:
Received: 3rd June 2022
Accepted: 3rd July 2022
Published: 12th September 2022

Abstract:
Analytical laboratories for the control of drinking water and wastewater treatment actually perform the functions of product quality control departments in the field of water supply and sewerage.

Keywords: Drinking water, water supply, microbiological composition, water supply networks, water intake facilities, wastewater treatment, sewerage, parameter

It is difficult to overstate the importance of the problem of drinking water quality. However, according to the World Health Organization (WHO) alone, about 5 million people die worldwide every year due to poor water quality. Infectious diseases of the population related to water supply reach 500 million cases per year. This is the basis for saying that the problem of providing sufficient quality water is one of the main problems of mankind. In addition, in world practice, the availability and quality of drinking water is one of the main components in assessing the ecological well-being of any region.

It is one of the main tasks of the state water supply enterprises to provide the population with epidemiologically safe, chemically harmless and good quality drinking water with favorable organoleptic properties. Drinking water is classified as a food product by global standards, and before entering our homes, it goes through a difficult path from the source of water supply to complex laboratory tests for compliance with safety requirements for human health. As the most abundant chemical substance on Earth, water dissolves many natural mineral compounds and gases to form solutions that can have beneficial or harmful properties for the human body depending on the concentration of the dissolved substances, so when choosing a source of drinking water first of all, the chemical and microbiological composition of natural water is assessed in accordance with sanitary and hygiene requirements based on laboratory analysis carried out seasonally for two years before water intake, and then it is put into use. These requirements are met according to OzDSt 950:2011 "Drinking water. Hygienic requirements and quality control" fully answers. The main criteria of the quality of drinking water are its transparency, oxidation capacity, alkalinity and hardness. Usually, it is not enough to smell or taste the liquid to judge its quality. Special analysis methods are used for these purposes. Then the obtained results are compared with the normative indicators specified in the regulatory documents (GOSTs). The norms of the state standard for the quality of drinking water of the Republic of Uzbekistan correspond to the international standards for most indicators, including the guidelines of the World Health Organization, and for the number of indicators, if all the analyzes determined are appropriate, they are the directives of the EU countries. can be compared with.

Specialists of communal analysis laboratories measure the quality of drinking water every day in direct water supply networks by the main indicators of the standard, including bacteriological indicators: the number of total microbes, the number of bacteria of the Escherichia coli group, Controls by mi, smell, color. , turbidity, the content of basic salts of calcium, magnesium, nitrogen compounds, the amount of residual chlorine after water disinfection are checked on the basis of accurate analyzes. These studies are carried out in laboratories every day to confirm the safety of water for our health and to guarantee the absence of various infectious diseases. At the same time, the laboratories follow the standard methods of measuring water content and sanitary rules and regulations in this field, the laboratories monthly measure the chemical composition of drinking water from water supply sources and main water pipes for heavy metals, fluorides, chlorides, sulfates and organic analyzes the compounds according to the amount of salts, and also conducts studies on at least radiological indicators. 1-2 times a year in agreement with the regional SES chief physician. With the efforts of chemical engineers, bacteriologists, laboratory technicians, and samplers, the composition of about 45 indicators is being monitored in all centralized water supply sources based on the central and regional analytical laboratories of water supply enterprises.

Chlorine residuals are monitored hourly by chlorination plant operators before entering water supply networks. Long-term experience of about 60 communal laboratories in monitoring indicators of all

World Bulletin of Social Sciences (WBSS)
Available Online at: https://www.scholarexpress.net
Vol. 14, September,2022
ISSN: 2749-361X

types of analyzes regulated by the standard: abbreviated, general physicochemical, special toxicological, radiological indicators drinking water of the centralized water supply of our republic confirms that it meets the standards. For dissolved substances, metal salts and most heavy metals, the standard is recorded for their absence. However, it should be noted that in a number of districts of Bukhara, Khorezm, Fergana and Jizzakh regions, the amount of calcium and magnesium salts in natural water is increasing, that is, general mineralization is occurring as a result of an increase in general hardness. In such cases, drinking water is provided to the population only in agreement with the sanitary-epidemiological service (SES) of the region, which shows the safety of water consumption in excess amounts, before taking measures for water desalination.

Currently, natural water desalination plants are operating in the regions of the Republic of Karakalpakstan; in other regions of the republic, the problem is being solved by gradually putting new devices into operation and replacing old ones with modern methods of water purification. Thanks to laboratory control, technologists have information about each source of water supply and can take measures to improve water quality by reducing the total salt content of mixtures and improving water quality or by building new water intake facilities with water supply that meets standard requirements. they said.

If the results of the water analysis showing that the concentration limits for individual parameters are exceeded, the laboratory will immediately notify the dispatch service to determine the source of contamination. Immediate measures are taken to eliminate the contamination or emergency, followed by washing of network sections with chlorine reagent solutions to disinfect the network and further study of drinking water with the participation of SES workers until the standard quality is established. is organized.

Analytical laboratories are in constant contact and work under the sanitary-epidemiological control of the Ministry of Health of Uzbekistan, regularly take samples together for the main indicators of drinking water quality, as well as the "Uzstandart" agency, which gives the right to conduct research. will have attestation certificates from regional authorities. In order to analyze the standardized parameters of drinking water quality at the level of international standards, the Ministry of Housing and Communal Services has equipped analytical laboratories with the latest equipment and tools for physico-chemical analysis of water using spectrophotometric, chromatographic and other methods. It is planned to be equipped with measuring devices.

Wastewater treatment is a complex and time-consuming process, which depends on certain technological parameters suitable for the biological process, in which there are living microorganisms of activated sludge with a sufficient amount of oxygen. Violation of at least one parameter leads to a significant decrease in the efficiency of wastewater treatment. One of the wastewaters that pose a threat to the domestic water treatment process in sewage plants is industrial wastewater. Industrial enterprises that do not have local treatment facilities discharge wastewater into municipal sewers, which harms domestic wastewater treatment processes and results in environmental pollution. Determination of the concentration of each component in industrial wastewater containing petroleum products, fats, oils, phenols, nitrogenous compounds, organic acids, heavy metal salts and other toxic substances is the main factor in solving this problem. The analysis of industrial wastewater is carried out by specialized laboratories of the city, and based on the received information, documents are drawn up to impose fines on enterprises that have committed violations in accordance with the laws of the Republic of Uzbekistan. The Ministry of Housing and Communal Services has implemented a number of measures to strengthen laboratory control of domestic waste water, including industrial wastewater treatment. Currently, 22 laboratories are operating in this direction in the cities of our republic. Within the framework of the project, it is planned to establish 9 laboratories for the analysis of wastewater. It is planned to monitor wastewater directly from enterprises in online mode, which requires utilities to equip modern control devices for certain parameters, as well as to work in laboratories. requires the involvement of qualified personnel.

In conclusion, it is possible to say that the population consuming drinking water delivered to water supply networks from centralized water supply sources in the Republic of Uzbekistan is aware that the quality of water obtained from sources meets regulatory requirements and is under the daily control of communal laboratories that guarantee water safety. we can be sure.

REFERENCE:

1. Alibekova, N.N. (2020). Application of information systems in water use processes. Science and Education, 1(3).
2. Kutlimurodov U.M. Zagryaznenie atmosfery vrednymi veshchestvami i meropriyatiya po ego sokrashchenyu //Ekologiya: vchera, segodnya, zavtra. - 2019. - p. 249-252.
3. Sultanov, A. (2019). Water use planning: a functional diagram of a decision making

World Bulletin of Social Sciences (WBSS)
Available Online at: https://www.scholarexpress.net
Vol. 14, September,2022
ISSN: 2749-361X

system and mathematical model. International Finance and Accounting, 2019(5),
4. Alibekova, N.N. (2020). U seofin format i on system sin water use processes. Science and Education,1
5. Alibekova, N.N. (2020). Zonirovanie vdoprovodnyx setey. Science and Education. Scientific journal.
6. Alibekova, N.N. (2021) Reliability and cost-effectiveness of Polymer pipes. Euroasiaconference.com. Euro Science: International Conference on Social and Humanitarian Research, Hosted from Cologne, Germany.
7. Alibekova N.N. (2021) Ways to ensure full reliability operation of hydromechanical equipment of pumping stations. Science and Education. Scientific journal.
8. Khazhimatova, M. M. (2021). Some hydrodynamic effects exhibited by bubble and projectile modes of gas-liquid mixture flow. Science and Education, 2(4), 257-264.
9. Kutlimurodov, U.M. Atmospheric pollution with harmful substances and measures to reduce it. Ecology: yesterday, today, tomorrow.-2019.--p, 249-252.
10. Saidullaev S. R. Primenenie informatsionnyx sistem v effektivnom ispolzovanii vody // Nauka i obrazovanie. - 2020. - T. 1. - no. 7.
11. Masharipovich, Q.U. (2021). Laboratory Equipment of Overpressure Determination on Standard. International Journal of Development and Public Policy, 1(6), 138-143.
12. Kutlimurodov, U.M. (2021). Solutions for the efficient use of water resources in the regions of the Republic of Uzbekistan. Symbol of Science, (3).
13. Saidullaev S. R. Application of information systems in efficient use of water //Science and Education. - 2020. - T. 1. – no. 7.
14. Qutlimurodov, U.M. Water supply and wastewater discharge systems; Textbook. 246 str. Tashkent - 2021/8/18 - T.: "IMPRESS MEDIA" LLC.