

## DRINKING WATER OF THE SURROUNDING AREAS OF KOKAND CITY AND THEIR COMPARATIVE ANALYSIS

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### ABSTRACT

Of the President of the Republic of Uzbekistan No. PF-60 dated 28.01.2022 "On the Development Strategy of New Uzbekistan for the years 2022-2026" : **Fundamental reform of the water resources management system and important tasks for the implementation of a separate state program on water saving [1].** In this regard, effective use of water resources in our increasingly developing republic and supply of quality drinking water to the population are among the most urgent tasks.

Today, groundwater, which is an integral part of water resources in Uzbekistan, is used mainly for the needs of the population. The rapid development of production, the lack of implementation of measures related to water protection in some regions and the lack of warnings about the pollution of water resources, lead to the deterioration of the quality of underground water.

At the moment, providing the population with clean drinking water that meets the requirements of the state standard in a timely manner is an urgent issue today. The need for this is especially high in the desert areas of the surrounding districts of Kokand city. In order to eliminate these problems, it is necessary to use our water resources wisely, not to allow it to be used unnecessarily, not to pollute it.

Taking into account the above points, it is important to carry out scientific research on the study of the composition of drinking water in the surrounding districts of Kokand and the methods of their mitigation. For this purpose, the chemical analysis of water samples taken from drinking water wells in accordance with the requirements of GOST 950:2011 was carried out in the laboratory of the Testing Department of Fergana Water Supply LLC in Kokand city [2,3].

In the laboratory of the testing department of Fergana water supply LLC, Koqon city branch, experiments were conducted on the basis of samples taken from drinking water wells in the suburbs of Koqon city, and the obtained results were analyzed and summarized. According to it, it was found that the results of organoleptic analysis were the same in all the samples taken from all the studied objects. The results of chemical and organoleptic analysis of the samples are presented in the following tables.

**Table 1. Results of chemical analysis of water samples taken from water facilities of drinking water wells in the city of Ko'kan according to the requirements of GOST 950:2011.**

No	Water of the building name	Temperature, °C	Odor 20°C and 60°C, points	Taste 20 °, C score	Color 20 °C, points	Blurry, mg /dm <sup>3</sup>	NO <sub>3</sub> <sup>-</sup> , mg /dm <sup>3</sup>	Hydrogen indicator _pH	Cl <sup>-</sup> , mg /dm <sup>3</sup>	Generalhardness, mg * eq /dm <sup>3</sup>	Oxidation	F <sup>-</sup> , mg /dm <sup>3</sup>	Dry residue, mg/dm <sup>3</sup>	Iron, mg /dm <sup>3</sup>
<b>Mingtut water facility</b>														
1	Well 1	17	0	0	0	0	0.02	6.5	7.3	4.2	0.4	0.01	240	0.01
2	3rd well	17	0	0	0	0	0.03	6.5	11	3.3	0.4	0.02	235	0.02
3	4th well	18	0	0	0	0	0.04	7	11	3.2	0.4	0.02	235	0.02
<b>Important water facility</b>														
4	Well 1	18	0	0	0	0	0.01	7	11	5.6	0.8	0.04	280	0.05
5	2nd well	17	0	0	0	0	0.02	7	15	5.7	0.8	0.03	280	0.05
6	3rd well	17	0	0	0	0	0.01	7	15	5.6	0.8	0.03	280	0.04
<b>To pay water facility</b>														
7	3rd well	18	0	0	0	0	0.01	7	11	4	0.4	0.001	230	0.03
8	6th well	17	0	0	0	0	0.02	7.5	11	3.8	0.4	0.01	240	0.04
9	7th well	17	0	0	0	0	0.002	6.5	11	4.3	0.5	0.02	260	0.04
<b>Street networks</b>														
10	Independence	18	0	0	0	0		7.5		2.9				
11	Master market	16	0	0	0	0		6.5		3.4				
15	A.Temur	17	0	0	0	0		6.5		3.1				
16	S h Okhrukhabad	17	0	0	0	0		7		3.1				
17	Soldier	17	0	0	0	0		7		2.8				
18	You are growing	16	0	0	0	0		7		2.8				
19	Turkestan	17	0	0	0	0		7		2.8				
20	X is alive	18	0	0	0	0		6.5		2.8				

According to the results of the analysis, it was found that the amount of chloride ions and the total hardness of the water in the water of the wells of the residential water facility is high compared to the rest of the objects. When delivering water from these wells to the population, it is recommended to reduce their hardness.

**Table 2. Results of chemical analysis of water samples taken from drinking water wells located in MFYs of Baghdad district of Fergana region according to the requirements of GOST 950:2011 .**

No	Water of the building name	The smell 20° and 60°, points	Taste 20°, points	Color	Blurry, mg/dm³	NH <sub>4</sub> <sup>+</sup> , mg/dm³	NO <sub>2</sub> <sup>-</sup> , mg/dm³	NO <sub>3</sub> <sup>-</sup> , mg/dm³	Hydrogen indicator_pH	Cl <sup>-</sup> , mg/dm³	Generalhardness, mg * eq /dm³	oxidation	F <sup>-</sup> , mg/dm³	Dry residue, mg/dm³	Iron, mg/dm³
1	Shoraker MFY Abad street 2 school	0	0	0	0	0.06	0.07	0.09	9.0	12, 50	16.7 5	1.12	0.2	640	0.09
2	China MFY 34th internal school	0	0	0	0	horse	horse	0.03	7.0	8.5	3.50	0.80	0.03	275	0.02
3	Garden Ishamal MFY Solidarity the street	0	0	0	0	horse	horse	0.02	7.0	7.5	2.90	0.70	0.02	240	0.01
4	Nurafshon MFY Dekhkan village _	0	0	0	0	horse	horse	0.01	7.0	10.0	3.40	0.75	0.03	250	0.02
5	Cherry MFY Medium _ street	0	0	0	0	horse	horse	0.04	7.5	9.5	3.00	0.75	0.04	245	0.07
6	Cho' lyunus MFY Cho'lmirzakhamdam k i	0	0	0	0	horse	horse	0.02	7.0	10.0	3.25	0.75	0.01	250	0.06
7	Chinese MFY Fathers teahouse	0	0	0	0	horse	horse	0.03	7.5	10.0	3.50	0.64	0.02	240	0.04
8	Koshtegrimon MFY Uzun _ the street	0	0	0	0	horse	horse	0.07	7.5	11.0	3.75	0.80	0.03	250	0.03
9	Resident MFY Islamabad street _	0	0	0	0	0.01	0.04	0.1	9.0	20.0	10.0 0	1.10	0.04	550	0.03
10	Cho' rindi MFY Katta Kocho	0	0	0	0	0.07	0.09	0.3	10.0	31.0	12.0 0	1.16	0.3	575	0.1

be seen from the above table that some of the studied objects in the Baghdad district ( ShorakerMFYProsperityStreet 2nd school , Muqimi MFY Islamabad \_ \_ street , C h sat MFY Big street )in the composition ammonium , nitrite , nitrate and chloride of ions amount of , from this except drink of water pH indicator ( pH >9) , general hardness to the rest to regions relatively high the fact that was determined .

**Table 3. analysis of water samples taken from drinking water wells located in Uchkoprik district MFYs of Fergana region according to the requirements of GOST 950:2011 .**

No	Water of the building name	The smell 20° and 60°, points	Taste 20°, points	Color	Blurry, mg/dm³	NO <sub>3</sub> <sup>-</sup> , mg/dm³	Hydrogen indicator_pH	Cl <sup>-</sup> , mg/dm³	Generalhardness, mg * eq /dm³	oxidation	F <sup>-</sup> , mg/dm³	Dry residue, mg/dm³	Iron, mg/dm³
1	Turvok MFY well	0	0	0	0	0.03	6.5	7.5	3.75	0.66	0.009	250	0.01
2	new prosperous MFY 49th school	0	0	0	0	0.02	6.5	9.0	3.00	0.78	0.02	240	0.02
3	new prosperous Come on poplar qg the well	0	0	0	0	0.03	6.5	8.0	2.50	0.72	0.03	220	0.03
4	Turvok MFY Valley wedding hall back	0	0	0	0	0.02	6.5	7.5	3.00	0.63	0.02	260	0.03
5	Forovon MFY 242-house inside the well	0	0	0	0	horse	7.0	9.5	3.25	0.64	0.02	250	0.02
6	Tashkentliguzar MFY 18 school interior	0	0	0	0	0.03	7.0	9.0	3.75	0.66	0.03	275	0.05
7	About Tashkent farmer land took the well	0	0	0	0	0.04	7.0	10	4.5	0.80	0.01	280	0.03

Kokan city, Uchkoprik district It was found that the chemical composition of drinking water in these regions is almost similar, and the general hardness of drinking water in these regions is relatively low (2-7 mg·eq/dm<sup>3</sup>). It was determined that some regions of Baghdad district have a high degree of hardness of drinking water ( $Q \geq 7$ ), the amount of ammonium, nitrite, nitrate and chloride ions, and also the pH indicator of drinking water. These conditions can have a negative impact on human health.

Consumption of drinking water with a high content of nitrates causes oncological diseases, autoimmune reactions, decay of tooth enamel.

When consuming chlorinated water, a person experiences water-salt imbalance and disturbances in the gastrointestinal tract, swelling occurs. A large amount of chlorine salts leads to an increase in stress on the genitourinary system, blood-vascular system, kidneys and heart, and also increases the symptoms of cardiovascular diseases.

High fluoride content in drinking water manifests as fluorosis or stains of varying degrees on tooth enamel. Drinking water with a high fluoride content leads to a decrease in the level of iodine metabolism, which is accompanied by a decrease in the body's ability to protect and adapt.

, it is recommended to take measures to soften the content of drinking water in these areas to the permissible level using physical, physico-chemical methods before delivering it to the population.

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