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Semi-annual air measurement report Project: Zarafshan Oyna

Prepared by Nazar Business and Technology, LLC
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Glossary

- NBT – Nazar Business and Technology, LLC
- SES - Sanitary and Epidemiological Service
- Uzgidromet - Agency of hydrometeorological service under the Ministry of ecology, environmental protection and climate change of the Republic of Uzbekistan
- Zarafshon Oyna - MChJ "ZARAFSHON OYNA", ZARAFSHON OYNA LLC

Introduction

The facility of "ZARAFSHON OYNA" Ltd. is an industrial enterprise for the production of sheet glass containing toxic impurities, as well as toxic chemicals and compounds of hazard classes 1 and 2. In accordance with Attachment No1 to the Decree of the Cabinet of Ministers No 541 "On further improvement of the mechanism of environmental impact assessment" dated 07.09.2020, the object belongs to the objects of the 1st category of environmental impact.

The requirements to the organization of works and measures proposed by the project are the confirmation of environmental security of the project implementation, and are related to the prevention of deterioration of the quality of the natural environment or its individual components, as well as the prevention of environmental risk.

This paper presents information about the project area, physical and geographical characteristics, describes the sources of emissions at the enterprise, describes the methods of measurements and provides the results of stationary and single measurements of NO and NO₂ components. In the conclusion the analysis of the performed works and measurement results is given.

1. Project Description

1.1 Project area

Project area of the enterprise for production of sheet glass "ZARAFSHON OYNA" Ltd. The production is located at the address: Navoi region, Zarafshan city, Industrial zone. Geographical coordinates of the enterprise: 41°34'33.07", 64°10'48.80". The total actual area of the enterprise is: 20.7 hectares.

The city of Zaravshan is an industrial city located in the central part of the Kizilkum Desert.

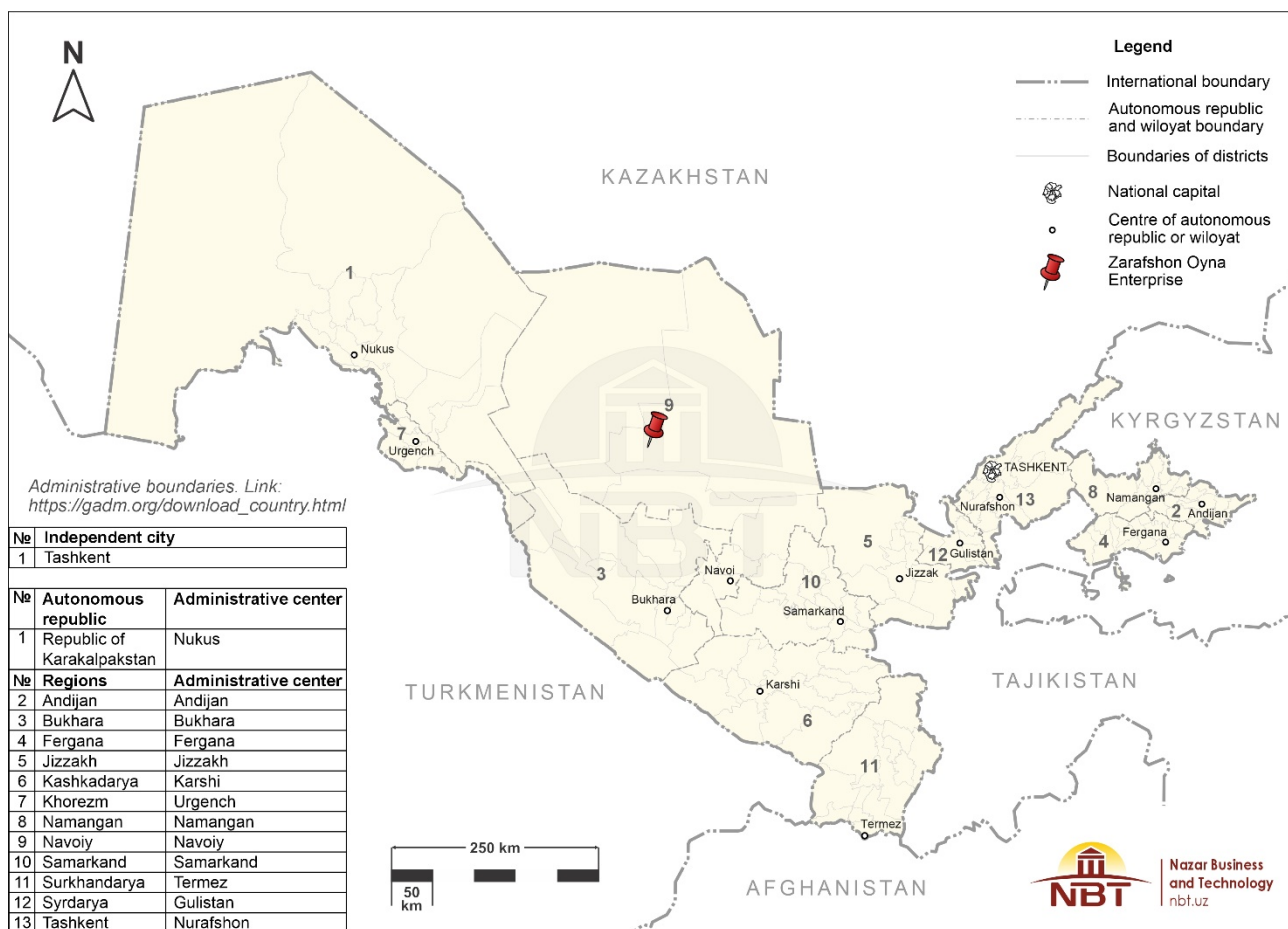


Figure 1. Location of the project area on the map of Uzbekistan

The territory of the enterprise is located in the industrial zone of Zarafshan city. The enterprise is bordered by:

- from the north and the north-east - industrial territories (oil depot);
- from the east - industrial territories, 500 metres away from the city boiler house, 170 metres away from the brick factory,
- from the south-east - 1 kilometre away from the microdistrict number 1 of Zarafshan city;
- from the south - wasteland, road, methane petrol station 50 metres away.
- from the south-west, west - in 140-300 metres across the road is a residential area of private houses "Yangi Zarafshon";
- from the north-west - cemetery, industrial area (locomotive depot).

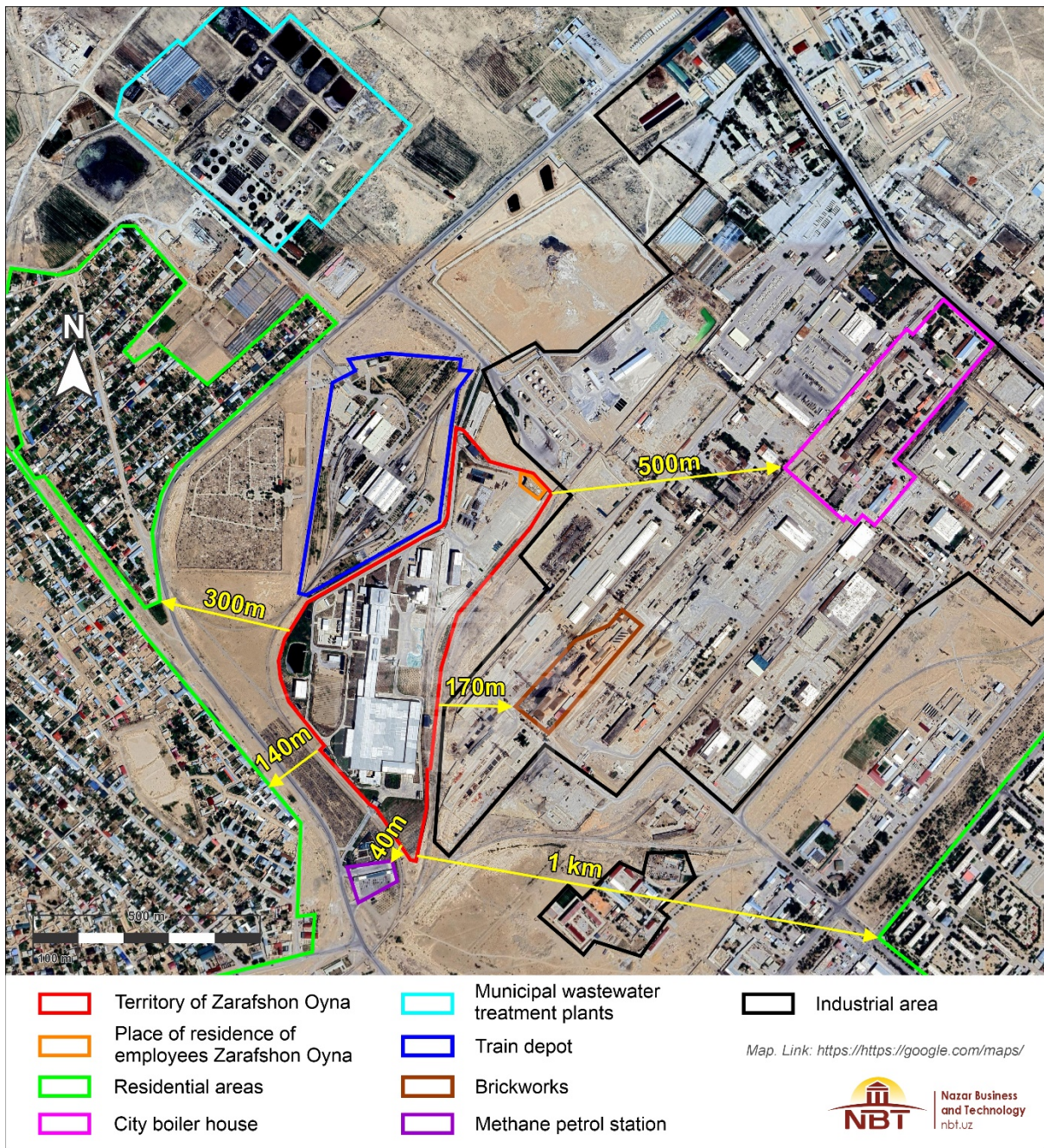


Figure 2. Location of Zarafshon Oyna and surrounding areas

1.2 Natural and climatic conditions

1.2.1 Landscape and land resources

The territory under consideration is located in the desert zone of Kyzylkum with transition to the zone of weakly expressed hilly Tamditau mountain system, the rocks composing the territory under consideration are characterized by description to several geological formations. Geological conditions consist of a complex of geological formations. Polygenetic proluvial-deluvial, eluvial and aeolian sediments of the Fytymian, Nadkuldukian, Kuldukian formations and Holocene combined (Neopleistocene-Holocene as a whole). Plastered conglomerates, breccias, rubble, sands, sandy loam of sloping stepped foothill plains of the Central Kyzylkum.

The territory is located at the junction of four periods Quaternary (Q), Devonian (D), Carboniferous (C) and Silurian (S) belonging to the Turanian plate zone laid out, reworked by aeolian processes. Most of Uzbekistan, like other Central Asian countries, is located in a seismically active region. Earthquakes are not uncommon in the region. The maximum possible earthquakes are up to 6.5 magnitude on the Richter scale and more. As shown on the seismic zoning map, the project area is located in the central part of the Republic of Uzbekistan, in the zone with possible earthquake magnitude from 1 to 8 on the scale (MSK-64).

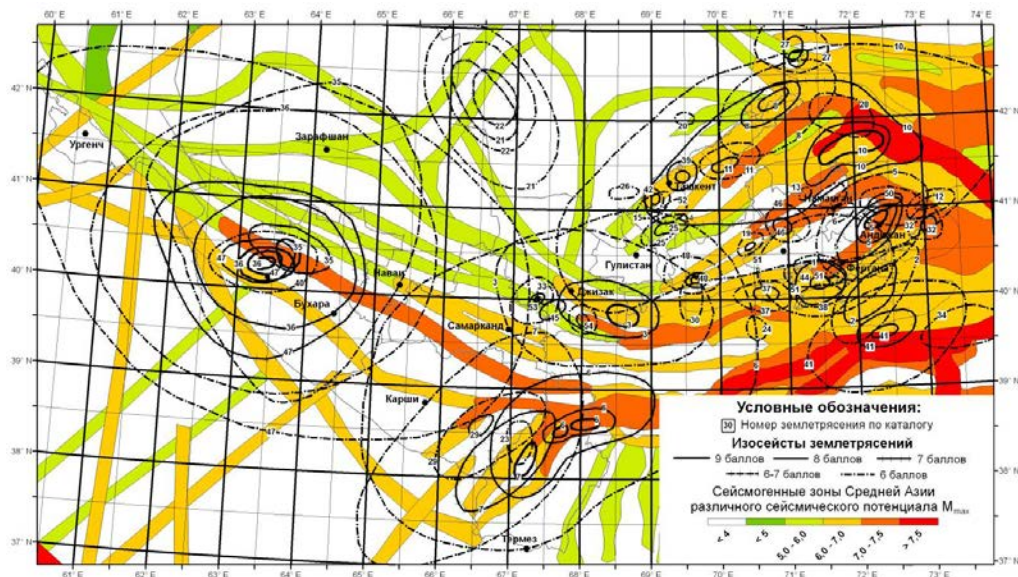


Figure 3. Map of seismic zoning of Uzbekistan.

Zarafshon Oyna is a currently existing enterprise. The whole territory of the enterprise is anthropogenic, no impact on land resources is foreseen. No degrading landscapes have been observed on the territory. At present on the most part of the territory is carried out cultural landscaping, planted trees shrubs and flower plants, watering by automatic irrigation system. There are no agricultural lands in the area of Zarafshon Oyna object location.

Near the city of Zarafshan there is mining of minerals such as: Silver, Brick and tile raw material, building stone. Also in 30 km to the east from the territory of the enterprise and the city of Zarafshan, there is the world's largest gold deposit - Muruntau. It is located in Muruntau mountains in the south-west of Kyzylkum desert, on the territory of Tamdyn district of Navoi region of Uzbekistan. It belongs to the oil shale type and has been mined since 1969. Mining is carried out by Navoi Mining and Metallurgical Combine.

1.2.2 Climate

The Zarafshan city is characterized by a sharply continental climate of the desert zone, with a long hot summer and relatively dry weather, the average annual air temperature is 14.4 ° C (average temperature for July 35.0 ° C maximum above 40 ° C), winter is moderately mild (average temperature in January - 2.0 ° C the lowest -5 ° C); the amount of precipitation on average from 67.3 to 120 mm per year. The annual distribution of precipitation is characterized by the highest moisture content in winter-spring period and the lowest in summer. Monthly maximum precipitation is observed in March

and April, minimum in September. Fogs are very rare, the average annual number of days is 11, the highest number of days is 24. Fogs are most frequent in winter months, the average frequency of fogs does not exceed 0.5%.

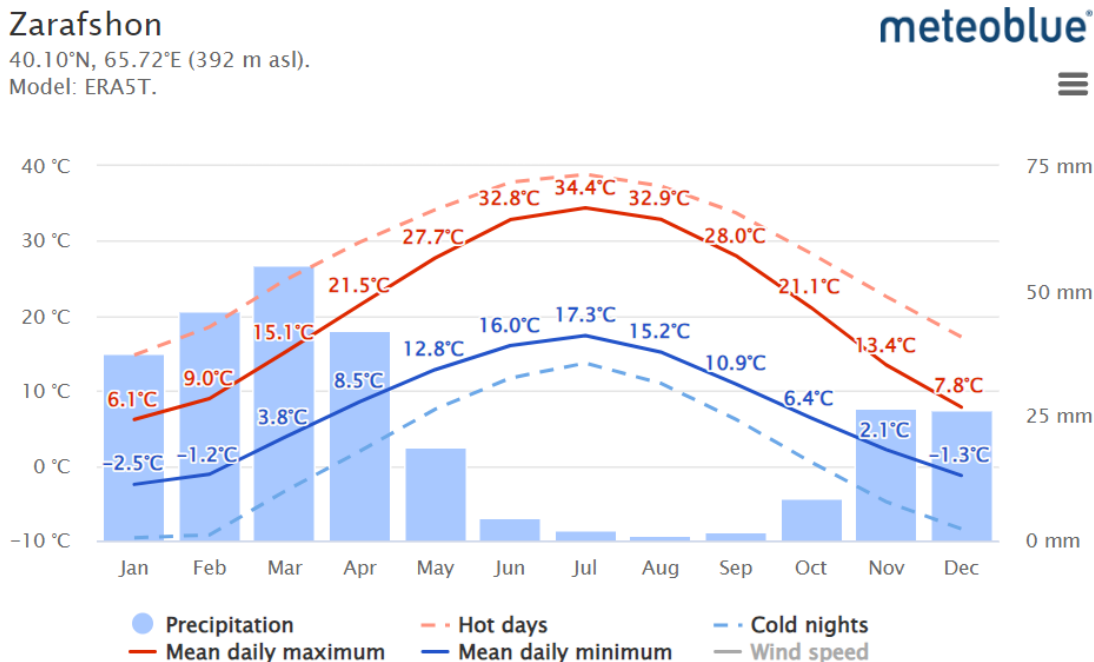


Figure 4. Graph of annual precipitation and average temperature for the city of Zarafshan.

1.2.3 Atmospheric air conditions

In the Zarafshan city, Navoi region, Republic of Uzbekistan prevail winds of north-west direction (22%), south-west direction (33%), west direction (9.0%), north direction (7%), south, north-east and east direction (8% each), south-east (5%). The recurrence of easterly winds does not exceed 8%. Wind load is stable for this part of Uzbekistan and depends on the blowing of the Kyzylkum desert on the plain territory.

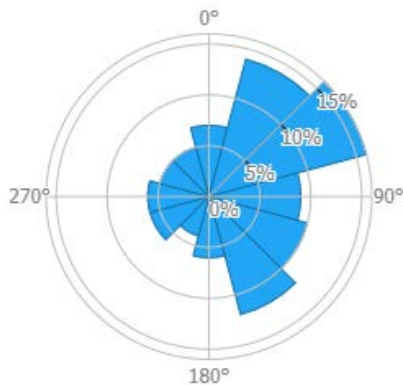


Figure 5. Average annual wind direction for the city of Zarafshan. Resource: <https://globalwindatlas.info>. Zarafshan is characterized by northeast and east winds.

During the study on the territory of the enterprise, stationary measurements of temperature, pressure and humidity of atmospheric air were carried out by gas analyser AQMesh. All data on measurements are presented in Appendix 1.

The maximum recorded temperature in July was 42.7 °C, the minimum temperature recorded during the period of observation was 6.3 °C in March. The average monthly temperatures from the beginning to the end of the month were:

- In March from 4 to 15 °C
- In April 15 to 23 °C
- In May 22 °C
- In June 30 to 31 °C
- In July 30 to 32 °C

An important meteorological characteristic determining conditions of pollutants dispersion in the atmosphere from emission sources is wind speed.

The survey area is characterized by small values of wind speeds in directions from weak 3.2 to fresh 7.45 m/sec with increasing gusts in the plain part. During the summer period, especially during the heat of the day, calm is often observed during the daytime hours and periodically there is calm in the evening hours.

The city of Zarafshan belongs to the zone with insignificant potential of air pollution due to the open blown area, most of the enterprises of Zarafshan city are located near the production site of Zarafshon Oyna. The main contribution to pollution comes from the brickyard, which uses coal as fuel and is located 140 meters away, oil depot, motor vehicles running along the highway A-379, local boilers installed in private households. The main source of fuel for heating homes is gas, coal, firewood and electricity.

1.3 Project goals and objectives

The main tasks to be completed by the NBT team are:

- Continuous air quality monitoring for 6 months for the ingredient: NO_x.
- Control measurements of air quality for ingredient 6 times: NO_x
- Preparation of monthly reports (summary reports in the form of two to three slides of a PPT presentation).
- Preparation of the final report, draft version for the fifth month, and final report for the sixth month





1.4 Main sources of air pollution

Studies on measurement of components in the atmosphere are conducted outside of the territory and buffer zone of the enterprise. In addition to the emissions of the enterprise, as mentioned earlier, there are other sources of NO and NO₂ emissions around. Therefore, when describing and identifying the impact it is necessary to consider not only the sources of emissions of the enterprise, but also external sources of impact.

1.4.1 Internal sources of ambient air pollution

According to the Environmental Impact Statement of Zarafshon Oyna, there are only 5 nitrogen dioxide emission points in the area, of which 92.7% of the emissions are from the main pipe of the production hall from the glass furnace. During the initial site visit, the following 5 emission sources were also found at the plant.

Table 1. Actual sources of atmospheric emissions of nitrogen dioxide.

№	Description	Location	Photo
1	The main source of emissions is the pipe of the production hall from the glass furnace. The pipe is 45 m high and 1.5 m in diameter.	41.57693° 64.18020°	
2	Pipe of the production hall / Glass annealing section.	41.57593° 64.18008°	
3	Compound hall / boiler room.	41.57664° 64.18106°	
4	Kitchen / First cooking zone for cooking on a gas stove	41.57389° 64.17930°	

5	Kitchen / Second cooking zone for cooking on a gas stove	41.57389° 64.17930°	
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Map-scheme of dispersion fields in the surface layer of the atmosphere for the ingredient NO₂, taken from the draft statement on environmental consequences of the organization of the enterprise for the production of sheet glass OOO "ZARAFSHON OYNA" in the city of Zarafshan, Navoi region, approved in 2023 by the State Committee on Ecology and Environmental Protection of the Republic of Uzbekistan.

According to the environmental impact statement, the highest concentrations of nitrogen dioxide are found around the source of emissions, with a southwestward spread in the wind direction. In the image, the red dots show the location of the sources of nitrogen dioxide emissions to the atmosphere.

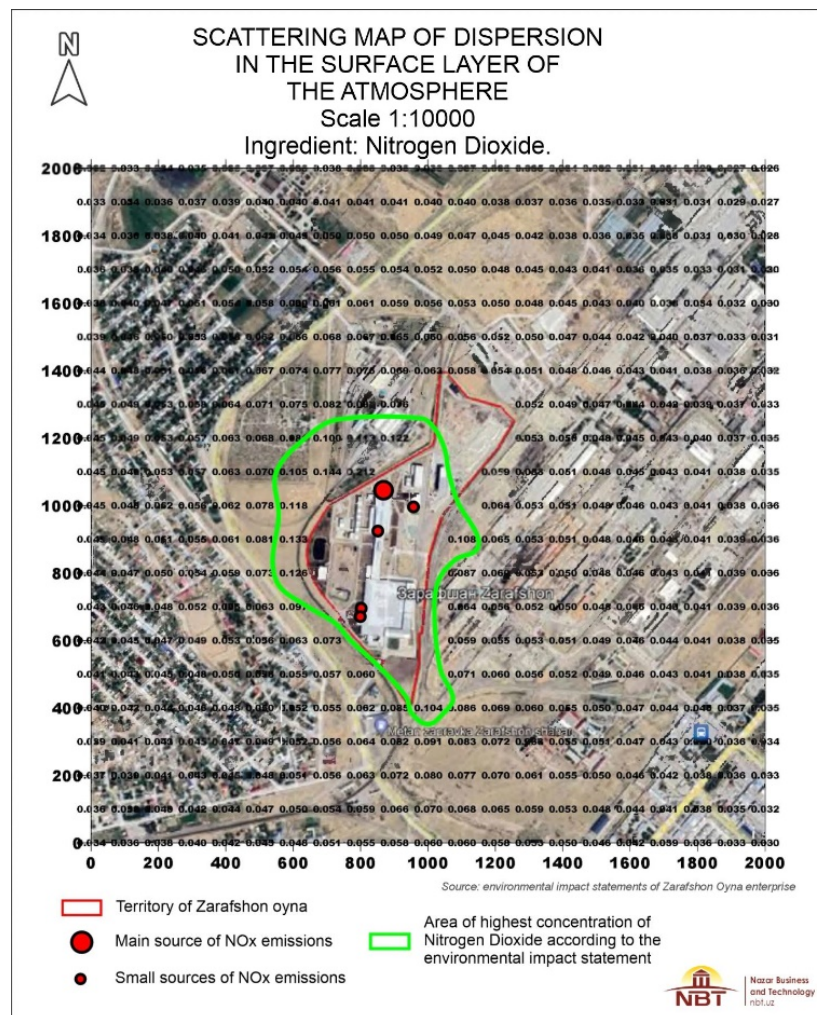


Figure 6. Map of nitrogen dioxide dispersion fields.

As the dispersion field map illustrates, it has been calculated that the maximum nitrogen dioxide dispersion values are around the main emission source. The values are indicated by the coefficient according to the emission allowance from the maximum permissible concentration. And the highest values are mainly located on the territory of the enterprise.

1.4.2 External sources of atmospheric air pollution

As it was mentioned earlier the territory of Zarafshon Oyna is located in the industrial area of the city and is surrounded by other enterprises with different activities and different impact on atmospheric air. Within a radius of 1 km from the territory of Zarafshon Oyna there are such enterprises as:

- Railway depot
- Brickyard
- City boiler house
- Oil storage facility
- Several large autobase
- Municipal sewage treatment plants
- Electric substation
- Fire station
- Methane petrol station
- Greenhouse facility
- And other small and medium-sized enterprises

The greatest concern, the air condition by components NO and NO₂ to a higher degree can be influenced by three main enterprises: the railway station depot, brickyard, and the city boiler house.

It is also necessary to consider the wind pattern (Figure 5), which shows that the most frequent winds for the area are north and northeast, which means that most of the NO_x emissions are directed south and southwest of the plant. Emissions from other enterprises located north and northeast of Zarafshon Oyna are also directed to the plant.

Source 1: Railway and railway depot.

On the north-western, northern side of Zarafshon Oyna is a 12-hectare railway station. A railway track runs around the station and around the Zarafshon Oyna facility, on which diesel locomotives run several times a day. The railway track used by the diesel locomotives runs 50 metres southwest of the AQMesh gas analyser site. Exhaust from diesel locomotives contains nitrogen oxides and dioxides, which can be reflected in the results obtained from on-site and off-site NO_x measurements.

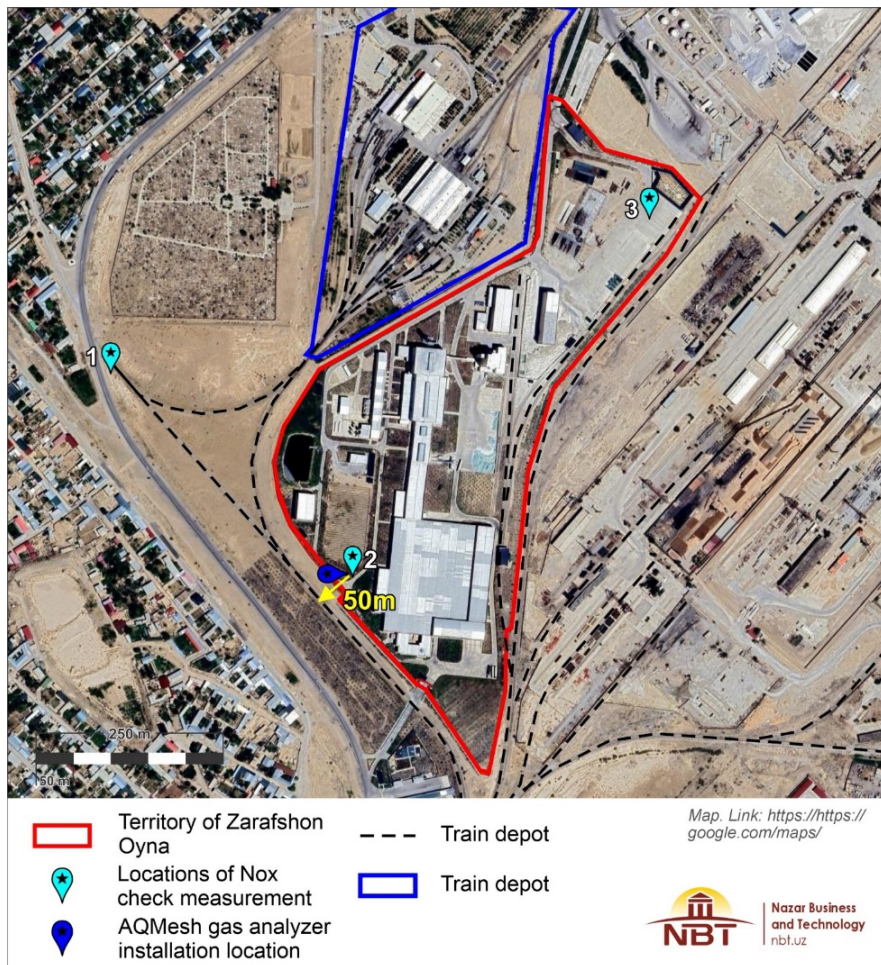


Figure 7. Map of the location of the railway depot and railway lines

On visits, a diesel locomotive was spotted near the western boundary of the facility many times.



Figure 8. Photo of a railway line and a diesel locomotive running on fuel oil

Source 2: Brickworks

On the eastern side of the Zarafshon Oyna property, a brick factory is located 140 meters away. Based on satellite imagery, the factory uses hard coal as fuel. During visits to Zarafshon Oyna, NBT

repeatedly recorded activity at the brick factory and black smoke from coal burning from the brick factory chimney. The main source of emissions at the brick plant is a chimney ≈ 14 meters high.

The employees of the enterprise repeatedly paid attention to the characteristic odour from the brick plant.



Figure 9. Smoke from a brickyard chimney recorded at different times and from different angles.



Figure 10. Map of brick factory location, location of the main pipe and distance to the factory

On June 17, 2021, the director of the enterprise Zarafshon Oyna wrote an appeal to the office of the Prime Minister of the Republic of Uzbekistan with complaints about unpleasant odor, smoke and a request to conduct an environmental inspection at this brickyard. The response to the complaint letter was received on July 7, 2021 from the Department of Ecology and Environmental Protection of Navoi region. The response stated that a laboratory employee of the Regional Department of Ecology was sent to the brick factory to conduct air sampling, but on the day of the inspection the brick factory suspended its activities and the laboratory employee could not conduct the analysis in the absence of emissions. Appendix 2 and Appendix 3. Further, the management of the brickyard was sent a warning letter about the requirement to comply with environmental legislation.

On March 25-27, the specialists of Zarafshon Oyna conducted voluntary observations of the activity of the factory. The results of the observations are presented in Appendix 4. As can be seen from the observation results, in many cases, when the wind blew from the side of the brick factory on the territory of Zarafshon Oyna enterprise there was an odor in the area of the main security point (entrance to the territory).

As can be observed from the monitoring, the odor was recorded mainly when the brickyard was active and the wind was east, north-east, it means that the wind was blowing from the side of the brickyard.

Based on the factors mentioned above, taking into account the proximity of the brickyard and its location on the eastern (windward) side. It is necessary to take into account the influence of the brickyard as one of the main factors of impact on the background content of NO and NO₂ in the air.

Source 3: City boiler house

The city boiler house, which supplies the town of Zarafshan with domestic hot water, is located 500 meters east of the enterprise. Presumably, the boiler house is gas-fired. The city boiler plant is located to the east of the Zarafshon Oyna enterprise, and referring to the fact that most of the winds blow from the east and northeast side, the impact on air pollution from the city boiler plant should be taken into account especially during cold periods of the year.



Figure 11. Photograph of the pipes of the city boiler house

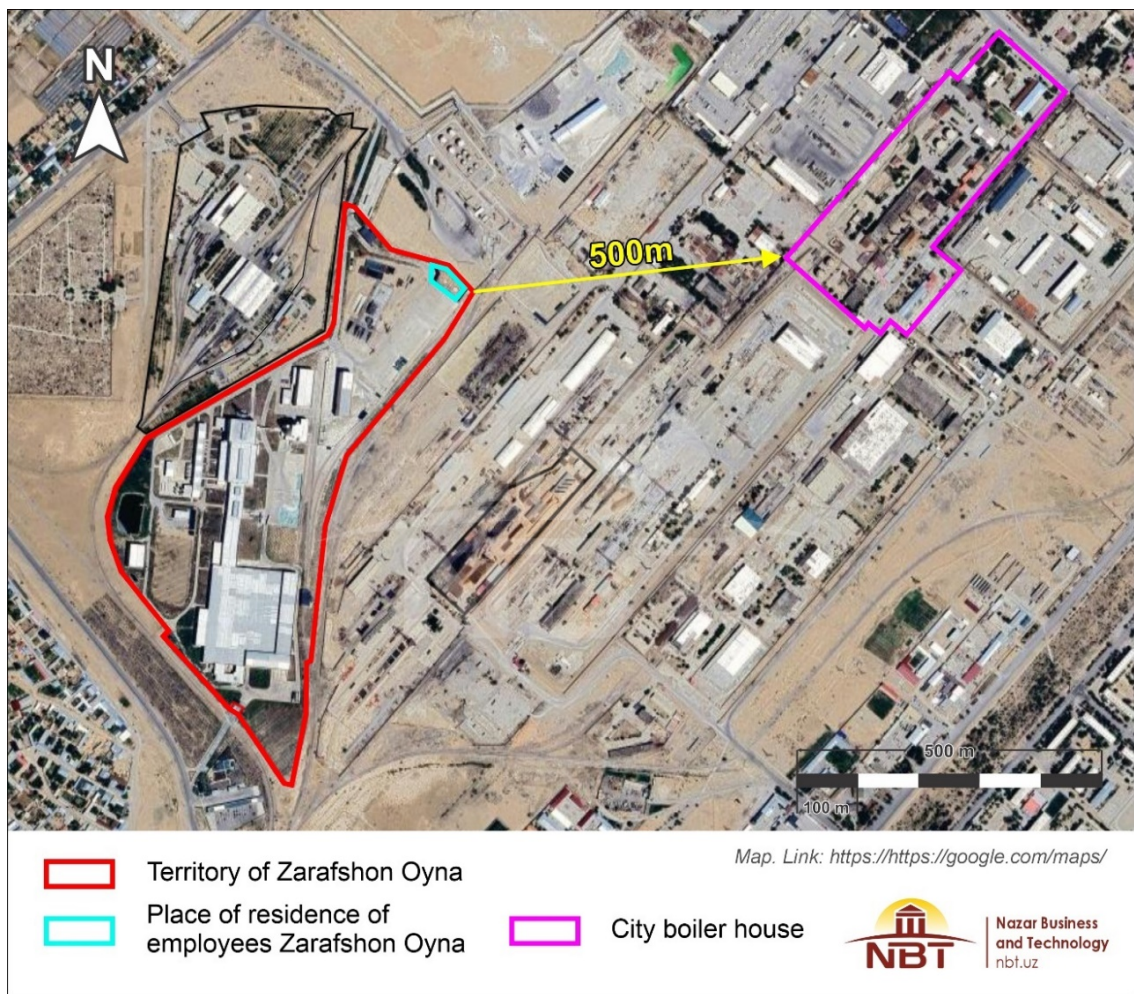


Figure 12. Map of the location of the city boiler house

1.4.3 Preliminary studies of ambient air quality.

In March 2020, before the launch of Zarafshon Oyna enterprise, air quality measurements were made on the territory by Uzgidromet pollution monitoring service. As a result of measurements at one of the two points, the daily maximum permissible concentration of NO₂ component exceeded 1.2 times the norm. The official conclusion of this measurement and non-official translation are presented in Appendix 5.

2. Air measurement methodology and standards for maximum permissible concentrations

2.1 Methodology for selecting an air analysis site

Nitrogen oxides (NO_x) is a collective term used for nitrogen monoxide (nitrogen oxide or NO) and nitrogen dioxide (NO₂). Nitrogen oxides (NO_x) are formed by the reaction of gaseous nitrogen and oxygen in air during combustion, especially at high temperatures. Total NO_x concentrations are determined by the formula: $M(\text{NO}_x) = M(\text{NO}_2) + 1.53 * M(\text{NO})$. Thus, the NO_x indicator is a calculation, and for its calculation it is necessary to measure the concentrations of NO and NO₂ in atmospheric air.

For this project it was decided to perform two types of NO_x measurements:

- Check measurements to the staff of the sanitary-epidemiological service of Uzbekistan (6 measurements, once a month);
- Stationary, permanent measurements by AQMesh gas analyser (for 5 months).

In order to select the locations of the check measurements, it is necessary to take into account:

- Average annual wind direction;
- Proximity of sensitive objects (residential areas to the territory of the enterprise and emission sources).

To select an installation point for the AQMesh gas analyser:

- An open blown place without obstacles of wind movement. Proximity of sensitive objects (residential areas to the plant site and emission sources);
- The installation site must be secured.

2.2 Check air measurements

Three locations were selected for the check measurements, taking into account the annual wind direction, the proximity of residential areas and the residence of the workers of the enterprise:

1. «Yangi Zarafshon» residential area. Location: 41.57677° 64.17471°
2. South-western part of the territory of Zarafshon oyna. Location: 41.57396° 64.17882°
3. Residential area of the company's employees. Location: 41.57864° 64.18399°

The south-western part of the Zarafshon oyna site has been selected for the installation of the AQMesh gas analyser. Location: 41.57406° 64.17875°



To carry out check measurements the following were involved:

- Sanitary-epidemiological service of Navoi region
- Hydrometcentre of Navoi region.

Each of the organizations used a different instrument to conduct the benchmark measurement of NO AND NO₂ components.

Table 2. Portable gas analysers

Organization	Name of instrument	Laboratory certificate and instrument calibration	Photo

Sanitary-epidemiological service of Navoi region	Drager X-am 5600 gas analyser. Serial number: ARNA-0359	Appendix 6, Appendix 7	
Hydrometcentre of Navoi region.	Asperator AПB-4-12	Appendix 8, Appendix 9	

2.3 Stationary air measurement

Taking into account the average annual wind direction, the location of the main emission sources and the operating conditions of the stationary gas analyser, the point «South-Eastern part of the territory of Zarafshon oyna» was chosen for its installation. Location: 41.57396° 64.17882°. A metal mast was installed at this location, on which a stationary gas analyser of AQMesh brand was mounted to continuously record NO and NO₂ values in the air, calculate NO_x, and record air temperature. This instrument has serial number 2450094 the calibration certificate is presented in Appendix 10.



Figure 13. AQMesh gas analyser installation location in February, March and July 2024

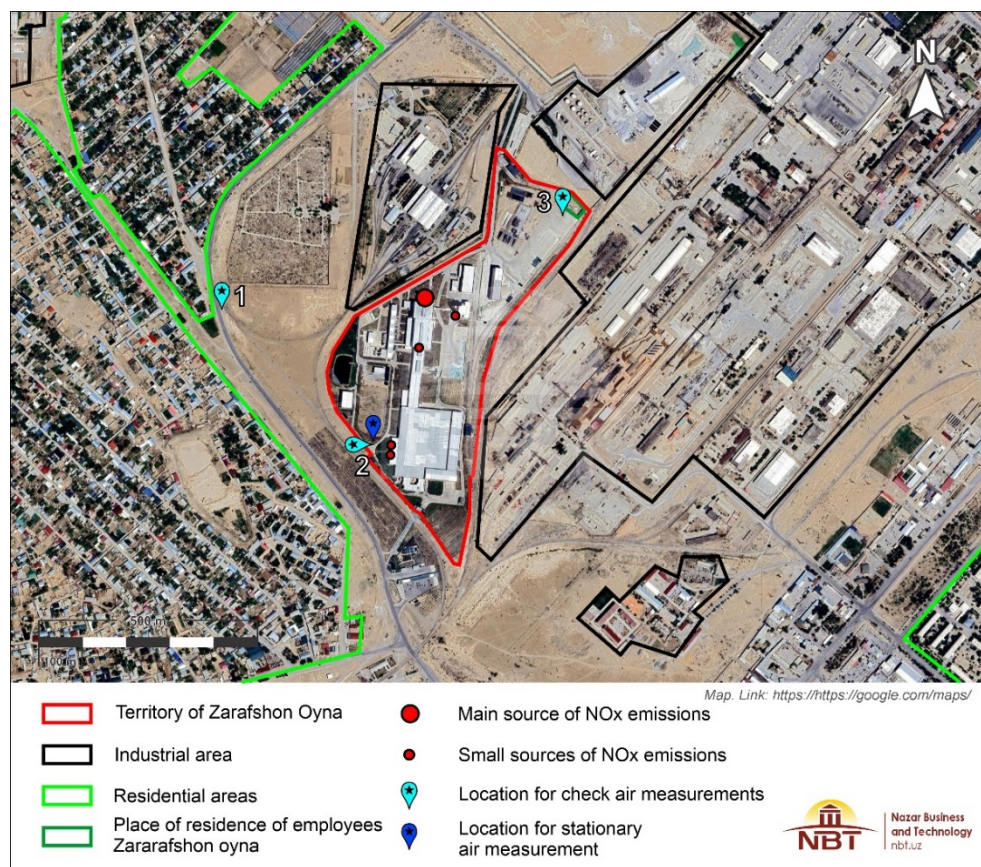


Figure 14. Locations for check and stationary measurements.

2.4 Air quality standards

To determine exceedances for NO and NO₂ components, norms were taken from the following sources according to the standards of the Republic of Uzbekistan and international standards.

- Hygienic standards list of maximum permissible concentrations pollutants in the atmospheric air inhabited places on the territory of Republic of Uzbekistan SanPiN RUz N 0293-11
- WHO global air quality guidelines. World Health Organization 2021

According to the study of national and international standards, it was determined that the resulting air measurement results will be compared to the maximum allowable concentrations for the components NO and NO₂:

Table 3. Table of maximum permissible concentrations of NO and NO₂ components according to national and international standards.

Component	Maximum permissible concentration SanPiN RUz (mg/m ³)			Air quality guideline level WHO 2005 and 2021 (mg/m ³)
	Peak value	Daily	Month	Daily
NO	0,6	0,25	0,12	-
NO ₂	0,085	0,06	0,05	0,12




3. Measurements and results

3.1 Results of check measurements

3.1.1 February

The March check measurement was taken on 28 February 2024. The measurement was carried out with the participation of the Sanitary-Epidemiological Service of Navoi region.

Table 4. Photo report of the measurements carried out in February

Location name	Photos
1. «Yangi Zarafshon» residential area. (41.57677° 64.17471°). Date: 28.02.2024, 10:05	
2. South-western part of the territory of Zarafshon oyna. (41.57396° 64.17882°). Date: 28.02.2024, 10:20	
3. Residential area of the company's employees. (41.57864° 64.18399°). Date: 28.02.2024, 10:35	

The result of the check measurements is presented in the table and in Appendix 11.

Table 5. Results of check measurements of measurements in February

Measuring point	Results provided by the sanitary-epidemiological service		Maximum permissible concentration for RUz (mg/m3)		WHO standard	Detected exceedances	
	NO	NO2	NO	NO2		NO	NO2

1. Residential area "Yangi Zarafshon"	0	0,4	0,6	0,085	No peak level	no	yes (4.7 times more)
2. Southwestern part of the territory of Zarafshon oyna	0	0,4	0,6	0,085		no	yes (4.7 times more)
3. Residential area of the company's employees	0	0	0,6	0,085		no	no

Problems of check measurements and report of sanitary-epidemiological service:

1. In the report the results are presented in "ppm", while the maximum permissible concentrations are written in "mg/m³". Thus, comparison of the obtained values with the maximum permissible concentrations is not correct.

2. This gas analyser is a portable tool for warning of concentrations of hazardous substances in the air and signalling if they are exceeded. This series of gas analysers has a wide range of sensor choices with different sensitivities to gases. No information on the sensitivity threshold of the sensors in this gas analyser was obtained. After the measurements, a test was carried out where the instrument showed NO₂ values from 0 to 0.5 ppm, depending on the wind strength. The analyser did not show low or intermediate values like 0.001 or 0.32 and so on. During the measurement of points 1 and 2, wind was present and NO₂ values of 0.4 ppm (≈ 0.76 mg/m³) were recorded. At point 3, there was no wind and a value of 0.0 ppm was recorded.

3. The NBT specialist, after taking measurements, decided to take an additional measurement near a road in the desert far from populated areas between the cities of Zarafshan and Navoi. The gas analyser also recorded a high value of 0.3 ppm (≈ 0.57 mg/m³), which is 6.7 times higher than the maximum permissible concentration. At the same time, according to the open data of the Hydrometeorological Service of Uzbekistan (<https://hydromet.uz>) as of 01.03, the average NO₂ content in Navoi city was ≈ 0.02 mg/m³ ≈ 0.01 ppm.

In connection with the above arguments, the conducted control measurement by Drager X-am 5600 device by the employee of sanitary-epidemiological service of Navoi region, in most probability are not reliable. The performed check measurement can be considered - not successful.

3.1.2 March

The March check measurement was taken on 29 March 2024. The measurement was carried out with the participation of the Sanitary-Epidemiological Service of Navoi region.

Table 6. Photo report of the measurements carried out in March

Location name	Photos
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<p>1. «Yangi Zarafshon» residential area. (41.57677° 64.17471°). Date: 29.03.2024, 09:30</p>		
<p>2. South-western part of the territory of Zarafshon oyna. (41.57396° 64.17882°). Date: 29.03.2024, 09:45</p>		
<p>3. Residential area of the company's employees. (41.57864° 64.18399°). Date: 29.03.2024, 10:00</p>		

The result of the check measurements is presented in the table and in Appendix 12.

Table 7. Results of check measurements of measurements in March

Measuring point	Results provided by the sanitary-epidemiological service		Maximum permissible concentration for RUz (mg/m3)		WHO standard	Detected exceedances	
	NO	NO2	NO	NO2		NO	NO2
1. Residential area "Yangi Zarafshon"	0	0,5	0,6	0,085	No peak level	no	yes (5.8 times more)
2. Southwestern part of the territory of Zarafshon oyna	0	0,4	0,6	0,085		no	yes (4.7 times more)




3. Residential area of the company's employees	0	0	0,6	0,085		no	no
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The same problems were noticed in the March measurement as in the February measurement. In connection with the above arguments, the check measurement made by the Drager X-am 5600 device by the expert of the sanitary-epidemiological service of the Navoi region in most probability are not reliable. The performed check measurement can be considered - **not successful**.

3.1.3 April

The March check measurement was taken on 26 April 2024. The measurement was carried out with the participation of the Sanitary-Epidemiological Service of Navoi region.

Table 8. Photo report of the measurements carried out in April

Location name	Photos
1. «Yangi Zarafshon» residential area. (41.57677° 64.17471°). Date: 26.04.2024, 11:15	
2. South-western part of the territory of Zarafshon oyna. (41.57396° 64.17882°). Date: 26.04.2024, 11:30	
3. Residential area of the company's employees. (41.57864° 64.18399°). Date: 26.04.2024, 11:45	

The result of the check measurements is presented in the table and in Appendix 13.

Table 9. Results of check measurements of measurements in April

Measuring point	Results provided by the sanitary-epidemiological service		Maximum permissible concentration for RUz (mg/m3)		WHO standard	Detected exceedances	
	NO	NO2	NO	NO2		NO	NO2
1. Residential area "Yangi Zarafshon"	0	0	0,6	0,085	No peak level	no	no
2. Southwestern part of the territory of Zarafshon oyna	0	0	0,6	0,085		no	no
3. Residential area of the company's employees	0	0	0,6	0,085		no	no

The same problems were noticed in the March measurement as in the February measurement. The results showed completely zero concentrations of NO and NO2 indicators, which is unlikely. In connection with the above arguments, the check measurement made by the Drager X-am 5600 device by the expert of the sanitary-epidemiological service of the Navoi region in most probability are not reliable. The performed check measurement can be considered - not successful.

3.1.4 May




It was decided not to conduct Check measurements in May with the involvement of specialists of sanitary-epidemiological service of Navoi city, due to the following aspects:

- The annual leave of the previously engaged specialist of the sanitary-epidemiological service of Navoi city.
- Lack of other specialists to perform this type of work in the sanitary-epidemiological service of Navoi.
- Inability to attract laboratories from other regions.

3.1.5 June

The June monitoring measurement was carried out on 26 June 2024. After unsuccessful measurements of the sanitary-epidemiological service, it was decided to conclude a contract with the Navoi region hydrometeorological centre for further measurements.

Table 10. Photo report of the measurements carried out in June

Location name	Photos
1. «Yangi Zarafshon» residential area. (41.57677° 64.17471°). Date: 26.06.2024, 09:52	
2. South-western part of the territory of Zarafshon oyna. (41.57396° 64.17882°). Date: 26.06.2024, 10:25	
3. Residential area of the company's employees. (41.57864° 64.18399°). Date: 26.06.2024, 10:55	

The result of the check measurements is presented in the table and in Appendix 14.

Table 11. Results of check measurements of measurements in April

Measuring point	Results provided by the Uzgidromet		Maximum permissible concentration for RUz (mg/m3)		WHO standard	Detected exceedances		Wind direction
	NO	NO2	NO	NO2		NO	NO2	
1. Residential area "Yangi Zarafshon"	0,08	0,19	0,6	0,085	No peak level	no	yes (2,2 times more)	Eastern (7 m/s)
2. Southwestern part of the territory of Zarafshon oyna	0,01	0,05	0,6	0,085		no	no	Eastern (2 m/s)
3. Residential area of the company's employees	0,05	0,06	0,6	0,085		no	no	No wind

In June, check measurements were successfully carried out jointly with Uzhydromet centre of Navoi region. There were no violations in the measurement methodology and no disagreements in the submitted report. The results recorded an excess of NO₂ in Point 1 (Residential area "Yangi Zarafshon") in 2.2 times. As can be seen from the results at the time of the measurements, the wind speed was 7 m/s on the east side. An oil-fueled train was passing 220 meters to the east at the time of the measurements. It is impossible to be sure that it was the train that caused the exceedance (Figure 15). But at the moment of measurement, according to the wind direction, the exhaust gases from the oil-fuelled train were flowing towards the measurement point, which could be a good reason for fixing this exceedance.



Figure 15. Diesel fuelled trains passing through at the time of measurement.

The performed check measurement can be considered as - **successful**.

3.1.6 July

The July check measurement was taken on 30 July 2024. The measurement was carried out with the participation of the Uzhydrometcentre of Navoi region.

Table 12. Photo report of the measurements carried out in June

Location name	Photos
1. «Yangi Zarafshon» residential area. (41.57677° 64.17471°). Date: 30.07.2024, 12:30	



The result of the check measurements is presented in the table and in Appendix 15.

Table 13. Results of check measurements of measurements in April

Measuring point	Results provided by the Uzgidromet		Maximum permissible concentration for RUz (mg/m ³)		WHO standard	Detected exceedances		Wind direction
	NO	NO ₂	NO	NO ₂		NO	NO ₂	
1. Residential area "Yangi Zarafshon"	0,05	0,089	0,6	0,085	No peak level	no	yes (1.05 times more)	Northern (7 m/s)
2. Southwestern part of the territory of Zarafshon oyna	0,03	0,068	0,6	0,085		no	no	Northern (3 m/s)
3. Residential area of the company's employees	0,05	0,077	0,6	0,085		no	no	Northern (6 m/s)

In June, check measurements were successfully carried out jointly with Uzhydromet centre of Navoi region. There were no violations in the measurement methodology and no disagreements in the submitted report. The results recorded an excess of NO₂ in Point 1 (Residential area "Yangi Zarafshon") in 1.05 times. As can be seen from the results, at the time of the measurements, the wind speed was 7 metres per second from the north side. Since the territory of the enterprise is located to the east of the measurement point, the impact of emissions from the enterprise Zarafshon Oyna in the north wind is excluded.

The performed check measurement can be considered as - **successful**.

3.2 Results of stationary measurements

The AQMesh stationary gas analyzer was installed on the project site on March 1, 2024, 14:40 (UTC+5:00). By the manufacturers' statement, the gas analyzer needs several days to adapt to the new location and record reliable results. From 14:00 on March 3, 2024, the gas analyzer began transmitting measured data to the server. The start of measurements was taken on March 4, 2024, for the accuracy of calculating average daily values.

Total data with prescribed exceedances of the maximum permissible concentration according to national and international WHO standards are presented below.

3.2.1 March

The first month of stationary measurements from March 4 to March 31, 2024, with the AQMesh gas analyzer was successful. The data are presented in the graphs and in the table in Appendix 16.

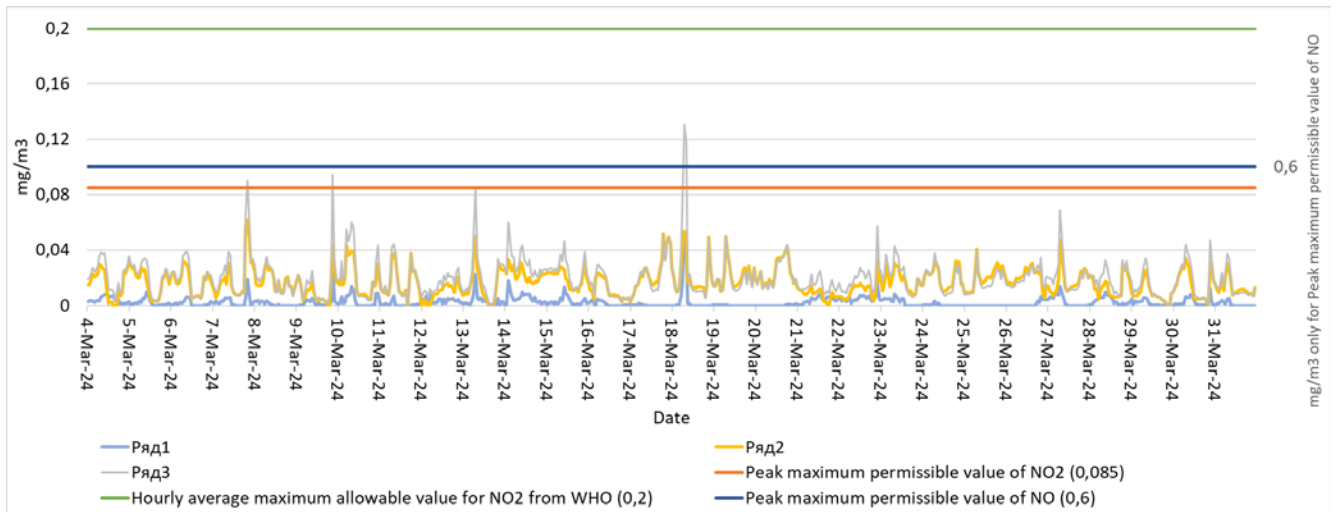


Figure 16. Graph of hourly average peak values and maximum permissible concentrations

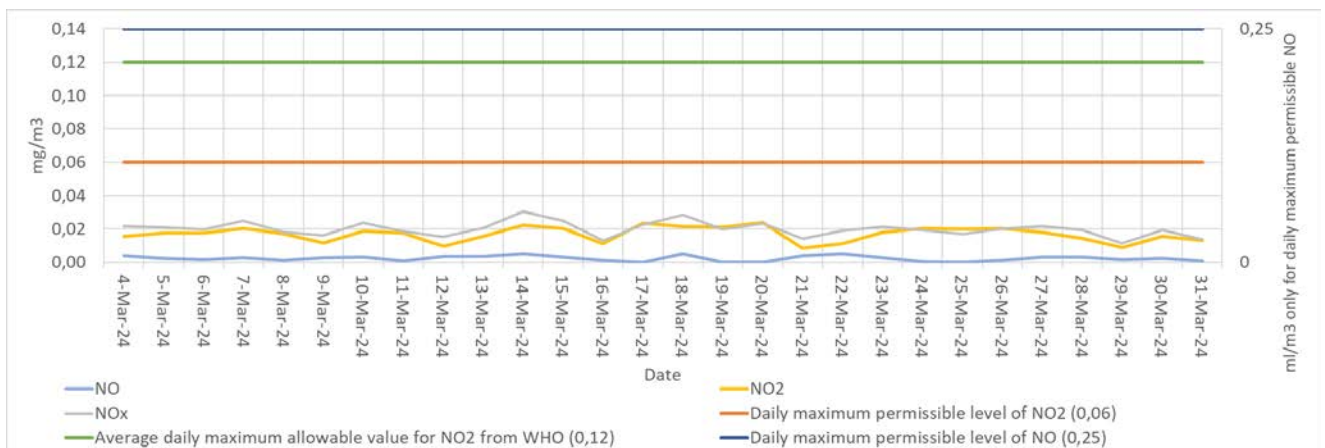


Figure 17. Graph of daily mean values and maximum permissible concentrations.

According to the data obtained on peak, average daily, and average monthly values, in accordance with national and international standards, no excess concentrations of NO and NO₂ components in the air were recorded.

3.2.2 April

Stationary measurements from April 1 to April 30, 2024, using the AQMesh gas analyzer were successfully completed. The measurement data are presented in the graphs and the table in Appendix 17.

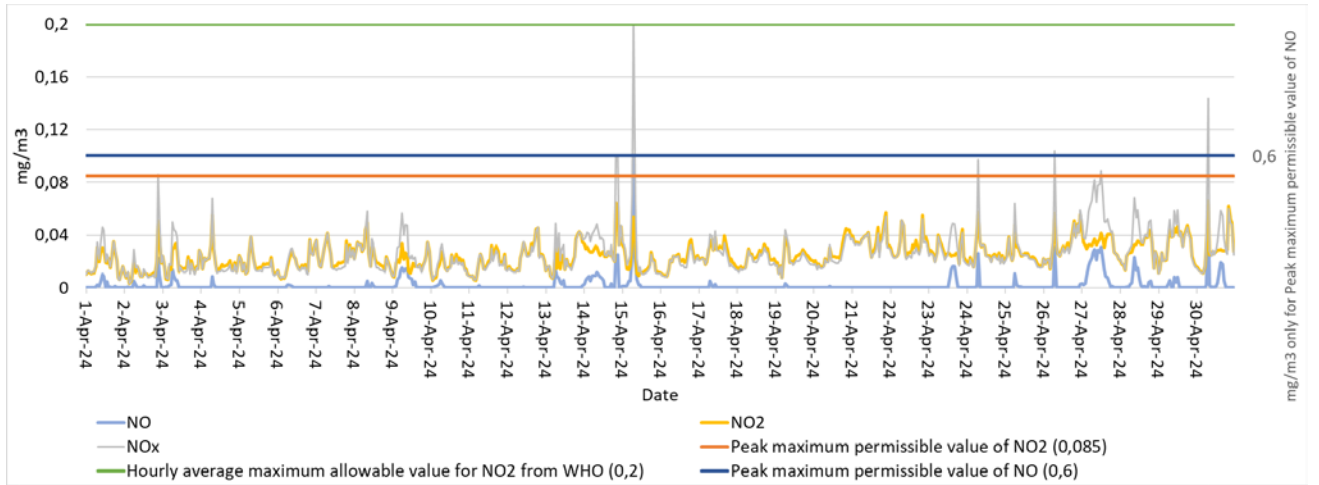


Figure 18. Graph of hourly average peak values and maximum permissible concentrations

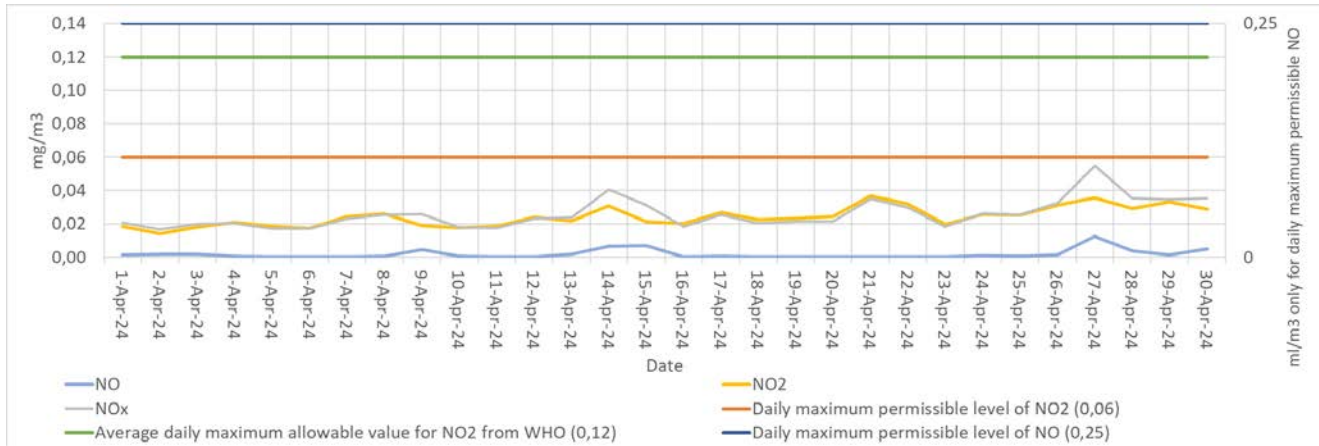


Figure 19. Graph of daily mean values and maximum permissible concentrations.

According to the data obtained on peak, average daily, and average monthly values, in accordance with national and international standards, no excess concentrations of NO and NO₂ components in the air were recorded.

3.2.3 May

Stationary measurements from May 1 to May 31, 2024, using the AQMesh gas analyzer were successfully completed. The measurement data are presented in the graphs and the table in Appendix 18.

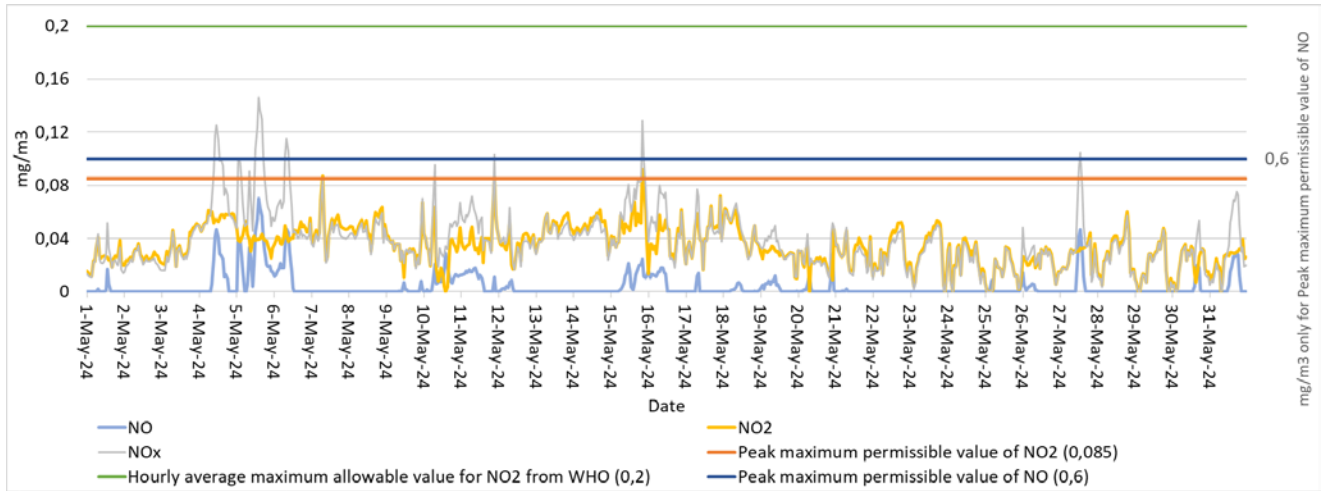


Figure 20. Graph of hourly average peak values and maximum permissible concentrations

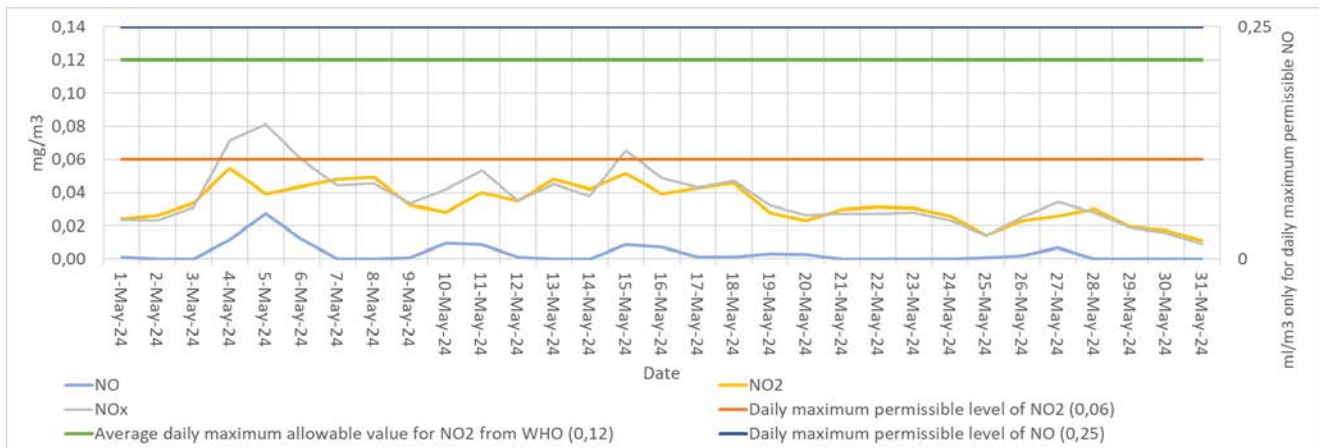


Figure 21. Graph of daily mean values and maximum permissible concentrations.

Recorded exceedances for peak nitrogen dioxide (NO₂):

Table 14. Recorded peak exceedances for the month of May.

Date	Time period for exceeding the maximum permissible concentration limit		Maximum allowable NO ₂ concentration for R of Uzb (mg/m ³)	Recorded maximum NO ₂ values (mg/m ³)	Detected exceedances
	From	To			
07.05.2024	7:10	7:38	0,085	0,102	yes (1,2 times more)

08.05.2024	21:15		0,085	0,086	yes (1,01 times more)
11.05.2024	21:10	21:43	0,085	0,092	yes (1,08 times more)
15.05.2024	20:20	21:47	0,085	0,104	yes (1,22 times more)

In observations for May there are 4 recorded short-term cases of exceeding the maximum permissible concentration limit for the component NO₂. The exceedances are short-term and are not critical. According to the obtained data on daily average and monthly average maximum permissible values, according to local and international standards - no exceedances of NO and NO₂ components in the air were recorded.

3.2.4 June

From June 2024 onwards, some problems have been observed in the data measurement process, as detailed in section 3.2.6. Detailed data are presented in the graphs and in Appendix 19.

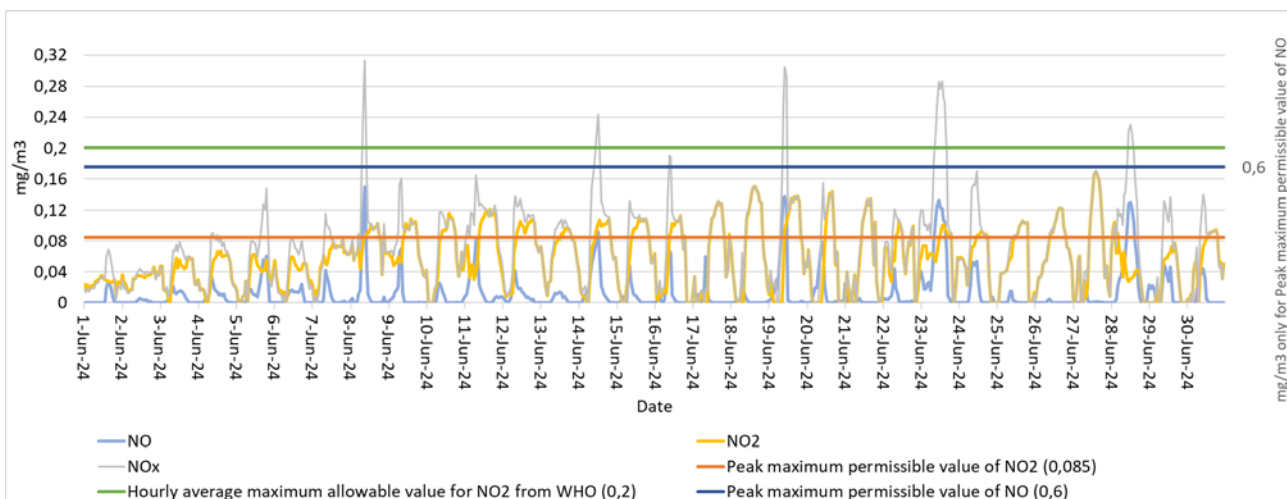


Figure 22. Graph of hourly average peak values and maximum permissible concentrations

As can be seen from the graph of peak values of NO₂ component, starting from 8 June, daily exceedances are observed from 8 to 28 and 30 June on average from 10:00-12:00 to 18:00-20:00. Maximum peak values were recorded on 27 June and equal to 0.169 mg/m³, which is 2 times higher than the national value of maximum permissible concentration. No exceedances of the NO₂ component according to the WHO standard were detected. No exceedances of the NO component according to the national standard were detected.

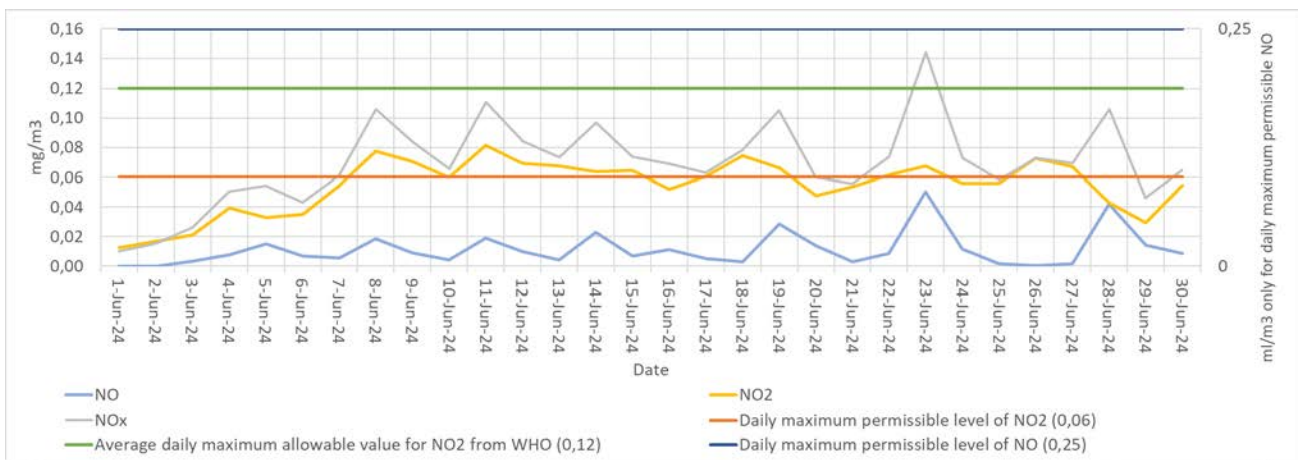


Figure 23. Graph of daily mean values and maximum permissible concentrations.

Regarding mean daily values, there were exceedances of the NO₂ component on 8-9, 11-15, 17-19, 22-23 and 26-27 June. The maximum daily average exceedance was recorded on 11 June (0.081 mg/m³) and the value is 1.35 times higher than the maximum permissible concentration. No exceedances were detected for the NO component.

3.2.5 July

In July 2024, the same problem as in June was observed in the data measurement process. Detailed data are presented in the graphs and in Appendix 20.

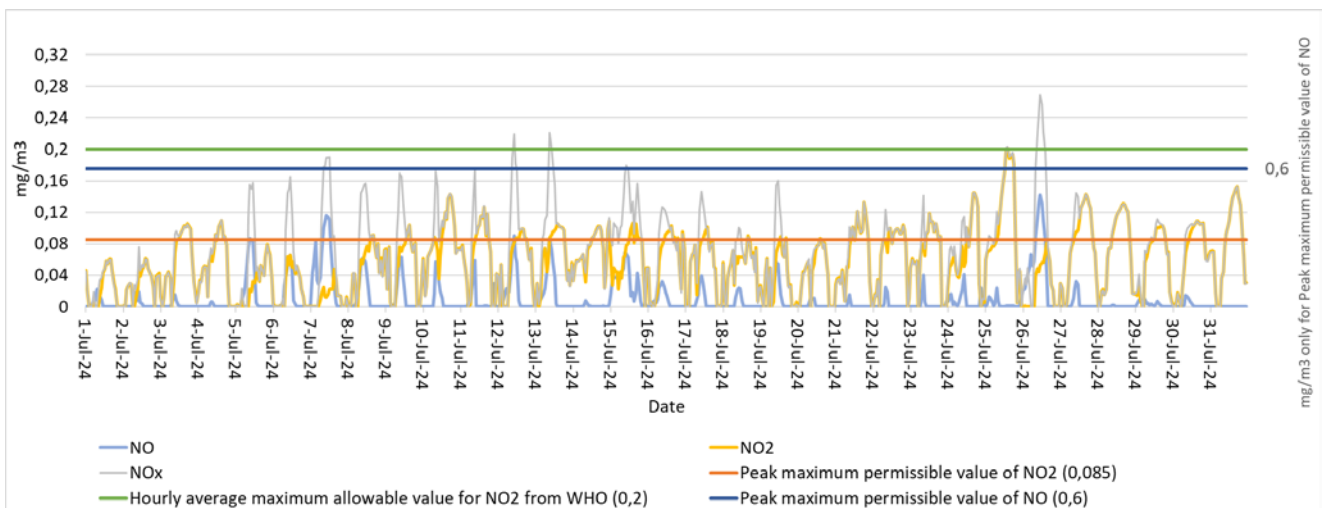


Figure 24. Graph of hourly average peak values and maximum permissible concentrations

As can be seen from the graph of peak values of NO₂ component, starting from 3-4, 8-25, 27-31 July there are daily exceedances on average from 10:00-12:00 to 18:00-20:00 or during midday. The maximum peak values were recorded on 25 July at 0.2 mg/m³, which is 2.35 times the national maximum permissible concentration value. No exceedances of NO component in accordance with the national standard were detected.

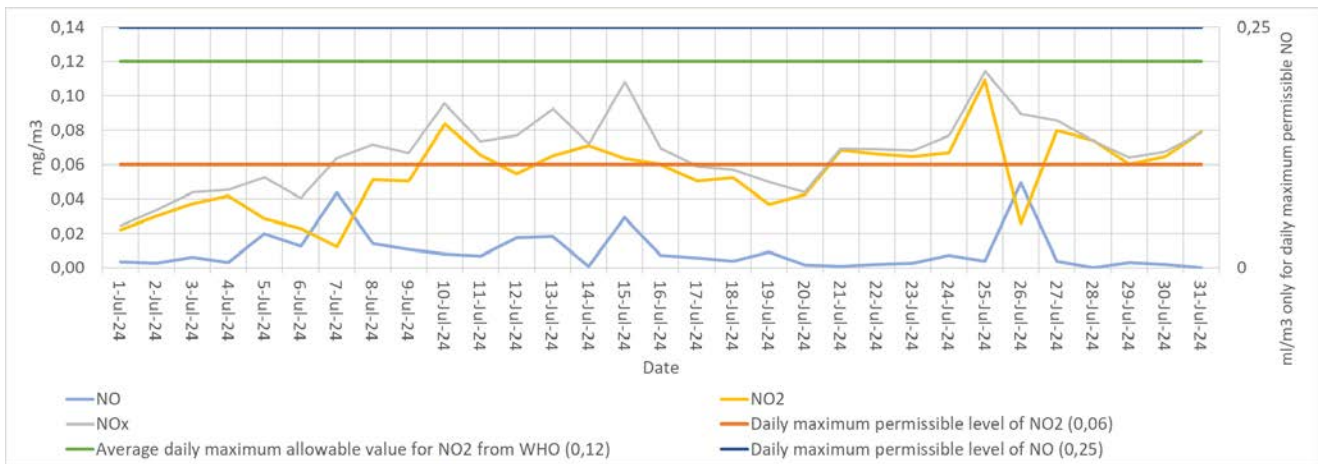


Figure 25. Graph of daily mean values and maximum permissible concentrations.

As for daily averages, exceedances of NO₂ were observed on 10-11, 13-16, 21-2 and 27-31 July. The maximum daily mean exceedance was recorded on 11 June (0.1 mg/m³), and this value is 1.66 times higher than the maximum permissible concentration. No exceedances were recorded for the NO component.

3.2.6 The problem of stationary measurements

Starting from May 31, 2024, the data received from the AQMesh gas analyzer began to have interruptions. As can be seen in the figure, the analyzer stopped recording data during the daytime. The instructions for the analyzer indicate that this may be due to extreme climatic conditions. Since the end of May, high air temperatures and dry air have been recorded in Uzbekistan. This could affect the incorrect operation of the device.



Figure 26. Data received with some data missing from the AQMesh gas analyser from 31 May to early June

After discovering the issue, AQMesh remotely fixed it and provided access to the missing data. AQMesh also expressed doubts about the reliability of NO₂ readings starting in June 2024 due to extreme weather conditions.

Text of the letter from the AQMesh specialist:

"AQMesh data processing corrects for temperature and humidity variations, but the conditions in this region over the last months have been exceptional. There is sufficient reason for reduced confidence in the AQMesh readings over the summer at Zarafshon Oyna, particularly NO₂, that they should not be used for compliance. Whilst electrochemical gas sensors are the best and really the only small sensor continuous monitoring option for measuring NO and NO₂ accurately, the sensors are challenged by environmental conditions, in this case high temperature and low humidity."

AQMesh representative Amanda Billingsley commented on the issue.

«Electrochemical gas sensors are the best available small sensors for this application, offering unbeatable accuracy in most conditions. However, they do have some limitations in particular combinations of environmental and mixed pollutant conditions. The sensor manufacturer outlines the challenges presented by sustained low humidity here. As environmental conditions are never completely comparable over time and distance, it is difficult to be conclusive about the impact of conditions at these margins, but it is possible to identify periods of reduced confidence in the data.

As a result, gas readings taken when temperature is above 30 degrees C and RH% is below 30% are flagged as 'Extreme Environment' and redacted, as has been standard with AQMesh for several years. These redacted readings were made available on request but they should be considered to have a lower level of confidence.

In addition, the deep negative NO₂ readings show that the sensor is being affected, either by a potential H₂S cross-gas effect, or by an extreme combination of temperature and relative humidity. Whilst this does not necessarily affect positive readings, it does affect confidence in the readings. Because the processing for NO and NO₂ is not the same, but the electrochemical sensors (NO and NO₂) are affected by environmental conditions in the same way, it is possible that the NO₂ negatives are indicating that both sensors are functioning on their margin of operation. As we are unable to rule out the presence of H₂S on the site, at a level that could be causing the negatives (a negative cross-gas effect is listed by the sensor manufacturer), we have to consider the possibility that both sensors are being affected by an extreme combination of temperature and humidity. We have looked at data from other sites with a similar environmental profile and do not see the same patterns (negatives) so we cannot draw conclusions about the reliability of data without further investigation.

However, we believe there are some useful indicative measurements here, even during the hottest, driest months. Trend analysis suggests NO peaks (primary pollution) followed by longer periods of NO₂. NO₂ measured may be a direct conversion of locally-generated NO, or could be - as we often see - more of a background pattern. The pod is installed downwind of a number of facilities and the NO₂ source cannot be determined from these readings alone.

NO₂

- All readings above zero, redacting Extreme Environment: average 27.54ppb / 92.2% data capture
- All readings above zero, including Extreme Environment; average 26.99ppb / 94.5% data capture

NO

- All readings above zero, redacting Extreme Environment: average 11.22ppb / 46.6% data capture *
- All readings above zero, including Extreme Environment: average 8.95ppb / 49.4% data capture *

* data capture rate is low due to a high proportion of very minor negatives between 0 and -2ppb. If all data points above -1ppb are included the capture rate rises to 84% and to 94% for NO if anything above -2ppb is included. We have used zero as an absolute cut off but these small negative readings have validity when local scaling is applied (not possible in this project).

The NO and NO2 gas levels seem plausible for this location and provide indicative measurements. »

3.3 Additional data from stationary measurements

3.3.1 August

Stationary measurements were made from August 1 through August 30, 2024 using an AQMesh gas analyzer. The measurement data are presented in the graphs and table in Appendix 21.

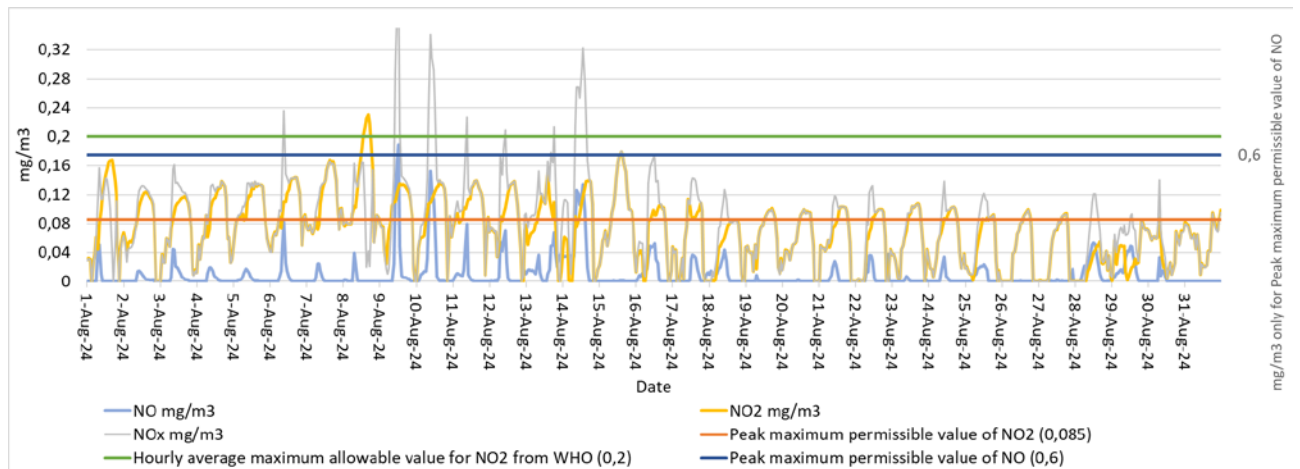


Figure 27. Graph of hourly average peak values and maximum allowable concentrations for August 2024

Peak exceedances for the NO2 component were observed daily except August 28, averaging from 11:00 to 19:00. The maximum peak values were recorded on August 8 and amounted to 0.23 mg/m3, which is 2.7 times higher than the national value of the maximum permissible concentration. No exceedances of the NO2 component according to the WHO standard were detected. No exceedances of the NO component according to the national standard were detected.

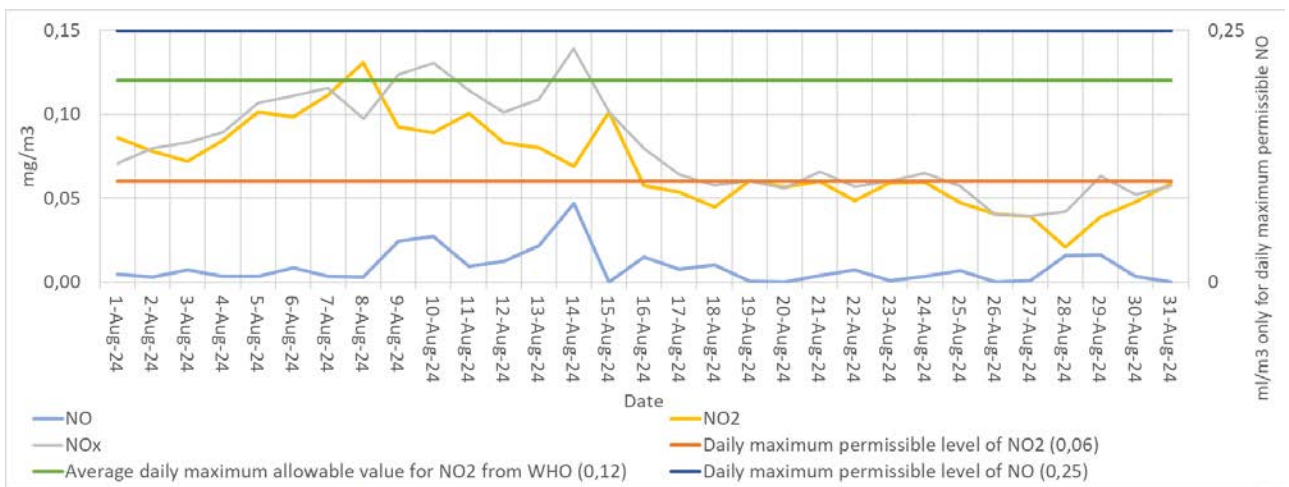


Figure 28. Graph of daily mean values and maximum permissible concentrations for August 2024

As for daily averages, exceedances of NO₂ component were observed on August 1-15, 19 and 21. The maximum daily average exceedance was recorded on August 8 (0.13 mg/m³), and this value is 2.1 times higher than the maximum permissible concentration for the national indicator and 1.08 times higher than the WHO norm. No exceedances were recorded for the NO component.

3.3.2 September

Stationary measurements were made from September 1 through September 30, 2024 using an AQMesh gas analyzer. The measurement data are presented in the graphs and table in Appendix 22.

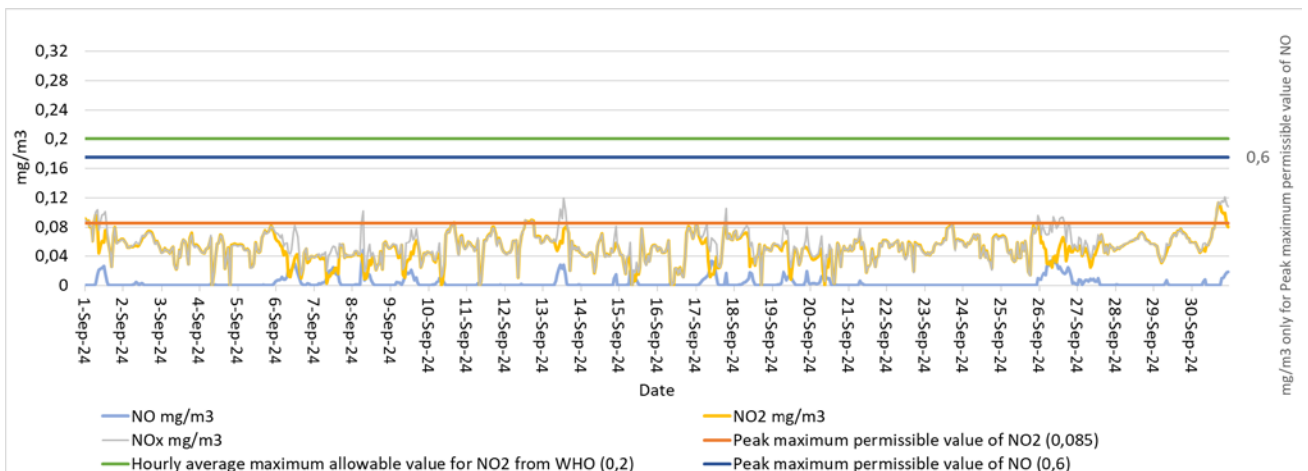


Figure 29. Graph of hourly average peak values and maximum allowable concentrations for September 2024

Peak exceedances for the NO₂ component were observed only on September 1, 10, 12, 23, 30. The maximum peak values were recorded on September 30 and amounted to 0.11 mg/m³, which is 1.3 times higher than the national value of the maximum permissible concentration. No exceedances of the NO₂ component according to the WHO standard were detected. No exceedances of the NO component according to the national standard were detected.

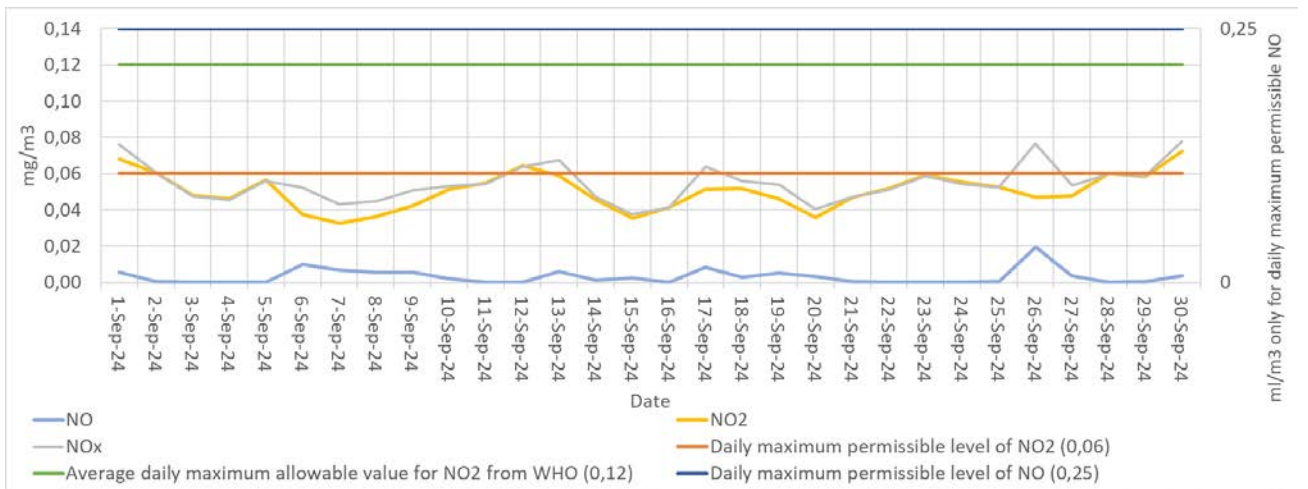


Figure 30. Graph of daily mean values and maximum permissible concentrations for September 2024

As for daily averages, exceedances of NO₂ component were observed on September 1-2, 12 and 30. The maximum daily average exceedance was recorded on September 30 (0.072 mg/m³), and this value is 1.2 times higher than the maximum permissible concentration for the national indicator. No exceedances were recorded for the NO component.

3.3.3 October

Stationary measurements were made from October 1 through October 30, 2024 using an AQMesh gas analyzer. The measurement data are presented in the graphs and table in Appendix 23.

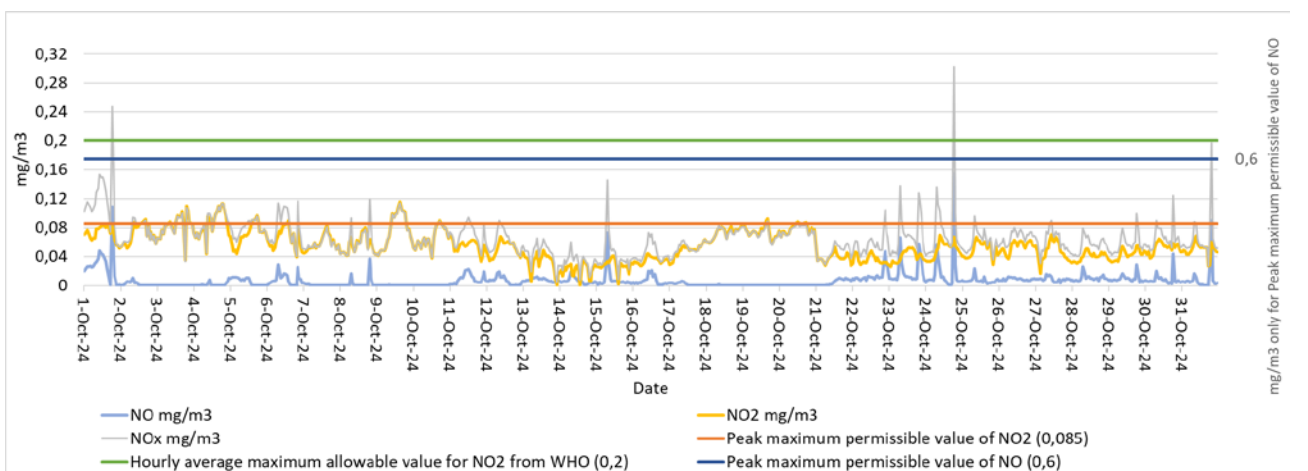


Figure 31. Graph of hourly average peak values and maximum allowable concentrations for October 2024

Peak exceedances for the NO₂ component were observed only on October 1-6, 9-10, 19-20. The maximum peak values were recorded on September 30 and amounted to 0.11 mg/m³, which is 1.3 times higher than the national value of the maximum permissible concentration. No exceedances of the NO₂ component according to the WHO standard were detected. No exceedances of the NO component according to the national standard were detected.

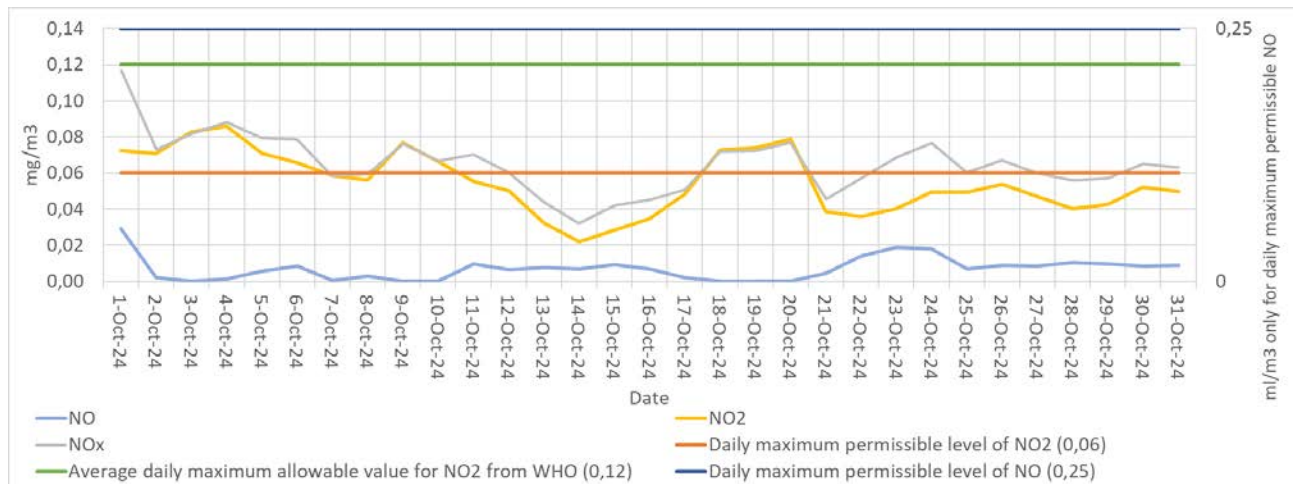


Figure 32. Graph of daily mean values and maximum permissible concentrations for October 2024

As for daily averages, exceedances of the NO₂ component were observed on October 1-6, 8-9 and 20. The maximum daily average exceedance was recorded on October 4 (0.085mg/m³), and this value is 1.4 times higher than the maximum permissible concentration for the national indicator. No exceedances were recorded for the NO component.

3.3.4 November

Stationary measurements were made from November 1 through November 10, 2024 using an AQMesh gas analyzer. The measurement data are presented in the graphs and table in Appendix 24.

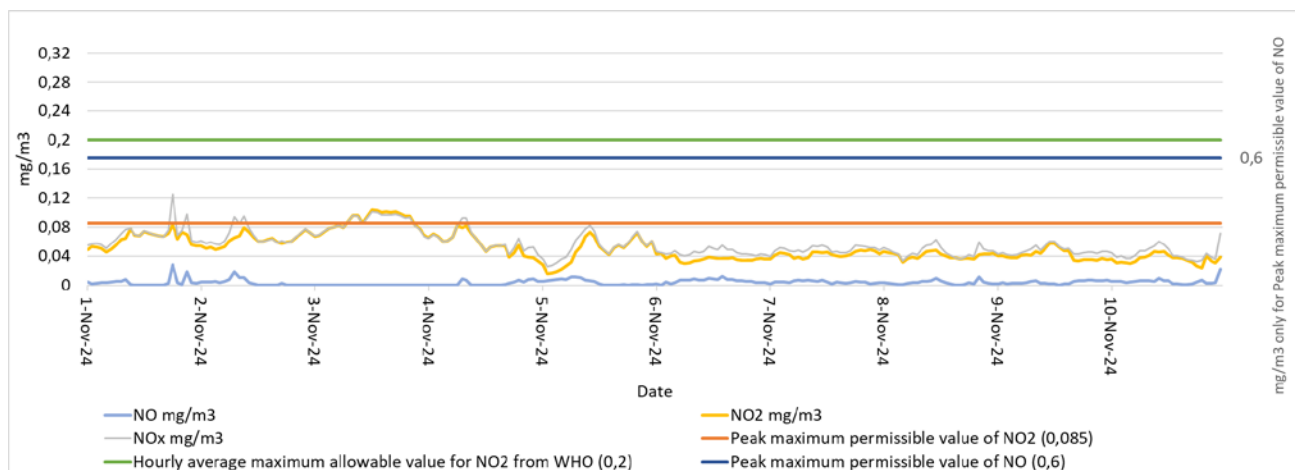


Figure 33. Graph of hourly average peak values and maximum allowable concentrations for November 2024

November was the last month of stationary measurements, therefore data of the first 10 days of November are presented. Peak exceedances for the NO₂ component were observed only on October 3. Exceedance of the maximum value lasted from 7 am to 9 pm and the maximum peak values amounted to 0.1 mg/m³, which is 1.17 times higher than the national value of the maximum permissible concentration. No exceedances of the NO₂ component according to the WHO standard were detected. No exceedances of the NO component according to the national standard were detected.

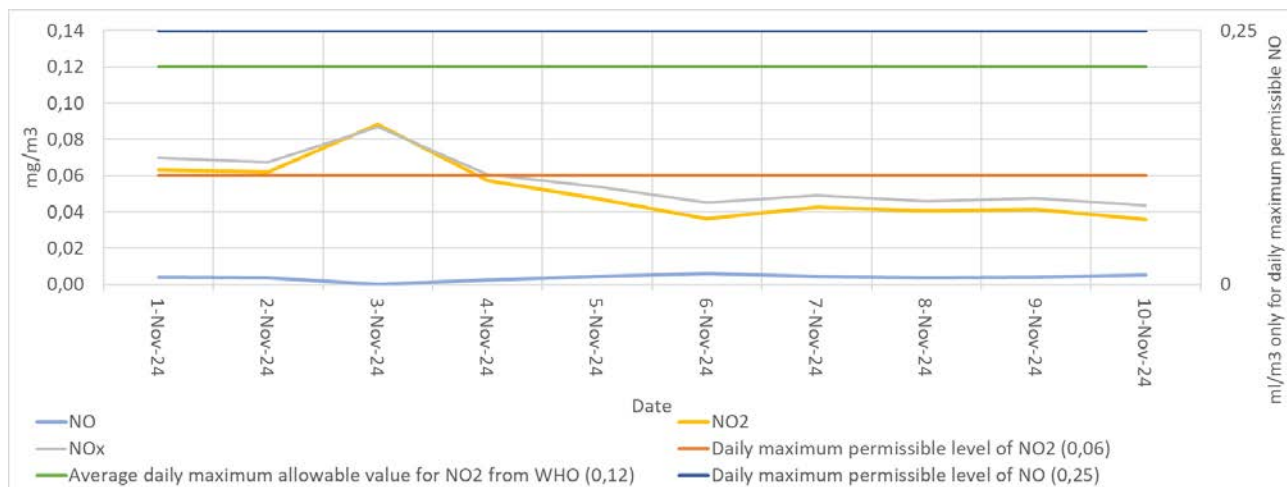


Figure 34. Graph of daily mean values and maximum permissible concentrations for November 2024

As for daily averages, exceedances of NO₂ component were observed on November 1-3. The maximum daily average exceedance was recorded on November 3 (0.088mg/m³), and this value is 1.46 times higher than the maximum permissible concentration for the national indicator. No exceedances were recorded for the NO component.

3.4 Full set of stationary measurement data

As can be seen from Table 15 for 8 months of observations on monthly averages, exceedances of the NO₂ component were recorded in June, July, August, September and October. Also additionally in the data of maximum permissible concentrations for the Republic of Uzbekistan there is an annual average value of 0.04 (mg/m³). This value can be compared with the average data for 12 months. But since our measurements lasted for 8 months, this value is given in Table 15 for comparison.

Table 15. Table of average values by month and for 5 months

Month	Results recorded by AQMesh gas analyzer	Maximum permissible monthly concentration	Maximum annual concentration limit according to R of Uzb (mg/m ³)	Detected exceedances	
	Monthly averages	R of Uzb (mg/m ³)		Monthly average	Annually (considering only 8 months)

	NO (mg/m ³)	NO ₂ (mg/m ³)	NO _x (mg/m ³)	NO (mg/m ³)	NO ₂ (mg/m ³)	NO ₂ (mg/m ³)	NO	NO ₂	NO ₂
March	0,002	0,017	0,020	0,012	0,05	0,04	no	no	0,0448 (excess)
Aprill	0,002	0,024	0,026	0,012	0,05		no	no	
May	0,003	0,033	0,037	0,012	0,05		no	no	
June	0,011	0,054	0,070	0,012	0,05		no	Yes	
July	0,01	0,055	0,068	0,012	0,05		no	Yes	
August	0,009	0,070	0,080	0,012	0,05		no	Yes	
Septemb er	0,003	0,051	0,055	0,012	0,05		no	Yes	
October	0,007	0,055	0,065	0,012	0,05		no	Yes	

All recorded data for NO and NO₂ components for the study period through of November 2024 are presented in a separate document (annex 1) in .xlsx format. This annex contains peak and average hourly values in ug/m³ values.

Conclusion

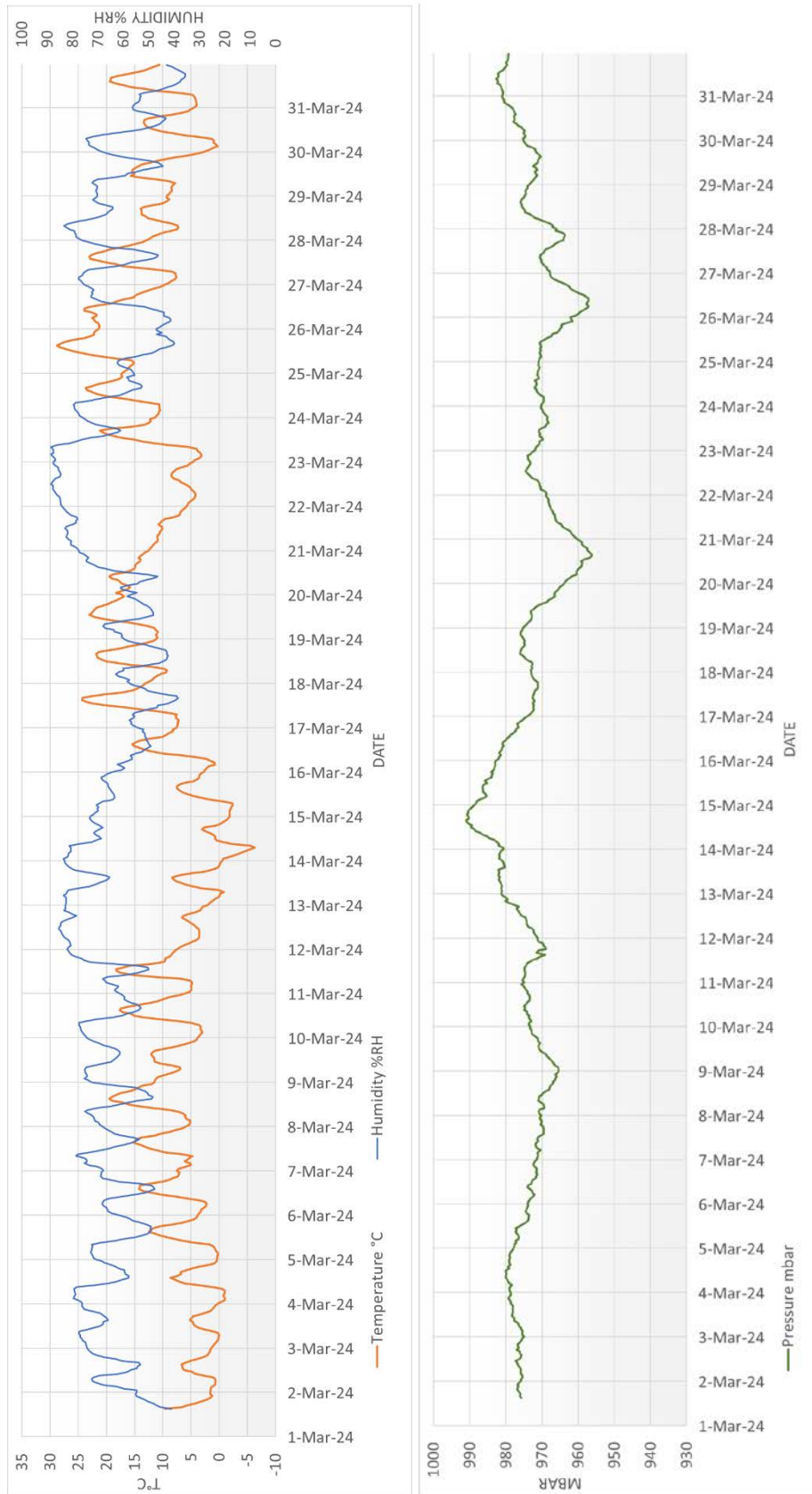
For the whole period of work on measurement of air components on the territory of the enterprise “Zarafshon Oyna”. There were 5 check measurements, of which 3 measurements were conducted by the Sanitary and Epidemiological Service of Navoi region, and two measurements were conducted by the service of Uzgidromet of Navoi region. All measurements for February, March, April 2024 conducted by the Sanitary-Epidemiologic Service can be considered unsuccessful. Two measurements in June and July 2024 conducted by Uzhydromet can be considered successful. The exceedances recorded in June and July at one of the three locations (residential area of Yangi Zarafshon. 41.57677° 64.17471°) for the NO₂ component are likely to have another source (railroad depot, etc.).

Stationary measurements were carried out from March to August (5 months), the main period and from August to November - the additional period using AQMesh gas analyzer.

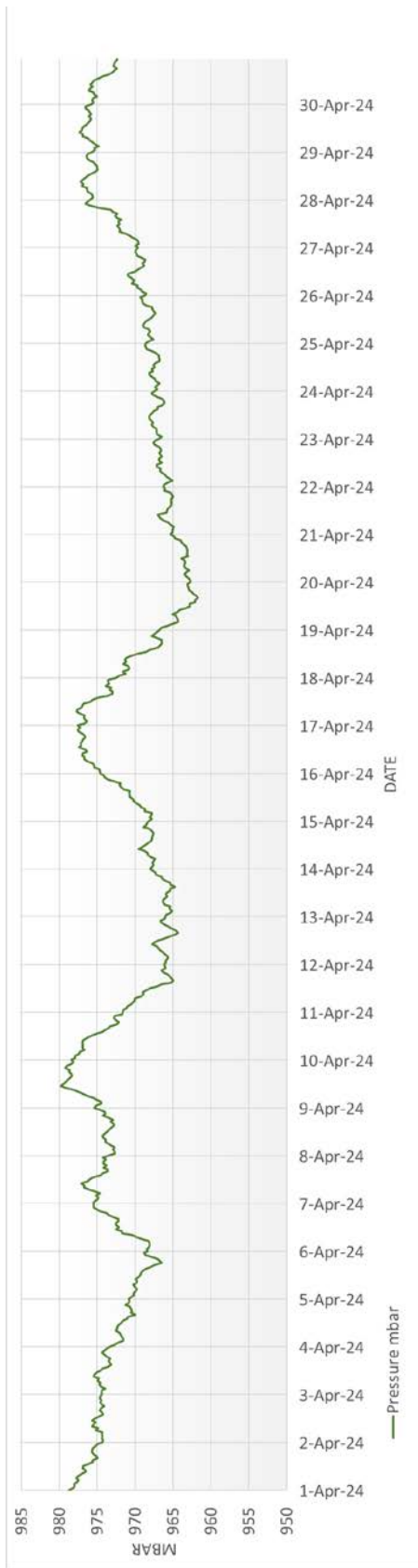
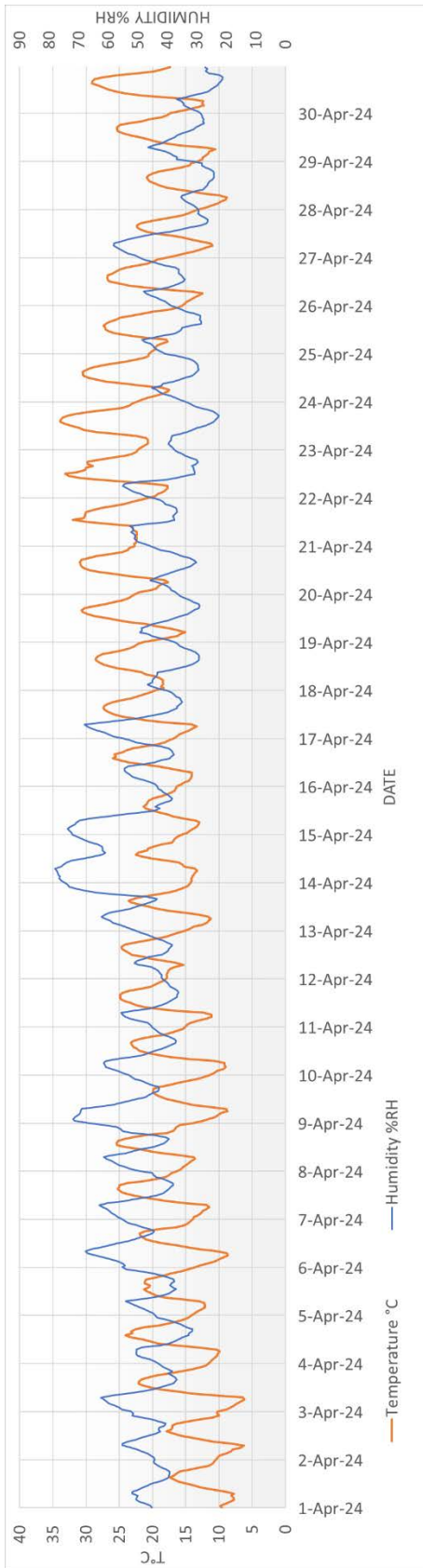
As can be seen from all the obtained and calculated data, no exceedances were recorded in March and April, in May there were 4 short-term peak exceedances of the maximum allowable concentrations of the NO₂ component according to the national standard, the source of these exceedances was not identified. In June, taking into account the described problems related to extreme conditions of changes, 14 exceedances of daily mean values of NO₂ component by maximum permissible concentrations of Pz were recorded. In the additional period from August to November, peak exceedances of NO₂ component and average daily exceedances were also recorded. On August 8, an exceedance was recorded for the NO₂ component according to WHO standards. August, September, October have average monthly exceedances of NO₂ by national standards.

Attachments

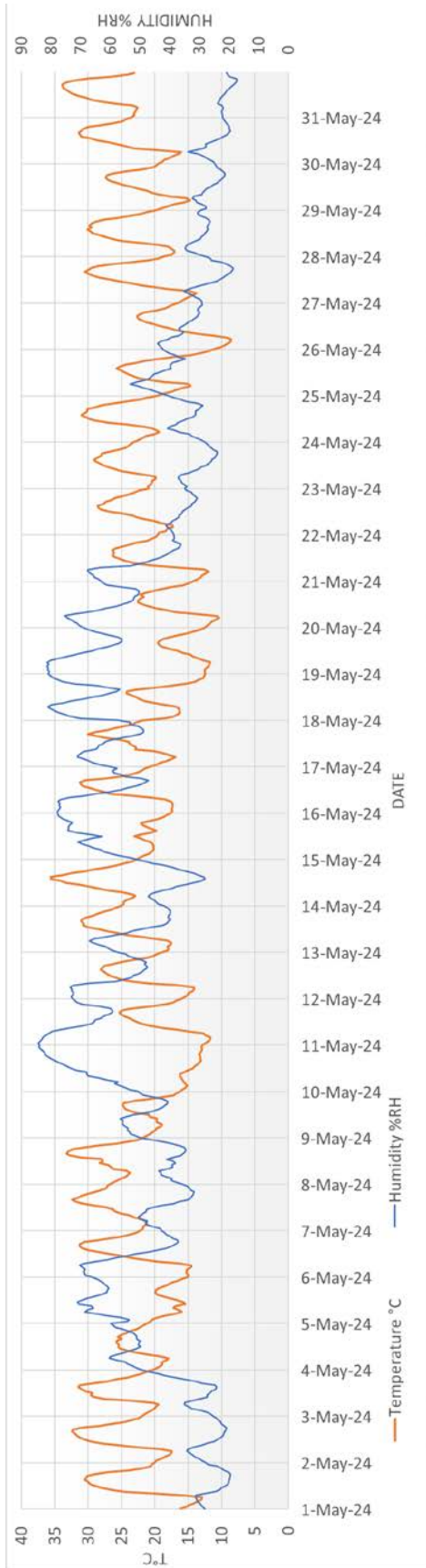
Appendix 1. Weather data for March 2024.



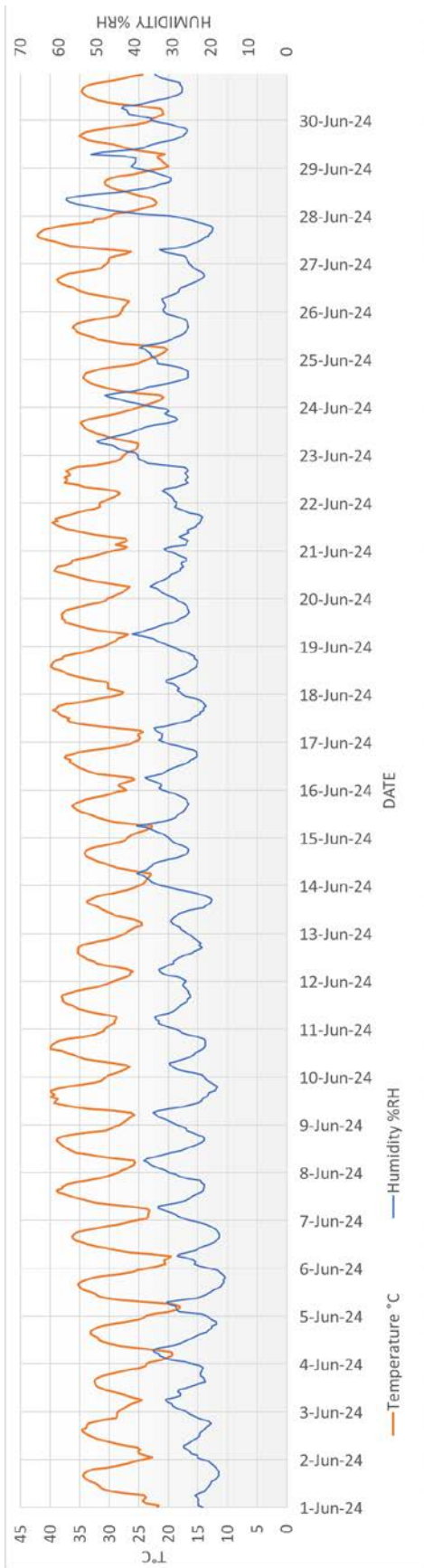
Weather data for April 2024.



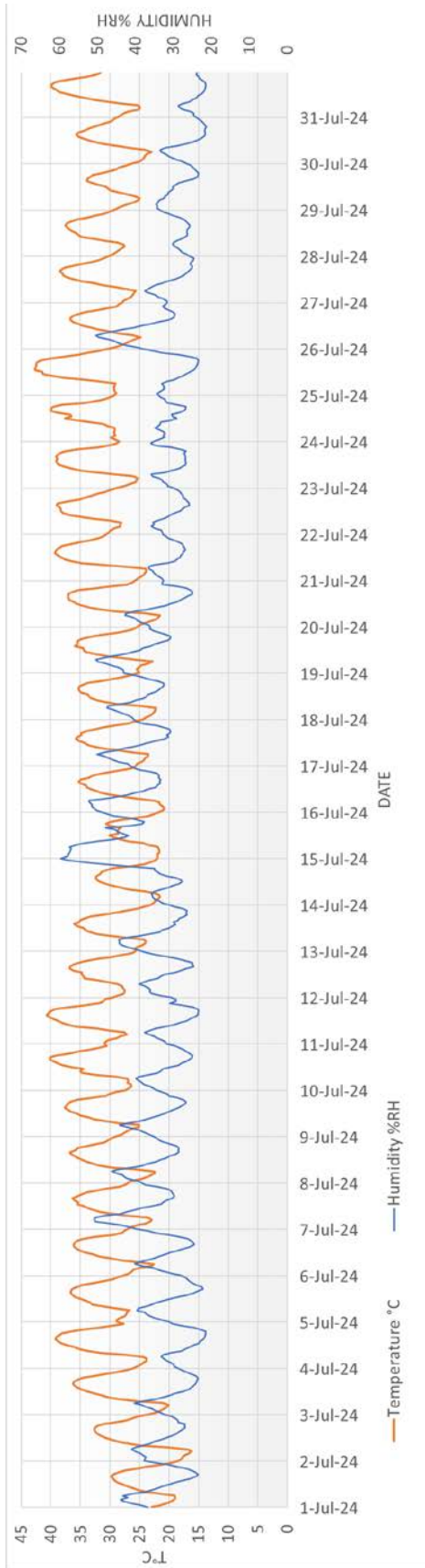
Weather data for May 2024.



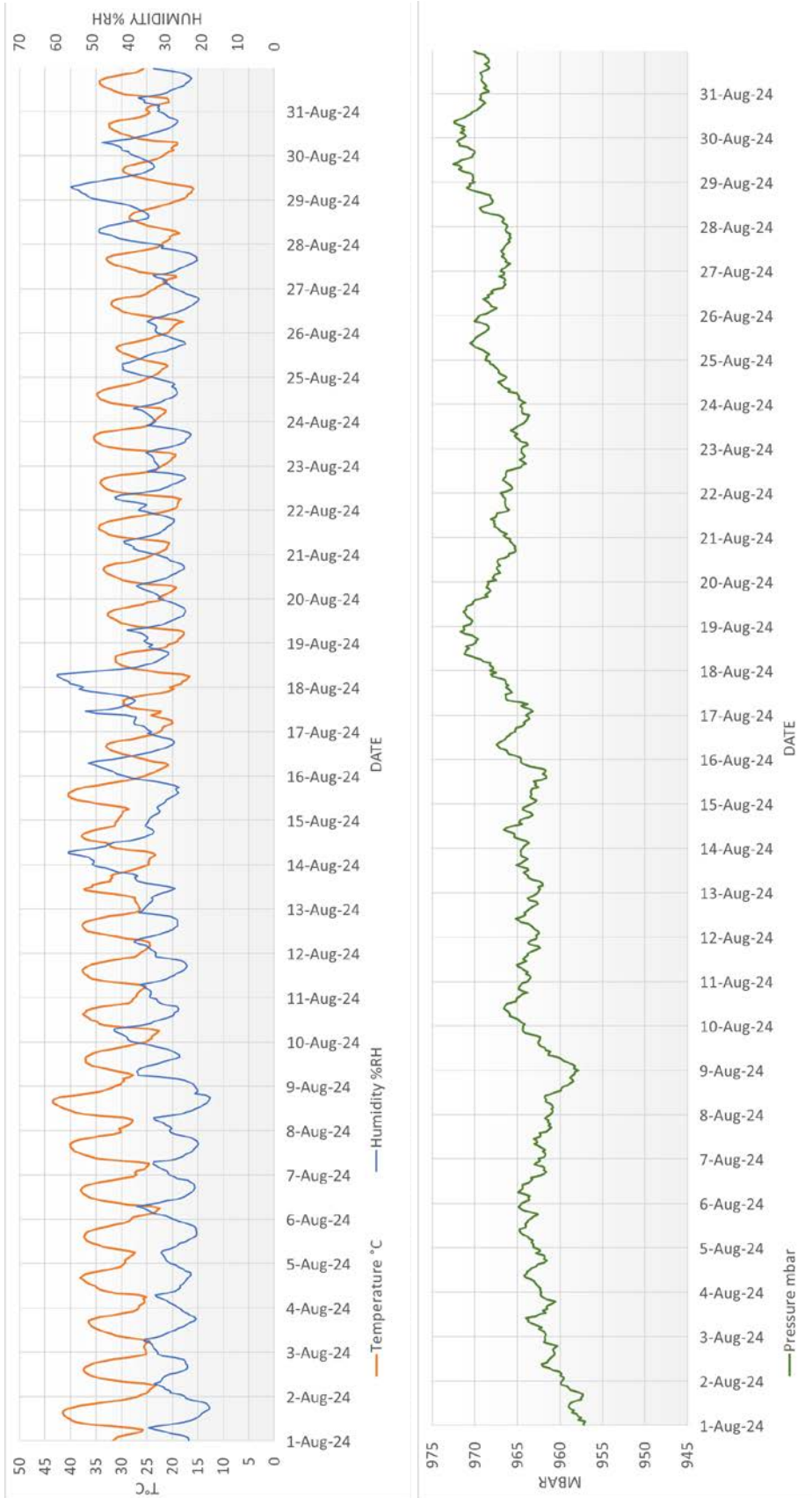
Weather data for June 2024.



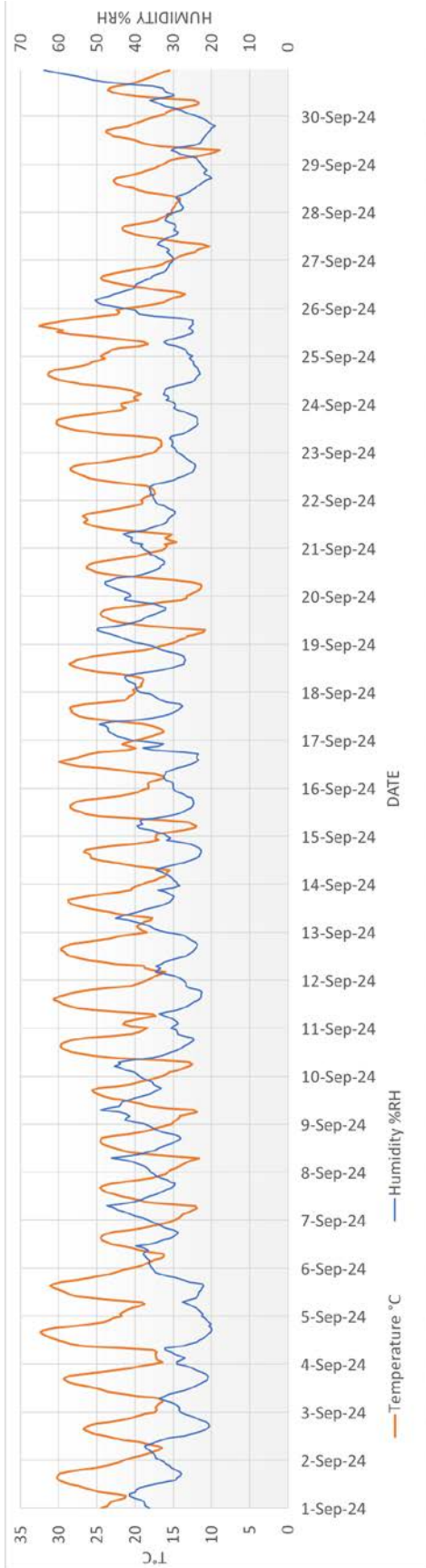
Weather data for July 2024.



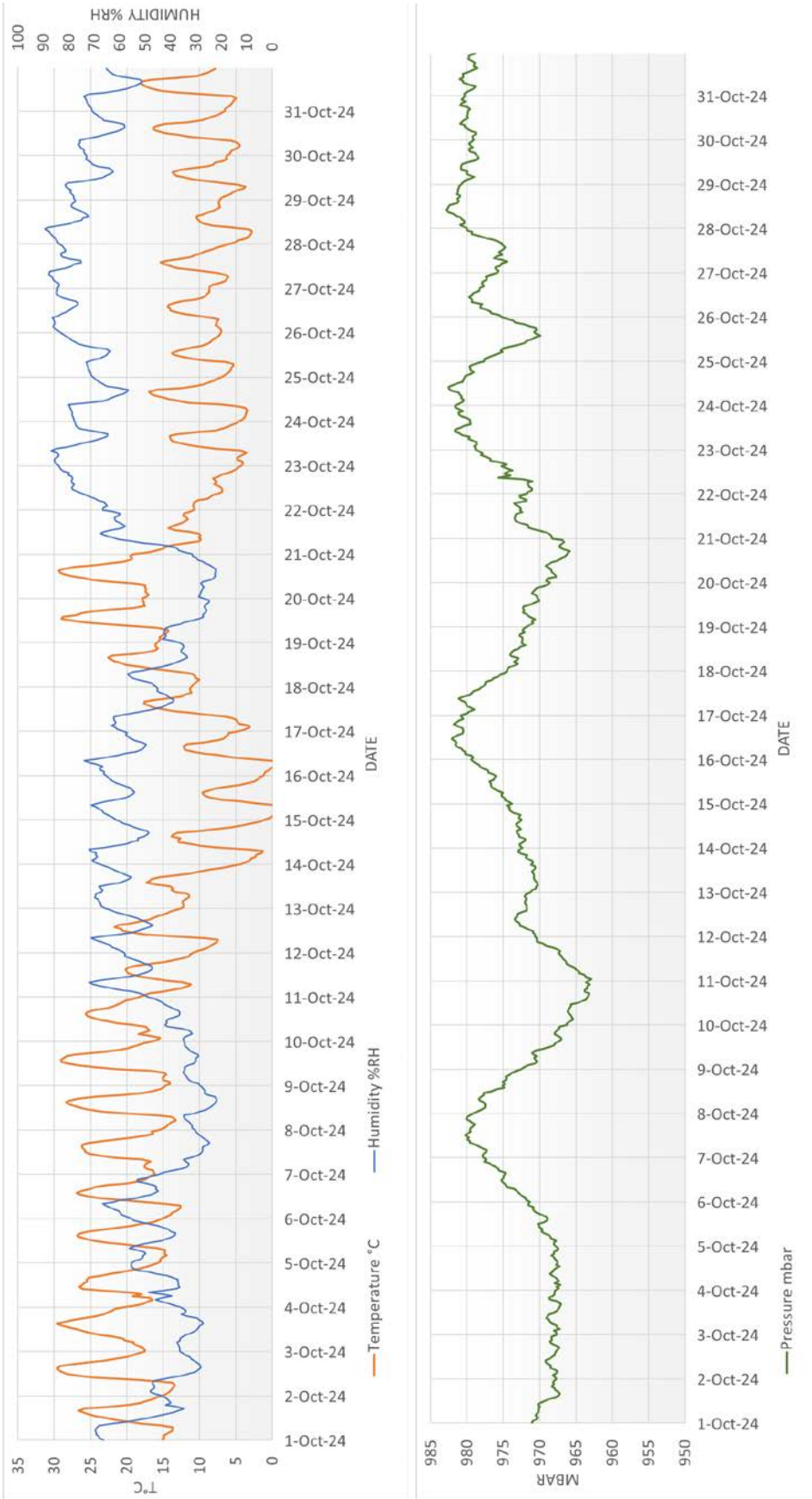
Weather data for August 2024.



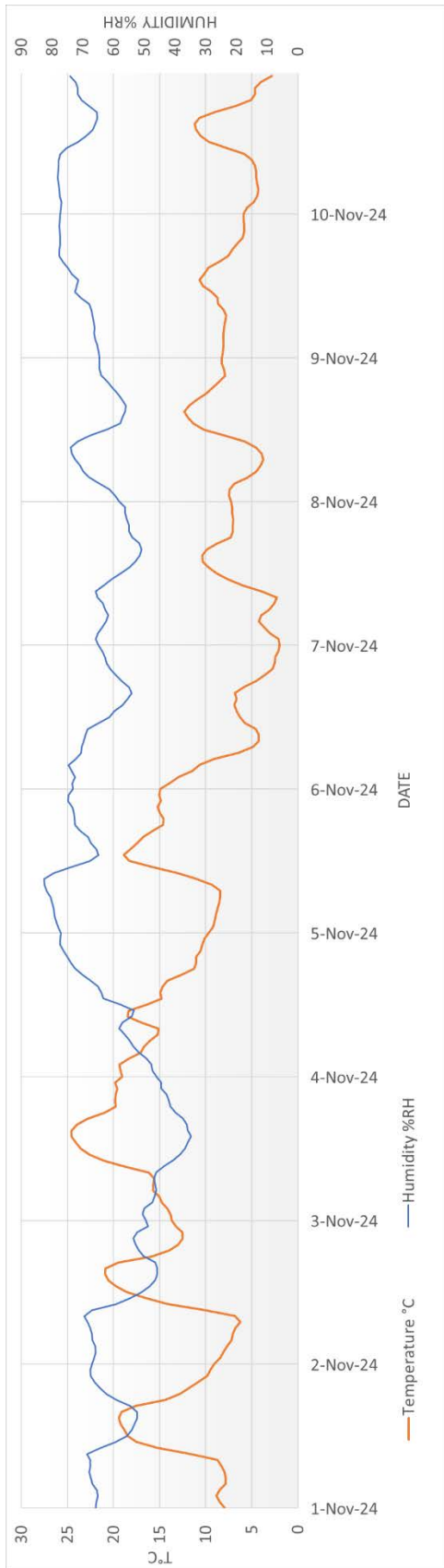
Weather data for September 2024.




Weather data for October 2024.



Weather data for November 2024.



Appendix 2. Official response of the Department of Ecology and Environmental Protection of Navoi Oblast to the complaint of the director of Zarafshon Oyna regarding the inspection of the brick factory due to odour emissions spreading in the territory of Zarafshon Oyna.



**O‘ZBEKISTON RESPUBLIKASI EKOLOGIYA VA ATROF-MUHITNI
MUHOFAZA QILISH DAVLAT QO‘MITASI**

**NAVOIY VILOYATI EKOLOGIYA VA ATROF-MUHITNI MUHOFAZA
QILISH BOSHQARMASI**

210100 Navoiy sh, S.Ayniy ko‘chasi 27-uy, tel: 79-220-61-65, tel:79-222-07-70
vab-sahifa:<http://www.navoiyeco.uz>, elektron manzil: navoiy@uznature.uz, e-xat navoiytabiat@exat.uz

2021- yil “ 07 ” 07 № 02-02 / 2493 Navoiy sh.

**Директору
ООО “ZARAFSHON OYNA”
Г. Муминову**

Вашем обращении в приемную Премьер-Министра Республики Узбекистан по рассмотрению заявок предпринимателей от 17 июня 2021 года под номером 2324- bgu /21, было указано, что работники завода ООО “ZARAFSHON OYNA” пожаловались от неприятного запаха, который выделяется от производственной деятельности завода жженного кирпича ООО “ZARAFSHON GOLDEN GROUP” в атмосферу, по этому поводу несколько раз обращались к руководителям ООО “ZARAFSHON GOLDEN GROUP” но результатов не было.

Ваша жалоба была визуально изучено сотрудниками аналитической лаборатории областного управления Экологии и охраны окружающей среды и Зарафшанской городской инспекцией, было установлено следующее:

21 июня 2021 года сотрудники аналитической лаборатории областного управления Экологии и охраны окружающей среды из-за приостановки деятельности завода ООО “ZARAFSHON GOLDEN GROUP” не смогли провести отборов от выброса для аналитического анализа. При участии сотрудника ООО “ZARAFSHON OYNA” А.Актемова была составлено акт о данном случае сотрудниками лаборатории и Зарафшанской городской инспекцией.

10 февраля 2021 года отправлено предупредительное письмо №12 для выполнения требований Экологического законодательства руководителям ООО “OMAD BIZNES ZARAFSHON”.

В соответствии с Указом Президента Республики Узбекистан УП-5863 от 30 октября 2019 года "Об утверждении концепции за охрану окружающей среды Республики Узбекистан на период до 2030 года", установлено что в нашей стране осуществляется рациональное использование природных ресурсов, улучшение санитарно-экологического состояния, благоустройство объектов окружающей среды (атмосферного воздуха, воды, земель), охраняемые природные территории),

В соответствии с указом Президента Республики Узбекистан УП-5863 от 30 октября 2019 года "Об утверждении концепции за охрану окружающей среды Республики Узбекистан на период до 2030 года", установлено что в нашей стране осуществляется рациональное использование природных ресурсов, улучшение санитарно-экологического состояния, благоустройство объектов окружающей среды ((атмосферного воздуха, воды, земель), охраняемые природные территории), а также были выявлены другие негативные факторы, влияющие на вопросы сохранения и качества.

Вышеуказанным постановлением Государственного комитета Экологии и охраны окружающей среды в целях обеспечения своевременного и качественного решения вопросов о снижении выбросов загрязняющих веществ в атмосферный воздух, организация применения пыле и газодерживающих устройств с эффективностью не менее 99,5% в стационарных источниках;

оснащение атмосферного воздуха автоматическими системами анализа сбросов из первичных (организованных) застойных источников и сбросов из загрязняющих источников водных объектов;

обеспечить эффективность действующих производственных мощностей в стационарных источниках загрязнения атмосферного воздуха с использованием пыле и газодерживающих устройств не ниже 95%;

для управления устройствами, улавливающими пыль и газов из стационарных источников, с целью обеспечения их непрерывной работы в исправном состоянии.

своевременная замена и установка фильтров пылегазодерживающих устройств;

проведение измерительных и аналитических работ с оборудованием в целях обеспечения соблюдения норм выбросов загрязняющих веществ из застойных источников в атмосферу с привлечением аналогов в сроки, установленные экологическими нормативными документами;

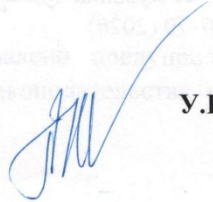
21 июня текущего года ООО "ZARAFSHON GOLDEN GROUP" было направлено повторное предупредительное письмо от 02-02/2101 о проведении регулярных мероприятий по предотвращению распространения любых загрязняющих веществ, образующихся в процессе производства, в окружающую среду.

Заявляем вам, что ООО "ZARAFSHON GOLDEN GROUP" будет находиться под контролем областного управления экологии и охраны окружающей среды. В случае несоблюдения вышеуказанных требований будут приняты меры в рамках наших полномочий.

Если вы не удовлетворены нашими действиями, можете обратиться в вышестоящие инстанции.

Начальник управления

У.Раззоков



Appendix 3. Technical translation of the official response of the Navoi Oblast Department of Ecology and Environmental Protection to the complaint of the director of Zarafshon Oyna LLC regarding the inspection of the brick factory due to the spread of odour on the territory of Zarafshon Oyna LLC.



**STATE COMMITTEE FOR ECOLOGY AND ENVIRONMENT
PROTECTION OF THE REPUBLIC OF UZBEKISTAN**

**ECOLOGY AND ENVIRONMENTAL PROTECTION
OF NAVOYI REGION EXECUTIVE OFFICER**

210100 Navoiy sh, S.Ayniy ko'chasi 27-uy, tel: 79-220-61-65, tel:79-222-07-70
vob-sahifa:<http://www.navoiyeco.uz>, elektron manzil: navoiy@uznature.uz, e-xat navoiytabiat@exat.uz

2021- yil " 07 " 07

№ 0202 / 2493

Navoiy sh.

**To the director of the
OOO "ZARAFSHON OYNA"
Г. Муминову**

In your appeal to the reception room of the Prime Minister of the Republic of Uzbekistan on consideration of applications of entrepreneurs, June 17, 2021 under #2324-bgu/21, it was stated "that the workers of the plant "ZARAFSHON OYNA" LLC complained about the bitterness of unpleasant odor, which the production activities of the factory of brick "ZARAFSHON GOLDEN GROUP" LLC into the atmosphere, on this occasion several times appealed to the MANAGERS of "ZARAFSHON GOLDEN GROUP" LLC, but there was no result".

Your complaint was visually examined by the analytical laboratory. by the staff of the Regional Department of Ecology and Environmental Protection and Zarafshan City Inspectorate, and the following was established:

On June 21 of this year, an employee of the analytical laboratory of the Regional Department of Ecology and Environmental Protection was unable to conduct a visual analytical analysis due to the suspension of the activities of the plant of ZARAFSHON GOLDEN GROUP LLC. With the participation of "ZARAFSHON OYNA" LLC employee A. Aktemov, a report on this case was drawn up by the laboratory staff and Zarafshan City Inspectorate. On February 10, 2021, a warning letter on fulfillment of the requirements of the Environmental Legislation was sent to the managers of "OMAD BIZNES ZARAFSHON" LLC under #12.

In accordance with the decree of the President of the Republic of Uzbekistan UP_5863 dated October 30, 2019 "On approval of the concept for environmental protection of the Republic of Uzbekistan for the period up to 2030, it is established that in our country is carried out rational use of natural resources, improvement of sanitary-ecological condition, improvement of environmental objects ((air, ", water, land)., protected natural areas), as well as other negative factors affecting the issues of conservation and quality.

By the above-mentioned resolution of the State Committee of Ecology and Environmental Protection in order to ensure timely and qualitative solution of issues on reduction of pollutant emissions into the atmospheric air, organization of application of dust and gas-retaining.

The organization of dust and gas retention devices with efficiency of not less than 99.5% in stationary sources;

equipping the atmospheric air with automatic systems for analysis of discharges from primary (organized) stagnant sources and discharges from polluting sources of water bodies; ensure the efficiency of existing production facilities at stationary sources of atmospheric air pollution using dust and gas retention devices of at least 95%;

To manage dust and gas-capturing devices from stationary sources in order to ensure their continuous operation in good condition.

The timely replacement and installation of filters of dust and gas collecting devices;

Carrying out measuring and analytical works with equipment in order to ensure compliance with the emission standards for pollutants and gases from stationary sources.

Ensuring compliance with the norms of pollutant emissions from stagnant SOURCES into the atmosphere with the involvement of analogs within the terms established by environmental regulatory documents;

On June 21 of the current year "ZARAFSHON GOLDEN GROUP" LLC was sent a repeated warning letter from 02-02/2101 about carrying out of regular measures to prevent the spreading of any pollutants formed during the production process into the environment.

We declare to you that "ZARAFSHON GOLDEN GROUP" LLC shall be under the supervision of the Regional Department of Ecology and Environmental Protection. In the event of non-compliance with the above requirements, action will be taken within the scope of our authority.

If you are not satisfied with our actions, you may appeal to higher authorities.

Head of Department

У.Раззоков

Вып: Т.Куванов
(79) 222-7007(204#)

Appendix 4. Table of odour fixation emanating from air emissions from a brick factory.

Date	Tine	Wind direction	Activity at the brick factory	Presence of odour	Employee name
25.03.2024	16:00	On the side of the brickyard	Active	Available	Маманазарова.Г
25.03.2024	17:00	On the side of the brickyard	Active	Available	Тураева С
25.03.2024	18:15	Other	Active	Not available	Тураева С
25.03.2024	19:00	Other	Active	Not available	Тураева С
25.03.2024	20:40	On the side of the brickyard	Active	Available	Нарзуллаева.Н
25.03.2024	21:15	Other	Active	Not available	Нарзуллаева.Н
25.03.2024	22:47	Other	Active	Not available	Нарзуллаева.Н
25.03.2024	23:20	On the side of the brickyard	Active	Available	Нарзуллаева.Н
26.03.2024	0:05	On the side of the brickyard	Active	Available	Нарзуллаева.Н
26.03.2024	1:55	Other	Active	Not available	Нарзуллаева.Н
26.03.2024	2:30	Other	Active	Not available	Нарзуллаева.Н
26.03.2024	3:14	Other	Active	Available	Нарзуллаева.Н
26.03.2024	4:45	Other	Active	Not available	Нарзуллаева.Н
26.03.2024	5:25	Other	Active	Not available	Нарзуллаева.Н
26.03.2024	6:40	On the side of the brickyard	Active	Available	Нарзуллаева.Н
26.03.2024	7:20	Other	Active	Not available	Нарзуллаева.Н
26.03.2024	8:30	On the side of the brickyard	Active	Available	Тураева С
26.03.2024	9:18	Other	Active	Not available	Тураева С
26.03.2024	10:05	On the side of the brickyard	Active	Available	Тураева С
26.03.2024	11:15	On the side of the brickyard	Active	Available	Тураева С
26.03.2024	12:13	On the side of the brickyard	Active	Available	Тураева С
26.03.2024	13:00	Other	Active	Not available	Тураева С
26.03.2024	14:20	Other	Active	Not available	Тураева С
26.03.2024	15:26	Other	Active	Not available	Тураева С
26.03.2024	16:31	On the side of the brickyard	Active	Available	Тураева С
26.03.2024	17:34	Other	Active	Not available	Тураева С
26.03.2024	18:26	Other	Active	Not available	Тураева С
26.03.2024	19:42	Other	Active	Not available	Тураева С
26.03.2024	20:55	Other	Active	Not available	Сайпидинова Н
26.03.2024	21:50	Other	Active	Not available	Сайпидинова Н
26.03.2024	22:30	Other	Active	Not available	Сайпидинова Н
26.03.2024	23:26	Other	Active	Not available	Сайпидинова Н
27.03.2024	0:07	Other	Active	Not available	Сайпидинова Н
27.03.2024	1:12	Other	Active	Not available	Сайпидинова Н
27.03.2024	2:27	Other	Active	Not available	Сайпидинова Н
27.03.2024	3:40	Other	Active	Not available	Сайпидинова Н
27.03.2024	4:22	Other	Active	Not available	Сайпидинова Н
27.03.2024	5:28	On the side of the brickyard	Active	Available	Сайпидинова Н

27.03.2024	6:30	On the side of the brickyard	Active	Available	Сайпидинова Н
27.03.2024	7:00	Other	Active	Not available	Сайпидинова Н
27.03.2024	8:00	Other	Active	Not available	Нарзуллаева.Н
27.03.2024	9:12	Other	Active	Not available	Нарзуллаева.Н
27.03.2024	10:23		Inactive		Нарзуллаева.Н
27.03.2024	11:16		Inactive		Нарзуллаева.Н
27.03.2024	12:10		Inactive		Нарзуллаева.Н
27.03.2024	13:25	Other	Active	Not available	Нарзуллаева.Н
27.03.2024	14:30	On the side of the brickyard	Active	Available	Нарзуллаева.Н
27.03.2024	15:15	On the side of the brickyard	Active	Available	Нарзуллаева.Н
27.03.2024	16:00	On the side of the brickyard	Active	Available	Нарзуллаева.Н
27.03.2024	17:00	On the side of the brickyard	Active	Available	Нарзуллаева.Н

Appendix 5. Protocol of laboratory analysis of ambient air samples at Zarafshon Oyna on March 11-12, 2020.

Служба мониторинга загрязнения природной среды Узгидромета (СМЗ)
Лаборатория мониторинга загрязнения атмосферного воздуха (ЛМЗАВ)
г.Ташкент, ул. Бодомзор йули 1-й проезд, 72, тел 237-15-47, 150-85-02
Свидетельство об аттестации экоаналитической лаборатории № 84-28 от 27.12.2019г.

«Утверждаю»

Начальник СМЗ

М.А. Плосен

14 марта 2020 г.

Протокол №5
лабораторного анализа проб атмосферного воздуха

Лабораторные испытания объекта: Навоийская область, стекольный завод г.Зарафшан
Полное наименование Заказчика его адрес: ООО «ZARAFSHON OYNA»
Цель, задачи испытаний (измерений): Определение фоновое загрязнения атмосферного воздуха
НД на объекты испытаний (измерений): СанПиН 0293-11; ГОСТ 17.2.4 05-83; ГОСТ 17.2.6.02-85; O'z O'U 0726:2016; O'z O'U 0724:2016
Описание и идентификация образцов: диоксид азота, оксид азота, диоксид серы, оксид углерода и пыль
Дата отбора образцов: 11 и 12 марта 2020 г.

Результаты анализов приведены в таблице.

№		Место отбора	Время отбора	NO ₂ мг/м ³	NO мг/м ³	SO ₂ мг/м ³	CO мг/м ³	Пыль мг/м ³
1	11.03.20г.	<u>1 точка</u>	14:00	0,07	0,06	0,006	2	0,1
	11.03.20г.	Возле проходной завода	17:30	0,05	0,05	0,007	2	0,1
	12.03.20г.		09:05	0,06	0,06	0,007	2	0,2
				<i>Ср.с.</i>	<i>0,06</i>	<i>0,06</i>	<i>0,007</i>	<i>2</i>
2	11.03.20г.	<u>2 точка</u>	14:50	0,08	0,07	0,007	1	0,3
	11.03.20г.	Восточная сторона завода	18:10	0,04	0,05	0,006	2	0,2
	12.03.20г.		09:45	0,08	0,07	0,006	2	0,1
				<i>Ср.с.</i>	<i>0,07</i>	<i>0,06</i>	<i>0,006</i>	<i>2</i>
ПДК ср.с., мг/м³				0,06	0,25	0,2	4,0	0,35

PS: По диоксиду азота наблюдалось превышение среднесуточной предельно допустимой концентрации в точке №2 – 1,2ПДК

Начальник ЛМЗАВ


(подпись)

Г.Н. Гранкина

Инженер 1 кат. ЛМЗАВ


(подпись)

Н.К. Теряева

Non-Official translate

Environmental Pollution Monitoring Service of UzHydromet (EPM) Atmospheric Air Pollution
Monitoring Laboratory

Tashkent city, 72, Bodomzor road 1 turn str., tel 237-15-47, 150-85-02

Certificate on certification of ecoanalytical laboratory No 84-28 dated 27.12.2019.

Approved by the Head of EPM – Signature – M. A. Plotsen. March 14, 2020.

Protocol №5

Laboratory analysis of atmospheric air samples:

Laboratory tests of the object: Navoi region, glass factory of Zarafshan city.

Full name of the Customer its address: "ZARAFSHON OYNA' LLC

Purpose, objectives of tests (measurements): Determination of background pollution of
atmospheric air

ND for objects of tests (measurements): SanPiN 0293-11: GOST 17.2.4 05-83; GOST 17.2.6.02-85;
O'z' OU' 0726:2016; O'z' OU 0724:2016

Description and identification of samples: nitrogen dioxide, nitrogen oxide, nitrogen oxide, sulphur
dioxide, carbon monoxide and dust Date of sampling: 1 and 12 March 2020.

The results of the analyses are summarised in the table.

No		Place of selection	Selection time	NO ₂ mg/m ³	NO mg/m ³	SO ₂ mg/m ³	CO ₂ mg/m ³	Dust mg/m ³
1	11.03.2020	1 st point near the factory gate	14:00	0.07	0.06	0.006	2	0.1
	11.03.2020		17:30	0.05	0.05	0.007	2	0.1
	12.03.2020		09:05	0.06	0.06	0.007	2	0.2
	Average content			0.06	0.06	0.007	2	0.1
2	11.03.2020	2 nd point east side of the plant	14:50	0.08	0.07	0.007	1	0.3
	11.03.2020		18:10	0.04	0.05	0.006	2	0.2
	12.03.2020		09:45	0.08	0.07	0.006	2	0.1
	Average content			0.07	0.06	0.006	2	0.2
Permissible concentration limit mg/m ³				0.06	0.25	0.2	4.0	0.35

PS: Nitrogen dioxide exceeded the average daily maximum permissible concentration at point No2 -
1.2 Maximum allowable concentration

Head of the Laboratory of Atmospheric Air Pollution Laboratory – Signature – G.N. Grankina

Engineer of the first category of the Atmospheric Air Pollution Laboratory – Signature – N.K.
Teryaeva

Appendix 6. Current certificate of calibration of the gas analyser AQMesh.



Tel. +44 (0)1789 207459
Email. info@aqmesh.com
www.aqmesh.com



Certificate of calibration

This is to certify that the sensors:

NO: 160120131

NO2: 202390602

in AQMesh pod of the following serial number 2450094 have been calibrated against certified reference equipment for the following measurements:

NO / NO2	Thermo Scientific 42i
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Date of manufacture: 21/02/2024

A handwritten signature in black ink, appearing to read "Richard Handy".

Richard Handy

Operations Manager

15 May 2024

Environmental Instruments Ltd., Units 5-6, The Mansley Centre, Timothy's Bridge Road, Stratford-upon-Avon, CV37 9NQ

Registered in the UK

Reg. no. 02741424

VAT reg. 217416914

Appendix 7. Accreditation of the laboratory of the Sanitary and Epidemiological Service of Navoi region

OZAKK
O'ZBEKISTON AKKREDITATSIYA MARKAZI

**AKKREDITATSIYA
TO'G'RISIDA GUVOHNOMA**


Ushbu hujjat

**SANITARIYA-EPIDEMIOLOGIK OSOYISHTALIK VA JAMOAT
SALOMATLIGI XIZMATINING NAVOIY VILOYATI BOSHQARMASI
sinov laboratoriyasi (majmuasi)**


(Yuridik va joylashgan manzili: 210100, Navoiy viloyati, Navoiy shahri, Navoiy ko'chasi, 8.)

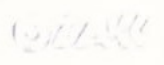
ilovada keltirilgan akkreditatsiya sohasiga asosan sinovlarni amalga oshirish uchun
"O'zbekiston akkreditatsiya markazi" DUK tomonidan O'z DST ISO/IEC 17025:2019 standart
talablariga muvofiq baholanganligini va akkreditatsiya qilinganligini tasdiqlaydi


*Akkreditatsiya sohasi ushbu akkreditatsiya to'g'risida guvohnomaning
ajralmas qismi hisoblanadi*



Davlat reestrda ro'yxat raqami O'ZAK.SL.0221
Akkreditatsiyadan o'tgan sana: 27.07.2022 yil
Guvohnoma rasmiylashtirilgan sana: 27.07.2022 yil
Amal qilish muddati: 26.07.2027 yil


A. Zakirov







Akkreditatsiya to'g'risida guvohnomaning amaldagi holati haqida ma'lumot markazning rasmiy veb-saytida (www.akkred.uz) keltirilgan.

Appendix 8. Calibration certificate for Drager X-am 5600 gas analyser. Serial Number: ARNA-0359

**O'ZBEKISTON RESPUBLIKASIDA O'LCHASHLARNING YAGONA BIRLIKDA
BO'LISHINI TA'MINLASH TIZIMI**
O'zbekiston milliy metrologiya instituti davlat muassasasi
(o'lchash vositasini qiyoslashni o'tkazgan metrologiya xizmatining nomi)

 **910203-2023-son**
o'lchash vositasini qiyoslash
GUVOHNOMASI  **O'ZBEKISTON
MILLIY METROLOGIYA
INSTITUTI**

Amal qilish muddati:
2024-yil 23 oktabrgacha

Ushbu guvohnoma
Qiyoslash gaz qorishmalari (O2-azot - 19,1%, 22,09 %) (CO2+azot-1,24%)
(CH4+azot-1,01%, 2,01%) **foydalangan holda**
(etalonlar (namunaviy o'lchash vositalari)ning belgilanishi va nomi, qiyoslangan sanasi)

ГОСТ 8.618-2013 **ga muvofiq**
(qiyoslash bo'yicha xujjatning belgilanishi va nomlanishi)

O'zMMI DM (Toshkent) **tomonidan qiyoslangan**
(o'lchash vositalarini qiyoslagan metrologiya xizmatining nomi)

КАРМАНА ТУМАН СЭО ВА ЖС ХИЗМАТИ БУЛИМИ **ga tegishli**
(o'lchash vositalarining egasi - yuridik shaxs)

(o'lchash vositalarini tayyorlovchi)

tomonidan tayyorlangan (import qilingan)
(o'lchash vositalarining tayyorlovchi - import qiluvchi mamlakat)

0 dan 5 % gacha CO2, 0 dan 25 % gacha O2, 0 dan 100 LEL gacha CH4
(o'lchash vositalari parametrlarining nomi, o'lchashlar,

xatolik ±10 % CO2, ± 5% O2, ± 5% CH4 **metrologik tavsifi**
xatolik chegaralari, aniqlik klassi)

1 dona "Drager X-am 5600" turdagi gaz analizatori № ARNA-0359 **o'lchash vositasi**
(o'lchash vositalarining nomlanishi va belgilanishi, zavod raqami)


ГОСТ 13320-81
(o'lchash vositalariga qo'yiladigan talablarni reglamentlovchi normativ xujjat belgilanishi va nomi)

talablariga mosligi
(o'lchash vositasi turining ta'rihi)

va davlat metrologik tekshiruv va nazorati tatbiq etilish sohasida qo'llanishiga yo'l qo'yilishini
tasdiqlaydi.

Qiyoslash sanasi: 2023 -yil 23 -oktabr

Qiyoslovchi: **XASANOV ANVAR BAXRAMOVICH**
(F.I.SH.)



*Ushbu guvohnoma haqqoniyligini yuqoridagi QR-kod orqali
aniqlashingiz mumkin!*

Mazkur guvohnomani qalbakilashtirish - qonunga muvofiq javobgarlikka tortiladi.

**"O'zbekiston akkreditatsiya markazi"
DUK**

Toshkent shahri, Mustaqillik shox ko'chasi, 105

**MA'QULLASH
TO'G'RISIDA GUVOHNOMA**

Ushbu hujjat

**O'zbekiston Respublikasi
Gidrometeorologiya xizmati markazi**

Navoiy viloyat Hidrometeorologiya boshqarmasining

**Atmosfera havosi ifloslanishi monitoringi
laboratoriyasi**

(Yuridik manzil: 210100, Navoiy viloyati, Navoiy shahar, Sadridin Ayniy ko'chasi 85-1.
Joylashgan manzil: 210100, Navoiy viloyati, Navoiy shahar, Sadridin Ayniy ko'chasi 85-1.)

**ilovada keltirilgan ma'qullash sohasiga asosan "O'zbekiston akkreditatsiya markazi" DUK
tomonidan**

texnik jihatdan malakaliligi ma'qullanganligini tasdiqlaydi

*Ma'qullash sohasi ushbu ma'qullash tog'risida guvohnomaning
ajralmas qismi hisoblanadi*


Reestrda ro'yxat raqami: ML.1115
Reestrda ro'yxatga olingan sana: 30.05.2023 yil
Amal qilish muddati: 29.05.2025 yil




*Ma'qullash to'g'risida guvohnomaning amaldagi holati haqidagi ma'lumot
"O'zbekiston akkreditatsiya markazi" DUK rasmiy veb-saytida (www.akkred.uz)
keltirilgan*

Appendix 10. Certificate of calibration of the aspirator device model "APV-4-12"

**O'ZBEKISTON RESPUBLIKASIDA O'LCHASHLARNING YAGONA BIRLIKDA
BO'LISHINI TA'MINLASH TIZIMI**
O'zbekiston milliy metrologiya instituti davlat muassasasi
(o'lchash vositasini qiyoslashni o'tkazgan metrologiya xizmatining nomi)

 **1022835-2024-son**
o'lchash vositasini qiyoslash
GUVOHNOMASI

 **O'ZBEKISTON
MILLIY METROLOGIYA
INSTITUTI**

Amal qilish muddati:
2025-yil 30-aprelgacha

Ushbu guvohnoma

Baraban gaz hisoblagichi GSB400 va mexanik sekundomer foydalangan holda
(etalonlar (namunaviy o'lchash vositalari)ning belgilanishi va nomi, qiyoslangan sanasi)

MI 09-171:2015 ga muvofiq
(qiyoslash bo'yicha xujjatning belgilanishi va nomlanishi)

O'zMMI DM Navoiy filiali tomonidan qiyoslangan
(o'lchash vositalarini qiyoslagan metrologiya xizmatining nomi)

O'ZBEKISTON RESPUBLIKASI GIDROMETEOROLOGIYA XIZMATI AGENTLIGI ga tegishli
(o'lchash vositalarining egasi - yuridik shaxs)

(o'lchash vositalarini tayyorlovchi)

tomonidan tayyorlangan (import qilingan)
(o'lchash vositalarining tayyorlovchi - import qiluvchi mamlakat)

0,2 dan 20 l/min gacha
(o'lchash vositalari parametrlarining nomi, o'lchashlar,

xatoligi: $\Delta = \pm 5,0 \%$; $\Delta = \pm 7,0 \%$ metrologik tavsifli
xatolik chegaralari, aniqlik klassi)

Havodan namuna olish uskunasini (Аспиратор) АПВ-4-12 № 435 o'lchash vositasi
(o'lchash vositalarining nomlanishi va belgilanishi, zavod raqami)


TY 64-1-862-82
(o'lchash vositalariga qo'yiladigan talablarni reglamentlovchi normativ xujjat belgilanishi va nomi)

talablariga mosligi
(o'lchash vositasi turining ta'rifi)


va davlat metrologik tekshiruv va nazorati tatbiq etilish sohasida qo'llanishiga yo'l qo'yilishini tasdiqlaydi.

Qiyoslash sanasi: 2024 -yil 30 -aprel

Qiyoslovchi: **HAYDAROV QOBILJON NABIJON O'G'LI**
(F.I.SH.)



Ushbu guvohnoma haqqoniyligini yuqoridagi QR-kod orqali aniqlashingiz mumkin!

 **yil**
1924-2024

Mazkur guvohnomani qalbakilashtirish - qonunga muvofiq javobgarlikka tortiladi.

Appendix 11. Result of check measurements of Sanitary-Epidemiological Service of Navoi region for February.

Узбекистон Республикаси Соғлиқни Сақлаш вазирлиги Навоий вилояти СЭО ва ЖС бошқармаси Муассаса номи	Узбекистон Республикаси Санитария-эпидемиологик осойишталик ва жамоат саломатлиги хизмати бошлигининг 2021 йил 25 январдаги №14 -сонли буйруғи билан тасдиқланган 8х/ш -ракамли тиббий ҳужжат шакли
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АХОЛИ ЯШАШ ЖОЙЛАРИ ХАВОСИНИ ТЕКШИРИШ БУЙИЧА 36-37-38 СОНЛИ

**БАЁННОМА (протокол)
« 6 » 03 2024 йил**

Хаво намунаси олинган жой Зарафшон шаҳар ООО «NAZAR BUSINESS AND TECHNOLOGY»

амуна олишдан мақсад Хаводаги газларни аниқлаш

Намуна тури (бир марталик, ўртача суткалик) Бир марталик

Намуна олишни асословчи ҳужжатлар Сан Пин № 0294-11

Ташиш усули _____ **саклаш шароитлари** _____

Намуна олишда қулланиладиган улчов воситалари Газанализатор "Dreager -x -am-5600"

Намуна олинган кун ва вақти 28.02.2024 йил **етказилган вақт** _____

Давлат текшируви тўғрисидаги маълумотлар Калибровкадан 25.11.2022 да ўтказилан

№	ЎЛЧОВ УТҚАЗИЛГАН ЖОЙЛАР	Анисланаётган моддалар												Аниқланган концентрация		ПДК		Текширувлар	Имзо	
		NH ₃	H ₂ S	CO	CL ₂	O ₂	CH ₄	NO ₂	NO	EO	SO ₂	CO ₂	Бир марталлик максимал концентранция	Ургача бир кунлик концентранция	Бир марталлик максимал концентранция	Ургача бир кунлик концентранция	Техширувлар		Тахлил утказган шахс	Тахлил натижасини олган шахс
36	Точка 1: дачные участки(№41.576770 ⁰ E64.174710 ⁰)время 10:05	ПДК 0,2	ПДК 0,008	ПДК 5,0	ПДК 0,1	ПДК 23	ПДК 0,667	ПДК 0,085	ПДК 0,6	ПДК 0,3	ПДК 0,5	ПДК 5,0								
37	Точка 2: Zarafshon Оула Юго-запад (№41.573964 ⁰ E64.178826 ⁰ .) время 10:20								0,4	0,0										
38	Точка 3: Zarafshon Оула Северо-восток,вагончики рабочих (41.578648 ⁰ E64.183990 ⁰) время 10:35								0,0	0,0										



Лаборатория муdiri Дустов Б.Т
Текширув утказган шахс фамилияси ва имзоси Исмаилова Р.Р
Санитария врач хулосаси
Санитария врач фамилияси ва имзоси

Appendix 12. Result of check measurements of Sanitary-Epidemiological Service of Navoi region for March.

Узбекистон Республикаси Соглиқни Сақлаш вазирлиги Навий вилояти СЭО ва ЖС бошқармаси Муассаса номи	Узбекистон Республикаси Санитария-эпидемиологик осойишталик ва жамоат саломатлиги хизмати бошлиғининг 2021 йил 25 январдаги №14 -сонли буйруғи билан тасдиқланган 8х/ш -рақамли тиббий ҳужжат шакли
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AIR TESTING IN RESIDENTIAL AND NON-RESIDENTIAL PREMISES

PROTOCOL
4 April 2024

Хаво намунаси олинган жой Зарафшон шаҳар ООО « NAZAR BUSINESS AND TECHNOLOGY »

амуна олишдан мақсад Хаводаги газларни аниқлаш

Намуна тури (бир марталик, ўртача суткалик) Бир марталик

Намуна олишни асословчи ҳужжатлар Сан Пин № 0294-11

Ташиш усули _____ саклаш шароитлари _____

Намуна олишда қўлланиладиган улчов воситалари Газанализатор "Dreager –x –am-5600"

Намуна олинган кун ва вақти 29.03.2024 йил етказилган вақт

Давлат текшируви тўғрисидаги маълумотлар Калибровкадан 25.11.2022 да ўтказилган

* ПДК - Maximum permissible concentration

№	ЎЛЧОВ УТКАЗИЛГАН ЖОЙЛАР	Аникланаётган моддалар										Аникланган концентрация		ПДК		Текширувлар қайси МТХ асосида олиб борилган	Имзо		
		NH ₃	H ₂ S	CO	CL ₂	O ₂	CH ₄	NO ₂	NO	EO	SO ₂	CO ₂	Бир маргалик максимал концентрация	Уртача бир кунлик концентрация	Бир маргалик максимал концентрация		Уртача бир кунлик концентрация	Тахлил утказган шахс	Тахлил натижасини олган шахс
43	Точка 1: дачные участки (№41.576770 ⁰ E64.174710 ⁰) время 10:05	0,2	0,008	5,0	0,1	23	0,667	0,085	0,6	0,3	0,5	5,0							
44	Точка 2: Zaratshon Oула Юго-запад (№41.573964 ⁰ E64.178826 ⁰) время 10:20							0,5	0,0										
45	Точка 3: Zaratshon Oула Северо-восток, вагончики рабочих (41.578648 ⁰ E64.183990 ⁰) время 10:35							0,0	0,0										



Лаборатория муdiri Дустов Б.Т
 Текширув утказган шахс фамилияси ва имзоси Дустов Б.Т
 Санитария врачи хулосаси Исмаилова Р.Р
 Санитария врачи фамилияси ва имзоси _____

№	ЎЛЧОВ УТКАЗИЛГАН ЖОЙЛАР	Аниқланаётган моддалар														Аниқланган концентрация		ПДК		Текширу влар		Имзо	
		NH ₃	H ₂ S	CO	CL ₂	O ₂	CH ₄	NO ₂	NO	EO	SO ₂	CO ₂	Бир маргалик максимал концент рация	Ургача бир кунлик концент рация	Бир маргалик максимал концент рация	Ургача бир кунлик концент рация	Бир кайси МТХ асосида олиб борилган	Техлир утказган шахс	Имзо				
		ПДК	ПДК	ПДК	ПДК	ПДК	ПДК	ПДК	ПДК	ПДК	ПДК	ПДК	ПДК	ПДК	ПДК	ПДК	ПДК	ПДК	ПДК	ПДК			
43	Точка 1: дачные участки(№41.576770 ⁰ Е64.174710 ⁰)время 10:05	0,2	0,008	5,0	0,1	23	0,667	0,085	0,6	0,3	0,5	5,0											
44	Точка 2: Zarafshon Оуна Юго-запад (№41.573964 ⁰ Е64.178826 ⁰ .) время 10:20							0,5	0,0														
45	Точка 3: Zarafshon Оуна Северо-восток, вагончики рабочих (41.578648 ⁰ Е64.183990 ⁰) время 10:35							0,4	0,0														
								0,0	0,0														



Лаборатория муdiri Дустов Б.Т
Текширув утказган шахс фамилияси ва имзоси Дустов Б.Т
Санитария врачи хулосаси Исмаилова Р.Р
Санитария врачч фамилияси ва имзоси _____

Appendix 14. Results of control measurements of the Uzhydromet center for July. In addition, climatic data on air temperature and average wind direction are attached.



**NAVOIY VILOYATI GIDROMETEOROLOGIYA
MARKAZI “NAVOIYGIDROMET”**

210100, O‘zbekiston Respublikasi, Navoiy shahri S.Ayniy ko‘chasi
Tel.: (78) 770-32-03, (78) 770-32-02

E-mail: ugmnavoi@meteo.uz | meteo@exat.uz | www.hydrmetet.uz | fb.com/uzhydromet | t.me/uzgydromet

319/001-сон

Навоий ш.

2024 йил 27 июнь

“NAZAR BUSINESS AND TECHNOLOGY” МЧЖ
директори М.И.Холмирзаевага

Сизнинг 2024 йил 20 июндаги № G46/2024-сонли хатингизга асосан Навоийгидромет тизимидаги Атмосфера ҳавоси ифлосланишини кузатув тармоқ лабораторияси ходимлари томонидан Зарафшон шаҳри ҳудудида жойлашган “ZARAFSHON OYNA” ОАЖ ҳудудидан ҳаво намуналари олиб таҳлиллар ўтказди. Таҳлил натижалари маълумотлари ва Зарафшон метеостанцияси кузатуви асосида шамол гули ҳамда метео маълумотлар тақдим этилади.

Изоҳ: Таҳлил натижалари тўғрисида маълумотлар 3 вароқда илова қилинади.

Навоийгидромет бошқаруви



Б. Мирзасев

ижрочи: Ш.Мардонова
тел: (55) 351-32-04

2024 йил 26 июнь куни “ZARAFSHON OYNA” OAJ hududidan olingan
tahlil natijalari tўg'risida
ma'lumot.

№	Намуна олинган жой номи Места отбора Проб (образца)	Намуна олинган вақт Время отбора	Ингредиентлар		Температура	Атмосфера босими	Шамол тезлиги м/с
			NO2 азот (IV) оксиди	NO азот (II) оксиди			
			ПДК м/р	ПДК м/р			
			0,085	0,6			
			мг/м3	мг/м3			
1.	“Yangi Zarafshon”ning aholi yashash hududi	09:52	0,19	0,08	35,3	721	Шимолий шаркий 7 м/с
2.	“Zarafshon oyna” hududining janubiy-g'arbiy qismi	10:25	0,05	0,01	33,4	721	Шимолий шаркий 2 м/с
3.	Ишлаб чиқариш корхонаси ходимларининг яшаш hududi	10:55	0,06	0,05	35,4	720	Штиль

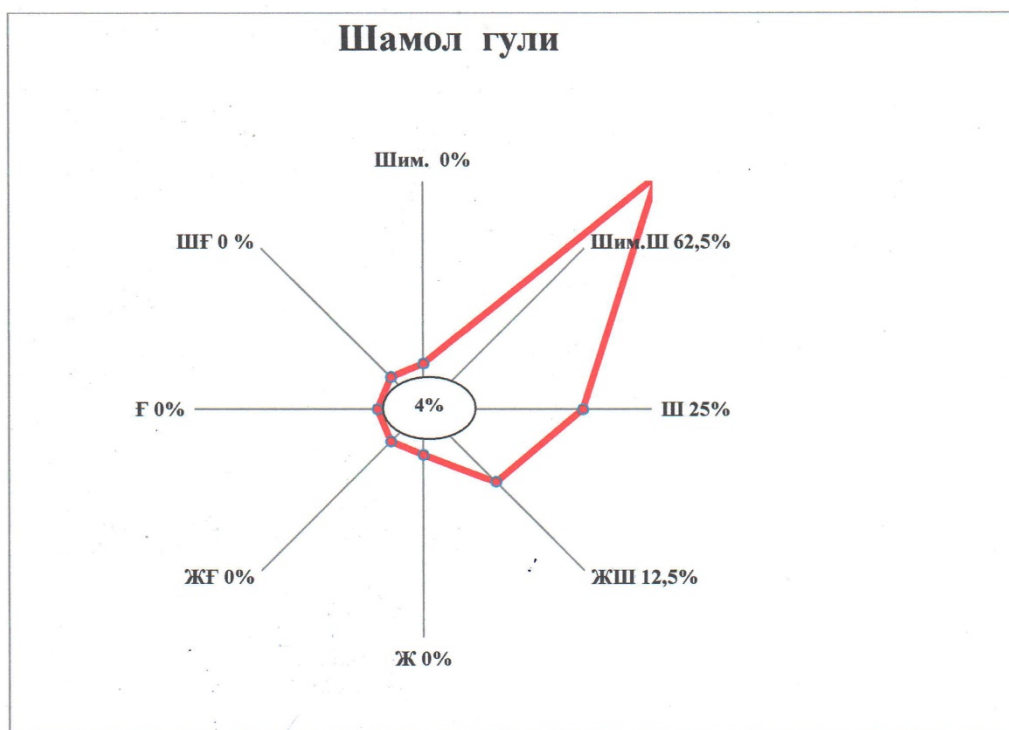


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**2024 йил 26 июнь куни Зарафшон шаҳрида кузатишган шамол йўналиши
тўғрисида
МАЪЛУМОТ**

2024 йил 26 июнь куни Зарафшон шаҳрида шамол йўналиши асосан шимолий-шарқий томондан эсиб, 62.5% ни ташкил этди. Бундан ташқари, жанубий-шарқдан 12.5%, ғарбдан 0%, жанубий-ғарбдан 0%, шимолий-ғарбдан 0%, шимолий томондан 0%, жанубдан 0%, шарқий томондан 25% эсанлиги кузатилди.

2024 йил 26 июнь куни олиб борилган кузатувлар натижаларига кўра 2 марта шамолсиз ҳолат (штиль) кузатилган. Бу умумий кузатувлар сонининг 4% ини ташкил килди.



Изоҳ:



Шим – шимолий
Шим/Ш – шимолий/шарқий

Ш – шарқий
Ж/Ш – жанубий/шарқий

Ж – жанубий
Ж/Ф – жанубий/ғарбий

Ғ – ғарбий
Шим/Ғ – шимолий/ғарбий

**“Зарафшон” метеостанцияси кузатуви асосида олинган 2024 йил июн ойида
кузатилган об-хаво тўғрисида
МАЪЛУМОТ**

Сана	Ўртача хаво ҳарорат (°C)	Максимал хаво ҳарорати (°C)	Минимал хаво ҳарорати (°C)	Ёғингарчилик миллорди, қор (*)мм, ёмғир (°)мм ҳисобида	Босим (Па)
01.06.2024	29	32	25	-	728
02.06.2024	29	34	25	-	724
03.06.2024	30	33	26	-	723
04.06.2024	27	34	22	-	722
05.06.2024	27	31	21	-	726
06.06.2024	29	34	23	-	723
07.06.2024	30	35	25	-	723
08.06.2024	32	36	28	-	721
09.06.2024	33	37	29	-	720
10.06.2024	34	38	29	-	721
11.06.2024	30	41	23	-	721
12.06.2024	32	36	27	-	721
13.06.2024	30	34	25	-	721
14.06.2024	28	33	23	-	720
15.06.2024	29	34	24	-	718
16.06.2024	31	35	29	-	721
17.06.2024	32	36	27	-	724
18.06.2024	34	38	31	-	722
19.06.2024	33	38	28	-	720
20.06.2024	33	38	28	-	718
21.06.2024	33	37	29	-	721
22.06.2024	33	37	28	-	716
23.06.2024	31	37	26	0	719
24.06.2024	28	34	24	-	721
25.06.2024	28	32	22	-	722
26.06.2024	30	35	25	-	719
27.06.2024	33	37	30	-	719



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Appendix 15. Results of control measurements of the Uzhydrometcentre for July. In addition, climatic data on air temperature and average wind direction are attached.



**NAVOIY VILOYATI GIDROMETEOROLOGIYA
MARKAZI "NAVOIYGIDROMET"**

210100, O'zbekiston Respublikasi, Navoiy shahri S.Ayniy ko'chasi
Tel.: (78) 770-32-03, (78) 770-32-02
E-mail: ugmnavoi@meteo.uz | meteo@exat.uz | www.hydromet.uz | fb.com/uzhydromet | t.me/uzgydromet

394/001-сон

Навоий ш.

2024 йил 31 июл

"NAZAR BUSINESS AND TECHNOLOGY" МЧЖ
директори М.И.Холмирзаевага

Сизнинг 2024 йил 26 июлдаги №G51/2024-сонли хатингизга асосан Навоийгидромет тизимидаги Атмосфера ҳавоси ифлосланишини кузатув тармок лабораторияси ходимлари томонидан Зарафшон шаҳрида жойлашган "ZARAFSHON OYNA" ОАЖ ҳудудидан ҳаво намуналари олиб таҳлиллар ўтказди. Таҳлил натижалари маълумотлари ва Зарафшон метеостанцияси кузатуви асосида шамол гули ҳамда метео маълумотлар тақдим этилади.

Илова 2 варақда.

Навоийгидромет бошлиги



Б. Мирзасев

ижрочи: Ш.Мардонова
тел: (55) 351-32-04

**2024 йил 30 июль куни “ZARAFSHON OYNA” ОАЖ ҳудудидан олинган
таҳлил натижалари тўғрисида
маълумот.**

№	Намуна олинган жой номи Места отбора Проб (образца)	Намуна олинган вақт Время отбора	Ингредиентлар			Температура	Атмосфера босими	Шамол тезлиги м/с
			Пыль чанг	NO2 азот (IV) оксиди	NO азот (II) оксиди			
			ПДК м/р	ПДК м/р	ПДК м/р			
			0,5	0,085	0,6			
			мг/м3	мг/м3	мг/м3			
1.	“Yangi Zarafshon”нинг аҳоли яшаш ҳудуди	12:30	0,17	0,089	0,05	34,4	717	Шимолий 7 м/с
2.	“Zarafshon oyna” ҳудудининг жанубий-ғарбий қисми	13:33	0,06	0,068	0,03	33.1	717	Шимолий 3 м/с
3.	Ишлаб чиқариш корхонаси ходимларининг яшаш ҳудуди	14:10	0,11	0,077	0,05	34,7	717	Шимолий 6 м/с



2024 йил 31 июлдаги
319/001-сон хатга 2-илова

**“Зарафшон” метеостанцияси кузатуви асосида олинган 2024 йил июл ойида
кузатилган об-хаво тўғрисида
МАЪЛУМОТ**

Сана	Ўртача хаво ҳарорат (°C)	Максимал хаво ҳарорати (°C)	Минимал хаво ҳарорати (°C)	Ёнгиғарчилик микдори, қор (*)мм, ёмғир (°)мм ҳисобида	Босим (Па)
01.07.2024	28	33	19	-	720
02.07.2024	24	28	19	-	721
03.07.2024	27	30	23	-	722
04.07.2024	31	34	27	-	720
05.07.2024	32	37	28	-	718
06.07.2024	30	35	25	-	717
07.07.2024	31	35	26	-	720
08.07.2024	30	35	24	-	719
09.07.2024	31	34	27	-	720
10.07.2024	32	35	29	-	721
11.07.2024	33	37	30	-	724
12.07.2024	37	34	29	-	716
13.07.2024	31	35	25	-	717
14.07.2024	29	35	23	-	717
15.07.2024	26	30	22	-	722
16.07.2024	26	29	23	0	720
17.07.2024	30	34	25	-	719
18.07.2024	29	34	24	-	718
19.07.2024	29	33	25	-	721
20.07.2024	29	33	24	-	720
21.07.2024	31	35	27	-	721
22.07.2024	33	35	29	-	718
23.07.2024	33	38	28	-	717
24.07.2024	34	37	31	-	715
25.07.2024	34	38	32	-	714
26.07.2024	34	40	26	-	716
27.07.2024	31	35	27	-	717
28.07.2024	32	36	27	-	718
29.07.2024	32	37	25	-	718
30.07.2024	28	33	24	-	717
31.07.2024	30	34	27	-	718



Appendix 16. Data table of stationary measurement results for March

Date	Results recorded by AQMesh gas analyzer				Maximum permissible daily				Maximum		Detected exceedances			
	Daily average			Monthly average	R of Uzb (mg/m3)		WHO (mg/m3)		NO (mg/m3)	NO2 (mg/m3)	Daily average		Monthly average	
	NO (mg/m3)	NO2 (mg/m3)	NOx (mg/m3)		NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)			NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)
04.03.2024	0,004	0,015	0,022		0,25	0,06	0,12				no	no		
05.03.2024	0,002	0,017	0,021		0,25	0,06	0,12				no	no		
06.03.2024	0,001	0,018	0,020		0,25	0,06	0,12				no	no		
07.03.2024	0,003	0,020	0,025		0,25	0,06	0,12				no	no		
08.03.2024	0,001	0,017	0,018		0,25	0,06	0,12				no	no		
09.03.2024	0,003	0,012	0,016		0,25	0,06	0,12				no	no		
10.03.2024	0,003	0,019	0,024		0,25	0,06	0,12				no	no		
11.03.2024	0,001	0,017	0,018		0,25	0,06	0,12				no	no		
12.03.2024	0,004	0,010	0,015		0,25	0,06	0,12				no	no		
13.03.2024	0,003	0,015	0,021		0,25	0,06	0,12				no	no		
14.03.2024	0,005	0,022	0,030		0,25	0,06	0,12				no	no		
15.03.2024	0,003	0,020	0,025		0,25	0,06	0,12				no	no		
16.03.2024	0,001	0,011	0,013		0,25	0,06	0,12				no	no		
17.03.2024	0,000	0,024	0,022		0,25	0,06	0,12				no	no		
18.03.2024	0,005	0,022	0,028	0,002	0,25	0,06	0,12	0,12	0,05		no	no	no	no
19.03.2024	0,000	0,021	0,020		0,25	0,06	0,12				no	no		
20.03.2024	0,000	0,024	0,023		0,25	0,06	0,12				no	no		
21.03.2024	0,004	0,008	0,014		0,25	0,06	0,12				no	no		
22.03.2024	0,005	0,011	0,019		0,25	0,06	0,12				no	no		
23.03.2024	0,003	0,018	0,021		0,25	0,06	0,12				no	no		
24.03.2024	0,000	0,020	0,019		0,25	0,06	0,12				no	no		
25.03.2024	0,000	0,020	0,017		0,25	0,06	0,12				no	no		
26.03.2024	0,001	0,020	0,020		0,25	0,06	0,12				no	no		
27.03.2024	0,003	0,018	0,022		0,25	0,06	0,12				no	no		
28.03.2024	0,003	0,014	0,019		0,25	0,06	0,12				no	no		
29.03.2024	0,002	0,009	0,011		0,25	0,06	0,12				no	no		
30.03.2024	0,002	0,016	0,019		0,25	0,06	0,12				no	no		
31.03.2024	0,001	0,013	0,014		0,25	0,06	0,12				no	no		

Appendix 17. Data table of stationary measurement results for April

Date	Results recorded by AQMesh gas analyzer				Maximum permissible daily			Maximum		Detected exceedances			
	Daily average		Monthly average		R of Uzb (mg/m3)		WHO (mg/m3)	R of Uzb (mg/m3)		Daily average		Monthly average	
	NO (mg/m3)	NO2 (mg/m3)	NOx (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)
01.04.2024	0,001	0,019	0,021	0,25	0,06	0,12				no	no		
02.04.2024	0,002	0,014	0,017	0,25	0,06	0,12				no	no		
03.04.2024	0,002	0,018	0,020	0,25	0,06	0,12				no	no		
04.04.2024	0,001	0,021	0,020	0,25	0,06	0,12				no	no		
05.04.2024	0,000	0,019	0,017	0,25	0,06	0,12				no	no		
06.04.2024	0,000	0,017	0,017	0,25	0,06	0,12				no	no		
07.04.2024	0,000	0,025	0,023	0,25	0,06	0,12				no	no		
08.04.2024	0,000	0,026	0,025	0,25	0,06	0,12				no	no		
09.04.2024	0,005	0,019	0,026	0,25	0,06	0,12				no	no		
10.04.2024	0,001	0,018	0,018	0,25	0,06	0,12				no	no		
11.04.2024	0,000	0,019	0,017	0,25	0,06	0,12				no	no		
12.04.2024	0,000	0,024	0,023	0,25	0,06	0,12				no	no		
13.04.2024	0,002	0,022	0,024	0,25	0,06	0,12				no	no		
14.04.2024	0,006	0,031	0,040	0,25	0,06	0,12				no	no		
15.04.2024	0,007	0,021	0,031	0,25	0,06	0,12				no	no		
16.04.2024	0,000	0,020	0,018	0,25	0,06	0,12		0,12	0,05	no	no		no
17.04.2024	0,000	0,027	0,026	0,25	0,06	0,12				no	no		
18.04.2024	0,000	0,023	0,020	0,25	0,06	0,12				no	no		
19.04.2024	0,000	0,023	0,021	0,25	0,06	0,12				no	no		
20.04.2024	0,000	0,024	0,022	0,25	0,06	0,12				no	no		
21.04.2024	0,000	0,037	0,035	0,25	0,06	0,12				no	no		
22.04.2024	0,000	0,032	0,030	0,25	0,06	0,12				no	no		
23.04.2024	0,000	0,020	0,018	0,25	0,06	0,12				no	no		
24.04.2024	0,001	0,026	0,026	0,25	0,06	0,12				no	no		
25.04.2024	0,001	0,025	0,025	0,25	0,06	0,12				no	no		
26.04.2024	0,001	0,031	0,033	0,25	0,06	0,12				no	no		
27.04.2024	0,012	0,036	0,055	0,25	0,06	0,12				no	no		
28.04.2024	0,004	0,029	0,035	0,25	0,06	0,12				no	no		
29.04.2024	0,001	0,033	0,035	0,25	0,06	0,12				no	no		
30.04.2024	0,005	0,029	0,036	0,25	0,06	0,12				no	no		

Appendix 18. Data table of stationary measurement results for May

Date	Results recorded by AQMesh gas analyzer						Maximum permissible daily				Maximum		Detected exceedances			
	Daily average			Monthly average			R of Uzb (mg/m3)		WHO (mg/m3)		R of Uzb (mg/m3)		Daily average		Monthly average	
	NO (mg/m3)	NO2 (mg/m3)	NOx (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)
01.05.2024	0,001	0,024	0,024	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
02.05.2024	0,000	0,026	0,023	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
03.05.2024	0,000	0,034	0,031	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
04.05.2024	0,011	0,055	0,071	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
05.05.2024	0,028	0,039	0,081	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
06.05.2024	0,012	0,044	0,060	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
07.05.2024	0,000	0,048	0,044	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
08.05.2024	0,000	0,049	0,045	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
09.05.2024	0,001	0,033	0,033	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
10.05.2024	0,009	0,028	0,042	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
11.05.2024	0,009	0,040	0,053	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
12.05.2024	0,001	0,035	0,035	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
13.05.2024	0,000	0,048	0,045	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
14.05.2024	0,000	0,042	0,038	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
15.05.2024	0,009	0,052	0,065	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
16.05.2024	0,007	0,039	0,049	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	0,12	0,05	no	no	no
17.05.2024	0,001	0,043	0,043	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
18.05.2024	0,001	0,046	0,047	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
19.05.2024	0,003	0,028	0,032	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
20.05.2024	0,003	0,023	0,027	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
21.05.2024	0,000	0,030	0,027	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
22.05.2024	0,000	0,031	0,027	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
23.05.2024	0,000	0,031	0,028	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
24.05.2024	0,000	0,026	0,023	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
25.05.2024	0,001	0,014	0,014	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
26.05.2024	0,002	0,023	0,025	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
27.05.2024	0,007	0,026	0,034	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
28.05.2024	0,000	0,030	0,028	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
29.05.2024	0,000	0,020	0,019	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
30.05.2024	0,000	0,017	0,016	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	
31.05.2024	0,000	0,011	0,009	0,003	0,033	0,25	0,06	0,12	0,25	0,06	0,12	no	no	no	no	

Appendix 19. Data table of stationary measurement results for June.

Date	Results recorded by AQMesh gas analyzer						Maximum permissible daily concentration				Maximum permissible monthly concentration		Detected exceedances				
	Daily average			Monthly average			R of Uzb (mg/m3)		WHO (mg/m3)		NO (mg/m3)	NO2 (mg/m3)	Daily average			Monthly average	
	NO (mg/m3)	NO2 (mg/m3)	NOx (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)			NO2 (mg/m3)	NO2(mg/m3 (WHO)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)
01.06.2024	0,000	0,013	0,010				0,25	0,06	0,12			no	no				
02.06.2024	0,000	0,017	0,015				0,25	0,06	0,12			no	no				
03.06.2024	0,003	0,021	0,026				0,25	0,06	0,12			no	no				
04.06.2024	0,008	0,039	0,051				0,25	0,06	0,12			no	no				
05.06.2024	0,015	0,033	0,055				0,25	0,06	0,12			no	no				
06.06.2024	0,007	0,035	0,043				0,25	0,06	0,12			no	no				
07.06.2024	0,006	0,055	0,061				0,25	0,06	0,12			no	no				
08.06.2024	0,019	0,077	0,106				0,25	0,06	0,12			no	yes				
09.06.2024	0,009	0,071	0,084				0,25	0,06	0,12			no	yes				
10.06.2024	0,004	0,060	0,065				0,25	0,06	0,12			no	no				
11.06.2024	0,019	0,082	0,111				0,25	0,06	0,12			no	yes				
12.06.2024	0,010	0,069	0,084				0,25	0,06	0,12			no	yes				
13.06.2024	0,004	0,068	0,074				0,25	0,06	0,12			no	yes				
14.06.2024	0,023	0,064	0,097				0,25	0,06	0,12			no	yes				
15.06.2024	0,007	0,064	0,074			0,054	0,25	0,06	0,12		0,12	no	yes			Yes	
16.06.2024	0,011	0,052	0,069			0,011	0,25	0,06	0,12		0,05	no	no		no		
17.06.2024	0,005	0,061	0,063				0,25	0,06	0,12			no	yes				
18.06.2024	0,003	0,075	0,078				0,25	0,06	0,12			no	yes				
19.06.2024	0,029	0,066	0,105				0,25	0,06	0,12			no	yes				
20.06.2024	0,014	0,048	0,060				0,25	0,06	0,12			no	no				
21.06.2024	0,003	0,054	0,056				0,25	0,06	0,12			no	no				
22.06.2024	0,009	0,061	0,074				0,25	0,06	0,12			no	yes				
23.06.2024	0,050	0,068	0,144				0,25	0,06	0,12			no	yes				
24.06.2024	0,012	0,056	0,073				0,25	0,06	0,12			no	no				
25.06.2024	0,002	0,056	0,058				0,25	0,06	0,12			no	no				
26.06.2024	0,000	0,073	0,073				0,25	0,06	0,12			no	yes				
27.06.2024	0,002	0,067	0,070				0,25	0,06	0,12			no	yes				
28.06.2024	0,042	0,043	0,106				0,25	0,06	0,12			no	no				
29.06.2024	0,014	0,030	0,046				0,25	0,06	0,12			no	no				
30.06.2024	0,008	0,055	0,065				0,25	0,06	0,12			no	no				

Appendix 20. Data table of stationary measurement results for July.

Date	Results recorded by AQMesh gas analyzer						Maximum permissible daily concentration				Maximum permissible monthly concentration		Detected exceedances					
	Daily average			Monthly average			R of Uzb (mg/m3)		WHO (mg/m3)		NO (mg/m3)	NO2 (mg/m3)	Daily average			Monthly average		
	NO (mg/m3)	NO2 (mg/m3)	NOx (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)			NO2 (mg/m3)	NO2(mg/m3) (WHO)	NO (mg/m3)	NO2 (mg/m3)	NO2(mg/m3) (WHO)	
01.07.2024	0,004	0,022	0,025				0,25	0,06	0,12			no	no	no				
02.07.2024	0,003	0,030	0,034				0,25	0,06	0,12			no	no	no				
03.07.2024	0,006	0,037	0,044				0,25	0,06	0,12			no	no	no				
04.07.2024	0,003	0,042	0,046				0,25	0,06	0,12			no	no	no				
05.07.2024	0,020	0,029	0,053				0,25	0,06	0,12			no	no	no				
06.07.2024	0,013	0,023	0,040				0,25	0,06	0,12			no	no	no				
07.07.2024	0,044	0,012	0,064				0,25	0,06	0,12			no	no	no				
08.07.2024	0,014	0,051	0,072				0,25	0,06	0,12			no	no	no				
09.07.2024	0,011	0,051	0,067				0,25	0,06	0,12			no	no	no				
10.07.2024	0,008	0,084	0,095				0,25	0,06	0,12			no	yes	no				
11.07.2024	0,007	0,065	0,073				0,25	0,06	0,12			no	yes	no				
12.07.2024	0,017	0,055	0,077				0,25	0,06	0,12			no	no	no				
13.07.2024	0,018	0,065	0,093				0,25	0,06	0,12			no	yes	no				
14.07.2024	0,001	0,071	0,072				0,25	0,06	0,12			no	yes	no				
15.07.2024	0,029	0,064	0,108				0,25	0,06	0,12			no	yes	no				
16.07.2024	0,007	0,060	0,069	0,010	0,055		0,25	0,06	0,12	0,12	0,05	no	yes	no	no	Yes		
17.07.2024	0,006	0,051	0,059				0,25	0,06	0,12			no	no	no				
18.07.2024	0,004	0,053	0,057				0,25	0,06	0,12			no	no	no				
19.07.2024	0,009	0,037	0,050				0,25	0,06	0,12			no	no	no				
20.07.2024	0,002	0,043	0,044				0,25	0,06	0,12			no	no	no				
21.07.2024	0,001	0,068	0,069				0,25	0,06	0,12			no	yes	no				
22.07.2024	0,002	0,066	0,069				0,25	0,06	0,12			no	yes	no				
23.07.2024	0,003	0,065	0,068				0,25	0,06	0,12			no	yes	no				
24.07.2024	0,007	0,067	0,077				0,25	0,06	0,12			no	yes	no				
25.07.2024	0,004	0,109	0,114				0,25	0,06	0,12			no	yes	no				
26.07.2024	0,049	0,026	0,089				0,25	0,06	0,12			no	no	no				
27.07.2024	0,004	0,080	0,086				0,25	0,06	0,12			no	yes	no				
28.07.2024	0,000	0,074	0,074				0,25	0,06	0,12			no	yes	no				
29.07.2024	0,003	0,060	0,064				0,25	0,06	0,12			no	yes	no				
30.07.2024	0,002	0,065	0,068				0,25	0,06	0,12			no	yes	no				
31.07.2024	0,000	0,079	0,079				0,25	0,06	0,12			no	yes	no				

Appendix 21. Data table of stationary measurement results for August.

Date	Results recorded by AQMesh gas analyzer					Maximum permissible daily concentration				Maximum permissible monthly concentration		Detected exceedances				
	Daily average			Monthly average		R of Uzb (mg/m3)		WHO (mg/m3)		R of Uzb (mg/m3)	NO2 (mg/m3)	Daily average			Monthly average	
	NO (mg/m3)	NO2 (mg/m3)	NOx (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)			NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)
01.08.2024	0,00453	0,08606	0,07072			0,25	0,06	0,12				no	yes	no		
02.08.2024	0,00295	0,07816	0,08000			0,25	0,06	0,12				no	yes	no		
03.08.2024	0,00739	0,07220	0,08317			0,25	0,06	0,12				no	yes	no		
04.08.2024	0,00361	0,08413	0,08942			0,25	0,06	0,12				no	yes	no		
05.08.2024	0,00359	0,10148	0,10671			0,25	0,06	0,12				no	yes	no		
06.08.2024	0,00840	0,09858	0,11098			0,25	0,06	0,12				no	yes	no		
07.08.2024	0,00324	0,11149	0,11566			0,25	0,06	0,12				no	yes	no		
08.08.2024	0,00294	0,13083	0,09719			0,25	0,06	0,12				no	yes	yes		
09.08.2024	0,02413	0,09252	0,12357			0,25	0,06	0,12				no	yes	no		
10.08.2024	0,02724	0,08904	0,13063			0,25	0,06	0,12				no	yes	no		
11.08.2024	0,00920	0,10042	0,11425			0,25	0,06	0,12				no	yes	no		
12.08.2024	0,01227	0,08322	0,10112			0,25	0,06	0,12				no	yes	no		
13.08.2024	0,02153	0,08021	0,10897			0,25	0,06	0,12				no	yes	no		
14.08.2024	0,04707	0,06898	0,13887			0,25	0,06	0,12				no	yes	no		
15.08.2024	0,00017	0,10150	0,10117			0,25	0,06	0,12				no	yes	no		
16.08.2024	0,01500	0,05757	0,07952	0,009	0,070	0,25	0,06	0,12		0,12	0,05	no	no	no	no	Yes
17.08.2024	0,00772	0,05386	0,06409			0,25	0,06	0,12				no	no	no		
18.08.2024	0,01025	0,04475	0,05793			0,25	0,06	0,12				no	no	no		
19.08.2024	0,00037	0,06061	0,06014			0,25	0,06	0,12				no	yes	no		
20.08.2024	0,00012	0,05656	0,05606			0,25	0,06	0,12				no	no	no		
21.08.2024	0,00393	0,06012	0,06581			0,25	0,06	0,12				no	no	no		
22.08.2024	0,00726	0,04855	0,05701			0,25	0,06	0,12				no	no	no		
23.08.2024	0,00086	0,05931	0,06029			0,25	0,06	0,12				no	no	no		
24.08.2024	0,00362	0,05967	0,06496			0,25	0,06	0,12				no	no	no		
25.08.2024	0,00673	0,04735	0,05732			0,25	0,06	0,12				no	no	no		
26.08.2024	0,00008	0,04054	0,04034			0,25	0,06	0,12				no	no	no		
27.08.2024	0,00104	0,03908	0,03922			0,25	0,06	0,12				no	no	no		
28.08.2024	0,01566	0,02096	0,04212			0,25	0,06	0,12				no	no	no		
29.08.2024	0,01605	0,03893	0,06320			0,25	0,06	0,12				no	no	no		
30.08.2024	0,00328	0,04771	0,05209			0,25	0,06	0,12				no	no	no		
31.08.2024	0,00001	0,05860	0,05743			0,25	0,06	0,12				no	no	no		

Appendix 22. Data table of stationary measurement results for September.

Date	Results recorded by AQMesh gas analyzer						Maximum permissible daily concentration				Maximum permissible monthly concentration		Detected exceedances					
	Daily average			Monthly average			R of Uzb (mg/m3)		WHO (mg/m3)		R of Uzb (mg/m3)		Daily average			Monthly average		
	NO (mg/m3)	NO2 (mg/m3)	NOx (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO2(mg/m3) (WHO)	NO (mg/m3)	NO2 (mg/m3)
01.09.2024	0,00548	0,06813	0,07612				0,25	0,06	0,12				no	yes	no			
02.09.2024	0,00061	0,06047	0,06076				0,25	0,06	0,12				no	yes	no			
03.09.2024	0,00000	0,04827	0,04748				0,25	0,06	0,12				no	no	no			
04.09.2024	0,00020	0,04614	0,04574				0,25	0,06	0,12				no	no	no			
05.09.2024	0,00013	0,05649	0,05594				0,25	0,06	0,12				no	no	no			
06.09.2024	0,00982	0,03743	0,05244				0,25	0,06	0,12				no	no	no			
07.09.2024	0,00683	0,03277	0,04318				0,25	0,06	0,12				no	no	no			
08.09.2024	0,00578	0,03606	0,04479				0,25	0,06	0,12				no	no	no			
09.09.2024	0,00562	0,04232	0,05089				0,25	0,06	0,12				no	no	no			
10.09.2024	0,00186	0,05118	0,05322				0,25	0,06	0,12				no	no	no			
11.09.2024	0,00012	0,05508	0,05433				0,25	0,06	0,12				no	no	no			
12.09.2024	0,00010	0,06440	0,06397				0,25	0,06	0,12				no	yes	no			
13.09.2024	0,00591	0,05871	0,06755				0,25	0,06	0,12				no	no	no			
14.09.2024	0,00114	0,04559	0,04701				0,25	0,06	0,12				no	no	no			
15.09.2024	0,00239	0,03521	0,03758	0,003	0,051		0,25	0,06	0,12			0,12	0,05	no	no			Yes
16.09.2024	0,00022	0,04144	0,04136				0,25	0,06	0,12				no	no	no			
17.09.2024	0,00826	0,05129	0,06380				0,25	0,06	0,12				no	no	no			
18.09.2024	0,00289	0,05151	0,05571				0,25	0,06	0,12				no	no	no			
19.09.2024	0,00512	0,04621	0,05403				0,25	0,06	0,12				no	no	no			
20.09.2024	0,00340	0,03576	0,04039				0,25	0,06	0,12				no	no	no			
21.09.2024	0,00055	0,04693	0,04727				0,25	0,06	0,12				no	no	no			
22.09.2024	0,00001	0,05187	0,05105				0,25	0,06	0,12				no	no	no			
23.09.2024	0,00001	0,05943	0,05848				0,25	0,06	0,12				no	no	no			
24.09.2024	0,00000	0,05527	0,05437				0,25	0,06	0,12				no	no	no			
25.09.2024	0,00042	0,05234	0,05231				0,25	0,06	0,12				no	no	no			
26.09.2024	0,01933	0,04709	0,07663				0,25	0,06	0,12				no	no	no			
27.09.2024	0,00365	0,04778	0,05334				0,25	0,06	0,12				no	no	no			
28.09.2024	0,00013	0,05992	0,05976				0,25	0,06	0,12				no	no	no			
29.09.2024	0,00049	0,05847	0,05870				0,25	0,06	0,12				no	no	no			
30.09.2024	0,00351	0,07242	0,07761				0,25	0,06	0,12				no	yes	no			

Appendix 23. Data table of stationary measurement results for October.

Date	Results recorded by AQMesh gas analyzer						Maximum permissible daily concentration				Maximum permissible monthly concentration		Detected exceedances					
	Daily average			Monthly average			R of Uzb (mg/m3)		WHO (mg/m3)		R of Uzb (mg/m3)		Daily average			Monthly average		
	NO (mg/m3)	NO2 (mg/m3)	NOx (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO2(mg/m3) (WHO)	NO (mg/m3)	NO2 (mg/m3)		
01.10.2024	0,02901	0,07235	0,11667				0,25	0,06	0,12				no	yes	no			
02.10.2024	0,00194	0,07076	0,07319				0,25	0,06	0,12				no	yes	no			
03.10.2024	0,00000	0,08267	0,08183				0,25	0,06	0,12				no	yes	no			
04.10.2024	0,00141	0,08598	0,08801				0,25	0,06	0,12				no	yes	no			
05.10.2024	0,00559	0,07097	0,07938				0,25	0,06	0,12				no	yes	no			
06.10.2024	0,00849	0,06576	0,07871				0,25	0,06	0,12				no	yes	no			
07.10.2024	0,00047	0,05843	0,05812				0,25	0,06	0,12				no	no	no			
08.10.2024	0,00282	0,05599	0,05936				0,25	0,06	0,12				no	no	no			
09.10.2024	0,00005	0,07667	0,07611				0,25	0,06	0,12				no	yes	no			
10.10.2024	0,00010	0,06639	0,06647				0,25	0,06	0,12				no	yes	no			
11.10.2024	0,00967	0,05530	0,07008				0,25	0,06	0,12				no	no	no			
12.10.2024	0,00645	0,05029	0,06015				0,25	0,06	0,12				no	no	no			
13.10.2024	0,00778	0,03218	0,04396				0,25	0,06	0,12				no	no	no			
14.10.2024	0,00676	0,02179	0,03194				0,25	0,06	0,12				no	no	no			
15.10.2024	0,00912	0,02810	0,04204				0,25	0,06	0,12				no	no	no			
16.10.2024	0,00674	0,03469	0,04499	0,007	0,055		0,25	0,06	0,12		0,12	0,05	no	no	no	no	Yes	
17.10.2024	0,00190	0,04818	0,05088				0,25	0,06	0,12				no	no	no			
18.10.2024	0,00013	0,07267	0,07185				0,25	0,06	0,12				no	yes	no			
19.10.2024	0,00000	0,07401	0,07230				0,25	0,06	0,12				no	yes	no			
20.10.2024	0,00000	0,07881	0,07678				0,25	0,06	0,12				no	yes	no			
21.10.2024	0,00460	0,03862	0,04554				0,25	0,06	0,12				no	no	no			
22.10.2024	0,01404	0,03583	0,05728				0,25	0,06	0,12				no	no	no			
23.10.2024	0,01855	0,04024	0,06858				0,25	0,06	0,12				no	no	no			
24.10.2024	0,01787	0,04932	0,07663				0,25	0,06	0,12				no	no	no			
25.10.2024	0,00693	0,04953	0,06012				0,25	0,06	0,12				no	no	no			
26.10.2024	0,00866	0,05373	0,06696				0,25	0,06	0,12				no	no	no			
27.10.2024	0,00853	0,04694	0,05997				0,25	0,06	0,12				no	no	no			
28.10.2024	0,01026	0,04018	0,05586				0,25	0,06	0,12				no	no	no			
29.10.2024	0,00944	0,04248	0,05689				0,25	0,06	0,12				no	no	no			
30.10.2024	0,00855	0,05212	0,06519				0,25	0,06	0,12				no	no	no			
31.10.2024	0,00884	0,04963	0,06314				0,25	0,06	0,12				no	no	no			

Appendix 24. Data table of stationary measurement results for November.

Date	Results recorded by AQMesh gas analyzer						Maximum permissible daily				Maximum permissible				Detected exceedances					
	Daily average			Monthly average			R of Uzb (mg/m3)		WHO (mg/m3)		R of Uzb (mg/m3)		Daily average		Monthly average					
	NO (mg/m3)	NO2 (mg/m3)	NOx (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO (mg/m3)	NO2 (mg/m3)	NO2(mg/m3) (WHO)	NO (mg/m3)	NO2 (mg/m3)
01.11.2024	0,00423	0,06322	0,06966			0,25	0,06	0,12												
02.11.2024	0,00349	0,06216	0,06733			0,25	0,06	0,12												
03.11.2024	0,00005	0,08826	0,08694			0,25	0,06	0,12												
04.11.2024	0,00247	0,05728	0,06087			0,25	0,06	0,12												
05.11.2024	0,00429	0,04729	0,05385	0,004	0,051	0,25	0,06	0,12			0,12	0,05								
06.11.2024	0,00604	0,03604	0,04527			0,25	0,06	0,12												
07.11.2024	0,00435	0,04247	0,04912			0,25	0,06	0,12												
08.11.2024	0,00354	0,04066	0,04606			0,25	0,06	0,12												
09.11.2024	0,00394	0,04159	0,04761			0,25	0,06	0,12												
10.11.2024	0,00522	0,03570	0,04367			0,25	0,06	0,12												