

Impact of wastes of “Navoiazot” Open Joint Stock Company on living organisms and their mitigating ways

Saydullayeva Aziza Akbar kizi

**Bukhara State University, 3rd year student of the direction of
Geography,**

Qalandarova Dilobar Davronovna

**Lecturer at the Department of Ecology and Geography,
Bukhara State University**

Annotation: The article deals with the issues of the toxic compounds emitted by “Navoiazot” OJSC and their negative impact on the environment, including living organisms, the geographical basis for their mitigation.

Key words: nitrogen dioxide, nitrates, thiourea, modernization, utilization, blood cancer, anemia, typhoid, plague, carboxyhemoglobin

Annotatsiya: Ushbumaqolada Navoiazot OAJ danchiqayotgan zaharli birikmalar va ularning atrof-muhitga, jumladan tirik organizmlarga salbiy ta'siri, ularni yumshatishning geografikasoslari haqidagi fikrlar bayon qilingan.

Kalit soʻzlar: azot dioksidi, nitratlar, tiomochevina, modernizatsiyalash, utilizatsiya qilish, qonraki, kamqonlik, qontifi, vabo, karboksigemoglobin

Аннотация: В статье описаны токсичные соединения, выбрасываемые ОАО «Навоиазот», и их негативное воздействие на окружающую среду, в том числе живые организмы, а также географические основы их смягчения.

Ключевые слова: диоксид азота, нитраты, тиомочевина, модернизация, утилизация, рак крови, анемия, брюшной тиф, чума, карбоксигемоглобин.

In the new century, our country has joined the ranks of many developed countries with a number of global problems of socio-economic, demographic and environmental nature. Accelerated use of natural resources, production that is not part of the natural cycle of substances, the release of unusable waste into the environment, the use of environmentally hazardous biotechnology has led to a violation of the balance between energy sources and other human activities . [1]

In the 90s of the last century, many industrial enterprises were built in Uzbekistan. For example, Muborak Gas Condensate Plant, Navoiazot Node, Navoi

Mining and Metallurgical Combine and others. They emit toxic substances into the environment, and industrial waste. Among the manufactured changes in the environment in which organisms live, its pollution with industrial and domestic wastes leads to complications that are more tragic. Toxic substances of various natures pose a much higher risk. [2]

One of such enterprises is “Navoiazot” JSC, which today has a significant impact on the environment and living organisms.

“Navoiazot” JSC is a chemical enterprise based on the production of ammonium nitrate and nitric acid, which are needed in agriculture.

Currently, the main products of the company include mineral fertilizers, nitron fiber, acetic acid, thiourea $\{\text{CH}_4\text{N}_2\text{S}\}$, chlorine and chlorine products, caustic soda. In addition, more than 70 chlorine and chlorine products, organic and inorganic chemicals are produced. It was built as an enterprise specializing in the processing of natural gas for the production of mineral fertilizers, various organic synthesis products and acrylic fiber (nitron). Natural gas, air, caustic soda, salt, etc. are the main raw materials for the enterprise. [3]

Organic synthesis chemistry is also one of the emerging branches of the chemical industry of the republic. Growth in the gas industry has a positive impact on its development. Currently, the largest enterprise in the industry is the Navoi Chemical Plant. It has the capacity to produce acetylene, acetic acid, acetyl-cellulose, and nitron fiber. [4]

Of course, the environmental problems caused by the plant should not be ignored. Environmental problems are especially acute for the city of Navoi and its environment. In a large city, the territorial urban location of a number of large, environmentally "dangerous" industrial enterprises and the environment have a significant impact on air and water. From this point of view, the modernization of industrial production, waste disposal, and recycling should be one of the priorities in the development of such a large industrial center. In this regard, it should be noted that the city of Navoi, first, is the administrative and political center of the region.

One of the main environmental problems in Uzbekistan is air pollution in major cities and industrial centers and its impact on human health. Of the total emissions, 51.9% are carbon monoxide, 16% sulfur dioxide, 17.9% hydrocarbons, 8.9% nitrogen oxides, 6.1% solids and 0.2% other substances. In 2000, the city of Navoi was the most polluted area in the country, with the highest level of air pollution in 2000. [5]

As a result of the “Navoiyazot” chemical plant, the emissions of nitrogen oxides, chlorine and hydrochloric acid, ammonia into the atmosphere have been repeatedly exceeded. For example, if we look at the results of laboratory tests in 2019, the content of ammonium nitrogen in the wastewater of the Zarafshan River was 4.6 times, nitrogen nitrite - 1.5 times, nitrogen nitrate - 2.5 times, chlorides - 1.3 times, copper ions - 1.2 times, sulfates - 2.4 times. Two years later, according to the results of 2021, ammonium nitrogen was discharged 2.1 times, nitrogen nitrate 2.6 times, nitrogen nitrite 60 times, chlorides 1.3 times, copper ions 2.1 times more than normal. [6]

It is obvious that the amount of toxic waste in wastewater increases, but does not decrease.

In addition, due to the production processes at the plant, various toxic wastes are added not only to the atmosphere, but also to water. Salt and sulfuric acid are common in water mixed with industrial effluents. They give the water a salty and bitter taste. Consumption of such water disrupts gastrointestinal function. 350 mg of chlorides and more than 500 mg of sulfates in 1 liter of water is considered dangerous to health.

The density of industrial enterprises in the cities of the country has a negative impact on the lives of living beings, including humans. The cities of Almalyk, Angren, Navoi, Andijan, Fergana, Tashkent, Bekabad, Chirchik and Sariosiya district continue to be polluted with sulfur, nitrogen, phenol, ammonia, hydrogen fluoride, lead, hydrocarbons and other harmful compounds. Atmospheric pollution has a major negative impact on water, soil, plants and animals, as well as humans, leading to the emergence and proliferation of various diseases. At one time, the American meteorologist Louise J. Button wrote in his book "Atmospheric Pollution" (1967), "People realize that the air is polluted, or air pollution leads to a shortage of people on earth". [7]

As a result of air and water pollution in Navoi, there is an increase in blood cancer, anemia, typhoid, plague, severe jaundice, tuberculosis, various severe intestinal diseases, bronchial asthma among people. In addition, one and joint diseases in the population are transmitted primarily to humans from contaminated water sources. According to statistics, the hardness of the Zarafshan River, which currently supplies water to Navoi, has doubled comparing to 1965, its salinity has tripled, the amount of chlorides has increased 2.1 times, sulfates 2-3 times, and salinity 3 times. [8]

Excessive consumption of hard water can lead to the formation of stones in the body, especially in the gallbladder and urinary bladder, urinary tract, as well as in the kidneys. Nitrogen nitrites and nitrogen nitrates in drinking water play an important role in the occurrence of waterborne and communicable diseases in the

population. Symptoms such as weakness, discoloration are observed in people poisoned by these substances. [9]

Today there are many cases of poisoning not only from water but also from the air under the influence of industrial enterprises. Toxins in the air enter the body of humans, animals and plants through inhalation and lead to respiratory poisoning, slow heart rate, bronchitis, asthma, pneumonia, emphysema in the lungs, eye diseases, tooth loss, It causes diseases such as deformity of the bones of the legs (under the influence of fluoride).

Combined particles of sulfur dioxide (SO_2) and sulfur dioxide (SO_3) in the air have the strongest toxic effects on all living organisms that breathe, including humans. Sulfur dioxide is a colorless and non-flammable gas, it smells, irritates the respiratory tract, makes breathing difficult, and causes lung disease. If the amount of this gas increases, the number of patients will increase and deaths will increase. Too much carbon monoxide in the air is very dangerous for humans. After entering the body, this gas combines with red blood cells (hemoglobin) to form carboxyhemoglobin. Because of an increase in blood pressure, his eyesight deteriorates, his ability to recognize time decreases, psychomotor function of the brain is impaired and changes in heart and lung function, headaches, drowsiness, spasms, respiratory disorders occur. [10]

What is the maximum level of air and water pollution caused by toxic gases produced by industrial enterprises such as JSC "Navoiyazot" near the city of Navoi, "Kyzylkum" cement plant, Navoi Mining and Metallurgical Combine and the state of living organisms through them?

For example, in the poultry factory in Karmana district, the feathers of chickens are sparse, the eggs are small, and even the top and inner layers of the eggs are blue. Productivity has also declined compared to the previous situation due to poor environmental conditions. In the area of the Zarafshan River near "Navoiyazot", mass poisoning occurred, fish died, and the color of the water flowing through the Karmana district changed slightly. This was due to the fact that the waste from the enterprise was released in excess and dumped into the water. Under the influence of toxic substances released into the water, the water delivered to the population around the enterprise is sometimes blue, sometimes it looks like oil or kerosene has been spilled. As a result, crops in the surrounding fields have dried up and fruit trees have become less productive. Plants other than cotton, corn, and mulberry have become unbearable.

In conclusion, it should be noted that the industrial enterprises of Navoi and the enterprises of JSC "Navoiyazot" bring significant material benefits to the economy of the republic and Navoi region, but in turn are environmentally toxic. JSC "Navoiyazot" suffers from various diseases due to toxic gases emitted into the atmosphere, as well as discharges and sewage, and suffers from various diseases. Plants are drying up and fruit trees are producing less harvest.

To prevent this, it is necessary to build a green city, that is, to surround the industrial enterprises with various fences (mulberry, saxophone, sugar). Then the trees will absorb the toxic gases from these enterprises, produce oxygen and reduce the damage to the environment. It is also advisable to build filtration devices that trap as much toxic gases from the company's pipes as possible. Regular water treatment should be carried out to reduce the environmental impact of polluted water bodies. To do this, when pistachios were planted in wastewater, the oxygen content of the water increased to 8.0-10.0 mg / l, and the biochemical oxygen consumption and oxidation levels decreased to 14.4 and 21.0 mg / l. Nitrogen compounds in wastewater have been used to grow pistachios. The level of organic and mineral pollution of wastewater was 95.0-99.0%. [11]

In addition to the measures listed above, it is necessary to increase the level of environmental literacy of the population. Although these measures do not completely stop the level of environmental pollution, they do have an effective impact on the pollution of geosystems and the health of living organisms.

References:

1. Sh.A. Shirinboyev, M.G.Safin "Atrof-muhitni muhofaza qilish" (Environmental protection). – Samarkand, SamSFLI, 2003.-P.77-80
2. www.oldconf.neasmo.org.ua Zarifa Saidmurodova, Asatullo Rajabov "Sanoatkorxonalarikeltiribchiqarayotgan ekologik xavf va ularning chiqindilaridanoqilona foydalanish istiqbollari" (Environmental risks posed by industrial enterprises and prospects for the rational use of their waste) O'zME, the first volume Tashkent, 2000.
4. Q.Abirkulov "Iqtisodiy geografiya" (Economic Geography). - Tashkent, Writers' Union of Uzbekistan Literary Fund, 2004. –P.264
5. S.T.Kosimova, Sh.Shojalilov, O.A.Bader "Atrof-muhitni muhofaza qilish va shahar iqlimshunosligi 2-qism" (Environmental Protection and Urban Climate). Part II. -Tashkent, "Istiqlol" publishing, 2005. –P.31-35
6. www.daryo.uz 3.10.2019

7. A.Ergashev, T.Ergashev “Ekologiya, biosfera va tabiatni muhofaza qilish” (Ecology, biosphere and nature protection). –Tashkent, “Yangi asr avlodi” publishing, 2005.–P.326-327
- 8 www.ziyouz.com 10.11.2014 Nazira Yuldosheva “Navoiy nidosi yoki kimyoviy ofat” (Navai’s scream or chemical disaster) (1989).
9. P. Sultonov “Ekologiya va atrof muhitni muhofaza qilish” – Toshkent, Musiq, 2007, 110-bet
10. A.Ergashev, T.Ergashev “Ekologiya, biosfera va tabiatni muhofaza qilish” (Ecology, Biosphere and Nature Protection). –Tashkent, “Yangi asr avlodi” publishing, 2005.-P. 322
11. “Bioecological efficiency of wastewater treatment in textile production and its technology in cultivating pistia telorezovidny”.Abstract of the thesis for the degree of candidate of biological sciences. -Tashkent, 2001.