

ISSUES OF MONITORING ENTERPRISES AND INVENTORY OF SOURCES FORMING HARMFUL SUBSTANCES

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Abstract. In this article, the identification of pollutant sources for the oil-oil production joint venture, their number, and the amount of substances released from the sources are determined. In addition, issues of regulation of harmful substances produced in enterprises were analyzed.

Key words: production, efficiency, harmful substances, permitted rate, environmental condition.

Introduction. Protection of atmospheric air from polluting substances, underground and surface water from waste water coming out of industrial enterprises is one of the pressing issues of the present time and is of global importance.

One of the most important directions is the study of atmospheric air pollution. In the Republic of Uzbekistan, the development of projects for the identification (inventory) of the sources of atmospheric air pollutant emissions and the permissible limited amount of emissions (TChM) has been widely implemented. The development of such documents is of great importance in determining the degree of pollution of the territory and in preventing it.

One of the necessary measures is the development of plans for the implementation of complex works to achieve the standard disposal of pollutants emitted from sources of pollutants in enterprises.

Protection of the surrounding environment has become one of the most urgent problems of the 21st century. The reason is that the scientific and technical revolution was the result of the achievements of various disciplines, which created an opportunity to use natural resources for a limited time. This, in turn, developed the productive forces of the society and created conditions for satisfying the material and spiritual needs.

But the rapid development of the scientific and technical revolution complicates the interaction between society and nature, between man and the surrounding environment, and causes unexpected changes in the management of ecological processes in the biosphere.

Method. The following methods were used to determine the composition and

amount of pollutants in exhaust gas streams:

- - theoretical (balance);
- - calculation and analytical (experimental); and
- - reporting and static methods.
- The theoretical method allows us to establish

the composition

and quantity of pollutants based on the determination of thermal and material balances of technological processes, considering the chemical composition and properties of raw materials, fuel, structural and geometric features of units, technological parameters, processes maximizing the performance of units and data on specific emissions of pollutants of the operated equipment.

- The Samarkand State Unitary Enterprise for

Current Road Use is

located in the village of Farhad in Samarkand. The main activity of this enterprise is the production of asphalt-concrete mixtures and reinforced concrete products. The production capacity of the enterprise reaches 200 thousand tons per year of asphalt-concrete mixture, and the plant produces 10 thousand m³/year of reinforced concrete structures. [2]

Analysis and results. “Bo‘ston olami” LLC enterprise is located in the industrial zone of the city of Jizzakh. The holding company “Узпахтасаноатэкспорт” belongs to the joint-stock company “Uzпахtayog”.

According to the location (situational) map of the enterprise, it is surrounded as follows:

- From the north - Jizzakh Oil Base Unitary Enterprise;
- From the south side - a settlement with multi-story houses;
- From the west - Jizzakh city "Zenatkor TTV" reinforced concrete products LLC;
- From the east side - the substation of Jizzakh City Electric Networks Company.

“Bo‘ston olami” LLC The main activity of the “Bo‘ston olami” LLC is the production of oil-oil products used as food products. The nearest settlement is located 100 meters from the south side.

The company is open 24 hours a day, 310 days a year. The number of employees is 225 people. The land area is 2.83 ha. In the last reporting year, 26,779,546 tons of fertilizer were processed. The following products are obtained as a result of fertilizer processing according to the technological process:

- Black neck - 18.5%;
- Kunjara - 44.5%;
- Husk – 32,1 %

The developed products are given to enterprises, organizations and institutions, farms, private organizations.

The relief of the area where the enterprise is located is flat, the relief effect coefficient of the place is equal to 1.

Meteorological data and coefficients of the area where the enterprise is located are shown in the table.

“Bo‘ston olami” LLC The company has the following workshops and departments:

- Administration;

- A warehouse;
- The main production workshop;
- Refinery;
- 1-extraction workshop;
- 2-extraction workshop;
- Cooling tower (water cooling) unit;
- Deodorization workshop;
- Packaging shop;
- Acid treatment shop;
- Soap production workshop;
- Boiler room.

“Bo’ston olami” LLC enterprise is located in the industrial area of the city of Jizzakh and is characterized by the following climatic conditions:

- The hours that emit the most heat are during the hottest summer months. In Jizzakh, it is 354-388 hours per month or 82-90% of the expected amount.

- In the city of Jizzakh, the wind blows from the southwest in autumn and winter, and from the northwest in summer.

- According to the climatic conditions, the city of Jizzakh belongs to 3 types of climate zones.

Climate-related meteorological descriptions used as primary data for pollutant release calculations

The name of the indicators	Designation	Unit of measure	Value
Coefficient related to atmospheric stratification			200
Coefficient of joint relief			1
Average air temperature			14
In the hottest month		°C	+45
In the coldest month		°C	-32
5% increase in wind speed in one year		m/c	2
Average annual wind speed		m/c	2
Average annual recurrence		%	5
The direction of the wind on the rumba			21

Meteorological data and indicators

There are 15 types of pollutants released into the atmosphere of the enterprise from pollutant sources, the total amount of which is 58.95569 tons/year, according to the ingredients as follows:

- Chigit dust - 9,426 tons/year, 15.99%;
- Shot dust – 0,435 tons/year, 0,738 %;
- Jail dust – 0,61 tons/year, 1,035 %;
- Carbon oxide – 8.0148 tons/yil, 13.595%;
- Nitrogen oxide – 1,61 tons/year, 2,731 %;
- An aromatic hydrocarbon – 1,2864 tons/year, 2,18 %;
- Nefras – 35,9448 tons/year, 60,97 %;

- Acrolein – 0,0054 tons/year, 0,009 %;
- Acetic acid vapor – 0,0024 tons/year, 0,004 %;
- Sulfuric acid vapor – 0,95 tons/year, 1,61 %;
- Alkali vapor – 0,284 tons/year, 0,482 %;
- Gasoline vapor – 0,2865 tons/year, 0,486 %;
- Benzene – 0,01 tons/year, 0,017 %;
- Metal dust – 0,089 tons/year, 0,151 %;
- Benzopiren – 0,00008 tons/year, 0,0001 %;
- Ammonia – 0,00131 tons/year, 0,0022 %.

The amount of solid pollutants is 10.56 tons/year (17.91%), the amount of gas and liquid substances is 48.39569 tons/year (82.09%).

Distribution of the amount of pollutants released into the atmosphere

Table 2.1

№	Name	Tones/year	%	Sources
1	Main production departments	58,86669	99,85	37
2	Assistant constructions	0,089	0,15	1
	TOTAL:		100	38

A source that emits pollutants into the atmosphere is an organic source. The 1st C-6 model dry mechanical dust collector in the workshop.

Source height $H = 8.4$ m, cross section $D = 0.45$ m.

The working time of the source is $T = 310$ days/year, $t = 24$ hours/a day or 7440 hours/year.

Saw dust is produced as a result of the operation of 1 separator and 3 pulverizers. The resulting saw dust is cleaned by C-6 dust removal equipment and released into the atmosphere.

The speed of the dust-gas mixture before the cleaning process is 12.8 m/s, the volume is 2.03 m³/s,

the temperature $T = 220^{\circ}\text{C}$. Density of dust - 238.6 mg/m^3 .

The maximum amount of dust per unit of time is:

$$B_1 = C \times W \times 10^{-3} = 238,6 \times 2,03 \times 10^{-3} = 0,48 \text{ g/s}$$

The total amount of dust is as follows:

$$M_1 = B \times T \times t \times 3600 \times 10^{-6} = 0,48 \times 310 \times 24 \times 3600 \times 10^{-6} = 12,86 \text{ tons/year}$$

The speed of the dust mixture at the exit from the cleaning device is 11.7 m/s , the volume is $1.86 \text{ m}^3/\text{s}$, the maximum capacity is 38.4 mg/m^3

average capacity – $34,3 \text{ mg/m}^3$.

The maximum amount within a time unit is as follows:

$$B_1 = 38,4 \times 1,86 \times 10^{-3} = 0,071 \text{ g/s}$$

The average amount per unit of time is as follows:

$$B_2 = 34,3 \times 1,86 \times 10^{-3} = 0,064 \text{ g/s}$$

The total amount is as follows:

$$M_2 = 0,064 \times 310 \times 24 \times 3600 \times 10^{-6} = 1,71 \text{ tons/year.}$$

Efficiency of cleaning equipment – $86,7 \%$.

Conclusion. According to the results of the calculation analysis, it was determined that the amount of ingredients coming from the company's sources will not exceed the permitted capacity PDK under the current working conditions and in the future.

A sanitary protection zone has been defined for the enterprise, and it was determined that the discharges into the atmosphere do not exceed the permissible capacity (PDK) even in the sanitary protection zone. This does not lead to pollution of the natural environment at a higher than normal level. It does not have a negative effect on the health of humans and other living organisms.

In the joint enterprise "Boston Olami" LLC, sources 2 are equipped with air pollutant dust treatment equipment (ChTU), sources 3 and 4 are equipped with Ts-6 dust treatment equipment, the data of dust treatment equipment is presented in the table in the appendix. According to the results of the calculation analysis, it was determined that the amount of ingredients coming from the company's sources will not exceed the permitted capacity under the current working conditions and in the future.

A sanitary protection zone has been established for the enterprise, and it was determined that emissions released into the atmosphere do not exceed the permitted capacity (PDK) even in the sanitary protection zone.

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