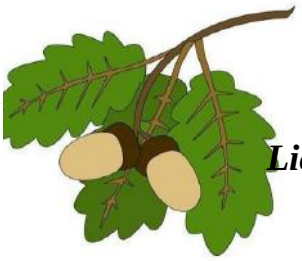


INDIVIDUAL ENTREPRENEUR
KUDAIBERGENOVA G.B.
License of the Ministry of Environmental Protection PK
№01633P dated 03.01.2008

Employer: South-Kazakhstan regional branch
JCS NC "Kazautozhol"

SECTION

«ENVIROMENTAL PROTECTION»

ON WORK PROJECT

Modification of Project estimated document

of the reconstruction (construction)

Road Section km. 593-632:
«Khorgos - Almaty –Taraz – Shymkent – border of the Republic of Uzbekistan»
section: «Shymkent – border of Zhambul oblast» from PK330+00 to PK 370N+00
Main project solutions of the construction of 2 way tunnel

Individual
entrepreneur ***Kudaibergenova G.B.***

Originator.: Bekbenbetova K..

Shymkent – 2014

Content

ANNOTATION

This section "Environmental Protection" (hereinafter - EP) is executed in accordance with the requirements of the Environmental Code of the Republic of Kazakhstan.

The environmental protection section is carried out in order to determine the environmental and other consequences of the options for managerial and economic decisions taken, develop recommendations for improving the environment, preventing the destruction, degradation, damage and depletion of natural ecological systems and natural resources.

When developing the EP section, one should be guided by the current legislation and the relevant sectoral regulatory documents of the Republic of Kazakhstan that regulate the activities of the intended concept.

This project solves the issue "Adjustment of the Design and Estimate Documentation of the reconstruction (construction) of the section km. 593-632 highways: "Khorgos - Almaty - Taraz - Shymkent - border of Of the Republic of Uzbekistan "section:" Shymkent-border of Zhambyl region" from PK330 + 00 to PK370n + 00. Basic design solutions for the construction of a 2-way tunnel". Project Employer - South Kazakhstan regional branch of JSC NK "KAZAUTOZHOL".

The developer of the working project "*Correction of the Design and Estimate Documentation of the reconstruction (construction) of the section km. 593-632 highways*: *"Khorgos - Almaty - Taraz - Shymkent – border of the Republic of Uzbekistan "section:" Shymkent-city of Zhambyl region." from PK330 + 00 to PK370n + 00.* The main design solutions for the construction of a 2-way tunnel is "SHYMKENT KAZDORPROEKT" LLP of the EP section is IE Kudaibergenova G.B. (license of the Ministry of Environmental Protection of the Republic of Kazakhstan No. 01633R dated 03.01.2008. for environmental design, regulation and work in the field of environmental impact assessment).

INRODUCTION

Environmental protection in the Republic of Kazakhstan is carried out on the basis of compliance with the following basic principles:

- the priority of protecting human life and health, preserving and restoring the environment favorable for life, work and recreation of the population;
- balanced solution of socio-economic problems and environmental problems in order to transition the Republic of Kazakhstan to sustainable development in the conditions of market relations and meet the needs of the current and future generations of people in a healthy and favorable environment;
- ensuring environmental safety and restoration of disturbed natural ecological systems in areas with an unfavorable environmental situation;
- rational use and reproduction of natural resources, the phased introduction of payments for the use of natural resources and the introduction of economic incentives for environmental protection, etc.

The most important environmental standards are environmental quality standards - maximum permissible concentrations (MPC) of harmful substances in natural environments. MPC is approved for each of the most dangerous substances separately and is valid in the territory of the Republic of Kazakhstan. On the basis of MPC, standards for maximum permissible discharges of harmful substances are developed. The standards are set individually for each source of pollution in such a way that the cumulative impact on the environment of all sources in a given area does not lead to an excess of the MPC standards established by the Ministry of Health of the Republic of Kazakhstan.

In accordance with the Law of the Republic of Kazakhstan "On Environmental Protection", environmental quality regulation aims to establish scientifically grounded maximum permissible environmental impact standards that guarantee the environmental safety of the population and the rational use of natural resources. Environmental protection is being developed in order to determine the environmental and other consequences of options for managerial and economic decisions, develop recommendations for improving the environment, preventing the destruction, degradation, damage and depletion of natural ecological systems.

1. INFORMATION ABOUT THE NATURAL CONDITIONS OF THE AREA OF LOCATION OF THE DESIGNED OBJECT

1.1 Location and brief description of the object

Location. The section of the tunnel through the Boraldaytau ridge is located in the Tyulkubas region, on the border with the Zhambyl region, in the area of the Shokpak-Baba aul, the length of the tunnel is about 860 m.

The main task of the project is to correct the Design and Estimate Documentation of the reconstruction (construction) of the section km. 593-632 highways: "Khorgos - Almaty - Taraz - Shymkent – border of the Republic of Uzbekistan "site:" Shymkent-city of Zhambyl region. " from PK330 + 00 to PK370n + 00. Basic design solutions for the construction of a 2-way tunnel.

Taking into account the placement of approaches to the tunnels with pear-shaped turns, the length of the route is 2700 m, or from PK340 + 00 to PK367 + 00.

Duration of construction is 15 months, including the preparatory period - 1 month.

1.2 Climatic conditions (m/point Tulkubas)

Climatic subdistrict III-B,
Outside air temperature ^{0}C:
absolute maximum +41;
absolute minimum -30.
Average maximum air temperature of the warmest month, 0C +33
the coldest five-day period (provision 0.92) -17:
average annual +11.5
Annual precipitation, mm - 951
The prevailing wind direction for December-February is E, SE.
The prevailing wind direction for June-August is E, SE.
The maximum of the average wind speeds in terms of points for January - 5.9 m/s
Maximum of the average wind speeds in terms of points for July - 2.0 m/s
Standard freezing depth, m: for loam - 0.38;
The depth of penetration 0C into the ground, m: for loam - 0.48;
Area by weight of snow cover – II
Region by wind pressure – IV
Region by ice wall thickness - IV

1.3 Seismicity

The seismicity of the site according to SNiP RK 2.03-30-2006 and the seismic zoning map of the territory of the Republic of Kazakhstan is *eight points*. The seismic category of soils is *the second*. Rocky soils to a depth of 10 meters weathered and fractured

1.4 Engineering and geological surveys.

Engineering and geological surveys for the project of the Shakpak Baba tunnel - on the instructions of the construction company "Dena Rahsaz Construction" were carried out at the stage of the working design, according to the letter and in accordance with SNiP RK 3.03-07-2003, GOST 25100-2011, GOST 8269-0-97, SNiP 32-04-97, (SP 122.13330-2012), SP RK 1.02-18-2007, VSN-190-78 and other regulatory documents of the Republic of Kazakhstan.

The climatic characteristics of the work area was adopted according to SNiP RK 2.04-01-2001, the assessment of the seismicity of the site - according to SNiP RK 2.03-30-2006, taking into account the category of soil by seismic properties.

The purpose of engineering and geological surveys is to assess the engineering and geological conditions of the site for the construction and driving of the tunnel on the basis of its geological and lithological structure, hydrogeological conditions and physical and mechanical properties of soils.

The complexity category of the geotechnical conditions of the site is the second. At the site along the alignment line of the projected tunnel, three wells were drilled with a depth of 73 m, 63 m, 27 m.

The workings were carried out along the axis of the projected tunnel.

Samples of undisturbed core structure and water samples for laboratory research were taken from the wells. The depth of workings and their drilling points are indicated on the ground by the customer, testing in the area of the underground structure was carried out in accordance with SNiP 32-04-97, Fig. one.

For drawing workings, breeding - rock outcrops on the day surface and the lines of the engineering-geological section, a topographic plan of 1: 1000 scale was used, made and provided by the customer.

Laboratory studies of soils were carried out in the soil science laboratory of Shymkent Kazdorproekt LLP, in accordance with the current regulatory documents and GOSTs. The report was compiled in accordance with the standards and GOSTs of the Republic of Kazakhstan.

1.5 Relief and hydrography.

The section of the projected tunnel is located within the middle mountains, with a difference in the heights of the south-western slope of about 90 m, the slope is of medium steepness, the north-east is about 66 m, the slope is steep. In some places there are outcrops of rocky soils on the day surface.

At the northeastern portal site, the exit from the tunnel, a dry hollow, which serves as a collection of surface water, melt and rainwater flows through it. The height of the water stream is about 0.6-1.0 m.

1.6 Lithological structure.

The Boraldaytau ridge, through which the tunnel is designed, belongs to southeastern Small Karatau and is represented by middle-low mountains and belongs to the area of the Baikal-Caledonian folding.

The Baikal structural stage is represented by the terrigenous formation of the lower-middle Riphean and upper Riphean complexes: sandstones, limestones, dolomites, felsic and basic effusives and tuffs, shales.

The Early Caledonian and Late Caledonian structural levels are represented by terrigenous-carbonate formations of the Middle Cambrian complex, deposits are composed mainly of sandstones, dolomites, limestones and, less often, subordinate siliceous, talc and clay shales, silicified tuffs and tuff sandstones. The section is dominated by limestones, dolomites, and various-grained polymictic, quartz and arkosic sandstones.

Limestones and dolomite sedimentary rocks are represented by chemogenic and organogenic varieties. Numerous veins of calcite (up to 1-2 mm) are characteristic, the structure is fine-fine-grained, pseudo-oolitic, irregularly granular, coarsely layered, the texture is platy (up to 3-5 cm) and massive, lenses, interlayers and nodules of silicon occur sporadically. Color is light gray, dark gray, yellow-brown, average hardness 3.5 - 4, non-soaking in water, violent boiling under the influence of HCl acid, the most common changes in limestone silicification, replacement by chalcedony, dolomitization, replacement by dolomites with the formation of dolomitized limestone.

Dolomites at the fracture are granular, lumpy, the texture is thin and coarsely layered, wavy, banded and spotted, massive, the structure is uniformly and unevenly granular. The color is grayish-white, yellowish and pinkish-cream, hardness 3.5 - 4, gloss matt, glassy, boils in powder when exposed to HCl acid. The upper part of the section is dominated by calcareous dolomites and dolomitic limestones. Dolomites and limestones are interconnected by transitions, depending on the dolomite content, dolomites and dolomite limestones are developed, the boundary between these varieties is gradual, indistinct, and practically the physicomechanical properties of these rocks are very close to each other. Therefore, limestone and dolomite are combined into one geotechnical element.

Sandstones are predominantly oligomictic (quartz) polymictic and arkose; cement is largely recrystallized and consists of smaller fragments of the same rocks, calcite, opal and chalcedony, unweathered of high hardness and strength. The color is gray and light gray, rusty brown, in places with a reddish tint.

Slates consist of the finest sheets of sericite and talc, fine-grained quartz or amorphous silicon, with a microlayer texture. The schists are greenish-gray, light brown and gray with a silky sheen, transformed into filites, chlorite-sericite, quartz-sericite and quartz-chlorite-sericite.

Silicified acidic and basic effusive rocks and their tuffs and tuffaceous sandstones are composed of a crystalline glassy groundmass, in which crystals of feldspar and quartz are scattered of irregular shape, glass fragments, effusive rocks and tur are found in sandstones in the form of large nests of irregular shapes, black color, glass luster.

Massive conglomerates are sometimes layered alternating with sandstones, arkose and polymictic, coarse-grained and uneven-grained cement, grains are cemented by a sericite-siliceous mass with an admixture of ferruginous carbonate. Shales and silicic effusive rocks and their rounds are in a clearly subordinate position in the massif. They occur in the form of low bed thickness, and tuffs in the form of injections of various shapes.

1.7 Physical and mechanical properties of soils

Rocky soils are sedimentary, silicate - sandstones and carbonate - limestones, dolomites, shales are metamorphic subspecies and silicate species.
According to physical and mechanical properties, rocky soils are divided into the following engineering and geological elements: 1 IGE - sandstone; 2 IGE - dolomites and limestones.
Sandstones, limestones and dolomites are subdivided into horizons 1 and 1a according to the degree of weathering; 2 and 2a.

IGE 1, horizon 1a - sandstone, occurs in the upper part of the section, weathered, strongly fractured, in the form of separate blocks, with shale interlayers and lenses, weathered.

IGE 1, horizon 1 - unweathered sandstone, strong with rare cracks, strong with veins of chalcedony, opal and calcite, at an angle of 40-600.

IGE 2, horizon 2a - limestones and dolomites, occur in the middle part of the section, weathered, fractured.

IGE 2, horizon 2 - lightly weathered limestone and dolomite, with veins of calcite and silicon, at an angle of 30-700.

No.	Name, indicators	Variety of soils of engineering and geological elements			
1	2	3	4	5	6
1	Uniaxial compressive strength R0, MPa. table B.1 dry in water-saturated	1a 11,73 9.53	1 29.87 27.19	2a 13.8 11.73	2 28.80 27.70
2	Soil density ρ, g / cm3 In a water-saturated state Density of dry soil ρ, g / cm3 table B.2	2.37 2.29	2.62 2.60	2.47 2.40	2.62 2.60
3	Moisture capacity,%	0.031	0.007	0.034	0.005
4	Weathering coefficient Kwr, unit fraction table B.4	medium weathered	slightly weathered	medium weathered	slightly weathered

5	Softening coefficient in water, Ksot d.u. table B.5	>75 Not softened	>75 Not softened	>75 Not softened	>75 Not softened
6	By the degree of solubility in water, gsr g / l table B.6	Insoluble < 0,01		Sparingly soluble 0,01 0,01< -< 1	
7	Filtration coefficient k, m / day table B.7	Very highly waterproof	permeable	Very highly permeable	permeable
8	Breed quality index RQD,% p.p. A.17 by intervals Table D.4	Very bad	good	Very bad	bad
9	Incidence angle β0 Fissure plane dip azimuth Further, the text from D.3	40-800	40-800	40-800	40-800
10	Internal friction angle, degree	-	29	-	43
11	Specific adhesion	-	307·105 Па	-	217·105 Па

1.8 Engineering and geodetic surveys.

For the design of the approaches to the tunnels, topographic and geodetic materials of previous years were used with partial changes from the survey period for the development of a detailed design for the reconstruction of a section of the A-2 “Khorgos-Almaty-border of RU” highway from km 593 to km 632 to the present .

For the design of the tunnel, the contractor "Dena Rahsaz" performed geodetic works and topographic survey in the same coordinate system and heights.

1.9 The groundwater

The groundwater within the study area was penetrated by well No. 2 at a depth of 40 m, well No. 5 at a depth of 21.5 m, and in the adit area the groundwater level corresponds to an altitude of 1112 m.

Regular observations of the position of the groundwater level in the annual cycle and over the years in the study area were not carried out. In the Boroldai structure, the discharge of springs is associated with the groundwater of the open fracture zone is 0.2 - 5 l / s, during rains and melting of snow it reaches 20 l / s, the groundwater is fresh.

1.10 Flora

The flora on the territory of the enterprise is scarce and is represented mainly by herbaceous and shrub species.

1.9. Fauna

On the territory of the object, the fauna is represented by minor species of birds, small lizards, rodents and insects.

2. OBJECT INFORMATION

2.1 Object characteristics

Address of the object:

Oblast:	**South-Kazakhstan**
Republic:	**Kazakhstan**

The considered section of the route passes through the Boraldai Tau ridge, through which the construction of a double-track tunnel is envisaged. The main objective of the project is to correct the Design and Estimate Documentation of the reconstruction (construction) of the section km. 593-632 highways: "Khorgos - Almaty - Taraz - Shymkent – border of the Republic of Uzbekistan "section:" Shymkent-border of Zhambyl region" from PK330 + 00 to PK370n + 00. Basic design solutions for the construction of a 2-way tunnel. Taking into account the placement of approaches to the tunnels with pear-shaped turns, the length of the route is 2700 m, or from PK340 + 00 to PK367 + 00. The technical category of approaches, as well as the entire route of the international corridor, is adopted 1-B with four lanes - two in each direction. The total width of the roadbed is 27.5 m, the width of the traffic lane is 8.75 m, and the total width of the asphalt concrete pavement is 22.0 m.

Water supply. For drinking water supply, water from the water supply network of the city of Shymkent should be used. For soaking soils, when constructing an earth embankment and reconstructing a road, it is recommended to bring industrial water from the river. Koshkar-Ata.

Road pavement and subgrade

1. On the approaches and on the rest of the road, the cement-concrete pavement was replaced by a non-rigid pavement with an upper pavement layer of stone mastic mix-20. The design design of the pavement is attached.
2. Inside the tunnel, it is proposed to take road clothes constructively, because the basis of the entire structure is rocky soil made of dolomite with interlayers of shale.

In this regard, on the worked-out surface of the bottom of the tunnel, taking into account the transverse slope, arrange a leveling layer of black-crushed stone mixture, with an average thickness of 8 cm, then the lower layer of the coating of coarse-grained asphalt concrete, 10 cm thick and the top layer of the coating of crushed stone-mastic asphalt concrete mixture 5 cm.

For discussion of NTS, two types of bitumen are proposed for the manufacture of SMM-20: - ordinary road bitumen BND 60/90 - unified on a polymer-bitumen binder based on a reactive elastic ternary copolymer, manufacturer "Kaz Bitumen Service" Pavlodar. Pavement options and the cost of 1m2 of the top layer of the pavement, as well as the entire structure, are shown in the drawing "Transverse profile of the pavement structure".

Road alignment. Taking into account the placement of approaches to the tunnels with pear-shaped turns, the length of the route is 2700m, or from PK340 + 00 to PK367 + 00.

The considered section of the route passes through the Boraldai Tau ridge, through which the construction of a double-track tunnel is envisaged.

The technical category of approaches, as well as the entire route of the international corridor, is adopted 1-B with four lanes - two in each direction. The total width of the roadbed is 27.5 m, the width of the traffic lane is 3.75 m, and the total width of the covered with asphalt concrete is 22.0 m.

The distance between the tunnels is taken in accordance with the SNiP requirements and is 15m. With the width of the dividing strip on the approaches equal to 5m, the length of the runway is 500m.

On the approaches to the tunnel, there are two turning platforms on each side:

- the first pear-shaped platforms at a distance of 500m from the tunnel are intended for turning of transit transport in case of emergency and oversized vehicles;

- second sites directly in front of the entrances to the tunnel for maneuvering special equipment in emergency situations in tunnels and for the passage of special vehicles into the emergency tunnel.

Directly in front of the tunnel entrances, there are sites for the location of the control room, maintenance service and other buildings necessary for the normal maintenance of the tunnels. Before the first turns, in addition to the necessary road signs, a sign is installed prohibiting the carriage of explosive and fire hazardous substances, an information electronic board prohibiting further movement in emergency cases. An automatic alarm is installed in front of the entrances. traffic lights prohibiting entry into the tunnel in extreme situations. For traffic safety, barrier fences are installed along the axis of the highway, and on the widening section of the roadbed (displacement) 0.5 m from the edges of the reinforcement of the safety bands. For the withdrawal of people from the emergency tunnel in the center (middle of the tunnel) a special adit is provided.

Longitudinal profile. When designing a longitudinal profile, the main norms were adopted according to SNiP RK 3.03-09-2006 *, thus, the maximum longitudinal slope on approaches is 40%, and in tunnels 30%. The minimum radius of a convex curve is 15,000m, a curved curve is 5,000m.

Cross profiles. Typical transverse profiles of the roadbed are shown only at the approach (drift) sections for a visual representation of the acceleration section of the dividing strip from 5m to 15m.

Double-track tunnel. According to SNiP RK 3.03.-07-2003, the distance between the tunnels is 15.0 m, the width of each tunnel is 12.5 m, the length is 940 m, or from PK348 + 97 to PK358 + 37.

The vertical limitation for vehicles in accordance with GOST 24451-80 is 5.0 m, the total height of the arch along the axis of the tunnel from the level of the carriageway is 9.0 m.

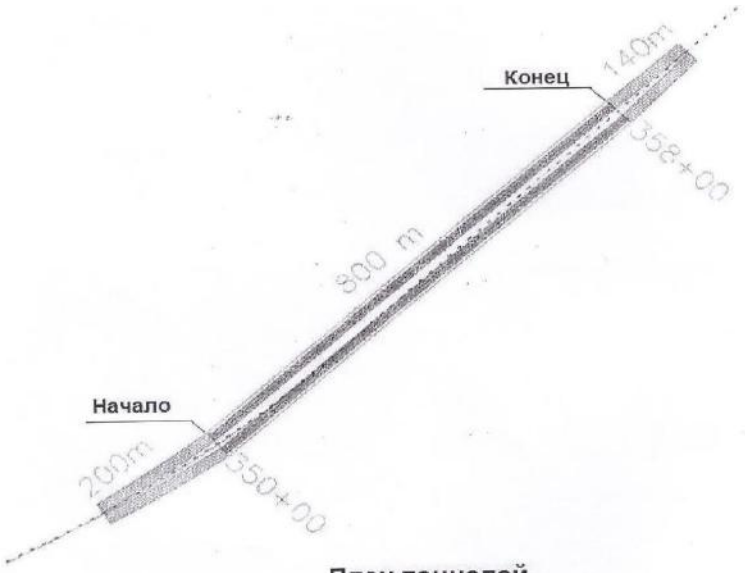
The width of the carriageway with reinforced lanes is taken according to the assignment and corresponds to the width on the approaches, i.e. on the right, a reinforced strip of the edge of the carriageway, 2.5 m wide, runs through the entire tunnel. On the left, a 1.0m wide reinforced safety lane also runs through the entire tunnel. Thus, the width to be covered with asphalt concrete is 11.0 m. Служебные проходы, шириной 0,75м возвышаются над проезжей частью на 40см.

For longitudinal drainage from the tunnel, reinforced concrete trays are provided under the service passage. In the direction of Shymkent-Almaty, the maximum direction of the wind rose partially coincides with the direction of movement of vehicles, therefore, four pairs of 22 kW fans are installed in the right tunnel (in the direction of travel in Almaty). In the opposite left tunnel (against the direction of the wind), ten fans are installed for maximum effect. The fan motors have a power of 30 kW, and they are all reversible. To control the processes of lighting, ventilation, alarms, incl. and external traffic lights and other processes are provided at the entrance to the tunnels control points, and to monitor the progress of traffic within the tunnel, video cameras are installed.

Tunnel Geometric Specifications

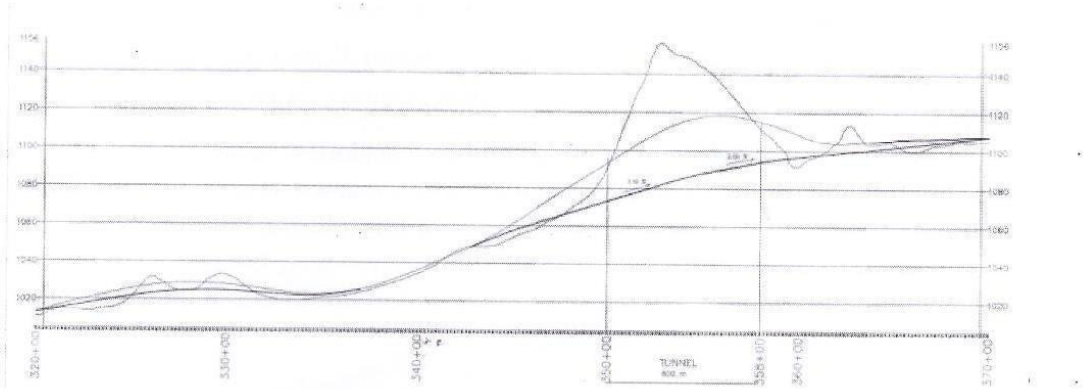
The above project consists of two tunnels with a length of 800 meters each.

The plan and longitudinal profile are shown on the following map:



План тоннелей

4

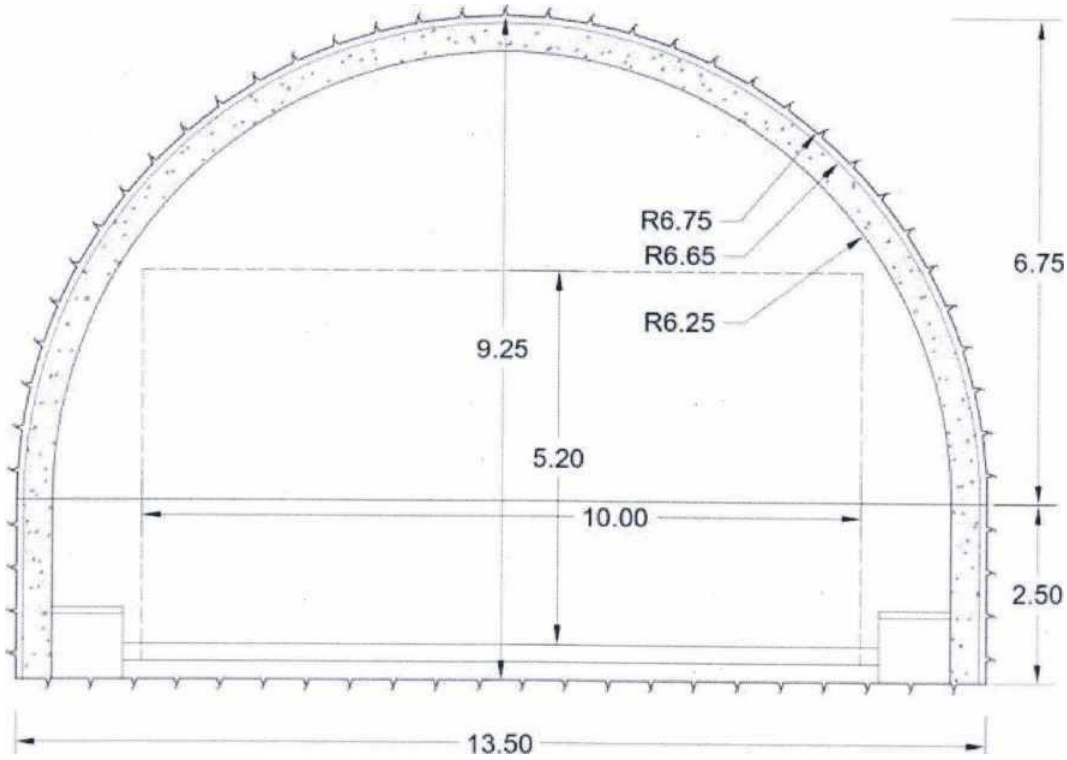


Продольный профиль тоннелей

Method for performing drilling, excavation, temporary reinforcement and tunnel lining

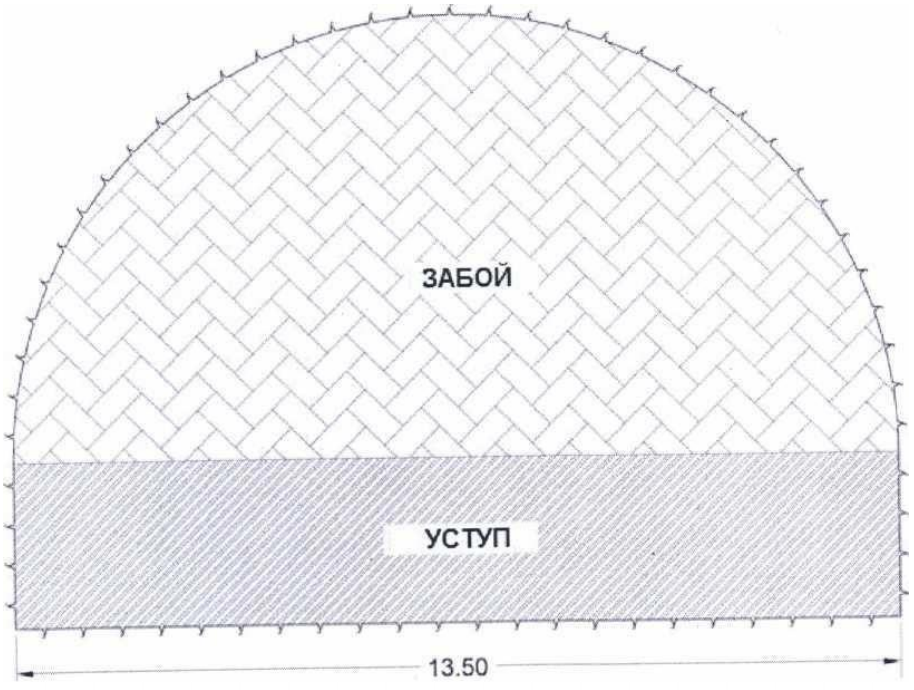
The horizontal distance of the two tunnels is 15 meters, the longitudinal slope on the south side is 3.1%, and on the north side it is about 2%.

The cross section (cut and lining) of the tunnels is shown below. The cross-sectional area of the excavation will be 105.32 square meters, the width of the tunnel during excavation will be 13.5 meters, the height from the bottom point to the top will be 9.25 meters.



Cross section of the tunnel

Tunnel excavation development. Based on the first inspection of the project site, existing rock outcrops along the path of the tunnels, as well as overburden (especially in the first and last hundred meters of tunnels), we believe that drilling and blasting may be the most suitable way

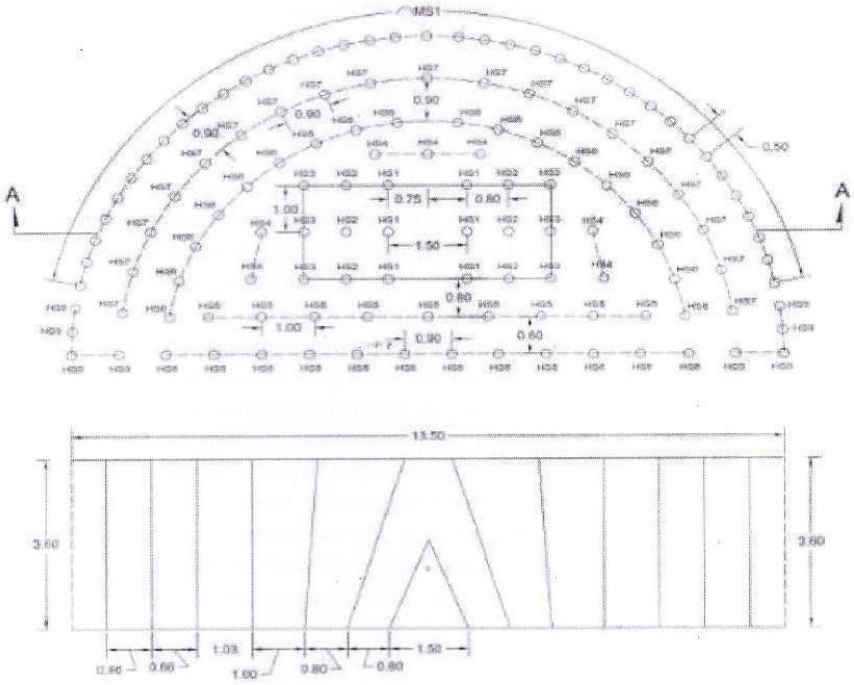


excavation development. With this method, the holes are drilled with a Jumbo Drill the first 6.75 meters down from the top of the tunnel, called the bottomhole. The diameter of the holes at this stage will be 51 mm, and their depth for the first hundred meters is about 2 meters, after this mark it can be increased to 3.60 meters. After drilling holes on the bench, explosions are made using electric detonators of the HS type (Half second - with a half-second deceleration), emulsion explosives, dynamite and Cordtex detonating cord (for edge holes), according to the presented layout of the holes and explosive charges. Drilling hole model and charge placement. Full cross-section slaughter

	Deceleration number	Detonator	Boreholes	Borehole diameter, mm	Borehole depth, mm	Length of groups of holes, m	The charge per hole is	
							Explosive (checkers for 1 hole)	Explosive substance, kg
1	HS1	6	6	51	2.5	15	6	18.00
2	HS2	6	6	51	3.6	21.6	8	24.00
3	HS3	6	6	51	3.6	21.6	8	24.00
4	HS4	7	7	51	3.6	35.2	6	21.00
5	HS5	9	9	51	3.6	32.4	7	31.50
6	HS6	18	18	51	3.6	64.8	6	54.00
7	HS7	19	21	51	3.6	75.6	5	54.50
8	HS8	12	13	51	3.6	46.8	7	45.50
9	HS9	8	8	51	3.6	28.8	8	32.00
10	MSI*	10	37	51	3.6	133.2	4	37.00
	TOTAL	101	131		3.6	465		340

*MS - Millisecond

Excavation surface: 72 m2 Excavation volume: 259.2 MJ
Emulsion explosive (Emolite): 340 kg Cordtex: 189 m
Detonator: 101 pcs. Specialist. charge: 1.31 kg / m3



Участок А-А

The model presented for drilling holes and placing charges is based on an initial survey of the surface; however, a more accurate model will be presented after the start of implementation, when the composition, type and structure of the rocks surrounding the tunnels (layer thickness, slope, duration and connection system) will be studied in more detail. After each stage of drilling and blasting, one layer of shotcrete 5 cm thick will be laid, followed by a new cycle of drilling and blasting. After completing about three cycles of the above operations, if necessary, the installation of reinforcing mesh, fastening with anchors and additional placement of shotcrete will be carried out simultaneously with the drilling of new boreholes. After the completion of about one hundred meters of excavation for the entrance of the tunnel, work on the bench will begin simultaneously with the commencement of mining operations. To perform this operation, using a drilling carriage, boreholes will be arranged in half the width of the tunnel and at a length of 12 meters. The diameter of these holes will be from 64 to 72 mm, and their depth will be about 2.7 m, they will be placed in a 1.5 x 1.5 pattern. After completing one cycle of drilling holes, placing charges, blasting, cleaning and temporarily strengthening the liberated wall, the next stage will begin. At this stage, the driveway to the face will be on the other half of the tunnel width. After excavating and temporarily strengthening about 50 meters of half of the bench section, the access road to the bottom will be moved to the excavated part of the bench, and the removal of the bench will be started on the other half of the bench as described above.

Temporary strengthening of tunnels. According to the instructions of the Customer and the Tunnel Designer, a layer of shotcrete 10 cm thick is required for all tunnel paths, about 5 cm will be placed after each cycle of drilling holes, filling charges and explosions, the rest will be placed in an additional form in more rare dimensions. In addition, 20% of the edge surface of the tunnels needs one layer of reinforcing mesh with a diameter of 6 mm and cells of 150 x 150 mm, and 10% of the surface needs anchors 6 m long, arranged in a 2 x 2 pattern; or roof bolts with a length of 4m, arranged in a 1.5 x 1.5 pattern. In this case, the number of works on temporary strengthening will be: - Shotcrete 10 cm thick: 43,200 m - Reinforcement mesh: 5000 m2 - Anchor supports 1000 m long

Permanent tunnel lining. The thickness of the tunnel lining is 40 cm. Based on this, the amount of shotcrete will be about 17,000 cubic meters. Considering the type of tunnel excavation system (drilling holes and explosions), as well as geological conditions and landslides, this amount can be increased Iron bars for lining tunnels will be about 1300 tons, the average use of iron bars per 1 cubic meter, concrete will be about 5 kg .

The lining is carried out in the following way: after excavating about 200 meters of the face length and 150 meters of the ledge of the tunnels at the southern entrance, the construction of water channels will begin. Upon completion of the construction of about 30 meters of water channels, wall lining will be started using modular blocks, and after completion of the lining of about 30 meters of the wall, a single block for the ceiling (designed according to the size of the vehicle) will be introduced into the tunnel and the ceiling lining will be started. For the lining of the ceiling of the tunnels, two sets of welding blocks with a length of 9 m will be used. There is one block for each tunnel, all lining of the tunnels will be carried out from the southern entrance.

Technical services. Tunnel technical services;

Design, preparation and installation of a ventilation system during excavation and reinforcement design * 000 Ë2 DESIGN, preparation and installation of a water supply system for the main work site

- Design, preparation and installation of a compressed air supply system Design, preparation and installation of an electricity supply system and temporary lighting

- Preparation and installation of the power supply system for the tunneling drilling rig And also ...

The initial calculation for the above works is presented below. However, the data will be updated as of the date of completion, according to the specifications for the best way to get the job done.

Ventilation system for each entrance: 50 kW fan and 70-90 cm air duct. For water supply: a container with a volume of 60 thousand liters (or several connected containers, together making up a volume of at least 60 thousand liters) will be installed at the south and north

entrances at a level of 1120 meters at the north entrance and about 1110 meters at the south entrance.

Water will be supplied to the entrance with 6 "minimum polyethylene pipes. Inside the tunnel, pipes with a diameter of 4 "will initially be laid, followed by pipes with a diameter of 3", and then pipes with a diameter of 2 "(at distances from 300 to 400 meters from each entrance).

Compressed air is required to handle shotcrete. Considering the type of shotcrete pumps used at the south and north inlets, two 900 cc compressors will be installed. feet per minute, and compressed air will be fed into the tunnel through polyethylene or metal pipes (at a distance of at least 100 m from the pit). An outlet (compressed air outlet valve) will be installed 50 meters inside the tunnel.

The power supply system consists of power for the shotcrete pump, power for the bolting pump and power for the lighting. For this work, it is necessary to install a generator with a capacity of approximately 400 kV at each input, supplying power for the above purposes, as well as supplying electricity to the fans.

- Since the tunneling rig requires a lot of power, the generator and cable for this system must be specially installed at the entrance to the tunnel and along its length. The power required for the heading rig is about 300 kW, and the cable required to supply power to the pit should be about 4 x 120 mm.

Traffic safety

Vehicle traffic control, control over the operation of technical devices and other types of operational management of the work will be carried out from dispatching points located at sites arranged in front of the entrances to each tunnel. Dispatchers' workplaces equipped with computers and modern means of operational communication and control will be organized in the control rooms.

The general traffic control system for vehicles in tunnels consists of two parts:

1. traffic management;

2. ensuring road safety. The automatic traffic control system will include:

- video surveillance of the situation in the transport zones of the tunnel;
- management of dynamic information boards and cut-off traffic lights;
- automatic detection of road accidents, congestion and single vehicle stops.

On the approaches to the tunnels, light indicators will be installed - traffic lights prohibiting the entry of vehicles with non-standard situations, indicators of the permissible speed in tunnels, information boards and road signs prohibiting the carriage of fire and explosive goods or other dangerous goods permitting carriage only at the time specified for this. Taking into account the European experience of operating tunnels, the permissible speed of movement in tunnels is assumed to be 80 km / h, while the least emission of toxic substances from vehicles occurs.

The addresses of the installation of light boards, road signs are given in the corresponding statements and on the plan of arrangement, organization of road safety.

Additionally, to ensure traffic safety, both on the approaches and in the tunnels, the project provides for:

- to bring drivers out of the state of road hypnosis, about 100 m before the tunnel, transverse noise stripes are arranged with a device of rough surface treatment; - reflective reflectors inside the tunnel on the dividing lanes;
- in alignment, at the end of pear-shaped turns, there are oversized gates made of metal frames, strictly limiting the height to 5.0 m Frames are adopted according to standard design 3.503.9-80.2-2NI;
- to prevent livestock from entering the road, within the approaches to the tunnels, on each side of the road, fences made of galvanized mesh netting are installed, framed in frames made of metal corners;
- for effective fire fighting inside the tunnel, every 60 m, fire shields are installed equipped with fire extinguishing and special means for opening emergency vehicles if necessary;
- dry pipes with fire hydrants will be installed in each tunnel. The pipes will be looped through the emergency adit.

Due to the fact that safety lanes pass through the tunnels, a niche device is not required. Sections in detail: construction of tunnels, lighting, ventilation, ecology, etc. are developed in separate volumes.

3. BRIEF CHARACTERISTIC OF THE OBJECT AS A SOURCE OF ENVIRONMENTAL POLLUTION

3.1. List of pollutants emitted into the atmosphere

When developing the section on the protection of atmospheric air from pollution, calculated indicators were used for emissions of pollutants into the atmosphere in accordance with the existing calculation methods. Calculation of gross emissions were produced using the "Era-Air" software package. V - 2.0.341 (application). Sources of air pollution during construction are loading and unloading operations (cement - 6163.2 tons / year, sand - 10141.06 tons / year, crushed stone - 17292.7 tons / year, gravel - 8362 tons / year) (source - 6001) ... Bituminous works (bitumen-152 t / year) (source 6002). Welding works (consumption of electrodes MP-3–330 kg / year) (source 6003). Paintwork (enamel - 0.54 t / year, primer - 0.52) (source 6004). Colorful works are carried out to protect metal structures from corrosion. Welding of polyethylene pipes (the number of welded joints is 64 pcs / year) (source 6005). Drilling operations will be introduced during the drilling of observation wells (the diameter of the well to be drilled

is 72 mm) (source 6006). Jumbo Drill (3 units) (source 6007). Blasting operations (dynamite (or emulsion explosive) - 66292.65 kg / year) (source 6008). Excavation and loading operations (source 6009). From construction equipment (wheel loader (4 units), single-bucket excavator and hydraulic hammer (4 units), crane (1 unit), dump truck (6 units), concrete mixer truck (3 units), water truck (1 unit) , light transport (4 units), concrete mixer (1 unit)).

Sources of air pollution during operation, the estimated value of traffic intensity - 6355 vehicles / day. Light transport (VAZ) - 3496 vehicles / day, light buses (PAZ) - 651 vehicles / day, heavy buses (Ikarus -260) - 646 vehicles / day, two-axle trucks with a carrying capacity of up to 2 tons (gazelle) - 433 vehicles days, three-axle trucks with a carrying capacity of up to 10 tons (Kamaz-53208) - 587 vehicles / day, four-axle trucks with a trailer (MAZ-500) - 519 vehicles / day, five-axle trucks with a hairstyle (Kraz 65053) - 23 vehicles / day.

To remove exhaust gases from vehicles from tunnels, ventilation (14 units) (source 0001-0014) with a height of H = 3.990 meters, a diameter 1650 mm.

All initial data are taken from the resource estimate.

The total emission during construction was 17.224427826t / year. The total emission from vehicles during construction was 0.0791027t / year. The total emission during operation was 20.1734442 t / year.

The list of pollutants emitted into the atmosphere during the construction period

Таблица 2

Code of pollutant substan	Name of substance	MPC Maximum one-time, mg / m3	Hazard Class	Emission of matter g / s	Emission of matter, t / year
1	2	3	6	7	8
0123	Iron (II, III) oxides / in converted to iron /		3	0.00285	0.003224
0143	Iron (II, III) oxides / in converted to iron / Manganese and its compounds / in	0.01	2	0.000505	0.000571

	converted to manganese (IV) oxide / (332)				
0337	Carbon Oxide (594)	5	4	0.000000762	0.000000576
0342	Fluoride gaseous compounds / in terms of terms of fluorine / (627)	0.02	2	0.0001167	0.000132
0616	Dimethylbenzene (mixture of o-, m-, p-isomers) (203)	0.2	3	0.2063	0.3555
0827	Chlorethylene (656)		1	0.00000033	0.0000002496
2752	White spirit (1316 *)			0.1069	0.1215
2754	Limit hydrocarbons C12-19 / в converted into C / (592)	1	4	0.1173	0.152
2902	Suspended substances	0.5	3	0.0784	0.1749
2908	Inorganic dust: 70-20% silicon dioxide (chamotte, cement, dust from cement production - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)	0.3	3	33.09071	16.4166
	TOTAL:			33.603082792	17.224427826

The list of pollutants emitted into the atmosphere during the construction period from vehicles

Таблица 3

Code of pollutant substances	Name of substance	MPC Maximum one-time, mg / m3	Hazard Class	Emission of matter g / s	Emission of matter, t / year
1	2	3	6	7	8
0301	Nitrogen (IV) dioxide (4)	0.2	2	0.04228	0.02087
0304	Nitrogen (II) oxide (6)	0.4	3	0.006869	0.0033915
0328	Carbon (593)	0.15	3	0.006519	0.002988
0330	Sulfur dioxide (526)		3	0.007382	0.0040162
0337	Carbon Oxide (594)	5	4	0.07445	0.041128
2732	Kerosene (660 *)			0.013128	0.006709
	TOTAL:			0.150628	0.0791027

List of pollutants emitted into the atmosphere period of operation

Таблица 4

Code of pollutant substan	Name of substance	MPC Maximum. one-time, mg / m3	Hazard Class	Emission of matter g / s	Emission of matter, t / year
1	2	3	6	7	8
0301	Nitrogen (IV) dioxide (4)	0.2	2	0.1275414	1.200388
0304	Nitrogen (II) oxide (6)	0.4	3	0.02072672	0.1951082
0328	Carbon (593)	0.15	3	0.0117278	0.119224
0330	Sulfur dioxide (526)		3	0.0182826	0.156184
0337	Carbon Oxide (594)	5	4	2.0097	16.1028

2704 2732	Gasoline (petroleum, low-sulfur) / in terms of carbon / (60) Kerosene (660*)	5	4	0.17304 0.095732	1.43822 0.96152
	TOTAL:			2.45675052	20.1734442

3.2 Maximum surface concentrations

The calculation of the maximum surface concentrations of pollutants from sources was carried out using the "Era-Air" software package. V 2.0.337 (attached). According to the table "Determination of the need and calculations of surface concentrations by substances for the current situation" (in the appendix) during the period of construction work, the calculation of dispersion is necessary for dimethylbenzene, nitrogen dioxide, inorganic dust 70-20% silicon dioxide and summation group _41 0337 + 2908, summation groups_31 0301 + 0330. The expected maximum surface concentration of pollutants, obtained as a result of the calculations performed, showed that during construction there is no excess of MPC standards.

Estimated concentrations of hazardous substances at the SPZ border::

Table 8

№	Name	ПДК	СЗЗ
In the construction			
1.	Dimethylbenzene	0,6312	0,6400
2.	Nitrogen (IV) dioxide (4)	0,0452	0,0459
3.	Inorganic dust 70-20% silicon dioxide	0,8037	0,8215
4.	Summation group _41 0337+2908	0,8081	0,8260
5.	Summation group _31 0301+0330	0,0469	0,0476

According to the tables "Determination of the need and calculations of surface concentrations by substances for the existing situation" (in the appendix), during the operation of the object, the calculation of dispersion is necessary for carbon oxide and summation groups_31 0301 + 0330. The expected maximum surface concentration of pollutants, obtained as a result of the calculations performed, showed that during operation there is no excess of MPC standards.

Table 9

№	Name	ПДК	СЗЗ
During operation			
1.	Carbon oxide	0,4735	0,4121
2.	Summation group _31 0301+0330	0,7685	0,6689

3.3 Regulatory requirements for the size of the sanitary protection zones

According to the sanitary rules Approved by the decree Government of the Republic of Kazakhstan January 17, 2012 "Sanitary and epidemiological requirements for the establishment of a sanitary protection zone of production facilities" No. 93, the size of the regulatory sanitary protection zone is 0 m. The site belongs to the 5th class according to the sanitary classification. According to the Environmental Code of the Republic of Kazakhstan dated January 9, 2007 No. 212-111 ZRK, the site belongs to category IV.

4.WASTE

Waste generated at the construction site is represented by temporary solid waste. The calculation of the amount of waste was made using the software package "Era-Waste" version - 1.4.29 (application).

The amount of waste during construction is 6.51155t / year. The amount of waste during operation amounted to 58.75 t / year

Characteristics of the generated waste

Table 5

Waste name	evaluation, t / year	Use, neutralization, t / year		Placement, t / year	
		in specialized enterprises in our own enterprise	at own enterprise	burial	storage on the territory of industrial sites and
1	2	3	4	5	6
During construction					
Total	**6,51155**	**6,51155**			**6,51155**
incl. production waste	0,04155	0,04155			0,04155
consumption waste	6.47	6.47			6.47
Amber hazard level					
Residues of paints and varnishes - AD 070	0,0366	0,0366			0,0366
Green hazard level					
Stubs of welding electrodes - GA 090	0.00495	0.00495			0.00495
Solid household waste -GO 060	6.47	6.47			6.47
During operation					
Total	**58,75**	**58,75**			58,75
incl. production waste	58,75	58,75			58,75
Amber hazard level					
Waste and residues of mercury - AA100	0,001095	0,001095			0,001095
Green hazard level					
Estimates from the territory	58,75	58,75			58,75

The amount of construction waste is accepted upon generation.

5.ENVIRONMENTAL PROTECTION

Occupational health and safety

The project provides for the following safety and labor protection measures:

- the structures meet the requirements of the size of the approach of buildings for highways;

- in the structures of prefabricated reinforced concrete elements, slinging loops are provided, which ensure the reliability of slinging the elements during installation.

n the construction organization project, the main issues of labor protection and safety are solved. When compiling the PIC, safety requirements are taken into account in accordance with the instructions of SNiP RK 1.03-05-2001 "Labor protection and safety in construction"; Sanitary buildings are located at a distance of at least 50 m from objects emitting dust and smoke.

All labor-intensive construction processes are mechanized. Before starting work, construction participants must, in the prescribed manner, undergo safety training, briefing and testing of knowledge on safe work methods.

Environmental protection

The construction organization project provides for the placement of temporary buildings and warehouses within the allocated land plot.

The site is not occupied by crops and residential buildings. To protect the environment, the POS provides for measures:

- the territory of construction, storage sites of structures after the end of construction must be cleared of construction and household waste and waste;

- construction and household waste is removed to a specially designated place 15 km away;

- in the dry season, the territory of construction sites should be moistened with watering machines.

There are no harmful emissions into the atmosphere, the designed structures do not cause disturbances to flora and fauna in the existing environmental conditions in the construction area during operation.

6. PROTECTION OF WATER RESOURCES

Water supply is carried out from the existing canal, and drinking water is imported.

The need for drinking water is provided by cisterns. Meals are organized at the nearest catering points.

Water consumption and water disposal for the construction period are as follows:

The construction period is 450 days. The project provides for the use of water for production and household and drinking needs, depending on the periods of work (construction).

The need for industrial water (for the preparation of concrete) is provided from the nearest water sources with transportation, and the drinking water is imported.

The need for water for technical needs during construction is associated in accordance with certain volumes of resources for construction, a total of 3658.65 m3 of water will be required (3685.65 m3 - for preparing a concrete mixture). All initial data are taken from the resource estimate.

The calculation of water for household needs is carried out in accordance with the procedure established by the legislation of the Republic of Kazakhstan. To calculate the volume of household water consumption for the needs of construction personnel, it is calculated in accordance with the water consumption rates according to SNiP RK 4.01-41-2006 and is:

Water consumption for household needs. Water consumption for household and drinking needs is determined at the rate of water consumption per 1 employee 16 l / day. Workers 70.

450 days x 70 people x 16 l / day / 1000 = 504 m3 = 0.504 thousand m3.

Water disposal during the construction period - 4162.65 m3 / lane, including: household - 504 m3 / lane; industrial - 3658.65 m3 / per.

The volume of domestic waste water is calculated based on the volume of water consumption. Design solutions considered the requirements for the use of dry closets for the period of construction, which belongs to the competence of the contractor.

The water used for the preparation of concrete is used irrevocably.

The balance of water consumption and water disposal for the construction period is shown in Table 6.

Balance of water consumption and wastewater disposal

Table 6

Production	Water consumption, m3 / period (year)					On the farm, household needs	Water disposal, m3 / period (year)					Note
	Total	For production needs										
		Fresh water		Water supply	Recyclable water		Total	Waste water volume reused	Industrial waste water	Domestic waste water	Irrevocable consumption	
		Total	Incl. good quality drinki									
For the construction period												
Household and drinking needs of construction workers	504	-	-	-	-	504	504	-	-	504	-	
Water for making concrete	3658,65	3658,65	-	-	-	-	3658,65	-	-	-	3658,65	-
Total:	4162,65	3658,65				504	4162,65			504	3658,65	

7. PROTECTION OF LAND RESOURCES

Land impacts generally involve three dimensions:

• withdrawal of land for construction;

• use of land resources for dumping when planning the territory;

• contamination of the surface layer of the soil as a result of construction.

Since the relief of the construction site is even, the amount of excavation is small, the second aspect of the impact is insignificant.

The fertile layer within the construction site will be used for landscaping the area.

Any excavation work leads to disruption or destruction of the top fertile soil layer. The restoration of the soil cover in a natural way is very slow - up to 1 ... 2 mm per year. In this regard, after any disturbance of the soil cover, it is necessary to restore it, i.e. land reclamation. To do this, after the end of any type of work, they carry out cleaning and leveling of the territory, filling and leveling of the soil layer with a thickness of at least 0.1 m.

The preserved soil layer is used for reclamation of dump areas, as well as for landscaping the territory.

Labor protection, safety and fire prevention measures

The working draft was drawn up in accordance with the requirements of safety standards and regulations, explosion and fire safety, as well as labor protection.

Construction work in the area of existing engineering structures must be carried out in compliance with the requirements of the operating organizations, while preliminary drilling is mandatory.

Construction and installation work must be carried out in accordance with "Guidelines for the construction of linear structures of trunk and intra-zone cable communication lines", Guidelines for laying, installation and commissioning of fiber-optic communication lines "," Safety rules for work on cable communication and radio lines ", as well as other guidance materials, officially published and valid in the territory of the Republic of Kazakhstan.

To ensure labor protection and safe working methods during the construction and operation of communication lines, it is necessary to strictly comply with the requirements of regulatory documents, including GOSTs of the Occupational Safety Standards System

(OSSS), the requirements set out in the "Collection of regulations and rules on occupational safety and health at enterprises and in building communications organizations, factory technical documentation for the equipment and materials used. When performing installation work in viewing devices, telephone sewers and mines must be sure that there are no dangerous gases. When gas is detected, work is immediately stopped and people are removed from the danger zone.

Fire-fighting measures are provided by the following measures: laying cables on metal structures, hanging warning notices and posters, organizing grounding of equipment and technical structures.

Excavation work in the area of the location of underground structures (electric cables, communication cables, gas pipelines, water pipelines) is allowed only after receiving the written consent of the organizations - owners of underground structures.

Earthworks should be carried out under the supervision of the work manager and a representative of the organization - the owner of the communications. Mechanized excavation of soil at intersections with existing gas pipelines, electrical cables and communication cables is prohibited.

8. MEASURES FOR ENVIRONMENTAL PROTECTION DURING THE CONSTRUCTION PERIOD

The project provides for the following environmental protection measures: - reducing the pollution of the roadside space with toxic substances (TV)

- emissions of exhaust gases from cars - by improving the mode of movement of a motor vehicle.

-The construction site after the end of work must be cleared of construction and household waste. All construction and household waste must be transported and buried in a specially designated place.

- The delivery of water for the needs of construction is carried out by a specially equipped machine with a water intake, equipped with a fish protection net with a mesh size of 3x3 mm.

9. CONCLUSIONS

This section of the ES was carried out by IE Kudaibergenova G.B. on the basis of the working draft *“Correction of the Design and Estimate Documentation of the reconstruction (construction) of the section km. 593-632 highways: "Khorgos - Almaty - Taraz - Shymkent - border of Republic of Uzbekistan "section: "Mr. Shymkent-city of*

Zhambyl region. " from PK330 + 00 to PK370n + 00. Basic design solutions for the construction of a 2-way tunnel ".

When developing the EP section, state, departmental regulatory requirements and regulations were taken into account, stock materials and literature data were used, including our own materials. The adopted technological solution for the construction of the school makes it unlikely that the facility will have a noticeable impact on the environment. The factors of impact on the environment identified during the development of the EP section are insignificant.

Project "Adjustment of the Design and Estimate Documentation for the reconstruction (construction) of the section km. 593-632 highways: "Khorgos - Almaty - Taraz - Shymkent - border of Republic of Uzbekistan "section: "Mr. Shymkent-city of Zhambyl region. " from PK330 + 00 to PK370n + 00. The main design solutions for the construction of a 2-way tunnel "was developed in accordance with the norms and rules in force in the Republic of Kazakhstan and provides for measures to ensure explosion and fire safety and exclude harmful effects on the environment and the air pool, as well as prevent natural and man-made emergencies.

The planned activities will not lead to a decrease in biological diversity, to a deterioration of the vital properties of the natural components of the biosphere in the zone of influence of the planned activities, will not worsen the quality of life of the local population and will not harm other types of economic activities, agriculture, fauna and flora.

10/ ENVIRONMENTAL IMPACT STATEMENT

«Correction of the Design and Estimate Documentation of the reconstruction (construction) of the section km. 593-632 highways: "Khorgos-Almaty-Taraz-Shymkent-border of the Republic of Uzbekistan "site:" Shymkent - c. Zhambyl region "_ from PK340n + 00 to PK367n + 00 *(object name)*

Investor (employer) **SKO branch of JSC NC "KAZAUTOZHOL"**
(full and short name)

Sources of financing **Budget resources**
(state budget, private or foreign investment)

Location of the object across **the Boraldaytau ridge, Tyulkubas district, with. Shakpak Baba**
(region, district, settlement or distance and direction from the nearest settlement)

Full name of the object **«Correction of the Design and Estimate Documentation of the reconstruction (construction) of the section km. 593-632 highways: "Khorgos-Almaty-Taraz-Shymkent-border of the Republic of Uzbekistan "site:" Shymkent - c. Zhambyl region "_ from PK340n + 00 to PK367n + 00**

Submitted design materials (full title of the documentation)
Work Project
(Justification of the investment, feasibility study, project, working project, (master plan of settlements, project of detailed planning and others)

General design organization

SHYMKENT KAZDORPROEKT LLP PCE - I.G. Lim

(name, details, surname and initials of the chief engineer of the project)

Object characteristics

Total length of each tunnel – 940м .

Radius and area of the sanitary protection zone (SPZ)

not classified

The number and number of storeys of industrial buildings - The planned construction of related social and cultural facilities

Nomenclature of main products and volume of production in physical terms (design indicators at full capacity)

1)_____

2)_____

3) and etc..

Main technological processes

_____

1)_____
2)_____and etc..
Justification of the socio-economic necessity of the planned activity The timing of the planned construction (first stage, at full capacity) **15 month**

Electricity required _____
No heat required_____
(volume and preliminary agreement of the source of receipt)
Environmental conditions and possible impact of the planned activity on the environment. Sources of physical impact, their intensity and areas of possible influence:
Electromagnetic radiation _
Acoustic
Vibrating
Water environment:

Sources of water supply:

Water lines and water lines are not required. Wastewater is discharged by gravity into the on-site networks.

(length material diameter, throughput) Amount of discharged waste water: Into outside sewer systems, cubic meters per year

Lands
Characteristics of the alienated land: Area: for permanent use, hectares for temporary use, hectares_

Flora

Types of flora undergoing partial or complete depletion, hectares There are no plant species listed in the Red Book in the area of the object located (steppe, meadow, shrubbery, tree plantations and so on)

Fauna
Sources of direct impact on wildlife, including hydrofauna:
1)_____
2)_____and etc.

Waste production

The volume of non-recyclable waste, tons per year

For collection and removal of solid waste, the customer must provide for a special site with a container and conclude an agreement with a specialized organization

including toxic, tons per year Proposed Methods for Waste Neutralization and Burial

to the solid waste landfill

Obligations of the customer (initiator of economic activity) to create favorable living conditions for the population during the construction, operation of the facility and its

liquidation maximize landscaping and greening

Emissions and waste during construction
CALCULATION OF GROSS EMISSIONS

City N 538, Tyulkubas district
Object N 0001, Option 1 "Khorgos-Almaty-Taraz-Shymkent-border ofRU
Source of pollution N 6001, unorganized Emission
source N 002, loading – unloading
References: "Collection of methods for calculating harmful emissions into the atmosphere by various industries." Almaty, KazEKOEXP, 1996, clause 9.3.
Calculation of emissions of harmful substances from fugitive sources Note: some auxiliary factors for dusty materials (except for coal) are taken from: "Methodological guidelines for calculating emissions of pollutants into the atmosphere by enterprises of the construction industry. Enterprises of non-metallic materials and porous aggregates", Alma-Ata, NPO Amal, 1992
Type of work: Calculation of emissions during loading and unloading operations (clause 9.3.3)
Material: Cement
Material moisture in the range: 3.0 - 5.0%
Coeff., Taking into account the moisture content of the material (table 9.1), ***K0 = 1.2***
Wind speed in the range: 2.0 - 5.0 m / s
Coeff., Taking into account the average annual wind speed (Table 9.2), ***K1 = 1.2***
Local conditions: warehouses, storages open from 4 sides
Coeff., Taking into account the degree of protection of the unit (Table 9.4), **K4 = 1**
Material fall height, m, **GB = 0.5**
Coefficient taking into account the height of the fall of the material (Table 9.5), **K5 = 0.4**
Specific emission of solid particles per ton of material, g / t, **Q = 120**
Efficiency of the applied dust suppression means (determined experimentally or taken from reference data), fraction of a unit, ***N = 0***
Amount of shipped (reloaded) material, t / year, ***MGOD = 6163.2***
Maximum amount of shipped (reloaded) material, t / hour, MH = ***5.87***
Impurity: 2908 Inorganic dust: 70-20% silicon dioxide (chamotte, cement, cement production dust - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503))
The amount of solid particles emitted during loading and unloading operations: Gross emissions, t / year (9.24) , ***_M_ = K0 * K1 * K4 * K5 * Q * MGOD * (1-N) * 10 ^ -6 = 1.2 * 1.2 * 1 * 0.4 * 120 * 6163.2 * (1-0) * 10 ^ -6 = 0.426***
Maximum one-time emission, g / s (9.25),***_G_ = K0 * K1 * K4 * K5 * Q * MH * (1-N) / 3600 = 1.2 * 1.2 * 1 * 0.4 * 120 * 5.87 * (1-0) / 3600 = 0.1127***
Total emissions:

Code	Impurity	Emission g / s	Emission t / year
2908	Inorganic dust: 70-20% silicon dioxide (chamotte, cement, cement production dust - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)	0.1127	0.426

Type of work: Calculation of emissions during loading and unloading operations (clause 9.3.3)
Material: Sand Material moisture in the range: 3.0 - 5.0%
Coeff., Taking into account the moisture content of the material (table 9.1), ***K0 = 1.2***
Wind speed in the range: 2.0 - 5.0 m / s
Coeff., Taking into account the average annual wind speed (Table 9.2), ***K1 = 1.2***
Local conditions: warehouses, storages open from 4 sides
Coeff., Taking into account the degree of protection of the unit (Table 9.4), ***K4 = 1***
Material fall height, m, ***GB = 0.5***

Coefficient taking into account the height of the fall of the material (Table 9.5), ***K5 = 0.4***
Specific emission of solid particles per ton of material, g / t***, Q = 540***
Efficiency of the applied dust suppression means (determined experimentally or taken from reference data), unit fractions, N = 0
Amount of shipped (reloaded) material, t / year, ***MGOD = 10141.06***
Maximum amount of shipped (reloaded) material, t / hour, ***MH = 9.66***
Impurity: 2908 Inorganic dust: 70-20% silicon dioxide (chamotte, cement, cement production dust - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)
The amount of solid particles emitted during loading and unloading operations: Gross emissions, t / year (9.24), ***_M_ = K0 * K1 * K4 * K5 * Q * MGOD * (1-N) * 10 ^ -6*** **= 1.2 * 1.2 * 1 * 0.4 * 540 * 10141.06 * (1-0) * 10 ^ -6 = 3.154**
Maximum one-time emission, g / s (9.25) , ***_G_ = K0 * K1 * K4 * K5 * Q * MH * (1-N) / 3600*** **= 1.2 * 1.2 * 1 * 0.4 * 540 * 9.66 * (1-0) / 3600 = 0.835**
Total emissions:

Code	Impurity	Emission g / s	Emission t / year
2908	Inorganic dust: 70-20% silicon dioxide (chamotte, cement, cement production dust - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)	0.835	3.58

Type of work: Calculation of emissions during loading and unloading operations (clause 9.3.3)
Material: Crushed stone
Material moisture in the range: 3.0 - 5.0%
Coeff., Taking into account the moisture content of the material (table 9.1), ***K0 = 1.2***
Wind speed in the range: 2.0 - 5.0 m / s
Coeff., Taking into account the average annual wind speed (Table 9.2), ***K1 = 1.2***
Local conditions: warehouses, storages open from 4 sides
Coeff., Taking into account the degree of protection of the unit (Table 9.4), ***K4 = 1***
Material fall height, m, ***GB = 0.5***
Coefficient taking into account the height of the fall of the material (Table 9.5), ***K5 = 0.4***
Specific emission of solid particles per ton of material, g / t, ***Q = 80***
Efficiency of the applied dust suppression means (determined experimentally, or taken according to reference data), unit fractions, ***N = 0***
Amount of shipped (reloaded) material, t / year, ***MGOD = 17292.7***
Maximum amount of shipped (reloaded) material, t / h, ***MH = 16.47***
Impurity: 2908 Inorganic dust: 70-20% silicon dioxide (chamotte, cement, cement production dust - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)
The amount of solid particles emitted during loading and unloading operations: Gross emission, t / year (9.24), ***_M_ = K0 * K1 * K4 * K5 * Q * MGOD * (1-N) * 10 ^ -6*** **= 1.2 * 1.2 * 1 * 0.4 * 80 * 17292.7 * (1-0) * 10 ^ -6 = 0.797**
Maximum one-time emission, g / s (9.25) , ***_G_ = K0 * K1 * K4 * K5 * Q * MH * (1-N) / 3600*** **= 1.2 * 1.2 * 1 * 0.4 * 80 * 16.47 * (1-0) / 3600 = 0.211**
Total emissions:

Code	Impurity	Emission g / s	Emission t / year
2908	Inorganic dust: 70-20% silicon dioxide (chamotte, cement, cement production dust - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)	0.835	4.377

Type of work: Calculation of emissions during loading and unloading operations (clause 9.3.3)
Material: Sand and gravel mixture (SGM) Material moisture in the range: 3.0 - 5.0%
Coeff., Taking into account the moisture content of the material (table 9.1), ***K0 = 1.2***
Wind speed in the range: 2.0 - 5.0 m / s
Coeff., Taking into account the average annual wind speed (Table 9.2), ***K1 = 1.2***
Local conditions: warehouses, storage facilities open from 4 sides
Coeff., Taking into account the degree of protection of the node (Table 9.4), ***K4 = 1***

Material drop height, m, ***GB = 0.5***
Coefficient taking into account the height of the fall of the material (Table 9.5), ***K5 = 0.***4
Specific emission of solid particles per ton of material, g / t, ***Q = 120***
Efficiency of the applied dust suppression means (determined experimentally or taken from reference data), fraction of a unit, ***N = 0***
Amount of shipped (reloaded) material, t / year, ***MGOD = 8362***
Maximum amount of shipped (reloaded) material, t / hour, ***MH = 7.96***

Impurity: 2908 Inorganic dust: 70-20% silicon dioxide (chamotte, cement, cement production dust - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)

The amount of solid particles emitted during loading and unloading operations: Gross emissions, t / year (9.24), ***_M_ = K0 * K1 * K4 * K5 * Q * MGOD * (1-N) * 10 ^ -6*** **= 1.2 * 1.2 * 1 * 0.4 * 120 * 8362 * (1-0) * 10 ^ -6 = 0.578**
Maximum one-time emission, g / s (9.25) , ***_G_ = K0 * K1 * K4 * K5 * Q * MH * (1-N) / 3600*** **= 1.2 * 1.2 * 1 * 0.4 * 120 * 7.96 * (1-0) / 3600 = 0.1528**
Total emissions:

Code	Impurity	Emission g / s	Emission t / year
2908	Inorganic dust: 70-20% silicon dioxide (chamotte, cement, cement production dust - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)	0.835	4.955

CALCULATION OF GROSS EMISSIONS

Город N 538,Тюлькубасский район
Объект N 0001,Вариант 1 "Хоргос-Алматы-Тараз-Шымкент-гр.РУ"
Источник загрязнения N 6002,неорганизованный
Источник выделения N 003,битумные работы
Список литературы:
1. Методика расчета выбросов вредных веществ от предприятий дорожно-строительной отрасли, в т.ч. АБЗ. Приложение №12 к Приказу Министра охраны окружающей среды Республики Казахстан от 18.04.2008 №100-п
2. "Сборник методик по расчету выбросов вредных в атмосферу различными производствами". Алматы, КазЭКОЭКСП, 1996 г.
п.6. Методика расчета выбросов вредных веществ при работе асфальтобетонных заводов
Тип источника выделения: Битумные работы
Время работы оборудования, ч/год , ***_T_*** **= 360**
City N 538, Tyulkubas district Object N 0001,
Option 1 "Khorgos-Almaty-Taraz-Shymkent-border ofRU"
Source of pollution N 6002, unorganized
Emission source N 003, bituminous works
References:
1. Methodology for calculating emissions of harmful substances from enterprises of the road construction industry, incl. ABZ. Appendix No. 12 to the Order of the Minister of Environmental Protection of the Republic of Kazakhstan dated April 18, 2008 No. 100-p
2. "Collection of methods for calculating harmful emissions into the atmosphere by various industries." Almaty, KazEKOEXP, 1996, item 6. Methodology for calculating emissions of harmful substances during the operation of asphalt concrete plants Type of emission source: Bituminous work Equipment operation time, h / year, ***_T_ = 360***

Impurity: 2754 Limiting hydrocarbons C12-19 / in terms of C / (592)

Bitumen production volume, t / year**,**, ***MY*** **= 152**
Gross emissions, t / year (f-la 6.7[1]) , ***_M_ = (1 * MY) / 1000*** **= (1 * 152) / 1000 = 0.152**
Maximum single discharge, g / s,, ***_G_ = _M_ * 10 ^ 6 / (_T_ * 3600)*** **= 0.152 * 10 ^ 6 / (360 * 3600) = 0.1173**
Total:

Code	Impurity	Emission g / s	Emission t / year
2754	Limit hydrocarbons C12-19 / in terms of C / (592) volume up	0.1173	0.152

CALCULATION OF GROSS EMISSIONS

City N 538, Tyulkubas district Object N 0001,
Option 1 "Khorgos-Almaty-Taraz-Shymkent-border ofRU"
Source of pollution N 6003, unorganized
Emission source N 004, welding works
References:
Methodology for calculating emissions of pollutants into the atmosphere during welding (based on specific emissions). RND 211.2.02.03-2004. Astana, 2005

CALCULATION of pollutant emissions from metal welding
Type of welding: Manual arc welding of steels with stick electrodes
Electrode (welding material): MP-3
Consumption of welding consumables, kg / year, ***B = 330***
Actual maximum consumption of welding consumables, taking into account the discreteness of the equipment operation, kg / h, ***BMAX = 1.05***
Specific emission of welding aerosol, g / kg of consumable material (tables 1, 3), GIS = 11.5 including:
Impurity: 0123 Iron (II, III) oxides / in terms of iron / (277
Specific emission of pollutants, g / kg of consumable material (tables 1, 3), ***GIS = 9.77***
Gross emissions, t / year (5.1), ***_M_ = GIS * B / 10 ^ 6 = 9.77 * 330/10 ^ 6 = 0.003224***
Maximum one-time emission, g / s (5.2), _G_ = GIS * BMAX / 3600 = 9.77 * 1.05 / 3600 = 0.00285
Impurity: 0143 Manganese and its compounds / in terms of manganese (IV) oxide / (332)
Specific emission of pollutants, g / kg of consumable material (tables 1, 3), ***GIS = 1.73***
Gross emissions, t / year (5.1), ***_M_ = GIS * B / 10 ^ 6 = 1.73 * 330/10 ^ 6 = 0.000571***
Maximum one-time emission, g / s (5.2), ***_G_ = GIS * BMAX / 3600 = 1.73 * 1.05 / 3600 = 0.000505***
Gases: Impurity: 0342 Gaseous fluoride compounds / in terms of fluorine / (627)
Specific emission of pollutants, g / kg of consumable material (tables 1, 3***), GIS = 0.4***
Gross emissions, t / year (5.1), ***_M_ = GIS * B / 10 ^ 6 = 0.4 * 330/10 ^ 6 = 0.000132***
Maximum one-time emission, g / s (5.2), ***_G_ = GIS * BMAX / 3600 = 0.4 * 1.05 / 3600 = 0.0001167***
TOTAL:

Code	Impurity	Emission g / s	Emission t / year
0123	Iron (II, III) oxides / in terms of iron / (277)	0.00285	0.003224
0143	Manganese and its compounds / in terms of manganese (IV) oxide / (332)	0.000505	0.000571
0342	Gaseous fluoride compounds / in terms of fluorine / (627)	0.0001167	0.000132

CALCULATION OF GROSS EMISSIONS

City N 538, Tyulkubas district Object N 0001,
Option 1 "Khorgos-Almaty-Taraz-Shymkent-border ofRU"
Source of pollution N 6004, unorganized
Emission source N 005, paintwork
List of literature:
Methodology for calculating emissions of pollutants into the atmosphere when applying paints and varnishes (based on the values of specific emissions). RND 211.2.02.05-2004. Astana, 2005
Technological process: painting and drying Actual annual consumption of paintwork materials, tons, MS = 0.54
Maximum hourly consumption of paintwork materials, taking into account the discreteness of the equipment operation, kg, ***MS1 = 1.71***

LKM brand: Enamel ***PF-115***
Coloring method: Pneumatic The share of the volatile part (solvent) in the paintwork materials (Table 2),%, ***F2 = 45***
Impurity: 0616 Dimethylbenzene (mixture of o-, m-, p- isomers) (203)
The share of the substance in the volatile part of the paintwork materials (Table 2), %, ***FPI = 50***
Solvent fraction during painting and drying for this method of coloring (table. 3),%, ***DP = 100***
Gross emission of pollutants (3-4), t / year, ***_M_ = MS * F2 * FPI * DP * 10 ^ -6 = 0.54 * 45 * 50 * 100 * 10 ^ -6 = 0.1215***
Maximum one-time emission of pollutants (5-6), g / s, ***_G_ = MS1 * F2 * FPI * DP / (3.6 * 10 ^ 6) = 1.71 * 45 * 50 * 100 / (3.6 * 10 ^ 6) = 0.1069***

Impurity: 2752 White spirit (1316 *)
The proportion of the substance in the volatile part of paintwork materials (Table 2),%, ***FPI = 50***
Solvent fraction during painting and drying for this method of coloring (table 3),%, ***DP* = 100**
Gross emission of pollutants (3-4), t / year,, ***_M_ = MS * F2 * FPI * DP * 10 ^ -6* = 0.54 * 45 * 50 * 100 * 10 ^ -6 = 0.1215**
Maximum one-time emission of pollutants (5-6), g / s, ***_G_ = MS1 * F2 * FPI * DP / (3.6 * 10 ^ 6)* = 1.71 * 45 * 50 * 100 / (3.6 * 10 ^ 6) = 0.1069**
Calculation of paint aerosol emissions:
Impurity: 2902 Suspended substances
The proportion of aerosol during painting, for a given painting method (Table 3),%, ***DK = 30***
Gross emission of pollutants (1), t / year, ***_M_ = KOC * MS * (100-F2) * DK * 10 ^ -4 = 1 * 0.54 * (100-45) * 30 * 10 ^ -4 = 0.0891***
Maximum one-time emission of pollutants (2), ***g / s, _G_ = KOC * MS1 * (100-F2) * DK / (3.6 * 10 ^ 4) = 1 * 1.71 * (100-45) * 30 / (3.6 * 10 ^ 4) = 0.0784***
Total:

Code	Impurity	Emission g / s	Emission t / year
0616	Dimethylbenzene (mixture of o-, m-, p- isomers) (203)	0.1069	0.1215
2752	White spirit (1316 *)	0.1069	0.1215
2902	Suspended substances	0.0784	0.0891

Technological process: painting and drying
Actual annual consumption of PWM ton, ***MS* = 0.52**
Maximum hourly consumption of PWM, considering discretion of equipment work, kg, ***MS1* = 1.65**
Brand of PWM: Prime coat GF-021
Painting method: Pneumatic
Percent of volatile content (solvent) in PWM (table 2), % , ***F2* = 45**
Impurity: 0616 Xylene (mix of o-, m-, p- isomers) (203)
Percent of the substance in volatile content of PWM (table 2), % ,
***FPI* = 100**
Percent of the solvent during painting and drying
For this method of painting (table 3), % , ***DP* = 100**
Gross emissions 3B (3-4), т/год , ***_M_ = MS * F2 * FPI * DP * 10 ^ -6* = 0.52 *45*100*100*10^-6 = 0.234**
Maximum from one-time emissions 3B (5-6), г/с , ***_G_ = MS1 * F2 * FPI * DP / (3.6 * 10 ^ 6)* = 1.65 * 45 * 100 * 100 / (3.6 * 10 ^ 6) = 0.2063**
Calculation of emissions of painting aerosol:
Impurities: 2902 Suspended materials
Percent of aerosol during painting, for this method of painting (table 3), % , ***DK* = 30**
Gross emission 3B (1), t/year , ***_M_ = KOC * MS * (100-F2) * DK * 10 ^ -4* = 1 * 0.52 * (100-45) * 30 * 10 ^ -4 = 0.0858**
Meximum among one-time emissions 3B (2), г/с , ***_G_ = KOC * MS1 * (100-F2) * DK / (3.6 * 10 ^ 4)* = 1 * 1.65 * (100-45) * 30 / (3.6 * 10 ^ 4) = 0.0756**
Technological process: painting and drying
Actual annual consumption of paintwork materials, tons, MS = 0.52
Maximum hourly consumption of paintwork materials, taking into account the discreteness of the equipment

operation, kg, ***MS1 = 1.65***
LKM brand: Primer ***GF-021***
Coloring method: Pneumatic The share of the volatile part (solvent) in the paintwork materials (Table 2),%, ***F2 = 45***
Impurity: 0616 Dimethylbenzene (mixture of o-, m-, p- isomers) (203)
The share of the substance in the volatile part of the paintwork materials (Table 2), %, ***FPI = 100***
Solvent fraction during painting and drying for this method of coloring (table. 3),%, ***DP = 100***
Gross emission of pollutants (3-4), t / year, ***_M_ = MS * F2 * FPI * DP * 10 ^ -6 = 0.52 * 45 * 100 * 100 * 10 ^ -6 = 0.234***
Maximum one-time emission of pollutants (5-6), g / s, _G_ = ***MS1 * F2 * FPI * DP / (3.6 * 10 ^ 6) = 1.65 * 45 * 100 * 100 / (3.6 * 10 ^ 6) = 0.2063***
Calculation of paint aerosol emissions:
Impurity: 2902 Suspended substances
The proportion of aerosol during painting, for a given painting method (Table 3),%, ***DK = 30***
Gross emission of pollutants (1), t / year, ***_M_ = KOC * MS * (100-F2) * DK * 10 ^ -4 = 1 * 0.52 * (100-45) * 30 * 10 ^ -4 = 0.0858***
Maximum one-time emission of pollutants (2), g / s, ***_G_ = KOC * MS1 * (100-F2) * DK / (3.6 * 10 ^ 4) = 1 * 1.65 * (100-45) * 30 / (3.6 * 10 ^ 4) = 0.0756***
Total:

Code	Impurity	Emission g / s	Emission t / year
0616	Dimethylbenzene (mixture of o-, m-, p- isomers) (203)	0.2063	0.3555
2752	White spirit (1316 *)	0.1069	0.1215
2902	Suspended substances	0.0784	0.1749

CALCULATION OF GROSS EMISSIONS

City N 538, Tyulkubas district Object N 0001,
Option 1 "Khorgos-Almaty-Taraz-Shymkent-border ofRU"
Source of pollution N, unorganized
Emission source N 006, welding of polyethylene pipes
References:
1. Methodology for calculating emissions of harmful substances into the atmosphere when working with plastic materials Appendix No. 7 to the Order of the Minister of Environmental Protection of the Republic of Kazakhstan dated April 18, 2008 No. 100-p
2. Collection "Standard indicators of specific emissions of harmful substances into the atmosphere from the main types of technological equipment in the industry. "Kharkov, 1991.

1. "Specific indicators of the formation of harmful substances from the main types of technological equipment ...", M, 2006
Type of work: Welding of polyethylene pipes
Number of welds performed, pcs / year, ***N = 64***
"Net" operating time, hours / year, ***_T_ = 210***
Impurity: 0337 Carbon oxide (594)
Specific emission of pollutants, g / per 1 welding (Table 12), ***Q = 0.009***
Gross emission of pollutants, t / year (3), ***_M_ = Q * N / 10 ^ 6 = 0.009 * 64/10 ^ 6 = 0.000000576***
Maximum single emission of pollutants, g / s (4), ***_G_ = _M_ * 10 ^ 6 / (_T_ * 3600) = 0.000000576 * 10 ^ 6 / (210 * 3600) = 0.000000762***
Impurity: 0827 Chlorethylene (656) Specific emission of pollutants, g / per 1 welding (Table 12), ***Q = 0.0039***
Gross emission of pollutants, t / year (3), _M_ = ***Q * N / 10 ^ 6 = 0.0039 * 64/10 ^ 6 = 0.0000002496***
Maximum single emission of pollutants, ***g / s (4), _G_ = _M_ * 10 ^ 6 / (_T_ * 3600) = 0.0000002496 * 10 ^ 6 / (210 * 3600) = 0.00000033***
Total emissions:

Code	Impurity	Emission g / s	Emission t / year
0337	Carbon Oxide (594)	0.00000076	0.000000576

0827	Chlorethylene (656)	0.00000033	0.0000002496

CALCULATION OF GROSS EMISSIONS

City N 538, Tyulkubas district Object N 0001,
Option 1 "Khorgos-Almaty-Taraz-Shymkent-border ofRU"
Source of pollution N, unorganized
Allocation source N 007, drilling operations
References: "Collection of methods for calculating harmful emissions into the atmosphere by various industries." Almaty, KazEKOEXP, 1996, clause 9.3. Calculation of emissions of harmful substances from fugitive sources
Note: some auxiliary factors for dusty materials (except for coal) are taken from: "Methodological guidelines for calculating emissions of pollutants into the atmosphere by enterprises of the construction industry. Enterprises of non-metallic materials and porous aggregates", Alma-Ata, NPO Amal, 1992
Type of work: Calculation of emissions during drilling operations (clause 9.3.4)
Rock: Clay Density, t / m3, ***P = 2.7***
Dust fraction content in drill fine, fraction of a unit, ***B = 0.04***
The fraction of dust (from the total mass of the dust fraction), turning into aerosol, ***K7 = 0.02***
Drilled hole diameter, m, D = 0.072 Drilling speed, m / h, **VB = 0.78**
Total number of drilling rigs, pcs. , ***_KOLIV_ = 3***
Number of simultaneously operating drilling rigs, pcs. , ***N1 = 3***
Operating time of one machine, h / year, ***_T_ = 1050***
The efficiency of the applied dust suppression means (determined experimentally, or taken according to reference data), unit fractions, ***N = 0***
Impurity: 2908 Inorganic dust: 70-20% silicon dioxide (chamotte, cement, cement production dust - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)
Gross emissions, t / year (9.30), ***_M_ = 0.785 * D ^ 2 * VB * P * _T_ * B * K7 * (1-N) * _KOLIV_ = 0.785 * 0.072 ^ 2 * 0.78 * 2.7 * 1050 * 0.04 * 0.02 * (1-0) * 3 = 0.0216***
Maximum one-time emission, g / s (9.31), ***_G_ = 0.785 * D ^ 2 * VB * P * B * K7 * (1-N) * 1000 * N1 / 3.6 = 0.785 * 0.072 ^ 2 * 0.78 * 2.7 * 0.04 * 0.02 * (1-0) * 1000 * 3 / 3.6 = 0.00571***

Total emissions:

Итого выбросы:

Code	Impurity	Emission g / s	Emission t / year
2908	Inorganic dust: 70-20% silicon dioxide (chamotte,	0.00571	0.0216
	cement, dust from cement production - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)		

CALCULATION OF GROSS EMISSIONS

City N 538, Tyulkubas district
Object N 0001,
Option 1 "Khorgos-Almaty-Taraz-Shymkent-border ofRU"
Source of pollution N, unorganized
Emission source N 008, Drilling rig
References:
1. Methodology for calculating emissions of pollutants from road transport enterprises (section 3) Appendix No. 3 to the Order of the Minister of Environmental Protection of the Republic of Kazakhstan dated 18.04.2008 No. 100-p
2. Methodology for calculating emissions of pollutants from enterprises of the road construction industry (section 4) Appendix No. 12 to the Order of the Minister of Environmental Protection of the Republic of Kazakhstan dated April 18, 2008 No. 100-p
CALCULATION OF EMISSIONS OF POLLUTANTS WHEN OPERATING AND MOVING CARS AROUND THE TERRITORY
List of vehicles

Car model	*Fuel grade*	*Total*	*Max*
Tractor (G), N ДВС = 101 - 160 кВт			
Jumbo Drill		3	3
TOTAL: 3			

Calculation period: Transition period (t> -5 and t <5)
Air temperature for the calculation period, deg. C, ***T = 13***
Machine type: Tractor (G), N ICE = 101 - 160 kW
Fuel type: diesel fuel Air temperature for the calculated period, deg. C, ***T = 0***
Number of working days in the period, ***DN = 210***
The total number of road vehicles in this group, pcs. ,***NK = 3***
Release rate (exit), ***A = 1***
The largest number of road vehicles operating on the territory for 30 minutes, pcs, ***NK1 = 2***
Total time of movement without load of 1 car per day, min, ***TV1 = 0.5***
Total time of movement of 1 vehicle with load per day, min, ***TV1N = 0.5***
Total time of operation of 1 car at cold. travel, min, ***TXS = 0.5***
Max travel time without load of 1 car in 30 min, min, ***TV2 = 1***
Max time of movement with load of 1 car in 30 min, min, ***TV2N = 1***
Max. stroke in 30 min, min, **TXM = 1**
Impurity: 0337 Carbon oxide (594)
Calculation period: Transition period (t> -5 and t <5)
Air temperature for the calculation period, deg. C***, T = 13***
Machine type: Tractor (G), N ICE = 101 - 160 kW
Fuel type: diesel fuel Air temperature for the calculated period, deg. C, ***T = 0***
Number of working days in the period, ***DN = 210***
The total number of road vehicles in this group, pcs. , ***NK = 3***
Release rate (exit), ***A = 1***
The largest number of road vehicles operating on the territory for 30 minutes, pcs, ***NK1 = 2***
Total time of movement without load of 1 car per day, min, ***TV1 = 0.5***
Total time of movement of 1 vehicle with load per day, min, ***TV1N = 0.5***
Total time of operation of 1 car at cold. travel, min, ***TXS = 0.5***
Max travel time without load of 1 car in 30 min, min, ***TV2 = 1***
Max time of movement with load of 1 car in 30 min, min, ***TV2N*** = 1
Max. stroke in 30 min, min, ***TXM = 1***
Impurity: 0337 Carbon oxide (594)

For the transitional period, emissions during the cold period are multiplied by a factor of 0.9
Mileage emissions of vehicles while driving, g / min, ***ML = 0.9 * ML = 0.9 * 0.85 = 0.765***
Emission of 1 machine when working on the territory, g, ***M1 = ML * TV1 + 1.3 * ML * TV1N + MXX * TXS = 0.765 * 0.5 + 1.3 * 0.765 * 0.5 + 0.49 * 0.5 = 1.125***
Maximum emission of 1 machine when working on the territory, g per 30 min, ***M2 = ML * TV2 + 1.3 * ML * TV2N + MXX * TXM = 0.765 * 1 + 1.3 * 0.765 * 1 + 0.49 * 1 = 2.25***
Gross emission of pollutants, t / year (4.8), ***M = A * M1 * NK * DN / 10 ^ 6 = 1 * 1.125 * 3 * 210/10 ^ 6 = 0.000709***
Maximum single emission of pollutants, g / s ***G = M2 * NK1 / 30/60 = 2.25 * 2/30/60 = 0.0025***
CALCULATION of nitrogen oxide
emissions Specific emission of cars to the cold. stroke, g / min, (table 4.2 [2]), ***MXX = 0.78***
Mileage emission of cars while driving, g / min, (table 4.6 [2]), ***ML = 4.01***
Emission of 1 machine when working on the territory, g, ***M1 = ML * TV1 + 1.3 * ML * TV1N + MXX * TXS = 4.01 * 0.5 + 1.3 * 4.01 * 0.5 + 0.78 * 0.5 = 5***
Maximum emission of 1 machine when working on the territory, g per 30 minutes, ***M2 = ML * TV2 + 1.3 * ML * TV2N + MXX * TXM = 4.01 * 1 + 1.3 * 4.01 * 1 + 0.78 * 1 = 10***
Gross emission of pollutants, t / year (4.8), ***M = A * M1 * NK * DN / 10 ^ 6 = 1 * 5 * 3 * 210/10 ^ 6 = 0.00315***
Maximum single emission of pollutants, g / s ***G = M2 * NK1 / 30/60 = 10 * 2/30/60 = 0.0111***
Taking into account the transformation of nitrogen oxides, we get:
Impurity: 0301 Nitrogen (IV) dioxide (4)
Gross emission, t / year, _M_ = ***0.8 * M = 0.8 * 0.00315 = 0.00252***
Maximum one-time emission, g / s***, GS = 0.8 * G = 0.8 * 0.0111 = 0.00888***
Impurity: 0304 Nitrogen (II) oxide (6)
Gross emission, t / year, ***_M_ = 0.13 * M = 0.13 * 0.00315 = 0.0004095***
Maximum one-time emission, g / s, ***GS = 0.13 * G = 0.13 * 0.0111 = 0.001443***
Impurity: 0328 Carbon (593)
Cold season emissions:
Specific emission of cars to the cold. stroke, g / min, (table 4.2 [2]), ***MXX = 0.1***
Mileage emission of cars while driving, g / min, (table 4.6 [2]), ***ML = 0.67***
For the transitional period, emissions during the cold period are multiplied by a factor of 0.9
Mileage emissions of vehicles while driving, g / min, ***ML = 0.9 * ML = 0.9 * 0.67 = 0.603***
Emission of 1 machine when working on the territory, g, ***M1 = ML * TV1 + 1.3 * ML * TV1N + MXX * TXS = 0.603 * 0.5 + 1.3 * 0.603 * 0.5 + 0.1 * 0.5 = 0.743***
Maximum emission of 1 machine during operation on the territory, g per 30 min, ***M2 = ML * TV2 + 1.3 * ML * TV2N + MXX * TXM = 0.603 * 1 + 1.3 * 0.603 * 1 + 0.1 * 1 = 1.487***
Gross emission of pollutants, t / year (4.8), ***M = A * M1 * NK * DN / 10 ^ 6 = 1 * 0.743 * 3 * 210/10 ^ 6 = 0.000468***
Maximum single emission of pollutants, g / s ***G = M2 * NK1 / 30/60 = 1.487 * 2/30/60 = 0.001652***
Impurity: 0330 Sulfur dioxide (526)
Cold season emissions: Specific emission of cars to the cold. stroke, g / min, (table 4.2 [2]), ***MXX = 0.16***
Mileage emission of cars while driving, g / min, (table 4.6 [2]), ***ML = 0.38***
For the transitional period, emissions during the cold season are multiplied by a factor of 0.9
Mileage emissions of vehicles while driving, g / min, ***ML = 0.9 * ML = 0.9 * 0.38 = 0.342***
Emission of 1 machine when working on the territory, g***, M1 = ML * TV1 + 1.3 * ML * TV1N + MXX * TXS = 0.342 * 0.5 + 1.3 * 0.342 * 0.5 + 0.16 * 0.5 = 0.473***
Maximum emission of 1 machine when working on the territory, g per 30 min, ***M2 = ML * TV2 + 1.3 * ML * TV2N + MXX * TXM = 0.342 * 1 + 1.3 * 0.342 * 1 + 0.16 * 1 = 0.947***
Gross emission of pollutants, t / year (4.8), ***M = A * M1 * NK * DN / 10 ^ 6 = 1 * 0.473 * 3 * 210/10 ^ 6 = 0.000298***
Maximum single emission of pollutants, g / s ***G = M2 * NK1 / 30/60 = 0.947 * 2/30/60 = 0.001052***
TOTAL emissions by period: Transition period (t> -5 and t <5)

Machine type: Tractor (G), N ICE = 101 - 160 kW										
Dn, daily	***Nk, nos***	***A***	***Nk1 nos***	***Tv1, min***	***Tv1n, min***	***Txs, мин***	***Tv2, min***	***Tv2n, min***	***Txm, min***	
210	***3***	***1.00***	***2***	***0.5***	***0.5***	***0.5***	***1***	***1***	***1***	

3B	***Mxx, g/min***	***Ml, g/min***	***g/s***	***t/year***	
0337	3.91	2.295	0.0102	0.00289	
2732	0.49	0.765	0.0025	0.000709	
0301	0.78	4.01	0.00888	0.00252	
0304	0.78	4.01	0.001443	0.0004095	
0328	0.1	0.603	0.001652	0.000468	
0330	0.16	0.342	0.001052	0.000298	

TOTAL EMISSIONS FROM CAR PARKING

Code	Impurity	Emission g / s	Emission t / year
0301	Nitrogen (IV) dioxide (4)	0.00888	0.00252
0304	Nitrogen (II) oxide (6)	0.001443	0.0004095
0328	Carbon (593)	0.001652	0.000468
0330	Sulfur dioxide (526)	0.001052	0.000298
0337	Carbon Oxide (594)	0.01021	0.00289
2732	Kerosene (660 *)	0.0025	0.000709

Maximum one-time emissions achieved during the transition period

CALCULATION OF GROSS EMISSIONS

City N 538, Tyulkubas district
Object N 0001, Option 1 "Khorgos-Almaty-Taraz-Shymkent-border ofRU"
Source of pollution N 6008, unorganized
Emission source N 009, blasting operations
References:
1. Methodology for calculating emission standards from fugitive sources Appendix No. 13 to the Order of the Minister of Environmental Protection of the Republic of Kazakhstan dated April 18, 2008 No. 100-p
2. Methodology for calculating emissions of pollutants into the atmosphere from enterprises producing building materials Appendix No. 11 to the Order of the Minister of Environmental Protection of the Republic of Kazakhstan dated April 18, 2008 No. 100-p
Emission source type:
Quarry Material:
Clay Impurity:
2908 Inorganic dust: 70-20% silicon dioxide (chamotte, cement, cement production dust - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)
Type of work: Blasting Amount of material lifted into the air during an explosion of 1 kg of explosive, t / kg, A1 = 5
Fraction of dust transfer to aerosol in relation to the exploded mass, A2 = 0.00002
Wind speed in the explosion area, m / s, ***G3 = 5***
Coeff. taking into account wind speed (Table 2), ***A3 = 1.4***
Preliminary preparation of the face: Irrigation of the dust settling zone with water, 10 l / m2
Coeff. taking into account the preliminary preparation of the face (Table 17), ***A4 = 0.7***
The total value of the exploded explosive charge, kg / year, ***D = 66292.65***
Maximum explosive charge, exploded within 20 min, kg, ***DMAX = 368.3***
Gross emission, t / year (11), **_M_ = A1 * A2 * A3 * A4 * D = 5 * 0.00002 * 1.4 * 0.7 * 66292.65 = 6.5**
Maximum one-time emission, g / s, ***_G_ = A1 * A2 * A3 * A4 * DMAX * 10 ^ 6/1200 = 5 * 0.00002 * 1.4 * 0.7 * 368.3 * 10 ^ 6/1200 = 30.1***
Total emissions from emission source: 009 blasting

Code	Impurity	Emission g / s	Emission t / year

2908	Inorganic dust: 70-20% silicon dioxide (chamotte, cement, cement production dust - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)	30.1	6.5

CALCULATION OF GROSS EMISSIONS

City N 538, Tyulkubas district Object N 0001,
Option 1 "Khorgos-Almaty-Taraz-Shymkent-border of RU"
Source of pollution N 6009, unorganized
Emission source N 010, cleaning and loading operations
References:
1. Methodology for calculating emission standards from fugitive sources Appendix No. 13 to the Order of the Minister of Environmental Protection of the Republic of Kazakhstan dated April 18, 2008 No. 100-p
2. Methodology for calculating emissions of pollutants into the atmosphere from enterprises producing building materials Appendix No. 11 to the Order of the Minister of Environmental Protection of the Republic of Kazakhstan dated April 18, 2008 No. 100-p
Material: Clay
Impurity: 2908 Inorganic dust: 70-20% silicon dioxide (chamotte, cement, cement production dust - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)
Type of work: Excavation and loading work
Material moisture,%, ***VL = 5***
Coeff., Taking into account the moisture content of the material (table 4), ***K5 = 0.6***
Dust fraction in the material (Table 1), ***P1 = 0.05***
Fraction of dust passing into aerosol (Table 1), ***P2 = 0.02***
Wind speed in the excavator operation zone (average), m / s, ***G3SR = 5***
Coefficient taking into account the average wind speed (Table 2), ***P3SR = 1.4***
Wind speed in the excavator operation zone (maximum), m / s, ***G3 = 12***
Coeff ... taking into account the maximum wind speed (Table 2), ***P3 = 2.3***
Coefficient taking into account local conditions (Table 3), ***P6 = 0.1***
Material piece size, mm, ***G7 = 150***
Coefficient taking into account the size of the material (Table 5), ***P5 = 0.2***
Material drop height, m, ***GB = 0.5***
Coefficient taking into account the height of the fall of the material (Table 7), ***B = 0.4***
The amount of rock processed by the excavator, t / hour, ***G = 700.7***
Maximum one-time emission, g / s (8), ***_G_ = P1 * P2 * P3 * K5 * P5 * P6 * B * G * 10 ^ 6/3600 = 0.05 * 0.02 * 2.3 * 0.6 * 0.2 * 0.1 * 0.4 * 700.7 * 10 ^ 6/3600 = 2.15***
Excavator operating time per year, hours, ***RT = 1050***
Gross emissions, t / year, ***_M_ = P1 * P2 * P3SR * K5 * P5 * P6 * B * G * RT = 0.05 * 0.02 * 1.4 * 0.6 * 0.2 * 0.1 * 0.4 * 700.7 * 1050 = 4.94***
Total emissions from source of emission: 010 cleaning and handling

Code	Impurity	Emission g / s	Emission t / year
2908	Inorganic dust: 70-20% silicon dioxide (chamotte, cement, cement production dust - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)	2.15	4.94

CALCULATION OF GROSS EMISSIONS

City N 538, Tyulkubas district Object N 0001,
Option 1 "Khorgos-Almaty-Taraz-Shymkent-border ofRU"
Source of pollution N, unorganized
Emission source N 012, motor vehicles
References:
1. Methodology for calculating emissions of pollutants from road transport enterprises (section 3) Appendix No. 3 to the Order of the Minister of Environmental Protection of the Republic of Kazakhstan dated 18.04.2008 No.

100-p
2. Methodology for calculating emissions of pollutants from enterprises of the road construction industry (section 4) Appendix No. 12 to the Order of the Minister of Environmental Protection of the Republic of Kazakhstan dated April 18, 2008 No. 100-p

CALCULATION OF EMISSIONS OF POLLUTANTS WHEN OPERATING AND MOVING CARS AROUND THE TERRITORY

List of vehicles

car model	***Fuel grade***	***Total***	***Max***
Carburetor cars with a working volume of up to 1.2 l (up to 94)			
Light transport	Unleaded gasoline	4	4
Carbureted trucks over 2 tons up to 5 tons (LPG)			
Concrete mixer	Diesel fuel	3	3
Diesel trucks over 8 to 16 tons (LPG)			
Crane	Diesel fuel	1	1
Concrete mixer (chassis KAMAZ-54115)	Diesel fuel	1	1
Total in the group	2	2	
Diesel trucks over 16 tons (LPG)			
Dump truck	Diesel fuel	6	4
Water carrier	Diesel fuel	1	1
Total in the group	7	5	
Tractor (G), N ICE = 36 - 60 kW			
Single bucket excavator	Diesel fuel	4	4
Wheel loader	Diesel fuel	4	4
Total in the group	8	8	
TOTAL : 24			

Calculation period: Transition period (t> -5 and t <5)

Air temperature for the calculated period, deg. C, T = 13

Machine type: Tractor (G), N ICE = 36 - 60 kW

Fuel type: diesel fuel Air temperature for the calculated period, deg. C, ***T = 0***

Number of working days in the period, ***DN = 420***

The total number of road vehicles in this group, pcs. , ***NK = 4***

Release rate (exit), ***A = 1***

The largest number of road vehicles operating on the territory for 30 minutes, pcs, ***NK1 = 4***

Total time of movement without load of 1 car per day, min, ***TV1 = 0.5***

Total time of movement of 1 vehicle with load per day, min, ***TV1N = 0.5***

Total time of operation of 1 car at cold. travel, min, ***TXS = 0.5***

Max travel time without load of 1 car in 30 min, min, ***TV2 = 1***

Max time of movement with load of 1 car in 30 min, min, ***TV2N = 1***

Max. stroke in 30 min, min, ***TXM = 1***

Impurity: 0337 Carbon oxide (594)

Cold season emissions:

Specific emission of cars to the cold. stroke, g / min, (table 4.2 [2]), ***MXX = 1.44***

Mileage emission of cars when driving, g / min, (table 4.6 [2]), ML = 0.94

For the transitional period, emissions during the cold period are multiplied by a factor of 0.9

Mileage emissions of vehicles while driving, g / min, ***ML = 0.9 * ML = 0.9 * 0.94 = 0.846***

Emission of 1 machine when working on the territory, g, ***M1 = ML * TV1 + 1.3 * ML * TV1N + MXX * TXS = 0.846 * 0.5 + 1.3 * 0.846 * 0.5 + 1.44 * 0.5 = 1.693***

Maximum emission of 1 machine when working on the territory, g per 30 min, ***M2 = ML * TV2 + 1.3 * ML * TV2N + MXX * TXM = 0.846 * 1 + 1.3 * 0.846 * 1 + 1.44 * 1 = 3.386***

Gross emission of pollutants, t / year (4.8), ***M = A * M1 * NK * DN / 10 ^ 6 = 1 * 1.693 * 4 * 420/10 ^ 6 = 0.002844***

Maximum single emission of pollutants, g / s ***G = M2 * NK1 / 30/60 = 3.386 * 4/30/60 = 0.00752***

Impurity: 2732 Kerosene (660 *)

Cold season emissions: Specific emission of cars to the cold. stroke, g / min, (table 4.2 [2]), ***MXX = 0.18***
Mileage emission of cars while driving, g / min, (table 4.6 [2]), ***ML = 0.31***

For the transitional period, emissions during the cold period are multiplied by a factor of 0.9
Mileage emissions of vehicles while driving, g / min, ***ML = 0.9 * ML = 0.9 * 0.31 = 0.279***
Emission of 1 machine when working on the territory, g, ***M1 = ML * TV1 + 1.3 * ML * TV1N + MXX * TXS = 0.279 * 0.5 + 1.3 * 0.279 * 0.5 + 0.18 * 0.5 = 0.411***
Maximum emission of 1 machine when working on the territory, g per 30 min, ***M2 = ML * TV2 + 1.3 * ML * TV2N + MXX * TXM = 0.279 * 1 + 1.3 * 0.279 * 1 + 0.18 * 1 = 0.822***
Gross emission of pollutants, t / year (4.8), ***M = A * M1 * NK * DN / 10 ^ 6 = 1 * 0.411 * 4 * 420/10 ^ 6 = 0.00069***
Maximum single emission of pollutants, g / s ***G = M2 * NK1 / 30/60 = 0.822 * 4/30/60 = 0.001827***
CALCULATION of nitrogen oxide emissions Specific emission of cars to the cold. stroke, g / min, (table 4.2 [2]), ***MXX = 0.29***
Mileage emission of cars while driving, g / min, (table 4.6 [2]), ***ML = 1.49***
Emission of 1 machine when working on the territory, g, ***M1 = ML * TV1 + 1.3 * ML * TV1N + MXX * TXS = 1.49 * 0.5 + 1.3 * 1.49 * 0.5 + 0.29 * 0.5 = 1.86***
Maximum emission of 1 machine when working on the territory, g per 30 min, ***M2 = ML * TV2 + 1.3 * ML * TV2N + MXX * TXM = 1.49 * 1 + 1.3 * 1.49 * 1 + 0.29 * 1 = 3.72***
Gross emission of pollutants, t / year (4.8), ***M = A * M1 * NK * DN / 10 ^ 6 = 1 * 1.86 * 4 * 420/10 ^ 6 = 0.003125***
Maximum single emission of pollutants, g / s ***G = M2 * NK1 / 30/60 = 3.72 * 4/30/60 = 0.00827***
Taking into account the transformation of nitrogen oxides, we get:
Impurity: 0301 Nitrogen (IV) dioxide (4)
Gross emission, t / year, ***_M_ = 0.8 * M = 0.8 * 0.003125 = 0.0025***
Maximum one-time emission, g / s, ***GS = 0.8 * G = 0.8 * 0.00827 = 0.00662***
Impurity: 0304 Nitrogen (II) oxide (6)
Gross emission, t / year, ***_M_ = 0.13 * M = 0.13 * 0.003125 = 0.000406***
Maximum one-time emission, g / s, ***GS = 0.13 * G = 0.13 * 0.00827 = 0.001075***
Impurity: 0328 Carbon (593)
Cold season emissions: Specific emission of cars to the cold. stroke, g / min, (table 4.2 [2]), ***MXX = 0.04***
Mileage emission of cars when driving, g / min, (table 4.6 [2]), ***ML = 0.25***
For the transitional period, emissions during the cold period are multiplied by a factor of 0.9
Mileage emissions of vehicles while driving, g / min, ***ML = 0.9 * ML = 0.9 * 0.25 = 0.225***
Emission of 1 machine when working on the territory, g, ***M1 = ML * TV1 + 1.3 * ML * TV1N + MXX * TXS = 0.225 * 0.5 + 1.3 * 0.225 * 0.5 + 0.04 * 0.5 = 0.279***
Maximum emission of 1 machine when working on the territory, g per 30 min, ***M2 = ML * TV2 + 1.3 * ML * TV2N + MXX * TXM = 0.225 * 1 + 1.3 * 0.225 * 1 + 0.04 * 1 = 0.558***
Gross emission of pollutants, t / year (4.8), ***M = A * M1 * NK * DN / 10 ^ 6 = 1 * 0.279 * 4 * 420/10 ^ 6 = 0.000469***
Maximum single emission of pollutants, g / s ***G = M2 * NK1 / 30/60 = 0.558 * 4/30/60 = 0.00124***

Impurity: 0330 Sulfur dioxide (526)
Cold season emissions:
Specific emission of cars to the cold. stroke, g / min, (table 4.2 [2]), ***MXX = 0.058***
Mileage emission of cars when driving, g / min, (table 4.6 [2]), ***ML = 0.15***
For the transitional period, emissions during the cold period are multiplied by a factor of 0.9
Mileage emissions of vehicles while driving, g / min, ***ML = 0.9 * ML = 0.9 * 0.15 = 0.135***
Emission of 1 machine when working on the territory, g, ***M1 = ML * TV1 + 1.3 * ML * TV1N + MXX * TXS = 0.135 * 0.5 + 1.3 * 0.135 * 0.5 + 0.058 * 0.5 = 0.1843***
Maximum emission of 1 machine when working on the territory, g per 30 min, ***M2 = ML * TV2 + 1.3 * ML * TV2N + MXX * TXM = 0.135 * 1 + 1.3 * 0.135 * 1 + 0.058 * 1 = 0.3685***
Gross emission of pollutants, t / year (4.8), ***M = A * M1 * NK * DN / 10 ^ 6 = 1 * 0.1843 * 4 * 420/10 ^ 6 = 0.0003096***
Maximum single emission of pollutants, g / s ***G = M2 * NK1 / 30/60 = 0.3685 * 4/30/60 = 0.000819***
Machine type:
Tractor (G), N ICE = 36 - 60 kW
Fuel type: diesel fuel Air temperature for the calculated period, deg. C, ***T = 0***
Number of working days in the period, ***DN = 420***

The total number of road vehicles in this group, pcs. , ***NK = 4***
Release rate (exit), ***A = 1***
The largest number of road vehicles operating on the territory for 30 minutes, pcs, ***NK1 = 4***
Total time of movement without load of 1 car per day, min, ***TV1 = 0.5***
Total time of movement of 1 vehicle with load per day, min, ***TV1N = 0.5***
Total time of operation of 1 car at cold. travel, min, ***TXS = 0.5***
Max travel time without load of 1 car in 30 min, min, ***TV2 = 1***
Max time of movement with load of 1 car in 30 min, min, ***TV2N = 1***
Max. stroke in 30 min, min, ***TXM = 1***
Impurity: 0337 Carbon oxide (594)
Cold season emissions: Specific emission of cars to the cold. stroke, g / min, (table 4.2 [2]), ***MXX = 1.44***
Mileage emission of cars when driving, g / min, (table 4.6 [2]), ***ML = 0.94***
For the transitional period, emissions during the cold period are multiplied by a factor of 0.9
Mileage emissions of vehicles while driving, g / min, ***ML = 0.9 * ML = 0.9 * 0.94 = 0.846***
Emission of 1 machine when working on the territory, g, ***M1 = ML * TV1 + 1.3 * ML * TV1N + MXX * TXS = 0.846 * 0.5 + 1.3 * 0.846 * 0.5 + 1.44 * 0.5 = 1.693***
Maximum emission of 1 machine when working on the territory, g per 30 min, ***M2 = ML * TV2 + 1.3 * ML * TV2N + MXX * TXM = 0.846 * 1 + 1.3 * 0.846 * 1 + 1.44 * 1 = 3.386***
Gross emission of pollutants, t / year (4.8), ***M = A * M1 * NK * DN / 10 ^ 6 = 1 * 1.693 * 4 * 420/10 ^ 6 = 0.002844***
Maximum single emission of pollutants, g / s ***G = M2 * NK1 / 30/60 = 3.386 * 4/30/60 = 0.00752***
Impurity: 2732 Kerosene (660 *)
Cold season emissions: Specific emission of cars to the cold. stroke, g / min, (table 4.2 [2]), ***MXX = 0.18***
Mileage emission of cars while driving, g / min, (table 4.6 [2]), ***ML = 0.31***
For the transitional period, emissions during the cold period are multiplied by a factor of 0.9
Mileage emissions of vehicles while driving, g / min, ***ML = 0.9 * ML = 0.9 * 0.31 = 0.279***
Emission of 1 machine when working on the territory, g, ***M1 = ML * TV1 + 1.3 * ML * TV1N + MXX * TXS = 0.279 * 0.5 + 1.3 * 0.279 * 0.5 + 0.18 * 0.5 = 0.411***
Maximum emission of 1 machine when working on the territory, g per 30 min, ***M2 = ML * TV2 + 1.3 * ML * TV2N + MXX * TXM = 0.279 * 1 + 1.3 * 0.279 * 1 + 0.18 * 1 = 0.822***
Gross emission of pollutants, t / year (4.8***), M = A * M1 * NK * DN / 10 ^ 6 = 1 * 0.411 * 4 * 420/10 ^ 6 = 0.00069***
Maximum single emission of pollutants, g / s ***G = M2 * NK1 / 30/60 = 0.822 * 4/30/60 = 0.001827***
CALCULATION of nitrogen oxide emissions Specific emission of cars to the cold. stroke, g / min, (table 4.2 [2]), ***MXX = 0.29***
Mileage emission of cars while driving, g / min, (table 4.6 [2]), ***ML = 1.49***
Emission of 1 machine when working on the territory, g, M***1 = ML * TV1 + 1.3 * ML * TV1N + MXX * TXS = 1.49 * 0.5 + 1.3 * 1.49 * 0.5 + 0.29 * 0.5 = 1.86***

Maximum emission of 1 machine when working on the territory, g per 30 min, ***M2 = ML * TV2 + 1.3 * ML * TV2N + MXX * TXM = 1.49 * 1 + 1.3 * 1.49 * 1 + 0.29 * 1 = 3.72***
Gross emission of pollutants, t / year (4.8), ***M = A * M1 * NK * DN / 10 ^ 6 = 1 * 1.86 * 4 * 420/10 ^ 6 = 0.003125***
Maximum single emission of pollutants, g / s ***G = M2 * NK1 / 30/60 = 3.72 * 4/30/60 = 0.00827***
Taking into account the transformation of nitrogen oxides, we get:
Impurity: 0301 Nitrogen (IV) dioxide (4)
Gross emission, t / year, _M_ = ***0.8 * M = 0.8 * 0.003125 = 0.0025***
Maximum one-time emission, g / s, ***GS = 0.8 * G = 0.8 * 0.00827 = 0.00662***
Impurity: 0304 Nitrogen (II) oxide (6)
Gross emission, t / year, _M_ = ***0.13 * M = 0.13 * 0.003125 = 0.000406***
Maximum one-time emission, g / s, ***GS = 0.13 * G = 0.13 * 0.00827 = 0.001075***
Impurity: 0328 Carbon (593)
Cold season emissions: Specific emission of cars to the cold. stroke, g / min, (table 4.2 [2]), ***MXX = 0.04***
Mileage emission of cars when driving, g / min, (table 4.6 [2]), ***ML = 0.25***
For the transitional period, emissions during the cold season are multiplied by a factor of 0.9

Mileage emission of cars when driving, g / min, ***ML = 0.9 * ML = 0.9 * 0.25 = 0.225***
Emission of 1 machine when working on the territory, g, ***M1 = ML * TV1 + 1.3 * ML * TV1N + MXX * TXS = 0.225 * 0.5 + 1.3 * 0.225 * 0.5 + 0.04 * 0.5 = 0.279***
Maximum emission of 1 machine when working on the territory, g per 30 min***, M2 = ML * TV2 + 1.3 * ML * TV2N + MXX * TXM = 0.225 * 1 + 1.3 * 0.225 * 1 + 0.04 * 1 = 0.558***
Gross emission of pollutants, t / year (4.8), ***M = A * M1 * NK * DN / 10 ^ 6 = 1 * 0.279 * 4 * 420/10 ^ 6 = 0.000469***
Maximum single emission of pollutants, g / s ***G = M2 * NK1 / 30/60 = 0.558 * 4/30/60 = 0.00124***
Impurity: 0330 Sulfur dioxide (526)
Cold season emissions: Specific emission of cars to the cold. stroke, g / min, (table 4.2 [2]), ***MXX = 0.058***
Mileage emission of cars when driving, g / min, (table 4.6 [2]), ***ML = 0.15***
For the transitional period, emissions during the cold period are multiplied by a factor of 0.9
Mileage emissions of vehicles while driving, g / min, ***ML = 0.9 * ML = 0.9 * 0.15 = 0.135***
Emission of 1 machine when working on the territory, g, ***M1 = ML * TV1 + 1.3 * ML * TV1N + MXX * TXS = 0.135 * 0.5 + 1.3 * 0.135 * 0.5 + 0.058 * 0.5 = 0.1843***
Maximum emission of 1 machine when working on the territory, g per 30 min, ***M2 = ML * TV2 + 1.3 * ML * TV2N + MXX * TXM = 0.135 * 1 + 1.3 * 0.135 * 1 + 0.058 * 1 = 0.3685***
Gross emission of pollutants, t / year (4.8), ***M = A * M1 * NK * DN / 10 ^ 6 = 1 * 0.1843 * 4 * 420/10 ^ 6 = 0.0003096***
Maximum single emission of pollutants, g / s ***G = M2 * NK1 / 30/60 = 0.3685 * 4/30/60 = 0.000819***
Machine type: Diesel trucks over 16 t (LPG)
Fuel type:Diesel fuel
Number of working days per year, days , ***DN = 420***
The largest number of cars operating on the territory for 30 minutes, ***NK1 = 1***
Total. number of cars of this group for the billing period, pcs. , ***NK = 1***
Release rate (exit), ***A = 1***
Environmental control is not carried out Total mileage with load, km / day, ***L1N = 0.5***
Total engine idling time, min / day, ***TXS = 0.5***
Max. run with load in 30 min, km, ***L2N = 1***
Max. engine idling time for 30 min, min***, TXM = 1***
Total mileage of 1 car without load on the territory of the p / p, km, ***L1 = 0.5***
Maximum mileage of 1 car without load in 30 min, km***, L2 = 1***
Admixture: 0337 Carbon oxide (594)
Mileage emissions of pollutants, g / km, (Table 3.8), ***ML = 8.37***
Specific pollutant emissions during idling, g / min, (Table 3.9), ***MXX = 2.9***
Pollutant emissions per day during movement and work on the territory, g, ***M1 = ML * L1 + 1.3 * ML * L1N + MXX * TXS = 8.37 * 0.5 + 1.3 * 8.37 * 0.5 + 2.9 * 0.5 = 11.08***
Gross emission of pollutants, t / year, ***M = A * M1 * NK * DN * 10 ^ (-6) = 1 * 11.08 * 1 * 420 * 10 ^ (-6) = 0.00465***
Maximum one-time emission of pollutants by one car, g per 30 min, ***M2 = ML * L2 + 1.3 * ML * L2N + MXX ****

TXM = 8.37 * 1 + 1.3 * 8.37 * 1 + 2.9 * 1 = 22.15
Maximum single emission of pollutants, g / s, ***G = M2 * NK1 / 30/60 = 22.15 * 1/30/60 = 0.0123***
Impurity: 2732 Kerosene (660 *)
Mileage emissions of pollutants, g / km, (Table 3.8), ***ML = 1.17***
Specific pollutant emissions during idle operation, g / min, (Table 3.9), ***MXX = 0.45***
Pollutant emissions per day when driving and working on the territory, g, ***M1 = ML * L1 + 1.3 * ML * L1N + MXX * TXS = 1.17 * 0.5 + 1.3 * 1.17 * 0.5 + 0.45 * 0.5 = 1.57***
Gross emission of pollutants, t / year, ***M = A * M1 * NK * DN * 10 ^ (-6) = 1 * 1.57 * 1 * 420 * 10 ^ (-6) = 0.00066***
Maximum one-time emission of pollutants by one car, g per 30 min, ***M2 = ML * L2 + 1.3 * ML * L2N + MXX * TXM = 1.17 * 1 + 1.3 * 1.17 * 1 + 0.45 * 1 = 3.14***
Maximum single emission of pollutants, g / s, ***G = M2 * NK1 / 30/60 = 3.14 * 1/30/60 = 0.001744***
CALCULATION of nitrogen oxide emissions:
Mileage emissions of pollutants, g / km, (Table 3.8), ***ML = 4.5***
Specific pollutant emissions during idling, g / min, (Table 3.9), ***MXX = 1***

Pollutant emissions per day during movement and work on the territory, g, ***M1 = ML * L1 + 1.3 * ML * L1N + MXX * TXS = 4.5 * 0.5 + 1.3 * 4.5 * 0.5 + 1 * 0.5 = 5.68***
Gross emission of pollutants, t / year, ***M = A * M1 * NK * DN * 10 ^ (-6) = 1 * 5.68 * 1 * 420 * 10 ^ (-6) = 0.002386***
Maximum one-time emission of pollutants by one car, g per 30 min, ***M2 = ML * L2 + 1.3 * ML * L2N + MXX * TXM = 4.5 * 1 + 1.3 * 4.5 * 1 + 1 * 1 = 11.35***
Maximum single emission of pollutants, g / s, ***G = M2 * NK1 / 30/60 = 11.35 * 1/30/60 = 0.0063***
Taking into account the transformation of nitrogen oxides, we get:
Impurity: 0301 Nitrogen (IV) dioxide (4)
Gross emission, t / year, ***_M_ = 0.8 * M = 0.8 * 0.002386 = 0.00191***
Maximum one-time emission, g / s, ***GS = 0.8 * G = 0.8 * 0.0063 = 0.00504***
Impurity: 0304 Nitrogen (II) oxide (6)
Gross emission, t / year, ***_M_ = 0.13 * M = 0.13 * 0.002386 = 0.00031***
Maximum one-time emission, g / s***, GS = 0.13 * G = 0.13 * 0.0063 = 0.000819***
Impurity: 0328 Carbon (593)
Mileage emissions of pollutants, g / km, (Table 3.8), ***ML = 0.45***
Specific pollutant emissions during idling, g / min, (Table 3.9***), MXX = 0.04***
Pollutant emissions per day during movement and work on the territory, g, ***M1 = ML * L1 + 1.3 * ML * L1N + MXX * TXS = 0.45 * 0.5 + 1.3 * 0.45 * 0.5 + 0.04 * 0.5 = 0.538***
Gross emission of pollutants, t / year, ***M = A * M1 * NK * DN * 10 ^ (-6) = 1 * 0.538 * 1 * 420 * 10 ^ (-6) = 0.000226***
Maximum one-time emission of pollutants by one car, g per 30 min, ***M2 = ML * L2 + 1.3 * ML * L2N + MXX * TXM = 0.45 * 1 + 1.3 * 0.45 * 1 + 0.04 * 1 = 1.075***
Maximum single emission of pollutants, g / s, ***G = M2 * NK1 / 30/60 = 1.075 * 1/30/60 = 0.000597***
Impurity: 0330 Sulfur dioxide (526)
Mileage emissions of pollutants, g / km, (Table 3.8), ***ML = 0.873***
Specific emissions of pollutants during idling, g / min, (Table 3.9), ***MXX = 0.1***
Pollutant emissions per day when driving and working on the territory, g, ***M1 = ML * L1 + 1.3 * ML * L1N + MXX * TXS = 0.873 * 0.5 + 1.3 * 0.873 * 0.5 + 0.1 * 0.5 = 1.054***
Gross emission of pollutants, t / year, ***M = A * M1 * NK * DN * 10 ^ (-6) = 1 * 1.054 * 1 * 420 * 10 ^ (-6) = 0.000443***
Maximum one-time emission of pollutants by one car, g per 30 min, ***M2 = ML * L2 + 1.3 * ML * L2N + MXX * TXM = 0.873 * 1 + 1.3 * 0.873 * 1 + 0.1 * 1 = 2.11***
Maximum single emission of pollutants, g / s, ***G = M2 * NK1 / 30/60 = 2.11 * 1/30/60 = 0.001172***
Machine type: Diesel trucks over 16 t (LPG)
Fuel type: Diesel fuel
Number of working days per year, days , ***DN = 420***
The largest number of vehicles operating on the territory for 30 minutes, ***NK1 = 3***
Total. number of cars of this group for the billing period, pcs. , ***NK = 6***
Release (exit) coefficient, ***A = 1***

Environmental control is not carried out Total mileage with load, km / day, ***L1N = 0.5***
Total engine idling time, min / day, ***TXS = 0.5***
Max. run with load in 30 min, km, ***L2N = 1***
Max. engine idling time for 30 min, min, ***TXM = 1***
Total mileage of 1 car without load on the territory of the p / p, km, ***L1 = 0.5***
Maximum mileage of 1 car without load in 30 min, km, ***L2 = 1***
Admixture: 0337 Carbon oxide (594)
Mileage emissions of pollutants, g / km, (Table 3.8), ***ML = 8.37***
Specific pollutant emissions during idling, g / min, (Table 3.9), ***MXX = 2.9***
Pollutant emissions per day during movement and work on the territory, g, ***M1 = ML * L1 + 1.3 * ML * L1N + MXX * TXS = 8.37 * 0.5 + 1.3 * 8.37 * 0.5 + 2.9 * 0.5 = 11.08***
Gross emission of pollutants, t / year, ***M = A * M1 * NK * DN * 10 ^ (-6) = 1 * 11.08 * 6 * 420 * 10 ^ (-6) = 0.0279***
Maximum one-time emission of pollutants by one car, g per 30 min, ***M2 = ML * L2 + 1.3 * ML * L2N + MXX * TXM = 8.37 * 1 + 1.3 * 8.37 * 1 + 2.9 * 1 = 22.15***
Maximum single emission of pollutants, g / s, ***G = M2 * NK1 / 30/60 = 22.15 * 3/30/60 = 0.0369***
Impurity: 2732 Kerosene (660 *)
Mileage emissions of pollutants, g / km, (Table 3.8), ***ML = 1.17***
Specific pollutant emissions during idle operation, g / min, (Table 3.9), ***MXX = 0.45***
Pollutant emissions per day when driving and working on the territory, g, ***M1 = ML * L1 + 1.3 * ML * L1N + MXX * TXS = 1.17 * 0.5 + 1.3 * 1.17 * 0.5 + 0.45 * 0.5 = 1.57***
Gross emission of pollutants, t / year, ***M = A * M1 * NK * DN * 10 ^ (-6) = 1 * 1.57 * 6 * 420 * 10 ^ (-6) = 0.00396***
Maximum one-time emission of pollutants by one car, g per 30 min, ***M2 = ML * L2 + 1.3 * ML * L2N + MXX * TXM = 1.17 * 1 + 1.3 * 1.17 * 1 + 0.45 * 1 = 3.14***
Maximum single emission of pollutants, g / s, ***G = M2 * NK1 / 30/60 = 3.14 * 3/30/60 = 0.00523***
CALCULATION of nitrogen oxide emissions:
Mileage emissions of pollutants, g / km, (Table 3.8), ***ML = 4.5***
Specific pollutant emissions during idling, g / min, (Table 3.9), ***MXX = 1***
Pollutant emissions per day during movement and work on the territory, g, ***M1 = ML * L1 + 1.3 * ML * L1N + MXX * TXS = 4.5 * 0.5 + 1.3 * 4.5 * 0.5 + 1 * 0.5 = 5.68***
Gross emission of pollutants, t / year, ***M = A * M1 * NK * DN * 10 ^ (-6) = 1 * 5.68 * 6 * 420 * 10 ^ (-6) = 0.0143***
Maximum one-time emission of pollutants by one car, g per 30 min, ***M2 = ML * L2 + 1.3 * ML * L2N + MXX * TXM = 4.5 * 1 + 1.3 * 4.5 * 1 + 1 * 1 = 11.35***
Maximum single emission of pollutants, g / s, ***G = M2 * NK1 / 30/60 = 11.35 * 3/30/60 = 0.0189***
Taking into account the transformation of nitrogen oxides, we get:
Impurity: 0301 Nitrogen (IV) dioxide (4)
Gross emission, t / year, ***_M_ = 0.8 * M = 0.8 * 0.0143 = 0.01144***
Maximum one-time emission, g / s, ***GS = 0.8 * G = 0.8 * 0.0189 = 0.01512***
Impurity: 0304 Nitrogen (II) oxide (6)
Gross emission, t / year, ***_M_ = 0.13 * M = 0.13 * 0.0143 = 0.00186***
Maximum one-time emission, g / s, ***GS = 0.13 * G = 0.13 * 0.0189 = 0.002457***
Impurity: 0328 Carbon (593)
Mileage emissions of pollutants, g / km, (Table 3.8), ***ML = 0.45***
Specific pollutant emissions during idling, g / min, (Table 3.9), ***MXX = 0.04***
Pollutant emissions per day during movement and work on the territory, g, ***M1 = ML * L1 + 1.3 * ML * L1N + MXX * TXS = 0.45 * 0.5 + 1.3 * 0.45 * 0.5 + 0.04 * 0.5 = 0.538***
Gross emission of pollutants, t / year, ***M = A * M1 * NK * DN * 10 ^ (-6) = 1 * 0.538 * 6 * 420 * 10 ^ (-6) = 0.001356***
Maximum one-time emission of pollutants by one car, g per 30 min, ***M2 = ML * L2 + 1.3 * ML * L2N + MXX * TXM = 0.45 * 1 + 1.3 * 0.45 * 1 + 0.04 * 1 = 1.075***
Maximum single emission of pollutants, g / s, ***G = M2 * NK1 / 30/60 = 1.075 * 3/30/60 = 0.00179***
Impurity: 0330 Sulfur dioxide (526)
Mileage emissions of pollutants, g / km, (Table 3.8), ***ML = 0.873***
Specific emissions of pollutants during idling, g / min, (Table 3.9), ***MXX = 0.1***
Pollutant emissions per day when driving and working on the territory, g, ***M1 = ML * L1 + 1.3 * ML * L1N + MXX***

**** TXS = 0.873 * 0.5 + 1.3 * 0.873 * 0.5 + 0.1 * 0.5 = 1.054***
Gross emission of pollutants, t / year, ***M = A * M1 * NK * DN * 10 ^ (-6) = 1 * 1.054 * 6 * 420 * 10 ^ (-6) = 0.002656***
Maximum one-time emission of pollutants by one car, g per 30 min, ***M2 = ML * L2 + 1.3 * ML * L2N + MXX * TXM = 0.873 * 1 + 1.3 * 0.873 * 1 + 0.1 * 1 = 2.11***
Maximum single emission of pollutants, g / s, ***G = M2 * NK1 / 30/60 = 2.11 * 3/30/60 = 0.00352***
TOTAL emissions by period: Transition period (t> -5 and t <5)

Type of car: Tractor (Г), N ДВС = 36 - 60 кВт										
Dn, dail	***Nk, nos***	***A***	***Nk1 nos.***	***Tv1, min***	***Tv1n, min***	***Txs, min***	***Tv2, min***	***Tv2n, min***	***Txm, mib***	
420	4	1.00	4	0.5	0.5	0.5	1	1	1	
3B	***Mxx, g/min***	***Ml, g/min***	***g/s***				***t/year***			
0337	1.44	0.846	0.00752				0.002844			
2732	0.18	0.279	0.001827				0.00069			
0301	0.29	1.49	0.00662				0.0025			
0304	0.29	1.49	0.001075				0.000406			
0328	0.04	0.225	0.00124				0.000469			
0330	0.058	0.135	0.000819				0.0003096			
0337	1.44	0.846	0.00752				0.002844			
2732	0.18	0.279	0.001827				0.00069			
0301	0.29	1.49	0.00662				0.0025			
0304	0.29	1.49	0.001075				0.000406			
0328	0.04	0.225	0.00124				0.000469			
0330	0.058	0.135	0.000819				0.0003096			

Type of car: Duisel trucks over 16 t. (CIS)										
Dn, dail	***Nk, nos***	***A***	***Nk1 nos.***	***L1, km***	***L1n, km***	***Txs, min***	***L2, km***	***L2n, km***	***Txm, min***	
420	1	1.00	1	0.5	0.5	0.5	1	1	1	
3B	***Mxx, g/min***	***Ml, g/k***	***g/s***				***t/year***			
0337	2.9	8.37	0.0123				0.00465			
2732	0.45	1.17	0.001744				0.00066			
0301	1	4.5	0.00504				0.00191			
0304	1	4.5	0.000819				0.00031			
0328	0.04	0.45	0.000597				0.000226			
0330	0.1	0.873	0.001172				0.000443			
0337	2.9	8.37	0.0369				0.0279			
2732	0.45	1.17	0.00523				0.00396			
0301	1	4.5	0.01512				0.01144			
0304	1	4.5	0.002457				0.00186			
0328	0.04	0.45	0.00179				0.001356			
0330	0.1	0.873	0.00352				0.002656			

TOTAL under the period: Transaction period (t>-5 u t<5)			
Code	***Impurity***	***Emission g / s***	***Emission t / year***
0337	Carbon Oxide (594)	0.06424	0.038238
2732	Kerosene (660 *)	0.010628	0.006
0301	Nitrogen (IV) dioxide (4)	0.0334	0.01835
0328	Carbon (593)	0.004867	0.00252
0330	Sulfur dioxide (526)	0.00633	0.0037182

0304	Nitrogen (II) oxide (6)	0.005426	0.002982

TOTAL EMISSIONS FROM CAR PARKING

Code	***Impurity***	***Emission g***	***Emission t /***
0301	Nitrogen (IV) dioxide (4)	0.0334	0.01835
0304	Nitrogen (II) oxide (6)	0.005426	0.002982
0328	Carbon (593)	0.004867	0.00252
0330	Sulfur dioxide (526)	0.00633	0.0037182
0337	Carbon Oxide (594)	0.06424	0.038238
2732	Kerosene (660 *)	0.010628	0.006

Maximum one-time emissions achieved during the transition period

Determination of the hazard category of the enterprise for the current situation

Tyulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border ofRU"

POLLUTANT code	Name of substance	MPC Maksim. one-time, mg / m3	MPC average daily, mg / m3	reference point. safe uv, mg / m3	Hazard Class	Emission of matter g / s	Emission of matter, t / year	COV value (M / MPC) **a	Emission of matter, conventional tons / year
1	2	3	4	5	6	7	8	9	10
0123	Iron (II, III) oxides / in terms of iron / (277)		0.04		3	0.00285	0.003224	0	0.0806
0143	Manganese and its compounds / in terms of manganese (IV) oxide / (332)	0.01	0.001		2	0.000505	0.000571	0	0.571
0337	Carbon Oxide (594)	5	3		4	0.000000762	0.000000576	0	0.00000019
0342	Fluoride gaseous compounds / in terms of fluorine / (627)	0.02	0.005		2	0.0001167	0.000132	0	0.0264
0616	Dimethylbenzene (mixture of o-, m-, p- isomers) (203)	0.2			3	0.2063	0.3555	1.7775	1.7775
0827	Chlorethylene (656)		0.01		1	0.00000033	0.0000002496	0	0.00002496
2752	White spirit (1316 *)			1		0.1069	0.1215	0	0.1215
2754	Limit hydrocarbons C12-19 / in terms of C / (592)	1			4	0.1173	0.152	0	0.152
2902	Suspended substances	0.5	0.15		3	0.0784	0.1749	1.166	1.166
2908	Inorganic dust: 70-20% silicon dioxide (chamotte, cement, dust from cement production - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)	0.3	0.1		3	33.09071	16.4166	164.166	164.166
	total					33.603082792	17.224427826	167.1	168.061025

Total hazard ratio: 167.1

Hazard category: 4

Determination of the need to calculate surface concentrations of substances for the current situation

Tulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border ofRU" "

POLLUTANT code	Name of substance	MPC Maksim. one-time, mg / m3	MPC average daily, mg / m3	reference point. safe uv, mg / m3	EMISSION substances g / s	Weighted average height, m	M / (MPC * N) for H> 10 M / MPC for H <10	Note
1	2	3	4	5	6	7	8	9
0123	Iron (II, III) oxides / in terms of iron / (277)		0.04		0.00285	2.0000	0.0071	-
0143	Manganese and its compounds / in terms of manganese (IV) oxide / (332)	0.01	0.001		0.000505	2.0000	0.0505	-
0304	Nitrogen (II) oxide (6)	0.4	0.06		0.006869	2.0000	0.0172	-
0328	Carbon (593)	0.15	0.05		0.006519	2.0000	0.0435	-
0616	Dimethylbenzene (mixture of o-, m-, p- isomers) (203)	0.2			0.2063	2.0000	1.0315	Расчет
0827	Chlorethylene (656)		0.01		0.00000033	2.0000	0.0000033	-
2732	Kerosene (660 *)			1.2	0.013128	2.0000	0.0109	-
2752	White spirit (1316 *)			1	0.1069	2.0000	0.1069	Расчет
2754	Limit hydrocarbons C12-19 / in terms of C / (592)	1			0.1173	2.0000	0.1173	Расчет
2902	Suspended substances	0.5	0.15		0.0784	2.0000	0.1568	Расчет
	Substances with the effect of the total harmful effect							
0301	Nitrogen (IV) dioxide (4)	0.2	0.04		0.04228	2.0000	0.2114	Расчет
0330	Sulfur dioxide (526)		0.125		0.007382	2.0000	0.0059	-
0337	Carbon Oxide (594)	5	3		0.074450762	2.0000	0.0149	-
0342	Gaseous fluoride compounds / in terms of fluorine / (627)	0.02	0.005		0.0001167	2.0000	0.0058	-
2908	Inorganic dust: 70-20% dioxide silicon (chamotte, cement, cement dust production - clay, shale, blast furnace slag, sand, clinker, ash, silica, ash from Kazakh coal deposits) (503)	0.3	0.1		33.09071	2.0000	110.3024	Расчет

Note. 1. The need for concentration calculations is determined in accordance with clause 5.21 OND-86. The weighted average height of API is determined by the standard formula: Sum (Hi * Mi) / Sum (Mi), where Hi is the actual height of API, Mi is the emission of pollutants, g / c 2. In the absence of MPCm.r. OBUV is taken, in the absence of OBUV - 10 * MPCs.s.

Determination of the hazard category of the enterprise for the existing situation from vehicles

Tyulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border ofRU"

POLLUTANT code	Name of substance	MPC Maksim. one-time, mg / m3	MPC average daily, mg / m3	OBUV reference point. safe uv, mg / m3	Hazard class	EMISSION substances g / s	EMISSION substances t/year	COV value (M / MPC) **a	Emission of matter, conventional tons / year
1	2	3	4	5	6	7	8	9	10
0301	Nitrogen (IV) dioxide (4)	0.2	0.04		2	0.04228	0.02087	0	0.52175
0304	Nitrogen (II) oxide (6)	0.4	0.06		3	0.006869	0.0033915	0	0.056525
0328	Carbon (593)	0.15	0.05		3	0.006519	0.002988	0	0.05976
0330	Sulfur dioxide (526)		0.125		3	0.007382	0.0040162	0	0.0321296
0337	Carbon Oxide (594)	5	3		4	0.07445	0.041128	0	0.01370933
2732	Kerosene (660 *)			1.2		0.013128	0.006709	0	0.00559083
	TOTAL:					0.150628	0.0791027		0.68946476
Total hazard ratio: 0 Hazard category: 4									

Parameters of emissions of pollutants into the atmosphere for calculating the MPE for 2014

Tyulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border of RU"

Production	Shop	Sources of emission of pollutants		Working hours per year	Name of the source of emission of harmful substances	Emission source number	Emission source number	Emission source height, m	Pipe mouth diameter m	Parameters of the gas-air mixture at the outlet of the discharge source			Source coordinates on the schematic map, m		
		Name	Amount							speed m/s	volume per pipe, m3 / s	temp. oC	point source./ 1st end lin./ center of the areal source		2nd end / length, w area of the source
													X1	Y1	X2
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
002		loading - unloading	1	1050	unorganized	1	6001	2				13	100	50	80
002		bituminous works	1	360	unorganized	1	6002	2				13	100	50	80
002		welding work	1	315	unorganized	1	6003	2				13	100	50	80

ца **лин. ирина ого** ка	Name of gas cleaning units and measures to reduce emissions	Вещества по котор. производ. г-очистка к-т обесп газоо-й %	Average exploitation degree of cleaning / max. Degree of cleaning%	Substance code	Name of substance	Emissions of pollutants			Year of reaching MPE
						g/s	mg / m3	t / year	
Y2									
17	18	19	20	21	22	23	24	25	26
40				2908	Inorganic dust: 70-20% silicon dioxide (chamotte,	0.835		4.955	

					cement, dust cement production - clay, shale, blast furnace slag, sand, clinker, ash, silica, coal ash Kazakhstani deposits) (503)					
40				2754	Hydrocarbons limit C12-19 / в converted into C / (592)	0.1173		0.152		
40				0123	Iron (II, III) oxides / in terms of for iron / (277)	0.00285		0.003224		
				0143	Manganese and its connections / in converted to manganese (IV) oxide / (332)	0.000505		0.000571		
				0342	Fluoride gaseous connections / in converted to fluorine / (627)	0.0001167		0.000132		

Tyulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border of RU"

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
002		paintwork work	1	315	unorganized	1	6004	2				13	100	50	80
002		welding polyethylene pipes	1	210	unorganized	1	6005	2				13	100	50	80
002		drilling works	3	1050	unorganized	1	6006	2				13	100	50	80
002		Drilling installation	1	1050	unorganized	1	6007	2				13	100	50	80
002		imploding works	1	60	unorganized	1	6008	2				13	100	50	80

17	18	19	20	21	22	23	24	25	26
40				0616	Dimethylbenzene (mixture o-, m-, p- isomers) (203)	0.2063		0.3555	
				2752	White spirit (1316 *)	0.1069		0.1215	
				2902	Suspended substances	0.0784		0.1749	
40				0337	Carbon Oxide (594)	0.000000762		0.000000576	
				0827	Chlorethylene (656)	0.00000033		0.0000002496	
40				2908	Inorganic dust: 70-20% dioxide silicon (chamotte, cement, dust cement production - clay, shale, blast furnace slag, sand, clinker, ash, silica, coal ash Kazakhstani deposits) (503)	0.00571		0.0216	
40				0301	Nitrogen (IV) dioxide (4)	0.00888		0.00252	
				0304	Nitrogen (II) oxide (6)	0.001443		0.0004095	
				0328	Carbon (593)	0.001652		0.000468	
				0330	Sulfur dioxide (526)	0.001052		0.000298	
				0337	Carbon Oxide (594)	0.01021		0.00289	
				2732	Kerosene (660 *)	0.0025		0.000709	
40				2908	Inorganic dust: 70-20% dioxide silicon (chamotte, cement, dust cement production - clay, shale, blast furnace slag, sand, clinker, ash,	30.1		6.5	

					silica, coal ash										

Tyulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border of RU"

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
002		soberly loading work	1	1050	unorganized	1	6009	2				13	100	50	80
002		vehicles	1	3360	unorganized	1	6010	2				13	100	50	80

17	18	19	20	21	22	23	24	25	26
					Kazakhstani deposits) (503)				
40				2908	Inorganic dust: 70-20% dioxide silicon (chamotte, cement, dust cement production - clay, shale, blast furnace slag, sand, clinker, ash, silica, coal ash Kazakhstani deposits) (503)	2.15		4.94	
40				0301	Nitrogen (IV) dioxide (4)	0.0334		0.01835	
				0304	Nitrogen (II) oxide (6)	0.005426		0.002982	
				0328	Carbon (593)	0.004867		0.00252	
				0330	Sulfur dioxide (526)	0.00633		0.0037182	
				0337	Carbon Oxide (594)	0.06424		0.038238	
				2732	Kerosene (660 *)	0.010628		0.006	

Standards for emissions of pollutants into the atmosphere for the current situation and for the year of reaching the MPE

Tyulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border of RU"

Production, workshop, site	Emission source number	Pollutant emission standards							
		current situation for 2014		For 2015		For 2016		For 2017	
Pollutant code and name		g/s	t/year	g/s	t/year	g/s	t/year	g/s	t/year
1	2	3	4	5	6	7	8	9	10
(0123) Iron (II, III) oxides / in terms of iron / (277)									
Unorganized sources									
construction period	6003	0.00285	0.003224	0.00285	0.003224	0.00285	0.003224	0.00285	0.003224
(0143) Manganese and its compounds / calculated as manganese									
(332) Unorganized sources									
период строительства	6003	0.000505	0.000571	0.000505	0.000571	0.000505	0.000571	0.000505	0.000571
(0337) Carbon oxide (594)									
Unorganized sources									
construction period	6005	0.000000762	0.000000576	0.000000762	0.000000576	0.000000762	0.000000576	0.000000762	0.000000576
(0342) Gaseous fluoride compounds / in terms of (627)									
Unorganized sources									
construction period	6003	0.0001167	0.000132	0.0001167	0.000132	0.0001167	0.000132	0.0001167	0.000132
(0616) Dimethylbenzene (mixture of o-, m-, p- isomers) (203)									
Unorganized sources									
construction period	6004	0.2063	0.3555	0.2063	0.3555	0.2063	0.3555	0.2063	0.3555
(0827) Chlorethylene (656)									
Unorganized sources									
construction period	6005	0.00000033	0.0000002496	0.00000033	0.0000002496	0.00000033	0.0000002496	0.00000033	0.0000002496

For 2018		MPE		year of reaching MPE
г/с	т/год	г/с	т/год	
11	12	13	14	15
0.00285	0.003224	0.00285	0.003224	
0.000505	0.000571	0.000505	0.000571	
0.000000762	0.000000576	0.000000762	0.000000576	
0.0001167	0.000132	0.0001167	0.000132	
0.2063	0.3555	0.2063	0.3555	
0.00000033	0.0000002496	0.00000033	0.0000002496	

1	2	3	4	5	6	7	8	9	10
(2752) White Spirit (1316*)									
Unorganized sources									
construction period	6004	0.1069	0.1215	0.1069	0.1215	0.1069	0.1215	0.1069	0.1215
(2754) Limit hydrocarbons C12-19 / in terms of C / (592) H									
Unorganized sources									

construction period	6002	0.1173	0.152	0.1173	0.152	0.1173	0.152	0.1173	0.152
(2902) Взвешенные вещества									
Неорганизованные источники									
construction period	6004	0.0784	0.1749	0.0784	0.1749	0.0784	0.1749	0.0784	0.1749
(2908) Inorganic dust: 70-20% silicon dioxide (chamotte, (503)									
Unorganized sources									
construction period	6001	0.835	4.955	0.835	4.955	0.835	4.955	0.835	4.955
	6006	0.00571	0.0216	0.00571	0.0216	0.00571	0.0216	0.00571	0.0216
	6008	30.1	6.5	30.1	6.5	30.1	6.5	30.1	6.5
	6009	2.15	4.94	2.15	4.94	2.15	4.94	2.15	4.94
Итого:		33.09071	16.4166	33.09071	16.4166	33.09071	16.4166	33.09071	16.4166
Total for the enterprise:		33.60308279	17.224427826	33.60308279	17.224427826	33.60308279	17.224427826	33.60308279	17.224427826
Solid:		33.172465	16.595295	33.172465	16.595295	33.172465	16.595295	33.172465	16.595295
Gaseous, liquid:		0.430617792	0.6291328256	0.430617792	0.6291328256	0.430617792	0.6291328256	0.430617792	0.6291328256

11	12	13	14	15
0.1069	0.1215	0.1069	0.1215	
0.1173	0.152	0.1173	0.152	
0.0784	0.1749	0.0784	0.1749	
0.835 0.00571 30.1 2.15 33.09071	4.955 0.0216 6.5 4.94 16.4166	0.835 0.00571 30.1 2.15 33.09071	4.955 0.0216 6.5 4.94 16.4166	
33.60308279	17.224427826	33.60308279	17.224427826	
33.172465	16.595295	33.172465	16.595295	
0.430617792	0.6291328256	0.430617792	0.6291328256	

Dispersion calculation

1. General information.
The calculation was carried out on the UPRZA "ERA" v2.0 of the company NPP "Logos-Plus", Novosibirsk The calculation was carried out by LLP "Yuzhkazekoproekt"
---------- ----------
| Certified by the State Standard of the Russian Federation, reg.N ROSS RU.SP09.H00090 until 05.12.2015 |
| To be agreed at the A.I. Voeikov State Geographical Society since 30.04.1999 |
| Approved for use in the bodies and organizations of Rospotrebnadzor: certificate N 17 |
| dated 12/14/2007. Valid until 15.11.2010. |
| Last approval: letter from GGO N 1694/25 dated 11/26/2013 for a period until 12/31/2014 |
2. City parameters UPRZA ERA v2.0
Name Tyulkubas region Coefficient A = 200 Wind speed U * = 12.0 m / s
Average wind speed = 5.0 m / s Summer temperature = 25.0 deg. C Winter temperature = -25.0 deg. C Relief coefficient = 1.00 City area = 0.0 sq. Km
Angle between the direction to the NORTH and the X-axis = 90.0 angular degrees
Background concentrations at the posts are not set
3. Initial parameters of sources. UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 06/11/2014 15:22
Impurity: 0616 - Dimethylbenzene (mixture of o-, m-, p- isomers) (203) Relief coefficient (KR): individual from the city Subsidence coefficient (F): individual from sources
Sign of sources "for winter" - negative altitude
Code | Type | H | D | Wo | V1 | T | X1 | Y1 | X2 | Y2 | Alf | F | KR | Di | Ejection <About ~ P> ~ <Is> | ~~~ | ~~ m ~~ | ~~ m ~~ | ~ m / s ~ | ~~ m3 / s ~ | degS | ~~~ m ~~~ | ~ ~~ m ~~~ | ~~~ m ~~~ | ~~~ m ~~~ | border of | ~~~ | ~~~~ | ~~ | ~~~ r / s ~~
000301 6004 P1 2.0 13.0 100 50 80 40 0 1.0 1.00 0 0.2063000
4. Design parameters Cm, Um, Xm UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 06/11/2014 15:22
Season: WINTER for energy and SUMMER for the rest
Impurity: 0616 - Dimethylbenzene (mixture of o-, m-, p- isomers) (203) MPCr for impurity 0616 = 0.2 mg / m3
| - For linear and area sources, the emission is total |
| over the entire area, and Cm` is the concentration of a single source |
| with total M (p. 33 OND-86) |
_____ __Sources _____ __	____ Their design parameters ___
Number	Code	M	Type	Cm (Cm`)	Um	Xm
-p / p-	<ab-p> - <is>	----------	----	[MAC share]	- [m / s] ---	- --- [m] ---
1	000301 6004	0.20630	P	0.862	0.50	57.0
Total Mq = 0.20630 g / s
Cm sum for all sources = 0.861804 shares of MPC
Weighted average dangerous wind speed = 0.50 m / s
5. Control parameters for calculating UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 06/11/2014 15:22
Season: WINTER for energy and SUMMER for the rest
Impurity: 0616 - Dimethylbenzene (mixture of o-, m-, p- isomers) (203) Background concentration not set
Calculation by rectangle 099: 500x500 with a step of 50 Calculation along the border of the sanitary zone. Coverage RP 099
Wind direction: automatic search for dangerous direction from 0 to 360 degrees. Wind speed: automatic search for dangerous speed from 0.5 to 12.0 (U *) m / s Weighted average dangerous wind speed Uw = 0.5 m / s
A calculation is ordered at a height of 2 meters.
6. Calculation results in the form of a table. UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 11.06.2014 15:22
Impurity: 0616 - Dimethylbenzene (mixture of o-, m-, p- isomers) (203)
The calculation was carried out on a rectangle 99
with parameters: center coordinates X = 100 Y = 50 dimensions: Length (X) = 500, Width (Y) = 500 grid spacing = 50.0

The calculation is ordered at a height of 2 meters.
_____ _ _Designation_Designation ___ _ _
| Qc - total concentration [MAC share] |
| Cc - total concentration [mg / m3] |
| Zop-height, where the maximum is reached [m] |
| Fop is a dangerous direction. wind [ang. deg.] |
| Uop - dangerous wind speed [m / s] |
| -If there is one source in the calculation, then its contribution and code are not printed |
| -If the line Cmax = <0.05 MPC, then Fop, Uop, Vi, Ki are not printed |
y= 300 : Y-line 1 Cmax= 0.293 share of MAC (x= 100.0; wind direction=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.186: 0.214: 0.241: 0.266: 0.286: 0.293: 0.286: 0.266: 0.241: 0.214: 0.186:
Cc : 0.037: 0.043: 0.048: 0.053: 0.057: 0.059: 0.057: 0.053: 0.048: 0.043: 0.037:
OPP: 135 : 142 : 149 : 159 : 169 : 180 : 191 : 201 : 211 : 218 : 225 :
Uon: 0.91 : 0.85 : 0.81 : 0.77 : 0.75 : 0.74 : 0.75 : 0.77 : 0.81 : 0.85 : 0.91 :
y= 250 : Y- line 2 Cmax= 0.369 share of MAC (x= 100.0; wind direction =180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.216: 0.255: 0.297: 0.334: 0.360: 0.369: 0.360: 0.334: 0.297: 0.255: 0.216:
Cc : 0.043: 0.051: 0.059: 0.067: 0.072: 0.074: 0.072: 0.067: 0.059: 0.051: 0.043:
OPP: 129 : 135 : 143 : 154 : 166 : 180 : 194 : 206 : 217 : 225 : 231 :
Uon: 0.86 : 0.80 : 0.75 : 0.70 : 0.67 : 0.66 : 0.67 : 0.70 : 0.75 : 0.80 : 0.86 :
y= 200 : Y- line 3 Cmax= 0.465 share of MAC (x= 100.0; wind direction =180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.248: 0.301: 0.360: 0.417: 0.453: 0.465: 0.453: 0.417: 0.360: 0.301: 0.248:
Cc : 0.050: 0.060: 0.072: 0.083: 0.091: 0.093: 0.091: 0.083: 0.072: 0.060: 0.050:
OPP: 121 : 127 : 136 : 147 : 162 : 180 : 198 : 213 : 224 : 233 : 239 :
Uon: 0.83 : 0.76 : 0.69 : 0.64 : 0.60 : 0.58 : 0.60 : 0.64 : 0.69 : 0.76 : 0.83 :
y= 150 : Y- line 4 Cmax= 0.548 share of MAC (x= 50.0; wind direction =155)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.278: 0.346: 0.430: 0.511: 0.548: 0.545: 0.548: 0.511: 0.430: 0.346: 0.278:
Cc : 0.056: 0.069: 0.086: 0.102: 0.110: 0.109: 0.110: 0.102: 0.086: 0.069: 0.056:
OPP: 112 : 117 : 124 : 136 : 155 : 180 : 205 : 224 : 236 : 243 : 248 :
Uon: 0.80 : 0.72 : 0.65 : 0.58 : 0.52 : 0.50 : 0.52 : 0.58 : 0.65 : 0.72 : 0.80 :
y= 100 : Y- line 5 Cmax= 0.602 share of MAC (x= 0.0; wind direction =118)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.297: 0.382: 0.492: 0.602: 0.243: 0.221: 0.254: 0.602: 0.492: 0.382: 0.297:
Cc : 0.059: 0.076: 0.098: 0.120: 0.049: 0.044: 0.051: 0.120: 0.098: 0.076: 0.059:
OPP: 101 : 104 : 109 : 118 : 148 : 193 : 228 : 242 : 251 : 256 : 259 :
Uon: 0.77 : 0.70 : 0.63 : 0.54 : 0.50 : 0.50 : 0.53 : 0.54 : 0.63 : 0.70 : 0.77 :
y= 50 : Y- line 6 Cmax= 0.649 share of MAC (x= 200.0; wind direction =270)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.305: 0.397: 0.519: 0.649: 0.271: 0.043: 0.261: 0.649: 0.519: 0.397: 0.305:
Cc : 0.061: 0.079: 0.104: 0.130: 0.054: 0.009: 0.052: 0.130: 0.104: 0.079: 0.061:
OPP: 90 : 90 : 90 : 90 : 105 : 24 : 263 : 270 : 270 : 270 : 270 :
Uon: 0.77 : 0.69 : 0.62 : 0.54 : 0.50 : 0.51 : 0.51 : 0.54 : 0.62 : 0.69 : 0.77 :
y= 0 : Y- line 7 Cmax= 0.602 share of MAC (x= 0.0; wind direction = 62)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.297: 0.382: 0.492: 0.602: 0.276: 0.210: 0.243: 0.602: 0.492: 0.382: 0.297:
Cc : 0.059: 0.076: 0.098: 0.120: 0.055: 0.042: 0.049: 0.120: 0.098: 0.076: 0.059:
OPP: 79 : 76 : 71 : 62 : 35 : 348 : 304 : 298 : 289 : 284 : 281 :
Uon: 0.77 : 0.70 : 0.63 : 0.54 : 0.51 : 0.50 : 0.50 : 0.54 : 0.63 : 0.70 : 0.77 :
y= -50 : Y- line 8 Cmax= 0.548 share of MAC (x= 50.0; wind direction = 25)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.278: 0.346: 0.430: 0.511: 0.548: 0.545: 0.548: 0.511: 0.430: 0.346: 0.278:
Cc : 0.056: 0.069: 0.086: 0.102: 0.110: 0.109: 0.110: 0.102: 0.086: 0.069: 0.056:
OPP: 68 : 63 : 56 : 44 : 25 : 0 : 335 : 316 : 304 : 297 : 292 :
Uon: 0.80 : 0.72 : 0.65 : 0.58 : 0.52 : 0.50 : 0.52 : 0.58 : 0.65 : 0.72 : 0.80 :
y= -100 : Y- line 9 Cmax= 0.465 share of MAC (x= 100.0; wind direction = 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.248: 0.301: 0.360: 0.417: 0.453: 0.465: 0.453: 0.417: 0.360: 0.301: 0.248:
Cc : 0.050: 0.060: 0.072: 0.083: 0.091: 0.093: 0.091: 0.083: 0.072: 0.060: 0.050:
OPP: 59 : 53 : 44 : 33 : 18 : 0 : 342 : 327 : 316 : 307 : 301 :
Uon: 0.83 : 0.76 : 0.69 : 0.64 : 0.60 : 0.58 : 0.60 : 0.64 : 0.69 : 0.76 : 0.83 :
y= -150 : Y- line 10 Cmax= 0.369 share of MAC (x= 100.0; wind direction = 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.216: 0.255: 0.297: 0.334: 0.360: 0.369: 0.360: 0.334: 0.297: 0.255: 0.216:
Cc : 0.043: 0.051: 0.059: 0.067: 0.072: 0.074: 0.072: 0.067: 0.059: 0.051: 0.043:
OPP: 51 : 45 : 37 : 26 : 14 : 0 : 346 : 334 : 323 : 315 : 309 :
Uon: 0.86 : 0.80 : 0.75 : 0.70 : 0.67 : 0.66 : 0.67 : 0.70 : 0.75 : 0.80 : 0.86 :
y= -200 : Y line 11 Cmax= 0.293 share of MAC (x= 100.0; wind direction = 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.186: 0.214: 0.241: 0.266: 0.286: 0.293: 0.286: 0.266: 0.241: 0.214: 0.186:
Cc : 0.037: 0.043: 0.048: 0.053: 0.057: 0.059: 0.057: 0.053: 0.048: 0.043: 0.037:
OPP: 45 : 38 : 31 : 21 : 11 : 0 : 349 : 339 : 329 : 322 : 315 :
Uon: 0.91 : 0.85 : 0.81 : 0.77 : 0.75 : 0.74 : 0.75 : 0.77 : 0.81 : 0.85 : 0.91 :
Calculation results at the maximum point of UPARE ERA v2.0 Point coordinates: X = 200.0 m Y = 50.0 m
At height: Z = 2.0 m
Maximum total concentration | Cs = 0.64874 share of MAC |

| 0.12975 mg / m3 |

Achieved in a dangerous direction 270 degrees.

and wind speed 0.54 m / s

Sources in total: 1. The table ordered depositors with no more than 95% of the contribution

___ _ _ _ _ _ _ _ _ __ SOURCE CONTRIBUTIONS

| Number | Code | Type | Ejection | Contribution | Contribution in% | Sum. % | Influence rate |

| ---- | <Ob-P> - <Is> | --- | --- M- (Mq) - | -C [MAC share] | -------- | --- ---- | ---- b = C / M

| 1 | 000301 6004 | P | 0.2063 | 0.648743 | 100.0 | 100.0 | 3.1446593 |

| In total = 0.648743 100.0 |

| The total contribution of the rest = 0.000000 0.0 |

7. Total concentrations at the nodes of the computational grid. UPRZA ERA v2.0

City: 538 Tyulkubas district.

Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".

Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 11.06.2014 15:22 Impurity: 0616 - Dimethylbenzene (mixture of o-, m-, p- isomers) (203) A calculation was ordered at a height of 2 meters.

_____Parameters_of_calculating_rectangle_No 99___

| Center coordinates: X = 100 m; Y = 50 m |

| Length and width: L = 500 m; B = 500 m |

| Grid step (dX = dY): D = 50 m |

(The ^ symbol means the presence of a source near the calculated node)

```
                          1    2    3    4    5 6    7    8 9   10   11
  *--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|----|
 1-| 0.186 0.214 0.241 0.266 0.286 0.293 0.286 0.266 0.241 0.214 0.186 |- 1
2-| 0.216 0.255 0.297 0.334 0.360 0.369 0.360 0.334 0.297 0.255 0.216 |- 2
3-| 0.248 0.301 0.360 0.417 0.453 0.465 0.453 0.417 0.360 0.301 0.248 |- 3
4-| 0.278 0.346 0.430 0.511 0.548 0.545 0.548 0.511 0.430 0.346 0.278 |- 4
5-| 0.297 0.382 0.492 0.602 0.243 0.221 0.254 0.602 0.492 0.382 0.297 |- 5
6-C 0.305 0.397 0.519 0.649 0.271 0.043 0.261 0.649 0.519 0.397 0.305 C- 6
7-| 0.297 0.382 0.492 0.602 0.276 0.210 0.243 0.602 0.492 0.382 0.297 |- 7
8-| 0.278 0.346 0.430 0.511 0.548 0.545 0.548 0.511 0.430 0.346 0.278 |- 8
9-| 0.248 0.301 0.360 0.417 0.453 0.465 0.453 0.417 0.360 0.301 0.248 |- 9
10-| 0.216 0.255 0.297 0.334 0.360 0.369 0.360 0.334 0.297 0.255 0.216 |-10
11-| 0.186 0.214 0.241 0.266 0.286 0.293 0.286 0.266 0.241 0.214 0.186 |-11
  |--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|----|
    1    2    3    4    5    6    7    8    9   10   11
```

Overall for the calculated rectangle:

Maximum concentration ---------> Cm = 0.64874 fractions of MAC

= 0.12975 mg / m3

Reached at the point with coordinates: Xm = 200.0m (X-column 8, Y-row 6) Ym = 50.0m

At a height of Z = 2.0 m

With a dangerous wind direction: 270 degrees. and "dangerous" wind speed: 0.54 m / s

9. The results of the calculation on the border of the sanzone (for the calculation of the rectangle 099). UPARE ERA v2.0

City: 538 Tyulkubas district.

Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".

Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 11.06.2014 15:22

Impurity: 0616 - Dimethylbenzene (mixture of o-, m-, p- isomers) (203) A calculation was ordered at a height of 2 meters.

_____ _ _ Explanation of Designation ___ _ _

| Qc - total concentration [MAC share] |

| Cc - total concentration [mg / m3] |

| Zop-height, where the maximum is reached [m] |

| Fop is a dangerous direction. wind [ang. deg.] |

| Uop - dangerous wind speed [m / s] |

| -If there is one source in the calculation, then its contribution and code are not printed |

| -If the line Cmax = <0.05 MPC, then Fop, Uop, Vi, Ki are not printed |

```
y=  -20:  -19:  -16:  -11:   -5:    3:   11:   21:   30:   70:   79:   89:   97:   105:  111:
x=   60:   50:   40:   32:   24:   18:   14:   11:   10:   10:   11:   14:   18:   24:   32:
Qc : 0.263: 0.265: 0.266: 0.609: 0.619: 0.631: 0.640: 0.651: 0.660: 0.660: 0.651: 0.640: 0.631: 0.619: 0.609:
Cc : 0.053: 0.053: 0.053: 0.122: 0.124: 0.126: 0.128: 0.130: 0.132: 0.132: 0.130: 0.128: 0.126: 0.124: 0.122:
Опр:  19 :  26 :  35 :  46 :  53 :  59 :  64 :  71 :  77 : 103 : 109 : 116 : 121 : 127 : 134 :
Uоп: 0.50 : 0.50 : 0.51 : 0.50 : 0.51 : 0.52 : 0.52 : 0.53 : 0.53 : 0.53 : 0.53 : 0.52 : 0.52 : 0.51 : 0.50 :
y=  116:  119:  120:  120:  120:  120:  120:  119:  116:  111:  105:   97:   89:   79:  70:
x=   40:   50:   60:   60:  100:  140:  140:  150:  160:  168:  176:  182:  186:  189:  190:
Qc : 0.248: 0.245: 0.241: 0.241: 0.235: 0.244: 0.244: 0.244: 0.242: 0.609: 0.619: 0.631: 0.640: 0.651: 0.660:
Cc : 0.050: 0.049: 0.048: 0.048: 0.047: 0.049: 0.049: 0.049: 0.048: 0.122: 0.124: 0.126: 0.128: 0.130: 0.132:
Опр:  149 :  156 :  162 :  162 :  190 :  214 :  214 :  220 :  226 :  226 :  233 :  239 :  244 :  251 : 257 :
Uоп: 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.56 : 0.56 : 0.50 : 0.51 : 0.52 : 0.52 : 0.53 : 0.53 :
y=   30:   21:   11:    3:   -5:  -11:  -16:  -19:  -20:  -20:  -20:
x=  190:  189:  186:  182:  176:  168:  160:  150:  140:  100:   60:
Qc : 0.660: 0.651: 0.640: 0.631: 0.619: 0.609: 0.241: 0.242: 0.242: 0.239: 0.263:
Cc : 0.132: 0.130: 0.128: 0.126: 0.124: 0.122: 0.048: 0.048: 0.048: 0.048: 0.053:
Опр:  283 :  289 :  296 :  301 :  307 :  314 :  309 :  314 :  320 :  348 :   19 :
Uоп: 0.53 : 0.53 : 0.52 : 0.52 : 0.51 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 :
```

Calculation results at the maximum point of UPARE ERA v2.0

Point coordinates: X = 190.0 m Y = 30.0 m

At height: Z = 2.0 m

Maximum total concentration | Cs = 0.65984 share of MPC |

| 0.13197 mg / m3 |

Achieved in the dangerous direction of 283 degrees.

and wind speed 0.53 m / s

Sources in total: 1. The table ordered depositors with no more than 95% of the contribution

___ _ _ _ _ _ _ _ _ __ SOURCE CONTRIBUTIONS _____ __ _ _ _ _ _ _ _

| Number | Code | Type | Ejection | Contribution | Contribution in% | Sum. % | Influence rate |

| ---- | <Ob-P> - <Is> | --- | --- M- (Mq) - | -C [MAC share] | -------- | --- ---- | ---- b = C / M --- |

| 1 | 000301 6004 | P | 0.2063 | 0.659840 | 100.0 | 100.0 | 3.1984496 |

| In total = 0.659840 100.0 |

| The total contribution of the rest = 0.000000 0.0 |

3. Initial parameters of sources. UPRZA ERA v2.0

City: 538 Tyulkubas district.

Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".

Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 06/11/2014 15:22

Impurity: 2752 - White spirit (1316 *)

Relief coefficient (KR): individual from the city Subsidence coefficient (F): individual from sources Sign of sources "for winter" - negative height value

Code | Type | H | D | Wo | V1 | T | X1 | Y1 | X2 | Y2 | Alf | F | KR | Di | Ejection

<About ~ P> ~ <Is> | ~~~ | ~~ m ~~ | ~~ m ~~ | ~ m / s ~ | ~~ m3 / s ~ | degS | ~~~ m ~~~ | ~ ~~ m ~~~ | ~~~ m ~~~ | ~~~ m ~~~ | border of | ~~~ | ~~~~ | ~~ | ~~~ r / s ~~ 000301 6004 P1 2.0 13.0 100 50 80 40 0 1.0 1.00 0 0.1069000

4. Design parameters Cm, Um, Xm UPRZA ERA v2.0

City: 538 Tyulkubas district.

Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".

Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 06/11/2014 15:22 Season: WINTER for energy and SUMMER for the rest

Impurity: 2752 - White spirit (1316 *)

MPCr for impurity 2752 = 1.0 mg / m3 (OBUV)

| - For linear and area sources, the emission is total |

| over the entire area, and Cm` is the concentration of a single source |

| with total M (p. 33 OND-86) |

| _____ __Sources _____ __ | ____ Their design parameters ___ |

| Number | Code | M | Type | Cm (Cm`) | Um | Xm |

| -p / p- | <ab-p> - <is> | ---------- | ---- | [MAC share] | - [m / s] --- | - --- [m] --- |

| 1 | 000301 6004 | 0.10690 | P | 0.089 | 0.50 | 57.0 |

| Total Mq = 0.10690 g / s |

| Sum Cm for all sources = 0.089313 shares of MPC |

| Weighted average dangerous wind speed = 0.50 m / s |

5. Control parameters for calculating UPRZA ERA v2.0

City: 538 Tyulkubas district.

Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".

Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 06/11/2014 15:22

Season: WINTER for energy and SUMMER for the rest

Impurity: 2752 - White spirit (1316 *) Background concentration not set

Calculation by rectangle 099: 500x500 with a step of 50 Calculation along the border of the sanitary zone. Coverage RP 099

Wind direction: automatic search for dangerous direction from 0 to 360 degrees. Wind speed: automatic search for dangerous speed from 0.5 to 12.0 (U *) m / s Weighted average dangerous wind speed Uw = 0.5 m / s

A calculation is ordered at a height of 2 meters.

6. Calculation results in the form of a table. UPRZA ERA v2.0

City: 538 Tyulkubas district.

Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".

Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 06/11/2014 15:22 Impurity: 2752 - White spirit (1316 *)

The calculation was carried out on a rectangle 99

with parameters: center coordinates X = 100 Y = 50 dimensions: Length (X) = 500, Width (Y) = 500 grid spacing = 50.0

A calculation is ordered at a height of 2 meters.

_____ _ _Designation_Designation ___ _ _

| Qc - total concentration [MAC share] |
| Cc - total concentration [mg / m3] |
| Zop-height, where the maximum is reached [m] |
| Fop is a dangerous direction. wind [ang. deg.] |
| Uop - dangerous wind speed [m / s] |
| -If there is one source in the calculation, then its contribution and code are not printed |
| -If the line Cmax = <0.05 MPC, then Fop, Uop, Vi, Ki are not printed |
y = 300: Y-line 1 Cmax = 0.030 MAC (x = 100.0; e.g. wind = 180)
x = -150: -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc: 0.019: 0.022: 0.025: 0.028: 0.030: 0.030: 0.030: 0.028: 0.025: 0.022: 0.019:

Cc : 0.019: 0.022: 0.025: 0.028: 0.030: 0.030: 0.030: 0.028: 0.025: 0.022: 0.019:
y= 250 : Y-строка 2 Cmax= 0.038 долей ПДК (x= 100.0; напр.ветра=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.022: 0.026: 0.031: 0.035: 0.037: 0.038: 0.037: 0.035: 0.031: 0.026: 0.022:
Cc : 0.022: 0.026: 0.031: 0.035: 0.037: 0.038: 0.037: 0.035: 0.031: 0.026: 0.022:
y= 200 : Y-строка 3 Cmax= 0.048 долей ПДК (x= 100.0; напр.ветра=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.026: 0.031: 0.037: 0.043: 0.047: 0.048: 0.047: 0.043: 0.037: 0.031: 0.026:
Cc : 0.026: 0.031: 0.037: 0.043: 0.047: 0.048: 0.047: 0.043: 0.037: 0.031: 0.026:
y= 150 : Y-строка 4 Cmax= 0.057 долей ПДК (x= 50.0; напр.ветра=155)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.029: 0.036: 0.045: 0.053: 0.057: 0.056: 0.057: 0.053: 0.045: 0.036: 0.029:
Cc : 0.029: 0.036: 0.045: 0.053: 0.057: 0.056: 0.057: 0.053: 0.045: 0.036: 0.029:
OPP: 112 : 117 : 124 : 136 : 155 : 180 : 205 : 224 : 236 : 243 : 248 :
Uоп: 0.80 : 0.72 : 0.65 : 0.58 : 0.52 : 0.50 : 0.52 : 0.58 : 0.65 : 0.72 : 0.80 :
y= 100 : Y-строка 5 Cmax= 0.062 долей ПДК (x= 0.0; напр.ветра=118)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.031: 0.040: 0.051: 0.062: 0.052: 0.042: 0.058: 0.062: 0.051: 0.040: 0.031:
Cc : 0.031: 0.040: 0.051: 0.062: 0.052: 0.042: 0.058: 0.062: 0.051: 0.040: 0.031:
OPP: 101 : 104 : 109 : 118 : 133 : 167 : 220 : 242 : 251 : 256 : 259 :
Uоп: 0.77 : 0.70 : 0.63 : 0.54 : 0.50 : 0.50 : 0.50 : 0.54 : 0.63 : 0.70 : 0.77 :
y= 50 : Y-строка 6 Cmax= 0.067 долей ПДК (x= 0.0; напр.ветра= 90)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.032: 0.041: 0.054: 0.067: 0.057: 0.007: 0.053: 0.067: 0.054: 0.041: 0.032:
Cc : 0.032: 0.041: 0.054: 0.067: 0.057: 0.007: 0.053: 0.067: 0.054: 0.041: 0.032:
OPP: 90 : 90 : 90 : 90 : 93 : 58 : 267 : 270 : 270 : 270 : 270 :
Uоп: 0.77 : 0.69 : 0.62 : 0.54 : 0.50 : 0.51 : 0.50 : 0.54 : 0.62 : 0.69 : 0.77 :
y= 0 : Y-строка 7 Cmax= 0.062 долей ПДК (x= 200.0; напр.ветра=298)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.031: 0.040: 0.051: 0.062: 0.057: 0.041: 0.051: 0.062: 0.051: 0.040: 0.031:
Cc : 0.031: 0.040: 0.051: 0.062: 0.057: 0.041: 0.051: 0.062: 0.051: 0.040: 0.031:
OPP: 79 : 76 : 71 : 62 : 46 : 12 : 320 : 298 : 289 : 284 : 281 :
Uоп: 0.77 : 0.70 : 0.63 : 0.54 : 0.50 : 0.50 : 0.50 : 0.54 : 0.63 : 0.70 : 0.77 :
y= -50 : Y-строка 8 Cmax= 0.057 долей ПДК (x= 50.0; напр.ветра= 25)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.029: 0.036: 0.045: 0.053: 0.057: 0.056: 0.057: 0.053: 0.045: 0.036: 0.029:
Cc : 0.029: 0.036: 0.045: 0.053: 0.057: 0.056: 0.057: 0.053: 0.045: 0.036: 0.029:
OPP: 68 : 63 : 56 : 44 : 25 : 0 : 335 : 316 : 304 : 297 : 292 :
Uоп: 0.80 : 0.72 : 0.65 : 0.58 : 0.52 : 0.50 : 0.52 : 0.58 : 0.65 : 0.72 : 0.80 :
y= -100 : Y-строка 9 Cmax= 0.048 долей ПДК (x= 100.0; напр.ветра= 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.026: 0.031: 0.037: 0.043: 0.047: 0.048: 0.047: 0.043: 0.037: 0.031: 0.026:
Cc : 0.026: 0.031: 0.037: 0.043: 0.047: 0.048: 0.047: 0.043: 0.037: 0.031: 0.026:
y= -150 : Y-строка 10 Cmax= 0.038 долей ПДК (x= 100.0; напр.ветра= 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.022: 0.026: 0.031: 0.035: 0.037: 0.038: 0.037: 0.035: 0.031: 0.026: 0.022:
Cc : 0.022: 0.026: 0.031: 0.035: 0.037: 0.038: 0.037: 0.035: 0.031: 0.026: 0.022:
y= -200 : Y-строка 11 Cmax= 0.030 долей ПДК (x= 100.0; напр.ветра= 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.019: 0.022: 0.025: 0.028: 0.030: 0.030: 0.030: 0.028: 0.025: 0.022: 0.019:
Cc : 0.019: 0.022: 0.025: 0.028: 0.030: 0.030: 0.030: 0.028: 0.025: 0.022: 0.019:
Calculation results at the maximum point of UPRZA ERA v2.0
Point coordinates: X = 0.0 m Y = 50.0 m
At height: Z = 2.0 m
Maximum total concentration | Cs = 0.06723 share of MPC |
| 0.06723 mg / m3 | Achieved in a dangerous direction of 90 degrees.
and wind speed 0.54 m / s
Sources in total: 1. The table ordered depositors with no more than 95% of the contribution
___ _ _ _ _ _ _ _ _ __ SOURCE CONTRIBUTIONS _____ __ _ _
Number	Code	Type	Ejection	Contribution	Contribution in%	Sum. %	Influence rate
----	<Ob-P> - <Is>	---	--- M- (Mq) -	-C [MAC share]	--------	--- ----	---- b = C / M ---
1	000301 6004	P	0.1069	0.067233	100.0	100.0
0.628931940
In total = 0.067233 100.0
The total contribution of the rest = 0.000000 0.0
3. Total concentrations at the nodes of the computational grid.
UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 06/11/2014 15:22
Impurity: 2752 - White spirit (1316 *)
A calculation is ordered at a height of 2 meters.
_____Parameters_of_calculating_rectangle_No 99___
| Center coordinates: X = 100 m; Y = 50 m |
| Length and width: L = 500 m; B = 500 m |
| Grid step (dX = dY): D = 50 m |
(The ^ symbol means the presence of a source near the calculated
node)1 2 3 4 5 6 7 8 9 10 11
*--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|----|

1-| 0.019 0.022 0.025 0.028 0.030 0.030 0.030 0.028 0.025 0.022 0.019 |- 1
2-| 0.022 0.026 0.031 0.035 0.037 0.038 0.037 0.035 0.031 0.026 0.022 |- 2
3-| 0.026 0.031 0.037 0.043 0.047 0.048 0.047 0.043 0.037 0.031 0.026 |- 3
4-| 0.029 0.036 0.045 0.053 0.057 0.056 0.057 0.053 0.045 0.036 0.029 |- 4
5-| 0.031 0.040 0.051 0.062 0.052 0.042 0.058 0.062 0.051 0.040 0.031 |- 5
6-C 0.032 0.041 0.054 0.067 0.057 0.007 0.053 0.067 0.054 0.041 0.032 C- 6
7-| 0.031 0.040 0.051 0.062 0.057 0.041 0.051 0.062 0.051 0.040 0.031 |- 7
8-| 0.029 0.036 0.045 0.053 0.057 0.056 0.057 0.053 0.045 0.036 0.029 |- 8
9-| 0.026 0.031 0.037 0.043 0.047 0.048 0.047 0.043 0.037 0.031 0.026 |- 9
10-| 0.022 0.026 0.031 0.035 0.037 0.038 0.037 0.035 0.031 0.026 0.022 |-10
11-| 0.019 0.022 0.025 0.028 0.030 0.030 0.030 0.028 0.025 0.022 0.019 |-11
|--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|-----|---|
1 2 3 4 5 6 7 8 9 10 11
Overall for the calculated rectangle:
Maximum concentration ---------> Cm = 0.06723 shares of MPC
= 0.06723 mg / m3 Achieved at the point with coordinates: Xm = 0.0m
(X-column 4, Y-row 6) Ym = 50.0 m At a height of Z = 2.0 m
With a dangerous wind direction: 90 degrees. and "dangerous" wind speed: 0.54 m / s
9. The results of the calculation on the border of the sanzone (for the calculation of the rectangle 099). UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 06/11/2014 15:22 Impurity: 2752 - White spirit (1316 *)
A calculation is ordered at a height of 2 meters.
_____ _ _Designation_Designation ___ _ _
| Qc - total concentration [MAC share] |
| Cc - total concentration [mg / m3] |
| Zop-height, where the maximum is reached [m] |
| Fop is a dangerous direction. wind [ang. deg.] |
| Uop - dangerous wind speed [m / s] |
| -If there is one source in the calculation, then its contribution and code are not printed |
| -If the line Cmax = <0.05 MPC, then Fop, Uop, Vi, Ki are not printed |
y= -20: -19: -16: -11: -5: 3: 11: 21: 30: 70: 79: 89: 97: 105: 111:
x= 60: 50: 40: 32: 24: 18: 14: 11: 10: 10: 11: 14: 18: 24: 32:
Qc : 0.054: 0.055: 0.057: 0.063: 0.064: 0.065: 0.066: 0.067: 0.068: 0.068: 0.067: 0.066: 0.065: 0.064: 0.063:
Cc : 0.054: 0.055: 0.057: 0.063: 0.064: 0.065: 0.066: 0.067: 0.068: 0.068: 0.067: 0.066: 0.065: 0.064: 0.063:
OPP: 32 : 37 : 44 : 46 : 53 : 59 : 64 : 71 : 77 : 103 : 109 : 116 : 121 : 127 : 134 :
Uоп: 0.50 : 0.50 : 0.50 : 0.50 : 0.51 : 0.52 : 0.52 : 0.53 : 0.53 : 0.53 : 0.53 : 0.52 : 0.52 : 0.51 : 0.50 :
y= 116: 119: 120: 120: 120: 120: 120: 119: 116: 111: 105: 97: 89: 79: 70:
x= 40: 50: 60: 60: 100: 140: 140: 150: 160: 168: 176: 182: 186: 189: 190:
Qc : 0.052: 0.052: 0.051: 0.051: 0.049: 0.055: 0.055: 0.056: 0.058: 0.063: 0.064: 0.065: 0.066: 0.067: 0.068:
Cc : 0.052: 0.052: 0.051: 0.051: 0.049: 0.055: 0.055: 0.056: 0.058: 0.063: 0.064: 0.065: 0.066: 0.067: 0.068:
OPP: 136 : 143 : 148 : 148 : 175 : 205 : 205 : 211 : 217 : 226 : 233 : 239 : 244 : 251 : 257 :
Uоп: 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.51 : 0.52 : 0.52 : 0.53 : 0.53 :
y= 30: 21: 11: 3: -5: -11: -16: -19: -20: -20: -20:
x= 190: 189: 186: 182: 176: 168: 160: 150: 140: 100: 60:
Qc : 0.068: 0.067: 0.066: 0.065: 0.064: 0.063: 0.054: 0.052: 0.051: 0.048: 0.054:
Cc : 0.068: 0.067: 0.066: 0.065: 0.064: 0.063: 0.054: 0.052: 0.051: 0.048: 0.054:
OPP: 283 : 289 : 296 : 301 : 307 : 314 : 322 : 329 : 336 : 4 : 32 :
Uоп: 0.53 : 0.53 : 0.52 : 0.52 : 0.51 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 :
Calculation results at the maximum point of UPRZA ERA v2.0 Point coordinates: X = 10.0 m Y = 30.0 m
At height: Z = 2.0 m
Maximum total concentration | Cs = 0.06838 share of MPC |
| 0.06838 mg / m3 | Achieved in a dangerous direction of 77 degrees.
and wind speed 0.53 m / s
Sources in total: 1. The table ordered depositors with no more than 95% of the contribution
___ _ _ _ _ _ _ _ _ __ SOURCE CONTRIBUTIONS _____ __ _ _ _ _ _ _
Number	Code	Type	Ejection	Contribution	Contribution in%	Sum. %	Influence rate
----	<Об-П>-<Ис>	---	---M-(Mq)--	-C[доли ПДК]	--------	-------	---- b=C/M ---
1	000301 6004	П	0.1069	0.068383	100.0	100.0	0.639689922
In sum = 0.068383 100.0
The total contribution of the rest = 0.000000 0.0
3. Initial parameters of sources. UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 06/11/2014 15:22
Impurity: 2754 - Limiting hydrocarbons C12-19 / in terms of C / Relief coefficient (KP): individual from the city
Subsidence coefficient (F): individual from sources Sign of sources "for winter" - negative height value |
Код |Тип| H | D | Wo | V1 | T | X1 | Y1 | X2 | Y2 |Alf| F | KP |Ди| Emission

<Об~П>~<Ис>|~~~|~~м~~|~~м~~|~м/с~|~~м3/с~|градС|~~~м~~~|~~~м~~~|~~~м~~~|~~~м~~~|гр.|~~~|~~~~|~~|~~~г/с~~
000301 6002 П1 2.0 13.0 100 50 80 40 0 1.0 1.00 0 0.1173000
3. Design parameters Cm, Um, Xm UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 06/11/2014 15:22 Season: WINTER for energy and SUMMER for the rest
Impurity: 2754 - Limiting hydrocarbons C12-19 / in terms of C / MPCr for impurities 2754 = 1.0 mg / m3
| - For linear and area sources, the emission is total |
| over the entire area, and Cm` is the concentration of a single source |
| with total M (p. 33 OND-86) |
| _____ __Sources _____ __ | ____ Their design parameters ___ |
No.| Code | M |Type | Cm (Cm`) | Um | Xm |
|-п/п-|<об-п>-<ис>|----------|----|[MAC share]|-[м/с]---|----[м]---|
| 1 |000301 6002| 0.11730| П | 4.190 | 0.50 | 11.4 |
| Total Mq = 0.11730 г/с |
| Cm sum for all sources = 4.189548 MAC share |
| Weighted average dangerous wind speed = 0.50 m/s |
3. Control parameters of the calculation UPARE ERA v2.0
City: 538 Tyulkubas district.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 06/11/2014 15:22
Season: WINTER for energy and SUMMER for the rest
Impurity: 2754 - Limit hydrocarbons C12-19 / in terms of C / Background concentration not set
Calculation by rectangle 099: 500x500 with a step of 50 Calculation along the border of the sanitary zone. Coverage RP 099
Wind direction: automatic search for dangerous direction from 0 to 360 degrees. Wind speed: automatic search for dangerous speed from 0.5 to 12.0 (U *) m / s Weighted average dangerous wind speed Uw = 0.5 m / s
A calculation is ordered at a height of 2 meters.
4. Calculation results in the form of a table. UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent- border of RU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 06/11/2014 15:22
Impurity: 2754 - Limiting hydrocarbons C12-19 / in terms of C / The calculation was carried out on a rectangle 99
with parameters: center coordinates X = 100 Y = 50 dimensions: Length (X) = 500, Width (Y) = 500 grid spacing = 50.0
A calculation is ordered at a height of 2 meters.
_____ _ _Explanation of_Designation ___ _ _
| Qc - total concentration [MAC share] |
| Cc - total concentration [mg / m3] |
| Zop-height, where the maximum is reached [m] |
| Fop is a dangerous direction. wind [ang. deg.] |
| Uop - dangerous wind speed [m / s] |
| -If there is one source in the calculation, then its contribution and code are not printed |
| -If the line Cmax = <0.05 MPC, then Fop, Uop, Vi, Ki are not printed |
y= 300 : Y-строка 1 Cmax= 0.113 долей ПДК (x= 100.0; напр.ветра=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.096: 0.104: 0.109: 0.112: 0.113: 0.113: 0.113: 0.112: 0.109: 0.104: 0.096:
Cc : 0.096: 0.104: 0.109: 0.112: 0.113: 0.113: 0.113: 0.112: 0.109: 0.104: 0.096:
OPP: 135 : 142 : 149 : 158 : 169 : 180 : 191 : 202 : 211 : 218 : 225 :
Uоп:12.00 :12.00 :11.65 :10.67 : 9.93 : 9.68 : 9.93 :10.67 :11.65 :12.00 :12.00 :
y= 250 : Y-строка 2 Cmax= 0.131 долей ПДК (x= 100.0; напр.ветра=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.108: 0.118: 0.124: 0.127: 0.127: 0.131: 0.127: 0.127: 0.124: 0.118: 0.108:
Cc : 0.108: 0.118: 0.124: 0.127: 0.127: 0.131: 0.127: 0.127: 0.124: 0.118: 0.108:
OPP: 129 : 135 : 143 : 154 : 166 : 180 : 194 : 206 : 217 : 225 : 231 :
Uоп:12.00 :11.31 : 9.68 : 8.36 : 2.83 : 1.04 : 2.83 : 8.36 : 9.68 :11.31 :12.00 :
y= 200 : Y-строка 3 Cmax= 0.205 долей ПДК (x= 100.0; напр.ветра=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.121: 0.134: 0.145: 0.163: 0.192: 0.205: 0.192: 0.163: 0.145: 0.134: 0.121:
Cc : 0.121: 0.134: 0.145: 0.163: 0.192: 0.205: 0.192: 0.163: 0.145: 0.134: 0.121:
OPP: 121 : 127 : 135 : 147 : 162 : 180 : 198 : 213 : 225 : 233 : 239 :
Uоп:11.69 : 9.68 : 7.75 : 1.98 : 0.98 : 0.92 : 0.98 : 1.98 : 7.75 : 9.68 :11.69 :
y= 150 : Y-строка 4 Cmax= 0.363 долей ПДК (x= 100.0; напр.ветра=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.133: 0.154: 0.180: 0.252: 0.332: 0.363: 0.332: 0.252: 0.180: 0.154: 0.133:
Cc : 0.133: 0.154: 0.180: 0.252: 0.332: 0.363: 0.332: 0.252: 0.180: 0.154: 0.133:
OPP: 112 : 117 : 124 : 137 : 156 : 180 : 204 : 223 : 236 : 243 : 248 :
Uоп:10.59 : 8.21 : 3.10 : 1.09 : 0.78 : 0.74 : 0.78 : 1.09 : 3.10 : 8.21 :10.59 :
y= 100 : Y-строка 5 Cmax= 0.399 долей ПДК (x= 200.0; напр.ветра=242)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:

Qc : 0.143: 0.173: 0.233: 0.399: 0.257: 0.253: 0.218: 0.399: 0.233: 0.173: 0.143:
Cc : 0.143: 0.173: 0.233: 0.399: 0.257: 0.253: 0.218: 0.399: 0.233: 0.173: 0.143:
OPP: 101 : 104 : 109 : 118 : 151 : 193 : 227 : 242 : 251 : 256 : 259 :
Uоп: 9.84 : 7.35 : 1.92 : 0.89 : 0.61 : 0.50 : 0.80 : 0.89 : 1.92 : 7.35 : 9.84 :
y= 50 : Y-line 6 Cmax= 0.733 share of MAC (x= 100.0; wind direction=350)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.148: 0.182: 0.261: 0.503: 0.545: 0.733: 0.287: 0.503: 0.261: 0.182: 0.148:
Cc : 0.148: 0.182: 0.261: 0.503: 0.545: 0.733: 0.287: 0.503: 0.261: 0.182: 0.148:
OPP: 90 : 90 : 90 : 90 : 108 : 350 : 263 : 270 : 270 : 270 : 270 :
Uоп: 9.58 : 6.98 : 1.86 : 0.83 : 0.52 :12.00 : 0.75 : 0.83 : 1.86 : 6.98 : 9.58 :
y= 0 : Y-line 7 Cmax= 0.399 share of MAC (x= 200.0; wind direction =298)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.143: 0.173: 0.233: 0.399: 0.378: 0.326: 0.228: 0.399: 0.233: 0.173: 0.143:
Cc : 0.143: 0.173: 0.233: 0.399: 0.378: 0.326: 0.228: 0.399: 0.233: 0.173: 0.143:
OPP: 79 : 76 : 71 : 62 : 35 : 348 : 304 : 298 : 289 : 284 : 281 :
Uоп: 9.84 : 7.35 : 1.92 : 0.89 : 0.61 : 0.50 : 0.71 : 0.89 : 1.92 : 7.35 : 9.84 :
y= -50 : Y-line 8 Cmax= 0.363 share of MAC (x= 100.0; wind direction = 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.133: 0.154: 0.180: 0.252: 0.332: 0.363: 0.332: 0.252: 0.180: 0.154: 0.133:
Cc : 0.133: 0.154: 0.180: 0.252: 0.332: 0.363: 0.332: 0.252: 0.180: 0.154: 0.133:
OPP: 68 : 63 : 56 : 43 : 24 : 0 : 336 : 317 : 304 : 297 : 292 :
Uоп:10.59 : 8.21 : 3.10 : 1.09 : 0.78 : 0.74 : 0.78 : 1.09 : 3.10 : 8.21 :10.59 :
y= -100 : Y-line 9 Cmax= 0.205 share of MAC (x= 100.0; wind direction = 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.121: 0.134: 0.145: 0.163: 0.192: 0.205: 0.192: 0.163: 0.145: 0.134: 0.121:
Cc : 0.121: 0.134: 0.145: 0.163: 0.192: 0.205: 0.192: 0.163: 0.145: 0.134: 0.121:
OPP: 59 : 53 : 45 : 33 : 18 : 0 : 342 : 327 : 315 : 307 : 301 :
Uоп:11.69 : 9.68 : 7.75 : 1.98 : 0.98 : 0.92 : 0.98 : 1.98 : 7.75 : 9.68 :11.69 :
y= -150 : Y-line 10 Cmax= 0.131 share of MAC (x= 100.0; wind direction = 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.108: 0.118: 0.124: 0.127: 0.127: 0.131: 0.127: 0.127: 0.124: 0.118: 0.108:
Cc : 0.108: 0.118: 0.124: 0.127: 0.127: 0.131: 0.127: 0.127: 0.124: 0.118: 0.108:
OPP: 51 : 45 : 37 : 26 : 14 : 0 : 346 : 334 : 323 : 315 : 309 :
Uоп:12.00 :11.31 : 9.68 : 8.36 : 2.83 : 1.04 : 2.83 : 8.36 : 9.68 :11.31 :12.00 :
y= -200 : Y-строка 11 Cmax= 0.113 share of MAC (x= 100.0; wind direction = 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.096: 0.104: 0.109: 0.112: 0.113: 0.113: 0.113: 0.112: 0.109: 0.104: 0.096:
Cc : 0.096: 0.104: 0.109: 0.112: 0.113: 0.113: 0.113: 0.112: 0.109: 0.104: 0.096:
OPP: 45 : 38 : 31 : 22 : 11 : 0 : 349 : 338 : 329 : 322 : 315 :
Uоп:12.00 :12.00 :11.65 :10.67 : 9.93 : 9.68 : 9.93 :10.67 :11.65 :12.00 :12.00 :
Calculation results at the maximum point UPAPE ERA v2.0
Point location: X= 100.0 m Y= 50.0 m
At a height: Z= 2.0 m
Maximum total concentration | Cs= 0.73301 share of MAC |
| 0.73301 mg/m3 |
Achieved in a dangerous direction 350 degree
and wind speed 12.00 m/s
Sources in total: 1. In the table depositors are ordered with no more than 95% of the contribution:
SOURCE CONTRIBUTIONS
№.	Code	Type	Emission	Contribution	Contribution in %	Sum. %	Coefficient of influence
----	<Об-П>-<Ис>	---	---M-(Mq)--	-C[share of MAC]	--------	-------	---- b=C/M ---
1	000301 6002	П	0.1173	0.733009	100.0	100.0	6.2490082
In amount = 0.733009 100.0
The total contribution of the rest = 0.000000 0.0
3. Total concentrations at the mesh point. UPAPE ERA
v2.0
City :538 Tyulkubas region.
Object :0003 “Khorgos-Almaty-Taraz-Shymkent-border of RU”
Variant of calculation: 1 Calcilation year: 2014 Calculation was made
11.06.2014 15:22 Addition :2754 - Limiting hydrocarbons C12-19 /
calculated as C/Calculation ordered at a height of 2 meters.
Computational rectangle parameters _No 99
Point location: X= 100 m; Y= 50 m
Lenght and width: L= 500 m; B= 500 m
Grid step (dX=dY) : D= 50 m
(The ^ symbol means the presence of a source near the calculated
node) 1 2 3 4 5 6 7 8 9 10 11
*--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|----|
1-| 0.096 0.104 0.109 0.112 0.113 0.113 0.113 0.112 0.109 0.104 0.096 |- 1
2-| 0.108 0.118 0.124 0.127 0.127 0.131 0.127 0.127 0.124 0.118 0.108 |- 2
3-| 0.121 0.134 0.145 0.163 0.192 0.205 0.192 0.163 0.145 0.134 0.121 |- 3
4-| 0.133 0.154 0.180 0.252 0.332 0.363 0.332 0.252 0.180 0.154 0.133 |- 4
5-| 0.143 0.173 0.233 0.399 0.257 0.253 0.218 0.399 0.233 0.173 0.143 |- 5
6-C 0.148 0.182 0.261 0.503 0.545 0.733 0.287 0.503 0.261 0.182 0.148 C- 6
7-| 0.143 0.173 0.233 0.399 0.378 0.326 0.228 0.399 0.233 0.173 0.143 |- 7
8-| 0.133 0.154 0.180 0.252 0.332 0.363 0.332 0.252 0.180 0.154 0.133 |- 8
9-| 0.121 0.134 0.145 0.163 0.192 0.205 0.192 0.163 0.145 0.134 0.121 |- 9
10-| 0.108 0.118 0.124 0.127 0.127 0.131 0.127 0.127 0.124 0.118 0.108 |-10
11-| 0.096 0.104 0.109 0.112 0.113 0.113 0.113 0.112 0.109 0.104 0.096 |-11

```
|--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|----|
   1    2    3    4    5    6    7    8    9   10   11
     Overall along the calculated rectangle:
 Maximum concentration ---------> Cм =0.73301 share of MAC
                                  =0.73301 mg/m3
 Reached at a point with coordinates:  Xm =   100.0m
    (X- column 6, Y-line 6)             Yм =    50.0 m
                       At a height Z =      2.0 m
 With a dangerous wind direction:   350 degree
  and "dangerous" wind speed   : 12.00 m/s
9. Calculation results for the sanitary zone boundary (for calculated rectangle
  099). UPAPE ERA v2.0
     City        :538  Tyulkubas region.
  Object    :0003 “Khorgos-Almaty-Taraz-Shymkent-border of RU”
     Variant of calculation: 1 Calcilation year: 2014 Calculation was made
     11.06.2014 15:22 Addition :2754 - Limiting hydrocarbons C12-19 /
     calculated as C/Calculation ordered at a height of 2 meters.
           _____   _   _ Explanation of designations ___   _   _
          | Qc - total concentration [share of MAC]           |
          | Cc - total concentration [mg/m.cube]              |
          | Zоп- height where the maximum is reached [m] |
          | OPP- dangerous wind direction [ угл. град.] |
          | Uоп- dangerous wind direction [     m/s    ] |
    | - If there is one source in the calculation, then its contribution and code are not printed |
    | - If in the line Cmax=< 0.05 MAC, then OPP,Uоп,Ви,Ки are not printed |
y=    -20:  -19:  -16:  -11:   -5:    3:   11:   21:   30:   70:   79:   89:   97:   105:  111:
x=     60:   50:   40:   32:   24:   18:   14:   11:   10:   10:   11:   14:   18:    24:   32:
Qc : 0.293: 0.290: 0.288: 0.496: 0.498: 0.510: 0.524: 0.543: 0.563: 0.563: 0.543: 0.524: 0.510: 0.498: 0.496:
Cc : 0.293: 0.290: 0.288: 0.496: 0.498: 0.510: 0.524: 0.543: 0.563: 0.563: 0.543: 0.524: 0.510: 0.498: 0.496:
OPP:  20 :   28 :   35 :   44 :   51 :   58 :   63 :   71 :   76 :  104 :  109 :  117 :  122 :  129 :  136 :
Uоп: 0.65 : 0.68 : 0.73 : 0.75 : 0.75 : 0.77 : 0.79 : 0.81 : 0.78 : 0.78 : 0.81 : 0.79 : 0.77 : 0.75 : 0.75 :
y=    116:  119:  120:  120:  120:  120:  120:  119:  116:  111:  105:   97:   89:    79:  70:
x=     40:   50:   60:   60:  100:  140:  140:  150:  160:  168:  176:  182:  186:   189:  190:
Qc : 0.208: 0.208: 0.209: 0.209: 0.210: 0.194: 0.194: 0.190: 0.186: 0.496: 0.498: 0.510: 0.524: 0.543: 0.563:
Cc : 0.208: 0.208: 0.209: 0.209: 0.210: 0.194: 0.194: 0.190: 0.186: 0.496: 0.498: 0.510: 0.524: 0.543: 0.563:
OPP:  148 :  155 :  162 :  162 :  188 :  212 :  212 :  219 :  224 :  224 :  231 :  238 :  243 :  251 : 256 :
Uоп: 0.67 : 0.66 : 0.65 : 0.65 : 0.65 : 0.77 : 0.77 : 0.83 : 0.93 : 0.75 : 0.75 : 0.77 : 0.79 : 0.81 : 0.78 :
y=     30:   21:   11:    3:   -5:  -11:  -16:  -19:  -20:   -20:  -20:
x=    190:  189:  186:  182:  176:  168:  160:  150:  140:   100:   60:
Qc : 0.563: 0.543: 0.524: 0.510: 0.498: 0.496: 0.191: 0.200: 0.205: 0.266: 0.293:
Cc : 0.563: 0.543: 0.524: 0.510: 0.498: 0.496: 0.191: 0.200: 0.205: 0.266: 0.293:
OPP:  284 :  289 :  297 :  302 :  309 :  316 :  310 :  316 :  321 :  348 :   20 :
Uоп: 0.78 : 0.81 : 0.79 : 0.77 : 0.75 : 0.75 : 0.75 : 0.69 : 0.50 : 0.50 : 0.65 :
Calculation results at the maximum point UPAPE ERA v2.0
          Point location:  X=   190.0 m    Y=    70.0 m
               At a height:  Z=      2.0 m
Maximum total concentration | Cs=   0.56324 share of MAC |
                            |       0.56324 mg/m3     |
   Achieved in a dangerous direction 256 degree
                     and wind speed 0.78 m/s
Total sources: 1. In the table depositors are ordered with no more than 95% of the contribution
___   _   _   _   _   _   _   _   _ __ SOURCE CONTRIBUTIONS _____   __   _   _   _   _   _   _ _
|№.|   Code    |Type|   Emission |   Contribution   | Contribution in %| Sum. %| Coefficient of influence |
|----|<Об-П>-<Ис>|---|---M-(Mq)--|-C[share of MAC]|--------|-------|---- b=C/M ---|
|  1 |000301 6002| П |     0.1173|   0.563239 | 100.0  | 100.0 |   4.8016968 |
|                    In sum =   0.563239    100.0                    |
|     The total contribution of the rest =   0.000000     0.0                    |
3. Initial parameters of sources.
   UPAPE ERA v2.0
     City        :538  Tyulkubas region.
     Object   :0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".
     Variant of calculation :1              Calculation year: 2014       Calculation was made 11.06.2014 15:23
     Addition :2902 - Suspended materials
       Relief coefficient (KP): individual from city
       Settlement factor (F): individual from sources
       Sign of sources "for winter" - negative height value
___   _   _   _   _   _   _   _   _   _   _   _   _   _   _   _   _   _   _   _   __   _   _   _   _   _   _   _   _   _   _   _   _   __
    Код    |Тип|  H  |  D  |  Wo |   V1   |  T  |  X1   |  Y1   |  X2   |  Y2   |Alf| F | KP |Ди| Emission
    <Об~П>~<Ис>|~~~|~~м~~|~~м~~|~м/с~|~~м3/с~|градС|~~~м~~~|~~~м~~~|~~~м~~~|~~~м~~~|гр.|~~~|~~~~~|~~|~~~г/с~~
    000301 6004 П1   2.0            13.0     10050              80              40    0 3.0 1.00 0 0.0784000
4. Design parameters Cм,Uм,Xм
   UPAPE ERA v2.0
     City        :538  Tyulkubas region
     Object   :0003 " Khorgos-Almaty-Taraz-Shymkent-border of RU".
     Variant of calculation:1 Calculation year: 2014 Calculation was made 11.06.2014 15:23
     Season     : Winter for energy and SUMMER for the rest
     Addition :2902 - Suspended materials
     MAC for addition 2902 = 0.5 mg/m3
| - For linear and area sources, the emission is the total |
```

```
|  throughout the area, a Cm` there is a concentration of a single source |
|  with total M (стр.33 ОНД-86)                                           |
|_________  __Sources____  _____|____ Their design parameters ___  |
|No.|  Code  |  M  |Type | Cm (Cm`) |  Um  |  Xm  |
|-п/п-|<об-п>-<ис>|----------|----|[share of MAC]|-[m/s]---|----[m]---|
|  1 |000301 6004|  0.07840|  П |  0.393 |  0.50  |  28.5 |
|  Total Mq =  0.07840 g/s                                                |
|  Amount Cм on all sources =          0.393013 share of MAC     |
|  Weighted average dangerous wind speed =  0.50 m/s            |
5. Control parameters of the calculation
  UPAPE ERA v2.0
    City      :538  Tyulkubas region.
    Object   :0003 " Khorgos-Almaty-Taraz-Shymkent-border of RU".
    Variant of calculation:1 Calculation year: 2014    Calculation was made 11.06.2014 15:23
    Season: WINTER for energy and SUMMER for the rest
    Addition: 2902 - Suspended materials
 Background concentration was not set
Rectangle calculation 099 : 500x500 with step 50
Calculation along the border of the sanitary zone. Pavement РП 099
 Wind direction: automatic search for dangerous direction from 0 to 360 degree
 Wind speed: automatic search for dangerous speed from 0.5 to12.0(U*) m/s Weighted
 average dangerous wind speed Uсв= 0.5 m/s
    Calculation ordered at a height of 2 meters.
6. Calculation results in the form of a table.
  UPAPE ERA v2.0
7.          City     :538  Tyulkubas region.
8. Object   :0003 " Khorgos-Almaty-Taraz-Shymkent-border of RU".
9.          Variant of calculation:1 Calculation year: 2014 Calculation was made
  11.06.2014 15:23 Addition   :2902 - Suspended materials
      The calculation was carried out on a rectangle 99
      with parameters: center coordinates X=      100  Y=     50
            dimensions: Length (по X)= 500, Width (по Y)= 500
            grid step =  50.0
    Calculation ordered at a height of 2 meters.
        ______  _  _ Explanation of designations ___  _  _
        | Qc - total concentration [share of MAC]          |
        | Cc - total concentration [mg/m.cube]             |
        | Zоп- height where the maximum is reached [m] |
        | OPP- dangerous wind direction [ угл. град.] |
        | Uоп- dangerous wind speed [  m/s  ] |
| - If there is one source in the calculation, then its contribution and code are not printed |
    | -If in the line Cmax=< 0.05 MAC, then OPP,Uоп,Ви,Ки are not printed|
 y=  300 : Y-line 1  Cmax= 0.046 share of MAC (x=  100.0;  wind direction=180)
 x=  -150 :  -100:  -50:    0:   50:  100:  150:  200:  250:  300:  350:
 Qc : 0.028: 0.032: 0.037: 0.041: 0.045: 0.046: 0.045: 0.041: 0.037: 0.032: 0.028:
 Cc : 0.014: 0.016: 0.018: 0.021: 0.023: 0.023: 0.023: 0.021: 0.018: 0.016: 0.014:
 y=  250 : Y-line  2  Cmax= 0.064 share of MAC (x=  100.0;  wind direction =180)
 x=  -150 :  -100:  -50:    0:   50:  100:  150:  200:  250:  300:  350:
 Qc : 0.033: 0.039: 0.048: 0.055: 0.062: 0.064: 0.062: 0.055: 0.048: 0.039: 0.033:
 Cc : 0.016: 0.020: 0.024: 0.028: 0.031: 0.032: 0.031: 0.028: 0.024: 0.020: 0.016:
 OPP:  129 :  135 :  144 :  154 :  166 :  180 :  194 :  206 :  216 :  225 :  231 :
 Uоп: 1.98 : 1.31 : 1.08 : 0.94 : 0.87 : 0.85 : 0.87 : 0.94 : 1.08 : 1.31 : 1.98 :
 y=  200 : Y- line  3  Cmax= 0.093 share of MAC (x=  100.0;  wind direction =180)
 x=  -150 :  -100:  -50:    0:   50:  100:  150:  200:  250:  300:  350:
 Qc : 0.038: 0.048: 0.062: 0.077: 0.088: 0.093: 0.088: 0.077: 0.062: 0.048: 0.038:
 Cc : 0.019: 0.024: 0.031: 0.038: 0.044: 0.046: 0.044: 0.038: 0.031: 0.024: 0.019:
 OPP:  121 :  127 :  136 :  147 :  162 :  180 :  198 :  213 :  224 :  233 :  239 :
 Uоп: 1.64 : 1.12 : 0.93 : 0.82 : 0.74 : 0.71 : 0.74 : 0.82 : 0.93 : 1.12 : 1.64 :
 y=  150 : Y- line  4  Cmax= 0.136 share of MAC (x=  100.0;  wind direction =180)
 x=  -150 :  -100:  -50:    0:   50:  100:  150:  200:  250:  300:  350:
 Qc : 0.044: 0.058: 0.080: 0.108: 0.130: 0.136: 0.130: 0.108: 0.080: 0.058: 0.044:
 Cc : 0.022: 0.029: 0.040: 0.054: 0.065: 0.068: 0.065: 0.054: 0.040: 0.029: 0.022:
 OPP:  112 :  117 :  125 :  136 :  155 :  180 :  205 :  224 :  235 :  243 :  248 :
 Uоп: 1.36 : 1.01 : 0.85 : 0.72 : 0.61 : 0.57 : 0.61 : 0.72 : 0.85 : 1.01 : 1.36 :
 y=  100 : Y- line  5  Cmax=  0.148 share of MAC (x=   0.0;  wind direction =118)
 x=  -150 :  -100:  -50:    0:   50:  100:  150:  200:  250:  300:  350:
 Qc : 0.048: 0.067: 0.099: 0.148: 0.102: 0.093: 0.120: 0.148: 0.099: 0.067: 0.048:
 Cc : 0.024: 0.034: 0.050: 0.074: 0.051: 0.047: 0.060: 0.074: 0.050: 0.034: 0.024:
 OPP:  101 :  104 :  109 :  118 :  139 :  186 :  221 :  242 :  251 :  256 :  259 :
 Uоп: 1.22 : 0.96 : 0.81 : 0.66 : 0.50 : 0.50 : 0.52 : 0.66 : 0.81 : 0.96 : 1.22 :
 y=   50 : Y- line  6  Cmax=  0.170 share of MAC (x=   0.0; wind direction = 90)
 x=  -150 :  -100:  -50:    0:   50:  100:  150:  200:  250:  300:  350:
 Qc : 0.049: 0.071: 0.108: 0.170: 0.134: 0.027: 0.118: 0.170: 0.108: 0.071: 0.049:
 Cc : 0.025: 0.035: 0.054: 0.085: 0.067: 0.013: 0.059: 0.085: 0.054: 0.035: 0.025:
 OPP:   90 :   90 :   90 :   90 :   97 :   24 :  268 :  270 :  270 :  270 :  270 :
 Uоп: 1.19 : 0.95 : 0.79 : 0.63 : 0.50 : 0.51 : 0.50 : 0.63 : 0.79 : 0.95 : 1.19 :
 y=    0 : Y- line 7  Cmax=  0.148 share of MAC (x=   0.0; wind direction = 62)
 x=  -150 :  -100:  -50:    0:   50:  100:  150:  200:  250:  300:  350:
 Qc : 0.048: 0.067: 0.099: 0.148: 0.132: 0.092: 0.101: 0.148: 0.099: 0.067: 0.048:
```

Cc : 0.024: 0.034: 0.050: 0.074: 0.066: 0.046: 0.051: 0.074: 0.050: 0.034: 0.024:
OPP: 79 : 76 : 71 : 62 : 42 : 359 : 315 : 298 : 289 : 284 : 281 :
Uоп: 1.22 : 0.96 : 0.81 : 0.66 : 0.53 : 0.50 : 0.50 : 0.66 : 0.81 : 0.96 : 1.22 :
y= -50 : Y- line 8 Cmax= 0.136 share of MAC (x= 100.0; wind direction = 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.044: 0.058: 0.080: 0.108: 0.130: 0.136: 0.130: 0.108: 0.080: 0.058: 0.044:
Cc : 0.022: 0.029: 0.040: 0.054: 0.065: 0.068: 0.065: 0.054: 0.040: 0.029: 0.022:
OPP: 68 : 63 : 55 : 44 : 25 : 0 : 335 : 316 : 305 : 297 : 292 :
Uоп: 1.36 : 1.01 : 0.85 : 0.72 : 0.61 : 0.57 : 0.61 : 0.72 : 0.85 : 1.01 : 1.36 :
y= -100 : Y- line 9 Cmax= 0.093 share of MAC (x= 100.0; wind direction = 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.038: 0.048: 0.062: 0.077: 0.088: 0.093: 0.088: 0.077: 0.062: 0.048: 0.038:
Cc : 0.019: 0.024: 0.031: 0.038: 0.044: 0.046: 0.044: 0.038: 0.031: 0.024: 0.019:
OPP: 59 : 53 : 44 : 33 : 18 : 0 : 342 : 327 : 316 : 307 : 301 :
Uоп: 1.64 : 1.12 : 0.93 : 0.82 : 0.74 : 0.71 : 0.74 : 0.82 : 0.93 : 1.12 : 1.64 :
y= -150 : Y- line 10 Cmax= 0.064 share of MAC (x= 100.0; wind direction = 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.033: 0.039: 0.048: 0.055: 0.062: 0.064: 0.062: 0.055: 0.048: 0.039: 0.033:
Cc : 0.016: 0.020: 0.024: 0.028: 0.031: 0.032: 0.031: 0.028: 0.024: 0.020: 0.016:
OPP: 51 : 45 : 36 : 26 : 14 : 0 : 346 : 334 : 324 : 315 : 309 :
Uоп: 1.98 : 1.31 : 1.08 : 0.94 : 0.87 : 0.85 : 0.87 : 0.94 : 1.08 : 1.31 : 1.98 :
y= -200 : Y- line 11 Cmax= 0.046 share of MAC (x= 100.0; wind direction = 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.028: 0.032: 0.037: 0.041: 0.045: 0.046: 0.045: 0.041: 0.037: 0.032: 0.028:
Cc : 0.014: 0.016: 0.018: 0.021: 0.023: 0.023: 0.023: 0.021: 0.018: 0.016: 0.014:
Calculation results at the maximum point UPAPE ERA v2.0
Point location: X= 0.0 м Y= 50.0 m
At a height: Z= 2.0 m
Maximum total concentration | Cs= 0.17043 share of MAC |
| 0.08521 mg/m3 |
Achieved in a dangerous direction 90 degree.
and wind speed 0.63 m/s
Sources in total: 1. In the table depositors ordered with no more than 95% of the contribution
___ _ _ _ _ _ _ _ _ __ SOURCE CONTRIBUTIONS _____ __ _ _ _ _ _ _ _
No.	Code	Type	Emission	Contribution	Contribution in %	Sum. %	Coefficient of influence
----	<Об-П>-<Ис>	---	---M-(Mq)--	-C[доли ПДК]	--------	-------	---- b=C/M ---
1	000301 6004	П	0.0784	0.170429	100.0	100.0	2.1738412
In sum = 0.170429 100.0
The total contribution of the rest = 0.000000 0.0
10. Total concentrations at the mesh point. UPAPE
ERA v2.0
City :538 Tyulkubas region.
Object :0003 " Khorgos-Almaty-Taraz-Shymkent-border of RU".
Variant of calculation:1 Calculation year: 2014 Calculation was made 11.06.2014 15:23
Addition :2902 - Suspended materials
Calculation ordered at a height of 2 meters.
_____ Computational Rectangle Parameters _No 99___
| Center coordinates: X= 100 мм; Y= 50 m |
| Lenght and width: L= 500 m; B= 500 m |
| Grid step (dX=dY) : D= 50 m |
(The ^ symbol means the presence of a source near the calculated node)
1 2 3 4 5 6 7 8 9 10 11
*--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|-----|
1-| 0.028 0.032 0.037 0.041 0.045 0.046 0.045 0.041 0.037 0.032 0.028 |- 1
2-| 0.033 0.039 0.048 0.055 0.062 0.064 0.062 0.055 0.048 0.039 0.033 |- 2
3-| 0.038 0.048 0.062 0.077 0.088 0.093 0.088 0.077 0.062 0.048 0.038 |- 3
4-| 0.044 0.058 0.080 0.108 0.130 0.136 0.130 0.108 0.080 0.058 0.044 |- 4
5-| 0.048 0.067 0.099 0.148 0.102 0.093 0.120 0.148 0.099 0.067 0.048 |- 5
6-C 0.049 0.071 0.108 0.170 0.134 0.027 0.118 0.170 0.108 0.071 0.049 C- 6
7-| 0.048 0.067 0.099 0.148 0.132 0.092 0.101 0.148 0.099 0.067 0.048 |- 7
8-| 0.044 0.058 0.080 0.108 0.130 0.136 0.130 0.108 0.080 0.058 0.044 |- 8
9-| 0.038 0.048 0.062 0.077 0.088 0.093 0.088 0.077 0.062 0.048 0.038 |- 9
10-| 0.033 0.039 0.048 0.055 0.062 0.064 0.062 0.055 0.048 0.039 0.033 |-10
11-| 0.028 0.032 0.037 0.041 0.045 0.046 0.045 0.041 0.037 0.032 0.028 |-11
|--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|----|
1 2 3 4 5 6 7 8 9 10 11

Overall for the calculated rectangle:
Maximum concentration ---------> Cm = 0.17043 share of MAC
= 0.08521 mg/m3 Achieved at the point with coordinates: Xm = 0.0m
(X-column 4, Y-line 6) Ym = 50.0 m At a height of Z = 2.0 m
With a dangerous wind direction: 90 degrees. and "dangerous" wind speed: 0.63 m/s
9. Calculation results for the sanitary zone boundary (for calculated rectangular
099). UPAPE ERA v2.0
City: 538 Tyulkubas region.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".

Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 11.06.2014 15:23
Addition: 2902 - Suspended materials
The calculation is ordered at a height of 2 meters.
_____ _ _ Explanation of designations ___ _ _
| Qc - total concentration [share of MAC] |
| Cc - total concentration [mg/m.cube] |
| Zоп- height where the maximum is reached [m] |
| OPP- dangerous wind direction [угл. град.] |
| Uоп- dangerous wind speed [m/s] |
| - If there is one source in the calculation, then its contribution and code are not printed|
| - If in the line Cmax = <0.05 MAC, then OPP,Uоп,Ви,Ки are not printed |
y= -20: -19: -16: -11: -5: 3: 11: 21: 30: 70: 79: 89: 97: 105: 111:
x= 60: 50: 40: 32: 24: 18: 14: 11: 10: 10: 11: 14: 18: 24: 32:
Qc : 0.116: 0.118: 0.119: 0.165: 0.166: 0.169: 0.173: 0.177: 0.181: 0.181: 0.177: 0.173: 0.169: 0.166: 0.165:
Cc : 0.058: 0.059: 0.059: 0.082: 0.083: 0.085: 0.086: 0.088: 0.090: 0.090: 0.088: 0.086: 0.085: 0.083: 0.082:
OPP: 27 : 33 : 40 : 45 : 52 : 58 : 64 : 71 : 77 : 103 : 109 : 116 : 122 : 128 : 135 :
Uоп: 0.54 : 0.56 : 0.59 : 0.57 : 0.59 : 0.60 : 0.60 : 0.61 : 0.61 : 0.61 : 0.61 : 0.60 : 0.60 : 0.59 : 0.57 :
y= 116: 119: 120: 120: 120: 120: 120: 119: 116: 111: 105: 97: 89: 79: 70:
x= 40: 50: 60: 60: 100: 140: 140: 150: 160: 168: 176: 182: 186: 189: 190:
Qc : 0.098: 0.098: 0.099: 0.099: 0.102: 0.112: 0.112: 0.113: 0.115: 0.165: 0.166: 0.169: 0.173: 0.177: 0.181:
Cc : 0.049: 0.049: 0.049: 0.049: 0.051: 0.056: 0.056: 0.057: 0.057: 0.082: 0.083: 0.085: 0.086: 0.088: 0.090:
OPP: 140 : 145 : 150 : 150 : 181 : 207 : 207 : 213 : 220 : 225 : 232 : 238 : 244 : 251 : 257 :
Uоп: 0.52 : 0.50 : 0.50 : 0.50 : 0.50 : 0.52 : 0.52 : 0.55 : 0.59 : 0.57 : 0.59 : 0.60 : 0.60 : 0.61 : 0.61 :
y= 30: 21: 11: 3: -5: -11: -16: -19: -20: -20: -20:
x= 190: 189: 186: 182: 176: 168: 160: 150: 140: 100: 60:
Qc : 0.181: 0.177: 0.173: 0.169: 0.166: 0.165: 0.098: 0.098: 0.099: 0.104: 0.116:
Cc : 0.090: 0.088: 0.086: 0.085: 0.083: 0.082: 0.049: 0.049: 0.049: 0.052: 0.058:
OPP: 283 : 289 : 296 : 302 : 308 : 315 : 320 : 325 : 330 : 359 : 27 :
Uоп: 0.61 : 0.61 : 0.60 : 0.60 : 0.59 : 0.57 : 0.52 : 0.50 : 0.50 : 0.50 : 0.54 :
Calculation results at the maximum point UPAPE ERA v2.0
Point location: X= 190.0 m Y= 70.0 m
At a height: Z= 2.0 m
Maximum total concentration | Cs= 0.18080 share of MAC |
| 0.09040 mg/m3 |
Achieved in a dangerous direction 257 degree
and wind speed 0.61 m/s
Sources in total: 1. In the table depositors ordered with no more than 95% of the contribution
___ _ _ _ _ _ _ _ _ __ SOURCE CONTRIBUTIONS _____ __ _ _ _ _ _ _ _
No.	Code	Type	Emission	Contribution	Contribution in %	Sum. %	Coefficient of influence
----	<Об-П>-<Ис>	---	---M-(Mq)--	-C[доли ПДК]	--------	-------	---- b=C/M ---
1	000301 6004	П	0.0784	0.180801	100.0	100.0	2.3061385
In sum = 0.180801 100.0
The total contribution of the rest = 0.000000 0.0
3. Initial parameters of sources.
UPAPE ERA v2.0
City: 538 Tyulkubas region.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 11.06.2014 15:23
Summation group: __ 31 = 0301 Nitrogen (IV) dioxide (4)
0330 Sulfur dioxide (526)
Relief coefficient (KR): individual from the city
Settlement factor (F): individual from sources
Sign of sources "for winter" - negative height value
___ __ _ _ _ _ _ _ _ _ _ _ _ __
Code |Type| H | D | Wo | V1 | T | X1 | Y1 | X2 | Y2 |Alf| F | KP |Ди| Emission
<Об~П>~<Ис>|~~~|~~м~~|~~м~~|~м/с~|~~м3/с~|градС|~~~м~~~|~~~м~~~|~~~м~~~|~~~м~~~|гр.|~~~|~~~~~|~~|~~~г/с~~
--------- Addition 0301--------
000301 6007 П1 2.0 13.0 100 50 80 40 0 1.0 1.00 0 0.0088800
000301 6010 П1 2.0 13.0 100 50 80 40 0 1.0 1.00 0 0.0334000
--------- Addition 0330--------
000301 6007 П1 2.0 13.0 100 50 80 40 0 1.0 1.00 0 0.0010520
000301 6010 П1 2.0 13.0 100 50 80 40 0 1.0 1.00 0 0.0063300
4. Design parameter См,Uм,Xм
UPAPE ERA v2.0
City: 538 Tyulkubas region.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 11.06.2014 15:23
Season: Winter energy and SUMMER for the rest
Summation group: __ 31 = 0301 Nitrogen (IV) dioxide
(4) 0330 Sulfur dioxide (526)
| - For the summation groups, the emission Mq = M1/ПДК1 +...+ Mn/ПДКn, and |
| total concentration Cм = См1/ПДК1 +...+ Смn/ПДКn (in more detail |
| see page 36 ОНД-86) |
| - For linear and area sources, the emission is the total |
| throughout the area, a Cm` there is a concentration of a single source|
| with total M (p.33 ОНД-86) |
_____ __Source____ _____	____ Their design parameters ___
No.	Code	Mq	Type	Cm (Cm`)	Um	Xm
-п/п-	<об-п>-<ис>	----------	----	[share of MAC]	-[m/s]---	----[m]---

| 1 |000301 6007| 0.04524| П | 0.015 | 0.50 | 85.5 |
| 2 |000301 6010| 0.17206| П | 0.056 | 0.50 | 85.5 |
| Total Mq = 0.21731 (sum Mq/MAC on all additions) |
| Sum Cm for all sources = 0.070491 share of MAC |
| Weighted average dangerous wind speed = 0.50 m/s |
5. Control parameters of the calculation
UPAPE ERA v2.0
City: 538 Tyulkubas region.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent- border of RU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 11.06.2014 15:23
Season: WINTER for energy and SUMMER for the rest
Summation group: __ 31 = 0301 Nitrogen (IV) dioxide (4) 0330 Sulfur dioxide (526)
Background concentration was not set
Calculation by rectangle 099: 500x500 with a step of 50
Calculation along the border of the sanitary zone. Pavement RP 099
Wind direction: automatic search for dangerous direction from 0 to 360 degrees.
Wind speed: automatic search for dangerous speed from 0.5 to 12.0 (U *) m/s
Weighted average dangerous wind speed Uw = 0.5 m/s
A calculation is ordered at a height of 2 meters.
6. Calculation results in the form of a table.
UPAPE ERA v2.0
City: 538 Tyulkubas region.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 11.06.2014 15:23
Summation group: __ 31 = 0301 Nitrogen (IV) dioxide (4)
0330 Sulfur dioxide (526)
The calculation was carried out on a rectangle 99
with parameters: center coordinates X = 100 Y = 50
dimensions: Length (X) = 500, Width (Y) = 500
grid step = 50.0
A calculation is ordered at a height of 2 meters.
Explanation of designations
| Qc - total concentration [share of MAC] |
| Zоп- height where the maximum is reached [m] |
| OPP- dangerous wind direction [угл. град.] |
| Uоп- dangerous wind speed [m/s] |
| Ви - contribution of SOURCE in Qc [g/sq. m in year] |
| Ки - source code for top line Ви |
| - If the calculation is for summation, then concentr. in mg/m3 not printed|
| -If in the line Cmax=< 0.05 MAC, then OPP,Uоп,Ви,Ки are not printed |
y= 300 : Y-line 1 Cmax= 0.038 share of MAC (x= 100.0; wind direction =180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.027: 0.030: 0.033: 0.035: 0.037: 0.038: 0.037: 0.035: 0.033: 0.030: 0.027:
y= 250 : Y- line 2 Cmax= 0.044 share of MAC (x= 100.0; wind direction =180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.030: 0.034: 0.038: 0.042: 0.044: 0.044: 0.044: 0.042: 0.038: 0.034: 0.030:
y= 200 : Y- line 3 Cmax= 0.051 share of MAC (x= 100.0; wind direction =180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.034: 0.039: 0.044: 0.048: 0.050: 0.051: 0.050: 0.048: 0.044: 0.039: 0.034:
OPP: 121 : 127 : 135 : 147 : 162 : 180 : 198 : 213 : 225 : 233 : 239 :
Uоп: 0.70 : 0.65 : 0.61 : 0.57 : 0.54 : 0.53 : 0.54 : 0.57 : 0.61 : 0.65 : 0.70 :
CS : 0.027: 0.031: 0.035: 0.038: 0.040: 0.040: 0.040: 0.038: 0.035: 0.031: 0.027:
SC: 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 :
CS : 0.007: 0.008: 0.009: 0.010: 0.011: 0.011: 0.011: 0.010: 0.009: 0.008: 0.007:
SC : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 :
y= 150 : Y- line 4 Cmax= 0.055 share of MAC (x= 50.0; wind direction =154)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.037: 0.043: 0.050: 0.055: 0.055: 0.053: 0.055: 0.055: 0.050: 0.043: 0.037:
OPP: 112 : 117 : 124 : 136 : 154 : 180 : 206 : 224 : 236 : 243 : 248 :
Uоп: 0.68 : 0.63 : 0.59 : 0.53 : 0.50 : 0.50 : 0.50 : 0.53 : 0.59 : 0.63 : 0.68 :
CS : 0.029: 0.034: 0.039: 0.043: 0.043: 0.042: 0.043: 0.043: 0.039: 0.034: 0.029:
SC : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 :
CS : 0.008: 0.009: 0.010: 0.011: 0.011: 0.011: 0.011: 0.011: 0.010: 0.009: 0.008:
SC : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 :
y= 100 : Y- line 5 Cmax= 0.060 share of MAC (x= 0.0; wind direction =117)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.038: 0.046: 0.054: 0.060: 0.055: 0.038: 0.055: 0.060: 0.054: 0.046: 0.038:
OPP: 101 : 104 : 109 : 117 : 136 : 180 : 224 : 243 : 251 : 256 : 259 :
Uоп: 0.66 : 0.61 : 0.57 : 0.52 : 0.50 : 0.50 : 0.50 : 0.52 : 0.57 : 0.61 : 0.66 :
CS : 0.030: 0.036: 0.043: 0.048: 0.044: 0.030: 0.044: 0.048: 0.043: 0.036: 0.030:
SC : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 :
SC : 0.008: 0.010: 0.011: 0.013: 0.011: 0.008: 0.011: 0.013: 0.011: 0.010: 0.008:
CS : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 :
y= 50 : Y- line 6 Cmax= 0.064 share of MAC (x= 0.0; wind direction = 90)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.039: 0.047: 0.056: 0.064: 0.051: 0.010: 0.051: 0.064: 0.056: 0.047: 0.039:
OPP: 90 : 90 : 90 : 90 : 90 : 270 : 270 : 270 : 270 : 270 : 270 :
Uоп: 0.66 : 0.61 : 0.56 : 0.52 : 0.50 : 0.50 : 0.50 : 0.52 : 0.56 : 0.61 : 0.66 :

CS : 0.031: 0.037: 0.044: 0.050: 0.041: 0.008: 0.041: 0.050: 0.044: 0.037: 0.031:
SC : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 :
CS : 0.008: 0.010: 0.012: 0.013: 0.011: 0.002: 0.011: 0.013: 0.012: 0.010: 0.008:
SC : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 :
y= 0 : Y- line 7 Cmax= 0.060 share of MAC (x= 200.0; wind direction =297)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.038: 0.046: 0.054: 0.060: 0.055: 0.038: 0.055: 0.060: 0.054: 0.046: 0.038:
OPP: 79 : 76 : 71 : 63 : 44 : 0 : 316 : 297 : 289 : 284 : 281 :
Uоп: 0.66 : 0.61 : 0.57 : 0.52 : 0.50 : 0.50 : 0.50 : 0.52 : 0.57 : 0.61 : 0.66 :
CS : 0.030: 0.036: 0.043: 0.048: 0.044: 0.030: 0.044: 0.048: 0.043: 0.036: 0.030:
SC : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 :
CS : 0.008: 0.010: 0.011: 0.013: 0.011: 0.008: 0.011: 0.013: 0.011: 0.010: 0.008:
SC : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 :
y= -50 : Y- line 8 Cmax= 0.055 share of MAC (x= 50.0; wind direction = 26)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.037: 0.043: 0.050: 0.055: 0.055: 0.053: 0.055: 0.055: 0.050: 0.043: 0.037:
OPP: 68 : 63 : 56 : 44 : 26 : 0 : 334 : 316 : 304 : 297 : 292 :
Uоп: 0.68 : 0.63 : 0.59 : 0.53 : 0.50 : 0.50 : 0.50 : 0.53 : 0.59 : 0.63 : 0.68 :
CS : 0.029: 0.034: 0.039: 0.043: 0.043: 0.042: 0.043: 0.043: 0.039: 0.034: 0.029:
SC : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 :
CS : 0.008: 0.009: 0.010: 0.011: 0.011: 0.011: 0.011: 0.011: 0.010: 0.009: 0.008:
SC : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 :
y= -100 : Y- line 9 Cmax= 0.051 share of MAC (x= 100.0; wind direction = 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.034: 0.039: 0.044: 0.048: 0.050: 0.051: 0.050: 0.048: 0.044: 0.039: 0.034:
OPP: 59 : 53 : 45 : 33 : 18 : 0 : 342 : 327 : 315 : 307 : 301 :
Uоп: 0.70 : 0.65 : 0.61 : 0.57 : 0.54 : 0.53 : 0.54 : 0.57 : 0.61 : 0.65 : 0.70 :
CS: 0.027: 0.031: 0.035: 0.038: 0.040: 0.040: 0.040: 0.038: 0.035: 0.031: 0.027:
SC : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 :
CS : 0.007: 0.008: 0.009: 0.010: 0.011: 0.011: 0.011: 0.010: 0.009: 0.008: 0.007:
SC : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 :
y= -150 : Y- line 10 Cmax= 0.044 share of MAC (x= 100.0; wind direction = 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.030: 0.034: 0.038: 0.042: 0.044: 0.044: 0.044: 0.042: 0.038: 0.034: 0.030:
y= -200 : Y- line 11 Cmax= 0.038 share of MAC (x= 100.0; wind direction = 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.027: 0.030: 0.033: 0.035: 0.037: 0.038: 0.037: 0.035: 0.033: 0.030: 0.027:
Calculation results at the maximum point UPAPE ERA v2.0
Point coordinates: X= 0.0 m Y= 50.0 м
At a height: Z= 2.0 m
Maximum total concentration | Cs= 0.06352 share MAC | Achieved in a dangerous direction of 90 degrees.
and wind speed 0.52 m/s
Sources in total: 2. The table contains orders of depositors with no more than 95% of the deposit
___ _ _ _ _ _ _ _ _ SOURCE CONTRIBUTIONS _____ __ _ _ _ _ _ _
No.	Code	Type	Emission	Contribution	Contribution in%	Sum. %	Influence coefficient
----	<Ob-P> - <Is>	---	--- M- (Mq) -	-C [MAC share]	--------	--- ----	---- b = C / M ---
1	000301 6010	P	0.1721	0.050299	79.2	79.2	0.292327553
2	000301 6007	P	0.0452	0.013225	20.8	100.0	0.292327523
In total = 0.063524 100.0
The total contribution of the rest = 0.000000 0.0
7. Total concentrations at the mesh point. UPARE ERA v2.0
City: 538 Tyulkuba region.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 11.06.2014 15:23 Summation group: __ 31 = 0301 Nitrogen (IV) dioxide (4) 0330 Sulfur dioxide (526) Calculation ordered at a height of 2 meters.
_____Parameters_of_calculating_rectangle_No 99___
| Center coordinates: X = 100 m; Y = 50 m |
| Length and width: L = 500 m; B = 500 m |
| Grid step (dX = dY): D = 50 m |
(The ^ symbol means the presence of a source near the calculated node)1 2 3 4 5 6 7 8 9 10 11
*--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|-----|----|
1-| 0.027 0.030 0.033 0.035 0.037 0.038 0.037 0.035 0.033 0.030 0.027 |- 1
2-| 0.030 0.034 0.038 0.042 0.044 0.044 0.044 0.042 0.038 0.034 0.030 |- 2
3-| 0.034 0.039 0.044 0.048 0.050 0.051 0.050 0.048 0.044 0.039 0.034 |- 3
4-| 0.037 0.043 0.050 0.055 0.055 0.053 0.055 0.055 0.050 0.043 0.037 |- 4
5-| 0.038 0.046 0.054 0.060 0.055 0.038 0.055 0.060 0.054 0.046 0.038 |- 5
6-C 0.039 0.047 0.056 0.064 0.051 0.010 0.051 0.064 0.056 0.047 0.039 C- 6
7-| 0.038 0.046 0.054 0.060 0.055 0.038 0.055 0.060 0.054 0.046 0.038 |- 7
8-| 0.037 0.043 0.050 0.055 0.055 0.053 0.055 0.055 0.050 0.043 0.037 |- 8
9-| 0.034 0.039 0.044 0.048 0.050 0.051 0.050 0.048 0.044 0.039 0.034 |- 9
10-| 0.030 0.034 0.038 0.042 0.044 0.044 0.044 0.042 0.038 0.034 0.030 |-10
11-| 0.027 0.030 0.033 0.035 0.037 0.038 0.037 0.035 0.033 0.030 0.027 |-11
|--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|-----|----|

1 2 3 4 5 6 7 8 9 10 11
Overall along the calculated rectangle:
Dimensionless max. concentration ---> Cm = 0.06352
Achieved at the point with coordinates: Xm = 0.0m
(X-column 4, Y-row 6) Ym = 50.0 m At a height of Z = 2.0 m
With a dangerous wind direction: 90 degrees. and
"dangerous" wind speed: 0.52 m/s
9. The results of the calculation on the border of the
sanzone (for the calculation of the rectangle 099).
UPARE ERA v2.0
City: 538 Tyulkubas region
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 11.06.2014 15:23
Summation group: __ 31 = 0301 Nitrogen (IV) dioxide (4)
0330 Sulfur dioxide (526)
Calculation ordered at a height of 2 meters.
_____ _ _Explanations of designation ___ _ _
| Qc - total concentration [MAC share] |
| Zоп -height, where the maximum is reached [m] |
OPP is a dangerous wind direction [угл. град.] |
| Uоп - dangerous wind speed [m/s] |
| CS - the contribution of the SOURCE to Qc g/m2 per year] |
| SC - source code for the top line CS |
| -If the calculation is for summation, then concentr. in mg / m3 is not printed |
| -If the line Cmax = <0.05 MAC, then OPP,Uоп,Ви,Ки are not printed |
y= -20: -19: -16: -11: -5: 3: 11: 21: 30: 70: 79: 89: 97: 105: 111:
x= 60: 50: 40: 32: 24: 18: 14: 11: 10: 10: 11: 14: 18: 24: 32:
Qc : 0.054: 0.056: 0.057: 0.059: 0.060: 0.061: 0.062: 0.063: 0.064: 0.064: 0.063: 0.062: 0.061: 0.060: 0.059:
OPP: 29 : 35 : 41 : 47 : 53 : 59 : 65 : 71 : 77 : 103 : 109 : 115 : 121 : 127 : 133 :
Uоп: 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.51 : 0.51 : 0.52 : 0.52 : 0.51 : 0.51 : 0.50 : 0.50 : 0.50 :
CS : 0.042: 0.044: 0.045: 0.046: 0.047: 0.048: 0.049: 0.050: 0.051: 0.051: 0.050: 0.049: 0.048: 0.047: 0.046:
SC : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 :
CS : 0.011: 0.012: 0.012: 0.012: 0.012: 0.013: 0.013: 0.013: 0.013: 0.013: 0.013: 0.013: 0.013: 0.012: 0.012:
SC : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 :
y= 116: 119: 120: 120: 120: 120: 120: 119: 116: 111: 105: 97: 89: 79: 70:
x= 40: 50: 60: 60: 100: 140: 140: 150: 160: 168: 176: 182: 186: 189: 190:
Qc : 0.057: 0.056: 0.054: 0.054: 0.048: 0.054: 0.054: 0.056: 0.057: 0.059: 0.060: 0.061: 0.062: 0.063: 0.064:
OPP: 139 : 145 : 151 : 151 : 180 : 209 : 209 : 215 : 221 : 227 : 233 : 239 : 245 : 251 : 257 :
Uоп: 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.51 : 0.51 : 0.52 :
CS : 0.045: 0.044: 0.042: 0.042: 0.038: 0.042: 0.042: 0.044: 0.045: 0.046: 0.047: 0.048: 0.049: 0.050: 0.051:
SC : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 :
CS : 0.012: 0.012: 0.011: 0.011: 0.010: 0.011: 0.011: 0.012: 0.012: 0.012: 0.012: 0.013: 0.013: 0.013: 0.013:
SC : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 :
y= 30: 21: 11: 3: -5: -11: -16: -19: -20: -20: -20:
x= 190: 189: 186: 182: 176: 168: 160: 150: 140: 100: 60:
Qc : 0.064: 0.063: 0.062: 0.061: 0.060: 0.059: 0.057: 0.056: 0.054: 0.048: 0.054:
OPP: 283 : 289 : 295 : 301 : 307 : 313 : 319 : 325 : 331 : 0 : 29 :
Uоп: 0.52 : 0.51 : 0.51 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 :
CS : 0.051: 0.050: 0.049: 0.048: 0.047: 0.046: 0.045: 0.044: 0.042: 0.038: 0.042:
SC : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 : 6010 :
CS : 0.013: 0.013: 0.013: 0.013: 0.012: 0.012: 0.012: 0.012: 0.011: 0.010: 0.011:
SC : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 : 6007 :
Calculation results at the maximum point of UPARE ERA v2.0
Point coordinates: X = 190.0 m Y = 70.0 m
At height: Z = 2.0 m
Maximum total concentration | Cs = 0.06384 share of MAC |
Achieved in the dangerous direction of 257 degrees.
and wind speed 0.52 m/s
Sources in total: 2. The table contains orders of depositors with no more than 95% of the deposit
___ _ _ _ _ _ _ _ __ SOURCE CONTRIBUTIONS _____
Number	Code	Type	Emission	Contribution	Contribution in%	Sum. %	Influence coefficient
----	<Об-П>-<Ис>	---	---M-(Mq)--	-C[доли ПДК]	--------	-------	---- b=C/M ---
1	000301 6010	П	0.1721	0.050546	79.2	79.2	0.293761373
2	000301 6007	П	0.0452	0.013290	20.8	100.0	0.293761313
In total = 0.063836 100.0
The total contribution of the rest = 0.000000 0.0
3. Initial parameters of sources. UPARE ERA v2.0
City: 538 Tyulkubas region.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 11.06.2014 15:23
Summation group: __ 41 = 0337 Carbon oxide (594)
2908 Inorganic dust: 70-20% silicon dioxide
Relief coefficient (CR): individual from the city
Settlement factor (F): individual from sources
Sign of sources "for winter" - negative height value
Code | Type | H | D | Wo | V1 | T | X1 | Y1 | X2 | Y2 | Alf | F | KR | Di | Emission
<Об~П>~~<Ис>|~~~|~~м~~|~~м~~|~м/с~|~~м3/с~|градС|~~~м~~~|~~~м~~~|~~~м~~~|~~~м~~~|гр.|~~~|~~~~~|~~|~~~g/s~~
--------- Addition 0337 --------

000301 6005 П1 2.0 13.0 100 50 80 40 0 1.0 1.00 0 0.0000008
000301 6007 П1 2.0 13.0 100 50 80 40 0 1.0 1.00 0 0.0102100
000301 6010 П1 2.0 13.0 100 50 80 40 0 1.0 1.00 0 0.0642400
--------- Addition 2908--------
000301 6001 П1 2.0 13.0 100 50 80 40 0 3.0 1.00 0 0.8350000
000301 6006 П1 2.0 13.0 100 50 80 40 0 3.0 1.00 0 0.0057100
000301 6008 П1 2.0 13.0 100 50 80 40 0 3.0 1.00 0 30.1000
000301 6009 П1 2.0 13.0 100 50 80 40 0 3.0 1.00 0 2.150000
3. Design parameter См,Uм,Xм
UPARE ERA v2.0
City: 538 Tyulkubas region
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out 11.06.2014 15:23
Season: WINTER for energy and SUMMER for the rest
Summation group: __ 41 = 0337 Carbon oxide (594)
2908 Inorganic dust: 70-20% silicon dioxide

| - For the summation groups, the emission Mq = M1/ПДК1 +...+ Mn/ПДКn, |
| total concentration См = См1/ПДК1 +...+ Смп/ПДКn (more details |
| see page.36 ОНД-86) |
| - For groups of summations, including addition with different settlement factor, normalized emission is indicated for each addition|
| separately together with the settlement factor |
| - For linear and area sources, the emission is total over the entire area, and Cm` is the concentration of a single source with total M (page 33 ОНД-86) |

No.	Code	Mq	Type	Cm (Cm`)	Um	Xm	F
-п/п-	<об-п>-<ис>	----------	----	[MAC share]	-[m/s]---	----[m]---	-----
1	000301 6005	0.00000020	П	6.4877E-8	0.50	85.5	1.0
2	000301 6007	0.00204	П	0.000662	0.50	85.5	1.0
3	000301 6010	0.01285	П	0.004	0.50	85.5	1.0
4	000301 6001	2.78333	П	0.023	0.50	327.8	3.0
5	000301 6006	0.01903	П	0.00016	0.50	327.8	3.0
6	000301 6008	100.33333	П	0.842	0.50	327.8	3.0
7	000301 6009	7.16667	П	0.060	0.50	327.8	3.0
Total Mq = 110.31725 (sum of Mq/MAC for all additions)
Sum of Cm for all sources = 0.930985 share of MAC
Weighted average dangerous wind speed = 0.50 m/s

4. Control parameters of the calculation
UPARE ERA v2.0
City: 538 Tyulkubas region.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 11.06.2014 15:23
Season: WINTER for energy and SUMMER for the rest
Summation group: __ 41 = 0337 Carbon oxide (594)
2908 Inorganic dust: 70-20% silicon dioxide
No background concentration set
Calculation by rectangle 099: 500x500 with a step 50
Calculation along the border of the sanitary zone. Pavement RP 099
Wind direction: automatic search for dangerous direction from 0 to 360 degrees. Wind speed: automatic search for dangerous speed from 0.5 to 12.0 (U *) m/s
Weighted average dangerous wind speed Uw = 0.5 m/s
A calculation is ordered at a height of 2 meters.

5. Calculation results in the form of a table. UPARE ERA v2.0
City: 538 Tyulkubas region.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent-border of RU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 11.06.2014 15:23
Summation group: __ 41 = 0337 Carbon oxide (594)
2908 Inorganic dust: 70-20% silicon dioxide (The calculation was carried out on a rectangle 99 with parameters: center coordinates X = 100 Y = 50
dimensions: Length (X) = 500, Width (Y) = 500
grid step = 50.0
A calculation is ordered at a height of 2 meters.

_____ _ _Explanation of designation ___ _ _
| Qc - total concentration [MAC share] |
| Zоп -height, where the maximum is reached [m] |
| OPP is a dangerous direction. wind [ang. deg.] |
| Uоп - dangerous wind speed [m/s] |
| CS - the contribution of the SOURCE to Qc [g/ m2 per year] |
| SC - source code for the top line CS |
| -If the calculation is for summation, then concentr. in mg / m3 is not printed |
| -If the line Cmax = <0.05 MAC, then OPP,Uоп,CS, SC are not printed |

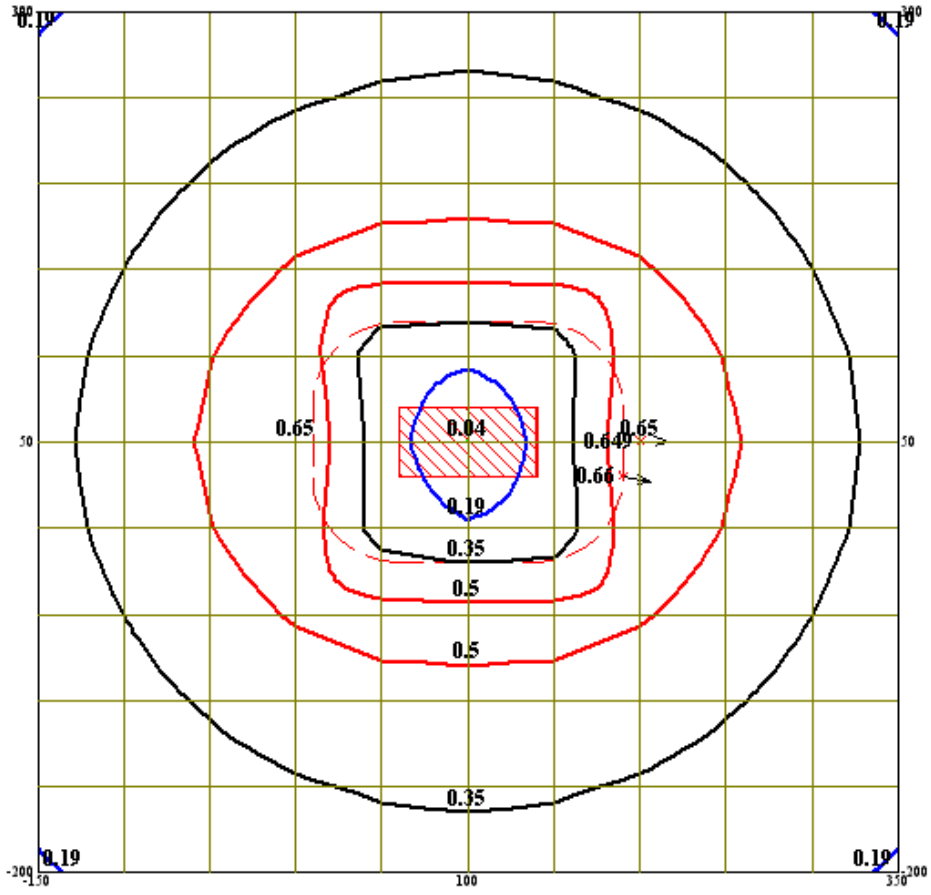
y= 300 : Y-line 1 Cmax= 0.915 MAC share(x= 300.0; wind direction=218)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.904: 0.915: 0.913: 0.900: 0.890: 0.884: 0.890: 0.900: 0.913: 0.915: 0.904:
OPP: 135 : 142 : 149 : 158 : 169 : 180 : 191 : 202 : 211 : 218 : 225 :

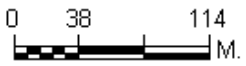
Uоп: 0.53 : 0.51 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.51 : 0.53 :
CS : 0.821: 0.831: 0.828: 0.817: 0.807: 0.802: 0.807: 0.817: 0.828: 0.831: 0.821:
SC : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 :
CS : 0.059: 0.059: 0.059: 0.058: 0.058: 0.057: 0.058: 0.058: 0.059: 0.059: 0.059:
SC : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 :
CS : 0.023: 0.023: 0.023: 0.023: 0.022: 0.022: 0.022: 0.023: 0.023: 0.023: 0.023:
SC : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 :
y= 250 : Y-line 2 Cmax= 0.919 MAC share (x= -150.0; wind direction =129)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.919: 0.916: 0.890: 0.841: 0.795: 0.776: 0.795: 0.841: 0.890: 0.916: 0.919:
OPP: 129 : 135 : 143 : 154 : 166 : 180 : 194 : 206 : 217 : 225 : 231 :
Uоп: 0.51 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.51 :
CS : 0.835: 0.831: 0.808: 0.763: 0.720: 0.703: 0.720: 0.763: 0.808: 0.831: 0.835:
SC : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 :
CS : 0.060: 0.059: 0.058: 0.054: 0.051: 0.050: 0.051: 0.054: 0.058: 0.059: 0.060:
SC : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 :
CS : 0.023: 0.023: 0.022: 0.021: 0.020: 0.020: 0.020: 0.021: 0.022: 0.023: 0.023:
SC : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 :
y= 200 : Y- line 3 Cmax= 0.923 MAC share (x= 350.0; wind direction =239)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.923: 0.895: 0.824: 0.723: 0.627: 0.587: 0.627: 0.723: 0.824: 0.895: 0.923:
OPP: 121 : 127 : 135 : 146 : 162 : 180 : 198 : 214 : 225 : 233 : 239 :
Uоп: 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 :
CS : 0.838: 0.812: 0.747: 0.655: 0.567: 0.530: 0.567: 0.655: 0.747: 0.812: 0.838:
SC : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 :
CS : 0.060: 0.058: 0.053: 0.047: 0.041: 0.038: 0.041: 0.047: 0.053: 0.058: 0.060:
SC : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 :
CS : 0.023: 0.023: 0.021: 0.018: 0.016: 0.015: 0.016: 0.018: 0.021: 0.023: 0.023:
SC : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 :
y= 150 : Y- line 4 Cmax= 0.919 MAC share (x= -150.0; wind direction =112)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.919: 0.856: 0.738: 0.570: 0.400: 0.323: 0.400: 0.570: 0.738: 0.856: 0.919:
OPP: 112 : 117 : 124 : 135 : 153 : 180 : 207 : 225 : 236 : 243 : 248 :
Uоп: 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 :
CS : 0.834: 0.776: 0.668: 0.515: 0.360: 0.290: 0.360: 0.515: 0.668: 0.776: 0.834:
SC : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 :
CS : 0.060: 0.055: 0.048: 0.037: 0.026: 0.021: 0.026: 0.037: 0.048: 0.055: 0.060:
SC : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 :
CS : 0.023: 0.022: 0.019: 0.014: 0.010: 0.008: 0.010: 0.014: 0.019: 0.022: 0.023:
SC : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 :
y= 100 : Y- line 5 Cmax= 0.906 MAC share (x= -150.0; wind direction =101)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.906: 0.822: 0.663: 0.434: 0.002: 0.003: 0.002: 0.434: 0.663: 0.822: 0.906:
OPP: 101 : 104 : 108 : 116 : 80 : 112 : 280 : 244 : 252 : 256 : 259 :
Uоп: 0.50 : 0.50 : 0.50 : 0.50 : 0.51 : 0.51 : 0.51 : 0.50 : 0.50 : 0.50 : 0.50 :
CS: 0.821: 0.745: 0.600: 0.391: 0.001: 0.003: 0.001: 0.391: 0.600: 0.745: 0.821:
SC : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 :
CS : 0.059: 0.053: 0.043: 0.028: : : : 0.028: 0.043: 0.053: 0.059:
SC : 6009 : 6009 : 6009 : 6009 : : : : 6009 : 6009 : 6009 : 6009 :
CS : 0.023: 0.021: 0.017: 0.011: : : : 0.011: 0.017: 0.021: 0.023:
SC : 6001 : 6001 : 6001 : 6001 : : : : 6001 : 6001 : 6001 : 6001 :
y= 50 : Y- line 6 Cmax= 0.901 долей ПДК (x= -150.0; wind direction = 90)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.901: 0.808: 0.634: 0.382: 0.001: 0.001: 0.001: 0.382: 0.634: 0.808: 0.901:
OPP: 90 : 90 : 90 : 90 : 32 : 24 : 328 : 270 : 270 : 270 : 270 :
Uоп: 0.50 : 0.50 : 0.50 : 0.50 : 0.51 : 0.51 : 0.51 : 0.50 : 0.50 : 0.50 : 0.50 :
CS : 0.818: 0.732: 0.573: 0.343: 0.001: 0.001: 0.001: 0.343: 0.573: 0.732: 0.818:
SC : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 :
CS : 0.058: 0.052: 0.041: 0.025: : : : 0.025: 0.041: 0.052: 0.058:
SC : 6009 : 6009 : 6009 : 6009 : : : : 6009 : 6009 : 6009 : 6009 :
CS : 0.023: 0.020: 0.016: 0.010: : : : 0.010: 0.016: 0.020: 0.023:
SC : 6001 : 6001 : 6001 : 6001 : : : : 6001 : 6001 : 6001 : 6001 :
y= 0 : Y- line 7 Cmax= 0.906 MAC share (x= -150.0; wind direction = 79)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.906: 0.822: 0.663: 0.434: 0.003: 0.003: 0.003: 0.434: 0.663: 0.822: 0.906:
OPP: 79 : 76 : 72 : 64 : 345 : 68 : 15 : 296 : 288 : 284 : 281 :
Uоп: 0.50 : 0.50 : 0.50 : 0.50 : 0.51 : 0.51 : 0.51 : 0.50 : 0.50 : 0.50 : 0.50 :
CS : 0.821: 0.745: 0.600: 0.391: 0.002: 0.003: 0.002: 0.391: 0.600: 0.745: 0.821:
SC : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 :
CS : 0.059: 0.053: 0.043: 0.028: : : : 0.028: 0.043: 0.053: 0.059:
SC : 6009 : 6009 : 6009 : 6009 : : : : 6009 : 6009 : 6009 : 6009 :
CS : 0.023: 0.021: 0.017: 0.011: : : : 0.011: 0.017: 0.021: 0.023:
SC : 6001 : 6001 : 6001 : 6001 : : : : 6001 : 6001 : 6001 : 6001 :
y= -50 : Y- line 8 Cmax= 0.919 MAC share (x= -150.0; wind direction = 68)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.919: 0.856: 0.738: 0.570: 0.400: 0.323: 0.400: 0.570: 0.738: 0.856: 0.919:
OPP: 68 : 63 : 56 : 45 : 27 : 0 : 333 : 315 : 304 : 297 : 292 :
Uоп: 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 :
CS : 0.834: 0.776: 0.668: 0.515: 0.360: 0.290: 0.360: 0.515: 0.668: 0.776: 0.834:

SC : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 :
CS : 0.060: 0.055: 0.048: 0.037: 0.026: 0.021: 0.026: 0.037: 0.048: 0.055: 0.060:
SC : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 :
CS : 0.023: 0.022: 0.019: 0.014: 0.010: 0.008: 0.010: 0.014: 0.019: 0.022: 0.023:
SC : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 :
y= -100 : Y- line 9 Cmax= 0.923 MAC share (x= 350.0; wind direction =301)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.923: 0.895: 0.824: 0.723: 0.627: 0.587: 0.627: 0.723: 0.824: 0.895: 0.923:
OPP: 59 : 53 : 45 : 34 : 18 : 0 : 342 : 326 : 315 : 307 : 301 :
Uоп: 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 :
CS : 0.838: 0.812: 0.747: 0.655: 0.567: 0.530: 0.567: 0.655: 0.747: 0.812: 0.838:
SC : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 :
CS : 0.060: 0.058: 0.053: 0.047: 0.041: 0.038: 0.041: 0.047: 0.053: 0.058: 0.060:
SC : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 :
CS : 0.023: 0.023: 0.021: 0.018: 0.016: 0.015: 0.016: 0.018: 0.021: 0.023: 0.023:
SC : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 :
y= -150 : Y- line 10 Cmax= 0.919 MAC share (x= -150.0; wind direction = 51)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.919: 0.916: 0.890: 0.841: 0.795: 0.776: 0.795: 0.841: 0.890: 0.916: 0.919:
OPP: 51 : 45 : 37 : 26 : 14 : 0 : 346 : 334 : 323 : 315 : 309 :
Uоп: 0.51 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.51 :
CS : 0.835: 0.831: 0.808: 0.763: 0.720: 0.703: 0.720: 0.763: 0.808: 0.831: 0.835:
SC : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 :
CS : 0.060: 0.059: 0.058: 0.054: 0.051: 0.050: 0.051: 0.054: 0.058: 0.059: 0.060:
SC : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 :
CS : 0.023: 0.023: 0.022: 0.021: 0.020: 0.020: 0.020: 0.021: 0.022: 0.023: 0.023:
SC : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 :
y= -200 : Y- line 11 Cmax= 0.915 MAC share (x= 300.0; wind direction =322)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.904: 0.915: 0.913: 0.900: 0.890: 0.884: 0.890: 0.900: 0.913: 0.915: 0.904:
OPP: 45 : 38 : 31 : 22 : 11 : 0 : 349 : 338 : 329 : 322 : 315 :
Uоп: 0.53 : 0.51 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.51 : 0.53 :
CS : 0.821: 0.831: 0.828: 0.817: 0.807: 0.802: 0.807: 0.817: 0.828: 0.831: 0.821:
SC : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 :
CS : 0.059: 0.059: 0.059: 0.058: 0.058: 0.057: 0.058: 0.058: 0.059: 0.059: 0.059:
SC : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 :
CS : 0.023: 0.023: 0.023: 0.023: 0.022: 0.022: 0.022: 0.023: 0.023: 0.023: 0.023:
SC : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 :
Calculation results at the maximum point of UPARE ERA v2.0 Point
coordinates: X = 350.0 m Y = 200.0 m
At height: Z = 2.0 m
Maximum total concentration | Cs = 0.92341 share of MAC |
Achieved in a dangerous direction of 239 degrees.
and wind speed 0.50 m / s
Total sources: 7. In the table, depositors with no more than 95% of the deposit are ordered
___ _ _ _ _ _ _ _ __ SOURCE CONTRIBUTIONS _____
Number	Code	Type	Emission	Contribution	Contribution in%	Sum. %	Influence coefficient
----	<Об-П>-<Ис>	---	---M-(Mq)--	-C[доли ПДК]	--------	-------	---- b=C/M ---
1	000301 6008	П	100.3330	0.837983	90.7	90.7	0.008352013
2	000301 6009	П	7.1667	0.059856	6.5	97.2	0.008351983
In total = 0.897838 97.2
The total contribution of the rest = 0.025569 2.8
5. Total concentrations at the mesh point.
UPARE ERA v2.0
City: 538 Tyulkubas region.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent- border of RU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 11.06.2014 15:23
Summation group: __ 41 = 0337 Carbon oxide (594)
2908 Inorganic dust: 70-20% silicon dioxide (sham
Calculation ordered at a height of 2 meters.
_____Parameters_of_calculating_rectangle_No 99___
| Center coordinates: X = 100 m; Y = 50 m |
| Length and width: L = 500 m; B = 500 m |
| Grid step (dX = dY): D = 50 m |
(The ^ symbol means the presence of a source near the calculated node)
1 2 3 4 5 6 7 8 9 10 11
*--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|----|
1-| 0.904 0.915 0.913 0.900 0.890 0.884 0.890 0.900 0.913 0.915 0.904 |- 1
2-| 0.919 0.916 0.890 0.841 0.795 0.776 0.795 0.841 0.890 0.916 0.919 |- 2
3-| 0.923 0.895 0.824 0.723 0.627 0.587 0.627 0.723 0.824 0.895 0.923 |- 3
4-| 0.919 0.856 0.738 0.570 0.400 0.323 0.400 0.570 0.738 0.856 0.919 |- 4
5-| 0.906 0.822 0.663 0.434 0.002 0.003 0.002 0.434 0.663 0.822 0.906 |- 5
6-C 0.901 0.808 0.634 0.382 0.001 0.001 0.001 0.382 0.634 0.808 0.901 C- 6
7-| 0.906 0.822 0.663 0.434 0.003 0.003 0.003 0.434 0.663 0.822 0.906 |- 7
8-| 0.919 0.856 0.738 0.570 0.400 0.323 0.400 0.570 0.738 0.856 0.919 |- 8
9-| 0.923 0.895 0.824 0.723 0.627 0.587 0.627 0.723 0.824 0.895 0.923 |- 9
10-| 0.919 0.916 0.890 0.841 0.795 0.776 0.795 0.841 0.890 0.916 0.919 |-10
11-| 0.904 0.915 0.913 0.900 0.890 0.884 0.890 0.900 0.913 0.915 0.904 |-11
|--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|----|

1 2 3 4 5 6 7 8 9 10 11
Overall along the calculated rectangle:
Dimensionless max. concentration ---> Cm = 0.92341
Achieved at the point with coordinates: Xm = 350.0m
(X-column 11, Y-line 3) Ym = 200.0 m
At a height of Z = 2.0 m
With a dangerous wind direction: 239 degrees and
"dangerous" wind speed: 0.50 m / s
9. The results of the calculation along the border of the sanctuary (for the calculated rectangle 099).
UPARE ERA v2.0
City: 538 Tyulkubas region.
Object: 0003 "Khorgos-Almaty-Taraz-Shymkent- border of RU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 11.06.2014 15:23
Summation group: __ 41 = 0337 Carbon oxide (594)
2908 Inorganic dust: 70-20% silicon dioxide
Calculation ordered at a height of 2 meters.
_____ _ Explanation of Designation ___ _ _
| Qc - total concentration [MAC share] |
| Zop -height, where the maximum is reached [m] |
| OPP is a dangerous direction. wind [ang. deg.] |
| Uop - dangerous wind speed [m / s] |
| Bu - the contribution of the SOURCE to Qc [g / m2 per
year] |
| Ku - source code for the top line Vi |
| -If the calculation is for summation, then concentr. in mg / m3 is not printed |
| -If the line Cmax = <0.05 MPC, then Fop, Uop, Vi, Ki are not printed |
y= -20: -19: -16: -11: -5: 3: 11: 21: 30: 70: 79: 89: 97: 105: 111:
x= 60: 50: 40: 32: 24: 18: 14: 11: 10: 10: 11: 14: 18: 24: 32:
Qc : 0.008: 0.004: 0.004: 0.307: 0.327: 0.337: 0.341: 0.341: 0.336: 0.336: 0.341: 0.341: 0.337: 0.327: 0.307:
OPP: 337 : 341 : 348 : 50 : 55 : 61 : 66 : 73 : 78 : 102 : 107 : 114 : 119 : 125 : 130 :
Uop: 0.51 : 0.51 : 0.51 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 :
CS : 0.007: 0.004: 0.003: 0.276: 0.294: 0.303: 0.306: 0.306: 0.302: 0.302: 0.306: 0.306: 0.303: 0.294: 0.276:
SC : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 :
CS : 0.001: : : 0.020: 0.021: 0.022: 0.022: 0.022: 0.022: 0.022: 0.022: 0.022: 0.022: 0.021: 0.020:
SC : 6009 : : : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 :
CS : : : : 0.008: 0.008: 0.008: 0.009: 0.008: 0.008: 0.008: 0.008: 0.009: 0.008: 0.008: 0.008:
SC : : : : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 :
y= 116: 119: 120: 120: 120: 120: 120: 119: 116: 111: 105: 97: 89: 79: 70:
x= 40: 50: 60: 60: 100: 140: 140: 150: 160: 168: 176: 182: 186: 189: 190:
Qc : 0.005: 0.004: 0.007: 0.007: 0.004: 0.007: 0.007: 0.004: 0.005: 0.307: 0.327: 0.337: 0.341: 0.341: 0.336:
OPP: 191 : 199 : 204 : 204 : 121 : 156 : 156 : 161 : 169 : 230 : 235 : 241 : 246 : 253 : 258 :
Uop: 0.51 : 0.51 : 0.51 : 0.51 : 0.51 : 0.51 : 0.51 : 0.51 : 0.51 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 :
CS : 0.004: 0.004: 0.006: 0.006: 0.003: 0.006: 0.006: 0.004: 0.004: 0.276: 0.294: 0.303: 0.306: 0.306: 0.302:
SC : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 :
CS : : : : : : : : : : 0.020: 0.021: 0.022: 0.022: 0.022: 0.022:
SC : : : : : : : : : : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 :
CS : : : : : : : : : : 0.008: 0.008: 0.008: 0.009: 0.008: 0.008:
SC : : : : : : : : : : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 :
y= 30: 21: 11: 3: -5: -11: -16: -19: -20: -20: -20:
x= 190: 189: 186: 182: 176: 168: 160: 150: 140: 100: 60:
Qc : 0.336: 0.341: 0.341: 0.337: 0.327: 0.307: 0.004: 0.004: 0.008: 0.004: 0.008:
OPP: 282 : 287 : 294 : 299 : 305 : 310 : 12 : 19 : 23 : 59 : 337 :
Uop: 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.50 : 0.51 : 0.51 : 0.51 : 0.51 : 0.51 :
CS : 0.302: 0.306: 0.306: 0.303: 0.294: 0.276: 0.003: 0.004: 0.007: 0.003: 0.007:
SC : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 : 6008 :
CS : 0.022: 0.022: 0.022: 0.022: 0.021: 0.020: : : 0.001: : 0.001:
SC : 6009 : 6009 : 6009 : 6009 : 6009 : 6009 : : : 6009 : : 6009 :
CS : 0.008: 0.008: 0.009: 0.008: 0.008: 0.008: : : : : :
SC : 6001 : 6001 : 6001 : 6001 : 6001 : 6001 : : : : : :
Calculation results at the point of maximum UPARE ERA v2.0
Point coordinates: X = 11.0 m Y = 79.0 m
At height: Z = 2.0 m
Maximum total concentration | Cs = 0.34113 share of MAC |
Achieved in a dangerous direction of 107 degrees.
and wind speed 0.50 m / s
Total sources: 7. In the table, depositors with no more than 95% of the deposit are ordered
___ _ _ _ _ _ _ _ _ __ SOURCE CONTRIBUTIONS _____
No	Code	Type	Emission	Contribution	Contribution in%	Sum. %	Influence coefficient
----	<Об-П>-<Ис>	---	---M-(Mq)--	-C[доли ПДК]	--------	-------	---- b=C/M ---
1	000301 6008	П	100.3330	0.306379	89.8	89.8	0.003053626
2	000301 6009	П	7.1667	0.021884	6.4	96.2	0.003053615
In total = 0.328264 96.2
The total contribution of the rest = 0.012863 3.8

Город : 538 Тюлькубасский район
Объект : 0003 Хоргос-Алматы-Тараз-Шымкент-гр.РУ Вар.№ 1
Примесь 0616 Диметилбензол (смесь о-, м-, п- изомеров) (203)
ПК ЭРА v2.0, Модель: ОНД-86

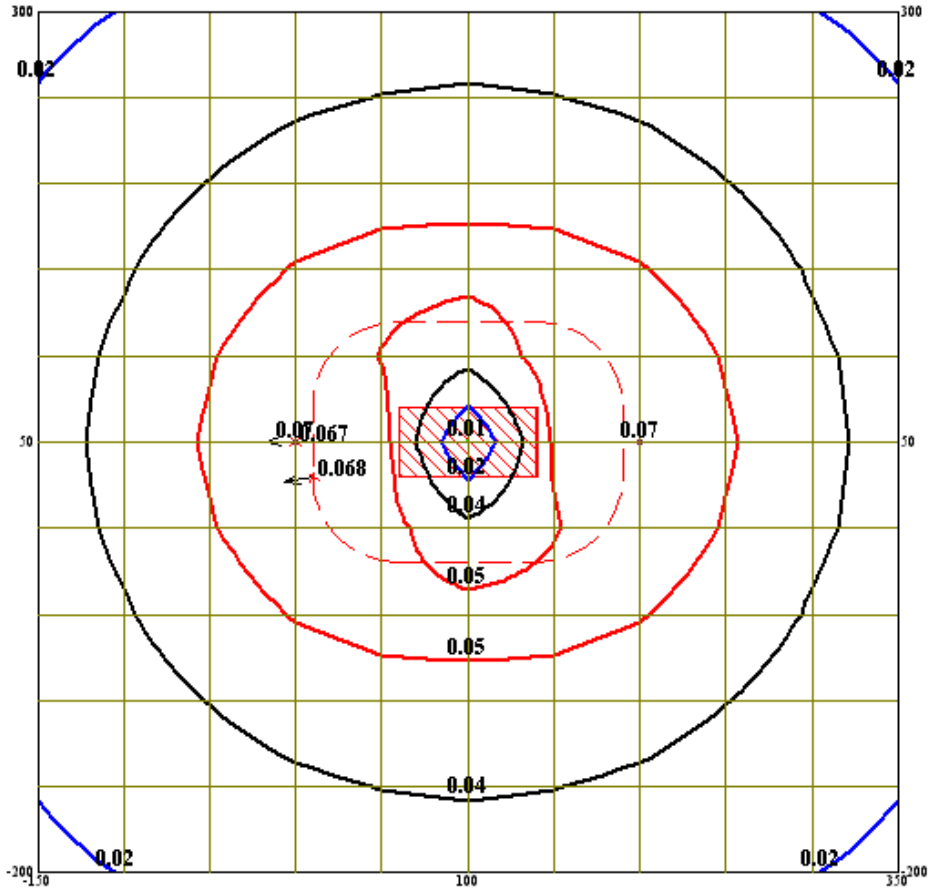


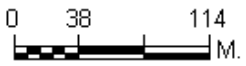


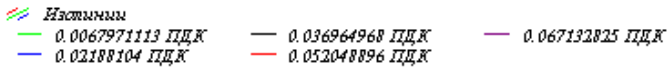
Изолинии
0.042833185 ПДК
0.19428569 ПДК
0.3457382 ПДК
0.49719071 ПДК
0.64864321 ПДК

Макс концентрация 0.649 ПДК достигается в точке x= 200 y= 50
При опасном направлении 270° и опасной скорости ветра 0.54 м/с на высоте 2 м
Расчетный прямоугольник № 99, ширина 500 м, высота 500 м,
*шаг расчетной сетки 50 м, количество расчетных точек 11*11*
Расчёт на существующее положение.

Город : 538 Тюлькубасский район
Объект : 0003 Хоргос-Алматы-Тараз-Шымкент-гр.РУ Вар.№ 1
Примесь 2752 Уайт-спирит (1316*)
ПК ЭРА v2.0, Модель: ОНД-86

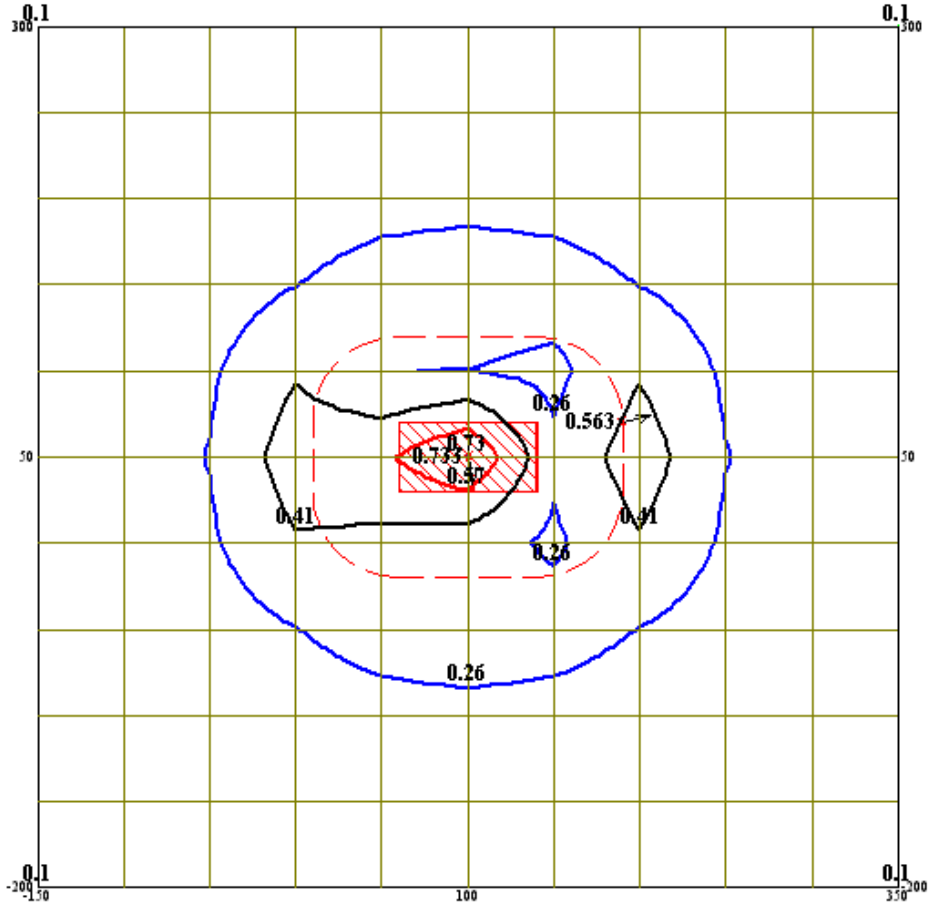


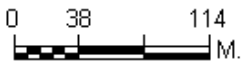


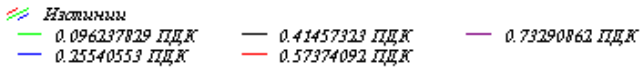


Макс концентрация 0.067 ПДК достигается в точке x= 0 y= 50
При опасном направлении 90° и опасной скорости ветра 0.54 м/с на высоте 2 м
Расчетный прямоугольник № 99, ширина 500 м, высота 500 м,
*шаг расчетной сетки 50 м, количество расчетных точек 11*11*
Расчёт на существующее положение.

Город : 538 Тюлькубасский район
Объект : 0003 Хоргос-Алматы-Тараз-Шымкент-гр.РУ Вар.№ 1
Примесь 2754 Углеводороды предельные С12-19 /в пересчете на С/
ПК ЭРА v2.0, Модель: ОНД-86

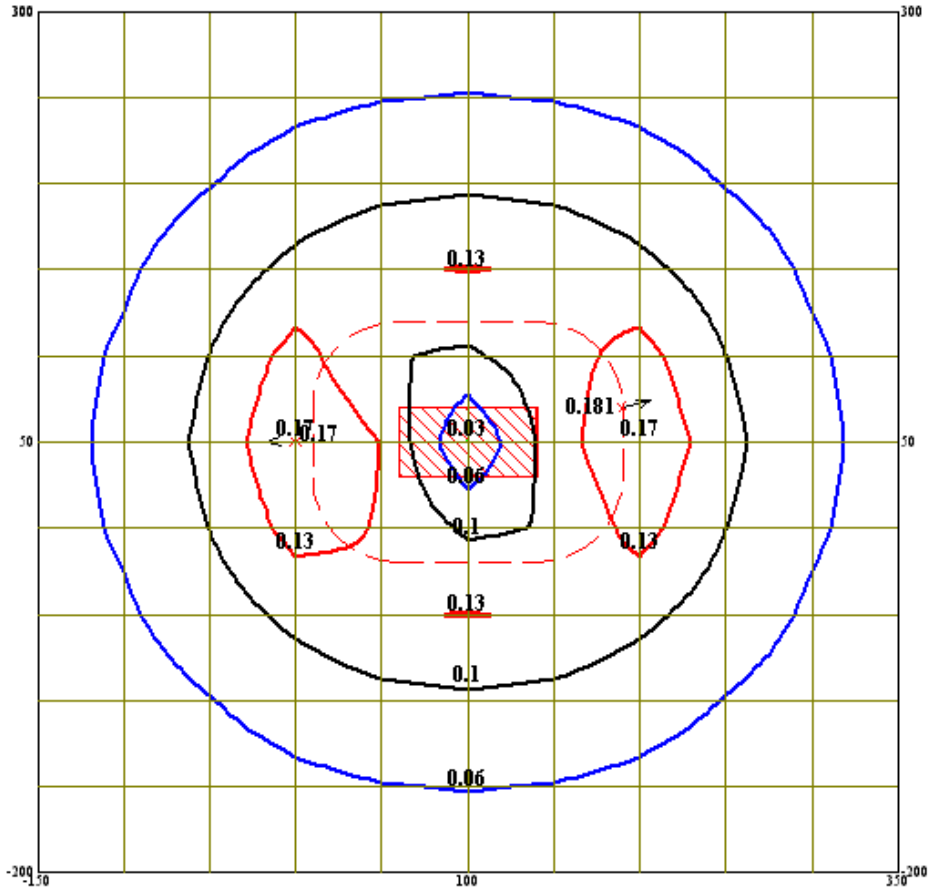


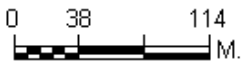




Макс концентрация 0.733 ПДК достигается в точке x= 100 y= 50
При опасном направлении 350° и опасной скорости ветра 12 м/с на высоте 2 м
Расчетный прямоугольник № 99, ширина 500 м, высота 500 м,
*шаг расчетной сетки 50 м, количество расчетных точек 11*11*
Расчёт на существующее положение.

Город : 538 Тюлькубасский район
Объект : 0003 Хоргос-Алматы-Тараз-Шымкент-гр.РУ Вар.№ 1
Примесь 2902 Взвешенные вещества
ПК ЭРА v2.0, Модель: ОНД-86

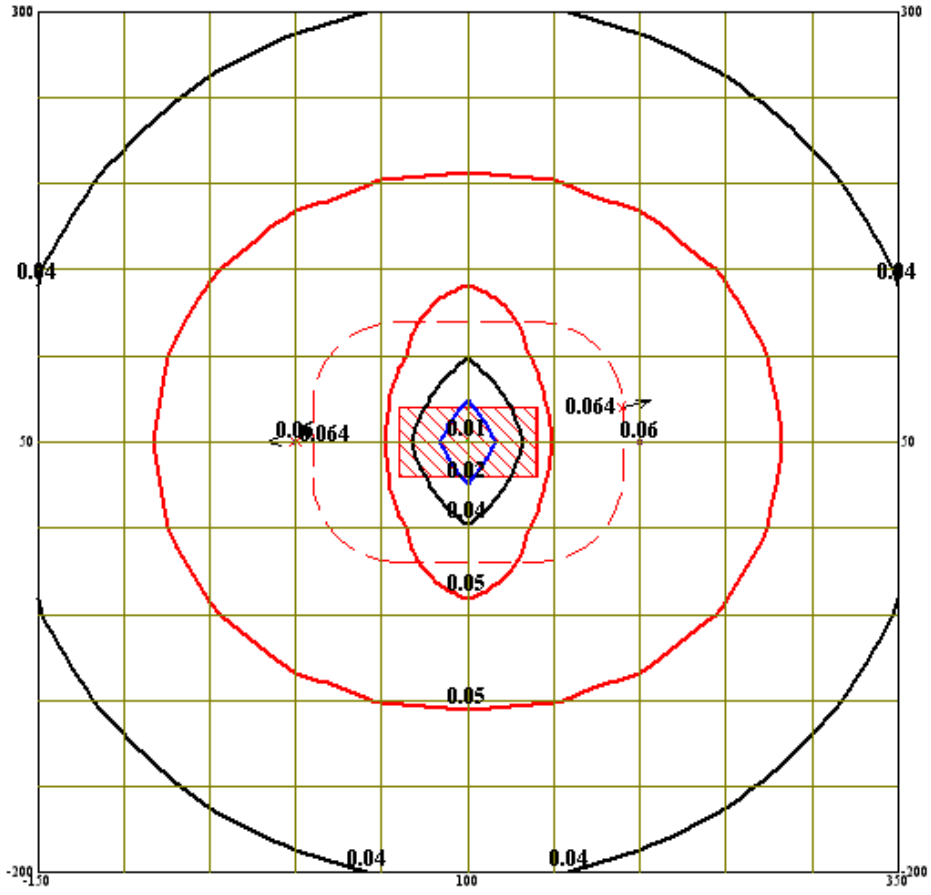




Изолинии
0.026935427 ПДК
0.062783859 ПДК
0.098632291 ПДК
0.13448072 ПДК
0.17032916 ПДК

Макс концентрация 0.17 ПДК достигается в точке x= 0 y= 50
При опасном направлении 90° и опасной скорости ветра 0.63 м/с на высоте 2 м
Расчетный прямоугольник № 99, ширина 500 м, высота 500 м,
*шаг расчетной сетки 50 м, количество расчетных точек 11*11*
Расчёт на существующее положение.

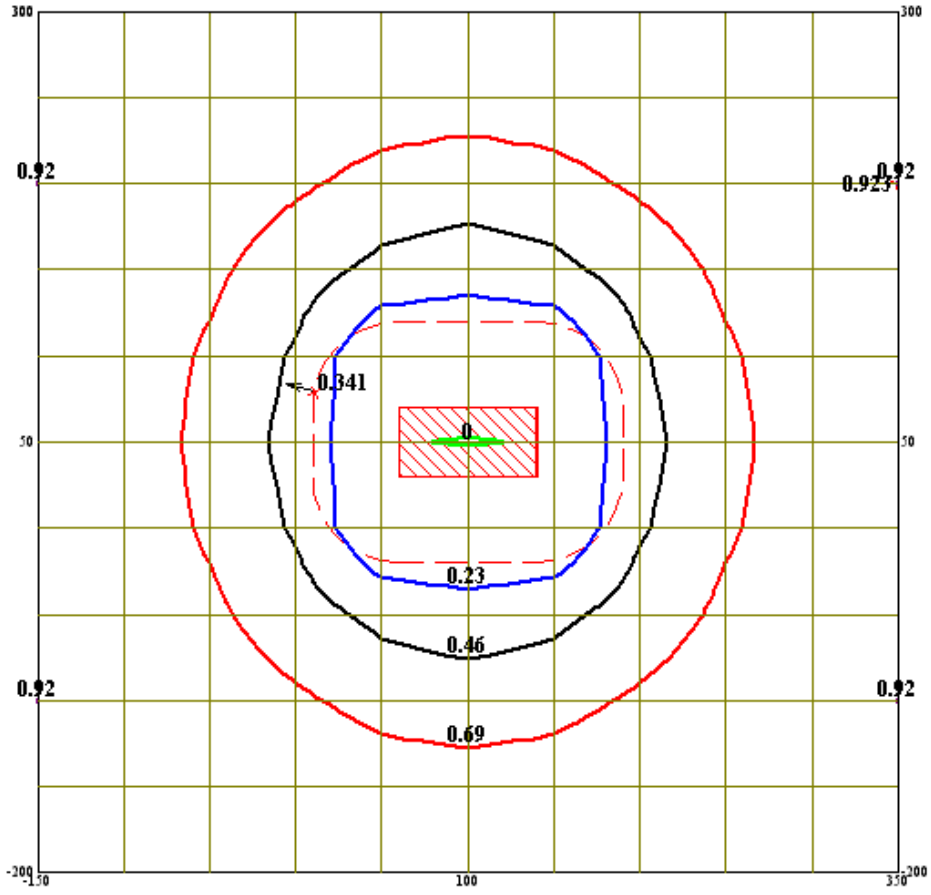
Город : 538 Тюлькубасский район
Объект : 0003 Хоргос-Алматы-Тараз-Шымкент-гр.РУ Вар.№ 1
Группа суммации __31 0301+0330
ПК ЭРА v2.0, Модель: ОНД-86

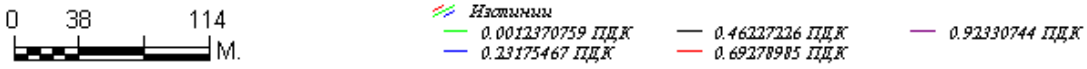


Изолинии
0.010552407 ПДК
0.02377041 ПДК
0.036988412 ПДК
0.050206415 ПДК
0.063424418 ПДК

Макс концентрация 0.064 ПДК достигается в точке x= 0 y= 50
При опасном направлении 90° и опасной скорости ветра 0.52 м/с на высоте 2 м
Расчетный прямоугольник № 99, ширина 500 м, высота 500 м,
*шаг расчетной сетки 50 м, количество расчетных точек 11*11*
Расчёт на существующее положение.

Город : 538 Тюлькубасский район
Объект : 0003 Хоргос-Алматы-Тараз-Шымкент-гр.РУ Вар.№ 1
Группа суммации __41 0337+2908
ПК ЭРА v2.0, Модель: ОНД-86





Макс концентрация 0.923 ПДК достигается в точке x= 350 y= 200
При опасном направлении 239° и опасной скорости ветра 0.5 м/с на высоте 2 м
Расчетный прямоугольник № 99, шириной 500 м, высота 500 м,
*шаг расчетной сетки 50 м, количество расчетных точек 11*11*
Расчёт на существующее положение.

CALCULATION DURING CONSTRUCTION

CALCULATION OF WASTE FORMATION

City N 538, Tyulkubas region
Object N 0001, Option 1 "Khorgos-Almaty-Taraz-Shymkent-border of RU"
Site: 001,
Production: 001, During construction
Shop, plot: 006, welding
References:
1. Appendix №16 to the order of the Ministry of Environment of the Republic of Kazakhstan dated 18.04.2008. №100p. **Waste according to MK: GA090 cinders of welding electrodes Waste according to EK: 200309 Mixed metals (volume, separately accumulated pieces, parts)**
Electrode cinders are formed when cutting scrap metal on an open site. Waste generation rates are calculated by the formula:
N = M x a;
Where: M - actual consumption of electrodes, t / year;
a is the balance of the electrodes, a = 0.015 by weight of the electrode.
The annual consumption of electrodes is 0.33 t / year.
N=0.33 x 0,015 = 0,00495 t/year of waste electrodes Summary table:

Code	Waste	No., t/year
GA090	Cinders of welding electrodes	0.00495

CALCULATION OF WASTE FORMATION

City N 538, Tyulkubas region
Object N 0001, Option 1 "Khorgos-Almaty-Taraz-Shymkent-border of RU"
Site: 1, During construction
Production: 3, waste
Shop, plot: 4, Paint
References:
1. Methodology of development of projects of standards of maximum placement of production and consumption wastes. Calculation of the recommended standards of waste generation. Item 2.35. Tin cans from under paint. (Appendix №16 to the order of the Ministry of Environment of the Republic of Kazakhstan dated 18.04.2008 № 100-n).
The rate of waste generation is determined by the formula:
N = ∑Mi x n + ∑Mki x αi, t / h
where Mi is the mass of the i-th type of container, t / year;
n is the number of types of containers (200 pcs);
Mki - mass of paint in the i-th container, t / year (1.06 t / year);
αi is the content of paint residues in the i-th container in fractions of Mki (0.01-0.05).
N = 0.00013 x 200 + 1.06 x 0.01 = 0.0366 t / year.
Summary table:

Code	Waste	No., t/year
AD070	Tin cans of paint	0,0366

CALCULATION OF WASTE FORMATION

City N 538, Tyulkubas region
Object N 0001, Option 1 "Khorgos-Almaty-Taraz-Shymkent-border of RU"
Site: 1, During construction
Production: 3, waste
Shop, plot: 5, solid waste from builders
1. Methodology for the development of draft standards for the maximum disposal of industrial waste and consumption. Calculation of recommended waste generation standards. (Appendix №16 to the

order of the Ministry of Environment of the Republic of Kazakhstan dated 18.04.2008 № 100-n). p.2.44.
Standards for the accumulation of solid waste (MSW) 0.075 t / year. Number of workers - 70 people.
The amount of waste M = 0.075 x 70 * 450/365 = 6.47 t / year.
Summary table:

Norms	***Waste***	**No., t/year**
GO060	Municipal solid waste (municipal)	6.47

EMISSION DURING OPERATION
CALCULATION OF GROSS EMISSIONS

City N 538, Tyulkubas region
Object N 0002, Option 1 “Khorgos-Almaty-Taraz-Shymkent-border of RU”
Source of pollution N 0001 - 00014, ventilation
Source of selection N 001, vent. trumpet №1- №14 (motor transport)
References:
1. Methodology for calculating emissions of pollutants from motor transport enterprises (Section 3) Annex №3 to the Order of the Minister of Environmental Protection of the Republic of Kazakhstan dated 18.04.2008 №100-n
2. Methodology for calculating pollutant emissions from road construction industry enterprises (Section 4) Appendix №12 to the Order of the Minister of Environmental Protection of the Republic of Kazakhstan dated 18.04.2008
№100-n
CALCULATION OF POLLUTANTS EMISSIONS FROM CAR PARKS
Parking: Settlement scheme 1. Detached, with direct access to the public road
Storage conditions: Open or closed unheated parking without means of heating

List of vehicles

Car brand	*Fuel brand*	*Total*	*Max*
Carburetor cars with a working volume up to 1.2 l (up to 94)			
VAZ-2101	Unleaded gasoline	10	10
Extra small carburetor buses up to 5.5 m long (CIS)			
GAZ-3221 "Gazelle"	Unleaded gasoline	1	1
Buses carburetor small overall length from 6 to 7.5 m (CIS)			
PAZ-3201	Unleaded gasoline	2	2
Large diesel buses with an overall length from 10.5 to 12 m (foreign cars)			
Ikarus-260	Diesel fuel	2	2
Diesel trucks over 5 to 8 tons (CIS)			
KazAZ-5320	Diesel fuel	2	2
MAZ-500	Diesel fuel	2	2
TOTAL in the group:	4	4	
Diesel trucks over 16 t (CIS)			
KrAZ-6443	Diesel fuel	1	1
TOTAL: 20			

Calculation period: Transition period (t> -5 and t <5)

Air temperature for the calculation period, deg. C, T = 13

Car type: Carburetor cars with a working volume up to 1.2 l (up to 94)

Fuel type: Unleaded petrol Number of working days per year, days , DN = 365

The largest number of cars leaving the parking lot within an hour, NK1 = 10 Total.

the number of cars in this group for the calculation period, pcs. , NK = 10 Output ratio, A = 1
Environmental control is not carried out
The car is equipped with a catalytic converter
Neutralizer type: 2-component with additional air supply (oxidative type) Engine warm-up time, min (Table 3.20), TPR = 3
Engine idling time, min, TX = 1
Mileage of the car from the nearest parking place to the exit to the exit of the parking lot, km, LB1 = 0.1

Mileage of the car from the farthest to the exit of the parking place to the exit of the parking lot, km, LD1 = 0.1
Mileage from the nearest parking lot to the entrance to the parking lot, km, LB2 = 0.1
Mileage of the car from the farthest from the entrance of the parking place to the entrance to the parking lot, km, LD2 = 0.5
Total mileage on the territory or premises of the parking lot (departure), km (3.5), L1 = (LB1 + LD1) / 2 = (0.1 + 0.1) / 2 = 0.1
Total mileage on the territory or premises of the parking lot (entrance), km (3.6), L2 = (LB2 + LD2) / 2 = (0.1 + 0.5) / 2 = 0.3

Impurity: 0337 Carbon monoxide (594)

Emission reduction factor when using a catalytic converter for specific emissions during heating (Table 3.1), SV1 = 1
Emission reduction factor when using a catalytic converter for mileage emissions, (Table 3.2), SV2 = 0.2
Emission reduction factor when using a catalytic converter for idle emissions, (Table 3.3), SV3 = 0.2
Specific emission of SV when warming up the engine, g / min, (table 3.1), MPR = 4.59
Running emissions of SV, g / km, (tab.3.2), ML = 3.114 Specific emissions of SV when working at idle, g / min, (tab.3.3), MXX = 0.5
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 4.59 * 3 + 3.114 * 0.1 + 0.5 * 1 = 14.58
Emission of ZV at entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 3.114 * 0.3 + 0.5 * 1 = 1.434
Gross emission of SV, t / year (3.7), M = A * (M1 + M2) * NK * DN * 10 ^ (-6) = 1 * (14.58 + 1.434) * 10 * 365 * 10 ^ (-6) = 0.0585
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 14.58 * 10/3600 = 0.0405

Impurity: 2704 Gasoline (petroleum, low sulfur) / in terms of carbon / (60)

Emission reduction factor when using a catalytic converter for specific emissions during heating (Table 3.1), SV1 = 1
Emission reduction factor when using a catalytic converter for mileage emissions (Table 3.2), SV2 = 0.3
Emission reduction factor when using a catalytic converter for idle emissions, (Table 3.3), SV3 = 0.3
Specific emission of SV when warming up the engine, g / min, (table 3.1), MPR = 0.36
Running emissions of SV, g / km, (tab.3.2), ML = 0.513 Specific emissions of SV when working at idle, g / min, (tab.3.3), MXX = 0.06
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.36 * 3 + 0.513 * 0.1 + 0.06 * 1 = 1.191
Emission of ZV at entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.513 * 0.3 + 0.06 * 1 = 0.214
Gross emission of SV, t / year (3.7), M = A * (M1 + M2) * NK * DN * 10 ^ (-6) = 1 * (1.191 + 0.214) * 10 * 365 * 10 ^ (-6) = 0.00513
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 1.191 * 10/3600 = 0.00331
CALCULATION of nitrogen oxide emissions:
Emission reduction factor when using a catalytic converter for specific emissions during heating (Table 3.1), SV1 = 1
Emission reduction factor when using a catalytic converter for mileage emissions (Table 3.2), SV2 = 1
Emission reduction factor when using a catalytic converter for idle emissions, (Table 3.3), SV3 = 1
Specific emission of SV when warming up the engine, g / min, (table 3.1), MPR = 0.03
Running emissions of SV, g / km, (tab.3.2), ML = 0.23 Specific emissions of SV when working at idle, g / min, (tab.3.3), MXX = 0.02
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.03 * 3 + 0.23 * 0.1 + 0.02 * 1 = 0.133
Emission of ZV at entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.23 * 0.3 + 0.02 * 1 = 0.089
Gross emission of SV, t / year (3.7), M = A * (M1 + M2) * NK * DN * 10 ^ (-6) = 1 * (0.133 + 0.089) * 10 * 365 * 10 ^ (-6) = 0.00081
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 0.133 * 10/3600 = 0.0003694
Taking into account the transformation of nitrogen oxides we obtain:

Impurity: 0301 Nitrogen (IV) dioxide (4)

Gross emission, t / year, _M_ = 0.8 * M = 0.8 * 0.00081 = 0.000648 Maximum single emission, g / s, GS = 0.8 * G = 0.8 * 0.0003694 = 0.0002955

Impurity: 0304 Nitrogen (II) oxide (6)

Gross emission, t / year, _M_ = 0.13 * M = 0.13 * 0.00081 = 0.0001053 Maximum single emission, g / s, GS = 0.13 * G = 0.13 * 0.0003694 = 0.000048

Impurity: 0330 Sulfur dioxide (526)

Specific emission of SV when warming up the engine, g / min, (table 3.1), MPR = 0.009
Running emissions of SV, g / km, (tab.3.2), ML = 0.054 Specific emissions of SV when working at idle, g / min, (tab.3.3), MXX = 0.008
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.009 * 3 + 0.054 * 0.1 + 0.008 * 1 = 0.0404
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.054 * 0.3 + 0.008 * 1 = 0.0242
Gross emission of SV, t / year (3.7), M = A * (M1 + M2) * NK * DN * 10 ^ (-6) = 1 * (0.0404 + 0.0242) * 10 * 365 * 10 ^ (-6) = 0.000236
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 0.0404 * 10/3600 = 0.0001122
Car type: Small carburetor buses with an overall length of 6 to 7.5 m (CIS)

Fuel type: Unleaded petrol Number of working days per year, days , DN = 365
The largest number of cars leaving the parking lot within an hour, NK1 = 2 Total. the number of cars in this group

for the calculation period, pcs. , NK = 2 Output ratio, A = 1
Environmental control is not carried out
The car is equipped with a catalytic converter
Neutralizer type: 2-component with additional air supply (oxidizing type) Route buses with periodic heating
Additional warm-up time in the parking lot, min, TDOPPR = 30
Engine warm-up time, min (Table 3.20), TPR = 4
Engine idling time, min, TX = 1
Mileage of the car from the nearest to the exit of the parking place before leaving the parking lot, km, LB1 = 0.1
Mileage of the car from the farthest to the exit of the parking place before leaving the parking lot, km, LD1 = 0.1
Mileage from the nearest parking lot to the entrance to the parking lot, km, LB2 = 0.1
Mileage of the car from the farthest from the entrance of the parking place to the entrance to the parking lot, km, LD2 = 0.5
Total mileage on the territory or premises of the parking lot (departure), km (3.5), L1 = (LB1 + LD1) / 2 = (0.1 + 0.1) / 2 = 0.1
Total mileage on the territory or premises of the parking lot (entrance), km (3.6), L2 = (LB2 + LD2) / 2 = (0.1 + 0.5) / 2 = 0.3

Impurity: 0337 Carbon monoxide (594)

Emission reduction factor when using a catalytic converter for specific emissions during heating (table.3.13), SV1 = 1
Emission reduction factor when using a catalytic converter for mileage emissions (Table 3.14), SV2 = 0.2
Emission reduction factor when using a catalytic converter for idle emissions (Table 3.15), SV3 = 0

Specific emission of SV when warming up the engine, g / min, (table.3.13), MPR = 25.3

Running emissions of SV, g / km, (tab.3.14), ML = 6.71 Specific emissions of SV when working at idle, g / min, (tab.3.15), MXX = 2.04

Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 25.3 * 4 + 6.71 * 0.1 + 2.04 * 1 = 103.9

Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 6.71 * 0.3 + 2.04 * 1 = 4.05 Gross emissions of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (103.9 + 4.05) + 25.3 * 30) * 2 * 365 * 10 ^ (-6) = 0.633

Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 103.9 * 2/3600 = 0.0577

Impurity: 2704 Gasoline (petroleum, low sulfur) / in terms of carbon / (60

) Emission reduction factor when using a catalytic converter for specific emissions during heating (table.3.13), SV1 = 1

Emission reduction factor when using a catalytic converter for run-off emissions, (Table 3.14), SV2 = 0.3

Emission reduction factor when using a catalytic converter for idle emissions (Table 3.15), SV3 = 0.3

Specific emission of SV when warming up the engine, g / min, (table.3.13), MPR = 3.42

Running emissions of SV, g / km, (tab.3.14), ML = 1.863 Specific emissions of SV when working at idle, g / min, (tab.3.15), MXX = 0.51

Emission of ZV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 3.42 * 4 + 1.863 * 0.1 + 0.51 * 1 = 14.38

Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 1.863 * 0.3 + 0.51 * 1 = 1.069

Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (14.38 + 1.069) + 3.42 * 30) * 2 * 365 * 10 ^ (-6) = 0.0862

Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 14.38 * 2/3600 = 0.00799

CALCULATION of nitrogen oxide emissions:

Emission reduction factor when using a catalytic converter for specific emissions during heating (table.3.13), SV1 = 1

Emission reduction factor when using a catalytic converter for mileage emissions (Table 3.14), SV2 = 1

Emission reduction factor when using a catalytic converter for idle emissions (Table 3.15), SV3 = 1

Specific emission of SV when warming up the engine, g / min, (table.3.13), MPR = 0.3

Running emissions of SV, g / km, (tab.3.14), ML = 0.8 Specific emissions of SV when working at idle, g / min, (tab.3.15), MXX = 0.2

Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.3 * 4 + 0.8

* 0.1 + 0.2 * 1 = 1.48

Emission of SV at entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.8 * 0.3 + 0.2 * 1 = 0.44 Gross emission of SV, t / year (3.7), taking into account note 2 to tab.3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (1.48 + 0.44) + 0.3 * 30) * 2 * 365 * 10 ^ (-6)) = 0.00797

Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 1.48 * 2/3600 = 0.000822

Taking into account the transformation of nitrogen oxides we obtain:

Impurity: 0301 Nitrogen (IV) dioxide (4)

Gross emission, t / year, _M_ = 0.8 * M = 0.8 * 0.00797 = 0.00638 Maximum single emission, g / s, GS = 0.8 * G = 0.8 * 0.000822 = 0.000658

Impurity: 0304 Nitrogen (II) oxide (6)

Gross emission, t / year, _M_ = 0.13 * M = 0.13 * 0.00797 = 0.001036 Maximum single emission, g / s, GS = 0.13 * G = 0.13 * 0.000822 = 0.0001069

Impurity: 0330 Sulfur dioxide (526)

Specific emission of SV when warming up the engine, g / min, (table.3.13), MPR = 0.0225

Running emissions of SV, g / km, (tab.3.14), ML = 0.171 Specific emissions of SV when working at idle, g / min, (tab.3.15), MXX = 0.02

Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.0225 * 4 + 0.171 * 0.1 + 0.02 * 1 = 0.127

Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.171 * 0.3 + 0.02 * 1 = 0.0713

Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (0.127 + 0.0713) + 0.0225 * 30) * 2 * 365 * 10 ^ (-6) = 0.000638

Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 0.127 * 2/3600 = 0.0000706

Car type: Large diesel buses with an overall length of 10.5 to 12 m (foreign cars)

Fuel type: Diesel fuel
Number of working days per year, days , DN = 365
The largest number of cars leaving the parking lot within an hour, NK1 = 2 Total. the number of cars in this group for the calculation period, pcs. , NK = 2 Output ratio, A = 1
Environmental control is not carried out
Shuttle buses with periodic warm-up Additional warm-up time in the parking lot, min, TDOPPR = 30 Engine warm-up time, min (Table 3.20), TPR = 4
Engine idling time, min, TX = 1
Mileage of the car from the nearest to the exit of the parking place before leaving the parking lot, km, LB1 = 0.1
Mileage of the car from the farthest to the exit of the parking place before leaving the parking lot, km, LD1 = 0.1
Mileage from the nearest parking lot to the entrance to the parking lot, km, LB2 = 0.1
Mileage of the car from the farthest from the entrance of the parking place to the entrance to the parking lot, km, LD2 = 0.5
Total mileage on the territory or premises of the parking lot (departure), km (3.5), L1 = (LB1 + LD1) / 2 = (0.1 + 0.1) / 2 = 0.1
Total mileage on the territory or premises of the parking lot (entrance), km (3.6), L2 = (LB2 + LD2) / 2 = (0.1 + 0.5) / 2 = 0.3

Impurity: 0337 Carbon monoxide (594)

Specific emission of SV when warming up the engine, g / min, (table 3.16), MPR = 2.007
Running emissions of SV, g / km, (tab.3.17), ML = 5.31 Specific emissions of SV when working at idle, g / min, (tab.3.18), MXX = 0.93
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 2.007 * 4 + 5.31 * 0.1 + 0.93 * 1 = 9.49
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 5.31 * 0.3 + 0.93 * 1 = 2.523
Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (9.49 + 2.523) + 2.007 * 30) * 2 * 365 * 10 ^ (-6) = 0.0527
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 9.49 * 2/3600 = 0.00527

Impurity: 2732 Kerosene (660 *)

Specific emission of SV when warming up the engine, g / min, (table 3.16), MPR = 0.711
Running emissions of SV, g / km, (tab.3.17), ML = 0.72 Specific emissions of SV when working at idle, g / min, (tab.3.18), MXX = 0.47
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.711 * 4 + 0.72 * 0.1 + 0.47 * 1 = 3.386
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.72 * 0.3 + 0.47 * 1 = 0.686
Gross emissions of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (3.386 + 0.686) + 0.711 * 30) * 2 * 365 * 10 ^ (-6) = 0.01854
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 3.386 * 2/3600 = 0.00188

CALCULATION of nitrogen oxide emissions:
Specific emission of SV when warming up the engine, g / min, (table 3.16), MPR = 1.04
Running emissions of SV, g / km, (tab.3.17), ML = 3.4 Specific emissions of SV when working at idle, g / min, (tab.3.18), MXX = 0.63
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 1.04 * 4 + 3.4 * 0.1 + 0.63 * 1 = 5.13
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 3.4 * 0.3 + 0.63 * 1 = 1.65
Gross emissions of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (5.13 + 1.65) + 1.04 * 30) * 2 * 365 * 10 ^ (-6) = 0.0277
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 5.13 * 2/3600 = 0.00285
Taking into account the transformation of nitrogen oxides we obtain:
Impurity: 0301 Nitrogen (IV) dioxide (4)
Gross emission, t / year, _M_ = 0.8 * M = 0.8 * 0.0277 = 0.02216 Maximum single emission, g / s, GS = 0.8 * G = 0.8 * 0.00285 = 0.00228
Impurity: 0304 Nitrogen (II) oxide (6)
Gross emission, t / year, _M_ = 0.13 * M = 0.13 * 0.0277 = 0.0036 Maximum single emission, g / s, GS = 0.13 * G = 0.13 * 0.00285 = 0.0003705
Impurity: 0328 Carbon (593)
Specific emission of SV when warming up the engine, g / min, (table 3.16), MPR = 0.036
Running emissions of SV, g / km, (tab.3.17), ML = 0.27 Specific emissions of SV when working at idle, g / min, (tab.3.18), MXX = 0.02
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.036 * 4 + 0.27 * 0.1 + 0.02 * 1 = 0.191
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.27 * 0.3 + 0.02 * 1 = 0.101
Gross emissions of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (0.191 + 0.101) + 0.036 * 30) * 2 * 365 * 10 ^ (-6)) = 0.001002
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 0.191 * 2/3600 = 0.0001061
Impurity: 0330 Sulfur dioxide (526)
Specific emission of SV when warming up the engine, g / min, (table 3.16), MPR = 0.108
Running emissions of SV, g / km, (tab.3.17), ML = 0.531 Specific emissions of SV when working at idle, g / min, (tab.3.18), MXX = 0.1
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.108 * 4 + 0.531 * 0.1 + 0.1 * 1 = 0.585
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.531 * 0.3 + 0.1 * 1 = 0.2593
Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (0.585 + 0.2593) + 0.108 * 30) * 2 * 365 * 10 ^ (-6) = 0.00298
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 0.585 * 2/3600 = 0.000325

Car type: Extra small carburetor buses with an overall length of up to 5.5 m (CIS)

Fuel type: Unleaded petrol Number of working days per year, days , DN = 365
The largest number of cars leaving the parking lot within an hour, NK1 = 1 Total. the number of cars in this group for the calculation period, pcs. , NK = 1 Output ratio, A = 1
Environmental control is not carried out
The car is equipped with a catalytic converter
Neutralizer type: 2-component with additional air supply (oxidizing type) Route buses with periodic heating
Additional warm-up time in the parking lot, min, TDOPPR = 30
Engine warm-up time, min (Table 3.20), TPR = 4

Engine idling time, min, TX = 1
Mileage of the car from the nearest to the exit of the parking place before leaving the parking lot, km, LB1 = 0.1
Mileage of the car from the farthest to the exit of the parking place before leaving the parking lot, km, LD1 = 0.1
Mileage from the nearest parking lot to the entrance to the parking lot, km, LB2 = 0.1
Mileage of the car from the farthest from the entrance of the parking place to the entrance to the parking lot, km, LD2 = 0.5
Total mileage on the territory or premises of the parking lot (departure), km (3.5), L1 = (LB1 + LD1) / 2 = (0.1 + 0.1) / 2 = 0.1
Total mileage on the territory or premises of the parking lot (entrance), km (3.6), L2 = (LB2 + LD2) / 2 = (0.1 + 0.5) / 2 = 0.3

Impurity: 0337 Carbon monoxide (594)

Emission reduction factor when using a catalytic converter for specific emissions during heating (table.3.13), SV1 = 1
Emission reduction factor when using a catalytic converter for mileage emissions (Table 3.14), SV2 = 0.2
Emission reduction factor when using a catalytic converter for idle emissions (Table 3.15), SV3 = 0.2
Specific emission of SV when warming up the engine, g / min, (table.3.13), MPR = 8.19
Running emissions of ZV, g / km, (tab.3.14), ML = 5.13 Specific emissions of ZV at idling, g / min, (tab.3.15), MXX = 0.9
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 8.19 * 4 + 5.13 * 0.1 + 0.9 * 1 = 34.2
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 5.13 * 0.3 + 0.9 * 1 = 2.44
Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (34.2 + 2.44) + 8.19 * 30) * 1 * 365 * 10 ^ (-6)) = 0.103
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 34.2 * 1/3600 = 0.0095

Impurity: 2704 Gasoline (petroleum, low sulfur) / in terms of carbon / (60)

Emission reduction factor when using a catalytic converter for specific emissions during heating (table.3.13), SV1 = 1
Emission reduction factor when using a catalytic converter for run-off emissions, (Table 3.14), SV2 = 0.3
Emission reduction factor when using a catalytic converter for idle emissions (Table 3.15), SV3 = 0.3
Specific emission of SV when warming up the engine, g / min, (table.3.13), MPR = 0.9
Running emissions of ZV, g / km, (tab.3.14), ML = 0.945 Specific emissions of ZV at idling, g / min, (tab.3.15), MXX = 0.12
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.9 * 4 + 0.945 * 0.1 + 0.12 * 1 = 3.815
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.945 * 0.3 + 0.12 * 1 = 0.4035
Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (3.815 + 0.4035) + 0.9 * 30) * 1 * 365 * 10 ^ (-6) = 0.0114
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 3.815 * 1/3600 = 0.00106
CALCULATION of nitrogen oxide emissions:
Emission reduction factor when using a catalytic converter for specific emissions during heating (table.3.13), SV1 = 1
Emission reduction factor when using a catalytic converter for mileage emissions (Table 3.14), SV2 = 1
Emission reduction factor when using a catalytic converter for idle emissions (Table 3.15), SV3 = 1
Specific emission of SV when warming up the engine, g / min, (table.3.13), MPR = 0.07
Running emissions of SV, g / km, (tab.3.14), ML = 0.6 Specific emissions of SV when working at idle, g / min, (tab.3.15), MXX = 0.05

Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.07 * 4 + 0.6 * 0.1 + 0.05 * 1 = 0.39
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.6 * 0.3 + 0.05 * 1 = 0.23
Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (0.39 + 0.23) + 0.07 * 30) * 1 * 365 * 10 ^ (-6)) = 0.000993
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 0.39 * 1/3600 = 0.0001083
Taking into account the transformation of nitrogen oxides we obtain:

Impurity: 0301 Nitrogen (IV) dioxide (4)

Gross emission, t / year, _M_ = 0.8 * M = 0.8 * 0.000993 = 0.000794 Maximum single emission, g / s, GS = 0.8 * G = 0.8 * 0.0001083 = 0.0000866

Impurity: 0304 Nitrogen (II) oxide (6)

Gross emission, t / year, _M_ = 0.13 * M = 0.13 * 0.000993 = 0.000129 Maximum single emission, g / s, GS = 0.13 * G = 0.13 * 0.0001083 = 0.00001408

Impurity: 0330 Sulfur dioxide (526)

Specific emission of SV when warming up the engine, g / min, (table.3.13), MPR = 0.0144
Running emissions of SV, g / km, (tab.3.14), ML = 0.099 Specific emissions of SV when working at idle, g / min, (tab.3.15), MXX = 0.012
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.0144 * 4 + 0.099 * 0.1 + 0.012 * 1 = 0.0795
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.099 * 0.3 + 0.012 * 1 = 0.0417
Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (0.0795 + 0.0417) + 0.0144 * 30) * 1 * 365 * 10 ^ (-6) = 0.000202
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 0.0795 * 1/3600 = 0.0000221

Machine type: Diesel trucks over 5 to 8 tons (CIS)

Fuel type: Diesel fuel
Number of working days per year, days , DN = 365
The largest number of cars leaving the parking lot within an hour, NK1 = 2 Total. the number of cars in this group for the calculation period, pcs. , NK = 2 Output ratio, A = 1
Environmental control is not carried out
Engine warm-up time, min (Table 3.20), TPR = 4
Engine idling time, min, TX = 1
Mileage of the car from the nearest to the exit of the parking place before leaving the parking lot, km, LB1 = 0.1
Mileage of the car from the farthest to the exit of the parking place before leaving the parking lot, km, LD1 = 0.1
Mileage from the nearest parking lot to the entrance to the parking lot, km, LB2 = 0.1
Mileage of the car from the farthest from the entrance of the parking place to the entrance to the parking lot, km, LD2 = 0.5
Total mileage on the territory or premises of the parking lot (departure), km (3.5), L1 = (LB1 + LD1) / 2 = (0.1 + 0.1) / 2 = 0.1
Total mileage on the territory or premises of the parking lot (entrance), km (3.6), L2 = (LB2 + LD2) / 2 = (0.1 + 0.5) / 2 = 0.3

Impurity: 0337 Carbon monoxide (594)

Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 3.96
Running emissions of SV, g / km, (tab.3.8), ML = 5.58 Specific emissions of SV when working at idle, g / min, (tab.3.9), MXX = 2.8
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 3.96 * 4 + 5.58 * 0.1 + 2.8 * 1 = 19.2
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 5.58 * 0.3 + 2.8 * 1 = 4.47
Gross emissions of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (19.2 + 4.47) + 3.96 * 30) * 2 * 365 * 10 ^ (-6) = 0.104

Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 19.2 * 2/3600 = 0.01067

Impurity: 2732 Kerosene (660 *)

Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 0.72

Running emissions of SV, g / km, (tab.3.8), ML = 0.99 Specific emissions of SV when working at idle, g / min, (tab.3.9), MXX = 0.35

Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.72 * 4 + 0.99 * 0.1 + 0.35 * 1 = 3.33

Emission of ZV at entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.99 * 0.3 + 0.35 * 1 = 0.647

Gross emission of ZV, t / year (3.7), taking into account note 2 to tab.3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (3.33 + 0.647) + 0.72 * 30) * 2 * 365 * 10 ^ (-6)) = 0.01867

Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 3.33 * 2/3600 = 0.00185

CALCULATION of nitrogen oxide emissions:

Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 0.8

Running emissions of SV, g / km, (tab.3.8), ML = 3.5 Specific emissions of SV when working at idle, g / min, (tab.3.9), MXX = 0.6

Emission of ZV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.8 * 4 + 3.5 * 0.1 + 0.6 * 1 = 4.15

Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 3.5 * 0.3 + 0.6 * 1 = 1.65

Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (4.15 + 1.65) + 0.8 * 30) * 2 * 365 * 10 ^ (-6)) = 0.02175

Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 4.15 * 2/3600 = 0.002306

Taking into account the transformation of nitrogen oxides we obtain:

Impurity: 0301 Nitrogen (IV) dioxide (4)

Gross emission, t / year, _M_ = 0.8 * M = 0.8 * 0.02175 = 0.0174 Maximum single emission, g / s, GS = 0.8 * G = 0.8 * 0.002306 = 0.001845

Impurity: 0304 Nitrogen (II) oxide (6)

Gross emission, t / year, _M_ = 0.13 * M = 0.13 * 0.02175 = 0.00283 Maximum single emission, g / s, GS = 0.13 * G = 0.13 * 0.002306 = 0.0003

Impurity: 0328 Carbon (593)

Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 0.108

Running emissions ZV, g / km, (table 3.8), ML = 0.315

Specific emissions of SV when working at idle, g / min, (table 3.9), MXX = 0.03

Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.108 * 4 + 0.315 * 0.1 + 0.03 * 1 = 0.4935

Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.315 * 0.3 + 0.03 * 1 = 0.1245

Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (0.4935 + 0.1245) + 0.108 * 30) * 2 * 365 * 10 ^ (-6) = 0.002816

Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 0.4935 * 2/3600 = 0.000274

Impurity: 0330 Sulfur dioxide (526)

Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 0.0972

Running emissions of SV, g / km, (tab.3.8), ML = 0.504 Specific emissions of SV when working at idle, g / min, (tab.3.9), MXX = 0.09

Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.0972 * 4 + 0.504 * 0.1 + 0.09 * 1 = 0.529

Emission of ZV at entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.504 * 0.3 + 0.09 * 1 = 0.241

Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (0.529 + 0.241) + 0.0972 * 30) * 2 * 365 * 10 ^ (-6) = 0.00269

Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 0.529 * 2/3600 = 0.000294

Machine type: Diesel trucks over 5 to 8 tons (CIS)

Fuel type: Diesel fuel
Number of working days per year, days , DN = 365
The largest number of cars leaving the parking lot within an hour, NK1 = 2 Total. the number of cars in this group for the calculation period, pcs. , NK = 2 Output ratio, A = 1
Environmental control is not carried out
Engine warm-up time, min (Table 3.20), TPR = 4
Engine idling time, min, TX = 1
Mileage of the car from the nearest to the exit of the parking place before leaving the parking lot, km, LB1 = 0.1
Mileage of the car from the farthest to the exit of the parking place before leaving the parking lot, km, LD1 = 0.1
Mileage from the nearest parking lot to the entrance to the parking lot, km, LB2 = 0.1
Mileage of the car from the farthest from the entrance of the parking place to the entrance to the parking lot, km, LD2 = 0.5
Total mileage on the territory or premises of the parking lot (departure), km (3.5), L1 = (LB1 + LD1) / 2 = (0.1 + 0.1) / 2 = 0.1
Total mileage on the territory or premises of the parking lot (entrance), km (3.6), L2 = (LB2 + LD2) / 2 = (0.1 + 0.5) / 2 = 0.3

Impurity: 0337 Carbon monoxide (594)

Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 3.96
Running emissions of SV, g / km, (tab.3.8), ML = 5.58 Specific emissions of SV when working at idle, g / min, (tab.3.9), MXX = 2.8
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 3.96 * 4 + 5.58 * 0.1 + 2.8 * 1 = 19.2
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 5.58 * 0.3 + 2.8 * 1 = 4.47
Gross emissions of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (19.2 + 4.47) + 3.96 * 30) * 2 * 365 * 10 ^ (-6) = 0.104
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 19.2 * 2/3600 = 0.01067

Impurity: 2732 Kerosene (660 *)

Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 0.72
Running emissions of SV, g / km, (tab.3.8), ML = 0.99 Specific emissions of SV when working at idle, g / min, (tab.3.9), MXX = 0.35
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.72 * 4 + 0.99 * 0.1 + 0.35 * 1 = 3.33
Emission of ZV at entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.99 * 0.3 + 0.35 * 1 = 0.647
Gross emission of ZV, t / year (3.7), taking into account note 2 to tab.3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (3.33 + 0.647) + 0.72 * 30) * 2 * 365 * 10 ^ (-6)) = 0.01867
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 3.33 * 2/3600 = 0.00185
CALCULATION of nitrogen oxide emissions:
Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 0.8
Running emissions of SV, g / km, (tab.3.8), ML = 3.5 Specific emissions of SV when working at idle, g / min, (tab.3.9), MXX = 0.6
Emission of ZV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.8 * 4 + 3.5 * 0.1 + 0.6 * 1 = 4.15
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 3.5 * 0.3 + 0.6 * 1 = 1.65
Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (4.15 + 1.65) + 0.8 * 30) * 2 * 365 * 10 ^ (-6)) = 0.02175
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 4.15 * 2/3600 = 0.002306
Taking into account the transformation of nitrogen oxides we obtain:

Impurity: 0301 Nitrogen (IV) dioxide (4)

Gross emission, t / year, _M_ = 0.8 * M = 0.8 * 0.02175 = 0.0174
Maximum single emission, g / s, GS = 0.8 * G = 0.8 * 0.002306 = 0.001845

Impurity: 0304 Nitrogen (II) oxide (6)
Gross emission, t / year, _M_ = 0.13 * M = 0.13 * 0.02175 = 0.00283 Maximum single emission, g / s, GS = 0.13 * G = 0.13 * 0.002306 = 0.0003
Impurity: 0328 Carbon (593)
Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 0.108
Running emissions ZV, g / km, (table 3.8), ML = 0.315
Specific emissions of SV when working at idle, g / min, (table 3.9), MXX = 0.03
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.108 * 4 + 0.315 * 0.1 + 0.03 * 1 = 0.4935
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.315 * 0.3 + 0.03 * 1 = 0.1245
Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (0.4935 + 0.1245) + 0.108 * 30) * 2 * 365 * 10 ^ (-6) = 0.002816
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 0.4935 * 2/3600 = 0.000274
Impurity: 0330 Sulfur dioxide (526)
Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 0.0972
Running emissions of SV, g / km, (tab.3.8), ML = 0.504 Specific emissions of SV when working at idle, g / min, (tab.3.9), MXX = 0.09
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.0972 * 4 + 0.504 * 0.1 + 0.09 * 1 = 0.529
Emission of ZV at entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.504 * 0.3 + 0.09 * 1 = 0.241
Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (0.529 + 0.241) + 0.0972 * 30) * 2 * 365 * 10 ^ (-6) = 0.00269
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 0.529 * 2/3600 = 0.000294

Machine type: Diesel trucks over 16 t (CIS)

Fuel type: Diesel fuel
Number of working days per year, days , DN = 365
The largest number of cars leaving the parking lot within an hour, NK1 = 1 Total. the number of cars in this group for the calculation period, pcs. , NK = 1 Output ratio, A = 1
Environmental control is not carried out
Engine warm-up time, min (Table 3.20), TPR = 4
Engine idling time, min, TX = 1
Mileage of the car from the nearest to the exit of the parking place before leaving the parking lot, km, LB1 = 0.1
Mileage of the car from the farthest to the exit of the parking place before leaving the parking lot, km, LD1 = 0.1
Mileage from the nearest parking lot to the entrance to the parking lot, km, LB2 = 0.1
Mileage of the car from the farthest from the entrance of the parking place to the entrance to the parking lot, km, LD2 = 0.5
Total mileage on the territory or premises of the parking lot (departure), km (3.5), L1 = (LB1 + LD1) / 2 = (0.1 + 0.1) / 2 = 0.1
Total mileage on the territory or premises of the parking lot (entrance), km (3.6), L2 = (LB2 + LD2) / 2 = (0.1 + 0.5) / 2 = 0.3
Impurity: 0337 Carbon monoxide (594)
Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 7.38
Running emissions of SV, g / km, (tab.3.8), ML = 8.37 Specific emissions of SV when working at idle, g / min, (tab.3.9), MXX = 2.9
Emission of ZV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 7.38 * 4 + 8.37 * 0.1 + 2.9 * 1 = 33.26
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 8.37 * 0.3 + 2.9 * 1 = 5.41
Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR *

TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (33.26 + 5.41) + 7.38 * 30) * 1 * 365 * 10 ^ (-6) = 0.095
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 33.26 * 1/3600 = 0.00924
Impurity: 2732 Kerosene (660 *)
Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 0.99
Running emissions of SV, g / km, (tab.3.8), ML = 1.17 Specific emissions of SV when working at idle, g / min, (tab.3.9), MXX = 0.45
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.99 * 4 + 1.17 * 0.1 + 0.45 * 1 = 4.53
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 1.17 * 0.3 + 0.45 * 1 = 0.801
Gross emissions of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (4.53 + 0.801) + 0.99 * 30) * 1 * 365 * 10 ^ (-6)) = 0.01279
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 4.53 * 1/3600 = 0.001258
CALCULATION of nitrogen oxide emissions:
Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 2
Running emissions of SV, g / km, (table 3.8), ML = 4.5 Specific emissions of SV when working at idle, g / min, (table 3.9), MXX = 1
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 2 * 4 + 4.5 * 0.1 + 1 * 1 = 9.45
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 4.5 * 0.3 + 1 * 1 = 2.35
Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (9.45 + 2.35) + 2 * 30) * 1 * 365 * 10 ^ (-6)) = 0.0262
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 9.45 * 1/3600 = 0.002625
Taking into account the transformation of nitrogen oxides we obtain:
Impurity: 0301 Nitrogen (IV) dioxide (4)
Gross emission, t / year, _M_ = 0.8 * M = 0.8 * 0.0262 = 0.02096 Maximum single emission, g / s, GS = 0.8 * G = 0.8 * 0.002625 = 0.0021
Impurity: 0304 Nitrogen (II) oxide (6)
Gross emission, t / year, _M_ = 0.13 * M = 0.13 * 0.0262 = 0.003406 Maximum single emission, g / s, GS = 0.13 * G = 0.13 * 0.002625 = 0.000341
Impurity: 0328 Carbon (593)
Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 0.144
Running emissions of SV, g / km, (tab.3.8), ML = 0.45 Specific emissions of SV when working at idle, g / min, (tab.3.9), MXX = 0.04
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.144 * 4 + 0.45 * 0.1 + 0.04 * 1 = 0.661
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.45 * 0.3 + 0.04 * 1 = 0.175
Gross emissions of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (0.661 + 0.175) + 0.144 * 30) * 1 * 365 * 10 ^ (-6)) = 0.001882
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 0.661 * 1/3600 = 0.0001836
Impurity: 0330 Sulfur dioxide (526)
Specific emission of SV when warming up the engine, g / min, (table 3.7), MPR = 0.1224
Running emissions of SV, g / km, (tab.3.8), ML = 0.873 Specific emissions of SV when working at idle, g / min, (tab.3.9), MXX = 0.1
Emission of SV at departure of the 1st car, grams, M1 = MPR * TPR + ML * L1 + MXX * TX = 0.1224 * 4 + 0.873 * 0.1 + 0.1 * 1 = 0.677
Emission of SV at the entrance of the 1st car, grams, M2 = ML * L2 + MXX * TX = 0.873 * 0.3 + 0.1 * 1 = 0.362
Gross emission of SV, t / year (3.7), taking into account note 2 to table 3.20, M = (A * (M1 + M2) + MPR * TDOPPR) * NK * DN * 10 ^ (-6) = (1 * (0.677 + 0.362) + 0.1224 * 30) * 1 * 365 * 10 ^ (-6)) = 0.00172
Maximum single emission of SV, g / s (3.10), G = MAX (M1, M2) * NK1 / 3600 = 0.677 * 1/3600 =

0.000188

TOTAL emissions by period: Transition period (t> -5 and t <5)

Car type: Carburetor cars with a working volume up to 1.2 l (up to 94)						
Dn, сут	***Nk, шт***	***A***	***Nk1 шт.***	***L1, км***	***L2, км***	
365	10	1.00	10	0.1	0.3	

3B	***Tpr min***	***Mpr, g/min***	***Tx, min***	***Mxx, g/min***	***Ml, g/km***	***g s***	***t/year***
0337	3	4.59	1	0.5	3.114	0.0405	0.0585
2704	3	0.36	1	0.06	0.513	0.00331	0.00513
0301	3	0.03	1	0.02	0.23	0.0002955	0.000648
0304	3	0.03	1	0.02	0.23	0.000048	0.0001053
0330	3	0.009	1	0.008	0.054	0.0001122	0.000236

Car type: Small carburetor buses with an overall length of 6 to 7.5 m (CIS)						
Dn, day	***Nk, Nos***	***A***	***Nk1 Nos.***	***L1, km***	***L2, km***	
365	2	1.00	2	0.1	0.3	

3B	*Tpr min*	*Mpr, g/min*	*Tx, min*	*Mxx, g/min*	*Ml, g/km*	*g/s*	*t/year*
0337	4	25.3	1	2.04	6.71	0.0577	0.633
2704	4	3.42	1	0.51	1.863	0.00799	0.0862
0301	4	0.3	1	0.2	0.8	0.000658	0.00638
0304	4	0.3	1	0.2	0.8	0.0001069	0.001036
0330	4	0.023	1	0.02	0.171	0.0000706	0.000638

Car type: Large diesel buses with an overall length of 10.5 to 12 m (foreign cars)						Car
Dn, day	*Nk, Nos*	*A*	*Nk1 Nos.*	*L1, km*	*L2, km*	
365	2	1.00	2	0.1	0.3	

3B	*Tpr min*	*Mpr, g/min*	*Tx, min*	*Mxx, g/min*	*Ml, g/km*	*g/s*	*t/year*
0337	4	2.007	1	0.93	5.31	0.00527	0.0527
2732	4	0.711	1	0.47	0.72	0.00188	0.01854
0301	4	1.04	1	0.63	3.4	0.00228	0.02216
0304	4	1.04	1	0.63	3.4	0.0003705	0.0036
0328	4	0.036	1	0.02	0.27	0.000106	0.001002
0330	4	0.108	1	0.1	0.531	0.000325	0.00298

Car type: Extra small carburetor buses up to 5.5 m (CIS)						
Dn, day	*Nk, Nos*	*A*	*Nk1 Nos.*	*L1, km*	*L2, km*	
365	1	1.00	1	0.1	0.3	

3B	*Tpr min*	*Mpr, g/min*	*Tx, min*	*Mxx, g/min*	*Ml, g/km*	*g/s*	*t/year*
0337	4	8.19	1	0.9	5.13	0.0095	0.103
2704	4	0.9	1	0.12	0.945	0.00106	0.0114
0301	4	0.07	1	0.05	0.6	0.0000866	0.000794
0304	4	0.07	1	0.05	0.6	0.00001408	0.000129
0330	4	0.014	1	0.012	0.099	0.0000221	0.000202

Vehicle type: Diesel trucks over 5 to 8 tons (CIS)						
Dn, day	***Nk, Nos***	***A***	***Nk1 Nos.***	***L1, km***	***L2, km***	
365	2	1.00	2	0.1	0.3	

3B	***Tpr min***	***Mpr, g/min***	***Tx, min***	***Mxx, g/min***	***Ml, g/km***	***g/s***	***t/year***
0337	4	3.96	1	2.8	5.58	0.01067	0.104
2732	4	0.72	1	0.35	0.99	0.00185	0.01867
0301	4	0.8	1	0.6	3.5	0.001845	0.0174
0304	4	0.8	1	0.6	3.5	0.0003	0.00283
0328	4	0.108	1	0.03	0.315	0.000274	0.002816
0330	4	0.097	1	0.09	0.504	0.000294	0.00269
0337	4	3.96	1	2.8	5.58	0.01067	0.104
2732	4	0.72	1	0.35	0.99	0.00185	0.01867
0301	4	0.8	1	0.6	3.5	0.001845	0.0174
0304	4	0.8	1	0.6	3.5	0.0003	0.00283
0328	4	0.108	1	0.03	0.315	0.000274	0.002816
0330	4	0.097	1	0.09	0.504	0.000294	0.00269

Vehicle type: Diesel trucks over 16 t (CIS)						
Dn, day	***Nk, Nos***	***A***	***Nk1 Nos.***	***L1, km***	***L2, km***	
365	1	1.00	1	0.1	0.3	

3B	***Tpr min***	***Mpr, g/min***	***Tx, min***	***Mxx, g/min***	***Ml, g/km***	***g/s***	***t/year***
0337	4	7.38	1	2.9	8.37	0.00924	0.095
2732	4	0.99	1	0.45	1.17	0.001258	0.0128
0301	4	2	1	1	4.5	0.0021	0.02096
0304	4	2	1	1	4.5	0.000341	0.003406
0328	4	0.144	1	0.04	0.45	0.0001836	0.001882
0330	4	0.122	1	0.1	0.873	0.000188	0.00172

TOTAL by period: Transition period (t> -5 and t <5)			
Code	***Impurity***	***Emission g/s***	***Emission t/year***
0337	Carbon monoxide (594)	0.14355	1.1502
2704	Gasoline (petroleum, low-sulfur) / in terms of carbon / (60)	0.01236	0.10273
2732	Kerosene (660 *)	0.006838	0.06867
0301	Nitrogen (IV) dioxide (4)	0.0091101	0.085742
0328	Carbon (593)	0.0008377	0.008516
0330	Sulfur dioxide (526)	0.0013059	0.011156
0304	Nitrogen (II) oxide (6)	0.00148048	0.0139363

TOTAL EMISSIONS FROM THE PARKING OF THE CAR

Code	***Impurity***	***Emission g/s***	***Emission t/year***
0301	Nitrogen (IV) dioxide (4)	0.0091101	0.085742
0304	Nitrogen (II) oxide (6)	0.00148048	0.0139363
0328	Carbon (593)	0.0008377	0.008516
0330	Sulfur dioxide (526)	0.0013059	0.011156
0337	Carbon monoxide (594)	0.14355	1.1502
2704	Gasoline (petroleum, low-sulfur) / in terms of carbon / (60)	0.01236	0.10273
2732	Kerosene (660 *)	0.006838	0.06868

Maximum single emissions were achieved during the transition period

Determining the category of danger of the enterprise to the existing situation

Tyulkubas district, "Horgos-Almaty-Taraz-Shymkent- border of RU"

Pollutant code	Name of substance	MAC Maximum one-time, mg/m3	MAC daily average, mg/m3	SRLI mg/m3	Class of hazard	Emission of matter g/s	Emission of matter, t / year	Value of HEC (M/MAC) * *a	Emission of matter, усл.т/год
1	2	3	4	5	6	7	8	9	10
0301	Nitrogen (IV) dioxide (4)	0.2	0.04		2	0.1275414	1.200388	83.2607	30.0097
0304	Nitrogen (II) oxide (6)	0.4	0.06		3	0.02072672	0.1951082	3.2518	3.25180333
0328	Carbon (593)	0.15	0.05		3	0.0117278	0.119224	2.3845	2.38448
0330	Sulfur dioxide (526)		0.125		3	0.0182826	0.156184	1.2495	1.249472
0337	Carbon Oxide (594)	5	3		4	2.0097	16.1028	4.5373	5.3676
2704	Gasoline (petroleum, low-sulfur) / in terms of carbon / (60)	5	1.5		4	0.17304	1.43822	0	0.95881333
2732	Kerosene (660 *)			1.2		0.095732	0.96152	0	0.80126667
	TOTAL:					2.45675052	20.1734442	94.7	44.0231353
Total hazard ratio: 94.7 Hazard category: 4									

Determination of the need to calculate surface concentrations of substances for the current situation

Tulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border of RU"

Pollutant code	Name of substance	MAC Maximum one-time,	MAC daily average, mg/m3	SRLI mg/m3	Emission of matter g/s	Weighted average height, m	M/(MAC*H) for H>10 M/MAC for H<10	Note
1	2	3	4	5	6	7	8	9
0304	Nitrogen (II) oxide (6)	0.4	0.06		0.02072672	3.9000	0.0518	-
0328	Carbon (593)	0.15	0.05		0.0117278	3.9000	0.0782	-
0337	Carbon Oxide (594)	5	3		2.0097	3.9000	0.4019	calculation
2704	Gasoline (petroleum, low-sulfur) / in converted to carbon / (60)	5	1.5		0.17304	3.9000	0.0346	-
2732	Kerosene (660 *)			1.2	0.095732	3.9000	0.0798	-
	Substances with the effect of the total harmful effect							
0301	Nitrogen (IV) dioxide (4)	0.2	0.04		0.1275414	3.9000	0.6377	calculation
0330	Sulfur dioxide (526)		0.125		0.0182826	3.9000	0.0146	-

Note. 1. The need for concentration calculations is determined in accordance with clause 5.21 OND-86. The weighted average height of API is determined by the standard formula: Sum (Hi * Mi) / Sum (Mi), where Hi is the actual height of API, Mi is the emission of pollutants, g / c
2. In the absence of MPCm.r. SHOE is taken, in the absence of SHOE - 10 * MPCs.s.

Parameters of emissions of pollutants into the atmosphere for calculating the MPE for 2014

Tulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border of RU"

Production	Shop	Sources of emission of pollutants		Working hours per year	Name of the source of emission of harmful substances	Number of emission sources	Emission source number	Ejection source height, m	Pipe mouth diameter m	Parameters of the gas-air mixture at the outlet of the discharge source			Source coordinates on the schematic map, m		
		Наименование	amount							speed m / s	volume per pipe, m3 / s	temperature	точечного источ. /1-го конца лин. /центра площадного источника		2-го кон /длина, ш площадн источни
													X1	Y1	X2
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
001		vent. pipe No. 1 (vehicles)	1	8760	ventilation	1	0001	3.9	1.65	2	4.276503	13	100	50	
001		vent. pipe No. 2 (vehicles)	1	8760	ventilation	1	0002	3.9	1.65	2	4.276503	13	100	50	
001		vent. pipe No. 3 (vehicles)	1	8760	ventilation	1	0003	3.9	1.65	2	4.276503	13	100	50	

ца лин. ирина ого ка	Name of gas treatment plants and measures to reduce emissions	Вещества по котор. производ. г-очистка к-т обесп газоо-й %	Средняя эксплуат степень очистки/ max.степ очистки%	Код ве-ще-ства	Name of substance	Emissions of pollutants			Год дос-тиже ния ПДВ
						g/s	mg/m3	t/year	
Y2									
17	18	19	20	21	22	23	24	25	26
				0301	Nitrogen (IV) dioxide (4)	0.0091101	2.130	0.085742	
				0304	Nitrogen (II) oxide (6)	0.00148048	0.346	0.0139363	
				0328	Carbon (593)	0.0008377	0.196	0.008516	
				0330	Sulfur dioxide (526)	0.0013059	0.305	0.011156	
				0337	Carbon Oxide (594)	0.14355	33.567	1.1502	
				2704	Gasoline (petroleum, low-sulfur) / in terms of carbon / (60)	0.01236	2.890	0.10273	

				2732	Kerosene (660 *)	0.006838	1.599	0.06868	
				0301	Nitrogen (IV) dioxide (4)	0.0091101	2.130	0.085742	
				0304	Nitrogen (II) oxide (6)	0.00148048	0.346	0.0139363	
				0328	Carbon (593)	0.0008377	0.196	0.008516	
				0330	Sulfur dioxide (526)	0.0013059	0.305	0.011156	
				0337	Carbon Oxide (594)	0.14355	33.567	1.1502	
				2704	Gasoline (petroleum, low-sulfur) / in converted to carbon / (60)	0.01236	2.890	0.10273	
				2732	Kerosene (660 *)	0.006838	1.599	0.06868	
				0301	Nitrogen (IV) dioxide (4)	0.0091101	2.130	0.085742	
				0304	Nitrogen (II) oxide (6)	0.00148048	0.346	0.0139363	
				0328	Carbon (593)	0.0008377	0.196	0.008516	
				0330	Sulfur dioxide (526)	0.0013059	0.305	0.011156	

Tulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border of RU"

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
001		vent. pipe No. 4 (vehicles)	1	8760	ventilation	1	0004	3.9	1.65	2	4.276503	13	100	50	
001		vent. pipe No. 5 (vehicles)	1	8760	ventilation	1	0005	3.9	1.65	2	4.276503	13	100	50	
001		vent. pipe No. 6 (vehicles)	1	8760	ventilation	1	0006	3.9	1.65	2	4.276503	13	100	50	

17	18	19	20	21	22	23	24	25	26
				0337	Carbon Oxide (594)	0.14355	33.567	1.1502	
				2704	Gasoline (petroleum, low-sulfur) / in converted to carbon / (60)	0.01236	2.890	0.10273	
				2732	Kerosene (660 *)	0.006838	1.599	0.06868	
				0301	Nitrogen (IV) dioxide (4)	0.0091101	2.130	0.085742	
				0304	Nitrogen (II) oxide (6)	0.00148048	0.346	0.0139363	
				0328	Carbon (593)	0.0008377	0.196	0.008516	
				0330	Sulfur dioxide (526)	0.0013059	0.305	0.011156	
				0337	Carbon Oxide (594)	0.14355	33.567	1.1502	

				2704	Gasoline (petroleum, low-sulfur) / in converted to carbon / (60)	0.01236	2.890	0.10273	
				2732	Kerosene (660 *)	0.006838	1.599	0.06868	
				0301	Nitrogen (IV) dioxide (4)	0.0091101	2.130	0.085742	
				0304	Nitrogen (II) oxide (6)	0.00148048	0.346	0.0139363	
				0328	Carbon (593)	0.0008377	0.196	0.008516	
				0330	Sulfur dioxide (526)	0.0013059	0.305	0.011156	
				0337	Carbon Oxide (594)	0.14355	33.567	1.1502	
				2704	Gasoline (petroleum, low-sulfur) / in converted to carbon / (60)	0.01236	2.890	0.10273	
				2732	Kerosene (660 *)	0.006838	1.599	0.06868	
				0301	Nitrogen (IV) dioxide (4)	0.0091101	2.130	0.085742	
				0304	Nitrogen (II) oxide (6)	0.00148048	0.346	0.0139363	
				0328	Carbon (593)	0.0008377	0.196	0.008516	
				0330	Sulfur dioxide (526)	0.0013059	0.305	0.011156	
				0337	Carbon Oxide (594)	0.14355	33.567	1.1502	
				2704	Gasoline (petroleum, low-sulfur) / in converted to carbon /	0.01236	2.890	0.10273	

Tulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border of RU"

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
001		vent. pipe No. 7 (vehicles)	1	8760	ventilation	1	0007	3.9	1.65	2	4.276503	13	100	50	
001		vent. pipe No. 8 (vehicles)	1	8760	ventilation	1	0008	3.9	1.65	2	4.276503	13	100	50	
001		vent. pipe No. 9 (vehicles)	1	8760	ventilation	1	0009	3.9	1.65	2	4.276503	13	100	50	
001		vent. pipe No. 10 (vehicles)	1	8760	ventilation	1	0010	3.9	1.65	2	4.276503	13	100	50	

17	18	19	20	21	22	23	24	25	26
					(60)				

				2732	Kerosene (660 *)	0.006838	1.599	0.06868	
				0301	Nitrogen (IV) dioxide (4)	0.0091101	2.130	0.085742	
				0304	Nitrogen (II) oxide (6)	0.00148048	0.346	0.0139363	
				0328	Carbon (593)	0.0008377	0.196	0.008516	
				0330	Sulfur dioxide (526)	0.0013059	0.305	0.011156	
				0337	Carbon Oxide (594)	0.14355	33.567	1.1502	
				2704	Gasoline (petroleum, low-sulfur) / in converted to carbon / (60)	0.01236	2.890	0.10273	
				2732	Kerosene (660 *)	0.006838	1.599	0.06868	
				0301	Nitrogen (IV) dioxide (4)	0.0091101	2.130	0.085742	
				0304	Nitrogen (II) oxide (6)	0.00148048	0.346	0.0139363	
				0328	Carbon (593)	0.0008377	0.196	0.008516	
				0330	Sulfur dioxide (526)	0.0013059	0.305	0.011156	
				0337	Carbon Oxide (594)	0.14355	33.567	1.1502	
				2704	Gasoline (petroleum, low-sulfur) / in converted to carbon / (60)	0.01236	2.890	0.10273	
				2732	Kerosene (660 *)	0.006838	1.599	0.06868	
				0301	Nitrogen (IV) dioxide (4)	0.0091101	2.130	0.085742	
				0304	Nitrogen (II) oxide (6)	0.00148048	0.346	0.0139363	
				0328	Carbon (593)	0.0008377	0.196	0.008516	
				0330	Sulfur dioxide (526)	0.0013059	0.305	0.011156	
				0337	Carbon Oxide (594)	0.14355	33.567	1.1502	
				2704	Gasoline (petroleum, low-sulfur) / in converted to carbon / (60)	0.01236	2.890	0.10273	
				2732	Kerosene (660 *)	0.006838	1.599	0.06868	
				0301	Nitrogen (IV) dioxide (4)	0.0091101	2.130	0.085742	

Tulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border of RU"

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
001		vent. pipe No. 11 (vehicle)	1	8760	ventilation	1	0011	3.9	1.65	2	4.276503	13	100	50	
001		vent. pipe No. 12 (vehicle)	1	8760	ventilation	1	0012	3.9	1.65	2	4.276503	13	100	50	

001		vent. pipe No. 13 (vehicle)	1	8760	ventilation	1	0013	3.9	1.65	2	4.276503	13	100	50	

17	18	19	20	21	22	23	24	25	26
				0304	Nitrogen (II) oxide (6)	0.00148048	0.346	0.0139363	
				0328	Carbon (593)	0.0008377	0.196	0.008516	
				0330	Sulfur dioxide (526)	0.0013059	0.305	0.011156	
				0337	Carbon Oxide (594)	0.14355	33.567	1.1502	
				2704	Gasoline (petroleum, low-sulfur) / in converted to carbon / (60)	0.01236	2.890	0.10273	
				2732	Kerosene (660 *)	0.006838	1.599	0.06868	
				0301	Nitrogen (IV) dioxide (4)	0.0091101	2.130	0.085742	
				0304	Nitrogen (II) oxide (6)	0.00148048	0.346	0.0139363	
				0328	Carbon (593)	0.0008377	0.196	0.008516	
				0330	Sulfur dioxide (526)	0.0013059	0.305	0.011156	
				0337	Carbon Oxide (594)	0.14355	33.567	1.1502	
				2704	Gasoline (petroleum, low-sulfur) / in converted to carbon / (60)	0.01236	2.890	0.10273	
				2732	Kerosene (660 *)	0.006838	1.599	0.06868	
				0301	Nitrogen (IV) dioxide (4)	0.0091101	2.130	0.085742	
				0304	Nitrogen (II) oxide (6)	0.00148048	0.346	0.0139363	
				0328	Carbon (593)	0.0008377	0.196	0.008516	
				0330	Sulfur dioxide (526)	0.0013059	0.305	0.011156	
				0337	Carbon Oxide (594)	0.14355	33.567	1.1502	
				2704	Gasoline (petroleum, low-sulfur) / in converted to carbon / (60)	0.01236	2.890	0.10273	
				2732	Kerosene (660 *)	0.006838	1.599	0.06868	
				0301	Nitrogen (IV) dioxide (4)	0.0091101	2.130	0.085742	
				0304	Nitrogen (II) oxide (6)	0.00148048	0.346	0.0139363	
				0328	Carbon (593)	0.0008377	0.196	0.008516	
				0330	Sulfur dioxide (526)	0.0013059	0.305	0.011156	
				0337	Carbon Oxide (594)	0.14355	33.567	1.1502	

Tulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border of RU"

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
001		Ventilation pipe No. 14 (vehicle)	1	8760	ventilation	1	0014	3.9	1.65	2	4.276503	13	100	50	

17	18	19	20	21	22	23	24	25	26
				2704	Gasoline (petroleum, low-sulfur) / in converted to carbon / (60)	0.01236	2.890	0.10273	
				2732	Kerosene (660 *)	0.006838	1.599	0.06868	
				0301	Nitrogen (IV) dioxide (4)	0.0091101	2.130	0.085742	
				0304	Nitrogen (II) oxide (6)	0.00148048	0.346	0.0139363	
				0328	Carbon (593)	0.0008377	0.196	0.008516	
				0330	Sulfur dioxide (526)	0.0013059	0.305	0.011156	
				0337	Carbon Oxide (594)	0.14355	33.567	1.1502	
				2704	Gasoline (petroleum, low-sulfur) / in converted to carbon / (60)	0.01236	2.890	0.10273	
				2732	Kerosene (660 *)	0.006838	1.599	0.06868	

Standards for emissions of pollutants into the atmosphere for the current situation and for the year of reaching the MPE

Production, workshop, site	Emission source number	Pollutant emission standards							
		current situation for 2014		for 2015		for 2016		for 2017	
Pollutant code and name		г/с	т/год	г/с	т/год	г/с	т/год	г/с	т/год
1	2	3	4	5	6	7	8	9	10
(0301) Nitrogen (IV) dioxide (4)									
ORGANIZED SOURCES									
period of operation	0001	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742
	0002	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742
	0003	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742
	0004	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742
	0005	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742
	0006	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742
	0007	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742
	0008	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742
	0009	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742
	0010	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742
	0011	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742
	0012	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742
	0013	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742
	0014	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742	0.0091101	0.085742
Итого:		0.1275414	1.200388	0.1275414	1.200388	0.1275414	1.200388	0.1275414	1.200388
(0304) Nitrogen (II) oxide	(6)								
ORGANIZED SOURCES									
period of operation	0001	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363
	0002	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363
	0003	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363
	0004	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363
	0005	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363
	0006	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363
	0007	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363
	0008	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363

for 2018		MPE		year of achievement of
г/с	т/год	г/с	т/год	
11	12	13	14	15
0.0091101	0.085742	0.0091101	0.085742	
0.0091101	0.085742	0.0091101	0.085742	
0.0091101	0.085742	0.0091101	0.085742	
0.0091101	0.085742	0.0091101	0.085742	
0.0091101	0.085742	0.0091101	0.085742	
0.0091101	0.085742	0.0091101	0.085742	
0.0091101	0.085742	0.0091101	0.085742	
0.0091101	0.085742	0.0091101	0.085742	
0.0091101	0.085742	0.0091101	0.085742	
0.0091101	0.085742	0.0091101	0.085742	
0.0091101	0.085742	0.0091101	0.085742	
0.0091101	0.085742	0.0091101	0.085742	
0.0091101	0.085742	0.0091101	0.085742	
0.0091101	0.085742	0.0091101	0.085742	
0.1275414	1.200388	0.1275414	1.200388	
0.00148048	0.0139363	0.00148048	0.0139363	
0.00148048	0.0139363	0.00148048	0.0139363	
0.00148048	0.0139363	0.00148048	0.0139363	
0.00148048	0.0139363	0.00148048	0.0139363	
0.00148048	0.0139363	0.00148048	0.0139363	
0.00148048	0.0139363	0.00148048	0.0139363	
0.00148048	0.0139363	0.00148048	0.0139363	
0.00148048	0.0139363	0.00148048	0.0139363	

Tulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border of RU"

1	2	3	4	5	6	7	8	9	10
	0009	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363
	0010	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363
	0011	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363
	0012	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363
	0013	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363
	0014	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363	0.00148048	0.0139363
Итого:		0.02072672	0.1951082	0.02072672	0.1951082	0.02072672	0.1951082	0.02072672	0.1951082
(0328) Carbon (593)									
ORGANIZED SOURCES									
period of operation	0001	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516
	0002	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516
	0003	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516
	0004	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516
	0005	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516
	0006	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516
	0007	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516
	0008	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516
	0009	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516
	0010	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516
	0011	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516
	0012	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516
	0013	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516
	0014	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516	0.0008377	0.008516
Итого:		0.0117278	0.119224	0.0117278	0.119224	0.0117278	0.119224	0.0117278	0.119224
(0330) Sulfur dioxide (526)									
ORGANIZED SOURCES									
period of operation	0001	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156
	0002	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156
	0003	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156
	0004	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156
	0005	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156
	0006	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156
	0007	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156

0.00148048	0.0139363	0.00148048	0.0139363	
0.00148048	0.0139363	0.00148048	0.0139363	
0.00148048	0.0139363	0.00148048	0.0139363	
0.00148048	0.0139363	0.00148048	0.0139363	
0.00148048	0.0139363	0.00148048	0.0139363	
0.00148048	0.0139363	0.00148048	0.0139363	
0.02072672	0.1951082	0.02072672	0.1951082	
0.0008377	0.008516	0.0008377	0.008516	
0.0008377	0.008516	0.0008377	0.008516	
0.0008377	0.008516	0.0008377	0.008516	
0.0008377	0.008516	0.0008377	0.008516	
0.0008377	0.008516	0.0008377	0.008516	
0.0008377	0.008516	0.0008377	0.008516	
0.0008377	0.008516	0.0008377	0.008516	
0.0008377	0.008516	0.0008377	0.008516	
0.0008377	0.008516	0.0008377	0.008516	
0.0008377	0.008516	0.0008377	0.008516	
0.0008377	0.008516	0.0008377	0.008516	
0.0008377	0.008516	0.0008377	0.008516	
0.0008377	0.008516	0.0008377	0.008516	
0.0008377	0.008516	0.0008377	0.008516	
0.0117278	0.119224	0.0117278	0.119224	
0.0013059	0.011156	0.0013059	0.011156	
0.0013059	0.011156	0.0013059	0.011156	
0.0013059	0.011156	0.0013059	0.011156	
0.0013059	0.011156	0.0013059	0.011156	
0.0013059	0.011156	0.0013059	0.011156	
0.0013059	0.011156	0.0013059	0.011156	
0.0013059	0.011156	0.0013059	0.011156	

Tulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border of RU"

1	2	3	4	5	6	7	8	9	10
	0008	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156
	0009	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156
	0010	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156
	0011	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156
	0012	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156
	0013	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156
	0014	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156	0.0013059	0.011156
Итого:		0.0182826	0.156184	0.0182826	0.156184	0.0182826	0.156184	0.0182826	0.156184
(0337) Carbon oxide (594)									
ORGANIZED SOURCES									
period of operation	0001	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502
	0002	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502
	0003	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502
	0004	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502
	0005	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502
	0006	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502
	0007	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502
	0008	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502
	0009	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502
	0010	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502
	0011	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502
	0012	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502
	0013	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502
	0014	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502	0.14355	1.1502
Итого:		2.0097	16.1028	2.0097	16.1028	2.0097	16.1028	2.0097	16.1028
(2704) Gasoline (petroleum, low-sulfur) / calculated as (60)									
ORGANIZED SOURCES									
period of operation	0001	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273
	0002	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273
	0003	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273
	0004	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273
	0005	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273
	0006	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273

11	12	13	14	15
0.0013059	0.011156	0.0013059	0.011156	
0.0013059	0.011156	0.0013059	0.011156	
0.0013059	0.011156	0.0013059	0.011156	
0.0013059	0.011156	0.0013059	0.011156	
0.0013059	0.011156	0.0013059	0.011156	
0.0013059	0.011156	0.0013059	0.011156	
0.0013059	0.011156	0.0013059	0.011156	
0.0182826	0.156184	0.0182826	0.156184	
0.14355	1.1502	0.14355	1.1502	
0.14355	1.1502	0.14355	1.1502	
0.14355	1.1502	0.14355	1.1502	
0.14355	1.1502	0.14355	1.1502	
0.14355	1.1502	0.14355	1.1502	
0.14355	1.1502	0.14355	1.1502	
0.14355	1.1502	0.14355	1.1502	
0.14355	1.1502	0.14355	1.1502	
0.14355	1.1502	0.14355	1.1502	
0.14355	1.1502	0.14355	1.1502	
0.14355	1.1502	0.14355	1.1502	
0.14355	1.1502	0.14355	1.1502	
0.14355	1.1502	0.14355	1.1502	
0.14355	1.1502	0.14355	1.1502	
2.0097	16.1028	2.0097	16.1028	
0.01236	0.10273	0.01236	0.10273	
0.01236	0.10273	0.01236	0.10273	
0.01236	0.10273	0.01236	0.10273	
0.01236	0.10273	0.01236	0.10273	
0.01236	0.10273	0.01236	0.10273	
0.01236	0.10273	0.01236	0.10273	

Tulkubas district, "Khorgos-Almaty-Taraz-Shymkent-border of RU"

1	2	3	4	5	6	7	8	9	10
	0007	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273
	0008	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273
	0009	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273
	0010	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273
	0011	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273
	0012	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273
	0013	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273
	0014	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273	0.01236	0.10273
Total:		0.17304	1.43822	0.17304	1.43822	0.17304	1.43822	0.17304	1.43822
(2732) Kerosene (660 *)									
Organized sources									
period of operation	0001	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868
	0002	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868
	0003	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868
	0004	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868
	0005	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868
	0006	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868
	0007	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868
	0008	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868
	0009	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868
	0010	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868
	0011	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868
	0012	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868
	0013	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868
	0014	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868	0.006838	0.06868
Total:		0.095732	0.96152	0.095732	0.96152	0.095732	0.96152	0.095732	0.96152
Total for the enterprise:		2.45675052	20.1734442	2.45675052	20.1734442	2.45675052	20.1734442	2.45675052	20.1734442
Solid:		0.0117278	0.119224	0.0117278	0.119224	0.0117278	0.119224	0.0117278	0.119224
Gaseous, liquid:		2.44502272	20.0542202	2.44502272	20.0542202	2.44502272	20.0542202	2.44502272	20.0542202

11	12	13	14	15

0.01236	0.10273	0.01236	0.10273	
0.01236	0.10273	0.01236	0.10273	
0.01236	0.10273	0.01236	0.10273	
0.01236	0.10273	0.01236	0.10273	
0.01236	0.10273	0.01236	0.10273	
0.01236	0.10273	0.01236	0.10273	
0.01236	0.10273	0.01236	0.10273	
0.01236	0.10273	0.01236	0.10273	
0.17304	1.43822	0.17304	1.43822	
0.006838	0.06868	0.006838	0.06868	
0.006838	0.06868	0.006838	0.06868	
0.006838	0.06868	0.006838	0.06868	
0.006838	0.06868	0.006838	0.06868	
0.006838	0.06868	0.006838	0.06868	
0.006838	0.06868	0.006838	0.06868	
0.006838	0.06868	0.006838	0.06868	
0.006838	0.06868	0.006838	0.06868	
0.006838	0.06868	0.006838	0.06868	
0.006838	0.06868	0.006838	0.06868	
0.006838	0.06868	0.006838	0.06868	
0.006838	0.06868	0.006838	0.06868	
0.006838	0.06868	0.006838	0.06868	
0.006838	0.06868	0.006838	0.06868	
0.095732	0.96152	0.095732	0.96152	
2.45675052	20.1734442	2.45675052	20.1734442	
0.0117278	0.119224	0.0117278	0.119224	
2.44502272	20.0542202	2.44502272	20.0542202	

1. General information.
The calculation was carried out on the UPRZA "ERA" v2.0 of the company NPP "Logos-Plus", Novosibirsk
The calculation was carried out by LLP "Yuzhkazekoproekt"

| Certified by the State Standard of the Russian Federation, reg.N ROSS RU.SP09.H00090 until 05.12.2015 |
| To be agreed at the A.I. Voeikov State Geographical Society since 30.04.1999 |
| Approved for use in the bodies and organizations of Rospotrebnadzor: certificate N 17 |
| dated 12/14/2007. Valid until 15.11.2010. |
| Last approval: letter from GGO N 1694/25 dated 11/26/2013 for a period until 12/31/2014 |

The working files were created by the following request: Calculation for the existing position.
City = Tulkubas district Settlement year: 2014 NMU regime: 0 Base year: 2014 Accounting for events: no
Object NG1 NG2 NG3 NG4 NG5 NG6 NG7 NG8 NG9 0006
Impurity = 0337 (Carbon oxide (594)) Sedimentation coefficient = 1.0 MPCm.r. = 5.0000000 MPCs. = 3.0000000 excluding background. Class dangerous = 4 Border of Sum = 31 Coeff. joint exposure = 1.00
Impurity - 0301 (Nitrogen (IV) dioxide (4)) Sedimentation coefficient = 1.0 MPCm.r. = 0.2000000 MPCs. = 0.0400000 excluding background. Class dangerous = 2 Impurity - 0330 (Sulfur dioxide (526)) Settlement factor = 1.0 MPCm.r. = 1.2500000 (= 10 * MPCs.) MPCs. = 0.1250000 excluding background. Class dangerous = 3
2. City parameters UPRZA ERA v2.0
Name Tulkubas region Coefficient A = 200 Wind speed U * = 12.0 m / s
Average wind speed = 5.0 m / s Summer temperature = 25.0 deg. C Winter temperature = -25.0 deg. C
Relief coefficient = 1.00 City area = 0.0 sq. Km
Angle between the direction to the NORTH and the X-axis = 90.0 angular degrees Background concentrations at the posts are not set
3. Initial parameters of sources. UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0006 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 06/13/2014 10:27
Impurity: 0337 - Carbon oxide (594)
Relief coefficient (KR): individual from the city Subsidence coefficient (F): individual from sources Sign of sources "for winter" - negative height value

Code | Type | H | D | Wo | V1 | T | X1 | Y1 | X2 | Y2 | Alf | F | KR | Di | Ejection
<About ~ P> ~ <Is> | ~~~ | ~~ m ~~ | ~~ m ~~ | ~ m / s ~ | ~~ m3 / s ~ | degS | ~~~ m ~~~ | ~ ~~ m ~~~ | ~~~ m ~~~ | ~~~ m ~~~ | border of | ~~~ | ~~~~ | ~~ | ~~~ r / s ~~
000601 0001 T 3.99 1.65 2.00 4.276503 13.0 100 50 1.0 1.00 0 0.1435500
000601 0002 T 3.99 1.65 2.00 4.276503 13.0 100 50 1.0 1.00 0 0.1435500
000601 0003 T 3.99 1.65 2.00 4.276503 13.0 100 50 1.0 1.00 0 0.1435500
000601 0004 T 3.99 1.65 2.00 4.276503 13.0 100 50 1.0 1.00 0 0.1435500
000601 0005 T 3.99 1.65 2.00 4.276503 13.0 100 50 1.0 1.00 0 0.1435500
000601 0006 T 3.99 1.65 2.00 4.276503 13.0 100 50 1.0 1.00 0 0.1435500
000601 0007 T 3.99 1.65 2.00 4.276503 13.0 100 50 1.0 1.00 0 0.1435500
000601 0008 T 3.99 1.65 2.00 4.276503 13.0 100 50 1.0 1.00 0 0.1435500
000601 0009 T 3.99 1.65 2.00 4.276503 13.0 100 50 1.0 1.00 0 0.1435500
000601 0010 T 3.99 1.65 2.00 4.276503 13.0 100 50 1.0 1.00 0 0.1435500
000601 0011 T 3.99 1.65 2.00 4.276503 13.0 100 50 1.0 1.00 0 0.1435500
000601 0012 T 3.99 1.65 2.00 4.276503 13.0 100 50 1.0 1.00 0 0.1435500
000601 0013 T 3.99 1.65 2.00 4.276503 13.0 100 50 1.0 1.00 0 0.1435500
000601 0014 T 3.99 1.65 2.00 4.276503 13.0 100 50 1.0 1.00 0 0.1435500
4. Design parameters Cm, Um, Xm UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0006 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 06/13/2014 10:27 AM Season: WINTER for energy and SUMMER for the rest
Impurity: 0337 - Carbon oxide (594) MPCr for impurity 0337 = 5.0 mg / m3

Sources	Their design parameters
Number	Code	M	Type	Cm (Cm`)	Um	Xm
-p / p-	<ab-p> - <is>	----------	----	[MAC share]	- [m / s] ---	- --- [m] ---
1	000601 0001	0.14355	T	0.017	1.20	88.9
2	000601 0002	0.14355	T	0.017	1.20	88.9
3	000601 0003	0.14355	T	0.017	1.20	88.9
4	000601 0004	0.14355	T	0.017	1.20	88.9
5	000601 0005	0.14355	T	0.017	1.20	88.9
6	000601 0006	0.14355	T	0.017	1.20	88.9
7	000601 0007	0.14355	T	0.017	1.20	88.9
8	000601 0008	0.14355	T	0.017	1.20	88.9
9	000601 0009	0.14355	T	0.017	1.20	88.9
10	000601 0010	0.14355	T	0.017	1.20	88.9
11	000601 0011	0.14355	T	0.017	1.20	88.9

12	000601 0012	0.14355	T	0.017	1.20	88.9
13	000601 0013	0.14355	T	0.017	1.20	88.9
14	000601 0014	0.14355	T	0.017	1.20	88.9
Total Mq = 2.00970 g / s	
Sum Cm for all sources = 0.235562 shares of MPC
Weighted average dangerous wind speed = 1.20 m / s
1. Control parameters for calculating UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0006 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 06/13/2014 10:27 AM Season: WINTER for energy and SUMMER for the rest
Impurity: 0337 - Carbon oxide (594) Background concentration not set
Calculation by rectangle 099: 500x500 with a step of 50 Calculation along the border of the sanitary zone. Coverage RP 099
Wind direction: automatic search for dangerous direction from 0 to 360 degrees. Wind speed: automatic search for dangerous speed from 0.5 to 12.0 (U *) m / s Weighted average dangerous wind speed Uw = 1.2 m / s
A calculation is ordered at a height of 2 meters.
2. Calculation results in the form of a table. UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0006 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 06/13/2014 10:27
Impurity: 0337 - Carbon oxide (594)
The calculation was carried out on a rectangle 99
with parameters: center coordinates X = 100 Y = 50 dimensions: Length (X) = 500, Width (Y) = 500 grid spacing = 50.0
A calculation is ordered at a height of 2 meters.
Explanation_of_designations
Qc - total concentration [MAC share]
Cc - total concentration [mg / m3]
Zop-height, where the maximum is reached [m]
Fop is a dangerous direction. wind [ang. deg.]
Uop - dangerous wind speed [m / s]
CS - the contribution of the SOURCE to Qc [g / m2 per year]
SC - source code for the top line CS
-If the line Cmax = <0.05 MPC, then Fop, Uop, CS, SC are not printed
y= 300 : Y-line 1 Cmax= 0.137 MPC share (x= 100.0; wind direction=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.095: 0.106: 0.118: 0.128: 0.135: 0.137: 0.135: 0.128: 0.118: 0.106: 0.095:
Cc : 0.474: 0.532: 0.589: 0.639: 0.673: 0.686: 0.673: 0.639: 0.589: 0.532: 0.474:
OPP: 135 : 141 : 149 : 158 : 169 : 180 : 191 : 202 : 211 : 219 : 225 :
Uоп: 1.80 : 1.72 : 1.67 : 1.62 : 1.59 : 1.58 : 1.59 : 1.62 : 1.67 : 1.72 : 1.80 :
CS : 0.007: 0.008: 0.008: 0.009: 0.010: 0.010: 0.010: 0.009: 0.008: 0.008: 0.007:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.007: 0.008: 0.008: 0.009: 0.010: 0.010: 0.010: 0.009: 0.008: 0.008: 0.007:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.007: 0.008: 0.008: 0.009: 0.010: 0.010: 0.010: 0.009: 0.008: 0.008: 0.007:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 250 : Y-line 2 Cmax= 0.165 share MPC (x= 100.0; wind direction=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.106: 0.122: 0.137: 0.151: 0.161: 0.165: 0.161: 0.151: 0.137: 0.122: 0.106:
Cc : 0.532: 0.608: 0.686: 0.755: 0.806: 0.824: 0.806: 0.755: 0.686: 0.608: 0.532:

OPP: 129 : 135 : 143 : 153 : 166 : 180 : 194 : 207 : 217 : 225 : 231 :
Uоп: 1.72 : 1.65 : 1.58 : 1.52 : 1.48 : 1.47 : 1.48 : 1.52 : 1.58 : 1.65 : 1.72 :
CS : 0.008: 0.009: 0.010: 0.011: 0.012: 0.012: 0.012: 0.011: 0.010: 0.009: 0.008:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.008: 0.009: 0.010: 0.011: 0.012: 0.012: 0.012: 0.011: 0.010: 0.009: 0.008:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.008: 0.009: 0.010: 0.011: 0.012: 0.012: 0.012: 0.011: 0.010: 0.009: 0.008:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 200 : Y-line 3 Cmax= 0.197 share MPC (x= 100.0; wind direction=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.118: 0.137: 0.158: 0.177: 0.191: 0.197: 0.191: 0.177: 0.158: 0.137: 0.118:
Cc : 0.589: 0.686: 0.788: 0.884: 0.955: 0.983: 0.955: 0.884: 0.788: 0.686: 0.589:
OPP: 121 : 127 : 135 : 146 : 162 : 180 : 198 : 214 : 225 : 233 : 239 :
CS : 0.008: 0.010: 0.011: 0.013: 0.014: 0.014: 0.014: 0.013: 0.011: 0.010: 0.008:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.008: 0.010: 0.011: 0.013: 0.014: 0.014: 0.014: 0.013: 0.011: 0.010: 0.008:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.008: 0.010: 0.011: 0.013: 0.014: 0.014: 0.014: 0.013: 0.011: 0.010: 0.008:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 150 : Y-line 4 Cmax= 0.229 share MPC (x= 100.0; wind direction=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.128: 0.151: 0.177: 0.202: 0.222: 0.229: 0.222: 0.202: 0.177: 0.151: 0.128:
Cc : 0.639: 0.755: 0.884: 1.011: 1.108: 1.147: 1.108: 1.011: 0.884: 0.755: 0.639:
OPP: 112 : 117 : 124 : 135 : 153 : 180 : 207 : 225 : 236 : 243 : 248 :
Uоп: 1.62 : 1.52 : 1.43 : 1.36 : 1.30 : 1.29 : 1.30 : 1.36 : 1.43 : 1.52 : 1.62 :
CS : 0.009: 0.011: 0.013: 0.014: 0.016: 0.016: 0.016: 0.014: 0.013: 0.011: 0.009:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.009: 0.011: 0.013: 0.014: 0.016: 0.016: 0.016: 0.014: 0.013: 0.011: 0.009:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.009: 0.011: 0.013: 0.014: 0.016: 0.016: 0.016: 0.014: 0.013: 0.011: 0.009:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 100 : Y-line 5 Cmax= 0.410 share MPC (x= 100.0; wind direction=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.135: 0.161: 0.191: 0.222: 0.301: 0.410: 0.301: 0.222: 0.191: 0.161: 0.135:
Cc : 0.673: 0.806: 0.955: 1.108: 1.504: 2.051: 1.504: 1.108: 0.955: 0.806: 0.673:
OPP: 101 : 104 : 108 : 117 : 135 : 180 : 225 : 243 : 252 : 256 : 259 :
Uоп: 1.59 : 1.48 : 1.39 : 1.30 : 1.76 : 1.79 : 1.76 : 1.30 : 1.39 : 1.48 : 1.59 :
CS : 0.010: 0.012: 0.014: 0.016: 0.021: 0.029: 0.021: 0.016: 0.014: 0.012: 0.010:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.010: 0.012: 0.014: 0.016: 0.021: 0.029: 0.021: 0.016: 0.014: 0.012: 0.010:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.010: 0.012: 0.014: 0.016: 0.021: 0.029: 0.021: 0.016: 0.014: 0.012: 0.010:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 50 : Y-line 6 Cmax= 0.474 share MPC (x= 100.0; wind direction= 8)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.137: 0.165: 0.197: 0.229: 0.410: 0.474: 0.410: 0.229: 0.197: 0.165: 0.137:
Cc : 0.686: 0.824: 0.983: 1.147: 2.051: 2.368: 2.051: 1.147: 0.983: 0.824: 0.686:
OPP: 90 : 90 : 90 : 90 : 90 : 8 : 270 : 270 : 270 : 270 : 270 :
Uоп: 1.58 : 1.47 : 1.37 : 1.29 : 1.79 : 1.60 : 1.79 : 1.29 : 1.37 : 1.47 : 1.58 :
CS : 0.010: 0.012: 0.014: 0.016: 0.029: 0.034: 0.029: 0.016: 0.014: 0.012: 0.010:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.010: 0.012: 0.014: 0.016: 0.029: 0.034: 0.029: 0.016: 0.014: 0.012: 0.010:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.010: 0.012: 0.014: 0.016: 0.029: 0.034: 0.029: 0.016: 0.014: 0.012: 0.010:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 0 : Y-line 7 Cmax= 0.410 share MPC (x= 100.0; wind direction= 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.135: 0.161: 0.191: 0.222: 0.301: 0.410: 0.301: 0.222: 0.191: 0.161: 0.135:
Cc : 0.673: 0.806: 0.955: 1.108: 1.504: 2.051: 1.504: 1.108: 0.955: 0.806: 0.673:
OPP: 79 : 76 : 72 : 63 : 45 : 0 : 315 : 297 : 288 : 284 : 281 :
Uоп: 1.59 : 1.48 : 1.39 : 1.30 : 1.76 : 1.79 : 1.76 : 1.30 : 1.39 : 1.48 : 1.59 :
CS : 0.010: 0.012: 0.014: 0.016: 0.021: 0.029: 0.021: 0.016: 0.014: 0.012: 0.010:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.010: 0.012: 0.014: 0.016: 0.021: 0.029: 0.021: 0.016: 0.014: 0.012: 0.010:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.010: 0.012: 0.014: 0.016: 0.021: 0.029: 0.021: 0.016: 0.014: 0.012: 0.010:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= -50 : Y-line 8 Cmax= 0.229 share MPC (x= 100.0; wind direction= 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.128: 0.151: 0.177: 0.202: 0.222: 0.229: 0.222: 0.202: 0.177: 0.151: 0.128:

Cc : 0.639: 0.755: 0.884: 1.011: 1.108: 1.147: 1.108: 1.011: 0.884: 0.755: 0.639:
OPP: 68 : 63 : 56 : 45 : 27 : 0 : 333 : 315 : 304 : 297 : 292 :
Uоп: 1.62 : 1.52 : 1.43 : 1.36 : 1.30 : 1.29 : 1.30 : 1.36 : 1.43 : 1.52 : 1.62 :
CS : 0.009: 0.011: 0.013: 0.014: 0.016: 0.016: 0.016: 0.014: 0.013: 0.011: 0.009:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.009: 0.011: 0.013: 0.014: 0.016: 0.016: 0.016: 0.014: 0.013: 0.011: 0.009:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.009: 0.011: 0.013: 0.014: 0.016: 0.016: 0.016: 0.014: 0.013: 0.011: 0.009:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= -100 : Y-line 9 Cmax= 0.197 share MPC (x= 100.0; wind direction= 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.118: 0.137: 0.158: 0.177: 0.191: 0.197: 0.191: 0.177: 0.158: 0.137: 0.118:
Cc : 0.589: 0.686: 0.788: 0.884: 0.955: 0.983: 0.955: 0.884: 0.788: 0.686: 0.589:
OPP: 59 : 53 : 45 : 34 : 18 : 0 : 342 : 326 : 315 : 307 : 301 :
Uоп: 1.67 : 1.58 : 1.50 : 1.43 : 1.39 : 1.37 : 1.39 : 1.43 : 1.50 : 1.58 : 1.67 :
Ви : 0.008: 0.010: 0.011: 0.013: 0.014: 0.014: 0.014: 0.013: 0.011: 0.010: 0.008:
Ки : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
Ви : 0.008: 0.010: 0.011: 0.013: 0.014: 0.014: 0.014: 0.013: 0.011: 0.010: 0.008:
Ки : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
Ви : 0.008: 0.010: 0.011: 0.013: 0.014: 0.014: 0.014: 0.013: 0.011: 0.010: 0.008:
Ки : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= -150 : Y-line 10 Cmax= 0.165 share MPC (x= 100.0; wind direction= 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.106: 0.122: 0.137: 0.151: 0.161: 0.165: 0.161: 0.151: 0.137: 0.122: 0.106:
Cc : 0.532: 0.608: 0.686: 0.755: 0.806: 0.824: 0.806: 0.755: 0.686: 0.608: 0.532:
OPP: 51 : 45 : 37 : 27 : 14 : 0 : 346 : 333 : 323 : 315 : 309 :
Uоп: 1.72 : 1.65 : 1.58 : 1.52 : 1.48 : 1.47 : 1.48 : 1.52 : 1.58 : 1.65 : 1.72 :
CS : 0.008: 0.009: 0.010: 0.011: 0.012: 0.012: 0.012: 0.011: 0.010: 0.009: 0.008:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.008: 0.009: 0.010: 0.011: 0.012: 0.012: 0.012: 0.011: 0.010: 0.009: 0.008:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.008: 0.009: 0.010: 0.011: 0.012: 0.012: 0.012: 0.011: 0.010: 0.009: 0.008:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= -200 : Y-line 11 Cmax= 0.137 share MPC (x= 100.0; wind direction= 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.095: 0.106: 0.118: 0.128: 0.135: 0.137: 0.135: 0.128: 0.118: 0.106: 0.095:
Cc : 0.474: 0.532: 0.589: 0.639: 0.673: 0.686: 0.673: 0.639: 0.589: 0.532: 0.474:
OPP: 45 : 39 : 31 : 22 : 11 : 0 : 349 : 338 : 329 : 321 : 315 :
Uоп: 1.80 : 1.72 : 1.67 : 1.62 : 1.59 : 1.58 : 1.59 : 1.62 : 1.67 : 1.72 : 1.80 :
CS : 0.007: 0.008: 0.008: 0.009: 0.010: 0.010: 0.010: 0.009: 0.008: 0.008: 0.007:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.007: 0.008: 0.008: 0.009: 0.010: 0.010: 0.010: 0.009: 0.008: 0.008: 0.007:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.007: 0.008: 0.008: 0.009: 0.010: 0.010: 0.010: 0.009: 0.008: 0.008: 0.007:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
Calculation results at the maximum point of UPRZA ERA v2.0 Point coordinates: X = 100.0 m Y = 50.0 m
At height: Z = 2.0 m
Maximum total concentration | Cs = 0.47355 share of MPC |
| 2.36775 mg / m3 | Achieved in a dangerous direction of 8 degrees.
and wind speed 1.60 m / s
Sources in total: 14. In the table, depositors with no more than 95% of the deposit are ordered
SOURCE_ CONTRIBUTIONS

Number	Code	Type	Ejection	Contribution	Contribution in%	Sum. %	Influence rate
1	000601 0001	T	0.1435	0.033825	7.1	7.1	0.235632211
2	000601 0002	T	0.1435	0.033825	7.1	14.3	0.235632211
3	000601 0003	T	0.1435	0.033825	7.1	21.4	0.235632211
4	000601 0004	T	0.1435	0.033825	7.1	28.6	0.235632211
5	000601 0005	T	0.1435	0.033825	7.1	35.7	0.235632211
6	000601 0006	T	0.1435	0.033825	7.1	42.9	0.235632211
7	000601 0007	T	0.1435	0.033825	7.1	50.0	0.235632211
8	000601 0008	T	0.1435	0.033825	7.1	57.1	0.235632211
9	000601 0009	T	0.1435	0.033825	7.1	64.3	0.235632211
10	000601 0010	T	0.1435	0.033825	7.1	71.4	0.235632211
11	000601 0011	T	0.1435	0.033825	7.1	78.6	0.235632211
12	000601 0012	T	0.1435	0.033825	7.1	85.7	0.235632211
13	000601 0013	T	0.1435	0.033825	7.1	92.9	0.235632211
14	000601 0014	T	0.1435	0.033825	7.1	100.0	0.235632211

| In total = 0.473550 100.0 |
| The total contribution of the rest = 0.000000 0.0 |
1. Total concentrations at the nodes of the computational grid. UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0006 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 06/13/2014 10:27
Impurity: 0337 - Carbon oxide (594) Calculation ordered at a height of 2 meters.
Calculation_Rectangle_Parameters_No 99
| Center coordinates: X = 100 m; Y = 50 m |
| Length and width: L = 500 m; B = 500 m |
| Grid step (dX = dY): D = 50 m |
(The ^ symbol means the presence of a source near the calculated node)
1 2 3 4 5 6 7 8 9 10 11
*--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|----|
1-| 0.095 0.106 0.118 0.128 0.135 0.137 0.135 0.128 0.118 0.106 0.095 |- 1
2-| 0.106 0.122 0.137 0.151 0.161 0.165 0.161 0.151 0.137 0.122 0.106 |- 2
3-| 0.118 0.137 0.158 0.177 0.191 0.197 0.191 0.177 0.158 0.137 0.118 |- 3
4-| 0.128 0.151 0.177 0.202 0.222 0.229 0.222 0.202 0.177 0.151 0.128 |- 4
5-| 0.135 0.161 0.191 0.222 0.301 0.410 0.301 0.222 0.191 0.161 0.135 |- 5
6-C 0.137 0.165 0.197 0.229 0.410 0.474 0.410 0.229 0.197 0.165 0.137 C- 6
7-| 0.135 0.161 0.191 0.222 0.301 0.410 0.301 0.222 0.191 0.161 0.135 |- 7
8-| 0.128 0.151 0.177 0.202 0.222 0.229 0.222 0.202 0.177 0.151 0.128 |- 8
9-| 0.118 0.137 0.158 0.177 0.191 0.197 0.191 0.177 0.158 0.137 0.118 |- 9
10-| 0.106 0.122 0.137 0.151 0.161 0.165 0.161 0.151 0.137 0.122 0.106 |-10
11-| 0.095 0.106 0.118 0.128 0.135 0.137 0.135 0.128 0.118 0.106 0.095 |-11
|--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|----|
1 2 3 4 5 6 7 8 9 10 11
Overall for the calculated rectangle:
Maximum concentration ---------> Cm = 0.47355 fractions of MPC
= 2.36775 mg / m3
Reached at the point with coordinates: Xm = 100.0m (X-column 6, Y-row 6) Ym = 50.0m
At a height of Z = 2.0 m
With a dangerous wind direction: 8 deg. and "dangerous" wind speed: 1.60 m / s
9. The results of the calculation on the border of the sanzone (for the calculation of the rectangle 099). UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0006 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 06/13/2014 10:27
Impurity: 0337 - Carbon oxide (594) Calculation ordered at a height of 2 meters.
Explanation_of_designations
| Qc - total concentration [MAC share] |
| Cc - total concentration [mg / m3] |
| Zop-height, where the maximum is reached [m] |
| Fop is a dangerous direction. wind [ang. deg.] |
| Uop - dangerous wind speed [m / s] |
| CS - the contribution of the SOURCE to Qc [g / m2 per year] |
| SC - source code for the top line CS |
| -If the line Cmax = <0.05 MPC, then Fop, Uop, Vi, Ki are not printed |
y= 0: 1: 4: 9: 15: 23: 31: 41: 50: 59: 69: 77: 85: 91: 96:
x= 100: 90: 80: 72: 64: 58: 54: 51: 50: 51: 54: 58: 64: 72: 80:
Qc : 0.410: 0.410: 0.409: 0.412: 0.409: 0.410: 0.411: 0.411: 0.410: 0.411: 0.411: 0.410: 0.409: 0.412: 0.409:
Cc : 2.051: 2.048: 2.043: 2.061: 2.044: 2.052: 2.056: 2.055: 2.051: 2.055: 2.056: 2.052: 2.044: 2.061: 2.043:
OPP: 0 : 12 : 23 : 34 : 46 : 57 : 68 : 80 : 90 : 100 : 112 : 123 : 134 : 146 : 157 :
Uоп: 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.79 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.80 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 99: 100: 100: 99: 96: 91: 85: 77: 69: 59: 50: 41: 31: 23: 15:
x= 90: 100: 100: 110: 120: 128: 136: 142: 146: 149: 150: 149: 146: 142: 136:
Qc : 0.410: 0.410: 0.410: 0.410: 0.409: 0.412: 0.409: 0.410: 0.411: 0.411: 0.410: 0.411: 0.411: 0.410: 0.409:
Cc : 2.048: 2.051: 2.051: 2.048: 2.043: 2.061: 2.044: 2.052: 2.056: 2.055: 2.051: 2.055: 2.056: 2.052: 2.044:
OPP: 168 : 180 : 180 : 192 : 203 : 214 : 226 : 237 : 248 : 260 : 270 : 280 : 292 : 303 : 314 :

Uоп: 1.79 : 1.79 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.79 : 1.79 : 1.79 : 1.80 : 1.79 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 9: 4: 1: 0: 0: 1: 4: 9: 15: 23: 32: 41: 49: 59: 68:
x= 128: 120: 110: 100: 99: 89: 80: 71: 64: 58: 53: 51: 50: 51: 53:
Qc : 0.412: 0.409: 0.410: 0.410: 0.410: 0.408: 0.409: 0.409: 0.409: 0.410: 0.408: 0.411: 0.410: 0.411: 0.408:
Cc : 2.061: 2.043: 2.048: 2.051: 2.050: 2.042: 2.043: 2.043: 2.044: 2.052: 2.040: 2.055: 2.050: 2.055: 2.040:
OPP: 326 : 337 : 348 : 0 : 1 : 13 : 23 : 35 : 46 : 57 : 69 : 80 : 89 : 100 : 111 :
Uоп: 1.79 : 1.80 : 1.79 : 1.79 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.79 : 1.79 : 1.79 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 77: 85: 91: 96: 99: 100: 100: 99: 96: 91: 85: 77: 68: 59: 51:
x= 58: 64: 71: 80: 89: 100: 101: 111: 120: 129: 136: 142: 147: 149: 150:
Qc : 0.410: 0.409: 0.409: 0.409: 0.408: 0.410: 0.410: 0.408: 0.409: 0.409: 0.409: 0.410: 0.408: 0.411: 0.410:
Cc : 2.052: 2.044: 2.043: 2.043: 2.042: 2.051: 2.050: 2.042: 2.043: 2.043: 2.044: 2.052: 2.040: 2.055: 2.050:
OPP: 123 : 134 : 145 : 157 : 167 : 180 : 181 : 193 : 203 : 215 : 226 : 237 : 249 : 260 : 269 :
Uоп: 1.80 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.79 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 41: 32: 23: 15: 9: 4: 1: 0:
x= 149: 147: 142: 136: 129: 120: 111: 99:
Qc : 0.411: 0.408: 0.410: 0.409: 0.409: 0.409: 0.408: 0.410:
Cc : 2.055: 2.040: 2.052: 2.044: 2.043: 2.043: 2.042: 2.050:
OPP: 280 : 291 : 303 : 314 : 325 : 337 : 347 : 1 :
Uоп: 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029: 0.029:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
Calculation results at the maximum point of UPRZA ERA v2.0 Point coordinates: X = 72.0 m Y = 9.0 m
At height: Z = 2.0 m
Maximum total concentration | Cs = 0.41215 share of MPC |
| 2.06076 mg / m3 | Achieved in a dangerous direction 34 degrees.
and wind speed 1.79 m / s
Sources in total: 14. In the table, depositors with no more than 95% of the deposit are ordered
SOURCE_ CONTRIBUTIONS

Number	Code	Type	Ejection	Contribution	Contribution in%	Sum. %	Influence rate
----	<Об-П>-<Ис>	---	---M-(Mq)--	-C[доли ПДК]	--------	-------	---- b=C/M ---
1	000601 0001	T	0.1435	0.029439	7.1	7.1	0.205081150
2	000601 0002	T	0.1435	0.029439	7.1	14.3	0.205081150
3	000601 0003	T	0.1435	0.029439	7.1	21.4	0.205081150
4	000601 0004	T	0.1435	0.029439	7.1	28.6	0.205081150
5	000601 0005	T	0.1435	0.029439	7.1	35.7	0.205081150
6	000601 0006	T	0.1435	0.029439	7.1	42.9	0.205081150
7	000601 0007	T	0.1435	0.029439	7.1	50.0	0.205081150
8	000601 0008	T	0.1435	0.029439	7.1	57.1	0.205081150
9	000601 0009	T	0.1435	0.029439	7.1	64.3	0.205081150
10	000601 0010	T	0.1435	0.029439	7.1	71.4	0.205081150
11	000601 0011	T	0.1435	0.029439	7.1	78.6	0.205081150
12	000601 0012	T	0.1435	0.029439	7.1	85.7	0.205081150
13	000601 0013	T	0.1435	0.029439	7.1	92.9	0.205081150
14	000601 0014	T	0.1435	0.029439	7.1	100.0	0.205081150
in sum = 0.412151 100.0
The total contribution of the rest = 0.000000 -0.0

3. Initial parameters of sources.
UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0006 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 06/13/2014 10:27 Summation group: 31 = 0301 Nitrogen (IV) dioxide (4)
0330 Sulfur dioxide (526)
Relief coefficient (KR): individual from the city Subsidence coefficient (F): individual from sources Sign of sources "for winter" - negative height value

Code	Type	H	D	Wo	V1	T	X1	Y1	X2	Y2	Alf	F	KP	Ди	Emission
<Об~П>~<Ис>		~~~	~~м~~	~~м~~	~м/с~	~~мЗ/с~	градС	~~~м~~~	~~~м~~~	~~~м~~~	~~~м~~~	~~~м~~~	гр.	~~~	~~~~~	~~~	~~~г/с~~
--------- Примесь 0301--------																	
000601 0001	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0091101
000601 0002	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0091101
000601 0003	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0091101
000601 0004	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0091101
000601 0005	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0091101
000601 0006	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0091101
000601 0007	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0091101
000601 0008	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0091101
000601 0009	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0091101
000601 0010	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0091101
000601 0011	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0091101
000601 0012	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0091101
000601 0013	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0091101
000601 0014	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0091101
--------- Impurity 0330--------																	
000601 0001	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0013059
000601 0002	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0013059
000601 0003	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0013059
000601 0004	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0013059
000601 0005	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0013059
000601 0006	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0013059
000601 0007	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0013059
000601 0008	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0013059
000601 0009	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0013059
000601 0010	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0013059
000601 0011	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0013059
000601 0012	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0013059
000601 0013	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0013059
000601 0014	T	3.99	1.65	2.00	4.276503	13.0	100	50					1.0	1.00	0	0.0013059

4.Design parameters Cm, Um, Xm UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0006 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 06/13/2014 10:27 AM Season: WINTER for energy and SUMMER for the rest
Summation group: 31 = 0301 Nitrogen (IV) dioxide (4) 0330 Sulfur dioxide (526)
| - For the summation groups, the emission Mq = M1 / MPC1 + ... + Mn / MPCn, and |
| total concentration Cm = Cm1 / MPC1 + ... + Cmn / MPCn (more details |
| see page 36 OND-86) | |

Source				Its estimated parameters		
Номер	Код	Mq	Тип	Cm (Cm`)	Um	Xm
-п/п-	<об-п>-<ис>			[доли ПДК]	[м/с]	[м]
1	000601 0001	0.04660	T	0.027	1.20	88.9
2	000601 0002	0.04660	T	0.027	1.20	88.9
3	000601 0003	0.04660	T	0.027	1.20	88.9
4	000601 0004	0.04660	T	0.027	1.20	88.9
5	000601 0005	0.04660	T	0.027	1.20	88.9
6	000601 0006	0.04660	T	0.027	1.20	88.9
7	000601 0007	0.04660	T	0.027	1.20	88.9
8	000601 0008	0.04660	T	0.027	1.20	88.9
9	000601 0009	0.04660	T	0.027	1.20	88.9
10	000601 0010	0.04660	T	0.027	1.20	88.9
11	000601 0011	0.04660	T	0.027	1.20	88.9
12	000601 0012	0.04660	T	0.027	1.20	88.9
13	000601 0013	0.04660	T	0.027	1.20	88.9

| 14 |000601 0014| 0.04660| T | 0.027 | 1.20 | 88.9 |
| Total Mq = 0.65233 (sum of Mq / MPC for all impurities) |
| The sum of Cm for all sources = 0.382307 shares of the MPC |
| Weighted average dangerous wind speed = 1.20 m / s |
4. Control parameters for calculating UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0006 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 The calculation was carried out on 06/13/2014 10:27 AM Season: WINTER for energy and SUMMER for the rest
Summation group: 31 = 0301 Nitrogen (IV) dioxide (4) 0330 Sulfur dioxide (526)
Background concentration not set
Calculation by rectangle 099: 500x500 with a step of 50 Calculation along the border of the sanitary zone. Coverage RP 099
Wind direction: automatic search for dangerous direction from 0 to 360 degrees. Wind speed: automatic search for dangerous speed from 0.5 to 12.0 (U *) m / s Weighted average dangerous wind speed Uw = 1.2 m / s
A calculation is ordered at a height of 2 meters.
5. Calculation results in the form of a table. UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0006 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 06/13/2014 10:27 Summation group: 31 = 0301 Nitrogen (IV) dioxide (4)
0330 Sulfur dioxide (526)
The calculation was carried out on a rectangle 99
with parameters: center coordinates X = 100 Y = 50 dimensions: Length (X) = 500, Width (Y) = 500 grid spacing = 50.0
A calculation is ordered at a height of 2 meters.
Explanation_of_designations
| Qc - total concentration [MAC share] |
| Zop-height, where the maximum is reached [m] |
| Fop is a dangerous direction. wind [ang. deg.] |
| Uop - dangerous wind speed [m / s] |
| CS - the contribution of the SOURCE to Qc [g / m2 per year] |
| SC - source code for the top line Vi |
| -If the calculation is for summation, then concentr. in mg / m3 is not printed |
| -If the line Cmax = <0.05 MPC, then Fop, Uop, Vi, Ki are not printed |
y= 300 : Y-строка 1 Cmax= 0.223 долей ПДК (x= 100.0; напр.ветра=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.154: 0.173: 0.191: 0.207: 0.218: 0.223: 0.218: 0.207: 0.191: 0.173: 0.154:
OPP: 135 : 141 : 149 : 158 : 169 : 180 : 191 : 202 : 211 : 219 : 225 :
Uоп: 1.80 : 1.72 : 1.67 : 1.62 : 1.59 : 1.58 : 1.59 : 1.62 : 1.67 : 1.72 : 1.80 :
CS : 0.011: 0.012: 0.014: 0.015: 0.016: 0.016: 0.016: 0.015: 0.014: 0.012: 0.011:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.011: 0.012: 0.014: 0.015: 0.016: 0.016: 0.016: 0.015: 0.014: 0.012: 0.011:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.011: 0.012: 0.014: 0.015: 0.016: 0.016: 0.016: 0.015: 0.014: 0.012: 0.011:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 250 : Y-line 2 Cmax= 0.267 share MPC (x= 100.0; wind direction=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.173: 0.197: 0.223: 0.245: 0.261: 0.267: 0.261: 0.245: 0.223: 0.197: 0.173:
OPP: 129 : 135 : 143 : 153 : 166 : 180 : 194 : 207 : 217 : 225 : 231 :
Uоп: 1.72 : 1.65 : 1.58 : 1.52 : 1.48 : 1.47 : 1.48 : 1.52 : 1.58 : 1.65 : 1.72 :
CS : 0.012: 0.014: 0.016: 0.018: 0.019: 0.019: 0.019: 0.018: 0.016: 0.014: 0.012:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.012: 0.014: 0.016: 0.018: 0.019: 0.019: 0.019: 0.018: 0.016: 0.014: 0.012:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.012: 0.014: 0.016: 0.018: 0.019: 0.019: 0.019: 0.018: 0.016: 0.014: 0.012:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 200 : Y-line 3 Cmax= 0.319 share MPC (x= 100.0; wind direction=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.191: 0.223: 0.256: 0.287: 0.310: 0.319: 0.310: 0.287: 0.256: 0.223: 0.191:
OPP: 121 : 127 : 135 : 146 : 162 : 180 : 198 : 214 : 225 : 233 : 239 :
Uоп: 1.67 : 1.58 : 1.50 : 1.43 : 1.39 : 1.37 : 1.39 : 1.43 : 1.50 : 1.58 : 1.67 :
CS : 0.014: 0.016: 0.018: 0.020: 0.022: 0.023: 0.022: 0.020: 0.018: 0.016: 0.014:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.014: 0.016: 0.018: 0.020: 0.022: 0.023: 0.022: 0.020: 0.018: 0.016: 0.014:

SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.014: 0.016: 0.018: 0.020: 0.022: 0.023: 0.022: 0.020: 0.018: 0.016: 0.014:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 150 : Y-line 4 Cmax= 0.372 share MPC (x= 100.0; wind direction=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.207: 0.245: 0.287: 0.328: 0.360: 0.372: 0.360: 0.328: 0.287: 0.245: 0.207:
OPP: 112 : 117 : 124 : 135 : 153 : 180 : 207 : 225 : 236 : 243 : 248 :
Uоп: 1.62 : 1.52 : 1.43 : 1.36 : 1.30 : 1.29 : 1.30 : 1.36 : 1.43 : 1.52 : 1.62 :
CS : 0.015: 0.018: 0.020: 0.023: 0.026: 0.027: 0.026: 0.023: 0.020: 0.018: 0.015:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.015: 0.018: 0.020: 0.023: 0.026: 0.027: 0.026: 0.023: 0.020: 0.018: 0.015:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.015: 0.018: 0.020: 0.023: 0.026: 0.027: 0.026: 0.023: 0.020: 0.018: 0.015:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 100 : Y-line 5 Cmax= 0.666 share MPC (x= 100.0; wind direction=180)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.218: 0.261: 0.310: 0.360: 0.488: 0.666: 0.488: 0.360: 0.310: 0.261: 0.218:
OPP: 101 : 104 : 108 : 117 : 135 : 180 : 225 : 243 : 252 : 256 : 259 :
Uоп: 1.59 : 1.48 : 1.39 : 1.30 : 1.76 : 1.79 : 1.76 : 1.30 : 1.39 : 1.48 : 1.59 :
CS : 0.016: 0.019: 0.022: 0.026: 0.035: 0.048: 0.035: 0.026: 0.022: 0.019: 0.016:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.016: 0.019: 0.022: 0.026: 0.035: 0.048: 0.035: 0.026: 0.022: 0.019: 0.016:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.016: 0.019: 0.022: 0.026: 0.035: 0.048: 0.035: 0.026: 0.022: 0.019: 0.016:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 50 : Y-line 6 Cmax= 0.769 share MPC (x= 100.0; wind direction= 8)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.223: 0.267: 0.319: 0.372: 0.666: 0.769: 0.666: 0.372: 0.319: 0.267: 0.223:
OPP: 90 : 90 : 90 : 90 : 90 : 8 : 270 : 270 : 270 : 270 : 270 :
Uоп: 1.58 : 1.47 : 1.37 : 1.29 : 1.79 : 1.60 : 1.79 : 1.29 : 1.37 : 1.47 : 1.58 :
CS : 0.016: 0.019: 0.023: 0.027: 0.048: 0.055: 0.048: 0.027: 0.023: 0.019: 0.016:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.016: 0.019: 0.023: 0.027: 0.048: 0.055: 0.048: 0.027: 0.023: 0.019: 0.016:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.016: 0.019: 0.023: 0.027: 0.048: 0.055: 0.048: 0.027: 0.023: 0.019: 0.016:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 0 : Y-line 7 Cmax= 0.666 share MPC (x= 100.0; wind direction= 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.218: 0.261: 0.310: 0.360: 0.488: 0.666: 0.488: 0.360: 0.310: 0.261: 0.218:
OPP: 79 : 76 : 72 : 63 : 45 : 0 : 315 : 297 : 288 : 284 : 281 :
Uоп: 1.59 : 1.48 : 1.39 : 1.30 : 1.76 : 1.79 : 1.76 : 1.30 : 1.39 : 1.48 : 1.59 :
CS : 0.016: 0.019: 0.022: 0.026: 0.035: 0.048: 0.035: 0.026: 0.022: 0.019: 0.016:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.016: 0.019: 0.022: 0.026: 0.035: 0.048: 0.035: 0.026: 0.022: 0.019: 0.016:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.016: 0.019: 0.022: 0.026: 0.035: 0.048: 0.035: 0.026: 0.022: 0.019: 0.016:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= -50 : Y-line 8 Cmax= 0.372 share MPC (x= 100.0; wind direction= 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.207: 0.245: 0.287: 0.328: 0.360: 0.372: 0.360: 0.328: 0.287: 0.245: 0.207:
OPP: 68 : 63 : 56 : 45 : 27 : 0 : 333 : 315 : 304 : 297 : 292 :
Uоп: 1.62 : 1.52 : 1.43 : 1.36 : 1.30 : 1.29 : 1.30 : 1.36 : 1.43 : 1.52 : 1.62 :
CS : 0.015: 0.018: 0.020: 0.023: 0.026: 0.027: 0.026: 0.023: 0.020: 0.018: 0.015:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.015: 0.018: 0.020: 0.023: 0.026: 0.027: 0.026: 0.023: 0.020: 0.018: 0.015:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.015: 0.018: 0.020: 0.023: 0.026: 0.027: 0.026: 0.023: 0.020: 0.018: 0.015:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= -100 : Y-line 9 Cmax= 0.319 share MPC (x= 100.0; wind direction= 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.191: 0.223: 0.256: 0.287: 0.310: 0.319: 0.310: 0.287: 0.256: 0.223: 0.191:
OPP: 59 : 53 : 45 : 34 : 18 : 0 : 342 : 326 : 315 : 307 : 301 :
Uоп: 1.67 : 1.58 : 1.50 : 1.43 : 1.39 : 1.37 : 1.39 : 1.43 : 1.50 : 1.58 : 1.67 :
CS : 0.014: 0.016: 0.018: 0.020: 0.022: 0.023: 0.022: 0.020: 0.018: 0.016: 0.014:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.014: 0.016: 0.018: 0.020: 0.022: 0.023: 0.022: 0.020: 0.018: 0.016: 0.014:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.014: 0.016: 0.018: 0.020: 0.022: 0.023: 0.022: 0.020: 0.018: 0.016: 0.014:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= -150 : Y-line 10 Cmax= 0.267 share MPC (x= 100.0; wind direction= 0)

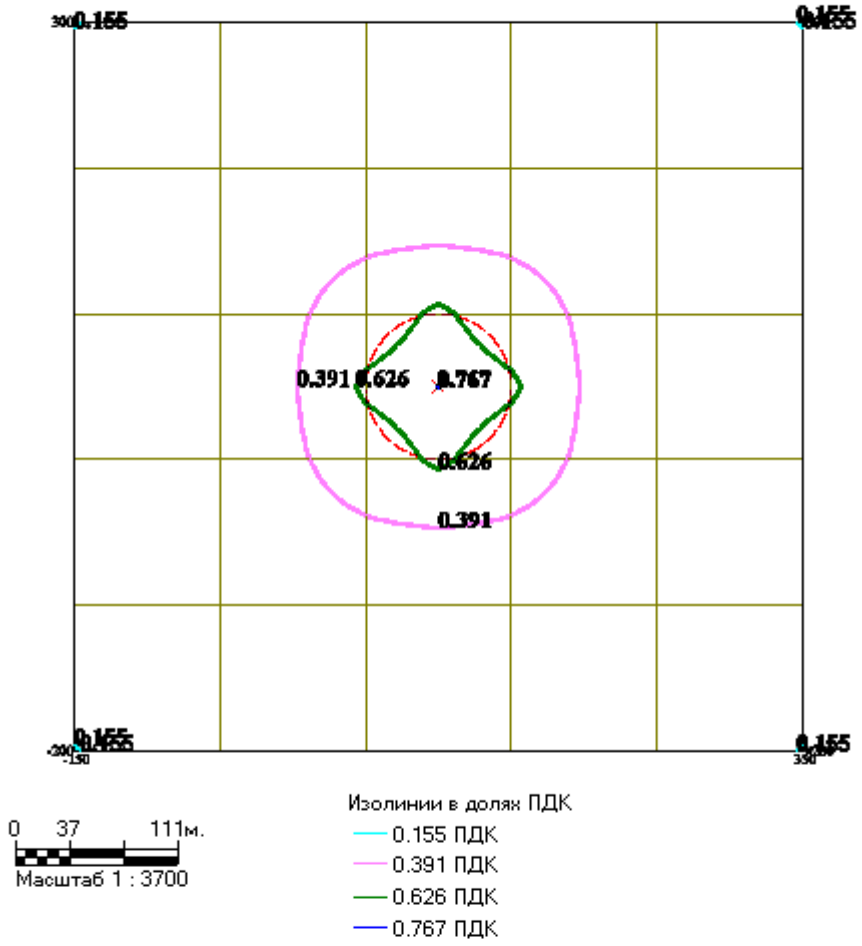
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.173: 0.197: 0.223: 0.245: 0.261: 0.267: 0.261: 0.245: 0.223: 0.197: 0.173:
OPP: 51 : 45 : 37 : 27 : 14 : 0 : 346 : 333 : 323 : 315 : 309 :
Uon: 1.72 : 1.65 : 1.58 : 1.52 : 1.48 : 1.47 : 1.48 : 1.52 : 1.58 : 1.65 : 1.72 :
CS : 0.012: 0.014: 0.016: 0.018: 0.019: 0.019: 0.019: 0.018: 0.016: 0.014: 0.012:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.012: 0.014: 0.016: 0.018: 0.019: 0.019: 0.019: 0.018: 0.016: 0.014: 0.012:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.012: 0.014: 0.016: 0.018: 0.019: 0.019: 0.019: 0.018: 0.016: 0.014: 0.012:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= -200 : Y-line 11 Cmax= 0.223 share MPC (x= 100.0; wind direction= 0)
x= -150 : -100: -50: 0: 50: 100: 150: 200: 250: 300: 350:
Qc : 0.154: 0.173: 0.191: 0.207: 0.218: 0.223: 0.218: 0.207: 0.191: 0.173: 0.154:
OPP: 45 : 39 : 31 : 22 : 11 : 0 : 349 : 338 : 329 : 321 : 315 :
Uon: 1.80 : 1.72 : 1.67 : 1.62 : 1.59 : 1.58 : 1.59 : 1.62 : 1.67 : 1.72 : 1.80 :
CS : 0.011: 0.012: 0.014: 0.015: 0.016: 0.016: 0.016: 0.015: 0.014: 0.012: 0.011:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS: 0.011: 0.012: 0.014: 0.015: 0.016: 0.016: 0.016: 0.015: 0.014: 0.012: 0.011:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.011: 0.012: 0.014: 0.015: 0.016: 0.016: 0.016: 0.015: 0.014: 0.012: 0.011:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
Calculation results at the maximum point of UPRZA ERA v2.0 Point coordinates: X = 100.0 m Y = 50.0 m
At height: Z = 2.0 m
Maximum total concentration | Cs = 0.76855 share of MPC | Achieved in a dangerous direction of 8 degrees.
and wind speed 1.60 m / s
Sources in total: 14. In the table, depositors with no more than 95% of the deposit are ordered
SOURCE_ CONTRIBUTIONS
| Number | Code | Type | Ejection | Contribution | Contribution in% | Sum. % | Influence rate
	----	<Об-П>-<Ис>	---	---M-(Mq)--	-C[shares MPC]	--------	-------	---- b=C/M ---
1	000601 0001	T	0.0466	0.054897	7.1	7.1	1.1781611
2	000601 0002	T	0.0466	0.054897	7.1	14.3	1.1781611
3	000601 0003	T	0.0466	0.054897	7.1	21.4	1.1781611
4	000601 0004	T	0.0466	0.054897	7.1	28.6	1.1781611
5	000601 0005	T	0.0466	0.054897	7.1	35.7	1.1781611
6	000601 0006	T	0.0466	0.054897	7.1	42.9	1.1781611
7	000601 0007	T	0.0466	0.054897	7.1	50.0	1.1781611
8	000601 0008	T	0.0466	0.054897	7.1	57.1	1.1781611
9	000601 0009	T	0.0466	0.054897	7.1	64.3	1.1781611
10	000601 0010	T	0.0466	0.054897	7.1	71.4	1.1781611
11	000601 0011	T	0.0466	0.054897	7.1	78.6	1.1781611
12	000601 0012	T	0.0466	0.054897	7.1	85.7	1.1781611
13	000601 0013	T	0.0466	0.054897	7.1	92.9	1.1781611
14	000601 0014	T	0.0466	0.054897	7.1	100.0	1.1781611
In total = 0.768553 100.0
The total contribution of the rest = 0.000000 -0.0
4. Total concentrations at the nodes of the computational grid.
UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0006 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on
06/13/2014 10:27 Summation group: 31 = 0301 Nitrogen (IV)
dioxide (4)
0330 Sulfur dioxide (526) Calculation ordered at a height of 2
meters.
Calculation_Rectangle_Parameters_No 99
Center coordinates: X = 100 m; Y = 50 m
Length and width: L = 500 m; B = 500 m
Grid step (dX = dY): D = 50 m
(The ^ symbol means the presence of a source near the calculated
node)1 2 3 4 5 6 7 8 9 10 11
*--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|----|
1-| 0.154 0.173 0.191 0.207 0.218 0.223 0.218 0.207 0.191 0.173 0.154 |- 1
2-| 0.173 0.197 0.223 0.245 0.261 0.267 0.261 0.245 0.223 0.197 0.173 |- 2
3-| 0.191 0.223 0.256 0.287 0.310 0.319 0.310 0.287 0.256 0.223 0.191 |- 3
4-| 0.207 0.245 0.287 0.328 0.360 0.372 0.360 0.328 0.287 0.245 0.207 |- 4
5-| 0.218 0.261 0.310 0.360 0.488 0.666 0.488 0.360 0.310 0.261 0.218 |- 5
6-C 0.223 0.267 0.319 0.372 0.666 0.769 0.666 0.372 0.319 0.267 0.223 C- 6
7-| 0.218 0.261 0.310 0.360 0.488 0.666 0.488 0.360 0.310 0.261 0.218 |- 7
8-| 0.207 0.245 0.287 0.328 0.360 0.372 0.360 0.328 0.287 0.245 0.207 |- 8

9-| 0.191 0.223 0.256 0.287 0.310 0.319 0.310 0.287 0.256 0.223 0.191 |- 9
10-| 0.173 0.197 0.223 0.245 0.261 0.267 0.261 0.245 0.223 0.197 0.173 |-10
11-| 0.154 0.173 0.191 0.207 0.218 0.223 0.218 0.207 0.191 0.173 0.154 |-11
|--|-----|-----|-----|-----|-----C-----|-----|-----|-----|-----|----|
1 2 3 4 5 6 7 8 9 10 11
Overall along the calculated rectangle: Dimensionless max. concentration ---> Cm = 0.76855 Achieved at the point with coordinates: Xm = 100.0m
(X-column 6, Y-row 6) Ym = 50.0 m At a height of Z = 2.0 m
With a dangerous wind direction: 8 deg. and "dangerous" wind speed: 1.60 m / s
9. The results of the calculation on the border of the sanzone (for the calculation of the rectangle 099). UPRZA ERA v2.0
City: 538 Tyulkubas district.
Object: 0006 "Khorgos-Almaty-Taraz-Shymkent-border ofRU".
Var. Cal. : 1 Calculation year: 2014 Calculation was carried out on 06/13/2014 10:27 Summation group: 31 = 0301 Nitrogen (IV) dioxide (4)
0330 Sulfur dioxide (526) Calculation ordered at a height of 2 meters.
Explanation_of_designations
| Qc - total concentration [MAC share] |
| Zop-height, where the maximum is reached [m] |
| Fop is a dangerous direction. wind [ang. deg.] |
| Uop - dangerous wind speed [m / s] |
| CS - the contribution of the SOURCE to Qc [g / m2 per year] |
| SC - source code for the top line Vi |
| -If the calculation is for summation, then concentr. in mg / m3 is not printed |
| -If the line Cmax = <0.05 MPC, then Fop, Uop, Vi, Ki are not printed |
y= 0: 1: 4: 9: 15: 23: 31: 41: 50: 59: 69: 77: 85: 91: 96:
x= 100: 90: 80: 72: 64: 58: 54: 51: 50: 51: 54: 58: 64: 72: 80:
Qc : 0.666: 0.665: 0.663: 0.669: 0.663: 0.666: 0.667: 0.667: 0.666: 0.667: 0.667: 0.666: 0.663: 0.669: 0.663:
OPP: 0 : 12 : 23 : 34 : 46 : 57 : 68 : 80 : 90 : 100 : 112 : 123 : 134 : 146 : 157 :
Uоп: 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.79 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.80 :
CS : 0.048: 0.047: 0.047: 0.048: 0.047: 0.048: 0.048: 0.048: 0.048: 0.048: 0.048: 0.048: 0.047: 0.048: 0.047:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.048: 0.047: 0.047: 0.048: 0.047: 0.048: 0.048: 0.048: 0.048: 0.048: 0.048: 0.048: 0.047: 0.048: 0.047:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.048: 0.047: 0.047: 0.048: 0.047: 0.048: 0.048: 0.048: 0.048: 0.048: 0.048: 0.048: 0.047: 0.048: 0.047:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 99: 100: 100: 99: 96: 91: 85: 77: 69: 59: 50: 41: 31: 23: 15:
x= 90: 100: 100: 110: 120: 128: 136: 142: 146: 149: 150: 149: 146: 142: 136:
Qc : 0.665: 0.666: 0.666: 0.665: 0.663: 0.669: 0.663: 0.666: 0.667: 0.667: 0.666: 0.667: 0.667: 0.666: 0.663:
OPP: 168 : 180 : 180 : 192 : 203 : 214 : 226 : 237 : 248 : 260 : 270 : 280 : 292 : 303 : 314 :
Uоп: 1.79 : 1.79 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.79 : 1.79 : 1.79 : 1.80 : 1.79 :
CS : 0.047: 0.048: 0.048: 0.047: 0.047: 0.048: 0.047: 0.048: 0.048: 0.048: 0.048: 0.048: 0.048: 0.048: 0.047:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.047: 0.048: 0.048: 0.047: 0.047: 0.048: 0.047: 0.048: 0.048: 0.048: 0.048: 0.048: 0.048: 0.048: 0.047:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.047: 0.048: 0.048: 0.047: 0.047: 0.048: 0.047: 0.048: 0.048: 0.048: 0.048: 0.048: 0.048: 0.048: 0.047:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 9: 4: 1: 0: 0: 1: 4: 9: 15: 23: 32: 41: 49: 59: 68:
x= 128: 120: 110: 100: 99: 89: 80: 71: 64: 58: 53: 51: 50: 51: 53:
Qc : 0.669: 0.663: 0.665: 0.666: 0.665: 0.663: 0.663: 0.663: 0.663: 0.666: 0.662: 0.667: 0.665: 0.667: 0.662:
OPP: 326 : 337 : 348 : 0 : 1 : 13 : 23 : 35 : 46 : 57 : 69 : 80 : 89 : 100 : 111 :
Uоп: 1.79 : 1.80 : 1.79 : 1.79 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.79 : 1.79 : 1.79 :
CS : 0.048: 0.047: 0.047: 0.048: 0.048: 0.047: 0.047: 0.047: 0.047: 0.048: 0.047: 0.048: 0.048: 0.048: 0.047:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.048: 0.047: 0.047: 0.048: 0.048: 0.047: 0.047: 0.047: 0.047: 0.048: 0.047: 0.048: 0.048: 0.048: 0.047:
SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.048: 0.047: 0.047: 0.048: 0.048: 0.047: 0.047: 0.047: 0.047: 0.048: 0.047: 0.048: 0.048: 0.048: 0.047:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 77: 85: 91: 96: 99: 100: 100: 99: 96: 91: 85: 77: 68: 59: 51:
x= 58: 64: 71: 80: 89: 100: 101: 111: 120: 129: 136: 142: 147: 149: 150:
Qc : 0.666: 0.663: 0.663: 0.663: 0.663: 0.666: 0.665: 0.663: 0.663: 0.663: 0.663: 0.666: 0.662: 0.667: 0.665:
OPP: 123 : 134 : 145 : 157 : 167 : 180 : 181 : 193 : 203 : 215 : 226 : 237 : 249 : 260 : 269 :
Uоп: 1.80 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.79 :
CS : 0.048: 0.047: 0.047: 0.047: 0.047: 0.048: 0.048: 0.047: 0.047: 0.047: 0.047: 0.048: 0.047: 0.048: 0.048:
SC : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
CS : 0.048: 0.047: 0.047: 0.047: 0.047: 0.048: 0.048: 0.047: 0.047: 0.047: 0.047: 0.048: 0.047: 0.048: 0.048:

SC : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
CS : 0.048: 0.047: 0.047: 0.047: 0.047: 0.048: 0.048: 0.047: 0.047: 0.047: 0.047: 0.048: 0.047: 0.048: 0.048:
SC : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
y= 41: 32: 23: 15: 9: 4: 1: 0:
x= 149: 147: 142: 136: 129: 120: 111: 99:
Qc : 0.667: 0.662: 0.666: 0.663: 0.663: 0.663: 0.663: 0.665:
OPP: 280 : 291 : 303 : 314 : 325 : 337 : 347 : 1 :
Uоп: 1.79 : 1.79 : 1.80 : 1.79 : 1.79 : 1.80 : 1.79 : 1.79 :
CS : 0.048: 0.047: 0.048: 0.047: 0.047: 0.047: 0.047: 0.048:
CS : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 : 0001 :
SC : 0.048: 0.047: 0.048: 0.047: 0.047: 0.047: 0.047: 0.048:
CS : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 : 0002 :
SC : 0.048: 0.047: 0.048: 0.047: 0.047: 0.047: 0.047: 0.048:
CS : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 : 0003 :
Calculation results at the maximum point of UPRZA ERA v2.0 Point coordinates: X = 72.0 m Y = 9.0 m
At height: Z = 2.0 m
Maximum total concentration | Cs = 0.66891 share of MPC | Achieved in a dangerous direction 34 degrees.
and wind speed 1.79 m / s
Sources in total: 14. In the table, depositors with no more than 95% of the deposit are ordered
SOURCE_ CONTRIBUTIONS

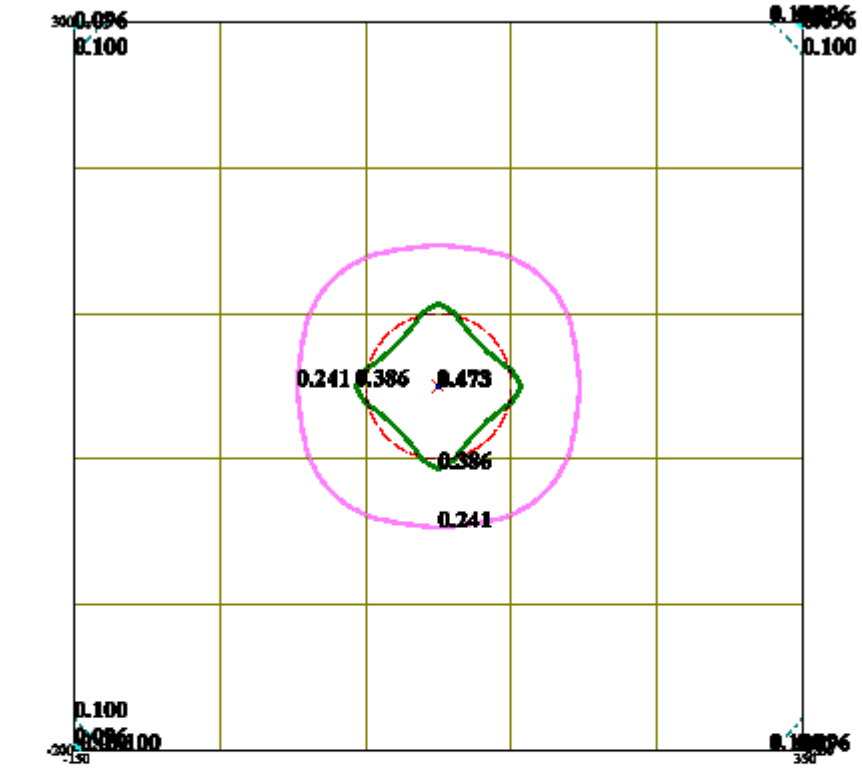
Number	Code	Type	Ejection	Contribution	Contribution in%	Sum. %	Influence rate
----	<Об-П>-<Ис>	---	---M-(Mq)--	-C[доли ПДК]	--------	-------	---- b=C/M ---
1	000601 0001	T	0.0466	0.047779	7.1	7.1	1.0254058
2	000601 0002	T	0.0466	0.047779	7.1	14.3	1.0254058
3	000601 0003	T	0.0466	0.047779	7.1	21.4	1.0254058
4	000601 0004	T	0.0466	0.047779	7.1	28.6	1.0254058
5	000601 0005	T	0.0466	0.047779	7.1	35.7	1.0254058
6	000601 0006	T	0.0466	0.047779	7.1	42.9	1.0254058
7	000601 0007	T	0.0466	0.047779	7.1	50.0	1.0254058
8	000601 0008	T	0.0466	0.047779	7.1	57.1	1.0254058
9	000601 0009	T	0.0466	0.047779	7.1	64.3	1.0254058
10	000601 0010	T	0.0466	0.047779	7.1	71.4	1.0254058
11	000601 0011	T	0.0466	0.047779	7.1	78.6	1.0254058
12	000601 0012	T	0.0466	0.047779	7.1	85.7	1.0254058
13	000601 0013	T	0.0466	0.047779	7.1	92.9	1.0254058
14	000601 0014	T	0.0466	0.047779	7.1	100.0	1.0254058
In sum = 0.668906 100.0
The total contribution of the rest = 0.000000 -0.0

Город : 538 Тюлькубасский район
Объект : 0006 "Хоргос-Алматы-Тараз-Шымкент-гр.РУ" рассеив Вар.№ 2
ПК ЭРА v2.0, Модель: ОНД-86
__31 0301+0330



Макс концентрация 0.7685531 ПДК достигается в точке x= 100 y= 50
При опасном направлении 8° и опасной скорости ветра 1.6 м/с на высоте 2 м
Расчетный прямоугольник № 99, ширина 500 м, высота 500 м,
шаг расчетной сетки 50 м, количество расчетных точек 11*11
Расчёт на существующее положение.

Город : 538 Тюлькубасский район
Объект : 0006 "Хоргос-Алматы-Тараз-Шымкент-гр.РУ" рассеив Вар.№ 2
ПК ЭРА v2.0, Модель: ОНД-86
0337 Углерод оксид (594)



Макс концентрация 0.4735501 ПДК достигается в точке x= 100 y= 50
При опасном направлении 8° и опасной скорости ветра 1.6 м/с на высоте 2 м
Расчетный прямоугольник № 99, ширина 500 м, высота 500 м,
шаг расчетной сетки 50 м, количество расчетных точек 11*11
Расчёт на существующее положение.

WASTE DURING OPERATION

CALCULATION OF WASTE GENERATION

City N 538, Tyulkubas district
Object N 0010, Option 1, "Khorgos-Almaty-Taraz-Shymkent-border ofRU"
Site: 1, During operation
Production: 2, Waste Workshop, site: 4, lumlampa References:
1. Methodology for the development of draft standards for the maximum disposal of production and consumption waste. Calculation of recommended standards for waste generation. Section 2.43. Waste fluorescent lamps. (Appendix No. 16 to the order of the Ministry of Environmental Protection of the Republic of Kazakhstan dated April 18, 2008 No. 100-p).
The rate of formation of used lamps (N) is calculated by the formula:
N = n x T / Tp, pcs / year,
where n is the number of working lamps of this type (50 pcs);
Tp - lamp operating time, h (for LB lamps Tp = 4800-15000 h, for DRL lamps Tp = 6000-15000 h);
T is the operating time of lamps of this type of lamps per year, h (1255 h / year).
N = 50 x 1255/12000 = 5 pcs / year.
Lamp type: DRL 250 (6) -4 Lamp weight - 219 grams.
N = 219 x 0.000001 x 5 = 0.001095 t / year.
Summary table:

Code	*Waste*	*Unit of m*	*No. in year*	*No of tons / year*
AA100	Waste and residues of	Nos.	5	0,001095

CALCULATION OF WASTE GENERATION

City N 538, Tyulkubas district
Object N 0010, Option 1, "Khorgos-Almaty-Taraz-Shymkent-border ofRU" Site: 001, Production: 001, During operation Shop, area: 010, Estimates from the territory References:
1. Methodology for the development of draft standards for the maximum disposal of production and consumption waste. Calculation of the recommended standards for waste generation. Section 2.45. Estimates from the territory. (Appendix No. 16 to the order of the Ministry of Environmental Protection of the Republic of Kazakhstan dated April 18, 2008 No. 100-p).
The area of the cleaned areas is S m2. The normative amount of the estimate is 0.005 t / m2year.
Waste amount M = S x 0.005, t / year. The area to be cleaned is 11,750 m2.
M = 11750x 0.005 = 58.75 t / year.
Summary table:

Code	*Waste*	*No of tons /*
GO060	Solid household waste (municipal)	58,75