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agrokush

CONSTRUCTION OF 24 POULTRY HOUSES
ON TWO SEPARATE SITES AND A FEED MILL IN KEMIN DISTRICT, CHUI REGION

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

BISHKEK, JULY 2025

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CONSTRUCTION OF 24 POULTRY HOUSES ON TWO SEPARATE SITES AND A FEED MILL IN KEMIN DISTRICT, CHUI REGION:

CLIENT:

ADAL AZYK LLC, AGRO KUSH LLC

REPORT:	ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (Version II)	
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Bishkek, July 2025

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Abbreviations

ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
IFC	International Finance Corporation
PS	Performance Standards (IFC Performance Standards)
SEP	Stakeholder Engagement Plan
GRM	Grievance redress mechanism
SPZ	Sanitary protection zone
SEE	State environmental expertise
NGO	Non-profit (non-governmental) organization
Local WWTP	Local wastewater treatment plant
SPNA	Specially Protected Natural Area
MSW	Municipal solid waste
VMR	Veterinary and sanitary measures
SES	Sanitary and epidemiologic supervision
OHS	Occupational Health and Safety
LSG	Local self-governments (village administration)
LMP	Labor Management Plan
RTD	Regulatory Technical Documentation
CO2	Carbon Dioxide
UV	Ultra Violet
MPE	Maximum Permissible Emission
MPD	Maximum Permissible Discharge
NLA	Normative Legal Act
MNRETS	Ministry Of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic
GD	Governmental Decree
BOD	Biochemical Oxygen Demand

Executive Summary

The project envisages the construction of 24 poultry houses on two separate sites and a feed mill in the Kemin District of Chui Region. The project is initiated by Adal Azyk LLC through its subsidiary Agro Kush LLC.

The poultry houses are designed for an annual production of 1 million broilers per year per poultry site (i.e., 1 million across 12 poultry houses at one site, and 1 million across the other 12 poultry houses at the second site), and the feed mill for 95,000 tons per year.

Project's main goal is to expand an integrated poultry complex with a closed production cycle through the construction of new poultry houses and a feed mill (i.e., the company is expanding its vertically integrated operations, although only part of the production chain - poultry houses and the feed mill - will be constructed under this project), including incubation, fattening, waste processing and feed production.

The project is being implemented on sites with partially existing infrastructure, using modern veterinary, sanitary, biosecurity and environmental solutions.

The project is classified as **Category B** according to IFC's Environmental and Social Sustainability Policy (2012), as its environmental and social impacts are localized, site-specific, and can be effectively managed through mitigation measures.

The impact assessment was prepared taking into account:

- legislation of the Kyrgyz Republic (EIA, sanitary, environmental standards);
- standards IFC PS 1-6, 8 (including requirements for stakeholder engagement and participation, occupational health and safety, biosecurity, biodiversity, waste management and emergency response).

Main environmental and social aspects

- Impact on atmospheric air: The main sources are ammonia, odors and dust. A system encompassing ventilation, filtration and sanitary buffer zones is implemented.
- Water resources: The project does not provide discharge of untreated wastewater into the environment. All domestic and industrial wastewater undergoes local treatment with UV disinfection at wastewater treatment plant.
- Biodiversity: there are no nature protection areas in the vicinity, however, bird migration routes have been considered in the assessment.
- Social Impacts: while local communities may be affected by factors such as noise, logistics, and odors, the social risks are deemed manageable upon assessment. Provision for job creation, implementation of GRMs and consultations.
- Institutional and cumulative impacts: cover a combination of odors, transportation and land use changes (intended use of land). An integrative approach to management is being implemented.

An Environmental and Social Management Plan (ESMP) has been prepared, including:

- pollution prevention measures;
- management of construction and biological risks;
- occupational health and safety, and biosecurity;
- interaction with stakeholders: population and local authorities;
- regular monitoring (ecology, sanitation, complaints, employment).

The measures include the construction of treatment facilities, sanitary buffer zones, disinfection barriers, compliance with veterinary protocols, adherence to established environmental protection requirements, and proper waste management, particularly of biological waste.

Public consultations are planned after draft ESIA preparation in accordance with requirements of the Kyrgyz Republic legislation and PS 1 IFC.

An information campaign was conducted for the local population and authorities, to raise awareness about the project and collect feedback and comments. Engagement activities included distribution of printed materials, structured surveys, focus group discussions, and interviews with key stakeholders.

The campaign revealed several areas of concern, including risks of air and water pollution, unpleasant odors, and health impacts from insects and vectors; expectations for decent jobs and fair wages; and interest from local farmers in cooperating with the company (e.g. supplying feed crops, using poultry litter).

These concerns have been reflected in the draft ESIA report through proposed mitigation measures (air, water, and waste management), commitments to fair employment practices, and provisions for future cooperation and stakeholder dialogue.

A Grievance Redress Mechanism (GRM) has been established, ensuring accessibility for vulnerable groups and confidentiality.

Project complies with key requirements of environmental and sanitary legislation of Kyrgyz Republic and international standards. Its implementation contributes to the development of the agro-industrial sector, improvement of food security and job creation. The identified impacts are subject to management through technological, organizational and institutional measures included in the ESIA and ESMP.

The draft ESIA (Preliminary Environmental and Social Impact Assessment (Pre-EIA/OVOS) has been prepared based on the preliminary technical solutions provided by the project proponent. The specific types of environmental and social impacts and corresponding mitigation measures will be developed at the next stage of the EIA/OVOS, as part of the preparation of detailed design documentation (detailed project).

I. INTRODUCTION

«Adal Azyk» LLC is one of the largest integrated companies producing poultry meat and meat products in Kyrgyz Republic. The project aims to expand broiler production and construct a feed mill plant (FM) is being implemented through a subsidiary, Agro Kush LLC, which manages full cycle of poultry farming: from feed production and incubation to fattening, and waste disposal.

The project includes two key components:

1. Construction and operation of 24 modern broiler poultry houses (PH) located on two sites (12 on each) near Kemin city, Chui region. Each site is designed for the production of up to 1 million broilers per year (with 6.5 production cycles annually, each lasting 38–39 days). The maximum simultaneous stock is up to 14,000 birds per site.
2. Construction and operation of a feed mill (FM) plant with a capacity of 95,000 tons per year (30 tons per hour) on the territory of a former linoleum plant. Plant will produce feed based on domestic and imported raw materials (wheat, corn, soybean meal, etc.).

Project goals:

- Enhancing food security and reducing reliance on poultry imports;
- Agriculture and employment growth in Kemin district;
- Application of modern technologies in biosecurity, waste recycling, and environmental protection.
- Ensuring compliance with international environmental and social standards (including IFC requirements).

The project covers all stages of the life cycle: preparation, construction, operation, impact management and sanitary safety. It will significantly contribute to Kyrgyzstan's agro-industrial sector development.

Current Project Status and Implementation Timeline

As of July 31, 2025, the project is at the advanced pre-investment and permitting stages. Site investigations and feasibility studies have been completed for both the feed mill (FM) and poultry sites, and land-related procedures (e.g., transformation of land category, access approvals) are underway.

For the feed mill, the detailed design and preparation of permitting documentation (including environmental, architectural, and utility designs) are ongoing. The Environmental and Social Impact Assessment (ESIA), which serves as a preliminary environmental assessment under national legislation, has been drafted and is undergoing finalization. Applications for permits and state approvals (e.g., ecological and sanitary expertise) are planned for Q3–Q4 2025. Construction works are scheduled to start in Q4 2025, with commissioning anticipated by the beginning of Q3 2026.

For the first poultry site, permitting and design documentation are under preparation, while the land transformation and coordination with authorities are in progress. Construction is expected to begin in Q2 2026, following completion of all required approvals, with commissioning projected for Q4 2026.

The second poultry site is at an earlier stage. Baseline studies, EIA Phase I, and land coordination are ongoing.

Detailed permitting and design activities are scheduled throughout 2026, with construction planned for Q2 2027 and commissioning expected in Q4 2027.

The facilities are designed for long-term use, and the expected operational period of both the feed mill and poultry production units is approximately 30 years, subject to routine maintenance and equipment upgrades.

The timeline reflects a phased implementation approach, where regulatory compliance, design approvals, and construction are sequenced to align with available resources and permitting status.

Below is a schedule of the project implementation by stages:

Project Timeline for planned activities of Agro Kush LLC – expansion project of poultry production, Kemin													
Feedmill Construction													
Phase	**Sub-Phase**	**Q2 2025**	**Q3 2025**	**Q4 2025**	**Q1 2026**	**Q2 2026**	**Q3 2026**						
1. Pre-Investment	Site selection, local authority coordination												
	Initial environmental screening												
2. Environmental Assesment	Surveys: environmental baseline; engineer-geological, hydrology												
	Public Consultations (informational campaign, interviews, surveys)												
	Environmnetal Impact Assesment (procedure, report preparation)												
3. Design Developement, State Review	Design development: technical, archetectual, environmental (final EIA report)												
	Technical conditions (utilities)												
	State expertise (technical, environmental, sanitary, fire safety)												
	Project Design completion												
4. Construction	Construction permit application												
	Civil works												
5. Commissioning	Systems testing, as-built docs												
	Final inspection and occupancy permit												
6. Operational	Exploitation launch												
Poultry House Site 1													
Phase	**Sub-Phase**	**Q2 2025**	**Q3 2025**	**Q4 2025**	**Q1 2026**	**Q2 2026**	**Q3 2026**	**Q4 2026**					
1. Pre-Investment	Site selection, local authority coordination												
	Initial environmental screening												
2. Environmental Assesment	Surveys: environmental baseline; engineer-geological, hydrology												
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	Technical conditions (utilities)												
	State expertise (technical, environmental, sanitary, fire safety)												
	Project Design completion												
4. Construction	Construction permit application												
	Civil works												
5. Commissioning	Systems testing, as-built docs												
	Final inspection and occupancy permit												
6. Operational	Exploitation launch												
Poultry Houses Site 2													
Phase	**Sub-Phase**	**Q2 2025**	**Q3 2025**	**Q4 2025**	**Q1 2026**	**Q2 2026**	**Q3 2026**	**Q4 2026**	**Q1 2027**	**Q2 2027**	**Q3 2027**	**Q4 2027**	
1. Pre-Investment	Site selection, local authority coordination												
	Initial environmental screening												
2. Environmental Assesment	Surveys: environmental baseline; engineer-geological, hydrology												
	Public Consultations (informational campaign, interviews, surveys)												
	Environmnetal Impact Assesment (procedure, report preparation)												
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4. Construction	Construction permit application												
	Civil works												
5. Commissioning	Systems testing, as-built docs												
	Final inspection and occupancy permit												
6. Operational	Exploitation launch												

Figure 1. Project implementation schedule, Agro Kush LLC

II. DESCRIPTION OF THE AGRO KUSH PROJECT

2.1. General concept of the project

The agro-industrial complex project in Kemin District represents a modern industrial broiler production system with its own production infrastructure, including a feed mill, its own wastewater treatment plant (approximate volume of wastewater will be 40 m^3 per day), administrative and utility buildings, and auxiliary engineering systems. The project proponent, Agro Kush, views this project as one of the key steps in expanding its presence in the poultry meat market of the Kyrgyz Republic and increasing the share of domestic production of feed and poultry meat.

The sites in Kemin District were selected based on logistical accessibility, availability of vacant land, distance from densely populated residential areas, and favorable climatic conditions for broiler production. The project is being implemented near the city of Kemin, on land designated as an industrial zone.

Figure 2. The territory of the former linoleum plant, the planned territory of the Feed Mill

Figure 3. View of the area for construction of poultry houses

According to current plans, the complex will host two production sites, each with 12 poultry houses for broiler production. Each poultry house is designed to accommodate up to 14,000 birds at a time, which, with 6.5 production cycles per year (each lasting approximately 38–39 days with breaks for sanitation and maintenance), allows for an annual planned output of approximately 1 million broilers per site. This is equivalent to approximately 3,800 tons of live-weight poultry.

A key element of the production infrastructure will be a feed mill designed to supply complete feed for the needs of the poultry farm. At the time this report was prepared, a technological solution with a capacity of up to 30 tons of finished products per hour, based on FAMSUN equipment, is being considered. The plant will process grain raw materials with the addition of vitamins and protein supplements, ensuring quality control of the feed at all stages.

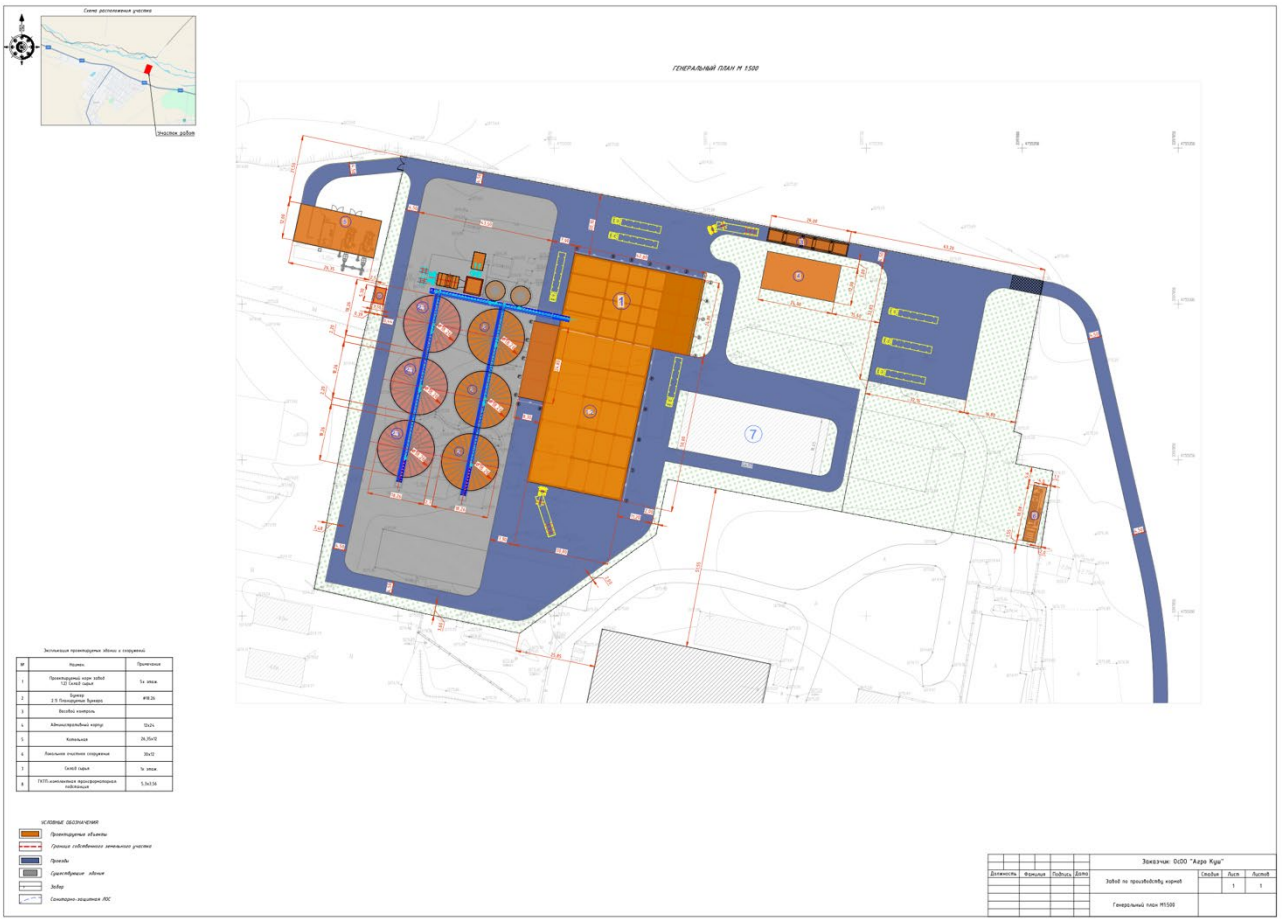

Figure 4. The territory of the Feed Mill Plant

Legend: Feed Mill Facilities and Structures

1. Main feed mill building (5-storey structure, 1 t/h mixing line) 2. Raw material silos (2 units, Ø 2.6 m, with loading platform) 3. Weighing control station 4. Administration building (12 × 14 m) 5. Boiler house (20.36 × 12 m) 6. Local wastewater treatment facility (38 × 12 m) 7. Raw material warehouse (single-storey building) 8. Packaged transformer substation (PTSS) (5.2 × 3.56 m)	Designed facilities Land plot boundary Driveways Existing buildings Boiler house Sanitary protection zone (SPZ)

In addition to the main production facilities, the project includes a solid fuel (coal-fired) boiler house, an administrative and utility building, sanitary checkpoints, local wastewater treatment plant, water supply, sewerage, heating, ventilation systems, as well as systems for waste collection and disposal.

The technical solutions presented are based on preliminary descriptions provided by the project proponent. It is assumed that part of the design solutions and technological lines will be replicated in Kemin with possible adjustments for local conditions, primarily in terms of production capacity and organizational schemes. Therefore, the numerical parameters presented in this section are preliminary and will be refined during the detailed design stage.

In addition to the core production facilities, the site will include sanitary protection and buffer zones, fire safety infrastructure, areas for temporary storage and removal of waste, and logistical routes to separate traffic flows, including the movement of feed, litter, and service vehicles.

The project is planned to be implemented in stages, starting with site preparation works, utility connections, and construction of infrastructure, followed by commissioning of the poultry houses, feed mill, and auxiliary systems. At all stages, sanitary and environmental measures are envisaged to minimize the risk of environmental pollution, ensure biosecurity, and comply with occupational health and safety standards.

The objective of the project is to establish a closed-cycle poultry meat production facility with integrated quality control of feed, biosecurity, and efficient waste management. The site layout is consistent with the master plan, providing functional zoning, separation of logistics flows, and compliance with sanitary protection zones.

2.2. Poultry farm: production cycle of broiler fattening

The broiler production process under the project is organized on two sites where 24 specialized poultry houses are planned. These buildings are intended for intensive industrial rearing of meat-type chickens under conditions of maximum control over microclimate, sanitation, and biosecurity. Each poultry house is an autonomous module equipped with its own systems for ventilation, heating, lighting, feeding, and water supply.

Figure 5. The territory of the Poultry House No. 1.

Legend: Poultry Farm Site 1 Facilities (Kemin-1)

1. Poultry houses (15.4 × 139.75 m, 12 units) 2. Administration building 3. Warehouse 4. Boiler house 5. Second administration building 6. Guard/security post 7. Sanitary unit 8. Transformer substation	Designed facilities Fence Driveways Contour

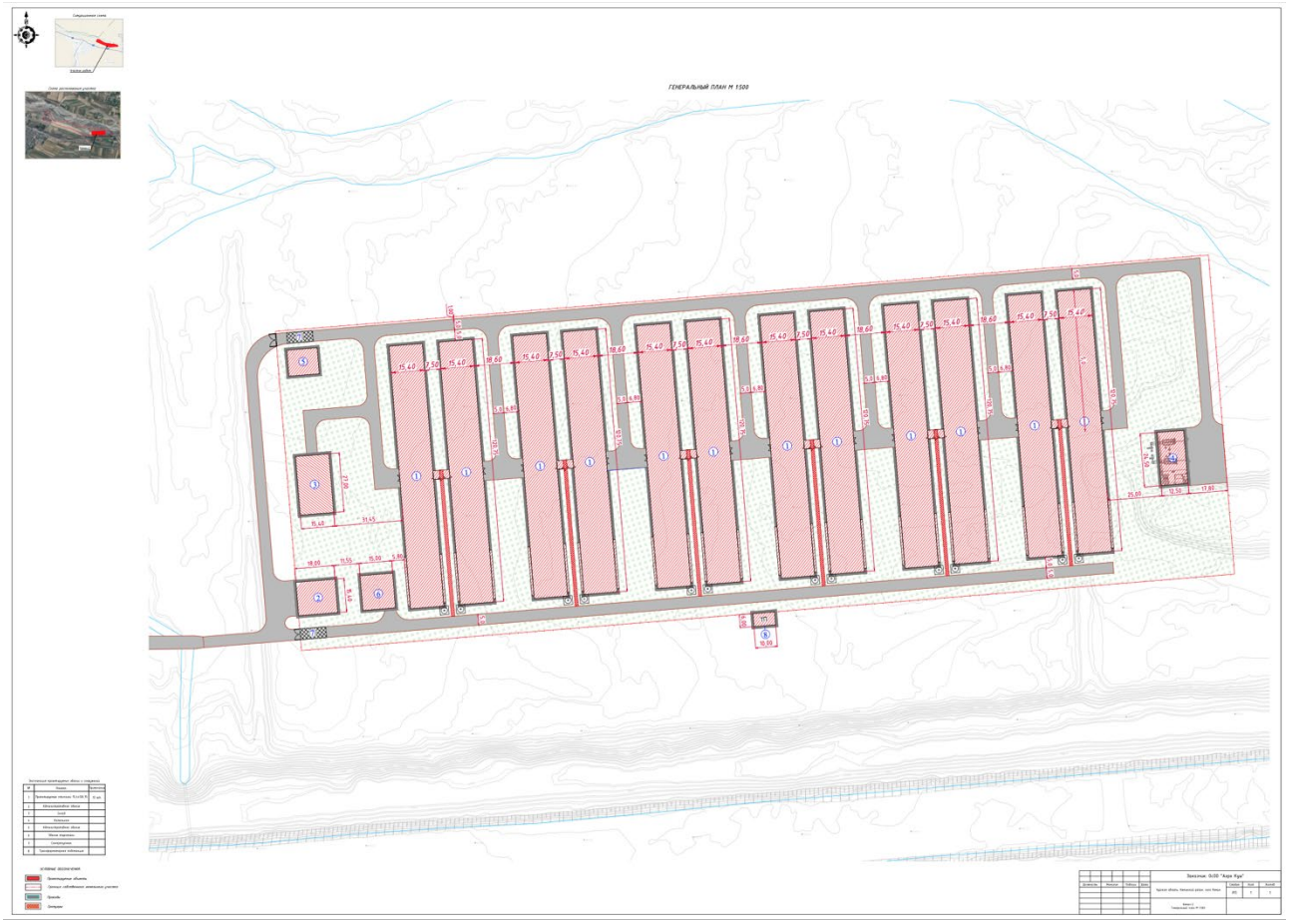

Figure 6. The territory of the Poultry House No. 2.

Legend: Poultry Farm Site 2 Facilities (Kemin-2)

1. Poultry houses (15.4 × 139.75 m, 12 units) 2. Administration building 3. Warehouse 4. Boiler house 5. Second administration building 6. Guard/security post 7. Sanitary unit 8. Transformer substation	Designed facilities Fence Driveways Contour

The production cycle involves housing up to 14,000 birds in a single building at any one time. A full production cycle lasts on average 38–39 days, including finishing, final feeding, and subsequent sanitary cleaning of the premises. Up to 6.5 such cycles are planned per year, ensuring steady capacity utilization and product output.

All processes inside the poultry house are automated or mechanized: from feed and water delivery to temperature and humidity control.

The drawing below shows the poultry house plan, longitudinal and transverse sections, as well as a diagram of the placement of the main engineering systems: feeding and drinking lines, ventilation systems, lighting and manure removal.

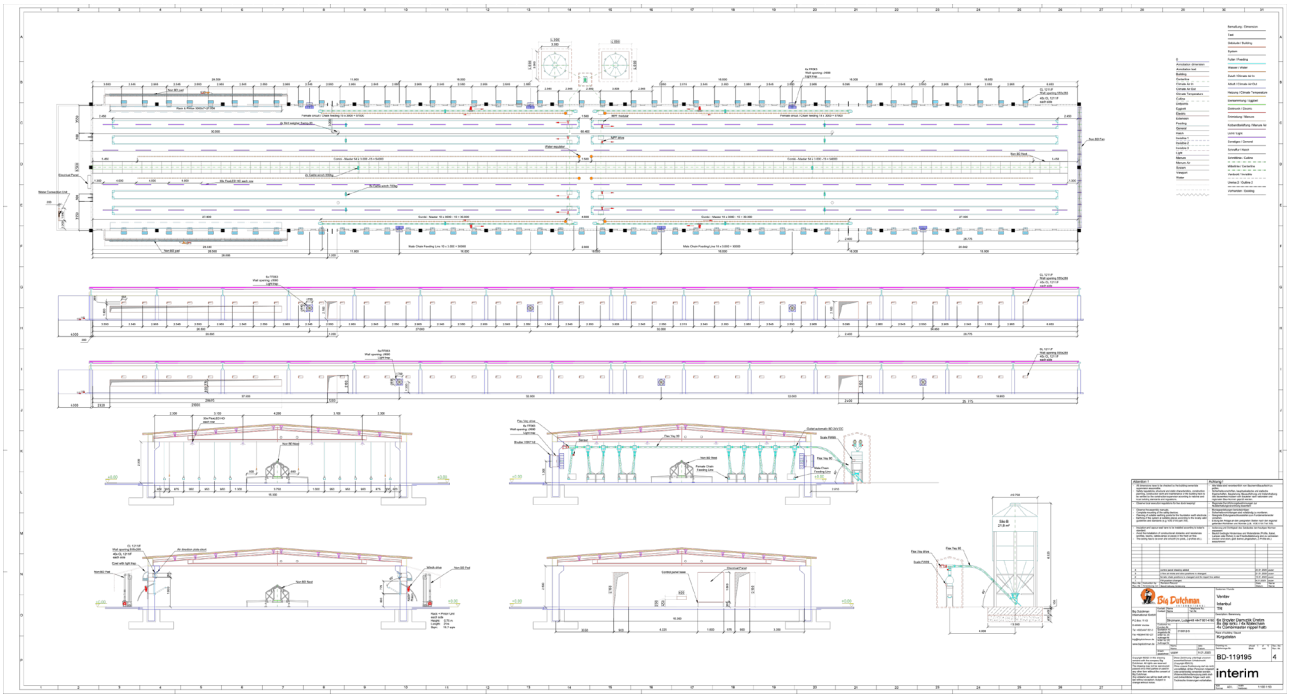

Figure 7. Poultry house plan and sections with equipment placement (Big Dutchman drawing, BD-119195, interim version, January 2025)

Each building is equipped with a nipple drinker system and a feeding system that evenly distributes pelleted feed into feeders. Microclimate control is a key element of production efficiency. The ventilation system regulates temperature, humidity, air exchange rate, and ammonia removal. It is a mechanical supply and exhaust ventilation system, with automatic regulation of parameters depending on bird age, stocking density, and weather conditions. During cold periods, heating is provided by boiler installations equipped with two 2.8 MW hot water boilers. Each production site has two hot water boilers (one of them is a backup). Hot water circulates from the boiler house to the poultry house heating systems.

The dry litter-manure mixture is removed from the poultry houses at the end of each cycle, after 38–39 days. Its disposal is planned through transportation to specialized storage sites (manure storage facilities, according to estimates, 280 tons of manure per year) for composting as part of a circular waste management strategy.

To ensure biosecurity, the project provides for a strict zoning scheme and access control regime. Poultry houses are divided into "clean" and "dirty" zones, with mandatory sanitary breaks between buildings. Access to production areas is allowed only through sanitary checkpoints equipped with showers, disinfection barriers, lockers for work clothes, and staff accounting systems. Disinfection mats, hand and footwear treatment are provided at every entrance. Movement on the territory is restricted: staff, vehicles, and feed move along separate routes, preventing cross-contamination.

In the event of bird mortality or signs of disease, measures for immediate isolation and safe removal of biological waste are provided. Dead birds are transported in sealed containers to designated temporary storage or disposal sites, with subsequent processing (rendering) in accordance with sanitary and veterinary regulations.

At the end of each production cycle, sanitary treatment of the poultry house is carried out: removal of litter, mechanical cleaning of surfaces, wet washing, and disinfection with agents approved by the veterinary service. Before each restocking, the premises undergo veterinary inspection.

The removal of litter and manure is carried out to a temporary storage area with an impermeable base. Further disposal is conducted either by composting or through agreements with agricultural consumers.

Health monitoring of birds is carried out by the complex's veterinary service, maintaining all necessary records of disease cases, mortality, preventive measures, and vaccinations.

Overall, the broiler production process is organized in accordance with modern veterinary and sanitary standards, biosecurity principles, and best practices of similar industrial farms, adapted to the conditions of the Kyrgyz Republic. The approach aims to achieve high productivity levels while controlling and minimizing potential risks to the environment, worker health and animal welfare.

To ensure appropriate animal welfare conditions, the project incorporates a range of technical and management measures tailored to broiler needs. Poultry houses will be cleaned, disinfected, and dried prior to chick placement, with walls lime-washed and dry bedding such as straw or rice husk evenly spread to maintain a clean, friable floor surface. Automated climate control systems will regulate temperature, humidity, and ventilation in accordance with age-specific norms. Lighting systems will include programmable day/night cycles with gradual dimming and brightening to reduce stress.

Feed and water will be continuously accessible, with nipple drinking systems used to prevent spillage and maintain bedding quality. Birds will receive age-appropriate compound feed to support balanced growth.

Preventive vaccination will be carried out against key poultry diseases including Newcastle disease, infectious bronchitis, Gumboro disease, and avian influenza. Personnel will ensure regular litter maintenance and enforce biosecurity protocols to minimize the risk of disease introduction. These measures are aligned with international animal welfare practices and adapted to local operating conditions.

2.3. Feed mill plant: technological line

The feed mill (FM) planned as part of the project is intended for the production of complete feed for the poultry raised on site. Having its own feed production facility allows the company to control the composition, quality, and safety of the feed, as well as to minimize dependence on external suppliers. The feed mill is located separately from the poultry housing areas, ensuring sanitary buffer zones and biological isolation.

The production processes at the feed mill include incoming quality control of raw materials, receiving, preliminary cleaning, grinding, mixing, pelleting, cooling, screening, and storage of finished products. The facility will use a modern automated FAMSUN production line with a capacity of up to 30 tons per hour.

1. Raw materials and storage

Raw materials (grains, meals, premixes, amino acids, vitamins) arrive at the site in covered trucks. Grain is loaded into silos, high-activity components (premixes, additives) - into isolated warehouses. For storage, containers and packaging are used to prevent contamination and moisture. Separate sections are provided for bulk, packaged and liquid components.

2. Main production chain

1) Cleaning - sieve machines, magnetic separators.
2) Crushing - hammer crushers, fraction up to 2-3 mm.
3) Dosing - programmable weighing systems.
4) Mixing - horizontal mixers with a homogeneity coefficient ≥ 90%.
5) Granulation – presses with adjustable matrices Ø 3–4 mm.
6) Cooling - counter-flow coolers to ambient temperature.
7) Sifting - Removal screening.
8) Packaging: in 25–50 kg bags or in bunkers.

3. Aspiration and Ventilation

The feed mill provides for a two-level air cleaning and renewal system:

The aspiration system covers the main dust-generating areas (grinding, mixing, packaging) and includes local exhausts, dust ducts, cyclones, and filters. The captured dust is returned to the production process, reducing raw material losses and minimizing atmospheric emissions.

The general ventilation system is designed as a mechanical supply and exhaust system. It ensures overall air exchange in the production areas, prevents overheating, removes suspended organic dust in zones not covered by the aspiration system, and improves working conditions.

The ventilation system includes dust collection filters operating on the supply and/or exhaust sections, allowing compliance with sanitary standards for permissible air dust levels.

Workplace air quality monitoring is carried out as part of occupational health monitoring and includes verification of dust concentrations against established maximum permissible concentrations (MPCs). Special attention will be given to areas with continuous staff presence (pelleting, packaging, control stations).

4. Biosecurity and Sanitary Measures

The feed mill is located at a sanitary distance from the poultry houses and other facilities. Biosecurity measures are provided, including zoning, a sanitary checkpoint with locker rooms, showers, and a buffer zone, control over personnel and material movements, disinfection barriers, and ventilation isolation from the external environment.

At the time of preparing this report, the design documentation for ventilation, aspiration, fire safety, and utility systems is still under development.

2.4. Engineering systems and supporting infrastructure

Power Supply (preliminary estimates):

- Feed mill: connection to the 10 kV grid via two 10/0.4 kV power transformers with a capacity of 2,500 kVA, taking into account 50% load and the possibility of sectionalization in case of failure of transmission lines or power equipment.
- Kemin 1 grow-out site: connection to the 10 kV grid via overhead transmission line, installation of a packaged transformer substation 10/0.4 kV with a capacity of 250 kVA, and an automatic emergency backup using a 250 kVA diesel generator.
- Kemin 2 grow-out site: connection to the 10 kV grid via overhead transmission line, installation of a packaged transformer substation 10/0.4 kV with a capacity of 250 kVA, and an automatic emergency backup using a 250 kVA diesel generator.

The total length of the projected 10 kV overhead line is approximately 3,000 meters. Of this, about 2,500 meters will run alongside existing municipal roads leading to the poultry sites, while the remaining 500 meters will follow the perimeter of the feed mill area, within the territory controlled by the company. The layout has been developed in accordance with technical connection conditions and is fully aligned with the existing infrastructure and land use status.

The approved electricity load is currently 2,600 kW, and a request for an additional 780 kW will be submitted in line with preliminary calculations. Control panels are located in secured technical rooms.

All permitting and technical conditions for the connections will be obtained through the standard design process and coordinated with the authorized energy utility.

Boiler Installations and Heat Supply

The project provides for autonomous boiler installations to supply thermal and steam energy to all project facilities, including poultry houses (PH), the feed mill (FM), administrative and utility buildings (AUB), security checkpoints, and auxiliary structures.

Boiler installations at PH sites

Each of the two PH sites will have two coal-fired hot water boilers with a capacity of 2.8 MW each, one of which will serve as backup. The heat transfer medium (water) will be centrally supplied to heaters and radiators in poultry houses and auxiliary buildings, with the ability to regulate temperature depending on the growing phases. The boiler houses will be located in separate buildings, observing sanitary and fire safety setbacks.

Boiler house at the feed mill (FM)

A dedicated boiler house is designed to meet the technological needs of the FM, with two steam boilers (steam generators) of 4 t/h each, one of which is a standby unit. Steam will be used for:

- Pelletizers: 2 × 900 kg/h
- Extruder: 400 kg/h
- Steam bath dryer: up to 200 kg/h.

Condensate return of up to 200 kg/h is planned, increasing efficiency and reducing resource consumption.

Fuel and siting

The fuel used will be coal, the coal used for heating boilers will be lignite from the Kara-Keche deposit, which is widely used for municipal and industrial heating in the Kyrgyz Republic. According to analytical data (2008 sample, main seam), the coal has a relatively low sulfur content of 0.65%, classifying it as low-sulfur fuel. It is also characterized by a high calorific value (approximately 20,478 kJ/kg), ash content of 22.9%, and volatile matter content of 28.7%.

Boiler houses will be placed in separate buildings with sanitary and fire safety distances, as per design. An automatic operating mode with minimal personnel involvement is planned, as well as automation and emergency protection systems.

Heat recovery (economizers)

To improve energy efficiency, the boilers will be equipped with economizers for recovering residual heat from flue gases.

Economizer specifications for DZL2.8-0.7-95/70-AII hot water boiler (poultry houses):

- Operating pressure: 1.1 MPa
- Design pressure: 1.65 MPa
- Heating surface: 34.5 m²
- Flue gas cross-section: 0.225 m²
- Water volume: 0.16 m³.

Economizer specifications for DZL2-1.25-AII steam boiler (feed mill):

- Operating pressure: 1.6 MPa
- Design pressure: 2.1 MPa
- Heating surface: 22.24 m²
- Flue gas cross-section: 0.176 m²
- Water volume: 0.07 m³.

Ash removal and waste management

For cleaning of flue gases, a cyclone-type ash collector will be used with the following parameters:

- Capacity: 12,000 m³/h
- Collection efficiency: up to 95%
- Aerodynamic resistance: 81–92 mm H_2O
- Hopper volume: 2.7 m³.

Collected fly ash will be removed to dry into containers. Bottom ash from the boilers will be sprayed with water to suppress dust and transported by belt conveyor to a temporary storage site, combined with the coal storage area. This site will be equipped with a concrete base, canopy, and fencing.

Ash from the combustion of Kara-Keche coal has been preliminarily classified as Class IV hazardous waste (low hazard) according to the Waste Classifier of the Kyrgyz Republic (Resolution No. 9 of January 15, 2010). After accumulation, the ash will be removed under a contract to the solid waste landfill of the city of Kemin, subject to the approval of the Sanitary and Epidemiological Surveillance (SES) authorities of the city of Kemin.

The centralized heat supply system will serve:

- Poultry houses,
- Administrative and utility buildings (AUB),
- Security checkpoints and service blocks,
- Technological equipment of the feed mill.

Detailed technical solutions for boiler installations, including fire protection, electrical safety, dust suppression, occupational health and safety, and monitoring, will be developed during the detailed design stage.

The boiler installations are a key component of the project's infrastructure and will be implemented in compliance with safety, energy efficiency, and environmental protection requirements.

Ventilation

The operation of the agro-industrial complex, which includes poultry houses, the feed mill, auxiliary and sanitary facilities, involves significant volumes of air that require ventilation, filtration, and monitoring. Air exchange systems play an important role both in ensuring the microclimate and health of the birds and in terms of occupational health, fire safety, and sanitary conditions of the premises.

Ventilation of poultry houses

Each poultry house is designed with its own automated ventilation system, maintaining temperature and humidity conditions, air exchange rate, and control of air gas composition. Ventilation operates on a supply and exhaust principle, with control based on external weather conditions, bird age, and indoor environmental parameters. Air intake is provided through adjustable valves, while exhaust is handled by fans installed at the building ends. The microclimate control system is automated, allowing adjustment of ventilation rates depending on ammonia concentration, temperature, and humidity.

Ventilation of the feed mill

In the feed mill (FM) production areas, the design includes a local aspiration system serving technological sections such as grinding, mixing, and pelleting. The system comprises air intake devices at the equipment, dust ducts, cyclones, and filters. The captured dust is returned to the production process, thereby reducing raw material losses.

The design will include mechanical supply and exhaust ventilation in workshops with a high likelihood of dust accumulation, including the raw material area. Natural ventilation will be provided in areas with low dust formation. The capacity of the planned supply and exhaust ventilation will be calculated based on the volume of premises, air exchange rate requirements, etc., and will be specified during the detailed design stage.

To address dust explosion risks, the project will incorporate preventive and structural safety measures, including zoning of dust-generating areas, grounding and bonding of equipment to prevent electrostatic discharge, and the use of explosion relief panels and cut-off valves. Regular cleaning of ventilation and aspiration systems will be carried out to prevent hazardous dust buildup. Where technically appropriate, ventilation systems will be interlocked with fire detection systems to ensure automatic shutdown during emergencies.

In accordance with national fire safety regulations, the feasibility of installing automatic fire suppression systems (e.g., dry powder extinguishers or sprinklers) in dust-prone areas will be assessed during the detailed design phase, taking into account explosion hazard classification. Personnel will be regularly trained in fire and explosion safety procedures. Emergency evacuation plans and early warning systems will be implemented as part of the Fire and Emergency Response Plan.

The main sources of pollutant emissions include:

- Poultry house ventilation (potential ammonia, dust, odors);
- Aspiration and ventilation of the feed mill (organic dust);
- Boiler house (ash particles, CO, NO_x, etc.).

Water Supply

The water supply for the agro-industrial complex is provided from an existing artesian well located outside the project sites. The well has a depth of 120 meters and a yield of 3.7 m³/s. The source is equipped in accordance with current sanitary requirements and is located within the organized and fenced first belt of the sanitary protection zone (SPZ).

Water abstraction is carried out using an ЭЦВ 10-65-90 type pump, delivering up to 65 m³/h at a head of 65 meters. From the well, water is transported via underground pipelines to two existing underground reservoirs, each with a capacity of 1,000 m³; these reservoirs are also located within the first belt SPZ. The reservoirs

serve to accumulate and evenly distribute the water reserve, ensuring a stable supply to all facilities of the complex.

Before distribution to consumers, a pre-treatment stage is provided. The water undergoes coarse and fine filtration as well as disinfection using ultraviolet filters. For the needs of the boiler house and steam generators at the feed mill site, an additional water treatment system is planned.

The entire distribution system is designed considering the technological specifics of the facilities and is divided by functional use. Water is supplied for:

- Poultry drinking - to all poultry houses through nipple drinkers with mandatory filtration;
- Sanitary cleaning - of premises, tools, and equipment;
- Domestic use for staff - to showers, washbasins, and sanitary facilities of the administrative and utility building;
- Heating systems - as technical make-up water for boilers.

The internal water supply networks are designed to be independent for each use, in compliance with biosecurity requirements, technological compatibility, and system reliability. All design solutions, including equipment types, water treatment parameters, distribution schemes, and hydraulic calculations, will be finalized and presented as part of the detailed design documentation.

Water Source Characteristics

The water source for the project is an officially registered operational well (Well No. 8262 / 19017-D), drilled in 1990 and included in the State Water Register. The well has a depth of 120 meters and is equipped with an ETsV 10-65-90 submersible pump (passport No. 14973). Based on data from the East Chui hydrogeological district and official inspection records, the sustainable yield is confirmed at 3.7 liters per second (approximately 320 m³/day). The well draws water from Quaternary alluvial deposits.

The well is privately owned by Agro Kush LLC and is officially registered as part of the company's infrastructure. It is located within a fenced and designated first-belt sanitary protection zone (SPZ), and its construction and operation meet applicable sanitary and technical requirements. Water quality has been assessed as suitable for both domestic and industrial use.

There are no other known or registered water users in the vicinity of the well. Based on the confirmed yield and available data, no significant impact on groundwater reserves or other users is expected. In accordance with Kyrgyz water legislation, groundwater use for production purposes is subject to registration, and water abstraction beyond defined thresholds requires a permit. Agro Kush holds valid documentation for existing use and will apply for additional approvals if needed based on future demand. Monitoring of water consumption and well performance will be implemented as part of regular operational oversight.

Wastewater Management

The wastewater management system at the agro-industrial complex is designed as a centralized system with segregation of wastewater types and routing of all industrial and domestic wastewater to a single local wastewater treatment plant (WWTP), which will be located on the feed mill site. The sewerage network will operate as a closed-loop system, ensuring reliable collection and treatment of wastewater in compliance with sanitary and environmental standards.

Wastewater is classified into several categories:

- Domestic wastewater generated from the sanitary facilities of the administrative and utility building (AUB), showers, washbasins, and staff rooms;
- Wastewater from sanitary cleaning of poultry houses, including wash water after completion of growing cycles and disinfection of the buildings;
- Wastewater from the feed mill and auxiliary buildings, mainly of domestic character;
- Surface (stormwater) runoff will not be included in the sewerage system and will be discharged separately through an open drainage network (canal/ aryk) with subsequent discharge to terrain, taking into account local drainage.

All wastewater from the complex will be collected in a closed underground sewerage system with centralized delivery to the on-site WWTP at the feed mill site. Each functional area (poultry sites, administrative building, and feed mill) will have its own intermediate collection point (e.g., mixing chamber or equalization tank), where wastewater streams are combined before being directed via a main collector pipeline to the treatment plant. Where gravity flow from individual collection points is not feasible (due to slopes and terrain), pumping stations will be installed.

The treatment process will include the following stages:

- Screening for removal of coarse contaminants;
- Equalization tank;
- Dissolved Air Flotation (DAF) for removal of fats and suspended solids;
- Anaerobic tank (denitrification);
- Aerobic bioreactors with moving bed biofilm reactor (MBBR) technology;
- Sedimentation tank;
- Intermediate tank;
- Sand and carbon filtration;
- Clean water tank (with sufficient storage volume);
- Ultraviolet disinfection;
- Screw press for sludge dewatering.

Treated water, after passing through all treatment stages at the WWTP, will be discharged to the underground infiltration fields designed for year-round discharge of treated wastewater. According to the results of geotechnical surveys, groundwater is not encountered up to a depth of 15 meters; the area is characterized by stable geological conditions and is not prone to flooding, allowing for the safe use of subsurface infiltration.

All design parameters - calculations of wastewater volumes, composition, system loads, and structural solutions - will be detailed in the design documentation. According to approximate calculations, the maximum wastewater discharge will be 40 m3 per day.

Fire Protection

The fire protection system of the agro-industrial complex will be organized in accordance with the legislation of the Kyrgyz Republic on fire safety, including fire regime rules, building codes, and sanitary regulations.

To protect the facilities from fire and ensure prompt response, a set of engineering, technical, and organizational measures is envisaged:

- External and internal fire water supply will be provided, with the installation of fire hydrants both on-site and inside buildings. The placement of hydrants will ensure free access for firefighting units to all areas of the complex;
- Existing firewater storage tank installed with a capacity of 50 m³ at the FM site, meeting the regulatory requirements for the minimum volume of water for external firefighting. The tank will be connected to the fire water supply system;
- Fire alarm and notification systems will be installed in all administrative, production, and technical buildings, ensuring alarm signal transmission and audible warnings to personnel in the event of a fire detection;
- Provision of primary fire extinguishing equipment (fire extinguishers, fire hose cabinets, fire shields) will be carried out in accordance with regulations, with mandatory inspection, recharge, and replacement as required;
- Staff training and preparation will include regular fire safety briefings, evacuation drills, use of firefighting equipment, and coordination with the Ministry of Emergency Situations (MoES) and internal security services.

During operation, based on the company's established practices at existing facilities, the following measures are planned:

- Appointment of responsible persons for fire safety of buildings and structures;
- Maintenance of records for fire safety briefings and equipment inspections;

- Scheduled inspections of fire protection systems at least twice a year;
- Fire safety training for technical and engineering personnel;
- Arrangement of designated storage areas for combustible materials and regular control to enforce no-smoking rules in non-designated areas;
- Inspection and winterization of outdoor fire hydrants during the autumn-winter period;
- Control of the proper condition of electrical equipment and elimination of unauthorized wiring.

All design solutions related to fire protection, including system placement, equipment, water consumption, evacuation routes, types of detectors and alarms, will be detailed in the design documentation and agreed upon with the authorized fire safety supervisory authorities.

2.5. Biosecurity

The project provides for the implementation of a comprehensive set of veterinary-sanitary, engineering, and organizational measures aimed at ensuring a biosecurity regime at all stages of the production cycle - from the delivery of day-old chicks to the removal of products and sanitation of premises. The biosecurity system is designed to prevent the introduction and spread of infectious agents, maintain epizootic well-being, protect flock health, and safeguard personnel.

The biosecurity system includes the following elements:

- Sanitary checkpoints with showers and barrier disinfection;
- Separate movement routes for personnel, vehicles, raw materials, and finished products (clean and dirty zones, roads, gates);
- Isolation of each bird batch under the "all-in, all-out" principle, preventing cross-flows;
- Mandatory disinfection of premises and equipment between production cycles, with an established sanitary break period;
- Sanitary treatment of vehicles before entry, including disinfection barriers and recording in a disinfection logbook;
- Physical zoning of the premises into "clean" and "dirty" areas, with perimeter fencing, security, and restricted access;
- Maintenance of visitor and access control logs, including records of movements by staff, visitors, inspectors, and contractors;
- Disposal of dead birds and organic waste in accordance with veterinary regulations, with subsequent processing at a specialized facility (rendering) located in the Issyk Kul region (on the territory of Toru-Aygyr rural municipality Issyk-Kul district of Issyk-Kul region);
- Closed feed and water supply system excluding external contaminants, with quality control and bacteriological monitoring;
- Compliance with sanitary storage requirements for disinfectants, medicines, and veterinary drugs - in isolated rooms with temperature control and restricted access for authorized personnel.

The project also envisages a veterinary monitoring system, including documentation of bird health, vaccination, treatment, disease outbreak surveillance, and sanitation of premises. In the event of a mass infectious mortality, a special protocol will be applied, including:

- Quarantine of premises and isolation of the affected group;
- Laboratory analyses (if required);
- Cleaning and disinfection of the affected area;
- Observance of an incubation period and sanitary break;
- Subsequent disposal of dead birds at the specialized facility in Balykchy only after completion of all procedures.

Biosecurity measures are mandatory for all personnel, including drivers, contractors, and temporary visitors. Responsibility for implementation and oversight of the system lies with the company's chief veterinarian. Complete procedures, instructions, a list of restrictions, and penalties for violations are set forth in the company's internal document "Veterinary-Sanitary Biosecurity Requirements" (11 September 2023), which will also apply to this project.

2.6. Logistics and Sanitary protection zone (SPZ)

The site layout of the agro-industrial complex provides for a clear separation of transport flows and functional zones to comply with sanitary, veterinary, and biosecurity requirements. The master plan includes designated routes for different operations:

- Delivery of feed raw materials and premixes to the feed mill (FM);
- Removal of grown poultry along a separate sanitary route;
- Removal of litter, dead birds, and other waste;
- Movement of personnel and servicing of facilities along separate pedestrian and transport routes.

Vehicle entry and movement within the site are regulated with biosecurity measures: sanitary checkpoints, disinfection barriers, and access control are provided, including route tracking and separation of "clean" and "dirty" zones.

Functional zoning

The planned sites are divided into four main functional zones:

- Production zone - includes poultry houses, feed mill, and boiler house;
- Auxiliary zone - administrative and utility building (AUB), warehouses, sanitary checkpoints, sanitary facilities, and technical structures;
- Logistics zone - access roads, loading/unloading areas, and maneuvering yards;
- Sanitary protection zone (SPZ) - buffer between production facilities and external development (residential or public), intended to minimize potential sanitary impacts.

Sanitary protection zone dimensions

Sanitary protection zones are established in accordance with Government Resolution of the Kyrgyz Republic No. 201 of 11 April 2016 "On approval of sanitary rules and standards for sanitary protection zones and sanitary classification of enterprises, facilities, and other objects":

- For each poultry site with a capacity of up to 1 million broilers per year, a sanitary protection zone of 300 meters is established, corresponding to Class III sanitary hazard according to sanitary classification;
- For the feed mill using only grain raw materials, premixes, and feed additives, without the use of food or livestock waste, the facility is classified as a Class IV sanitary hazard object, with a sanitary protection zone of 100 meters;
- For closed local wastewater treatment plant (WWTP) and underground infiltration fields with a design load of up to 50 m³/day, the sanitary protection zone is set at 100 meters according to the standards.

The nearest settlements - the village of Kara-Tobo and the city of Kemin - are each located at a distance of about 400-500 meters from the border of the project territory, which meets the requirements for the placement of objects of III-IV sanitary hazard classes.

Actual confirmation of the size of the sanitary protection zone will be carried out at the stage of preparation of the design documentation, including sanitary and epidemiological approval and preparation of the EIA section. If necessary, dispersion calculations, epidemiological justification and approval with the state sanitary supervision authorities will be carried out.

2.7. Labor resources and working hours

Production activities at the Agro Kush agro-industrial complex in Kemin District will operate year-round, with two shifts. The work schedule will be adapted to the production cycles of the poultry house sites and the operating rhythm of the feed mill, taking into account seasonal workloads.

In accordance with the Labor Code of the Kyrgyz Republic, the standard working time may not exceed 40 hours per week, and work is generally organized in two 8-hour shifts per day. The specific shift hours (e.g., start and end time) will be determined during the operational planning phase, but each worker’s schedule will comply with national labor legislation and occupational safety requirements. Night shift regulations and additional rest periods, where applicable, will also be taken into account.

At the time of this documentation, it is planned to employ more than 100 permanent staff. Personnel will be distributed among three main sites: the feed mill, poultry house No. 1, and poultry house No. 2. All staff will be provided with appropriate infrastructure, sanitary conditions, and biosecurity procedures.

According to current data:

- Approximately 30 people will work at the feed mill (including operators, mechanics, technical personnel, and AUB staff);
- 25–30 permanent staff across the two poultry sites, including operators, veterinarians, sanitation workers, and technical specialists;
- Administrative and utility personnel (guards, drivers, cleaners, duty staff) - approximately 15–20 people;
- For seasonal operations (disinfection, assembly, shipment), temporary workers or contractors may be engaged.

Each site will have a separate administrative and utility building (AUB):

- For the poultry house - an area of 415 m², designed for 15 permanent and 10 additional shift -based personnel working in alternating schedules (e.g. 24-hour shift with two days off).
- For the feed mill - an area of 288 m², including a canteen, changing rooms, showers, laundry, rest rooms, and offices.

Work organization for personnel will comply with all sanitary standards and biosecurity requirements:

- Sanitary checkpoints (sanitary posts) with showers, cloakrooms, and disinfection barriers are provided;
- Separation of personnel, vehicle, raw material, and product flows to eliminate cross-contamination;
- Provision of workwear and personal protective equipment (PPE), with separate storage for "clean" and "dirty" clothing;
- All labor activities will be accompanied by training and instruction on occupational health and safety, sanitary practices, and veterinary requirements;
- Records will be maintained for visits, shift schedules, disinfection procedures, and medical monitoring.
- The design includes separate sanitary and hygiene facilities (changing rooms, toilets, and showers) for male and female personnel.

Maintenance of sanitary infrastructure (cleaning, disinfection, replacement of consumables) will be carried out by personnel assigned to each site. Responsibility for ensuring compliance with sanitary and epidemiological regimes will lie with the responsible veterinarian and site managers.

A detailed allocation of responsibilities, staffing plan, shift schedule, and monitoring system will be developed during the design phase and within internal personnel management procedures.

2.8. Waste Management

The agro-industrial complex will generate various types of waste arising from production and utility activities. The waste management system is expected to be organized in accordance with the legislation of the Kyrgyz Republic, sanitary and veterinary requirements, as well as Agro Kush's internal regulations, including the approved Waste Management Plan (WMP) for existing facilities.

Taking into account the nature of production processes and the practices of similar facilities, following waste categories are expected:

- Litter-manure mixture (organic waste) - temporary storage in equipped manure storage facilities, followed by removal for composting or agricultural use;
- Poultry mortalities and biological remains - disposal at a specialized rendering facility owned by the company in the Issyk Kul region;
- Ash and dust from boiler installations - accumulation in a concrete storage area and removal to a municipal landfill, subject to coordination with the sanitary-epidemiological authorities;
- Industrial and sanitary wastewater - collection and treatment at on-site wastewater treatment plant (WWTP), with residual sludge dewatered and disposed of to a designated landfill;

- Packaging waste (bags, pallets, etc.) - partially recycled, partially removed under contracts with contractors;
- Hazardous waste (oils, filters, lamps, veterinary drugs, etc.) - accounting, storage in sealed containers, and transfer to licensed organizations.

The waste management system will include:

- Separate collection and temporary storage in specially equipped areas;
- Access control to storage areas and registration of waste movements;
- Recordkeeping and maintenance of logbooks for each waste type;
- Timely disposal along approved routes with accompanying documentation.

All waste handling areas will provide staff training, appointment of responsible personnel, and provision of protective equipment. Design and operational measures will draw on approaches already applied at Agro Kush's existing facilities, adapted to the specifics of the new complex.

The volumes, composition, hazard classes, storage methods, and disposal routes for waste will be specified in the design documentation, in accordance with sanitary, environmental, and veterinary requirements as well as IFC Performance Standards and WBG's Environmental, Health, and Safety Guidelines for Poultry Production (notably PS3 and PS6 regarding waste management).

III. REGULATORY AND INSTITUTIONAL FRAMEWORK FOR ESIA

3.1 Normative and legal framework of Kyrgyz Republic

3.1.1 Environmental regulations of Kyrgyz Republic

Kyrgyz Republic has a developed legal system in the field of environmental protection, rational use of natural resources and sanitary safety. The basis of this system is framework laws, special technical regulations, sanitary standards and international obligations. The legislation is aimed at preventing negative impacts on environment and protecting public health.

Goals nature conservation legislation:

- Ensuring citizens' constitutional right for favorable life and health environment (Article 48 of the Constitution of the Kyrgyz Republic);
- Prevention of pollution, depletion and destruction of natural resources and ecosystems;
- Determination of permissible levels of environmental impact (MPE, MPD, SPZ, etc.);
- Mandatory environmental impact assessment (EIA/OVOS) and state environmental expertise (SEE);
- Introducing the principles of accountability, transparency, sustainability and public participation in decision making.

Key regulatory statement:

Law of Kyrgyz Republic "On Environmental Protection" No. 53 of June 16, 1999 (as amended in 2024) - the main document defining the state's environmental policy. Law fixes:

- Obligation to prevent irreversible damage to the environment;
- Priority of conservation and sustainable use of ecosystems;
- The principle of compensation for damage in case of pollution or destruction of environment;
- The need to conduct an environmental assessment before the start of project implementation;
- Duty to take into account public opinion and ensure access to environmental information.

Below is a list of key laws on the basis of which the requirements for the project are formed.

Table 1. Environmental regulations

No.	NLA	Summary / Meaning
1	Law of the Kyrgyz Republic "On Environmental Protection" No. 53 (as amended in 2024)	Establishes the principles of sustainable development, the responsibilities of legal entities to prevent pollution, protect all components of the environment and develop measures to reduce harmful impacts.
2	Law of the Kyrgyz Republic "On Environmental Expertise" No. 54	Determines the mandatory nature of the EIA/OVOS and the passage of state environmental expertise before approval of design documentation.
3	General technical regulations No. 151	Contains mandatory principles and measures to ensure environmental safety at all stages - design, construction, operation, including the use of the best available technologies.
4	Law of the Kyrgyz Republic "On Production and Consumption Waste" (as amended in 2023)	Establishes waste classification, handling, licensing, accounting and reporting requirements. Biological waste are subject to mandatory disposal through incineration from 2025 art.15.
5	Law of the Kyrgyz Republic "On the Sanitary and Epidemiological Welfare of the Population" (2023)	Requires the implementation of a sanitary examination, the establishment of sanitary protection zones, monitoring of working conditions and sanitary classification of the enterprise.
6	Law of the Kyrgyz Republic "On Water" and Resolution No. 271 (1995) on water protection zones	Regulates discharges, water intake, sanitary restrictions within 100-meter water protection zones. Construction Poultry farms are prohibited in such zones.

7	Law of the Kyrgyz Republic "On the Protection of Atmospheric Air" (as amended in 2024)	Requires obtaining an emission permit, calculating the maximum permissible emissions, installing purification systems and monitoring emissions.
8	SanPiN KR (GD No. 201 of 11.04.2016)	The sanitary protection zones are established: 300 m for poultry farms (class III), 100 m for feed mills (class IV), MPC for noise, water, air, soil.
9	Law of the Kyrgyz Republic "On Livestock", "On the Plant World", "On the Animal World"	They regulate the protection of flora and fauna, including during the construction and operation of agro-industrial facilities.
10	Law of the Kyrgyz Republic "On the licensing and permitting system" (as amended in 2024)	Defines the types of activities subject to licensing, in particular, the extraction of groundwater and the handling of hazardous waste.

3.1.2. National guarantees and citizen participation

Social rights and participation mechanisms are regulated by the following legislative acts presented in Table 2.

Table 2. NLA including social aspects

No.	Legislation	Applicability and Key Points
1	Law of the Kyrgyz Republic "On the procedure for considering citizens' appeals" (2007, as amended on February 12, 2025, No. 37)	Article 2. The right of citizens to appeal Every citizen of the Kyrgyz Republic has the right to personally apply or send individual or collective appeals to state bodies, local government bodies and their officials, who are obliged to consider appeals, ensuring compliance with the terms and conditions established by law. Article 4. Forms of appeals Appeals may be submitted in the form of an application, complaint, proposal, both in written and electronic form. Oral appeals during a personal reception are also allowed. Article 8. Timeframes for consideration of applications The general term for consideration of applications is 14 working days from the date of registration. In exceptional cases, the term may be extended, but not more than by 30 calendar days, with mandatory notification of the applicant. Article 10. Response to an appeal The response to the appeal must be motivated and contain an explanation of the essence of the decision taken. In case of refusal to satisfy the appeal - with an indication of the grounds and procedure for its appeal. Article 12. Monitoring compliance with the procedure for considering appeals State and municipal bodies are required to keep records of incoming requests, ensure transparency and control over the timing and quality of responses. Administrative liability has been established for violating the established procedure.
2	Labor Code of the Kyrgyz Republic dated January 23, 2025 No. 23	Article 9. Non-discrimination in the sphere of labor Article 10. Prohibition of forced labor Article 91. Remuneration of employees. Forms of remuneration Article 20. Conclusion of an employment contract and registration of hiring Article 51. Duration of working hours Article 108. Payment for overtime work Article 139. Works in which the employment of persons under 18 years of age and women is prohibited

		Article 140. Additional guarantees when hiring persons under 18 years of age and for women Article 156. Employment of persons with disabilities Article 158. Guarantees, conditions of work and rest for persons with disabilities Article 246. Making decisions on disputes regarding dismissal, suspension and transfer to another job Article 204. Obligations of the employer to ensure safety labor Article 206. Training and instruction of employees on safety labor
3	Law of the Kyrgyz Republic "On Local State Administration and Local Self-Government Bodies" (2021; as amended on December 31, 2024, No. 209)	Article 3. Principles of organization and activities of local self-government Local self-government is based on the principles of legality, independence, openness, consideration of the opinion of the population and responsibility to the local community. Local self-government bodies are obliged to ensure the participation of citizens in resolving issues of local importance. Article 5. Powers of local government bodies Local government bodies resolve issues of local importance, including: – approval of plans for socio-economic development; – determination of locations for construction projects; – assistance in organizing public hearings and consultative processes. Local governments have the right to participate in environmental procedures and ensure interaction with the population within the framework of environmental impact assessment. Article 27. Forms of population participation in local self-government Mechanisms for citizen participation have been established: – holding meetings, public discussions, public hearings; – organizing the dissemination of information and taking into account the opinions of local residents when developing and coordinating projects. This establishes the legal basis for consultation in the preparation of EIAs. Article 40. Interaction with government authorities Local government bodies interact with government agencies when coordinating territorial planning, land allocation, design, and also when participating in environmental and sanitary assessments.
4	Law of the Kyrgyz Republic "On the Right of Access to Information" (dated December 29, 2023 No. 217	Article 4. Basic principles of ensuring the right of access to information The law establishes the following key principles: – transparency and openness of the activities of state and municipal bodies; – equal access to information for all individuals and legal entities; – the obligation to provide information that does not contain state or other secrets protected by law; – unhindered and timely provision of information. Article 8. Information subject to mandatory publication Authorities are required to regularly publish: – plans and reports on their activities; – draft regulatory legal acts, including environmental programs and impact assessments;

		– information on the consideration of appeals and the holding of public discussions. Article 10. Methods of access to information Information provided by: – in the form of official publications on websites; – through written requests from citizens and organizations; – during public hearings, discussions and meetings. Article 14. Timeframes for Providing Information The response to the information request is provided within 7 working days. If clarification is required or the volume is large, the period may be extended to 15 working days, with mandatory notification of the applicant. Article 18. Liability for violation of the right of access to information Administrative liability has been established for officials for failure to provide or concealment of information subject to public access.
5	Law of the Kyrgyz Republic "On the Protection of Health of Citizens in the Kyrgyz Republic" dated January 12, 2024 No. 14. (as amended on January 21, 2025 No. 22)	Article 5. Basic principles of state policy in the field of health protection of citizens in the Kyrgyz Republic Article 36. Sanitary and preventive care
6	Law of the Kyrgyz Republic "On the Protection and Use of Historical and Cultural Heritage" dated July 26, 1999 No. 91 (as amended on August 17, 2020 No. 134)	Article 32 “Ensuring the preservation of historical and cultural heritage sites during economic work and development of the territory. Article 39. Responsibility for violation of the legislation of the Kyrgyz Republic on the protection and use of historical and cultural heritage.

Note on Applicability to Private Sector Entities:

The legislative acts referenced above comprise the national legal framework governing social rights, public participation, and transparency in the Kyrgyz Republic. While several of these laws are primarily directed at state and municipal authorities, they establish the overarching institutional environment within which private sector projects are executed.

For instance, the Law “On the Right of Access to Information” places obligations upon public institutions but concurrently guarantees access rights for all individuals and legal entities, including private companies. Likewise, environmental assessment procedures require private developers-such as Agro Kush-to inform and consult stakeholders, adhering to national legislation and collaborating with local authorities.

Additionally, adherence to international standards (e.g., IFC Performance Standards) necessitates greater levels of transparency, stakeholder engagement, and information disclosure, often exceeding baseline requirements set forth by national law. Consequently, although not all outlined regulations directly assign responsibilities to private sector parties, they significantly impact project implementation through regulatory processes, involvement with local government bodies, and evolving public expectations.

3.1.3. International environmental obligations

Kyrgyz Republic is a party to a number of international treaties in the field of environmental protection, rational use of natural resources and citizens' rights. Applicable international and national legal obligations related to Agro Kush project are presented below.

Table 3. International conventions applicable to the project

No.	Convention	Applicability to the project
1	Convention on Environmental Impact Assessment in a Transboundary Context (Espoo)	To be taken into account if there is a potential transboundary impact (Chu River). Requires public participation and preliminary assessment before project approval.

2	Agreement on the management of water resources of the Chu and Talas rivers between the Kyrgyz Republic and the Republic of Kazakhstan	Regulates the joint use and protection of water bodies. Participation in operation, maintenance, emergency response.
3	Convention on Biological Diversity and the Cartagena Protocol	They require consideration and preservation of natural habitats, including bird migration zones.
4	Basel Convention on Hazardous Wastes	Regulates cross-border transport and safe handling of hazardous waste components.
5	UN Framework Convention on Climate Change and the Kyoto Protocol	They are required to take into account greenhouse gas emissions and plan adaptation measures.

Transboundary Water Management and Bilateral Cooperation with Kazakhstan

In addition to multilateral conventions, the Kyrgyz Republic and the Republic of Kazakhstan have established bilateral mechanisms to manage shared watercourses, particularly the Chu River, which flows near the project site.

The project is located approximately 250 meters from the state border and in the vicinity of the Chu River, a designated transboundary water body of strategic importance. While the project does not involve any water intake from or discharge into the river, all potential risks to shared water resources are considered, and applicable legal instruments are observed.

The following key legal frameworks apply:

- Bilateral Agreement between the Governments of the Kyrgyz Republic and the Republic of Kazakhstan on the Use of Water Management Facilities of Intergovernmental Status on the Rivers Chu and Talas (signed on 21 January 2000):

This agreement governs the joint use, maintenance, and repair of hydraulic infrastructure along the Chu and Talas rivers. It establishes a Permanent Commission that coordinates decisions between the two countries, including funding, technical oversight, and emergency response. Although the project does not interact with shared infrastructure, its location within the transboundary basin requires full consideration of this agreement.

- Government Decree of the Kyrgyz Republic No. 271 dated 4 July 1995 on “Rules for the Protection of Water Bodies”:

This decree sets out a 100-meter water protection zone along interstate rivers, within which construction and discharge are restricted. The project complies with this requirement: all facilities are located outside this zone, and no treated or untreated wastewater is discharged into natural water bodies.

- Espoo Convention (UNECE Convention on Environmental Impact Assessment in a Transboundary Context, 1991):

The Kyrgyz Republic ratified the Espoo Convention in 2001. Although the Convention is not formally triggered (as no significant adverse transboundary impact is anticipated), its principles-early consultation, transparency, and good neighborly cooperation-are respected.

Wastewater generated on-site will be fully treated and disposed of via underground infiltration, in accordance with national regulations and based on favorable geological conditions. The project includes localized stormwater collection and filtration, ensuring that no runoff or discharge enters the Chu River or its tributaries.

The project developer commits to full compliance with national water protection rules, bilateral agreements with Kazakhstan, and the general principles of transboundary impact prevention and responsible water use.

3.1.4. Environmental requirements at the planning and design stage: Environmental assessment and ESIA

Environmental Impact Assessment (EIA/OVOS) in Kyrgyz Republic is a mandatory legal instrument regulated by following statements:

- Law of Kyrgyz Republic "On Environmental Expertise" No. 54 of 16.06.1999

- Law of Kyrgyz Republic "On Environmental Protection" No. 53 of 16.06.1999 (as amended in 2024)
- Resolution of Government of Kyrgyz Republic No. 60 of 15.02.2015 - approves procedure for conducting EIA/OVOS procedure.
- General technical regulations of Kyrgyz Republic No. 151 of 08.05.2009 - defines principles of environmental safety.

OVOS's goals are to identify, assess and prevent potential negative consequences of planned activity in advance, ensure selection of best alternatives, and include measures to reduce the impact in design documentation.

OVOS procedure is applied prior to approval of design documentation and obtaining construction permits, and is an essential condition for obtaining positive conclusion of the state environmental expertise (SEE).

Environmental Impact Assessment (OVOS) is regulated by:

- By Law of Kyrgyz Republic "On Environmental Expertise" No. 54 of 16.06.1999.
- By Decree of Government of Kyrgyz Republic No. 60 of 15.02.2015.

OVOS includes 4 stages; the stages and requirements are described below in Table 4.

Table 4. Environmental Impact Assessment stages

No.	Stage	Contents and requirements
1	Screening (preliminary assessment)	Determining the need to conduct an Environmental Impact Assessment (OVOS). In accordance with Appendix to Gov.Decree No. 60, poultry farming facilities (with a capacity of over 500 thousand heads/year) and feed mills belong to class III-IV of environmental hazard - an OVOS is mandatory.
2	Pre-OVOS (at the feasibility study stage)	Includes analysis of initial design decisions, description of the environment, preliminary mitigation measures, analysis of possible alternatives.
3	OVOS (as part of the design documentation, environmental protection section)	Main stage. Includes: project description, impact assessment by components (air, water, soil, bio, social), detailed plan of mitigation and compensatory measures, monitoring program (ESMP).
4	Post-project analysis (1 year after launch)	Monitoring the effectiveness of implemented measures. Required by Article 21 of the Law of the Kyrgyz Republic "On Environmental Expertise". This OVOS is not included.

3.1.5. Environmental requirements for the operation of the facility

In Kyrgyz Republic, the operation of facilities that impact environment is regulated by a number of laws, technical regulations and sanitary standards. Below are the key provisions of legislation that must be observed when operating a poultry farm and feed mill.

Table 5. Applicable regulatory legal statements of Kyrgyz Republic

Normative act	Basic Provisions	Applicability to the project
Law of the Kyrgyz Republic "On Environmental Protection"	Sustainability principles, State Environmental Expertise, compensation for damage	Basic legal framework for all environmental protection activities
General technical regulations (Law No. 151)	Emission/discharge limits, reporting, requirements for reducing Emissions of harmful substances into air or water	Regulates the operating mode of contaminated objects
Law "On the Protection of Atmospheric Air"	Maximum allowable emission, permits, cleaning, monitoring, sanitary standards	Compliance with maximum permissible emissions, air purification, and permits are required.

Law "On Production and Consumption Waste" (2023)	Classification, reporting, licensing, burning/burial bans	Regulates work with poultry biowaste
Law "On Water"	Discharges, permits, cleanup, pollution ban	Wastewater treatment and discharge approval required
Law "On the Animal World" and "On the Plant World"	Habitat protection, seasonality, migration control	Bird migration records and biodiversity monitoring are needed
Resolution No. 201 (SanPiN)	Sanitary protection zone, maximum permissible concentrations for air/water, noise, sanitary classification	Establishes sanitary protection zone: 300 m (poultry house), 100 m (feed mill)

General responsibilities at operation:

- Maintenance of the enterprise's environmental passport, projects for maximum permissible emissions (MPE), maximum permissible discharges (MPD), and waste generation and disposal limits (WGDL) (if the facility is classified as Category 1 or 2 according to the Law of the Kyrgyz Republic "General Technical Regulation on Environmental Safety"). The environmental category (Category of Environmental Impact, CEI) will be determined during the preparation of the Environmental Protection Section for the Detailed Design stage.;
- Annual statistical reporting on emissions, discharges and waste;
- Licenses and permits for emissions, discharges and waste management;
- Industrial ecological control;
- Compliance with sanitary standards and interaction with supervisory authorities (Ministry of Health, Sanitary and Epidemiological Supervision, National Statistical Committee).

Table 6. Environmental permits and regulatory requirements during operational phase

View document	Authorized body	Base
Permit for emission of pollutants into the atmosphere	MNRETS	Law No. 151, Air Protection Law
Wastewater discharge permit	MNRETS and Sanitary and Epidemiological Service	Law "On Water", GD No. 271
Waste disposal permit	MNREST	Law "On Production and Consumption Waste"
Waste Passport	MNREST	Law "On Production and Consumption Waste", Accounting Procedure
Maintaining primary reporting (Form 1 and 2 - "Waste")	National Statistics Committee and MNRETS	State Statistics Service Resolutions
Maintenance and registration of an environmental passport	MNRETS	Law No. 151 Technical regulation
Conclusion of the sanitary examination	Department of Sanitary Inspection	Law on Sanitary Safety

3.1.6. Applicability of Kyrgyz Republic legal framework to the Agro Kush project

The company's project is located in Kemin district of Chui region - a region with high natural and agricultural value, as well as immediate proximity to the Chu River. These factors determine need to comply with full range of environmental and sanitary requirements of Kyrgyz Republic.

Kyrgyz Republic's legislation in the field of environmental protection provides for mandatory environmental impact assessment (OVOS) procedures, sanitary and ecological expertise, as well as obtaining relevant permits and approvals before the start of implementation of projects related to potential impact on environmental components.

Project is subject to a number of key laws and regulations of Kyrgyz Republic that define legal framework for placement, design and operation of facilities with increased environmental control, such as poultry farms and

feed mills. These requirements concern sanitary protection zones, protection of water objects, waste management, air emissions and architectural restrictions.

Project includes construction:

- 24 poultry farms for growing broilers (up to 14,000 heads each);
- Feed mill plant (up to 30 t/h);
- Warehouses, treatment facilities, wells, auxiliary infrastructure.

By classifications:

- For each poultry site, with a capacity of up to 1 million broilers per year, a sanitary protection zone (SPZ) of 300 meters is established, corresponding to Class III sanitary hazard according to sanitary classification;
- For the feed mill, using exclusively grain raw materials, premixes, and feed additives, without the use of food or livestock waste, it is classified as a Class IV sanitary hazard facility, with a sanitary protection zone of 100 meters;
- For closed local wastewater treatment plant (WWTP) with a projected load of up to 50 m³/day and underground infiltration fields - in accordance with standards - the sanitary protection zone is set at 100 meters.

Additionally:

- SPZ - 300 m from the boundary of the poultry house;
- SPZ - 100 m from the boundary of the feed mill;
- SPZ - 100 m from the boundary of the local wastewater treatment plant (for closed facilities and underground infiltration fields with a capacity of up to 50 m³/day);
- Water protection zone - 100 m from the riverbed of the Chu River (in accordance with Government Decree No. 271 dated 04.07.1995).

According to Government Decree of the Kyrgyz Republic No. 271 of 4 July 1995:

- Clause 3.1.2 establishes that for rivers of interstate importance, including the Chu River, the water protection zone is 100 meters from the water's edge.

The Chu River is recognized as a transboundary (interstate) river between Kyrgyzstan and Kazakhstan, as confirmed by bilateral agreements and regulatory practice.

In accordance with legislation of Kyrgyz Republic, project is subject to a full OVOS procedure with mandatory development of a working project and passing a state environmental impact assessment in the Ministry of Natural Resources and Ecology and Technical Supervision of Kyrgyz Republic.

Table below provides a summary of the most significant regulations and their direct connection with project:

Table 7. Regulatory legal acts applicable to the project

No.	Subject	Key Points	Normative act
1	Sanitary protection zones (SPZ)	Sanitary protection zone: 300 m (poultry house), 100 m (feed mill)	Gov. Decree KR No. 201 of 11.04.2016
2	Water protection zones	Construction ban within 100 m of the Chu River	Gov. Decree KR No. 271 of 04.07.1995
3	Waste management	Classification, waste passports (biological waste, hazardous waste, etc.), Waste Generation Standards Project (WGSP)	Law of the Kyrgyz Republic "On Waste" (2023 edition) Gov. Decree KR No. 559 dated 5 August 2015
4	Atmospheric air	MPE, monitoring, cleaning	Law of the Kyrgyz Republic "On the Protection of Atmospheric Air" Gov. Decree KR No. 479 dated 2 September 2016

5	Sanitation and health	Working conditions, sanitary conclusion	Law of the Kyrgyz Republic "On Sanitary and Epidemiological Welfare"
6	Water use and licenses	Well licenses, source protection	Law of the Kyrgyz Republic "On Water"
7	Land use and architecture	Transformation, project approval	Land and Urban Development Codes
8	Water resources (groundwater, surface water)	Wastewater treatment, Maximum Permissible Discharges (MPD) project	Law "On Environmental Protection" General Technical Regulation on Environmental Safety in the Kyrgyz Republic Gov.Decree of the Kyrgyz Republic No. 102 of 13 February 2017

The following key actions have already been implemented within the project's framework:

- A draft Pre-OVOS (ESIA) has been prepared covering the project description, alternatives, background environmental characteristics and preliminary measures;
- The compliance of facilities placement with the requirements for sanitary protection zones and water protection zones has been confirmed (general plan of facilities);
- Design documentation will take into account sanitary and urban planning restrictions;
- Treatment plant is planned, equipment, wells are subject to licensing, waste will be taken into account in passports and disposal plans.
- All design solutions comply with the standards for the protection of atmospheric air, water quality, soil and sanitary safety.

Table 8. Government agencies involved in mandatory approvals:

No.	Procedure	Responsible body
1	Land plot approval (change of land use)	Kemin City Hall, District Architecture
2	Sanitary conclusion and approval of the sanitary protection zone	Kemin district sanitary and epidemiological supervision
3	Environmental assessment and emission permits	MNRETS for Chui region
4	Water intake and licenses	MNRETS: Water Resources Service and State Geology
5	Waste accounting and reporting	MNRETS, National Statistical Committee

In accordance with the requirements of Gov. Decree No. 60 and Law of the Kyrgyz Republic No. 54, the implementation of the OVOS for the project is carried out sequentially.

Table 9. Status of OVOS process implementation

No.	Element	Status
1	Screening	Completed - the need for a full OVOS procedure is confirmed
2	Pre-OVOS (ESIA)	In preparation (OVOS Report)
3	OVOS (environmental protection section)	As part of the design documentation
	ESMP	*Overall, It is formed within the framework of the OVOS Report or environmental protection section and is detailed within the framework of the Environmental Impact Assessment section.* *(This document, as part of the implementation of national OVOS, is prepared as part of the environmental protection section. It is highlighted here as a separate item, just for understanding that the activities are considered necessarily within the document, and not as a separate document).*

4	Consultations	Conducted with the authorities and the State Agency for Land Resources, Cadaster, Geodesy and Cartography under the Cabinet of Ministers of the Kyrgyz Republic. (Abbreviated name - SALRCGM). Public consultations (informing, participation) will be conducted later, after preparation of the draft OVOS Report.
5	Institutional support	A project environmental and social specialist (E&S specialist) has been appointed and consultants have been brought in

Public and stakeholder participation will be conducted in accordance with IFC PS1 and Resolution No. 60:

- Public consultations on draft Pre-OVOS (ESIA) report are planned;
- A complaint filing and redressing mechanism (GRM) is being prepared;
- Disclosure of information will be provided in an accessible form - announcements, meetings, electronic channels.

During draft Pre-OVOS (ESIA) preparation, the project demonstrates compliance with key requirements:

- The sites are located outside restricted zones (water protection, sanitary);
- MPE, sanitary protection zones, discharge/emission standards are taken into account;
- The project includes treatment plant, equipment, waste control systems, closed-loop water supply;
- Measures for biodiversity and prevention of dust pollution are taken into account.

3.2. Institutional framework

3.2.1. State agencies involved in the regulation of EIA (OVOS) and environmental control

The environmental component of the Agro Kush project involves a number of authorized public agencies of Kyrgyz Republic, each of them performing key functions within the system of environmental and social regulation:

Ministry of Natural Resources, Ecology and Technical Supervision of Kyrgyz Republic (MNRETS) is the main authorized agency for conducting state environmental assessment and monitoring environmental protection. Internal divisions:

- Department of State Environmental Expertise - responsible for review and approval of OVOS materials, issues formal opinions;
- Department of Environmental Monitoring – conducts sampling and laboratory research;
- Environmental and Technical Supervision Service - oversees compliance with environmental legislation;
- Regional Directorates - conduct local supervision and authorize documents, including environmental passport, maximum permissible emissions level, permits waste discharge and disposal.

Ministry of Agriculture of the Kyrgyz Republic carries out regulatory functions in agro-industrial complex, including:

- veterinary control, including sanitary standards for keeping poultry;
- biosecurity in poultry farming;
- control of water and land use in the agricultural sector;
- participation in climate change adaptation measures in agriculture.

Department of Disease Prevention and State Sanitary and Epidemiological Surveillance (Ministry of Health of the Kyrgyz Republic) provides sanitary and epidemiological supervision and control over:

- sanitary protection zones (SPZ),
- sanitary classification of objects,
- working conditions at the enterprise,
- food safety and veterinary production.

Ministry of Emergency Situations (MoES KR) is responsible for:

- assessment and prevention of emergency risks,

- participation in the approval of Emergency Response Plans (ERP),
- coordination of fire safety and facility readiness.

Local authorities: Kemin City Hall - carries out:

- coordination withdrawal land plots;
- architectural and urban planning support for the project;
- organization public hearings;
- issuing permits within the limits of its competence.

3.2.2. Role and actions of Agro Kush

Agro Kush, as an initiator of facilities' construction of (poultry houses and feed mill plant), as part of its role ensures:

- compliance with the requirements of national legislation in terms of preparing OVOS;
- organization and support of expert and project work;
- participation in approvals with authorized agencies.

Organization process OVOS preparation:

- company has a project E&S specialist responsible for coordinating the preparation and support of approvals;
- An agreement has been concluded with external consultants for preparation of the ESIA (Pre-OVOS) /ESMP;
- An internal project team (technologists, engineers, lawyers) has been formed to ensure the collection of initial data, technical specifications and project support;
- A draft ESIA (Pre-OVOS) has been prepared, including an impact analysis and a draft ESMP;
- Coordination is underway with Sanitary and Epidemiological Supervision Authority, the Ministry of Natural Resources and the Environment, and architectural services, including the approval of sanitary protection zones, sanitary and water protection restrictions.

Public participation stage. At the time of preparation of the report:

- information and a social survey of the population and other interested parties were conducted; the results of the information are presented in Chapter IX "Public consultations";
- public consultations will be conducted after the preparation of the draft ESIA;
- company and consultants plan to organize an open discussion of the project in Kemin and adjacent settlements, in accordance with Gov. Decree No. 60 and IFC PS1 requirements;
- the draft ESIA report includes the Stakeholder Engagement Plan (SEP) section with with main basic recommendations. SEP development is not provided for by the consultant's ToR. The company has been developed the SEP and is currently in the process of internal finalization.

3.3. Requirements for conducting ESIA according to IFC standards

Draft ESIA has been prepared in accordance with legislation of Kyrgyz Republic, as well as taking into account IFC Performance Standards (IFC Performance Standards (2012), which represent an internationally recognized methodological framework for assessing and managing environmental and social risks.

International Finance Corporation (IFC) puts forward eight Performance Standards Standards), mandatory for all projects supported by the IFC or other banks applying similar policies (e.g. EBRD, ADB). These standards are aimed at identifying, assessing, minimizing and managing environmental and social risks.

Within the framework of proposed international financing, project is subject to assessment and implementation in accordance with international standards, in particular, the project falls under 6 (six) of the 8 (eight) IFC Performance Standards:

- **PS 1** - Assessment and management of environmental and social risks and impacts;
- **PS 2** - Labor and working conditions;
- **PS 3** - Resource efficiency and pollution prevention;
- **PS 4** - Community health, safety and security;

- **PS 5** - Land acquisition and I\involuntary resettlement *(not applicable to this project)*;
- **PS 6** - Biodiversity conservation and sustainable management of living natural resources;
- **PS 7** - Indigenous Peoples *(not applicable);*
- **PS 8** - Cultural heritage *(relevant when accidental finds are discovered).*

Additional international documents:

- IFC Access to Information Policy (2012);
- IFC Environmental, Health, and Safety General Guidelines (2007)
- IFC Environmental, Health, and Safety Guidelines for Poultry Production (2007)
- Global Sustainable Livestock Practices (https://globalslp.org/) – to assess animal welfare;
- IFC Good Practice Note on Animal Welfare in Livestock Projects (2023).

IFC EHS Guidelines for Poultry Production (2007) is used as a source of best international industry practice (GIIP), especially on:

- manure management;
- handling dead birds;
- wastewater treatment;
- odor and ammonia control;
- ventilation and sanitation;
- biosecurity and access protocols.

Indicators from the document (e.g., permissible concentrations of BOD, nitrogen, phosphorus in wastewater; ammonia levels in premises; waste management scenarios) are used within ESMP as guidelines for justifying design decisions.

Full-fledged ESIA in accordance with IFC must:

- take into account all stages of the project: planning, construction, operation, withdrawal;
- be supported by an environmental and social management system (ESMS);
- include Stakeholder Engagement Plan (SEP) and grievance redress mechanism (GRM);
- take into account international principles of access to information, human rights, resource efficiency, biodiversity conservation, fair labor and health protection.

Table 10. IFC Performance Standards (PS) to the Agro Kush project

Standard	Name	Applicability	Comment
PS 1	Risk assessment and management	Fully applicable	A full ESIA taking into account bio, social and climatic aspects and the development of an ESMP are required. Development of a complete ESMS required, which is not included in the consultant's specifications.
PS 2	Workers and working conditions	Applicable	It is necessary to develop a Labor management plan (LMP), compliance with labor rights, health protection, non-discrimination. The preparation of the LMP is not included in the technical specification's consultant.
PS 3	Resource efficiency and pollution prevention	Applicable	The project covers emissions, wastewater, manure, best available techniques (BAT) energy control. ESMP reflects these aspects.
PS 4	Community Health and Safety	Applicable	The project takes into account biosecurity, sanitary protection, emergency response plan, and public awareness.
PS 5	Land acquisition and resettlement	Not applicable	The project is being implemented on land plots owned by the company and does not involve resettlement.
PS 6	Biodiversity and Natural Resources	Applicable	The sites are located on bird migration zones and are subject to surveys and monitoring in the ESMP.
PS 7	Indigenous peoples	Not applicable	There are no indigenous peoples in the project area.

PS 8	Cultural heritage	Not applicable	The project site is located outside the archaeological zones. It is recommended to implement the chance finds procedure as part of the ESMP, but the development of this procedure is not included in the consultant's TOR.

3.4. Analysis of differences between IFC standards and national legislation of the Kyrgyz Republic

The Kyrgyz Republic enforces strict environmental protection standards, but they:

- are oriented primarily on technical and sanitary parameters;
- do not comprehensively address social aspects related to labor and working conditions and stakeholder engagement;
- do not require system integration and management in the form of ESMS, SEP, LMP, GRM.

International (IFC) approach stipulates the following requirements:

- integrated impact management (ESMS);
- meaningful stakeholder and community engagement (SEP, GRM);
- labor protection and working conditions (LMP);
- use best available technologies (BAT), which is not directly provided in the legislation of the Kyrgyz Republic.

Table 11. IFC Performance Standards with the national legislation of the Kyrgyz Republic and conclusions for the Agro Kush project

PS IFC	IFC Requirements	Relevant regulatory legal acts of the Kyrgyz Republic	Differences/gaps	Protection instruments/implementation within the framework of ESIA
PS1 Assessment and Management of Environmental and Social Risks and Impactst	Full ESIA, public participation, GRM, ESMS	Law No. 54 "On Environmental Expertise", Gov. Decree No. 60, Technical Regulation No. 151	There is no ESMS as a system, GRM and SEP are not required by law, participation is advisory in nature	Development of ESIA with ESM, including responsibility matrix, recommendations for GRM and SEP, taking into account IFC requirements
PS2 Labor and Working Conditions	LMP, personnel protection, GRM, contractor management	Labor Code of the Kyrgyz Republic, Law "On Health Protection"	There are no requirements for the LMP, GRM for employees, no obligations to control contractors	It is recommended to develop an LMP, include a GRM for workers, and ensure basic OHS requirements through ESMP
PS3 Resource Efficiency and Pollution Prevention	BAT, energy audit, emissions/discharge management	Law "On the Protection of Atmospheric Air", Law "On Waste", Technical Regulation No. 151	There is no BAT principle, energy audit is not provided by law	Justification of the choice of technologies based on BAT, energy efficiency considerations
PS4 Community Health, Safety, and Security	ERP, bio risk assessment, sanitation, interaction with the population	Sanitary Rules and Norms, Ministry of Emergency Situations, Law on Sanitation	ERP and biosecurity are absent as formalized procedures	The biosecurity plan is included in the ESMP, the ERP is recommended, sanitary standards are taken into account in the design decisions
PS5 Land Acquisition and Involuntary Resettlement	Resettlement plan, compensation, accounting of all forms of ownership and use	Land Code of the Kyrgyz Republic, Law on Property	Not required if the land is owned and there is no resettlement	The plots are owned by the company; there is no resettlement - PS 5 does not apply
PS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources	Accounting for rare species, migrations, ecosystem services, light and noise pollution	Law "On flora and fauna", Conventions (CITES, Ramsar, etc.)	No consideration of ecosystem functions, insufficient focus on migration	Ornithological survey planned, monitoring included in ESMP, light and noise restrictions recommended
PS7 Indigenous peoples	Cultural identity, participation	Not applicable	Not applicable	Not applicable
PS8 Cultural heritage	Archaeology, the procedure of chance finds	Law of the Kyrgyz Republic "On Culture"	There is no "chance find" procedure	The EMP will include a “chance find” procedure in case archaeological objects is discovered

3.5. Current status of project design development and next steps for finalization

At this stage (as of July 31, 2025), all key data and information required to prepare an environmental and social impact assessment report are presented, including a description of production processes, engineering infrastructure, sanitary protection measures and biosecurity systems. These materials provide a sufficient basis for making environmental and social decisions, as well as for screening according to IFC Performance Standards.

However, the project remains at the pre-design and permitting stage. For the feed mill, engineering surveys have been completed and the project design is under development. For the first poultry site, the land transformation procedure is ongoing, along with project design and permitting activities. The second poultry site is at an earlier phase, with field surveys in progress and initial consultations underway.

At the detailed design stage, additional refinement of engineering solutions, confirmation of design parameters, and completion of legal procedures for land transformation will be required. At this stage, a detailed OVOS (section on environmental protection and a mitigation plan) will be developed in accordance with the requirements of national legislation.

The ESIA will be updated once detailed design documents are finalized and approved, to ensure consistency with both national environmental procedures and IFC Performance Standards.

Table 12. Next Steps and Timeline

No.	Step	Description	Timeline
1	Finalization of project design (Feed Mill)	Completion of architectural, sanitary, and environmental documentation	Q4 2025
2	Finalization of project design (Poultry Site 1)	Subject to land transformation approval and permits	Q1 2026
3	Finalization of project design (Poultry Site 2)	Following surveys and preliminary environmental review	Q3 2026
4	Update of ESIA / development of full OVOS	Includes mitigation plan and protective measures	Feed Mill – Q4 2025; Poultry Sites – Q1/Q3 2026
5	Submission of permit applications	Environmental, sanitary, construction permits	Q4 2025 – Q2 2026
6	Start of construction	Based on readiness of each site	Feed Mill – Q4 2025; Poultry Site 1 – Q2 2026; Poultry Site 2 – Q2 2027
7	Start of operations	After commissioning and permitting	Feed Mill – Q3 2026; Poultry Site 1 – Q4 2026; Poultry Site 2 – Q4 2027

The project developer (Agro Kush LLC) has confirmed that the detailed design for the feed mill is expected to be completed by December 2025.

IV. ENVIRONMENTAL AND SOCIAL CONDITIONS OF THE LOCATION AREA

4.1. General information about the project location

Project is being implemented in Kemin district, Chui region, Kyrgyz Republic, in close proximity to Kemin city. Project's initiator is Adal Azyk LLC, and implementation is carried out through the subsidiary company Agro Kush. The project includes construction of 24 broiler poultry houses and a feed mill on land plots owned by Agro Kush.

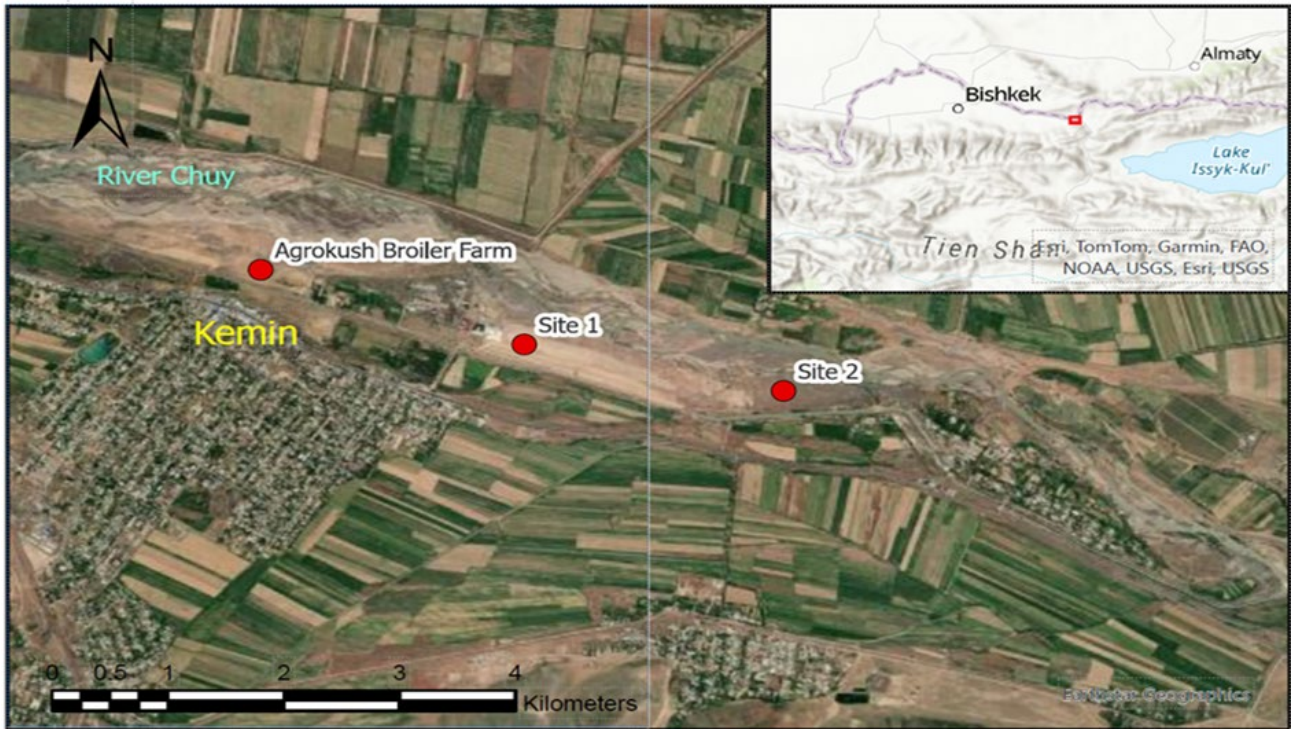

Figure 8. Situational diagram of the location of objects

Geographical location of the area

Kemin district is located in the eastern part of Chui region. Borders area pass:

- on north - along the Zailiy ridge and state border with Republic of Kazakhstan;
- on west - with Chui region;
- on south and east - with Issyk-Kul region (along the ridge parts of Kyrgyz and Kungei Ala- Too ranges).

Landscape of the area varies from flat to mountainous, with absolute elevations:

- Chui valley: 930 –1300 m;
- Kichi-Kemin valley: 1200 –1600 m;
- Chon-Kemin Valley: 1000 – 2000 m;
- Highest points of ridges reach 4200 – 4760 m.

Main water objects are the Chu River and the Kichi -Kemin River. Energy supply is provided, among other things, by Kemin Hydroelectric Power Station.

Economic and geographical characteristics

Region is characterized by a developed infrastructure and natural resource base. The leading industries are agriculture (livestock and crop production), as well as mining. There are deposits of sand, gravel, clay and limestone, which meet the needs of the construction industry.

Location of project facilities

Location of project facilities is presented on master plan.

Figure 9. Master plan for facilities' location

The feed mill plant will be built on the territory of the former linoleum plant (coordinates: 42.792291, 75.710523). The site includes existing foundation and the remains of buildings subject to dismantling. Distance to the Chu River is 150 m which exceeds the established 100-meter water protection zone, in accordance with Government Decree of the Kyrgyz Republic No. 271 dated 04.07.1995. The area is partially fenced with concrete slabs and was previously used as an industrial zone.

The poultry houses (two sites of 12 houses) are located in a deserted area between Chu River and the Bystrov Canal:

- Site No. 1: about 500 m from the feed mill, previously used as agricultural land (coordinates: 42°47'13.6" N 75°44'10.0" E);
- Site No. 2: at a distance of ~1.5 km from the feed mill, is a wasteland next to the dried-up bed of the Chu River (coordinates: 42°47'24.9" N 75°42'57.6" E).

Total width between the water bodies is 300–550 m. The dried-up bed of Chu River belongs to the water fund of Kyrgyz Republic. The sites are located on elevated terrain with a natural slope that facilitates surface water runoff and are not subject to permanent flooding. No permanent watercourses or wetlands have been recorded within the sites. The land on both sides of the riverbed is owned by Agro Kush.

The distance from the project sites to the nearest settlements (Kara Tobo village and Kemin city) are approximately 400-500 m, which complies with the siting requirements for facilities of sanitary hazard Classes III–IV.

The design capacity of each site is up to 14,000 thousand broilers per year. Feed raw materials will be supplied by local suppliers (corn) and imported from abroad (wheat, soybean meal, soybean cake, premixes, etc.).

Transboundary aspect

The project sites are located approximately 250 meters from the state border with the Republic of Kazakhstan. The Chu River, a transboundary watercourse, flows near the project area and is governed by the Agreement between the Government of the Kyrgyz Republic and the Government of the Republic of Kazakhstan on the Use of Water Management Facilities on the Chu and Talas Rivers, signed on January 21, 2000. Therefore, the project must take into account potential transboundary impacts on water resources and include appropriate management measures, such as water use quantity (strictly following maximum extraction flowrate of well water)/wastewater/water quality monitoring and cooperation with regulatory authorities of both countries.

Legal status of land plots

The territory designated for the feed mill is located within an industrial zone and was previously used as a linoleum plant. The land plots designated for the poultry houses were previously agricultural lands. These plots are privately owned by Agro Kush with ownership formalized through a purchase agreement signed on June 5, 2024. The total land area allocated for the project is 95 hectares. The plots are currently undergoing the process of reclassification into industrial land in accordance with national land use regulations.

There are no registered or informal land users on any of the plots, and no resettlement or livelihood restoration measures are required.

The sites have a strategically advantageous location, and the availability of transport and engineering infrastructure, as well as access to water resources, provides a solid foundation for the sustainable implementation of the project in accordance with national legislation and international standards.

4.2. Assessment of environmental conditions

Assessment of environmental conditions in areas planned for the project's implementation is based on the results of field surveys, analysis of archive and regulatory materials, as well as observation data conducted by relevant agencies of Kyrgyz Republic.

1. Climate characteristics

Region's climate is characterized as sharply continental, with a pronounced seasonal temperature range and unstable weather conditions in spring and summer. Key climatic parameters:

- Average annual air temperature - +9.7 ° C;
- The absolute minimum - up to -37 ° C (in winter);
- Absolute maximum - up to +40 ° C (in summer);
- Average annual precipitation - 426 mm, most of it in April-May;
- Prevailing wind direction - north-east, speed 5–7 m/s;
- Relative humidity - 54–81%, minimum - in August-September.

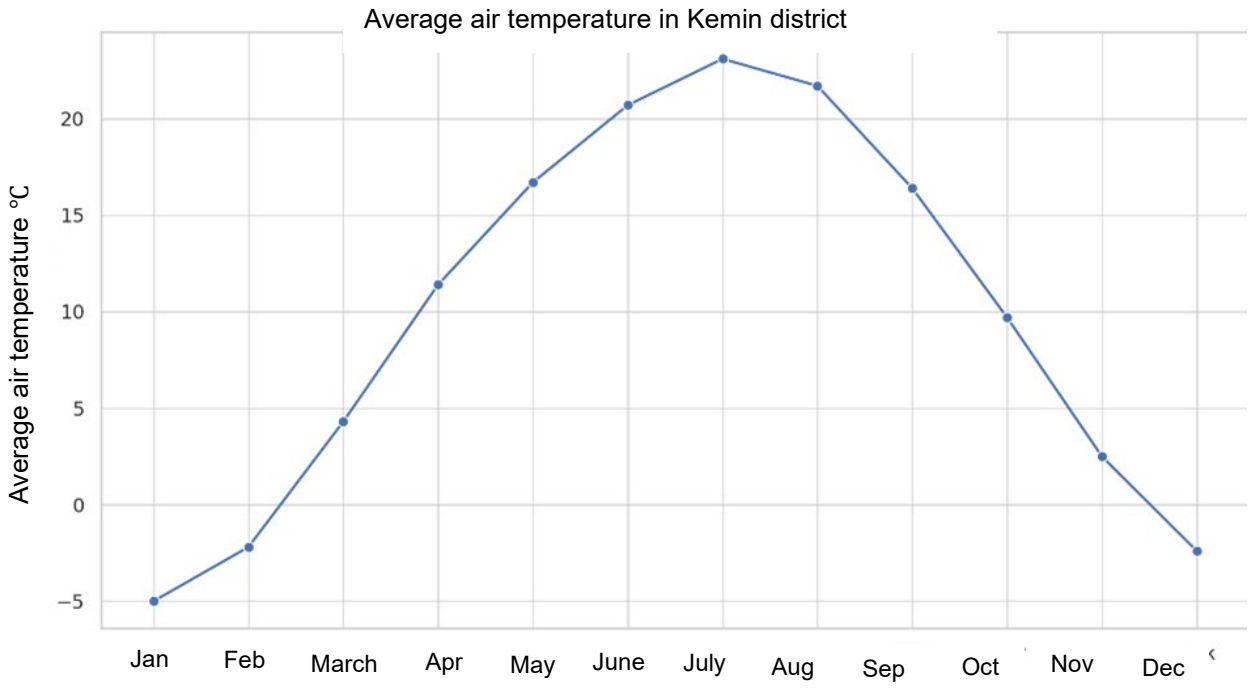

Figure 10. Average monthly air temperature in Kemin district

The most representative meteorological data are provided by the weather station Tokmok city (data for 2024).

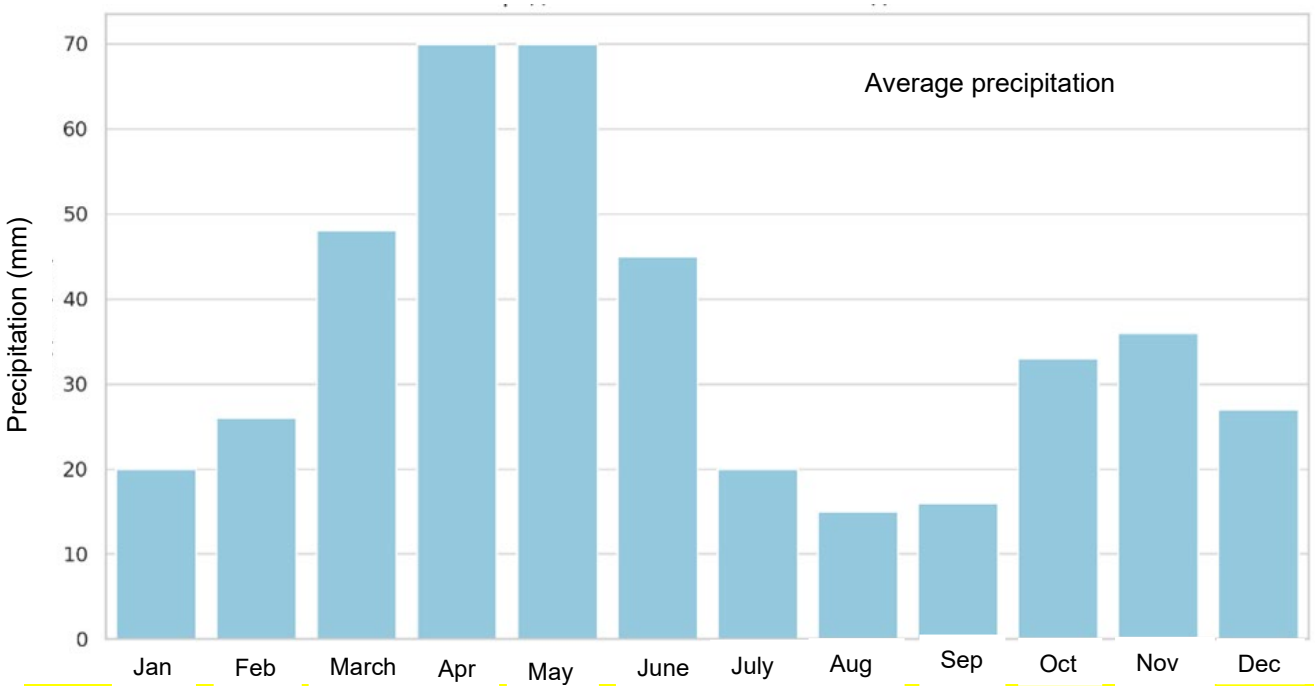

Figure 11. Average monthly precipitation

Detailed climate characteristics are provided in the table below.

Table 13. Climate characteristics according to Tokmok weather station data

Meteorological elements	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	year
Average monthly and annual air temperature, ° C	-5.0	-2.2	4.3	11.4	16.7	20.7	23.1	21.7	16.4	9.7	2.5	-2.4	9.7

Absolute minimum air temperature, °C	-37	-34	-22	-17	-3	1	7	5	-2	-14	-32	-35	-37
Absolute maximum air temperature, °C	18	25	31	37	38	40	40	40	38	34	29	22	40
Average monthly and annual wind speed, m/s	2.1	1.9	1.9	1.9	2.0	2.0	1.8	1.7	1.7	1.7	1.8	2.0	1.9
Average monthly and annual precipitation, mm	20	26	48	70	70	45	20	15	16	33	36	27	426

Table 14. Frequency (%) of wind direction and calms

Month	Norh	NE	E	SE	S	SW	W	NW	calm
I	3	3	67	5	1	1	12	8	27
II	3	3	58	5	1	2	18	10	30
III	3	2	41	4	1	3	32	14	30
IV	2	3	42	4	2	3	32	12	27
V	3	3	44	6	3	3	26	12	24
VI	3	3	49	7	3	4	21	10	23
VII	2	4	50	6	3	4	20	11	25
VIII	2	4	50	5	2	2	25	10	29
IX	1	3	51	3	2	2	26	12	30
X	2	3	53	4	1	3	23	11	31
XI	2	3	61	4	1	1	21	7	30
XII	2	3	67	4	1	2	15	6	27
year	2	3	53	5	2	3	22	10	28

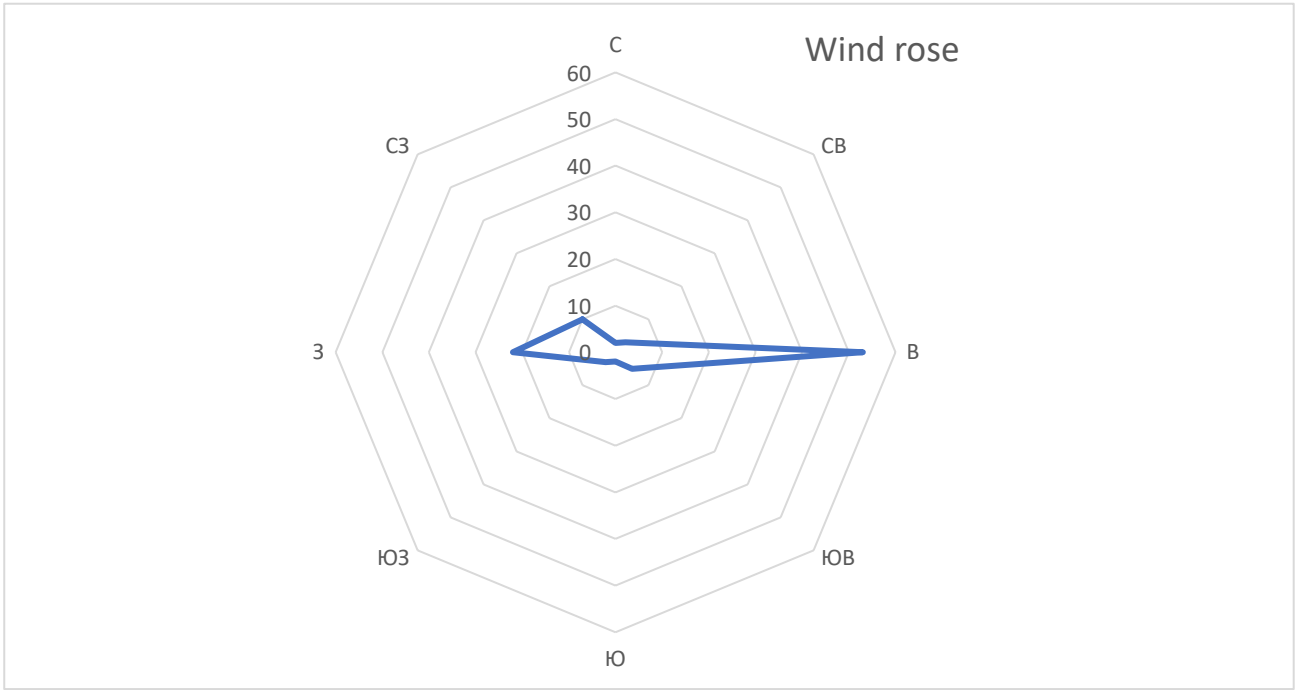

Figure 12. Wind rose of the placement area

2. Atmospheric air

Project area is characterized by low anthropogenic load on the atmospheric air. Main potential sources pollution:

- private households (burning wood and coal);
- motor transport (Bishkek–Issyk-Kul highway);
- dust phenomena (during dry season).

According to observation data for 2024 (Tokmok weather station), concentrations of pollutants did not exceed the MPE:

- sulfur dioxide: 0.002–0.013 mg/m³ (max. 0.26 MAC),
- nitrogen dioxide: up to 0.09 mg/m³ (1.0 MPE),
- nitrogen oxide: up to 0.19 mg/m³ (0.48 MPE).

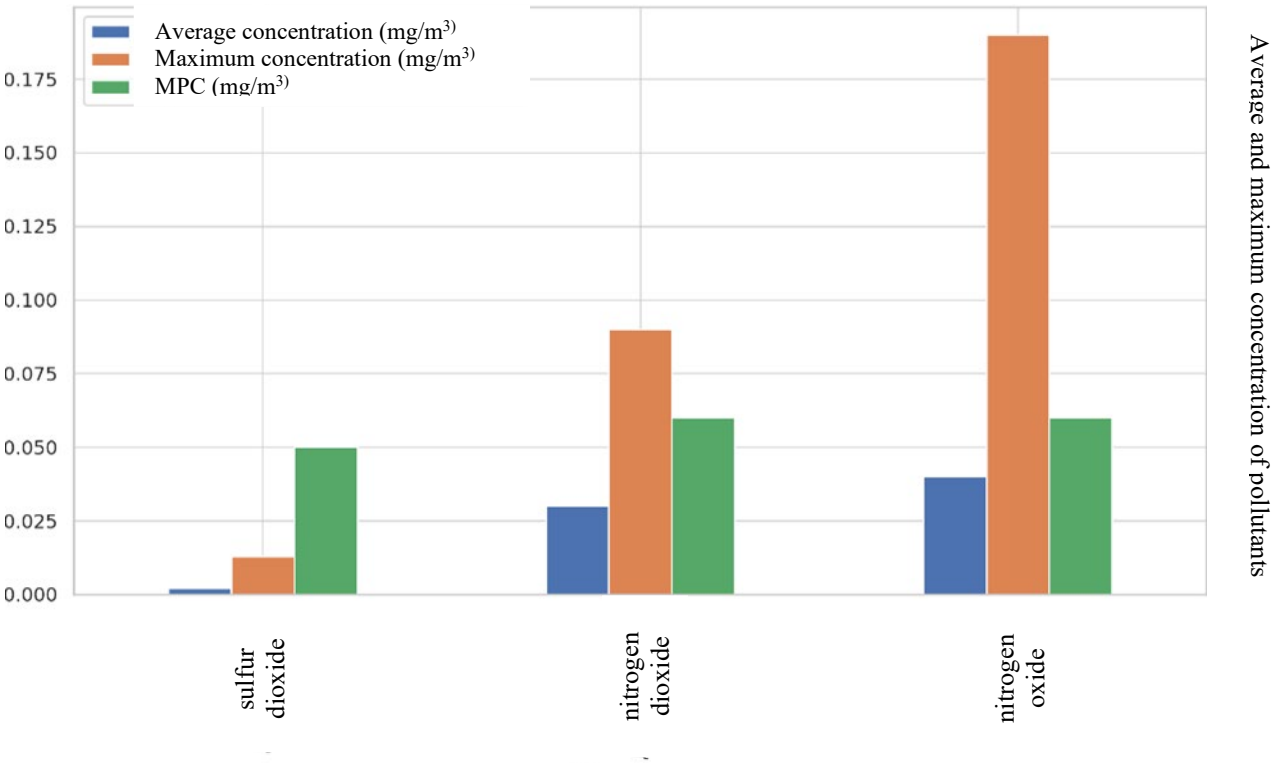

Figure 13. Concentrations of major pollutants in the air

Laboratory analysis

On 23 April 2025, representatives of the Environmental Monitoring Department under the Ministry of Natural Resources, Ecology and Technical Supervision (MNRETS) of the Kyrgyz Republic conducted ambient air sampling in the area of the proposed facility. The purpose of the investigation was to determine background concentrations of pollutants and assess the possible influence of the Bishkek–Issyk-Kul highway on air quality.

Samples were collected at six control points located on the southern, western, and northern sides of poultry houses No. 1 and No. 2, considering prevailing wind directions and potential impact zones.

The analysis included determination of concentrations of the following substances:

- Particulate matter PM10 and PM2.5,
- Sulfur dioxide (SO_2),
- Nitrogen dioxide (NO_2),
- Carbon monoxide (CO).

All samples were collected in the field using certified equipment and transported to the laboratory in accordance with approved sampling and storage procedures. Analyses were performed by an accredited laboratory using methods approved under the national sanitary surveillance system.

Results of ambient air sampling and analysis

To assess background pollution and the potential influence of the proposed facility, air samples were collected at six control points: southern, western, and northern sides of poultry house No. 1, and southern, western, and northern sides of poultry house No. 2.

The analysis covered the following pollutants: sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), and particulate matter (PM10, PM2.5).

According to laboratory results:

- Concentrations of pollutants at all control points did not exceed maximum permissible concentrations (MPC) for one-time measurements;
- Variations between sampling points remained within normative background values, indicating no local pollution source;
- The proposed facility has no detectable impact on ambient air quality in the control area.

The state of ambient air meets environmental safety requirements.

Complete laboratory results and applied methodologies are presented in Annex 1 (Test Reports, Kemin, dated 23.04.2025).

3. Hydrological characteristics

Chu river, flowing at a distance of 150 m from territory of the former linoleum plant (of the planned feed mill and poultry house sites), is one of the largest transboundary watercourses of Chui Valley. Source of nutrition is glaciers and snow of Teskey and Kyrgyz ranges.

Specifications:

- length - 1186 km, drainage area - 67,500 km²;
- average flow rate - 130 m³/s;
- flood - May-September;
- used for irrigation;
- refers to fishery water bodies (according to Resolution No. 128 of 14.03.2016).
- The historical flood of 1964 reached a flow rate of up to 149 m³/s, which characterizes the hydrological vulnerability of the area under exceptional conditions.

According to laboratory research data (January 2025, three water abstraction point):

- BOD_5 varies from 0.29 to 0.61 mgO2/l (MPE - 3);
- ammonium nitrogen - within normal limits;
- nitrate nitrogen - up to 2.83 mg/l (MPE - 9).

River's water chemical composition formation occurs under influence of both natural factors and human anthropogenic activity. Pollution sources are located mainly in the middle and lower reaches.

Main pollutants' concentrations, according to data from Hydrometeorological Service under the Ministry of Emergency Situations of Kyrgyz Republic, are presented below in Table 14.

Table 15. Concentrations of the main pollutants in Chu River

No.	Place of selection (case)	Selection date	Components to be determined						
			T, °C	CO_2, mg/l	Silicon, mg/l	Iron total	BOD_5, mgO_2/l	Ammonium nitrogen, mg N / l	Nitrate nitrogen, mg N/l
			-	-	-	0.10 (mg/ dm)	MPC* 3 mgO_2/l	MPC* 0.4 mg N/ l	MPC* 9 mg N/l
1.	Chu river – Boroldoysky bridge, 0.01 km above the bridge;	14.01.25	1.0	1.6	3.2	0.01	0.61	0,00	0.79
2.	Chu river – Tokmok city, 1 km above the city;	14.01.25	6.5	3.4	3.5	0,00	0.29	0,00	2.27
3.	Chu river – Tokmok city, 0.5 km below the city;	14.01.25	8.3	1.5	3.9	0,00	0.53	0.16	2.83

The construction site is located downstream of the Bystrovskaya HPP. Flooding on the project site is possible due to floods, heavy rainfall, and water releases from the Bystrovskaya HPP. The project area is situated on the left-bank floodplain of the Chu River, characterized by a local slope towards the river and low erosion risk, provided that the dam is maintained in good condition. The main risk sources are heavy rainfall during the spring-summer period, emergency discharges (up to 40 m³/s), and flushing of the canal through the spillway (up to 20 m³/s), directed towards the site.

Groundwater has not been encountered at depths of 10–15 m within the sites; the area is considered non-flooded from a hydrogeological perspective but falls within the zone of influence of flood and surface runoff, which requires the arrangement of a drainage and discharge regulation system.

Recommendations:

- A drainage system should be arranged with a slope towards the Chu River to protect the area;
- It is recommended to regulate discharge regimes during canal flushing to prevent unauthorized flooding;
- Bank protection and river channel diversion works should be carried out on land owned by the company, in coordination with the relevant state authorities.

Laboratory analysis

On 23 April 2025, representatives of the Environmental Monitoring Department under the MNRETS of the Kyrgyz Republic collected water samples to assess the background state and pollution risks of the Chu River watercourse.

Sampling was carried out at three water abstraction points:

- Upstream;
- Near the project site;
- Downstream.

The analysis included physico-chemical and chemical-toxicological parameters: pH, temperature, turbidity, BOD_5, ammonium, nitrites, nitrates, phosphates, sulfates, chlorides, petroleum hydrocarbons, heavy metals (Pb, Cd, Cu, Zn, Cr, Hg, As).

Results:

- No exceedances of maximum permissible concentrations (MPCs) for water bodies used for fisheries were recorded;
- Most parameters corresponded to background concentrations or were below detection limits;
- Indicators for domestic and cultural water use were also within standards.

Complete protocols are presented in Annex 1 (Test Reports, Kemin, dated 23.04.2025).

4. Radiation exposure

According to Tokmok weather station, radiation background level for 2024 averages 0.21 μSv/h, which is within permissible sanitary standards. No danger of radiation contamination has been recorded in the project area.

5. Land resources and soils

The soil cover is represented by grey earth, meadow-grey earth and dark chestnut soils with pronounced altitudinal zonation. Characteristic features:

- humus content in the arable horizon: 0.7–2.5%;
- there has been a steady trend towards a decrease in humus content over past 30 years;
- main use: agricultural land (grain, pasture).

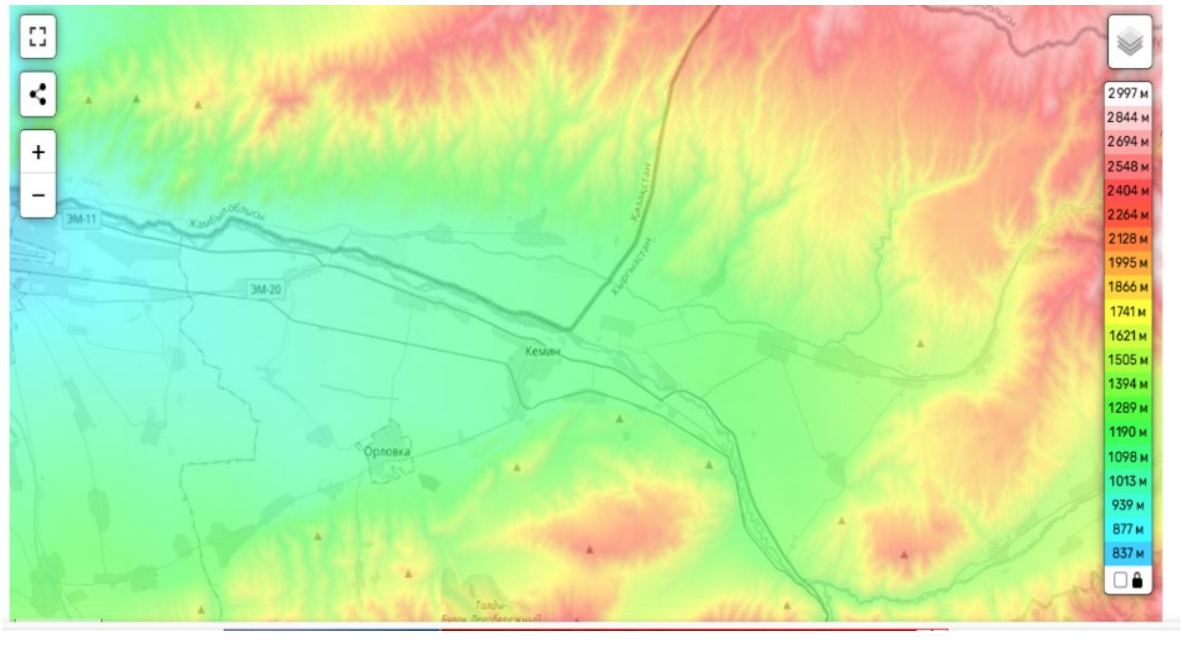

Figure 14. Topographic map of Kemin district

Current land use characteristics differ depending on location: the area designated for the construction of the feed mill (FM) is a technogenic site - a former industrial area of a linoleum plant with remnants of structures and fill soils; the sites for the poultry houses were previously used as agricultural land and temporary pastures, which is reflected in the soil structure and degree of anthropogenic transformation.

According to geotechnical investigations:

- The thickness of the current soil layer varies from 0.4 to 0.9 m across the sites;
- Light and medium loams with gravel inclusions predominate at the poultry house sites;
- The area for the feed mill is partially covered with technogenic fill soils (remnants of past industrial activity).

The soils are characterized by medium filtration properties (filtration coefficient 0.2–0.6 m/day), which is suitable for the construction of subsurface infiltration fields.

Laboratory analysis

On 23 April 2025, representatives of the Environmental Monitoring Department under the MNRETS of the Kyrgyz Republic collected soil samples to assess the condition of the soil cover and identify potential contamination at the planned sites for the feed mill and poultry houses.

Sampling was conducted at 5 points at the feed mill site and 11 points at poultry houses No. 1 and No. 2, including a background control point and representative points at the corners and center of the project areas.

The analysis covered the following parameters:

- Petroleum hydrocarbons;
- Heavy metals: Cu, Zn, Pb, Mn, Fe, Cd, Ni, Hg;
- Nitrate nitrogen.

Soil analysis results:

At the feed mill site:

- Petroleum hydrocarbon concentrations exceeded background levels by 2.0-2.2 times at four points (localized contamination);
- Exceedances of maximum permissible concentrations (MPCs) were recorded for iron (up to 3.7 times) and nickel (up to 2.9 times);
- Other metals (copper, zinc, lead, manganese, cadmium, mercury) were within standards;
- Nitrate nitrogen concentrations were significantly below MPCs and raise no concerns.

Conclusion for the feed mill site:

Localized contamination by petroleum hydrocarbons and elevated concentrations of certain heavy metals were recorded at specific points of the industrial site, requiring consideration in planning earthworks and land reclamation.

Before construction begins, it is recommended to clean the area by removing contaminated soil and transporting it to a landfill, subject to coordination with the relevant authorities and the municipality.

At poultry house sites No. 1 and No. 2:

- Petroleum hydrocarbon concentrations exceeded background levels by 1.2–34 times (maximum in the southwest corner of site No. 2);
- Exceedances of MPCs were recorded for iron (8.2–16.4 times), copper (1.5–8.2 times), zinc (2.5–9.5 times), and lead (2.3–5.3 times);
- Nitrate nitrogen concentrations exceeded background values up to 9.8 times but remained below MPCs;
- Other metals (manganese, cadmium, nickel, chromium, mercury) were within standards.

Conclusion for poultry house sites:

Localized elevated concentrations of petroleum hydrocarbons and certain metals were recorded at some points; however, the overall condition of the soil corresponds to regional agricultural lands and does not pose a significant environmental risk provided mitigation measures are implemented.

Before construction begins, it is recommended to clean the area by removing contaminated soil and transporting it to a landfill, subject to coordination with the relevant authorities and the municipality.

Overall conclusion for the section:

The identified localized exceedances of pollutants require consideration in the preparation of design documentation, including planning for the storage of removed topsoil, land reclamation measures, and soil protection measures. During project implementation, it is necessary to establish soil quality control procedures and prevent secondary contamination. Despite the identified localized contamination areas, the overall

condition of the soil cover is assessed as satisfactory and suitable for development, provided that the recommended mitigation measures are implemented.

Complete laboratory test protocols are presented in Annex 1.

6. Seismic characteristics

According to the Building Codes of the Kyrgyz Republic SNIP KR 20-02:2024 "Construction in Seismic Areas," the project site is located in a seismic zone with an intensity of 9 on the MSK-64 scale (maximum possible earthquake intensity at the site). This corresponds to the high-seismicity zone of Chui Region.

Geologically, the area is characterized by:

- Recent alluvial and alluvial-proluvial deposits within the Chu River valley;
- Pebbly soils of varying degrees of rounding, interbedded with sands and loams;
- Underlying loose, dispersed soils to depths of up to 10–15 m.

These soil conditions are typical for the left-bank floodplain of the Chu River and require consideration of the seismic coefficient and seismic amplification factor in foundation design.

According to the results of the geotechnical investigations:

- The groundwater level at the site is below 10–15 m;
- The strength characteristics of soils are within acceptable limits for the construction of shallow strip and slab foundations;
- Compressibility of soils in the upper layer is elevated, which suggests the need for additional settlement analysis under dynamic loads.

Given the seismic activity of the region and geological conditions, the project must provide for:

- Structural solutions accounting for seismic loads (seismic-resistant foundations and building frames);
- Calculations of seismic loads on equipment and utilities;
- Site selection for buildings and structures to minimize risks associated with soil liquefaction during strong ground shaking.

The site is located in the Chui high-seismicity zone; however, there are no active tectonic faults within the construction footprints.

4.3. Specially protected natural areas (SPNA) and biodiversity

4.3.1. Specially protected natural areas (SPNA)

There is a natural park on the territory of Kemin district **"Chon-Kemin",** which is a unique ecosystem complex. Park covers an area of ~500 hectares, with an altitude amplitude of 1400 to 2800 m above sea level, and includes a variety of natural landscapes - from semi-deserts to glaciers.

However, the planned construction site is located outside SPNA and is located more than 50 km away from natural park. Thus, there is no impact on specially protected natural areas.

4.3.2. Biodiversity

Survey's purpose

- Identification of species listed in the Red Book of Kyrgyz Republic;
- Assessment of the status of wild fauna populations;
- Identification of risks from construction and operation;
- Develop recommendations to reduce impact.

Methodology

Biodiversity assessment was conducted using the methodology established in ecological practices across Central Asia, with particular emphasis on the avifauna as an indicator of environmental sustainability. The following approaches were used:

- Point counts of birds using binoculars (8x);
- Field visual examinations;
- Collection of testimonies from local shepherds and residents;
- Comparative analysis with funds of Red Book of the Kyrgyz Republic.

Plots' fauna

- **Feed mill plant (former linoleum plant):**
  - Synanthropic birds (pigeons, sparrows, mynah);
  - In adjacent territory there are chukars, tolai hares, hedgehogs, and mouse-like rodents;
  - Possible: fox, jackal, stray dogs and cats.
- **Poultry house #1 (agricultural field):**
  - Crested lark, partridge, tree sparrow, magpie;
  - Mouse-like rodents, dogs' tracks.
- **Poultry house No. 2 (desert area, former riverbed):**
  - Black kite, magpie, wagtail, carrion crow;
  - Hedgehog, field mice, gopher holes, jackal tracks;
  - According to shepherds, there are hares and muskrats (in the Bystrov Canal).

Photo 1. Gopher holes near site No. 2

Photo 2. Bystrov Canal

Vegetation

The site had been subjected to a relatively strong anthropogenic impact in the previous phase, and the vegetation was modified accordingly, with the primary vegetation cover being replaced by secondary species.

Vegetation in the areas of poultry houses is sparse. There is no woody vegetation. The areas are partially degraded, used for agricultural purposes or for temporary pasture use.

Photo 3. The former linoleum factory site, where a feed mill will be built

Photo 4. The site for construction of poultry house No. 1

Photo 5. The site for construction of poultry house No. 2

Conclusion for the section:

Project does not affect territories of specially protected natural zones. There are no species listed in the Kyrgyz Republic Red Book or IUCN Red List within the project area. Potential impact on fauna is insignificant and can be reduced if the recommended measures are implemented.

4.4. Socio-economic situation of Kemin district

General characteristics

Kemin district is located in the north-eastern part of Chui region of Kyrgyz Republic. The administrative center is Kemin city, located at a distance of about 95 km from the capital - Bishkek. District's territory is 3.5 thousand km² and covers Chon-Kemin, Kichi -Kemin and eastern part of the Chui valley.

District borders:

- on north - with Zhambyl and Almaty regions of the Republic of Kazakhstan,
- on west - with Chui region,
- on south and southeast - with Jumgal and Kochkor districts of Naryn region, as well as the Ton district of Issyk-Kul region.

Demography

As of 01.01.2024:

- General number population - 51,905 people;

- Population density - 14.8 people/km²;
- Structure: rural population - 68.4%, urban - 31.6%;
- Age structure:
    - children (under 15 years old) - 17,042 people,
    - working-age population - 28,088 people,
    - over working age - 6775 people.

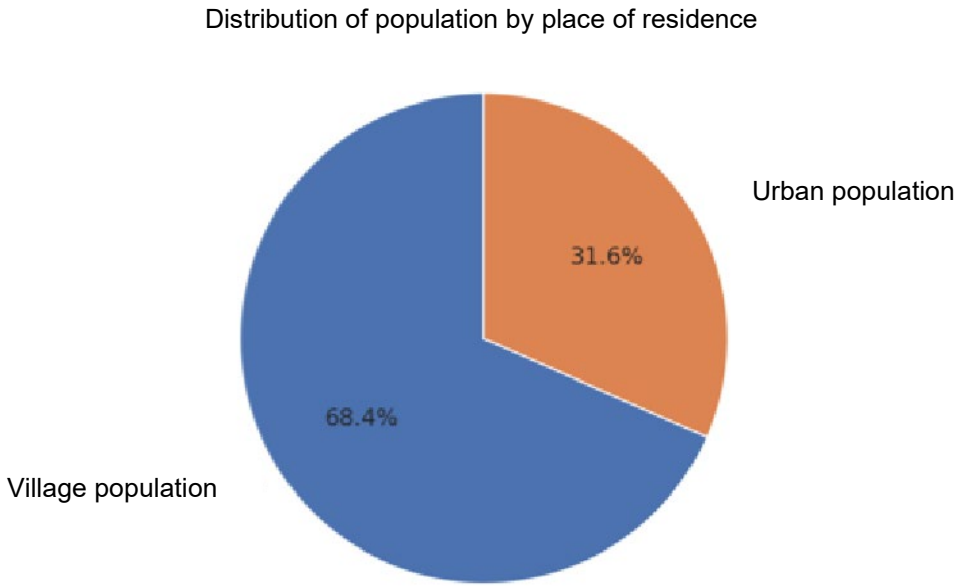

Figure 15. Population distribution by place of residence

Figure 16. Age structure of the population of Kemin District

Ethnic composition:

- Kyrgyz - 91.3%,
- Russians - 6%,
- Also represented: Uzbeks, Kazakhs, Dungans and others.

Economy

The economic structure of the region is traditionally based on agriculture and industry.

- Rural farm:
  - Cropland area - 27,487 ha (including 24,295 ha irrigated),
  - Main crops: grain (11,360 ha), potatoes (1,092 ha), sugar beets (848 ha),
  - Livestock population (2023): cattle - 27,585, sheep/goats - 102,574, horses - 12,976.
- Industry:
  - Gold mining, oil refining, production of building materials and food products,
  - Total industrial production (2023) - 21.9 billion soms,
  - Index physical volume - 96.9%.

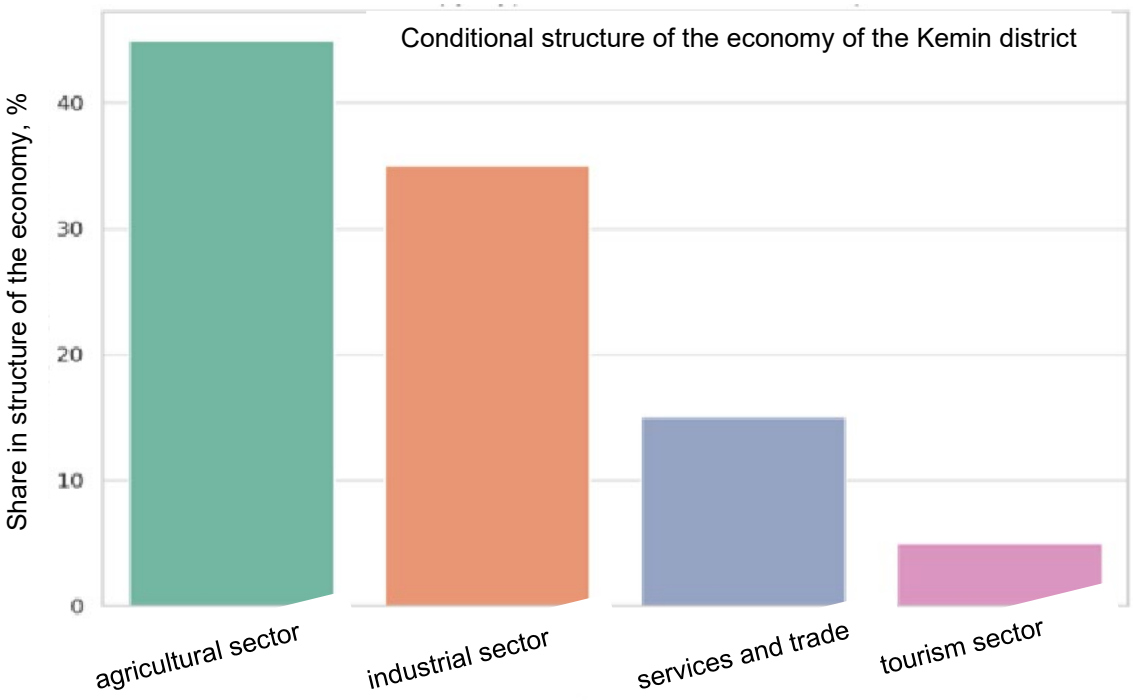

Figure 17. General economic profile of Kemin District

Social infrastructure

- Education:
  - 29 schools,
  - 1 vocational and technical lyceum,
  - Private boarding school,
  - 24 preschool institutions (coverage - 2699 children).
- Culture and leisure:
  - 2 cultural centers,
  - 18 clubs,
  - 27 libraries.
- Healthcare:
  - General Practice Center,
  - Republican Psychiatric Hospital,
  - Palliative care hospital.

Infrastructure and housing and communal services

- Water supply networks - 398 km;

- Central heating in Kemin;
- Telephone network - 2461 subscribers;
- Internet access – in 159 institutions;
- The total area of housing stock is 641,543 m² (12.3 m²/person).

Employment and social protection

- Main sectors of employment: agriculture (32,955 farm households), education (1,863 workers), health care (930 workers);
- Recipients address assistance: 120 people;
- Persons with disabilities: 788;
- Single elderly: 59;
- The poverty level is less than 1.3% (648 people).

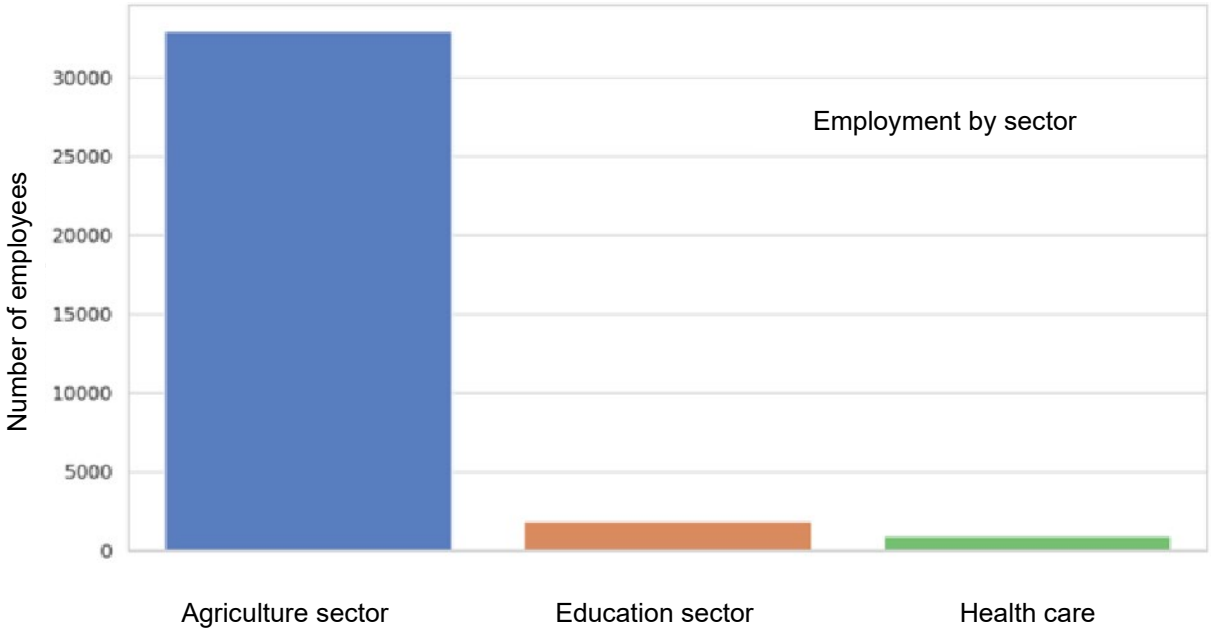

Figure 18. Employment by sector

Services and tourism

- Tourism: 5 registered entities, volume of services - 5.9 million soms (2023);
- Trade: 456 enterprises, annual turnover – 7.4 billion soms.

Conclusion for the section:

Kemin district has a stable social and economic structure, good provision of basic infrastructure and labor resources. District's socio-economic situation of is favorable for the project's implementation: there are labor resources, infrastructure and social stability, which reduces potential social risks.

4.5. Objects of historical and cultural heritage

Historical and cultural heritage of Kyrgyz Republic covers immovable monuments of archeology, architecture, urban development and monumental art, which are of particular importance for the formation of cultural identity and historical memory of the population.

Based on results of the analysis of archive materials and field survey, within boundaries of areas allocated for project's implementation (a feed mill and two areas of poultry houses), There are no objects included in State List of Historical and Cultural Monuments of Kyrgyz Republic.

- Also, within a radius of 3 km from boundaries of designed objects, there are no protected archaeological zones, sanctuaries or cultural ensembles.

- Area's visual inspection, carried out as part of the preliminary assessment, did not reveal any traces of ancient settlements, cemeteries, remains of stone buildings or other elements of cultural value.

Currently, the project does not affect territories protected under cultural legislation and does not require approval from cultural heritage protection authorities. Nevertheless:

- In case of discovery of culturally significant finds during construction works (e.g., artifacts, wall fragments, stone structures, etc.), Contractor shall immediately suspend works and notify the Ministry of Culture of the KR.
- These requirements will be included in the ESMP and construction contracts as a mandatory item under section "Accidental discoveries", in accordance with IFC PS8 (Cultural Heritage) standard.

There are no historical and cultural heritage objects in project areas. However, there are procedures in place to respond to accidental finds during excavations, in accordance with both national legislation and international standards.

While Article 32 of the Law of the Kyrgyz Republic "On the Protection and Use of Historical and Cultural Heritage" does not mandate a formal written chance find procedure, it does impose legal responsibilities in case of accidental discoveries. These include the immediate suspension of works and prompt notification of the appropriate authorities.

To operationalize these obligations and ensure alignment with international standards (e.g., IFC Performance Standard 8), a project-specific chance finds procedure will be incorporated into the Environmental and Social Management Plan (ESMP). It will define steps for site workers, including reporting, site protection, and coordination with local authorities. A responsible person will be appointed from among the project's engineering and technical staff to oversee the implementation of this procedure.

V. ENVIRONMENTAL AND SOCIAL RISK IMPACT ASSESSMENT

5.1 Project Description

Project initiated by Adal Azyk LLC through its subsidiary Agro Kush LLC is aimed at creating an integrated poultry infrastructure in Kemin district of Chui region of the Kyrgyz Republic. Project's main goal is to enhance national food security, reduce reliance on imported meat products, stimulate employment in rural areas and implement sustainable production practices.

Project includes:

- two production sites for growing broilers, each with 12 buildings (24 poultry houses in total);
- feed mill plant on the territory of a former industrial enterprise;
- life support elements (boiler houses, wells, logistics, engineering infrastructure, WWTP);
- its own biosecurity and veterinary control system.

Location and plot:
The site was chosen taking into account transport accessibility, availability of engineering infrastructure and relative distance from residential areas (at least 400 m). Feed mill is located on a previously developed industrial territory, which reduces pressure on undeveloped natural areas. Poultry house sites are located between Chu River and Bystrovka Canal, in a former agricultural zone.
The project is being implemented in three stages of construction:

- Stage 1 – Feed mill plant;
- Stage 2 - 12 poultry houses in site No. 1;
- Stage 3 – 12 poultry houses in site No. 2.

Each building is designed to hold 14,000 heads, with a stocking density corresponding to veterinary standards (no more than 40 kg/m²). Poultry houses are equipped with automatic feeding, watering, ventilation, lighting and microclimate control systems, which ensures comfort for the birds and reduces biological risks.

Feed production:
Workshop production capacity is up to 30 tons of feed per hour. There are several types of feed adapted to the bird's age. All industrial cycle automated, including:

- laboratory control of raw materials;
- step-by-step dosing, mixing, granulation, cooling and packaging;
- aspiration and filtration systems.

Infrastructure and support:

- Water supply is provided by deep wells (up to 120 m³/ day), with regular sanitary control.
- Heat supply is provided through a coal-fired boiler equipped with an exhaust gases cleaning system.
- All poultry houses and workshops are equipped with backup energy and lighting sources.
- The local wastewater treatment plant (WWTP) will include dissolved air flotation, bio-treatment and UV disinfection, underground infiltration fields.

Biosecurity and zoning:
Project is built on the principles of strict sanitary demarcation of zones:

- "clean" and "dirty" zones on the site;
- separate routes for feed, finished products and waste;
- disinfection barriers, veterinary control, sanitary time gap between cycles.

Biosecurity is regulated by internal protocols (approved by a veterinarian), developed in accordance with World Organization for Animal Health (WOAH, formerly OIE) and Food and Agriculture Organization of the United Nations (FAO) recommendations.

Labor force and social aspects:
Project creates about 100 jobs - operators, livestock specialists, technologists, mechanics, logisticians and support staff. Training on labor protection, biosecurity and emergency response are provided. Particular

attention is paid to gender and social inclusion, as well as the protection of workers' rights (including a complaints redress mechanism).

Project influence area

Project's zone of influence in the Kemin district was determined based on an analysis of the geospatial location of production sites, adjacent infrastructure, sanitary and protective requirements and potential environmental and social impacts.

Project is being implemented on three designated sites - Feed mill plant site; Site №1 and Site №2, each containing 12 poultry houses and auxiliary buildings. Between sites there is a river channel and rugged terrain. Site №1 And Site №2 is adjacent to the A365 road (southern border), and is also limited to north by a riverbed and natural ravine-meadow relief.

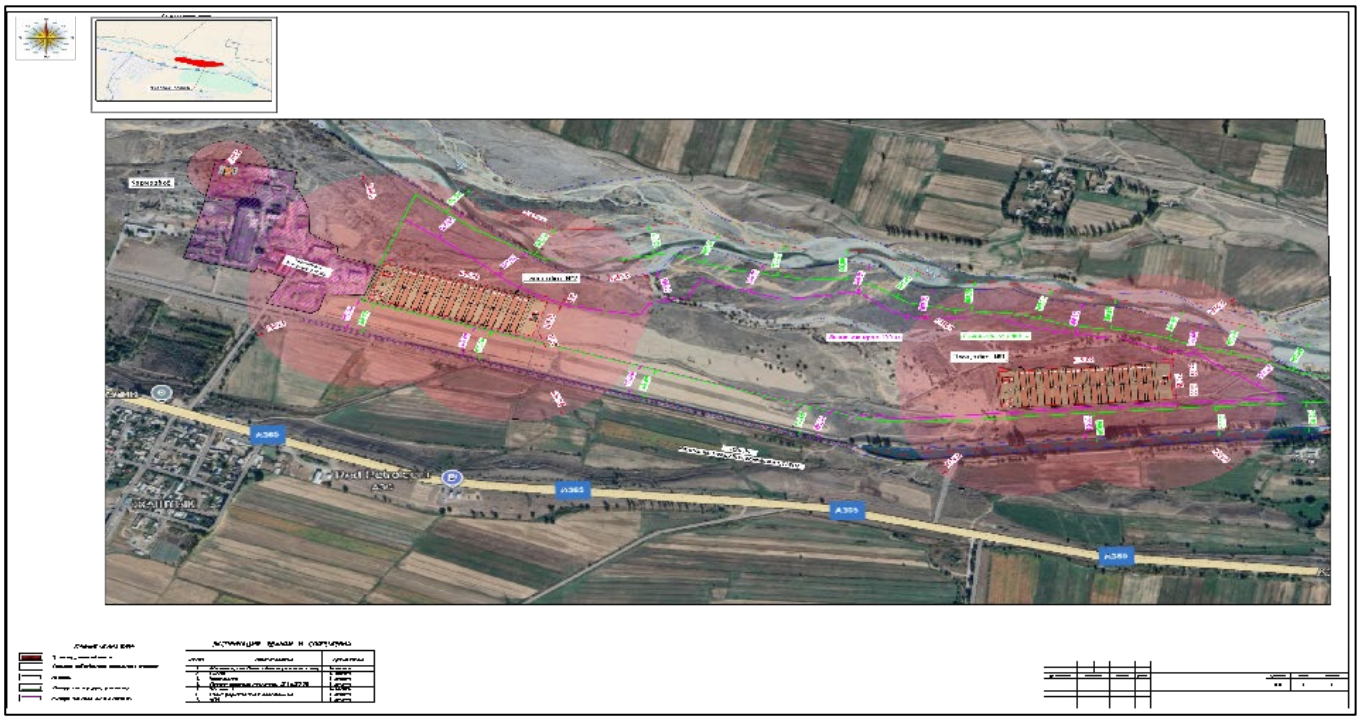

Figure 19. Schematic map showing the location of poultry farm sites and their area of influence

The following elements of zone of influence are shown on the chart:

- Project sites boundaries (purple line) - include poultry houses and service facilities.
- Sanitary protection zones (SPZ) - are marked with a translucent red ring with a radius of 100 m and 300 m from industrial buildings, according to Sanitary Rules and Regulations of the Kyrgyz Republic.
- Buffer distances to key facilities:
  - to Kara Tobo village - about **1221 m** from Site №2 and **400 m** from Site №1;
  - to the nearest river sections - less than **150 m** from Site 2 and **230** m from Site 1;
  - to the A365 - approximately **200 m from Site 2 and 400 m** from Site 1;
  - to the residential area of Kemin city - more than **500 m**;
- The 100 m and 300 m lines are marked for grading exposure by risk zone (water, air, odor, transportation).

Taking these factors into account, the project's area of direct impact encompasses:

- manufacturing facilities;
- adjacent 100 m SPZ from feed mill and 300 m (SPZ) from each poultry houses Site №1 and Site №2;
- adjacent canal, river and road.

The area of indirect impact (up to 500 m) includes:

- some private and agricultural land;

- populated areas and roads with possible traffic load;
- potential bird migration routes.

Based on the diagram and baseline data the following features of the impact zone were established:

Table 16. Area of influence

Factor	Notes
Proximity to residential development	Kara Tobo village and the northern outskirts of Kemin town are within 400-1200 m
Water protection zones	A river and irrigation canals run along the northern boundary of the properties.
Infrastructure load	Main exit/entry from the A365, near “Red petroleum” gas station
Cumulative impacts	Possible joint risks: noise, odor, transport, lighting

Thus, the Project is localized within industrial-agricultural zone, but its impact affects adjacent populated and agricultural areas, which requires:

- strict observance SPZ of not less than 300 m;
- additional sanitary, landscaping and noise protection measures;
- regular monitoring of air, wastewater and complaints;
- documented recording of public feedback (GRM);
- route planning and logistics taking into account existing infrastructure.
- emergency planning considering the WWTP breakdown

The analysis of the master plan revealed that part of the sanitary protection zones overlaps with the water protection zone of the Chu River. This may require clarification during the detailed design stage, including subsequent dispersion modeling and justification of compliance with the sanitary and water legislation of the Kyrgyz Republic. If necessary, the project will be adapted with respect to the boundaries of functional zones and buffer areas.

Although this overlap does not require a separate permit, it should be addressed during project design. Adherence with applicable sanitary and water protection requirements will be maintained through appropriate layout adjustments and mitigation measures. If these requirements are fulfilled, the matter will be handled as part of the standard permitting and design approval process carried out by the relevant authorities.

5.2. Analysis of Alternatives

The assessment of alternatives is a mandatory component of environmental and social impact assessment process in accordance with international standards (in particular, PS 1 IFC) and the requirements of national legislation**.** Such analysis allows to justify the choice of design solutions, to ensure appropriateness of designated location and technology, and to determine whether project can be implemented with lower environmental and social costs.

In this assessment, three main groups of alternatives were considered:

1) Alternative to project implementation/rejection;
2) Alternatives for the placement of planned facilities;
3) Alternative technologies taking into account the implementation conditions in Kemin district.

5.2.1 Alternative 1: Refusal to implement the project

This scenario assumes a complete refusal to build poultry house sites and feed mill plant on any site.

Potential benefits of this option consist of minimal impact on the environment. Refusal to implement eliminates the need for land transformation, removal of fertile soil layer, construction of facilities in water protection zone, as well as subsequent impact on air, water and soil during operation. Possible negative reactions from local population concerned about sanitary and epidemiological safety are also eliminated.

However, project rejection would also entail significant losses, both in terms of regional development and at the level of national food strategy. Kemin district has all prerequisites for development of agro-industrial production: access to roads, skilled labor, water and energy sources. The implementation of the project will

result in creation of stable jobs for local population, formation of a new tax base, expansion of the domestic market for fodder and chicken meat, and reduction of reliance dependence n imports. Failure of the project will result in a missed opportunity to hit the sector with greener and more manageable forms of production.

Moreover, against the background of growing demand for protein food, refusal to develop organized and regulated forms of poultry production will create prerequisites for the expansion of informal production facilities, often lacking sanitary control, which will only exacerbate the environmental and epidemiological situation.

Conclusion: while the failure scenario eliminates physical impact risks, it increases the cumulative risks to food, social and environmental sustainability in the long term.

5.2.2 Alternative 2: Implementation of the project in the current configuration (Kemin)

This scenario includes the construction and operation of facilities within Kemin district. Kemin sites were selected based on an analysis of several factors: accessibility, legal status, engineering parameters, social sustainability and logistical advantages. The site for the feed mill plant is territory of a former linoleum plant, which makes it an object with a reduced environmental background value. The sites for the poultry houses are agricultural lands.

Benefits of implementation in Kemin:

- High level of readiness and proper legal status of land plots;
- Developed transport accessibility (including sales markets and production facilities);
- Availability of water supply (own wells), energy capacity and labor resources;
- No need for resettlement and land seizure;
- Local support, including from local administration.

Meanwhile, the project consciously implements tools for environmental and sanitary protection: treatment facilities, biosecurity systems, sanitary zones, drainage, sanitary break, ventilation, sanitary control of personnel.

Risks that require additional control:

- The proximity of the sites to the Chu River and the Bystrovka Canal requires careful calculation of the boundaries of the water protection zone;
- Part of the sanitary protection zone overlaps with the water protection zone, which requires technical adjustments to the layout and additional approval from the authorities;
- According to the geotechnical investigation report, the groundwater level is low, below 15 m, but there is a risk of flooding from flood and stormwater runoff and minor bank erosion, as indicated in the hydrological survey report.

Conclusion: Kemin project is a realistic, balanced and manageable option, provided that the envisaged engineering and environmental measures are implemented.

5.2.3 Alternatives for technological solutions considering Kemin conditions

Kemin district is characterized by a combination of the following conditions:

- Temperature fluctuations from –25 to +35° C;
- High humidity near the river;
- Prevailing south-east winds;
- The groundwater level has not been encountered at a depth of 15 m.

Table 17. Technological alternatives

No.	Component	Standard solution	Alternative / revision	Target
1	Poultry maintenance	Floor standing	Option with automatic ventilation according to wind rose, landscaping, buffer zones	Sanitary protection, comfort
2	Heating	Coal boiler	Conversion to pellets or gas in the future	Reducing Pollution

3	Wastewater treatment	LTP with DAF + MBBR[1]	Additional filtration and reserve volumes	Protection of the Chu River
4	Waste storage	Incinerator	Processing into compost, biogas	Sustainable management
5	Biosecurity	Standard	Tightening sanitary barriers and prohibiting access	Reducing epidemiological risks

Conclusion: Project configuration is adapted to Kemin conditions with minimal adjustments and technically sound measures.

General conclusion on the analysis of alternatives

As a result of the multi-level analysis, it was established that the alternative “Implementation of the project in Kemin”:

- Ecologically sound;
- Socially acceptable and supported**;**
- Legally feasible subject to approval procedures;
- Technically adaptable to local risks.

Thus, the current project is the most sustainable and manageable alternative.

5.3. Impact assessment methodology

Environmental and social impact assessment was carried out using a systematic approach aimed at identifying, analyzing and ranking possible impacts associated with project implementation at all stages of its life cycle: design, construction, commissioning, and operation.

The Methodology is based on IFC PS provisions and relevant legislation of Kyrgyz Republic on environmental protection, labor protection and sanitary and epidemiological supervision.

Impact assessment process included the following principles:

- Comprehensiveness: all types of impact were considered – physical, biological, social, institutional.
- Stages: the assessment was carried out separately for the key phases of the project.
- Operation with probabilistic and qualitative parameters: scales of probability, severity and sensitivity of the environment were used.
- Reliance on verifiable data: official statistical and engineering-geological stock materials, cartographic sources, and results of on-site surveys are used.
- Applicability: The assessment results are integrated into ESMP, monitoring and institutional management sections.

The assessment was based on:

- Design materials: process flow diagrams, technical and economic calculations, descriptions of production processes and sites (feed shop, poultry houses, treatment facilities, biosecurity).
- Stock data: engineering-geological, climatic and hydrological characteristics of the site.
- Socio-economic profile of the region (according to data from National Statistical Committee of Kyrgyz Republic and surveys by RAM consultants).
- Findings from field survey (February, March 2025).
- Regulatory framework of Kyrgyz Republic (environmental, sanitary, land, water, urban planning legislation).
- International requirements (IFC PS1–8, including criteria for assessing critical and sensitive areas according to PS6).

[1] DAF (Dissolved Air Flotation) - dissolved air flotation; MBBR (Moving Bed Biofilm Reactor) - bioreactor with moving bed

5.3.1. Categorization of impacts and risks

A three-component matrix was used to assess the impact:

1. Probability of occurrence: highly probable / probable / unlikely.
2. Severity of consequences: minor/moderate/significant/critical.
3. Environment sensitivity: high / medium / low.

Each type of impact was assigned a conditional risk category:

Risk category	Terms and Conditions
Minor	The impact is minor, local, reversible, and does not pose a threat to health/ecosystems.
Moderate	Impact is moderate, manageable, requires standard mitigation measures.
Major	Significant impact, requires targeted engineering or administrative measures.
Critical	Systemic or transboundary impacts cannot be addressed without changing the design.

5.3.2. Impact Analysis Approach

The evaluation process included the following steps:

- Identification of potential sources of impact: emissions, discharges, noise, odors, waste, physical changes to the landscape, traffic, labor influx, land use change.
- Assessment of the route of transmission of exposure: air, water, contact, infrastructure, social.
- Identification of impact recipients: components of the natural environment (atmosphere, water, soil, biocenoses), local population, workers, infrastructure facilities, economic and cultural resources.
- Impact assessment in space and time: analysis of scale (local, regional), duration (short-term, long-term), project phase (construction, operation).
- Comparison with standards and maximum permissible values.

5.3.3. Assessment structure

The ESIA framework organized assessment into the following categories:

- Physical environment - air, water, soil, climate, geology;
- Biological environment - biodiversity, wild and synanthropic species, wetland and coastal ecosystems;
- Social environment - population, vulnerable groups, employment, working conditions, land rights, access to resources;
- Man-made factors - noise, lighting, transport, smells, emergency situations;
- Cumulative risks - a combination of factors (for example, noise + odors + traffic);
- Climate risks - the impact of climate change on the project and vice versa;
- Institutional - the operator's ability to manage impact, the presence of monitoring, policies, procedures.

5.3.4. Application of the methodology

The results of the impact assessment are used:

- To form a summary table of risks by project stages;
- To develop mitigation measures;
- To develop a monitoring and reporting program;
- To justify the need for public consultation and stakeholder involvement;
- To clarify the requirements for land transformation, water protection zones, sanitary protection zones and sanitary restrictions.

5.4. Climate risk assessment

5.4.1. Main observed and predicted trends for Kemin district

According to Kyrgyz Republic's climatic zoning, Kemin district is located in continental zone with pronounced seasonal contrast, sharp daily temperature changes, moderate precipitation, but high wind loads. However, in last 30 years, there have been persistent changes in climate parameters, confirmed by long-term observations of Kyrgyzhydromet and regional models of the Central Asian Climate Center.

The main observed and projected trends (based on the RCP 4.5 and RCP 8.5 scenarios) are presented in Table 17.

Table 18. Observed and projected trends

Parameter	Observed trend (1990–2020)	Forecast to 2050 (RCP 4.5 / RCP 8.5)	Explanation
Average air temperature	+0.3–0.5 °C over 10 years	+1.5 °C / +2.7 °C	Steady warming, shifting seasons
Frequency of days with T > 32 °C	Increased by 1.5 times	+40–60%	Extension of the summer heat stress period
Duration of snow cover	Reduced by 15-20 days	-20% / -35%	Decreased winter resilience, increased risk of early floods
Precipitation intensity	Peak values have increased	+10% / +20%	Natural rains, erosion, drainage stress
Wind frequency >10 m/s	Increase by 12%	+15–25%	Wind damage, dust, loss of filtration
Dry periods	Lengthened in summer	+20%	Increase in dust, decrease in humidity, microclimate stress

These scenarios show that even with a moderate RCP 4.5 path, the project will operate under more aggressive conditions than originally anticipated.

5.4.2 Potential impacts on the project

1. Microclimate in poultry houses

- Risk: Increased duration of heat in summer will lead to heat stress in birds, reduced feed consumption, and increased mortality.
- The result: a drop in productivity and increased ventilation and cooling costs.

2. Ventilation and dust

- Risk: Increased dust winds and prolonged droughts will overload filtration systems, spreading odors, aerosols and bacteria.
- Result: increased risk of epizootics, public complaints, and a decline in sanitary stability.

3. Infrastructure

- Risk: floods and heavy precipitation pose a risk of undermining foundations and flooding treatment plant and warehouses.
- Result: failures in sanitization, loss of control over organic flows.

4. Labor force

- Risk: Overheating, sudden weather changes and dust create stress for staff.
- Result: deterioration of working conditions, decreased productivity, increase in occupational diseases.

5. Energy costs

- Risk: Increased need for cooling in summer and heating in winter will increase the plant's energy dependence.
- Result: increased operating costs, decreased resilience to disruptions.

Table 19. Identified risks

No.	Climate trend	Impact on the project	Risk level
1	**Warming**	Overheating of poultry, decreased weight gain	High
2	**Reduction of snow cover**	Reducing the freezing time of parasites and pathogens	Average
3	**Increased dusty winds**	Aerosol spread of odors and bacteria	High

4	**Increase in precipitation intensity**	Flooding, erosion, wastewater treatment plant failures	High
5	**Increase in dry days**	Dust, drop in humidity, increase in diseases	Average
6	**Temperature changes**	Additional load on ventilation and heating	Average

5.4.3 Adaptation measures

Below in table 19 are given adaptation measures that a company can integrate at the construction or operation stage, with minimal costs and maximum effect:

Table 20. Adaptation measures

No.	Direction	Measure	Comment
1	**Poultry houses**	Installation of ventilation with automatic temperature control and alarm	Helps prevent overheating and high humidity
2	**Filtration**	Double stage air filtration with rotation and blow-through capability	Provides stable sanitary protection during dust storms
3	**Biosecurity**	Separation of "clean" and "dirty" flows by wind direction	Considers the wind rose, reduces cross-contamination
4	**Wastewater treatment plant and warehouses**	Raising embankments, protection against erosion, reserve tanks in case of heavy rains	Reduces the likelihood of emergency discharges Excludes contamination of water resources
5	**Greening**	Strips of trees and shrubs along wind directions	Natural barrier against dust and odors, reduces temperature
6	**Power supply**	Backup power source + insulation of buildings	Ensures uninterrupted operation under overload conditions
7	**Instructions for staff and contractors**	Protocols for working in conditions of heat, wind, dust, preparing heat stress and work at windy weather procedure	Improves worker safety and climate adaptation

Project is implemented in conditions where climate is increasingly becoming a limiting and shaping factor. Forecasts indicate an increase in climate stress even under a moderate scenario. However:

- Foreseen architectural and engineering solutions already form a basic adaptation;
- With implementation of additional proposed measures, project will receive real resilience to climate change;
- Inclusion of these aspects in monitoring system, ESMP and operating instructions creates conditions for sustainable, sanitary and economically safe operation for 20-30 years ahead.

5.4.4 Baseline Data for Greenhouse Gas (GHG) Emissions Estimation

The inclusion of a preliminary GHG emissions estimate in this report is driven by the requirements of international environmental and social assessment standards, in particular, IFC PS3. According to these requirements, the project must assess not only local environmental impacts but also its climate impact, including direct and indirect GHG emissions.

The purpose of this subsection is to present a preliminary quantitative assessment of the project's carbon profile and to establish a basis for future monitoring, climate reporting, and planning of mitigation measures (GHG mitigation). The calculation was carried out in accordance with the GHG Protocol methodology, with a breakdown by emission categories:

- Scope 1 – direct emissions from fuel combustion and production activities;
- Scope 2 – indirect emissions from electricity consumption;

- Scope 3 – other indirect emissions in the supply chain (raw materials, transportation, organic waste, etc.).

Aggregated input data were used, based on technical specifications, planned production capacity, and estimated volumes of raw materials, fuel, and logistics. The values serve as indicative figures and are not intended as precise estimates - refinements will be made following commissioning, based on actual performance data. This approach aligns with IFC guidance and international climate reporting principles.

Table 21. Input data for GHG estimation

No.	Indicator	Unit	Typical value	Comment	Scope
1	**Electricity**	kWh/year	2,500,000	Equipment and lighting consumption	Scope 2
2	**Diesel fuel**	liters/year	60,000	Transport, machinery, generators	Scope 1
3	**Compound feed**	t/year	18,000	Production at own feed mill	Scope 3
4	**Poultry meat (grow-out)**	t/year	6,700	Production output	Scope 3
5	**Manure and litter**	t/year	9,000	Disposal, composting	Scope 3
6	**Waste / carcasses**	t/year	200	Mortalities, unprocessed carcasses	Scope 3
7	**Water**	m³/year	2,600	Indirect emissions for treatment and heating	Scope 2 / 3

Table 22. Preliminary GHG emissions estimate

No.	Source	Volume	Unit	Emission factor (t CO_2e/unit)	Scope	Estimated emissions (t CO_2e/year)
1	**Electricity**	2,500,000	kWh	0.000709	Scope 2	1,772.5
2	**Diesel fuel**	60,000	liters	0.00268	Scope 1	160.8
3	**Compound feed**	18,000	t	0.42	Scope 3	7,560.0
4	**Poultry meat (grow-out)**	6,700	t	1.8	Scope 3	12,060.0
5	**Manure and litter**	9,000	t	0.21	Scope 3	1,890.0
6	**Waste / carcasses**	200	t	0.35	Scope 3	70.0
7	**Water**	2,600	m³	0.0003	Scope 2/3	0.78
	Total					23,514.08 t CO_2e/year

The preliminary annual carbon footprint of the project is estimated at approximately 23,514 tonnes CO_2 equivalent, which corresponds to the typical load for a full-cycle agro-industrial facility (excluding slaughter). The main contributor to emissions is poultry production (about 51%), followed by compound feed production (32%) and energy consumption (about 17%).

The data obtained will serve as the baseline for climate monitoring under the project's Environmental and Social Management System (ESMS), and as a reference point for the future GHG Mitigation Plan. The estimates will be updated during operation, once actual data on energy consumption, logistics, feed composition, and waste management are available.

5.5. Impact and risk assessment

Assessment impact covers all stages of project implementation - design, construction and operation. Environmental, social, sanitary-epidemiological and institutional risks are considered, including cumulative and

transboundary impacts. Assessment is based on design and technical documentation, site survey results, regulatory framework of Kyrgyz Republic and requirements of IFC standards (PS1–6, 8).

Special attention given:

- Environmental risks associated with emissions, wastewater, waste, biological impacts and the use of natural resources;
- Social risks, including complaints, employment, sanitary conditions, relations with the local community;
- Institutional factors such as exposure management, monitoring, biosecurity and occupational safety;
- Cumulative impacts arising from the simultaneous action of odors, noise, traffic flows, organic loads and sanitary factors;
- Transboundary aspects related to possible pollution of Chu River, an international watercourse between Kyrgyz Republic and Republic of Kazakhstan. Following is taken into account: provisions Agreements on Joint Water Resources Management (2000).

All risks are managed within the framework of the Environmental and Social Management Plan (ESMP).

1. Design Stage Risks

During the design stage, the project faces several key environmental, social, biological, technical, legal, and institutional risks that require careful consideration to ensure that subsequent phases are implemented in compliance with national regulations, IFC Performance Standards (PS1–6, 8), and Good International Industry Practice (GIIP).

Environmental Risks

Improper placement of facilities and failure to observe protection zones: a poultry farm requires a sanitary protection zone (SPZ) of at least 300 m from residential areas, a feed mill - 100 m, and a distance from the Chu River of at least 100 m. Violation of these requirements may result in impacts on the population and the river ecosystem (pollution, odor, noise). This is an ongoing risk that must be prevented already at the design stage (see IFC PS1, PS3).

Historical soil contamination on the plant site: laboratory tests revealed excess levels of petroleum products and heavy metals. This creates a risk of secondary contamination of the soil, groundwater, and surface water during construction and subsequent use. A reclamation plan must be included in the project: identification, excavation, and disposal of contaminated soil before excavation work begins (IFC PS3).

Biological Risks

Insufficient biosecurity and sanitary zoning. Without clear separation of clean and dirty zones, disinfection barriers and thoughtful storage of manure, infection pathways (for birds) are created, including the risk of disease transmission between birds, personnel and the environment. In intensive poultry farming, this is a critical factor (IFC PS4). Measures include clear zoning, veterinary passes and disinfection points.

Social Risks

Lack of proper community consultation at the design stage can lead to mistrust and opposition from local population, creating reputational and operational risks. Early identification of affected groups, transparent communication and the establishment of a grievance redress mechanism (GRM) before construction begins are essential (IFC PS1, PS4).

Legal and Institutional Risks

Re-registration of the land use from agricultural to industrial status may be subject to procedural delays. Full compliance with Kyrgyz Republic legal requirements and obtaining all permits before commencing work is mandatory (IFC PS1). The legal status of the dry riverbed also requires approval from government agencies. Uncertainty of institutional responsibilities: a management system (ESMS) must be implemented, responsibilities must be clearly allocated, and resources must be provided for the implementation of environmental and social impact measures (IFC PS1).

Climate Risks

The design area is the floodplain of the Chu River in the MSK-64 seismic zone (9 points). In the absence of appropriate engineering solutions, the facilities may be damaged by floods or earthquakes. Design of drainage systems, flood protection structures and seismic-resistant structures is required (IFC PS4).

2. Construction Stage Risks

The construction stage presents a diverse set of environmental, social, biological, technical, and institutional risks. While impacts are generally temporary, they can cause significant adverse effects if not properly managed. The following description identifies the principal risks for this stage, integrating findings from baseline assessments, soil and groundwater surveys, social surveys, and regulatory requirements, as well as aligning with IFC Performance Standards (PS1–6, 8) and Good International Industry Practice (GIIP).

Environmental Risks

Historical soil contamination (hydrocarbons, heavy metals) can cause secondary contamination through dust and runoff. Contaminated soils must be identified, excavated and removed to licensed sites before construction work begins (IFC PS3).

Soil and water contamination due to fuel and oil spills, unprepared storage of materials. Work must be carried out in equipped areas with limited filling areas, with a spill collection system, timely liquidation and sanitary facilities (IFC PS3, PS4).

Slope erosion and washout: in uneven terrain, temporary drainage and slope stabilization is necessary (IFC PS3).

Dust and air quality control: regular watering, vehicle speed limits and proper maintenance of equipment (IFC PS3, EHS Guidelines).

Noise and vibration restrict work time, maintain equipment, notify residents in advance (IFC PS3, PS4).

Damage to existing infrastructure: pre-survey roads and utilities, protect them during work, restore damage (IFC PS4).

Social Risks

Influx of construction workers: The influx of construction workers may create social tensions and stress on infrastructure. It is necessary to implement a Code of Conduct, ensure sanitary conditions, prioritize local workers (including women and youth) and work with the GRM (IFC PS2, PS4).

Community health and safety install fences, warning signs and information campaigns to ensure safety, especially for children (IFC PS4).

Road traffic risks: traffic management plan agreed with authorities, control of routes, schedules and warning signs (IFC PS4).

Potential exclusion of vulnerable groups: fair access to jobs for foreign and local workers, information for vulnerable groups (IFC PS1, PS2).

Complaints from the public: work of the GRM with periodic monitoring of complaints (IFC PS1, PS4).

Occupational Health and Safety (OHS) Risks

Construction is characterized by the risks of injuries: falls, work with machines, noise, dust, mechanical loads. Implementation of the Occupational Health and Safety Plan, use of PPE, briefings, monitoring of hazardous work, temperature stress control, provision of drinking water (IFC PS2).

Biodiversity Risks

Although there are no critical habitats, local impacts on vegetation and small animals are possible. It is necessary to minimize deforestation, fence off green areas and monitor flora and fauna (IFC PS6).

3. Operation Stage Risks

The operation phase of the poultry farm and feed mill will generate continuous environmental, biological, social, technical, and institutional risks that must be carefully managed to ensure compliance with national regulations, IFC Performance Standards (PS1–6, 8), and international best practice (GIIP). This phase introduces long-term interactions with the surrounding environment and communities, requiring sustained attention to risk management.

Environmental Risks

Air emissions (ammonia, dust, odours): installation of ventilation systems with biofilters, regular removal of manure, filtration at the feed mill, green buffer zones and continuous monitoring of air quality (IFC PS3, PS4, EHS Guidelines).

Water pollution: multi-stage wastewater treatment system, regular parameter monitoring, protective drainage (IFC PS3).

Waste management: removal of manure, secure storage, licensed disposal of manure and carcasses (IFC PS3, PS4, PS6).

Natural Hazard and Climate Risks

The project sites are exposed to natural hazards, including seismic activity, seasonal flooding, and climate-related impacts. These risks have been assessed based on site-specific geological, hydrological, and climatic conditions.

Seismic risk: The project area is located in Seismic Zone 9 (MSK-64), requiring the application of earthquake-resistant structural design. All buildings and infrastructure will be constructed in accordance with national seismic codes (SNIP KR 20-02:2024), considering the ground composition (loose alluvial soils with medium compressibility) and the potential for liquefaction or uneven settlement. Engineering measures include appropriate foundation types, structural reinforcement, and anchoring of equipment.

Flood and surface water risks: The sites are situated within the broader floodplain of the Chu River and may be influenced by intense rainfall, snowmelt, canal discharge, or emergency releases from the Bystrovskaya HPP. Although groundwater lies deeper than 10–15 meters, surface runoff risks are significant. To prevent waterlogging and erosion, a gravity drainage system is included in the design, adapted to the terrain profile.

Climate-related risks and adaptation: Increased temperatures, extreme weather events, and dust levels pose additional operational risks. To address these, the following adaptation and protection measures are planned:

- Backup power supply for critical equipment (ventilation, pumping systems);
- Microclimate control in poultry houses to reduce heat stress;
- Upgraded dust collection systems in the feed mill;
- Rain and flood protection for infrastructure, including storage areas;
- Occupational health and safety protocols for workers under extreme heat or variable conditions.

These measures are aligned with IFC Performance Standards (PS1, PS2 and PS4) and will be further detailed in the Operational ESMP.

Biological Risks

Biosecurity and animal diseases: strict sanitary zones, access control, disinfection, special clothing, veterinary supervision, pest control (IFC PS4, PS2, EHS Guidelines).

Pest influx: rodent control, flies - pesticide management plan, cleanliness, traps, barriers (IFC PS4, PS6).

Social Risks

Welfare risks - odours, noise, traffic: maintain buffers, optimize truck routes, implement odour control measures, and conduct regular monitoring (IFC PS1, PS4).

Non-discrimination and equality: implement equality policies, gender-sensitive conditions, train staff, separate facilities (IFC PS2).

Child and forced labour risks: age verification, compliance with legislation (IFC PS2).

Vulnerable groups: proactive inclusive approach, information (SEP) (IFC PS1, PS4).

Community health and safety: traffic control, environmental monitoring, functional GRM (IFC PS4).

Occupational Health and Safety (OHS) Risks

OHS for workers: ammonia, dust, noise, heat stress - occupational safety plan, PPE, monitoring of conditions, medical surveillance, emergency protocols (IFC PS2, EHS).

Climate and Infrastructure Risks

Extreme weather events: heat, storms, heavy rains - resilient engineering solutions, drainage, backup power supply, adaptation of work schedules (IFC PS1, PS4).

Road and infrastructure deterioration: service agreements, routing and delivery schedules (IFC PS4).

Cumulative and Transboundary Risks

Cumulative impacts of emissions, odors, noise, traffic and waste on the environment and communities. The Chu River requires coordination with government agencies in accordance with the international Agreement.

Measures: integrated management, monitoring, transparency, cooperation (IFC PS1, PS3, PS4).

Below is a summary risk table which is a synthesis tool and systematizes the impact assessment results presented in the previous sections. Table reflected all significant impacts of the project, including:

- direct and indirect impacts on environmental components;
- social and sanitary risks;
- institutional gaps and governance issues;
- risks associated with climate and changing weather conditions;
- cumulative and transboundary effects.

Assessment is carried out by stages of project implementation: design, construction, operation. For each risk, following are indicated: nature of the impact, duration, scale, sensitivity of area, risk category, as well as compliance with requirements of the IFC PS and practical management measures.

Purpose of the table is providing a structured framework to develop a Management Plan, monitoring, institutional responsibility and response procedures.

Table 23. Project Impact and Risk Assessment Table

No.	Component	Risk/Impact	Duration	Scale	Sensitivity	Risk Category	IFC PS	Management Measures
Design								
1	**Land use**	Encroachment on SPZ and WPZ	Constant	Local	High	High	PS1, PS3	Adjustment of site layout, formal approvals
2	**Historical soil contamination**	Residual pollution from former industrial use	Short-term	Local	High	High	PS1, PS3	Identification, removal, disposal of contaminated soil
Construction								
3	**Soil and water**	Fuel and oil spills during construction	Short-term	Local	High	High	PS3	Designated refueling/maintenance areas, spill kits, staff training
4	**Soil erosion**	Slope instability during works	Short-term	Local	Medium	Moderate	PS1, PS3	Temporary drainage, slope stabilization
5	**Air quality**	Dust emissions from works and transport	Short-term	Local	Average	Moderate	PS3	Water spraying, speed limits, covering trucks
6	**Noise and vibration**	Noise from construction equipment	Short-term	Local	Average	Moderate	PS3, PS4	Time restrictions, maintenance of equipment
7	**Waste management**	Improper handling of construction and household waste	Short-term	Local	Medium	Moderate	PS1, PS3	Sorting, contracts with licensed landfill, documentation
8	**Biodiversity**	Clearance of vegetation, habitat disturbance	Short-term	Local	Medium	Moderate	PS6	Minimize clearing, protection of green areas
9	**Community safety**	Unauthorized access to site	Short-term	Local	High	High	PS4	Fencing, warning signs, community info
10	**Labor influx**	Social tensions, poor accommodation	Short-term	Local	Average	Moderate	PS2, PS4	Code of conduct, priority local hiring, sanitary accommodation
11	**Infrastructure damage**	Damage to roads, utilities near site	Short-term	Local	Medium	Moderate	PS4	Pre-construction surveys, protection measures, restoration

12	**Traffic and transport**	Increased traffic, accidents	Short-term	Local	Medium	Moderate	PS4	Traffic Management Plan, signage, schedules, community notice
13	**Chance finds**	Discovery of cultural heritage	Incidental	Local	High	Moderate	PS8	Chance finds procedure, stop work, notify authorities
Operation								
14	**Air quality**	Odors, ammonia, dust from operations	Constant	Local	High	High	PS3, PS4	Biofilters, ventilation, landscaping, monitoring
15	**Water pollution**	Wastewater discharges	Constant	Local, transboundary	Very high	Critical	PS1, PS3	WWTP, effluent monitoring, drainage control
16	**Solid waste**	Improper handling of manure, sludge, dead birds	Constant	Local	Medium	Moderate	PS3, PS4, PS6	Storage design, secure transport, approved disposal
17	**Biosecurity**	Disease outbreaks, zoonoses	Periodic	Internal / Local	High	High	PS2, PS4	Biosecurity plan, veterinary surveillance, sanitation protocols
18	**Pest attraction**	Rodents, birds, flies	Constant	Local	Average	Moderate	PS4, PS6	IPM program, waste hygiene, monitoring
19	**Labor protection**	OHS: ammonia, dust, noise, heat	Constant	Internal	High	High	PS2	PPE, ventilation, medical checks, training
20	**Non-discrimination**	Unequal employment opportunity	Constant	Internal / Local	Medium	Moderate	PS2	Equal opportunity policy, monitoring, gender-sensitive facilities
21	**Child and forced labor**	Employment of minors	Constant	Internal	Medium	Moderate	PS2	Age verification, labor contracts compliance, awareness-raising
22	**Vulnerable groups**	Exclusion from opportunities	Constant	Local	Medium	Moderate	PS1, PS2	SEP outreach, fair recruitment, monitoring
23	**Community nuisance**	Complaints on odor, noise, traffic	Periodic	Local	Average	Moderate	PS1, PS4	GRM, routing, buffer zones, monitoring
24	**Community health and safety**	Traffic, air quality impacts	Constant	Local	Medium	Moderate	PS4	Traffic management, stakeholder communication, GRM
25	**Fire and boiler room**	Fire, ash, emissions	Incidental	Local	Average	Moderate	PS2, PS3	Fire prevention, hydrants, alarm systems, maintenance

26	**Climate resilience**	Extreme weather events	Periodic	Local	Medium	Moderate	PS1, PS4	Resilient design, drainage, backup power, adaptive work schedules
27	**Infrastructure strain**	Road wear from operational traffic	Constant	Local	Medium	Moderate	PS4	Maintenance agreements, routing, schedules
28	**Cumulative impacts**	Combined odor, noise, traffic	Constant	Local / impact zone	High	High	PS1, PS3, PS4	Integrated controls, monitoring, SPZ revision if needed
29	**Transboundary impacts**	Impact on Chu River	Constant	Watershed	Very high	Critical	PS1, PS3	WWTP performance, online monitoring, coordination with state authorities

The project is being implemented as a standard poultry complex with feed production, adapted to the specific conditions of the selected sites. Structural, sanitary, and technological solutions are based on a typical scheme but require refinement considering:

- estimated site's capacity (number of birds, volume of wastewater, load on local WWTP);
- climatic, geological and hydrological characteristics of the area;
- wind roses and sanitary protection restrictions;
- location in relation to populated areas and water bodies.

All impacts presented in the summary table are pre-identified and will be further refined through engineering design and subject to formal review and approval.

Most identified risks are assessed as moderate, localized, and manageable, provided that appropriate design, sanitary, and environmental measures are properly implemented in line with the approved ESMP.

The assessment finds that the environmental and social impacts associated with the project can be effectively mitigated and controlled through planned measures to ensure that residual impacts remain within acceptable limits and that the project is environmentally and socially feasible.

5.6. Project categorization according to IFC requirements

IFC's policy, all investment projects are subject to environmental and social categorization according to the level of potential risk and the scale of impact, as stated in the document:

- IFC Sustainability Policy, Annex 1: Environmental and Social Categorization[2]

The project belongs to **Category B** because:

- It has potential negative environmental and social impacts, however:
    - These impacts are not widespread, irreversible, or without potential for mitigation;
    - Geographically limited to territory of the object and its immediate zone of influence (not transboundary, do not affect critical habitats);
    - Fully amenable to engineering and organizational management.

Table 24. Project categorization

No.	IFC criterion	Availability in the project	Comment
1	Impacts are widespread and irreversible (Category A)	No	All key impacts (odor, water, ammonia, bio risks) are localizable
2	The project affects critical or protected areas	No	Location near a populated area, but outside protected areas and sensitive biodiversity zones
3	The project causes population displacement	No	Violations of land rights or resettlement are not envisaged.
4	The impacts are limited in scale and mitigable.	Yes	Sanitary, water, atmospheric and biological risks can be addressed by ESMP measures
5	Implementation of management and monitoring measures is required	Yes	The need for ESMP, sanitary plans, water and air monitoring is substantiated

Main factors risk:

[2] https://www.ifc.org/en/insights-reports/2012/ifc-performance-standards

- Non-compliance with the requirements for establishing a sanitary protection zone between the facility and residential buildings;
- Risk of water pollution (proximity to Chu River, lack of drainage);
- Biosecurity (including disposal of dead animals and risks of epizootics);
- Social perception (odors, noise, transport, complaints);
- Lack of coordinated and formalized fire safety plans, sanitary zones and monitoring.

Project is identified as **Category B** (medium risk) in accordance with IFC's Sustainability Framework and the IFC Sustainability Policy.

In connection with the identified risks and the possibility of their effective management, project requires the preparation and implementation of following documents:

- ESIA in a volume sufficient to analyze all components of the impact;
- Environmental and Social Management Plan (ESMP);
- Monitoring plan (water, air, noise, sanitation);
- Grievance Redress Mechanism (GRM) and public consultation, in accordance with IFC PS1, including requirements for stakeholder engagement, disclosure and GRM as set out in the Guidance Notes to PS1.

In preparing this report, all key risks and constraints identified during the preliminary surveys were considered and integrated, including the hydrological, geological, and sanitary characteristics of the sites. Mitigation measures to minimize environmental and social impacts have been thoroughly developed for each component, in line with the objectives of the impact assessment and international IFC standards.

At the same time, a number of aspects require final detailing during the design documentation stage. In particular, the final topographic alignment and design coordination of the overlap between the sanitary protection zone (SPZ) and the water protection zone (WPZ) must be completed prior to approval of the design solutions. In addition, the legal status of the former dry riverbed passing through Site No. 2 will be clarified, with necessary agreements obtained from the competent authorities. As well as completing the process of transforming poultry areas according to the intended purpose of the land (industrial land).

Upon completion of the design work, these issues will be formalized as part of the design documentation and submitted for state expert review.

VI. MITIGATION MEASURES

6.1. Mitigation measures and principles of their development

This section provides a detailed description of mitigation measures designed to prevent, minimize, control, or compensate for potential environmental and social impacts throughout the project lifecycle. These measures ensure compliance with national legislation and international standards, particularly the IFC Performance Standards (PS1–6, 8) and Good International Industry Practice (GIIP), including the EHS Guidelines for Poultry Production.

All mitigation measures are structured according to the following principles:

- Hierarchy of mitigation: Priority to prevention → minimization → restoration → compensation.
- Feasibility: All measures are realistic and adapted to project conditions.
- Integration: Measures are embedded in design, construction, and operation stages.
- Proportionality: Measures are commensurate with risk magnitude.
- Accountability: Clear responsibilities, reporting mechanisms, and performance indicators are defined.

Mitigation measures by project phase

Design Stage

The focus of mitigation at the design stage is on embedding prevention and control measures into project planning and infrastructure. Measures include:

- Proper sanitary and water protection zoning: Ensure minimum distances (300 m for poultry farms, 100 m for feed mill, 100 m from Chu River) are maintained by adjusting facility layouts as needed and securing formal approvals from authorities.
- Climate-resilient design: Incorporate floodplain analysis, seismic-resistant structural elements (for MSK-64 zone 9), and robust drainage systems. Optimize building orientation and ventilation to reduce heat stress risks.
- Biosecurity integration in design: Ensure clear separation of clean and dirty zones; include disinfection barriers at facility entry points; design pest-proof storage and production areas; define personnel and vehicle flows to minimize contamination risks.
- Embedding environmental and occupational health safeguards in facility design: Provide appropriate space for future waste segregation, covered storage areas for manure and carcasses, planned locations for PPE stations, and emergency equipment.

Core management instruments prepared:

Environmental and Social Management Plan (ESMP): Overall management framework covering the full lifecycle.

Construction Stage

Construction-related mitigation measures focus on preventing temporary but significant impacts:

- Soil remediation before works: Identify, excavate, and remove contaminated soils from legacy industrial pollution areas; transport to licensed disposal sites.
- Fuel and chemical handling: Establish dedicated refueling and maintenance areas away from water bodies with spill containment systems; train workers in spill prevention and response.
- Dust and air quality control: Routine watering of exposed soil, limiting vehicle speeds, covering trucks during material transport.
- Noise management: Restrict noisy operations to daytime hours; maintain machinery in good condition; notify residents in advance.
- Erosion and drainage control: Install temporary drainage ditches, slope stabilization structures; inspect regularly during works.

- Protection of existing infrastructure: Conduct pre-construction surveys of roads and utilities; protect during works; restore if damage occurs.
- Community health and safety controls: Fence work areas securely, install warning signage, maintain communication with local residents, coordinate work near homes to avoid disruptions.
- Worker accommodation and behavior management: Enforce Code of Conduct; provide safe, hygienic temporary accommodation (if needed); prioritize hiring of local residents, including women and youth.
- Occupational health and safety: Implement Construction Phase OHS Plan: provide PPE, train workers, supervise hazardous tasks (e.g., work at heights, welding, excavation).
- Chance Finds Procedure: Require contractors to stop work immediately if cultural heritage objects are discovered and notify authorities.
- Waste management: Provide on-site containers for sorting construction and domestic waste; remove waste promptly to authorized landfills.
- Traffic management: Develop and enforce a Traffic Management Plan: define routes, limit speeds, regulate timing, provide signage and flaggers where needed.

Instruments for management:

- All mitigation measures integrated into a comprehensive Construction Environmental and Social Management Plan (CESMP), which also includes an embedded monitoring program (dust, noise, erosion, complaints).
- Active use of GRM, Code of Conduct, and contractor management systems to ensure compliance.

Operational Stage

Operational mitigation focuses on managing continuous and cumulative impacts:

- Air emissions and odor control: Install ventilation systems with biofilters; optimize manure removal frequency; maintain vegetative buffers to reduce odor dispersal.
- Wastewater treatment and water pollution prevention: Operate a wastewater treatment plant (WWTP) meeting national and IFC standards; monitor effluent quality regularly.
- Solid waste and manure management: Manure removal; secure storage; safe removal and transport to authorized facilities; incineration or rendering of dead birds.
- Strict biosecurity procedures: Maintain separation of clean and dirty areas; restrict and control visitor access; operate sanitation barriers; monitor pest exclusion; maintain veterinary health programs and vaccinations.
- Pest management: Implement an Integrated Pest Management Plan (IPMP): reduce attractants (e.g., spilled feed), use traps and barriers, apply pesticides only as last resort.
- OHS measures for workers: Enforce PPE use; monitor exposure to dust, ammonia, noise; provide regular medical surveillance; implement safe animal handling protocols and emergency preparedness measures (including fire, ammonia leaks, disease outbreaks).
- Traffic management: Maintain an Road Safety Management Plan to regulate deliveries and waste removal, optimize routing and scheduling to minimize community disturbance and road wear.
- Community engagement and complaints management: Maintain an active Grievance Redress Mechanism (GRM); respond promptly to concerns about odor, noise, traffic; adjust operations if warranted.
- Climate adaptation measures: Ensure infrastructure can withstand extreme weather events; operate reliable drainage systems; provide ventilation and shading for animal welfare and worker safety during heatwaves; maintain backup power systems.
- Cumulative and transboundary impact management: Monitor water quality in the Chu River; coordinate with national authorities; ensure integrated control of emissions, waste, noise, and odor.

Instruments for management:

- All measures embedded in a detailed Operational Environmental and Social Management Plan (OESMP), which includes all operational monitoring requirements (e.g., emissions, effluent, grievances).
- Use of the Biosecurity Management System for Disease Prevention and Control in Poultry Production (BMS), Occupational Health and Safety Management System (OHS MS), Waste Management Plan (WMP), Road Safety Management Plan (RSMP), Integrated Pest Management Plan (IPMP), and Emergency Preparedness and Response Plan (EPRP) as functional management tools.

Table 25. Classification of mitigation measures

No.	Classification	Examples
1	**Technical**	Biofilters, sanitary zoning, WWTP, spill containment pallets, ventilation systems, secure manure storage, pest-proofing
2	**Organizational**	Worker and contractor training, Code of Conduct, monitoring protocols, grievance mechanism procedures, medical checks, shift adjustments during extreme weather
3	**Institutional**	Appointment of E&S officers, documentation systems, contractor management procedures, ESMP review and update cycles
4	**Ecological/Biological**	Buffer zones, landscaping, Integrated Pest Management (IPM), pest exclusion, prevention of disease transmission

Table 26. Measures to mitigate environmental and social risks

No.	Main Risk	Mitigation Measures	Type of Measure	PS IFC	Responsible Parties	Timing / Frequency	Indicator	Reporting
Design								
1	**Improper location near Chu River may lead to flooding, pollution, and violation of protection zones**	Layout adjustment: setback ≥100 m, drainage design for stormwater management	Technical	PS1, PS3, PS6	Designer / Environmental specialist	Before project approval	Setback and drainage included in design	Design documentation
2	**Insufficient sanitary protection zone (SPZ), risk of odor, noise, dust for population**	Establish SPZ 300 m for poultry farm, 100 m for feed mill; include buffer green planting along borders	Tech/Org	PS1, PS4	Designer / Sanitary and Epidemiological Service	Before project approval	SPZ confirmed, landscaping plan prepared	Design documentation
3	**Flood risk due to poor site selection**	Exclude flood-prone areas; provide drainage system	Technical	PS1, PS3	Designer	Before project approval	Flood analysis and drainage included	Design documentation
4	**Erosion and slope instability**	Include slope and bank stabilization measures	Technical	PS1, PS3	Designer	Before project approval	Slope protection included	Design documentation
5	**Non-compliance with legislation**	Obtain all necessary permits and approvals, land transformation state acts	Institutional	PS1	Management	Before construction	All permits obtained	Permit register
6	**Absence of effective biosecurity layout**	Ensure sanitary zoning, pest protection, hygiene barriers in design	Technical	PS4	Designer / Veterinarian	Before project approval	Biosecurity included in design	Design documentation
Construction								
7	**Dust, noise, soil disturbance from machinery and works**	Water spraying, limit noisy works and vehicle speed, maintain machinery, protect soil from fuel spills, use	Tech/Org	PS3, PS4	Contractor / Environmental specialist	Continuous	Visual monitoring, soil protection in place	Monitoring logs

		pallets, refueling at gas stations						
8	**Water resources**	Arrange local drainage, temporary pits/portable toilets, timely removal of liquid waste, protection of surface runoff	Tech/Org	PS3, PS4	Contractor / Environmental specialist	Continuous	Visual monitoring, required facilities present	Monitoring logs, removal certificates
9	**Bank erosion**	Temporary drainage, slope stabilization	Tech/Org	PS3, PS4	Contractor / Environmental specialist	Continuous	Visual monitoring	Monitoring logs
10	**Flora and fauna**	Minimize felling, protect green areas	Tech/Org	PS3, PS6	Contractor / Environmental specialist	Continuous	Visual monitoring	Monitoring logs
11	**Labor influx, social tension**	Code of conduct; priority for locals, women and youth; gender-sensitive conditions; prohibition of child/forced labor; equal pay and non-discrimination	Organizational	PS2, PS4	Contractor / HR	Continuous	Staff records, absence of complaints	Contractor & HR reports
12	**Unauthorized site access**	Install fences, signs; inform local community	Tech/Org	PS4	Contractor	Continuous	Fence integrity and signs present	Inspection logs
13	**Occupational health and safety risks**	OHS Plan: PPE, briefings, control of hazardous works	Organizational	PS2, PS4	Contractor / OHS specialist	Continuous	PPE available, briefings recorded, incident logs	OHS reports
14	**Damage to roads and utilities**	Preliminary inspections, protection, restoration in case of damage	Technical	PS1, PS4	Contractor	Before works	Infrastructure protected/restored	Inspection reports
15	**Transport risks**	Transport management plan: routes, signage, work schedule	Organizational	PS4	Contractor / Engineer	Continuous	Plan implemented, no accidents	Transport logs

16	**Soil contamination (historic)**	Identify and remove contaminated soil to licensed facility	Technical	PS1, PS3	Contractor / Environmental specialist	Before earthworks	Soil removed, disposal certificates	Waste logs
17	**Waste management**	Sorting, storage and removal to licensed landfill	Organizational	PS1, PS3	Contractor	Continuous	Sorting containers present, waste removed properly	Waste logs
18	**Site maintenance**	Cleaning and landscaping restoration	Organizational	PS1, PS3	Contractor	Upon completion	Clean site, landscaping restored	Acceptance certificate
19	**Chance finds of cultural heritage**	Apply "chance finds" procedure: stop works, protect and notify authorities	Institutional	PS8	Contractor	As needed	Finds documented	Contractor reports
20	**Community grievances**	GRM: receipt and processing of complaints, registration	Organizational	PS1, PS3, PS4	Contractor / GRM manager	Continuous	Complaints recorded; register maintained	GRM log, processed complaints
Operation								
21	**Odors and ammonia emissions**	Ventilation, biofilters, optimization of manure handling	Technical	PS3, PS4	Engineer / Environmental specialist	Continuous	NH_3 < MPC; odor minimization	Monitoring logs
22	**Waste management (manure, bedding, carcasses)**	Waste management plan: safe storage, composting, removal to licensed facilities; sanitary control	Tech/Org	PS1, PS3, PS4, PS6	Manager / Environmental specialist	Continuous	Clean storage areas; confirmed removal	Waste log
23	**Animal diseases, zoonoses**	Biosecurity: sanitary inspections, pest control, veterinary supervision	Tech/Org	PS4	Veterinarian / Manager	Continuous	Inspection logs; vet records	Biosecurity reports, record keeping
24	**Attraction of rodents, birds**	Pest management plan: sanitation, barriers, traps, inspections	Technical	PS6	Environmental specialist	Continuous	Inspections completed; no complaints	Record log, reporting
25	**Occupational health and safety risks**	OHS plan: PPE, workwear, ventilation, medical checks, briefings	Organizational	PS2	Manager / OHS specialist	Continuous	OHS compliance; worker health records	OHS reports

26	**Community grievances**	GRM maintenance; timely complaint handling	Organizational	PS1	GRM specialist	Continuous	Up-to-date GRM log; complaints resolved	GRM log, reporting, record keeping
27	**Traffic risks**	Traffic management plan at sites: routes, schedule, road safety	Organizational	PS4	Transport manager	Continuous	Plan implemented; no accidents	Traffic log
28	**Cumulative impacts**	Landscaping, routing, monitoring	Tech/Org	PS1, PS3, PS4	Manager / Environmental specialist	Quarterly	Confirmed reduction of impacts	Monitoring report
29	**Extreme weather conditions**	Insulation, ventilation, flexible schedule	Organizational	PS1, PS4	Manager	Continuous	No cases of heat stress; measures documented	Monitoring report
30	**Insects and disease vectors**	Pest management plan: sanitation, pest control, inspections	Organizational	PS4	Contractor / Environmental specialist	Continuous	No complaints; inspections completed	Record log, reporting
31	**Poor sanitary condition of the site**	Cleaning, inspections	Organizational	PS1, PS4	Contractor	Continuous	Clean site	Cleaning log
32	**Employment-related conflicts**	Transparent hiring; priority for locals, women, youth; equal pay, non-discrimination	Organizational	PS2	HR / Manager	Continuous	Hiring records; no disputes	HR reports
33	**Negative project perception**	Events with local population once per year or as needed	Organizational	PS1, PS4	Management / GRM	Once per year or as needed	Events held; meeting minutes	SEP, reporting

All mitigation measures listed will be consolidated and operationalized through the Project's Environmental and Social Management Plan (ESMP), Construction ESMP (CESMP), and Operational ESMP (OESMP).

This is a living document: all mitigation measures described herein will be subject to regular review and adjustment throughout the project lifecycle, to reflect updated technical designs, regulatory requirements, environmental and social monitoring results, and stakeholder feedback, ensuring their continued relevance, effectiveness, and alignment with Good International Industry Practice (GIIP) and applicable IFC Performance Standards.

6.2. Residual impacts

After all, planned environmental and social risk mitigation measures provided in ESMP have been applied, residual impacts remain in a number of areas – that is, impacts that cannot be completely eliminated but remain at a manageable and acceptable level.

Such impacts are particularly characteristic of projects with a high sanitary load (as in the case of poultry farms), as well as for areas where there is a cumulative impact from other objects and sensitive receptors, such as the population and natural components (Chu River, bird migration routes).

As part of residual risk assessment, five areas were identified where, despite implementation of measures, there remains a possibility of residual negative impact. For each of them, additional monitoring or adaptive measures were defined.

Table 27. Residual impacts after implementation of measures

No.	Risk	Measures taken	Residual impact	Degree of residual risk	Additional measures/monitoring
1	**Odors and ammonia**	Ventilation, filtration, buffer zone	Odors in adverse weather conditions	Average	Greening, complaint response, NH_3 control
2	**Biosecurity and mortality**	Incinerator, sanitary breaks, veterinary control	Risk of infection through wildlife or personnel	Average	Bird nets, entry quarantine, bio surveillance
3	**Cumulative air pollution**	Filtering, coordination, monitoring	Increase in ammonia and odors during hot periods	Average	Emissions schedule, additional landscaping, response to complaints
4	**Complaints from the population**	Work with population's complaints, meetings, complaints mechanism	Social discontent, residual distrust	Average	Constant feedback, information, media support
5	**Cumulative biodiversity**	Repellents, observation, migration records	Possible attraction of birds, risk of infection	Average	Regular environmental monitoring, nets, adjustment of feeding and cleaning regimes

Conclusion:

- All residual effects are classified as of medium or low significance.
- Most of them are related to natural factors (weather conditions, migration) and perception of population, which makes not only technical but also social support for the project important.
- Company is committed to maintaining an adaptive response system, a GRM mechanism and enhanced monitoring of residual impacts.

Residual risks are not irreversible, transboundary or extreme in nature and are subject to management within the framework of the approved ESMS and ESMP.

VII. MONITORING AND REPORTING

Monitoring within the framework of poultry houses and feed mill plant project is aimed at systematically monitoring the effectiveness of mitigation measures and early detection of negative impacts that may arise during the construction and operation stages. Monitoring ensures transparency and accountability to regulatory authorities, financiers (including IFC), and local communities.

Main tasks monitoring:

- Confirmation that actual impacts match planned impacts;
- Security execution of ESMP;
- Early response to deviations and complaints;
- Support acceptance management solutions;
- Fulfilment of obligations to banks and regulators.

Monitoring covers:

- Environmental parameters: air quality, water, noise, lighting;
- Biological parameters: mortality, sanitation, bird migration;
- Social parameters: complaints from the population, interaction with land users;
- Institutional elements: functioning of procedures, appointment of responsible persons, quality of reporting;
- Cumulative impacts: air, water, biodiversity, pressure on social infrastructure.

For each risk in the monitoring table the following are defined:

- parameters observations;
- monitoring methods;
- periodicity (from constant to seasonal);
- responsible for execution;
- documentation and reporting format.

Monitoring is carried out by company's environmental specialist and other specialists (veterinarian, occupational health and safety engineer). In some cases, services of accredited laboratories are used.

The following methods are used:

- Instrumental measurements (NH_3, dBA, illumination, water analysis);
- Laboratory samples (groundwater, wastewater, microbiology);
- Visual inspections and walk-throughs (control of sanitary zones, equipment condition, contact with wild fauna);
- Surveys, interviews and complaint analysis (as part of the complaints mechanism);
- Ornithological observations (during migration seasons, if applicable).

Responsibility and documentation. Each monitoring parameter is assigned to a specific performer. Main Responsible:

- Environmental specialist – overall coordination, control and reporting;
- Veterinarian - biosecurity, mortality, disinfection;
- GRM manager or assigned person – complaints, interaction with the population;
- Occupational Health and Safety Engineer – working with chemicals, safety;
- Designers/contractors – at the construction and technical acceptance stage.

Results are recorded in:

- control and inspection logs;
- laboratory research protocols;
- inspection reports;
- consolidated quarterly and annual reports;
- reports to regulatory authorities and the IFC.

In case of deviation from the standards:

- is registered incident;
- an internal investigation is being conducted;
- corrective actions are developed and implemented;
- is being carried out repeated control;
- If necessary, a mechanism for notifying regulatory authorities is activated.

Link to ESMP and reporting mechanisms

The monitoring program is an integral part ESMP and provides a basis for its periodic evaluation. Reporting is carried out:

- monthly - internal control;
- quarterly - data summarization, submission to authorities;
- annually - a summary report with trend analysis is sent to the IFC.

Table 28.. Monitoring and reporting plan

No.	Risk/Impact	Monitoring object	Method	Frequency	Responsible	Reporting
Design						
1	**Accommodation near Chu River**	Distance to water body	Inspection, review	Once before construction	Ecologist	Report
2	**Violation of SPZ**	Buffer zone compliance	Inspection	Once before construction	Ecologist, SES	Report
Construction						
3	**Dust and noise**	Dust concentration, noise levels	Visual monitoring, mmeasurement	Monthly	Ecologist	Protocol
4	**Soil quality at Feed Mill**	Petroleum hydrocarbons, metals	Laboratory analysis	Before start and post-cleanup	Ecologist	Protocol
5	**Waste management**	Storage, removal compliance	Inspection, document review	Monthly	Ecologist	Report
6	**Occupational safety**	OHS compliance; workforce conditions for temporary labor influx	Inspection, interviews; workforce composition records (% women and youth); verification of no child labor; verification of worker accommodation standards; absence of discrimination complaints	Monthly	OHS Engineer / HR Manager	HR reports; inspection logs
7	**Traffic and access safety**	Traffic flow, signage	Inspection	Weekly	Contractor / Engineer	Logbook
8	**Community complaints**	Complaints received	GRM analysis	Continuous	GRM Manager	GRM report
9	**Site sanitation**	Cleanliness	Inspection	Weekly	Ecologist	Inspection log
Operation						
10	**Odors and ammonia**	Air quality, complaints	Measurement, survey	Quarterly	Ecologist	Report
11	**Wastewater discharge**	Effluent pollutants	Laboratory analysis	Quarterly	Ecologist, Utility	Protocol
12	**Waste management during operation**	Waste segregation, storage, removal	Inspection of storage areas; verification of waste records; contracts with disposal facilities; absence of illegal dumping or burning	Monthly	Ecologist / Manager	Inspection logs; waste registry

13	**Biosecurity and mortality**	Mortality logs, hygiene practices	Inspection, document review	Monthly	Vet / Ecologist	Logbook
14	**Attraction of pests/insects**	Presence of pests/insects	Inspection	Monthly	Ecologist	Report
15	**Site sanitation (around facility)**	Cleanliness, litter	Inspection	Weekly	Ecologist	Inspection log
16	**Labor conditions**	PPE, worker health checks; workforce composition and conditions for permanent staff	Inspection, records review; workforce composition records (% women and youth); verification of no child labor; availability of gender-sensitive facilities; absence of discrimination complaints	Quarterly	HR / OHS	HR reports
17	**Complaints from population**	GRM logs, complaint types	Analysis	Monthly	GRM Manager	GRM report
18	**Social issues (employment conflicts)**	Hiring records, share of locals	HR records review	Quarterly	HR / GRM	Report
19	**Perception/stigmatization**	Community perception trends	Interviews, surveys	Annually	Social specialist	Social report
20	**Traffic load**	Traffic levels, complaints	Inspection, survey	Quarterly	Transport Manager	Report
21	**Energy and water use**	Consumption volumes	Meter readings	Monthly	Engineer	Utility report
22	**Equipment condition**	Maintenance logs	Inspection	Monthly	Engineer	Maintenance log
23	**Ventilation system**	Technical performance	Inspection	Monthly	Engineer	Logbook
24	**Extreme weather impacts**	Incidents, preparedness	Inspection	Annually	Engineer	Report
25	**Cumulative impacts**	Integrated indicators (odor, noise, traffic, ammonia)	Integrated analysis	Annually	Ecologist	Summary report

VIII. INSTITUTIONAL PROJECT MANAGEMENT

To ensure sustainable and controlled implementation of project, an institutional management system has been created covering all key aspects: environmental, social, occupational safety, stakeholder engagement and regulatory compliance.

Table 29. Functional control blocks

No.	Management component	Description of functions
1	**General Management of the enterprise**	Strategic management, plan approval, external communications
2	**Environmental and social manager, site specialist**	Implementation and control of environmental protection measures
3	**GRM specialist**	Interaction with the population and the GRM Receiving, processing and resolving complaints from interested parties
4	**Occupational Health and Safety Specialist**	Providing health and safety, keeping logs and monitoring safety procedures
5	**Environmental and social manager**	Data analysis, parameter control, reporting

Table 30. Distribution of responsibilities and accountability

Position / Department	Main responsibilities	Accountability
General Management	– Making strategic decisions – Interaction with investors and government agencies – Approval of plans and reports	To Owners / Board of Directors / IFC representatives
Environmental and social manager, site specialists	– Emissions, waste and monitoring control – Reporting and interaction with regulatory authorities	To the General Management of the company
GRM specialist	– Interaction with the population – Management of the GRM and implementation of SEP – Social reporting – Registration, processing and resolution of complaints – Maintaining a database of complaints and analytics	To the Environmental and social manager, HR department
Occupational Health and Safety Specialist	– Conducting briefings and trainings – Monitoring working conditions and compliance with occupational safety standards	To the Management of the company
Environmental and social manager	– Monitoring of all parameters (environmental, social, institutional) – Preparation of quarterly and annual reports	To the General Management of the company

Mechanism of interaction between structures is built on the basis of internal regulations, monitoring plans, response protocols and integration with the corporate governance system.

Table 31. Interaction structure

Direction	Responsible	Who reports / interacts with	Interaction tools
Environmental control	Environmental and social manager	General Management, regulatory authorities	Journals, reports, acts, monitoring protocols
Social activities	Environmental and social manager, GRM specialist	Management, population, GRM	Meeting minutes, complaint database, engagement plan
Complaints and suggestions	Responsible for GRM	GRM specialist	GRM magazine, database, feedback
Occupational safety and health	Health and Safety Engineer	Management	Briefings, logbooks, inspection reports
Environmental and social monitoring	Environmental and social manager	Management, donors	Summary reports, presentations, internal audit

Training and professional development

For successful functioning of control system, the following is provided: training program including:

Table 32. Training program

Topic	Target group	Frequency	Format of the event	Responsible
Environmental protection	Contractors, engineering and technical workers	Annually	Internal and external trainings	Environmental and social manager
Social interaction and GRM	Contractors, engineering and technical workers	Quarterly	Seminars, simulations	Environmental and social manager, GRM specialist
Occupational Health and Safety	All employees, contractors	Every 6 months	Instructions, knowledge testing	Health and Safety Specialist
Environmental and social monitoring	Internal monitoring staff, Environmental and social manager, GRM specialist	Quarterly	Workshops, learning new techniques	Environmental and social manager

IX. INTERACTION WITH STAKEHOLDERS

9.1 Stakeholder Engagement Plan (SEP)

In accordance with requirements of IFC PS1, including stakeholder engagement, disclosure and grievance mechanism (GRM) requirements as set out in the Guidance Notes to PS1, the project requires preparation Stakeholder Engagement Plan (SEP) as a separate document. At the time of preparing this report, the SEP has been developed in line with IFC requirements.

The SEP is necessary both to meet requirements of donors and the company itself - to build a sustainable and understandable system of interaction with society, authorities and interested groups which must include:

- identification and analysis of stakeholders;
- forms and schedule of interactions;
- tools for accounting of vulnerable groups;
- connection with the complaints mechanism (GRM);
- responsibility and reporting procedures;
- linking with monitoring and project implementation stages.

The objectives of the SEP are:

- Providing early information about the project;
- Identifying and taking into account the opinions and expectations of stakeholders;
- Supporting inclusive dialogue, especially with vulnerable groups;
- Minimization of social and institutional risks;
- Increasing trust and obtaining a social license for the project;
- Fulfilling commitments to IFC and other donors.

Table 33. Key stakeholders

No.	Category	Interests and sensitivity
1	**Local residents (up to 2 km)**	Impact on air, water, noise, employment, infrastructure
2	**Women, elderly, vulnerable groups**	Access to information, participation, protection of rights, complaints
3	**Village administration, district authority**	Coordination of documentation, participation in monitoring
4	**SES, Ministry of Natural Resources, Veterinary Service**	Sanitation control, epidemiological safety
5	**Contractors and workers**	Working conditions, training, complaints mechanism
6	**Agricultural users**	Access to water, pastures, land interests
7	**Local NGOs and activists**	Ecology, Biodiversity, Impact Assessment
8	**Donors (IFC)**	Compliance with standards, transparency, and effectiveness of the GRM

Table 34. Methods of interaction and adaptation

Group	Interaction formats
Local population	Face-to-face meetings, leaflets in Kyrgyz/Russian, announcements through ayil okmotu, mobile groups
Vulnerable groups	Individual interviews, oral complaints, support
Authorities	Official letters, minutes, discussion of design decisions
Workers	Briefings, stands at sites, explanatory sessions
Land users	Early approval, written confirmations
Donors (IFC)	Regular reporting, participation in audits, responses to inquiries

Table 35. Responsibility for the implementation of the SEP

Element of the SEP	Responsible department / position
Development and implementation of the SEP	Environmental and Social manager
Conducting consultations	Environmental and Social manager
Taking into account vulnerable groups	GRM-responsible with the participation of the Environmental and Social manager
Documentation management	GRM-responsible with the participation of the Environmental and Social manager
Preparation of reports	Environmental and Social manager

GRM is described separately, but is an integral component of the SEP. It provides for:

- registration of oral and written complaints;
- confirmation of receipt within 3 working days;
- provision of a decision - within 15 working days;
- anonymity upon submission (at the applicant's request);
- maintaining a complaints database with analysis of repetitions and risks.

9.2 Public information and consultation

Conducting public consultation and information about the project is carried out in accordance with legislation of Kyrgyz Republic, in particular:

- Law "On Environmental Expertise" No. 54 of June 16, 1999 (as amended in 2023);
- Law on Environmental Protection No. 53 of June 16, 1999;
- Resolution No. 60 of 13.02.2015 "On the procedure for conducting EIA (OVOS)";
- Methodological recommendations of the Ministry of Economic Development and Trade on organizing discussions.

Table 36. The consultation procedure includes the following stages

No.	Stage	Action	Deadlines / Notes
1	**Preparing a notification**	Posting an ad in the media, village administration, on the website of the Company	At least 10 days before the discussion
2	**Distribution of materials**	Open access to the ESIA draft (paper and electronic format)	Includes NGO, maps, impact descriptions
3	**Conducting hearings**	Face-to-face meetings, discussion of risks and measures, collection of opinions	With the participation of residents, NGOs, authorities
4	**Logging**	Keeping minutes, registering participants, recording proposals	Required element
5	**Taking into account comments**	Incorporation of substantiated comments into the final version of the ESIA	Answers are in the appendix to the report.
6	**Transfer to the State Environmental Expertise**	Submission of the ESIA with the minutes of discussions to the state environmental review	Mandatory step before project approval

Forms participation:

- publications in the media, leaflets, announcements;
- oral and written comments;
- focus groups and individual interviews;
- activities to ensure accessibility for vulnerable groups.

After preparation draft ESIA report, the company organizes:

- public consultation through informing interested sides;

- conducting public consultations in the form of meetings (if necessary);
- logging reverse connections;
- reflection of all results in the final version of the report;
- launch of preparation of a full SEP at the project implementation stage.

Public consultation through information disclosure as part of the requirements of KR legislation and IFC

In accordance with the requirements of the Kyrgyz Republic's legislation on Environmental Impact Assessment (EIA), comprehensive public consultations on the Agro Kush poultry farm and feed mill project were conducted in June 2025. The consultations were organized as a sociological survey employing various methods of stakeholder engagement.

The consultations followed an integrated approach combining information disclosure and feedback collection:

1. **Information campaign**

- Distribution of information leaflets about the project among residents of Kemin
- Provision of basic information on production scale, planned employment, and environmental protection measures
- Explanation of the project's objectives in the context of regional food security

2. **Public opinion assessment**

A comprehensive sociological survey included:

- 75 residents surveyed via questionnaires
- 7 in-depth interviews with key stakeholders (local authorities, regulatory bodies, deputies)
- 3 focus groups with farmers, activists, and energy specialists

Key outcomes of consultations

1. **Awareness and perception of the project**
   The consultations revealed a high level of public awareness about the project (88% of respondents knew about the construction plans). However, the main sources of information were informal channels - friends and acquaintances (68%) - indicating the need to strengthen official communication mechanisms. Overall, attitudes toward the project were positive: 89% of respondents supported the initiative, viewing it as an opportunity for regional economic development and job creation.
2. **Identified concerns and expectations**
   Key public concerns identified during consultations included:

- **Environmental risks:**
- Air pollution and odors (61% of respondents)
- Water pollution (36%)
- Presence of disease-carrying insects
- **Socio-economic expectations:**
- Job creation with decent working conditions (fair wages - 77%, official employment - 63%)
- Local infrastructure development
- Opportunities for cooperation with local farmers

Recommendations from stakeholders

Representatives of local authorities and regulatory bodies expressed unanimous support for the project, subject to:

- Compliance with environmental and sanitary standards
- Establishment of an independent monitoring system
- Ensuring the energy resilience of production

Local farmers expressed interest in:

- Supplying feed raw materials (soy, corn, wheat)

- Using organic fertilizers (poultry manure)
- Creating transparent cooperation mechanisms

Based on the consultation results, proposals were formulated to institutionalize public participation:

1. Establishment of a coordination council under the mayor's office with representatives from the company, local residents, farmers, and regulatory bodies
2. Regular information meetings using existing communication channels (neighborhood committees, WhatsApp groups)
3. A public monitoring system involving youth and activists to monitor the environmental situation
4. A feedback mechanism via a hotline and regular company reports to the population

The consultations demonstrated a high level of public interest in project implementation, provided that environmental safety and the investor's social responsibility are ensured. The sociological research format enabled not only informing the public about construction plans but also identifying key concerns and generating constructive proposals to minimize risks and maximize benefits for the local community.

Further work should focus on transforming the identified expectations and concerns into concrete mechanisms for interaction between Agro Kush and stakeholders, in line with the legislative requirement to consider public opinion in projects affecting the environment.

Demographic profile of participants:

The majority of respondents were residents aged 31 to 60 years, comprising approximately 63% of the sample, reflecting the active and mature segment of the population. Youth under 18 years accounted for only 5%, while 18–30-year-olds made up 13%, and individuals over 60 years accounted for 19%.

Women made up the majority (51 individuals or 68%), with men accounting for 24 individuals or 32%. Respondents included homemakers, pensioners, professionals, farmers, laborers, government representatives, and other categories. Education levels were relatively evenly distributed: 23% had secondary education, 25% vocational education, 25% higher education, and 2% belonged to other educational categories. The average length of residence in Kemin among respondents was about 30 years, indicating that the sample predominantly consisted of long-term resident's familiar with the local social and economic context.

A detailed report on the sociological survey is provided in Annex 2.

9.3. Grievance redress mechanism (GRM)

Grievance redress mechanism (GRM) is a Company's formalized system that enables complaints and suggestions from:

- local population;
- employees of the enterprise;
- contractors;
- stakeholders and organizations.

The creation of GRM is a mandatory requirement under PS1. It serves as a tool for preventing conflicts, minimizing discontent and increasing social sustainability of project.

GRM's Principles

- Openness - the mechanism is available to any interested party;
- Confidentiality - if necessary, the applicant can remain anonymous;
- Promptness - complaints are considered within the established timeframes;
- Transparency - all requests are recorded and tracked;
- No sanctions - filing a complaint does not entail any negative consequences for the applicant.

The mechanism covers complaints related to:

- impact on environment (noise, odor, water, dust);
- biosecurity and sanitary condition;
- access to information;

- activities of staff and contractors;
- working conditions and safety;
- breach of promises or obligations of the project;
- common perception project.

Complaints can be submitted:

- written form in complaint log (at the checkpoint or with GRM specialist);
- hotline call (it will be indicated in the announcements and on the board at facility);
- via the on-site contact box;
- verbally - through meetings, consultations or contact with GRM specialist;
- by email (if there is a project web page).

Table 37. Stages of complaint consideration

Stage	Action	Term
1	**Registering a complaint in the journal**	On the day of receipt
2	**Confirmation of receipt to the applicant**	Within 2 working days
3	**Preliminary screening and classification**	Up to 5 working days
4	**Internal review and decision making**	Up to 15 working days
5	**Informing the applicant of the decision**	Within 2 working days after the decision
6	**Closing the complaint, archiving**	Within 30 days of receipt
7	**In case of appeal - transfer to management or to an independent commission**	On request

Documentation and reporting

- All complaints are recorded in registration log;
- An electronic database of appeals is maintained with complaint code, date, status, and decision;
- Every quarter, ecologist and GRM specialist prepare a report on complaints with an analysis by category;
- Complaints and responses may be included in annual ESMP and monitoring report.

Table 38. Persons responsible for the GRM

Role	Functions
GRM specialist / Environmental and social manager	Reception, registration, coordination, communication with the applicant
Veterinarian / Engineer / Occupational Health and Safety	Providing clarification on the specialization of the complaint
Management of the enterprise	Making decisions on complex cases or appeals
Independent party (if necessary)	It is brought in when there is no agreement between the parties

Mechanism will regularly to be reviewed:

- in case of significant changes to the project;
- for recurring types of complaints;
- as part of the annual internal audit of the ESMS.

Additionally:

- training will be provided to staff handling complaints;
- The feedback system will be strengthened by placing information boards and publications in local media.

X. CONCLUSION

The project for the construction and operation of 24 broiler poultry houses and a feed mill plant, initiated by Adal Azyk LLC and implemented through Agro Kush LLC, represents a significant agro-industrial investment aimed at strengthening food security, promoting regional economic growth, and creating employment opportunities, particularly in the rural economy of the Kyrgyz Republic.

The Environmental and Social Impact Assessment (ESIA) has been prepared in accordance with the national legislative framework of the Kyrgyz Republic and the IFC Performance Standards (PS 1–4, 6, 8). The ESIA methodology applied a systematic assessment of environmental, social, health, institutional, and cumulative risks and impacts throughout all project phases: design, construction, and operation.

Key conclusions of the ESIA are as follows:

- Compliance: If all mitigation measures and management commitments are implemented as planned, the project is expected to be compliant with:
    - The legislation of the Kyrgyz Republic, including all relevant environmental, health, labor, and safety regulations;
    - International best practices and the applicable IFC Performance Standards, ensuring that risks and impacts are identified, avoided, minimized, or otherwise mitigated.
- Impact characterization:

  The project's potential adverse impacts are:
    - Localized and largely reversible, affecting primarily the immediate vicinity of the sites;
    - Manageable through the application of Good International Industry Practice (GIIP) and technically feasible mitigation measures;
    - Not affecting protected areas or critical habitats (PS6) and not involving resettlement or Indigenous Peoples (PS5 and PS7 are not triggered).
- Significant risks and mitigation:

  All significant environmental and social risks have been identified, including those associated with air emissions (odors, dust, ammonia), wastewater discharges, solid waste management, biosecurity, occupational health and safety (OHS), and community health and safety.

  Mitigation measures are fully integrated into the Environmental and Social Management Plan (ESMP), covering monitoring, institutional responsibilities, grievance management, and adaptive management.
- Transboundary dimension:

  The project acknowledges and appropriately mitigates potential transboundary impacts on the Chu River, an international watercourse shared with Kazakhstan, including through compliance with agreements on joint water resources management.
- Cumulative impacts:

  Cumulative effects associated with odor, noise, traffic, and organic waste will be managed through integrated controls, landscaping, routing strategies, and robust monitoring programs.
- Stakeholder engagement:

  The project has demonstrated high levels of initial public awareness and support. Comprehensive public consultations have been conducted as part of the ESIA process, including surveys, focus groups, and meetings, in compliance with national legislation and IFC PS1 requirements for stakeholder engagement. A Stakeholder Engagement Plan (SEP) is being finalized and will guide future engagement, grievance redress, and inclusive communication.
- Climate and resilience considerations:

  The project design has incorporated adaptation measures to address climate and natural hazard risks, including flood control, seismic resilience, and seasonal weather variability.

The project can be considered environmentally and socially acceptable provided that all recommended mitigation measures, institutional arrangements, monitoring and reporting requirements set forth in the ESMP are implemented effectively.

The project aligns with the IFC's categorization as Category B, indicating that it has limited, site-specific, and manageable risks and impacts.

ANNEXES

Annex 1. Analytical results of laboratory tests

DEPARTMENT OF ENVIRONMENTAL MONITORING UNDER THE MINISTRY OF NATURAL RESOURCES, ECOLOGY AND TECHNICAL SUPERVISION OF THE KYRGYZ REPUBLIC

Chui oblast, Kemin district, Kemin city
23.04.2025

TEST REPORT
SOIL SAMPLES
№ 1437 – 1441

Item	Name of the indicator to be determined	Unit of measure.	Point analysis data					ND for the test method	MPC	The tests were conducted
			02-**1437**-25	02-**1438**-25	02-**1439**-25	02-**1440**-25	02-**1441**-25			
1	Petroleum products	mg/kg	340,0±153,0	340,0±153,0	320,0±144,0	580,0±261,0	160,0±72,0	СТП 02-03-2022	-	Ybykeeva G.Zh. Mursazhanova B.E.
2	Copper	mg/kg	1,2±0,4	1,6±0,5	1,4±0,4	2,0±0,6	1,2±0,4	СТП 02-02-2022	3	
3	Zinc	mg/kg	21,4±6,4	1,4±0,4	5,0±1,5	9,0±3,0	1,4±0,4	СТП 02-02-2022	23	
4	Lead	mg/kg	5,6±2,0	4,0±1,2	5,4±1,6	4,6±1,4	3,4±1,0	СТП 02-02-2022	6	
5	Manganese	mg/kg	80,6±24,2	112,0±33,6	94,0±28,2	38,0±11,4	114,0±34,2	СТП 02-02-2022	140	
6	Iron	mg/kg	<5	6,6±2,0	18,4±5,5	11,4±3,4	<5	СТП 02-02-2022	-	
7	Cadmium	mg/kg	<1	<1	<1	<1	<1	СТП 02-02-2022	2	
8	Nickel	mg/kg	<1	<1	<1	11,2±3,4	<1	СТП 02-02-2022	4	
9	Chromium	mg/kg	<1	<1	<1	3,4±1,0	<1	СТП 02-02-2022	6	
10	Nitrate nitrogen	mg/kg	5,0±0,75	3,6±0,5	1,9±0,3	3,1±0,5	2,6±0,4	ГОСТ 26951-86	29	
11	Mercury	mg/kg	0,0127±0,005	0,0053±0,00	0,0091±0,004	0,0083±0,004	0,0090±0,004	СТП 02-04-2022*	2,1	

SOIL SAMPLE TEST PROTOCOL No. 1657 – 1667

Item	Name of the indicator to be determined	Unit of measure.	Point analysis data			ND for the test method	MPC	The tests were conducted
			02-1640-25	02-1641-25	02-1642-25			
1	Petroleum products	mg/kg	280,0±126,0	340,0±153,0	460,0±207,0	СТП 02-03-2022	-	Abdyralieva A.A. Mursazhanova B.E.
2	Copper	mg/kg	1,40±0,42	1,20±0,36	2,60±0,78	СТП 02-02-2022	3	
3	Zinc	mg/kg	19,8±6,0	7,6±2,3	16,2±4,9	СТП 02-02-2022	23	
4	Lead	mg/kg	4,8±1,4	2,6±0,8	4,2±1,3	2,6±0,8	6	
5	Manganese	mg/kg	52,2±15,7	53,2±16,0	61,8±18,5	СТП 02-02-2022	140	
6	Iron	mg/kg	<5	<5	18,6±5,6	СТП 02-02-2022	-	
7	Cadmium	mg/kg	<1	<1	<1	СТП 02-02-2022	2	
8	Nickel	mg/kg	<1	<1	<1	СТП 02-02-2022	4	
9	Chromium	mg/kg	<1	<1	<1	СТП 02-02-2022	6	
10	Nitrate nitrogen	mg/kg	7,28±1,09	8,99±1,35	5,95±0,89	ГОСТ 26951-86	29	
11	Chlorides	mg/kg	113,60±23,86	127,80±26,84	113,60±23,86	ГОСТ 26425-85*	-	
12	Sulfates	mg/kg	52,18±7,30	52,18±7,30	52,18±7,30	ГОСТ 26426-85*	-	
13	Mercury	mg/kg	0,0896±0,040	0,0426±0,019	0,0252±0,011	СТП 02-04-2022*	2,1	

Item	Name of the indicator to be determined	Unit of measure.	Point analysis data			item	Name of the indicator to be determined	Unit of measure.
			02-**1643**-25	02-**1644**-25	02-**1645**-25			
1	Petroleum products	mg/kg	260,0±177,0	240,0±108,0	120,0±54,0	СТП 02-03-2022	-	Abdyralieva A.A. Mursazhanova B.E.
2	Copper	mg/kg	4,80±1,44	3,20±0,96	1,80±0,54	СТП 02-02-2022	3	
3	Zinc	mg/kg	30,4±9,1	32,2±9,7	17,4±5,2	СТП 02-02-2022	23	
4	Lead	mg/kg	8,4±2,5	14,0±4,2	5,0±1,5	СТП 02-02-2022	6	
5	Manganese	mg/kg	85,4±25,6	84,4±25,3	58,2±17,5	СТП 02-02-2022	140	
6	Iron	mg/kg	16,8±5,0	49,8±15,0	<5	СТП 02-02-2022	-	
7	Cadmium	mg/kg	<1	<1	<1	СТП 02-02-2022	2	
8	Nickel	mg/kg	<1	<1	<1	СТП 02-02-2022	4	

9	Chromium	mg/kg	<1	<1	<1	СТП 02-02-2022	6	
10	Nitrate nitrogen	mg/kg	7,17±1,08	2,28±0,34	24,42±3,66	ГОСТ 26951-86	29	
11	Chlorides	mg/kg	127,80±26,84	99,40±20,87	170,40±35,78	ГОСТ 26425-85*	-	
12	Sulfates	mg/kg	52,18±7,30	208,70±29,22	156,53±21,91	ГОСТ 26426-85*	-	
13	Mercury	mg/kg	0,01056±0,031	0,0951±0,043	0,0475±0,021	СТП 02-04-2022*	2,1	

Item	**Name of the indicator to be determined**	**Unit of measure.**	**Point analysis data**			**ND for the test method**	**MPC**	**The tests were conducted**
			02-**1646**-25	02-**1647**-25	02-**1648**-25			
1	Petroleum products	mg/kg	180,0±81,0	160,0±72,0	80,0±36,0	СТП 02-03-2022	-	Abdyralieva A.A. Mursazhanova B.E.
2	Copper	mg/kg	3,00±0,90	12,80±3,84	1,80±0,54	СТП 02-02-2022	3	
3	Zinc	mg/kg	34,4±10,3	26,0±7,8	13,2±4,0	СТП 02-02-2022	23	
4	Lead	mg/kg	6,2±1,9	6,6±2,0	3,8±1,1	СТП 02-02-2022	6	
5	Manganese	mg/kg	73,4±22,0	59,2±17,0	73,0±21,9	СТП 02-02-2022	140	
6	Iron	mg/kg	5,8±1,7	<5	<5	СТП 02-02-2022	-	
7	Cadmium	mg/kg	<1	<1	<1	СТП 02-02-2022	2	
8	Nickel	mg/kg	<1	<1	<1	СТП 02-02-2022	4	
9	Chromium	mg/kg	<1	<1	<1	СТП 02-02-2022	6	
10	Nitrate nitrogen	mg/kg	6,47±0,97	2,14±0,32	37,09±5,56	ГОСТ 26951-86	29	
11	Chlorides	mg/kg	99,40±20,87	113,60±23,86	85,20±17,89	ГОСТ 26425-85*	-	
12	Sulfates	mg/kg	104,35±14,61	156,53±21,91	104,35±14,61	ГОСТ 26426-85*	-	
13	Mercury	mg/kg	0,2808±0,070	0,0504±0,023	0,0669±0,030	СТП 02-04-2022*	2,1	

Item	**Name of the indicator to be determined**	**Unit of measure**	**Point analysis data**				**Item**	**Name of the indicator to be determined**	**Unit of measure**
			02-**1649**-25	02-**1650**-25	02-**1651**-25	02-**1652**-25			
1	Petroleum products	mg/kg	160,0±72,0	200,0±90,0	120,0±54,0	320,0±144,0	СТП 02-03-2022	-	Abdyralieva A.A.
2	Copper	mg/kg	2,80±0,84	3,80±1,14	1,20±0,36	1,40±0,42	СТП 02-02-2022	3	
3	Zinc	mg/kg	1,4±0,4	1,2±0,4	1,8±0,5	<1	СТП 02-02-2022	23	

4	Lead	mg/kg	<1	<1	2,2±0,7	<1	СТП 02-02-2022	6	Mursazhanova B.E.
5	Manganese	mg/kg	92,6±27,78	89,8±26,94	76,8±23,04	48,8±14,64	СТП 02-02-2022	140	
6	Iron	mg/kg	165,2±49,56	152,4±45,72	196,4±58,92	102,4±30,72	СТП 02-02-2022	-	
7	Cadmium	mg/kg	<1	<1	<1	<1	СТП 02-02-2022	2	
8	Nickel	mg/kg	2,0±0,60	2,8±0,84	1,2±0,36	<1	СТП 02-02-2022	4	
9	Chromium	mg/kg	<1	<1	<1	<1	СТП 02-02-2022	6	
10	Nitrate nitrogen	mg/kg	1,25±0,19	0,91±0,14	2,63±0,39	0,83±0,12	ГОСТ 26951-86	29	
11	Chlorides	mg/kg	85,20±17,89	99,40±20,87	56,80±11,93	56,80±11,93	ГОСТ 26425-85*	-	
12	Sulfates	mg/kg	104,35±14,61	417,41±58,44	156,53±21,91	104,35±14,61	ГОСТ 26426-85*	-	

Item	**Name of the indicator to be determined**	**Unit of measure.**	**Point analysis data**				**item**	**Name of the indicator to be determined**	**Unit of measure**
			02-**1653**-25	02-**1654**-25	02-**1655**-25	02-**1656**-25			
1	Petroleum products	mg/kg	<20	460,0±207,0	360,0±162,0	160,0±72,0	СТП 02-03-2022	-	Abdyralieva A.A. Mursazhanova B.E.
2	Copper	mg/kg	2,80±0,84	2,40±0,72	7,20±2,16	1,20±0,36	СТП 02-02-2022	3	
3	Zinc	mg/kg	27,2±8,1	24,8±7,4	20,2±6,0	14,4±4,3	СТП 02-02-2022	23	
4	Lead	mg/kg	23,8±7,1	20,4±6,1	9,6±2,9	3,8±1,1	СТП 02-02-2022	6	
5	Manganese	mg/kg	67,4±20,22	67,2±20,16	54,4±16,32	83,4±25,02	СТП 02-02-2022	140	
6	Iron	mg/kg	111,4±33,4	7,2±2,2	98,4±29,5	<5	СТП 02-02-2022	-	
7	Cadmium	mg/kg	<1	<1	<1	<1	СТП 02-02-2022	2	
8	Nickel	mg/kg	<1	<1	<1	<1	СТП 02-02-2022	4	
9	Chromium	mg/kg	1,0±0,3	<1	<1	<1	СТП 02-02-2022	6	
10	Nitrate nitrogen	mg/kg	22,64±3,40	41,99±6,30	3,81±0,57	5,60±0,84	ГОСТ 26951-86	29	
11	Chlorides	mg/kg	99,40±20,87	866,20±121,27	99,40±20,87	113,60±23,86	ГОСТ 26425-85*	-	
12	Sulfates	mg/kg	104,35±14,61	208,70±29,22	52,18±7,30	104,35±14,61	ГОСТ 26426-85*	-	
13	Mercury	mg/kg	0,0254±0,011	0,1445±0,043	0,0281±0,013	0,1917±0,057	СТП 02-04-2022*	2,1	

Item			**Point analysis data**	**Item**		

	Name of the indicator to be determined	Unit of measure.	02-**1657**-25	02-**1658**-25	02-**1659**-25	02-**1660**-25		Name of the indicator to be determined	Unit of measure.
1	Petroleum products	mg/kg	<20	20,0±9,0	140,0±63,0	160,0±72,0	СТП 02-03-2022	-	
2	Copper	mg/kg	<1	1,20±0,36	<1	<1	СТП 02-02-2022	3	Abdyralieva A.A.
3	Zinc	mg/kg	1,4±0,4	1,2±0,4	1,0±0,3	<1	СТП 02-02-2022	23	
4	Lead	mg/kg	2,6±0,8	3,8±1,1	3,2±1,0	4,6±1,4	СТП 02-02-2022	6	Mursazhanova B.E.
5	Manganese	mg/kg	70,4±21,12	75,0±22,5	71,2±21,36	64,8±19,44	СТП 02-02-2022	140	
6	Iron	mg/kg	5,8±1,7	6,2±1,9	9,0±2,7	11,4±9,4	СТП 02-02-2022	-	
7	Cadmium	mg/kg	<1	<1	<1	<1	СТП 02-02-2022	2	
8	Nickel	mg/kg	<1	<1	<1	<1	СТП 02-02-2022	4	
9	Chromium	mg/kg	<1	<1	<1	<1	СТП 02-02-2022	6	
10	Nitrate nitrogen	mg/kg	2,60±0,39	4,76±0,71	4,13±0,62	3,37±0,50	ГОСТ 26951-86	29	
11	pH	pH	6,55±0,20	6,83±0,20	7,13±0,20	7,48±0,20	ГОСТ 26423-85	-	
12	Mercury	mg/kg	0,0048±0,002	0,0130±0,006	0,0102±0,005	0,0132±0,006	СТП 02-04-2022*	2,1	

Item	Name of the indicator to be determined	Unit of measure.	Point analysis data				Oltem	Name of the indicator to be determined	Unit of measure.
			02-**1661**-25	02-**1662**-25	02-**1663**-25	02-**1664**-25			
1	Petroleum products	mg/kg	180,0±81,0	2180,0±981,0	300,0±135,0	140,0±63,0	СТП 02-03-2022	-	
2	Copper	mg/kg	<1	1,20±0,36	<1	<1	СТП 02-02-2022	3	Abdyralieva A.A.

3	Zinc	mg/kg	<1	<1	<1	<1	СТП 02-02-2022	23	
4	Lead	mg/kg	3,4±1,0	2,8±0,8	3,0±0,9	3,4±1,0	СТП 02-02-2022	6	Mursazhanova B.E.
5	Manganese	mg/kg	71,4±21,42	65,6±19,68	67,0±20,1	65,6±19,68	СТП 02-02-2022	140	
6	Iron	mg/kg	5,4±1,6	<5	11,8±3,5	5,8±1,7	СТП 02-02-2022	-	
7	Cadmium	mg/kg	<1	<1	<1	<1	СТП 02-02-2022	2	
8	Nickel	mg/kg	<1	<1	<1	<1	СТП 02-02-2022	4	
9	Chromium	mg/kg	<1	<1	<1	<1	СТП 02-02-2022	6	
10	Nitrate nitrogen	mg/kg	3,60±0,54	3,31±0,50	1,94±0,29	2,48±0,37	ГОСТ 26951-86	29	
11	pH	pH	7,63±0,20	7,41±0,20	7,87±0,20	7,79±0,20	ГОСТ 26423-85	-	
12	Mercury	mg/kg	0,0110±0,005	0,0152±0,007	0,0076±0,003	0,0140±0,006	СТП 02-04-2022*	2,1	

Item	**Name of the indicator to be determined**	**Unit of measure.**	**Point analysis data**			**Item**	**Name of the indicator to be determined**	**Unit of measure.**
			02-**1665**-25	02-**1666**-25	02-**1667**-25			
1	Petroleum products	mg/kg	5500,0±2475,0	160,0±72,0	160,0±72,0	СТП 02-03-2022	-	
2	Copper	mg/kg	1,20±0,36	1,20±0,36	1,20±0,36	СТП 02-02-2022	3	Abdyraliev a A.A.
3	Zinc	mg/kg	<1	1,2±0,4	1,2±0,4	СТП 02-02-2022	23	
4	Lead	mg/kg	3,0±0,9	4,0±1,2	3,4±1,0	СТП 02-02-2022	6	
5	Manganese	mg/kg	45,4±13,62	71,4±21,42	67,2±20,16	СТП 02-02-2022	140	Mursazhanova B.E.
6	Iron	mg/kg	<5	5,2±1,6	12,0±3,6	СТП 02-02-2022	-	
7	Cadmium	mg/kg	<1	<1	<1	СТП 02-02-2022	2	
8	Nickel	mg/kg	<1	<1	<1	СТП 02-02-2022	4	
9	Chromium	mg/kg	<1	<1	<1	СТП 02-02-2022	6	
10	Nitrate nitrogen	mg/kg	4,20±0,63	3,10±0,46	3,19±0,48	ГОСТ 26951-86	29	

11	pH	pH	7,65±0,20	7,88±0,20	6,91±0,20	ГОСТ 26423-85	-	
12	Mercury	mg/kg	0,0197±0,009	0,0157±0,007	0,0113±0,005	СТП 02-04-2022*	2,1	

TEST REPORT
ATMOSPHERIC AIR SAMPLES
№ 254 – 259

Name of the indicator to be determined	**ND for the test method**	**Analysis data by points, mg/m3**		**MPC max allowed mg/m3**	**The tests were conducted**
		03-**254**-25	03-**255**-25		
Sulphur dioxide	РД 52.04.186-89	0,092 ±0,011	0,082 ±0,010	**0,5**	Zholdoshbekova Z.Zh
Nitrogen dioxide	РД 52.04.186-89	0,075 ±0,013	0,081 ±0,015	**0,085**	
Carbon monoxide	СТП ДЭМ 03-01-2021 СТП ДЭМ 03-02-2021	0,2 ±0,04	0,4 ±0,08	**5,0**	
Suspended solids	РД 52.04.186-89	0,155 ±0,039	0,155 ±0,039	**0,5**	

Name of the indicator to be determined	**ND for the test method**	**Analysis data by points, mg/m3**		**MPC max allowed mg/m3**	**The tests were conducted**
		03-**256**-25	03-**257**-25		
Sulphur dioxide	РД 52.04.186-89	0,079 ±0,009	0,066 ±0,008	**0,5**	Zholdoshbekova Z.Zh.
Nitrogen dioxide	РД 52.04.186-89	0,100 ±0,018	0,119 ±0,021	**0,085**	
Carbon monoxide	СТП ДЭМ 03-01-2021 СТП ДЭМ 03-02-2021	0,5 ±0,1	0,3 ±0,06	**5,0**	
Suspended solids	РД 52.04.186-89	0,155 ±0,039	0,155 ±0,039	**0,5**	

Name of the indicator to be determined	**ND for the test method**	**Analysis data by points, mg/m3**		**MPC max allowed mg/m3**	**The tests were conducted**
		03-**258**-25	03-**259**-25		

Sulphur dioxide	РД 52.04.186-89	0,088 ±0,011	0,069 ±0,008	**0,5**	Zholdoshbekova Z.Zh
Nitrogen dioxide	РД 52.04.186-89	0,115 ±0,021	0,111 ±0,020	**0,085**	
Carbon monoxide	СТП ДЭМ 03-01-2021 СТП ДЭМ 03-02-2021	0,2 ±0,04	0,3 ±0,06	**5,0**	
Suspended solids	РД 52.04.186-89	0,155 ±0,039	0,155 ±0,039	**0,5**	

WATER SAMPLE
TEST REPORT
№ 158-160

No.	Name of the indicator to be determined	Unit of measure	ND for the test method	Point analysis data		MPC		The tests were conducted
				01-**158**-25	01-**159**-25	+	++	
1	Ammonium Nitrogen	mg/l	ГОСТ 33045-2014	<0,078	<0,078	**0,4**	**1,5**	Bayaly k.B. Zhunusova A.A.
2	Nitrite Nitrogen	mg/l	ПНД Ф 14.1:2:4.132-98*	<0,1	<0,1	**0,02**	**1,0**	
3	Nitrate Nitrogen	mg/l		1,16±0,15	1,21±0,16	**9,0**	**10,2**	
4	pH		РД 52.24.495-2005*	8,19±0,10	8,18±0,10	**6,5-8,5**		
5	Transparency	cm	СЭВ ч.1 М. 1977*	39,20	38,90	**-**	**-**	
6	Phosphates	mg/l	ПНД Ф 14.1:2:4.132-98*	<0,1	<0,1	**-**	**-**	

7	Chlorides	mg/l	СЭВ ч.1 М. 1977*	10,90	11,72	**300**	**350**	
8	Sulfates	mg/l		41,19	40,08	**100**	**500**	
9	Biochemical Oxygen Demand (BOD5)	mgO/l	ПНД Ф 14.1:2:3:4.123-97	0,60±0,13	0,51±0,08	**3,0**	**4,0**	
10	Petroleum Products	mg/l	ПНД Ф 14.1:2:4.128-98	0,030±0,010	0,010±0,004	**0,05**	**0,3**	
11	Iron	mg/l	ЦВ 3.18.05-2005*	<0,01	<0,01	**0,1**	**0,3**	Bayaly k.B Kutmanbaeva G.K. Zholchubekova G.K.
12	Manganese	mg/l		<0,0001	<0,0001	**0,01**	**0,1**	
13	Copper	mg/l		<0,001	<0,001	**0,001**	**1,0**	
14	Zinc	mg/l		<0,001	<0,001	**0,01**	**1,0**	
15	Nickel	mg/l		<0,0001	<0,0001	**0,01**	**0,02**	
16	Cadmium	mg/l		<0,0001	<0,0001	**0,005**	**0,001**	
17	Chromium	mg/l		<0,0001	<0,0001	**-**	**-**	
18	Lead	mg/l		<0,0001	<0,0001	**0,006**	**0,01**	

ISO/IEC 17025
№ KG 417/КЦА.ИЛ.049
От: 12.08.2022 г.
Область аккредитации
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* -Вне аккредитации

ДЕПАРТАМЕНТ ЭКОЛОГИЧЕСКОГО МОНИТОРИНГА ПРИ МИНИСТЕРСТВЕ ПРИРОДНЫХ РЕСУРСОВ, ЭКОЛОГИИ И ТЕХНИЧЕСКОГО НАДЗОРА КЫРГЫЗСКОЙ РЕСПУБЛИКИ

КЫРГЫЗ РЕСПУБЛИКАСЫНЫН ЖАРАТЫЛЫШ РЕСУРСТАРЫ, ЭКОЛОГИЯ ЖАНА ТЕХНИКАЛЫК КӨЗӨМӨЛ МИНИСТРЛИГИНЕ КАРАШТУУ ЭКОЛОГИЯЛЫК МОНИТОРИНГ ДЕПАРТАМЕНТИ

720005, г. Бишкек, ул. Байтик-Баатыра, 34 тел. (312) 54-61-22

ПРОТОКОЛ ИСПЫТАНИЙ ПРОБ ВОДЫ

№ 158 – 160

1. **Наименование предприятия, организации (заявитель):**
   Чуйская область, Кеминский район, г. Кемин, трасса Бишкек-Иссык-Куль, р. Чу, ОсОО "Агро-Куш".

2. **Регистрационный номер и место отбора проб/дата паспорта отбора проб:** *23.04.2025 г.*

   158 – р. Чу выше по течению, 42. 793113; 75. 716883;
   159 – р. Чу вблизи участка, 42. 796860; 75. 711262;
   160 – р. Чу ниже по течению, 42. 788026; 75. 709607.

3. **Дата и время отбора проб:**
   23.04.2025 г. с 12 часов 00 минут.

4. **Нормативный документ:**
   ГОСТ 31861-2012 Вода. Общие требования к отбору проб.

5. **Дата(ы) проведения испытаний:**
   .04. – 10.04.2025 г.

6. **Результаты испытаний:**

Стр. 1 из 3

Продолжение стр. 1 из 2

№	Наименование определяемого показателя	Ед. изм.	НД на метод испытаний	Данные анализа по точкам		ПДК		Испытания провел
				01-158-25	01-159-25	+	++	
1	Азот аммонийный	мг/л	ГОСТ 33045-2014	<0,078	<0,078	0,4	1,5	Баялы к.Б. Жунусова А.А.
2	Азот нитритный	мг/л	ПНД Ф 14.1:2:4.132-98*	<0,1	<0,1	0,02	1,0	
3	Азот нитратный	мг/л		1,16±0,15	1,21±0,16	9,0	10,2	
4	pH		РД 52.24.495-2005*	8,19±0,10	8,18±0,10	6,5-8,5		
5	Прозрачность	см	СЭВ ч.1 М. 1977*	39,20	38,90	-	-	
6	Фосфаты	мг/л	ПНД Ф 14.1:2:4.132-98*	<0,1	<0,1	-	-	
7	Хлориды	мг/л	СЭВ ч.1 М. 1977*	10,90	11,72	300	350	
8	Сульфаты	мг/л		41,19	40,08	100	500	
9	Биохимическое потребление кислорода ($БПК_5$)	мгО/л	ПНД Ф 14.1:2:3:4.123-97	0,60±0,13	0,51±0,08	3,0	4,0	
10	Нефтепродукты	мг/л	ПНД Ф 14.1:2:4.128-98	0,030±0,010	0,010±0,004	0,05	0,3	
11	Железо	мг/л	ЦВ 3.18.05-2005*	<0,01	<0,01	0,1	0,3	Баялы к.Б Кутманбаева Г.К. Жолчубекова Г.К.
12	Марганец	мг/л		<0,0001	<0,0001	0,01	0,1	
13	Медь	мг/л		<0,001	<0,001	0,001	1,0	
14	Цинк	мг/л		<0,001	<0,001	0,01	1,0	
15	Никель	мг/л		<0,0001	<0,0001	0,01	0,02	
16	Кадмий	мг/л		<0,0001	<0,0001	0,005	0,001	
17	Хром	мг/л		<0,0001	<0,0001	-	-	
18	Свинец	мг/л		<0,0001	<0,0001	0,006	0,01	

Стр.

Продолжение стр. 2 из 3

№	Наименование определяемого показателя	Ед. изм.	НД на метод испытаний	Данные анализа по точкам	ПДК		Испытания провел
				01-160-25	+	++	
1	Азот аммонийный	мг/л	ГОСТ 33045-2014	<0,078	0,4	1,5	Баялы к.Б. Жунусова А.А.
2	Азот нитритный	мг/л		<0,1	0,02	1,0	
3	Азот нитратный	мг/л		1,07±0,14	9,0	10,2	
4	pH		РД 52.24.495-2005*	8,18±0,10	6,5-8,5		
5	Прозрачность	см	СЭВ ч.1 М. 1977*	38,50	-	-	
6	Фосфаты	мг/л	ПНД Ф 14.1:2:4.132-98*	<0,1	-	-	
7	Хлориды	мг/л	СЭВ ч.1 М. 1977*	9,62	300	350	
8	Сульфаты	мг/л		35,85	100	500	
9	Биохимическое потребление кислорода ($БПК_5$)	мгО/л	ПНД Ф 14.1:2:3:4.123-97	0,07	3,0	4,0	
10	Нефтепродукты	мг/л	ПНД Ф 14.1:2:4.128-98	0,016±0,006	0,05	0,3	
11	Железо	мг/л	ЦВ 3.18.05-2005*	<0,01	0,1	0,3	Баялы к.Б Кутманбаева Г.К. Жолчубекова Г.К.
12	Марганец	мг/л		<0,0001	0,01	0,1	
13	Медь	мг/л		<0,001	0,001	1,0	
14	Цинк	мг/л		<0,001	0,01	1,0	
15	Никель	мг/л		<0,0001	0,01	0,02	
16	Кадмий	мг/л		<0,0001	0,005	0,001	
17	Хром	мг/л		<0,0001	-	-	
18	Свинец	мг/л		<0,0001	0,006	0,01	

+Перечень ПДК для рыбохозяйственного водопользования

++Перечень ПДК хозяйственно-питьевого и культурно-бытового водопользования

Заключение*: *По результатам химических испытаний в отобранных пробах воды не наблюдается превышение по сравнению ПДК (предельно-допустимая концентрация) для рыбохозяйственной категории по всем определяемым показателям. Предельно допустимые концентрации химических веществ в воде водных объектов хозяйственно-питьевого и культурно бытового водопользовании, Утв. Постановлением Правительства КР №201 от 11 апреля 2016г.*

Сообщаемая расширенная неопределенность измерения указывается как суммарная стандартная неопределенность измерения, умноженная на коэффициент охвата k=2, который обеспечивает уровень доверия приблизительно 95%. Неопределенность измерений, возникающая в результате отбора проб, включена в расширенную неопределенность измерений.

Заведующая ОМВР Кутманбаева Г. К.

Заведующая ОКОПАИР Дарбакова А.С.

Исполнитель не несет ответственности, если проба отобрана самим заказчиком

Перепечатка протокола без разрешения ДЭМ запрещена.

ОМВР – отдел мониторинга водных ресурсов (поверхностных и сточных вод)

ОКОПАИР - отдел координации отбора проб, аналитики и измерение радиации.

Конец протокола.

Стр. 3 из 3

КЫРГЫЗ РЕСПУБЛИКАСЫНЫН ЖАРАТЫЛЫШ РЕСУРСТАРЫ, ЭКОЛОГИЯ ЖАНА ТЕХНИКАЛЫК КӨЗӨМӨЛ МИНИСТРЛИГИНЕ КАРАШТУУ ЭКОЛОГИЯЛЫК МОНИТОРИНГ ДЕПАРТАМЕНТИ

ДЕПАРТАМЕНТ ЭКОЛОГИЧЕСКОГО МОНИТОРИНГА ПРИ МИНИСТЕРСТВЕ ПРИРОДНЫХ РЕСУРСОВ, ЭКОЛОГИИ И ТЕХНИЧЕСКОГО НАДЗОРА КЫРГЫЗСКОЙ РЕСПУБЛИКИ

720005, г. Бишкек, ул. Байтик Баатыра, 34 тел. (312) 54-61-22

ПАСПОРТ НА ПРОБУ
(вода)

1. **Наименование, адрес объекта:** 1. Кемин, трасса Бишкек-Иссык-Куль, р. Чу, ОсОО «Агро-Кум».
2. **Основание для отбора:** ______
3. **Порядковый номер и место отбора проб:**
   1. Выше по течению р. Чу, 42.793113, 75.716883;
   2. Вблизи участка р. Чу, 42.796860, 75.711262;
   3. ниже по течению р. Чу, 42.798026, 75.709607.
4. **Цель отбора:** Опред-ие кач-ва воды
5. **Характер отобранных проб:** разовые
6. **Условия окружающей среды** облачно
7. **Дата отбора проб** 23.04.2025 г с 12:00 ч
8. **НД:** *ГОСТ 31861-2012 "Вода. Общие требования к отбору проб"; Правила охраны поверхностных вод КР от 14 марта 2016-год №128.*

Пробы отобрал: вед. специалист Мелибек у. Р. [подпись]

Представитель ДЭМ
(должность, фамилия) ______

Присутствовали:

Госинспектор
(должность, фамилия) ______

Представитель предприятия
(должность, фамилия) ______ [подпись]

Нач. СБ Турдунбаев З.Б.

1 стр из 1

ISO/IEC 17025
№ KG 417/КЦА.ИЛ.049
От: 12.08.2022 г.
Область аккредитации
на сайте: www.kca.gov.kg

*Вне аккредитации

ДЕПАРТАМЕНТ ЭКОЛОГИЧЕСКОГО МОНИТОРИНГА
ПРИ МИНИСТЕРСТВЕ ПРИРОДНЫХ РЕСУРСОВ, ЭКОЛОГИИ И
ТЕХНИЧЕСКОГО НАДЗОРА КЫРГЫЗСКОЙ РЕСПУБЛИКИ

КЫРГЫЗ РЕСПУБЛИКАСЫНЫН ЖАРАТЫЛЫШ
РЕСУРСТАРЫ,
ЭКОЛОГИЯ ЖАНА ТЕХНИКАЛЫК КӨЗӨМӨЛ
МИНИСТРЛИГИНЕ КАРАШТУУ
ЭКОЛОГИЯЛЫК МОНИТОРИНГ ДЕПАРТАМЕНТИ

720005, г. Бишкек, ул. Байтик-Баатыра, 34 тел. (312) 54-61-22

ПРОТОКОЛ ИСПЫТАНИЙ
ПРОБ АТМОСФЕРНОГО ВОЗДУХА

№ 254 – 259

1. **Наименование предприятия, организации (заявитель):**
   г. Кемин, Чуйская область, трасса Бишкек – Иссык-Куль, площадка птичников, ОсОО "Агро-Куш".

2. **Регистрационный номер и место отбора проб/дата паспорта отбора проб:** *23.04.2025 г.*

   254 – Южная сторона птичника №1, 42.785 760 – 75.734 023;
   255 – Западная сторона птичника №1, 42.786 645 – 75.733 910;
   256 – Северная сторона птичника №1, 42.787 966 – 75.733 731;
   257 – Южная сторона птичника №2, 42.789 118 – 75.715 637;
   258 – Западная сторона птичника №2, 42.789 627 – 75.715 830;
   259 – Северная сторона птичника №2, 42.790 382 – 75.716 105.

3. **Дата и время отбора проб:**
   23.04.2025 г., с 13 часов 30 минут.

4. **Нормативный документ:**
   РД 52.04.186-89 – Руководство по контролю загрязнения атмосферы.
   СТП ДЭМ 03-01-2021 – Отбор проб атмосферного воздуха.
   СТП ДЭМ 03-02-2021 – Методика выполнения измерений содержания оксида углерода (CO) в атмосферном воздухе с помощью газоанализатора стационарного электрохимического К-100.

5. **Дата(ы) проведения испытаний:**
   24.04. – 28.04.2025 г.

6. **Результаты испытаний:**

Стр. 1 из 3

Наименование определяемого показателя	НД на метод испытаний	Данные анализа по точкам, мг/м³		ПДК макс. раз. мг/м³	Испытания провел
		03-254-25	03-255-25		
Диоксид серы	РД 52.04.186-89	0,092 ±0,011	0,082 ±0,010	0,5	Жолдошбекова З.Ж.
Диоксид азота	РД 52.04.186-89	0,075 ±0,013	0,081 ±0,015	0,085	
Оксид углерода	СТП ДЭМ 03-01-2021 СТП ДЭМ 03-02-2021	0,2 ±0,04	0,4 ±0,08	5,0	
Взвешенные вещества	РД 52.04.186-89	0,155 ±0,039	0,155 ±0,039	0,5	

Наименование определяемого показателя	НД на метод испытаний	Данные анализа по точкам, мг/м³		ПДК макс. раз. мг/м³	Испытания провел
		03-256-25	03-257-25		
Диоксид серы	РД 52.04.186-89	0,079 ±0,009	0,066 ±0,008	0,5	Жолдошбекова З.Ж.
Диоксид азота	РД 52.04.186-89	0,100 ±0,018	0,119 ±0,021	0,085	
Оксид углерода	СТП ДЭМ 03-01-2021 СТП ДЭМ 03-02-2021	0,5 ±0,1	0,3 ±0,06	5,0	
Взвешенные вещества	РД 52.04.186-89	0,155 ±0,039	0,155 ±0,039	0,5	

Наименование определяемого показателя	НД на метод испытаний	Данные анализа по точкам, мг/м³		ПДК макс. раз. мг/м³	Испытания провел
		03-258-25	03-259-25		
Диоксид серы	РД 52.04.186-89	0,088 ±0,011	0,069 ±0,008	0,5	Жолдошбекова З.Ж.
Диоксид азота	РД 52.04.186-89	0,115 ±0,021	0,111 ±0,020	0,085	
Оксид углерода	СТП ДЭМ 03-01-2021 СТП ДЭМ 03-02-2021	0,2 ±0,04	0,3 ±0,06	5,0	
Взвешенные вещества	РД 52.04.186-89	0,155 ±0,039	0,155 ±0,039	0,5	

Сообщаемая расширенная неопределенность измерения указывается как суммарная стандартная неопределенность измерения, умноженная на коэффициент охвата k=2, который обеспечивает уровень доверия приблизительно 95%. Неопределенность измерений, возникающая в результате отбора проб, включена в расширенную неопределенность измерений.

Заключение*: *По результатам химических испытаний в отобранных пробах атмосферного воздуха не наблюдается превышение по сравнению ПДК (предельно-допустимая концентрация) максимально разовый по всем определяемым показателям. Установленная ГН «ПДК загрязняющих веществ в атмосферном воздухе населенных мест». утв. Постановлением Правительства КР №201 (приложение 17) от 11 апреля 2016г.*

Заведующая СМАВиПВ Абдылдаева А.Н.

Заведующая ОКОПАИР Дарбакова А.С.

Исполнитель не несет ответственности, если проба отобрана самим заказчиком
Перепечатка протокола без разрешения ДЭМ запрещена.
СМАВиПВ – сектор мониторинга атмосферного воздуха и промышленных выбросов.
ОКОПАИР- отдел координации отбора проб, аналитики и измерение радиации.

Конец протокола.

КЫРГЫЗ РЕСПУБЛИКАСЫНЫН ЖАРАТЫЛЫШ РЕСУРСТАРЫ, ЭКОЛОГИЯ ЖАНА ТЕХНИКАЛЫК КӨЗӨМӨЛ МИНИСТРЛИГИНЕ КАРАШТУУ ЭКОЛОГИЯЛЫК МОНИТОРИНГ ДЕПАРТАМЕНТИ

ДЕПАРТАМЕНТ ЭКОЛОГИЧЕСКОГО МОНИТОРИНГА ПРИ МИНИСТЕРСТВЕ ПРИРОДНЫХ РЕСУРСОВ, ЭКОЛОГИИ И ТЕХНИЧЕСКОГО НАДЗОРА КЫРГЫЗСКОЙ РЕСПУБЛИКИ

720005, г. Бишкек, ул. Байтик Баатыра, 34 тел. (312) 54-61-22

ПАСПОРТ НА ПРОБУ
(атмосферный воздух)

1. **Наименование, адрес объекта:** г. Кемин, траса Бишкек-Кант-Кум, площадка птичников, ОсОО «Агро Жуш»
2. **Основание для отбора:** _____
3. **Порядковый номер и место отбора проб:**
   1 Южная сторона птичника №1, 42.785760, 75.734023
   2. Западная сторона птичника №1, 42.786645, 75.733910
   3. Северная сторона птичника №1, 42.787966, 75.733731
   4 Южная сторона птичника №2, 42.789118, 75.715637
   5. Западная сторона птичника №2, 42.789627, 75.715830
   6. Северная сторона птичника №2, 42.790382, 75.716105.
4. **Цель отбора:** Опред-ие кач-ва воздуха
5. **Характер отобранных проб:** разовый
6. **Условия окружающей среды** облачно
7. **Температура перед аспиратором:** +9
8. **Атмосферное давление:** 632
9. **Дата и время отбора проб:** 23.04.2026г с 13:30ч
10. **НД на отбор проб:** РД 52.04.186-89 Руководство по контролю загрязнения атмосферы
    СТП ДЭМ 03-01-2021 Отбор проб атмосферного воздуха

Пробы отобрал: вед. специалист Жеенсбеков Р

Представитель ДЭМ
(должность, фамилия) _____

Присутствовали:

Госинспектор
(должность, фамилия) _____

Представитель предприятия
(должность, фамилия) _____

Нач. СБ Тургунбаев З.Б

1 стр из 1

ISO/IEC 17025
№ KG 417/КЦА.ИЛ.049
От: 12.08.2022 г.
Область аккредитации
на сайте: www.kca.gov.kg

* - Вне аккредитации

ДЕПАРТАМЕНТ ЭКОЛОГИЧЕСКОГО МОНИТОРИНГА
ПРИ МИНИСТЕРСТВЕ ПРИРОДНЫХ РЕСУРСОВ, ЭКОЛОГИИ И
ТЕХНИЧЕСКОГО НАДЗОРА КЫРГЫЗСКОЙ РЕСПУБЛИКИ

КЫРГЫЗ РЕСПУБЛИКАСЫНЫН ЖАРАТЫЛЫШ РЕСУРСТАРЫ,
ЭКОЛОГИЯ ЖАНА ТЕХНИКАЛЫК КӨЗӨМӨЛ
МИНИСТРЛИГИНЕ КАРАШТУУ
ЭКОЛОГИЯЛЫК МОНИТОРИНГ ДЕПАРТАМЕНТИ

720005, г. Бишкек, ул. Байтик-Баатыра, 34 тел. (312) 54-61-22

ПРОТОКОЛ ИСПЫТАНИЙ ПРОБ ПОЧВЫ

№ 1437 – 1441

1. **Наименование предприятия, организации (заявитель):**
   Чуйская область, Кеминский район, г. Кемин, трасса Бишкек-Иссык-Куль, р. Чу, ОсОО "Агро-Куш".

2. **Регистрационный номер и место отбора проб/дата паспорта отбора проб**: *23.04.2025 г.*

   1437 – Северо-восточная сторона участка цеха, 42. 795503; 75. 711757;
   1438 – Северо-западная сторона участка цеха, 42. 795567; 75. 709803;
   1439 – Западно-восточная сторона участка цеха, 42. 794574; 75. 708604;
   1440 – Западно-южная сторона участка цеха, 42. 794140; 75.708468;
   1441 – фоновая.

3. **Дата и время отбора проб:**
   23.04.2025 г. с 11 часов 30 минут.

4. **Нормативный документ:**
   ГОСТ 17.4.4.02-2017 «Охрана природы Почвы. Методы отбора и подготовки проб для химического, бактериологического и гельминтологического анализа».

5. **Дата(ы) проведения испытаний:**
   24.04. – 12.05.2025 г.

6. **Результаты испытаний:**

Стр. 1 из 2

№п/п	Наименование определяемого показателя	Ед. изм.	Данные анализа по точкам					НД на метод испытаний	ПДК	Испытания провел
			02-1437-25	02-1438-25	02-1439-25	02-1440-25	02-1441-25			
1	Нефтепродукты	мг/кг	340,0±153,0	340,0±153,0	320,0±144,0	580,0±261,0	160,0±72,0	СТП 02-03-2022	-	Ыбыкеева Г.Ж. Мурсажанова Б.Э.
2	Медь	мг/кг	1,2±0,4	1,6±0,5	1,4±0,4	2,0±0,6	1,2±0,4	СТП 02-02-2022	3	
3	Цинк	мг/кг	21,4±6,4	1,4±0,4	5,0±1,5	9,0±3,0	1,4±0,4	СТП 02-02-2022	23	
4	Свинец	мг/кг	5,6±2,0	4,0±1,2	5,4±1,6	4,6±1,4	3,4±1,0	СТП 02-02-2022	6	
5	Марганец	мг/кг	80,6±24,2	112,0±33,6	94,0±28,2	38,0±11,4	114,0±34,2	СТП 02-02-2022	140	
6	Железо	мг/кг	<5	6,6±2,0	18,4±5,5	11,4±3,4	<5	СТП 02-02-2022	-	
7	Кадмий	мг/кг	<1	<1	<1	<1	<1	СТП 02-02-2022	2	
8	Никель	мг/кг	<1	<1	<1	11,2±3,4	<1	СТП 02-02-2022	4	
9	Хром	мг/кг	<1	<1	<1	3,4±1,0	<1	СТП 02-02-2022	6	
10	Азот нитратный	мг/кг	5,0±0,75	3,6±0,5	1,9±0,3	3,1±0,5	2,6±0,4	ГОСТ 26951-86	29	
11	Ртуть	мг/кг	0,0127±0,005	0,0053±0,00	0,0091±0,004	0,0083±0,004	0,0090±0,004	СТП 02-04-2022*	2,1	

Сообщаемая расширенная неопределенность измерения указывается как суммарная стандартная неопределенность измерения, умноженная на коэффициент охвата k=2, который обеспечивает уровень доверия приблизительно 95%. Неопределенность измерений, возникающая в результате отбора проб, включена в расширенную неопределенность измерений. Неопределенность измерений:

Заключение*: *По результатам химических испытаний в отобранных пробах почвы наблюдается превышение по сравнению с фоновой концентрацией и ПДК (предельно-допустимая концентрация), по нефтепродуктам: в точке №1437 – в 2,2 раза; в точке №1438 – в 2,2 раза; в точке №1439 – в 2 раза; по железу: в точке №1439 – в 3,7 раз; в точке №1440 – в 2,3 раза; по никелю: №1440 – в 2,9 раз. Установленная ГН (Гигиенические нормативы) «ПДК (Предельно допустимая концентрация) загрязняющих веществ в почве населенных мест». Утв. Постановлением Правительства КР №201 от 11 апреля 2016 г. установленная ГН «ПДК загрязняющих веществ в почве населенных мест». Утв. Постановлением Правительства КР №201 от 11 апреля 2016г.*

Заведующий ОМЗРОКУ Ыбыкеева Г.Ж.

Заведующая ОКОПАИР Дарбакова А. С.

Исполнитель не несет ответственности, если проба отобрана самим заказчиком
Перепечатка протокола без разрешения ДЭМ запрещена.
ОМЗРОКУ - Отдел мониторинга земельных ресурсов и по определению качества угля.
ОКОПАИР- Отдел координации отбора проб аналитики и измерения радиации.

Конец протокола.

КЫРГЫЗ РЕСПУБЛИКАСЫНЫН ЖАРАТЫЛЫШ РЕСУРСТАРЫ, ЭКОЛОГИЯ ЖАНА ТЕХНИКАЛЫК КӨЗӨМӨЛ МИНИСТРЛИГИНЕ КАРАШТУУ ЭКОЛОГИЯЛЫК МОНИТОРИНГ ДЕПАРТАМЕНТИ

ДЕПАРТАМЕНТ ЭКОЛОГИЧЕСКОГО МОНИТОРИНГА ПРИ МИНИСТЕРСТВЕ ПРИРОДНЫХ РЕСУРСОВ, ЭКОЛОГИИ И ТЕХНИЧЕСКОГО НАДЗОРА КЫРГЫЗСКОЙ РЕСПУБЛИКИ

720005, г. Бишкек, ул. Байтик Баатыра, 34 тел. (312) 54-61-22

ПАСПОРТ НА ПРОБУ
(почва)

1. **Наименование, адрес объекта:** г. Кемин, трасса Бишкек-Иссык-Куль, участок цеха, ОсОО «Агро-Нуш».
2. **Основание для отбора:**
3. **Порядковый номер и место отбора проб:**
   1. северо-восточная сторона участка цех, 42.795503, 75.711757;
   2. северо-западная сторона участка цех, 42.795567, 75.709803;
   3. западно-(северная) восточная сторона участка цех, 42.794574, 75.708604;
   4. западно-южная сторона участка цех, 42.794140, 75.708468;
   5. Фон, 42.794908, 75.706930.
4. **Цель отбора:** Опред-ие кач-ва почвы
5. **Характер отобранных проб:** единичный
6. **Условия окружающей среды:** обычно
7. **Дата отбора проб:** 23.04.2025 г с 11:30 ч
8. **НД на отбор проб:** ГОСТ 17.4.4.02 – 2017 "Охрана природы ПОЧВЫ. Методы отбора и подготовки проб для химического, бактериологического и гельминтологического анализа".

Пробы отобрал: вед. специалист. Калыбек у. Р.

Представитель ДЭМ

(должность, фамилия)

Присутствовали:

Госинспектор

(должность, фамилия)

Представитель предприятия

(должность, фамилия)

Нач. СБ Турдубаев З.Б.

1 стр из 1

ISO/IEC 17025
№ KG 417/КЦА.ИЛ.049
От: 12.08.2022 г.
Область аккредитации
на сайте: www.kca.gov.kg

* - Вне аккредитации

ДЕПАРТАМЕНТ ЭКОЛОГИЧЕСКОГО МОНИТОРИНГА ПРИ МИНИСТЕРСТВЕ ПРИРОДНЫХ РЕСУРСОВ, ЭКОЛОГИИ И ТЕХНИЧЕСКОГО НАДЗОРА КЫРГЫЗСКОЙ РЕСПУБЛИКИ

КЫРГЫЗ РЕСПУБЛИКАСЫНЫН ЖАРАТЫЛЫШ РЕСУРСТАРЫ, ЭКОЛОГИЯ ЖАНА ТЕХНИКАЛЫК КӨЗӨМӨЛ МИНИСТРЛИГИНЕ КАРАШТУУ ЭКОЛОГИЯЛЫК МОНИТОРИНГ ДЕПАРТАМЕНТИ

720005, г. Бишкек, ул. Байтик-Баатыра, 34 тел. (312) 54-61-22

ПРОТОКОЛ ИСПЫТАНИЙ ПРОБ ПОЧВЫ

№ 1657 – 1667

1. **Наименование предприятия, организации (заявитель):**
   Чуйская область, Кеминский район, Птичник, площадка №1, Площадка №2, ОсОО "Агро-Куш".

2. **Регистрационный номер и место отбора проб/дата паспорта отбора проб**: *13.06.2025 г.*

   ***1657** – Юго-западная сторона площадки №1 42.785 874 – 75.733 885;*
   ***1658** – Северо-западная сторона площадки №1 42.787 843 – 75.737 084;*
   ***1659** – Северо-восточная сторона площадки №1 42.788 109 – 75.737 084;*
   ***1660** – Юго-восточная сторона площадки №1 42.786 279 – 75.738 107;*
   ***1661** – Центр площадки №1 42.787 530 – 75.735 557;*
   ***1662** – Юго-восточная сторона площадки №2 42.788 369 – 75.719 808;*
   ***1663** – Северо-восточная сторона площадки №2 42.789 874 – 75.720 552;*
   ***1664** – Северо-западная сторона площадки №2 42.790 419 – 75.715 099;*
   ***1665** – Юго-западная сторона площадки №2 42.789 779 – 75.714 254;*
   ***1666** – Центр площадки №2 42.789 670 – 75.718 273;*
   ***1667** – Фон.*

3. **Дата и время отбора проб:**
   13.06.2025 г. с 11 часов 00 минут.

4. **Нормативный документ:**
   ГОСТ 17.4.4.02-2017 «Охрана природы Почвы. Методы отбора и подготовки проб для химического, бактериологического и гельминтологического анализа».

5. **Дата(ы) проведения испытаний:**
   12.06. – 30.06.2025 г.

6. **Результаты испытаний:**

Стр. 1 из 6

Продолжение стр. 1 из 6

№ п/п	Наименование определяемого показателя	Ед. изм.	Данные анализа по точкам			НД на метод испытаний	ПДК	Испытания провел
			02-**1640**-25	02-**1641**-25	02-**1642**-25			
1	Нефтепродукты	мг/кг	280,0±126,0	340,0±153,0	460,0±207,0	СТП 02-03-2022	-	Абдыралиева А.А. Мурсажанова Б.Э.
2	Медь	мг/кг	1,40±0,42	1,20±0,36	2,60±0,78	СТП 02-02-2022	3	
3	Цинк	мг/кг	19,8±6,0	7,6±2,3	16,2±4,9	СТП 02-02-2022	23	
4	Свинец	мг/кг	4,8±1,4	2,6±0,8	4,2±1,3	2,6±0,8	6	
5	Марганец	мг/кг	52,2±15,7	53,2±16,0	61,8±18,5	СТП 02-02-2022	140	
6	Железо	мг/кг	<5	<5	18,6±5,6	СТП 02-02-2022	-	
7	Кадмий	мг/кг	<1	<1	<1	СТП 02-02-2022	2	
8	Никель	мг/кг	<1	<1	<1	СТП 02-02-2022	4	
9	Хром	мг/кг	<1	<1	<1	СТП 02-02-2022	6	
10	Азот нитратный	мг/кг	7,28±1,09	8,99±1,35	5,95±0,89	ГОСТ 26951-86	29	
11	Хлориды	мг/кг	113,60±23,86	127,80±26,84	113,60±23,86	ГОСТ 26425-85*	-	
12	Сульфаты	мг/кг	52,18±7,30	52,18±7,30	52,18±7,30	ГОСТ 26426-85*	-	
13	Ртуть	мг/кг	0,0896±0,040	0,0426±0,019	0,0252±0,011	СТП 02-04-2022*	2,1	

№ п/п	Наименование определяемого показателя	Ед. изм.	Данные анализа по точкам			НД на метод испытаний	ПДК	Испытания провел
			02-**1643**-25	02-**1644**-25	02-**1645**-25			
1	Нефтепродукты	мг/кг	260,0±177,0	240,0±108,0	120,0±54,0	СТП 02-03-2022	-	Абдыралиева А.А. Мурсажанова Б.Э.
2	Медь	мг/кг	4,80±1,44	3,20±0,96	1,80±0,54	СТП 02-02-2022	3	
3	Цинк	мг/кг	30,4±9,1	32,2±9,7	17,4±5,2	СТП 02-02-2022	23	
4	Свинец	мг/кг	8,4±2,5	14,0±4,2	5,0±1,5	СТП 02-02-2022	6	
5	Марганец	мг/кг	85,4±25,6	84,4±25,3	58,2±17,5	СТП 02-02-2022	140	
6	Железо	мг/кг	16,8±5,0	49,8±15,0	<5	СТП 02-02-2022	-	
7	Кадмий	мг/кг	<1	<1	<1	СТП 02-02-2022	2	
8	Никель	мг/кг	<1	<1	<1	СТП 02-02-2022	4	
9	Хром	мг/кг	<1	<1	<1	СТП 02-02-2022	6	
10	Азот нитратный	мг/кг	7,17±1,08	2,28±0,34	24,42±3,66	ГОСТ 26951-86	29	
11	Хлориды	мг/кг	127,80±26,84	99,40±20,87	170,40±35,78	ГОСТ 26425-85*	-	
12	Сульфаты	мг/кг	52,18±7,30	208,70±29,22	156,53±21,91	ГОСТ 26426-85*	-	
13	Ртуть	мг/кг	0,01056±0,031	0,0951±0,043	0,0475±0,021	СТП 02-04-2022*	2,1	

Стр. 2 из 6

Продолжение стр. 2 из 6

№ п/п	Наименование определяемого показателя	Ед. изм.	Данные анализа по точкам			НД на метод испытаний	ПДК	Испытания провел
			02-**1646**-25	02-**1647**-25	02-**1648**-25			
1	Нефтепродукты	мг/кг	180,0±81,0	160,0±72,0	80,0±36,0	СТП 02-03-2022	-	Абдыралиева А.А. Мурсажанова Б.Э.
2	Медь	мг/кг	3,00±0,90	12,80±3,84	1,80±0,54	СТП 02-02-2022	3	
3	Цинк	мг/кг	34,4±10,3	26,0±7,8	13,2±4,0	СТП 02-02-2022	23	
4	Свинец	мг/кг	6,2±1,9	6,6±2,0	3,8±1,1	СТП 02-02-2022	6	
5	Марганец	мг/кг	73,4±22,0	59,2±17,0	73,0±21,9	СТП 02-02-2022	140	
6	Железо	мг/кг	5,8±1,7	<5	<5	СТП 02-02-2022	-	
7	Кадмий	мг/кг	<1	<1	<1	СТП 02-02-2022	2	
8	Никель	мг/кг	<1	<1	<1	СТП 02-02-2022	4	
9	Хром	мг/кг	<1	<1	<1	СТП 02-02-2022	6	
10	Азот нитратный	мг/кг	6,47±0,97	2,14±0,32	37,09±5,56	ГОСТ 26951-86	29	
11	Хлориды	мг/кг	99,40±20,87	113,60±23,86	85,20±17,89	ГОСТ 26425-85*	-	
12	Сульфаты	мг/кг	104,35±14,61	156,53±21,91	104,35±14,61	ГОСТ 26426-85*	-	
13	Ртуть	мг/кг	0,2808±0,070	0,0504±0,023	0,0669±0,030	СТП 02-04-2022*	2,1	

№ п/п	Наименование определяемого показателя	Ед. изм.	Данные анализа по точкам				НД на метод испытаний	ПДК	Испытания провел
			02-**1649**-25	02-**1650**-25	02-**1651**-25	02-**1652**-25			
1	Нефтепродукты	мг/кг	160,0±72,0	200,0±90,0	120,0±54,0	320,0±144,0	СТП 02-03-2022	-	Абдыралиева А.А. Мурсажанова Б.Э.
2	Медь	мг/кг	2,80±0,84	3,80±1,14	1,20±0,36	1,40±0,42	СТП 02-02-2022	3	
3	Цинк	мг/кг	1,4±0,4	1,2±0,4	1,8±0,5	<1	СТП 02-02-2022	23	
4	Свинец	мг/кг	<1	<1	2,2±0,7	<1	СТП 02-02-2022	6	
5	Марганец	мг/кг	92,6±27,78	89,8±26,94	76,8±23,04	48,8±14,64	СТП 02-02-2022	140	
6	Железо	мг/кг	165,2±49,56	152,4±45,72	196,4±58,92	102,4±30,72	СТП 02-02-2022	-	
7	Кадмий	мг/кг	<1	<1	<1	<1	СТП 02-02-2022	2	
8	Никель	мг/кг	2,0±0,60	2,8±0,84	1,2±0,36	<1	СТП 02-02-2022	4	
9	Хром	мг/кг	<1	<1	<1	<1	СТП 02-02-2022	6	
10	Азот нитратный	мг/кг	1,25±0,19	0,91±0,14	2,63±0,39	0,83±0,12	ГОСТ 26951-86	29	
11	Хлориды	мг/кг	85,20±17,89	99,40±20,87	56,80±11,93	56,80±11,93	ГОСТ 26425-85*	-	
12	Сульфаты	мг/кг	104,35±14,61	417,41±58,44	156,53±21,91	104,35±14,61	ГОСТ 26426-85*	-	

Стр. 3 из 6

№ п/п	Наименование определяемого показателя	Ед. изм.	Данные анализа по точкам				НД на метод испытаний	ПДК	Испытания провел
			02-**1653**-25	02-**1654**-25	02-**1655**-25	02-**1656**-25			
1	Нефтепродукты	мг/кг	<20	460,0±207,0	360,0±162,0	160,0±72,0	СТП 02-03-2022	-	Абдыралиева А.А. Мурсажанова Б.Э.
2	Медь	мг/кг	2,80±0,84	2,40±0,72	7,20±2,16	1,20±0,36	СТП 02-02-2022	3	
3	Цинк	мг/кг	27,2±8,1	24,8±7,4	20,2±6,0	14,4±4,3	СТП 02-02-2022	23	
4	Свинец	мг/кг	23,8±7,1	20,4±6,1	9,6±2,9	3,8±1,1	СТП 02-02-2022	6	
5	Марганец	мг/кг	67,4±20,22	67,2±20,16	54,4±16,32	83,4±25,02	СТП 02-02-2022	140	
6	Железо	мг/кг	111,4±33,4	7,2±2,2	98,4±29,5	<5	СТП 02-02-2022	-	
7	Кадмий	мг/кг	<1	<1	<1	<1	СТП 02-02-2022	2	
8	Никель	мг/кг	<1	<1	<1	<1	СТП 02-02-2022	4	
9	Хром	мг/кг	1,0±0,3	<1	<1	<1	СТП 02-02-2022	6	
10	Азот нитратный	мг/кг	22,64±3,40	41,99±6,30	3,81±0,57	5,60±0,84	ГОСТ 26951-86	29	
11	Хлориды	мг/кг	99,40±20,87	866,20±121,27	99,40±20,87	113,60±23,86	ГОСТ 26425-85*	-	
12	Сульфаты	мг/кг	104,35±14,61	208,70±29,22	52,18±7,30	104,35±14,61	ГОСТ 26426-85*	-	
13	Ртуть	мг/кг	0,0254±0,011	0,1445±0,043	0,0281±0,013	0,1917±0,057	СТП 02-04-2022*	2,1	

№ п/п	Наименование определяемого показателя	Ед. изм.	Данные анализа по точкам				НД на метод испытаний	ПДК	Испытания провел
			02-**1657**-25	02-**1658**-25	02-**1659**-25	02-**1660**-25			
1	Нефтепродукты	мг/кг	<20	20,0±9,0	140,0±63,0	160,0±72,0	СТП 02-03-2022	-	Абдыралиева А.А. Мурсажанова Б.Э.
2	Медь	мг/кг	<1	1,20±0,36	<1	<1	СТП 02-02-2022	3	
3	Цинк	мг/кг	1,4±0,4	1,2±0,4	1,0±0,3	<1	СТП 02-02-2022	23	
4	Свинец	мг/кг	2,6±0,8	3,8±1,1	3,2±1,0	4,6±1,4	СТП 02-02-2022	6	
5	Марганец	мг/кг	70,4±21,12	75,0±22,5	71,2±21,36	64,8±19,44	СТП 02-02-2022	140	
6	Железо	мг/кг	5,8±1,7	6,2±1,9	9,0±2,7	11,4±9,4	СТП 02-02-2022	-	
7	Кадмий	мг/кг	<1	<1	<1	<1	СТП 02-02-2022	2	
8	Никель	мг/кг	<1	<1	<1	<1	СТП 02-02-2022	4	
9	Хром	мг/кг	<1	<1	<1	<1	СТП 02-02-2022	6	
10	Азот нитратный	мг/кг	2,60±0,39	4,76±0,71	4,13±0,62	3,37±0,50	ГОСТ 26951-86	29	
11	pH	ед.pH	6,55±0,20	6,83±0,20	7,13±0,20	7,48±0,20	ГОСТ 26423-85	-	
12	Ртуть	мг/кг	0,0048±0,002	0,0130±0,006	0,0102±0,005	0,0132±0,006	СТП 02-04-2022*	2,1	

№ п/п	Наименование определяемого показателя	Ед. изм.	Данные анализа по точкам				НД на метод испытаний	ПДК	Испытания провел
			02-**1661**-25	02-**1662**-25	02-**1663**-25	02-**1664**-25			
1	Нефтепродукты	мг/кг	180,0±81,0	2180,0±981,0	300,0±135,0	140,0±63,0	СТП 02-03-2022	-	Абдыралиева А.А. Мурсажанова Б.Э.
2	Медь	мг/кг	<1	1,20±0,36	<1	<1	СТП 02-02-2022	3	
3	Цинк	мг/кг	<1	<1	<1	<1	СТП 02-02-2022	23	
4	Свинец	мг/кг	3,4±1,0	2,8±0,8	3,0±0,9	3,4±1,0	СТП 02-02-2022	6	
5	Марганец	мг/кг	71,4±21,42	65,6±19,68	67,0±20,1	65,6±19,68	СТП 02-02-2022	140	
6	Железо	мг/кг	5,4±1,6	<5	11,8±3,5	5,8±1,7	СТП 02-02-2022	-	
7	Кадмий	мг/кг	<1	<1	<1	<1	СТП 02-02-2022	2	
8	Никель	мг/кг	<1	<1	<1	<1	СТП 02-02-2022	4	
9	Хром	мг/кг	<1	<1	<1	<1	СТП 02-02-2022	6	
10	Азот нитратный	мг/кг	3,60±0,54	3,31±0,50	1,94±0,29	2,48±0,37	ГОСТ 26951-86	29	
11	pH	ед.pH	7,63±0,20	7,41±0,20	7,87±0,20	7,79±0,20	ГОСТ 26423-85	-	
12	Ртуть	мг/кг	0,0110±0,005	0,0152±0,007	0,0076±0,003	0,0140±0,006	СТП 02-04-2022*	2,1	

№ п/п	Наименование определяемого показателя	Ед. изм.	Данные анализа по точкам			НД на метод испытаний	ПДК	Испытания провел
			02-**1665**-25	02-**1666**-25	02-**1667**-25			
1	Нефтепродукты	мг/кг	5500,0±2475,0	160,0±72,0	160,0±72,0	СТП 02-03-2022	-	Абдыралиева А.А. Мурсажанова Б.Э.
2	Медь	мг/кг	1,20±0,36	1,20±0,36	1,20±0,36	СТП 02-02-2022	3	
3	Цинк	мг/кг	<1	1,2±0,4	1,2±0,4	СТП 02-02-2022	23	
4	Свинец	мг/кг	3,0±0,9	4,0±1,2	3,4±1,0	СТП 02-02-2022	6	
5	Марганец	мг/кг	45,4±13,62	71,4±21,42	67,2±20,16	СТП 02-02-2022	140	
6	Железо	мг/кг	<5	5,2±1,6	12,0±3,6	СТП 02-02-2022	-	
7	Кадмий	мг/кг	<1	<1	<1	СТП 02-02-2022	2	
8	Никель	мг/кг	<1	<1	<1	СТП 02-02-2022	4	
9	Хром	мг/кг	<1	<1	<1	СТП 02-02-2022	6	
10	Азот нитратный	мг/кг	4,20±0,63	3,10±0,46	3,19±0,48	ГОСТ 26951-86	29	
11	pH	ед.pH	7,65±0,20	7,88±0,20	6,91±0,20	ГОСТ 26423-85	-	
12	Ртуть	мг/кг	0,0197±0,009	0,0157±0,007	0,0113±0,005	СТП 02-04-2022*	2,1	

Продолжение стр. 5 из 6

Сообщаемая расширенная неопределенность измерения указывается как суммарная стандартная неопределенность измерения, умноженная на коэффициент охвата k=2, который обеспечивает уровень доверия приблизительно 95%. Неопределенность измерений, возникающая в результате отбора проб, включена в расширенную неопределенность измерений.

Заключение*: *По результатам химических испытаний в отобранных пробах почвы наблюдается превышение по сравнению с фоновой концентрацией и ПДК (предельно-допустимая концентрация) по нефтепродуктам в точках №1640 – 1,7 раз; №1641 – 2,1 раза; №1642 – 2,9 раза; №1643 – 1,6 раз; №1644 – 1,5 раз; №1650 – 1,2 раз; №1652 – 2 раза; №1654 – 2,9 раза; №1655 – 2,2 раза; №1662 – 14 раз; №1663 – 1,9 раз; №1665 – 34 раза; по меди в точках: №1643 – 1,5 раз; №1647 – 8,2 раза; №1655 – в 3,5 раз; по цинку в точках: №1643 – 5,8 раз; №1643 – 7,7 раз; №1646 – 9,5 раз; №1647 – 2,5 раз; №1653 – 3,5 раз; №1653 – 1,5 раз; по свинцу в точках: №1644 – 2,3 раз №1653 – 5,3 раза; №1654 – 4,3 раза; по железу в точках: №1642 – 1,5 раз; №1643 – 1,4 раз; №1644 – 4,1 раза; №1649 – 13,8 раза; №1650 – 12,7 раза; №1651 – 16,4 раза; №1652 – 8,5 раза; №1653 – 9,3 раза; №1655 – 8,2 раза; по азоту нитратному в точке: №1648 – 2,5 раз; №1654 – 9,8 раз. Остальные показатели в пределах установленных норм. Установленная ГН (Гигиенические нормативы) «ПДК (Предельно допустимая концентрация) загрязняющих веществ в почве населенных мест» утв. Постановлением Правительства КР №201 от 11 апреля 2016г*

Заместитель директора — Садыкбеков Т. А.
Заведующая ОКОПАИР — Дарбакова А. С.

Исполнитель не несет ответственности, если проба отобрана самим заказчиком
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ОКОПАИР- Отдел координации отбора проб аналитики и измерения радиации.

Конец протокола.

Стр. 6 из 6

Annex 2. Sociological survey

Report on the Sociological Survey
for the Project on the Construction of the Poultry Farm in Kemin (hereinafter – the Project)

Methodology: *report is based on the results of a sociological survey, structured interviews, and focus group discussions. The research follows a classical approach to qualitative studies, adapted to the specifics of the Project (socio-economic development of the region, environmental oversight, access to high standards of production quality, transparency, and timely dissemination of information on the Project's development, among others).*

Table of Contents of the Report

1. Executive Summary

- Brief description of the purpose, methodology, and key findings of the study
- Main recommendations based on the results

2. Introduction

- Purpose of the study

Context: brief overview of the Project
Relevance of the topic (construction of the poultry house, transparency of environmental oversight, civic participation in public consultations)

- Research objectives
- Target audience of the report

3. Methodology

- Type of research: quantitative and qualitative
- Methods: sociological survey, in-depth interviews, and focus group discussions
- Respondent selection criteria
    - Groups: Akimiat (district administration), City Hall, Sanitary and Epidemiological Surveillance, Veterinary Service, Kemin regional electricity grid, civic activists, residents of Kemin, farmers, Cadastral Service, and others
- Geographic scope: City of Kemin; 3 focus group discussions; private interviews (integrated into the overall findings); 7 structured in-depth interviews
- Data collection period: 9–10 June 2025
- Data analysis procedure (thematic analysis, coding, etc.)
- Study limitations: time constraints

4. Key Findings: Analysis of In-Depth Interviews

- Participants' understanding of the Project's purpose
- Practices to ensure project transparency and information awareness
- Perceived environmental risks
- Impact on the socio-economic situation in the region
- Level of engagement of local residents and self-government bodies
- Proposals for improvement

5. Key Findings: Analysis of Focus Group Discussions

- Topics addressed during the discussions
- Comparison of viewpoints among different groups (e.g., residents vs. officials)
- Common trends, points of contention, and differences in perception
- Emotional markers and value orientations
- Barriers and motivations for participation in the initiative

6. Conclusions

- Summary of key insights
- Perception of the investment initiative as such
- Role of the human factor (trust, personal motivation)
- Strengths and weaknesses of the Company's current implementation approach

7. Recommendations

- For government authorities (e.g, Ministry of Water Resources, Agriculture, and Processing Industry of the Kyrgyz Republic)
- For civil society
- For market participants
- For project teams (communication improvement, capacity building, etc.)

8. Annexes

- In-depth interview guide
- Focus group discussion guide
- List of experts and participants
- Coding table (if necessary)
- Perception graphs/charts (by topic)

Abstract

Objective of the Study:

To assess the perceptions of local residents, municipal authorities, and farmers in Kemin District regarding the **construction of a poultry houses and feed mill** (hereinafter – the Project).

Methodology:

The study employed qualitative and quantitative methods:

- **Seven in-depth interviews** with key stakeholders (including the mayor, public sector specialists, and a member of the City Council);
- **Three focus group** discussions involving energy sector specialists, civil society representatives, activists, and farmers
- **Individual conversations with other interested parties**

Quantitative methods:

- Sociological **survey** among residents of Kemin town (**75 respondents**).

The analysis was structured around six key thematic areas: awareness, transparency, risks, economic impact, participation, and stakeholder suggestions.

Study Purpose

The study aimed to identify how the investment project for the construction of a poultry farm and feed mill by Agro Kush LLC in Kemin District is perceived by the population and stakeholders. It also analyzed public expectations, concerns, levels of awareness, readiness for cooperation, and community engagement.

Project Context: Brief Overview of "Agro Kush"

Agro Kush LLC has been operating since 2019, specializing in broiler chicken farming and poultry meat processing. The company is part of the Adal Azuk Group (Toiboss™), one of the leading domestic producers of Halal- and FSSC-certified meat products. In Q3 2025, construction is expected to begin on a new production complex in Kemin District, comprising:

- 24 poultry houses on two sites, each designed to raise 14,000 chicks for 40 days;
- A feed mill with a capacity of 30 tons per hour, intended to fully supply the production cycle.

Relevance of the Topic

The construction of large agro-industrial facilities in Kyrgyzstan's regions brings high expectations regarding employment and food availability, while also raising concerns among the public over:

- Environmental safety and sanitary risks (odor, water/air pollution, waste management);
- Transparency of procedures (expert review, permitting, monitoring);
- Involvement of local residents and farmers in decision-making processes;
- Potential conflicts of interest between business, government, and the public.

The Agro Kush project has become one of the most prominent cases in this context, and its public perception requires a comprehensive assessment.

Research Objectives

1. Assess the level of awareness and understanding of the Project among residents, farmers, representatives of local self-governance bodies, businesses, and other stakeholders.
2. Identify the main expectations, concerns, and emotional reactions related to the implementation of the Project.
3. Evaluate the level of trust in the environmental and sanitary control mechanisms.
4. Analyze the degree of community engagement in public consultation processes and interaction with the project team.
5. Develop practical recommendations to enhance transparency, improve communication strategies, and foster sustainable cooperation.

Target Audience of the Report

- **Government authorities and regulatory bodies**: Representatives of the Ministry of Water Resources, Agriculture and Processing Industry of the Kyrgyz Republic, the State Inspectorate for Environmental and Technical Safety, and local governments (district administrations, Village Administration).
- **Project team and investors** Agro Kush LLC (a subsidiary of Adal Azik LLC) – for refining the community engagement strategy and aligning with local expectations.
- **Local residents, farmers, and others.** As stakeholders in dialogue and potential project partners.
- **Civil society organizations and the media** - For ensuring public oversight, disseminating verified information, and enhancing civic participation.
- **International partners and donor organizations:** with an interest in investment and environmental policy in Kyrgyzstan.

Methodology

- **Research type:** Qualitative and quantitative
- **Methods:** In-depth interviews and focus group discussions
- **Justification for method selection**
- **Respondent selection criteria**
    - Stakeholder groups included representatives from the district administration, city mayor's office, sanitary and epidemiological services, veterinary services, Kemin power grid enterprise, civic activists, and Kemin town residents
- **Geographic scope:** Kemin town, Three focus group discussions, Two informal conversations, Seven structured in-depth interviews, One sociological survey
- **Fieldwork period: 9–10 June 2025.**
- **Data analysis procedure** (Thematic content analysis, manual coding and etc.)
- Study limitations: time (urgency).

Part I. Sociological Survey under the Agro Kush Project

In June 2025, an anonymous sociological survey was conducted. The Agro Kush Project has generated **strong interest and optimism** among residents of the village, with expectations of increased income, job creation, and rural development. At the same time, the community has expressed well-grounded concerns

regarding environmental impacts and fairness of working conditions. To ensure the Project's success, it is essential to foster **effective communication, guarantee environmental safety,** and promote **socially responsible support** and inclusive engagement of all stakeholder groups. A total of 75 respondents of various ages and occupations participated in the survey.

Residents of Kemin, June 9,10, 2025

Results' analysis

1. Socio-Demographic Profile

- **Age:** under 18 – 5%, 18–30 – 13%, 31–45 – 29%, 46–60 – 33%, 60+ – 19%

– The dominant age group is 31–60 years (approx. 63%), representing the most active and mature segment of the population.

- **Gender:** Men – 24 respondents (32%),

Women – 51 respondents (68%)

– The sample is predominantly female.

- **Occupational Background:** Diverse: housewives, pensioners, specialists, farmers, laborers, public servants, etc.
- **Education:**
  - Secondary – 23%
  - Vocational secondary – 25%
  - Higher education – 25%
  - Other – 2%

Educational levels are fairly evenly distributed.

- **Average residency duration in the town:** ~30 years old → sample predominantly local people.

2. Project Awareness

- **Aware of the Project:** 88% of respondents.
- **Sources of Information:** Friends (mentioned 51 times), municipal office, social media, traditional media.

Social networks and official channels are the main sources of information.

- **Attitude towards the Project:**
  - Positive – 89%
  - Neutral – 5%
  - Negative – 1%

Public support is high.

3. Perceived Impact on Life and Economy

- On a scale of 1 to 5:
  - Income: 4.01
  - Employment: 3.95
  - Prices: 3.86
  - Rural development: 4.44

Strong expectations for income growth and rural development; slightly lower optimism regarding employment and price stability.

Willingness to Work at the Facility

- Willing – approx. 52%
- Uncertain – 27%
- Unwilling – 21%

Key employment conditions (multiple choice):

- Fair wages – 58
- Official employment – 47
- Social benefits and health insurance – 46

4. Environmental Concerns

Primary concerns

- • Air pollution – 31
- • Water pollution – 27
- • Waste/odors – 46

Measures such as filtration, regular monitoring, and environmental oversight are considered necessary.

Land Use:

- The project site is not used by the majority (64 respondents).
- Land-related conflicts are minimal.

5. Infrastructure (Roads, Water, Electricity)

- General expectations of infrastructure improvements were expressed.
- Water supply remains a concern (noted in individual comments).

6. Information Access

- Feel sufficiently informed: 58% of respondents
- Feel under-informed or unsure: 42% of respondents

Preferred channels for receiving information:

- Public announcements
- Meetings at Village administration
- WhatsApp groups
- Communication efforts need to be expanded.

Engagement

- Two-thirds expressed willingness to participate in public discussions.

Maintaining dialogue with residents is essential.

7. Summary and Recommendations

Vulnerable groups identified

• Women, youth, elderly, low-income households, and persons with disabilities.

Targeted outreach and support are needed.

Overall Summary

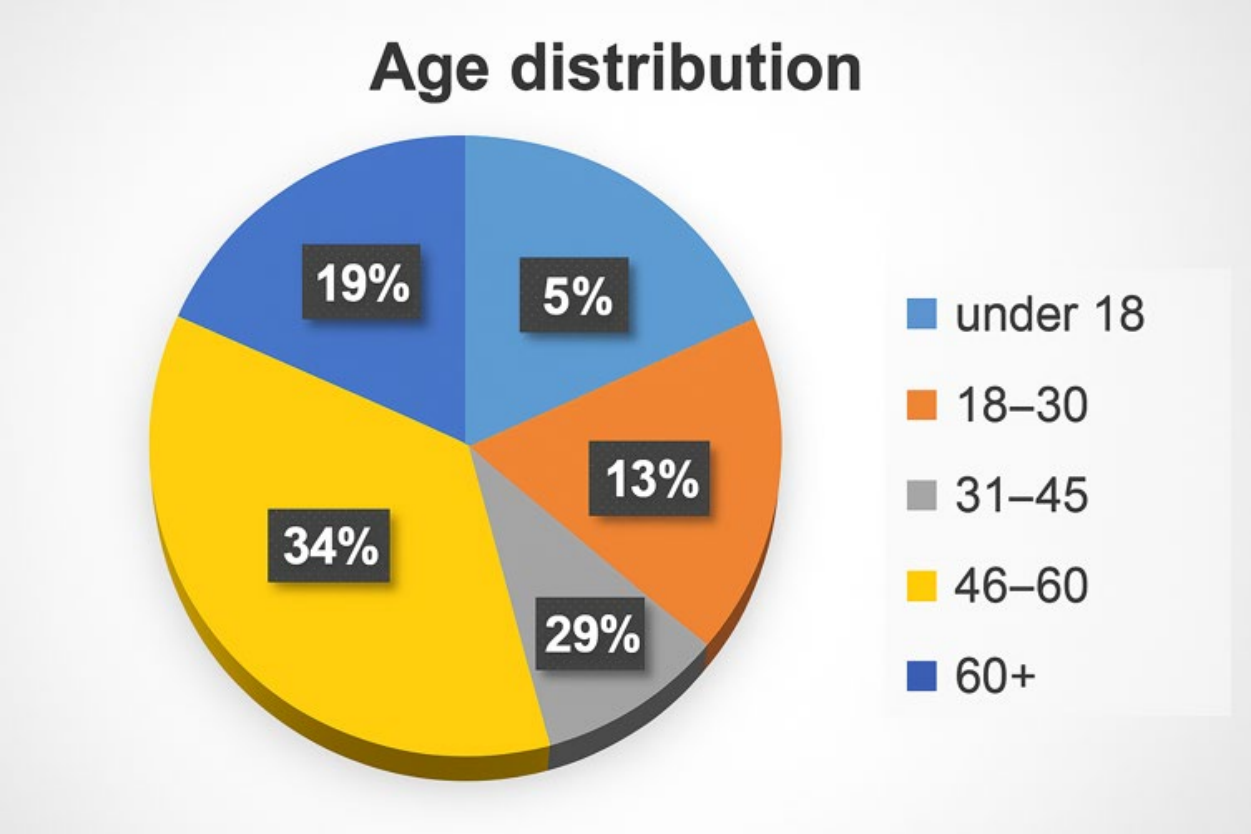
- **The level of support for the project is high (89%).**
- **Main expectations:** income growth, rural development, official employment.
- **Main concerns:** environmental risks and price effects.

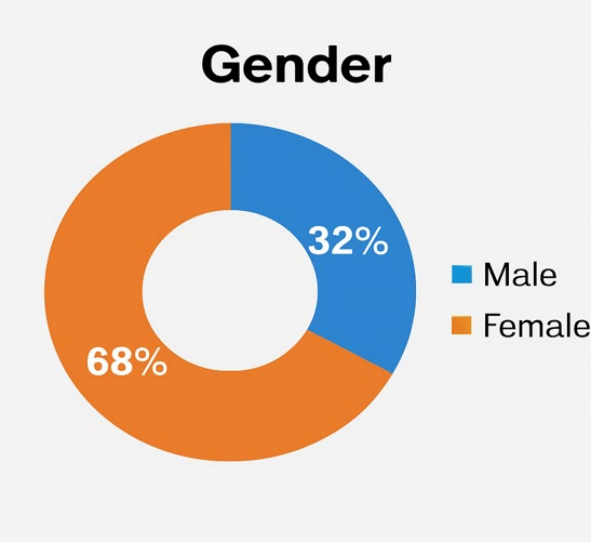
Recommendations:

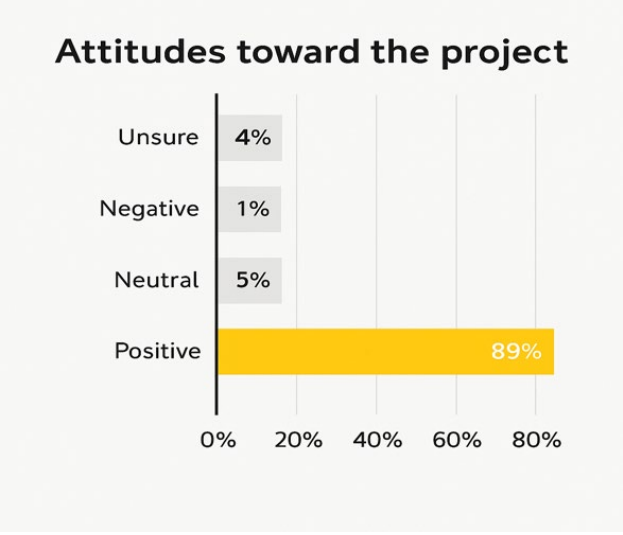
1. Strengthen information dissemination (especially via WhatsApp and community meetings).
2. Develop an environmental protection and monitoring plan (filters, sanitary oversight).
3. Clearly define employment terms and ensure transparency.
4. Incorporate the needs of vulnerable groups.
5. Continue inclusive dialogue and participatory planning with the community.

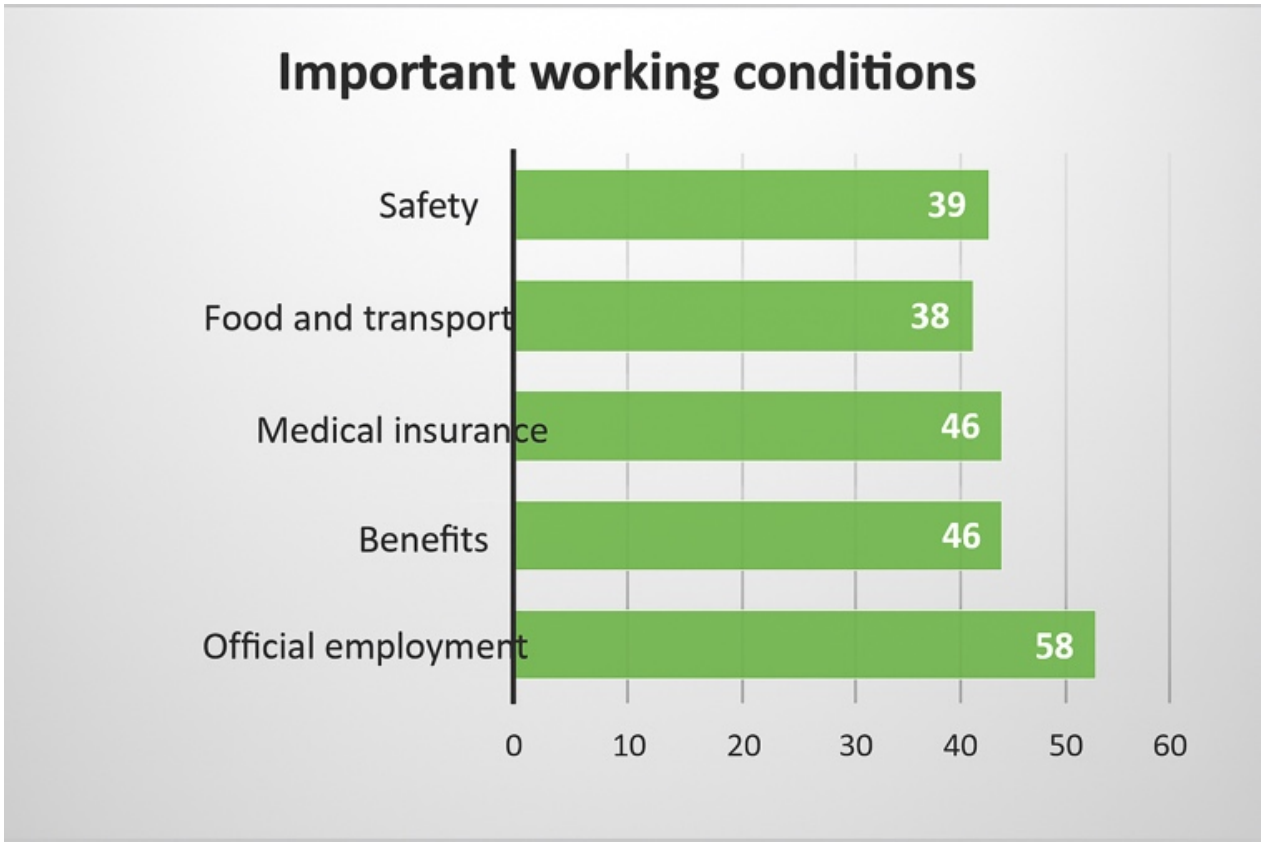
8. Infographic

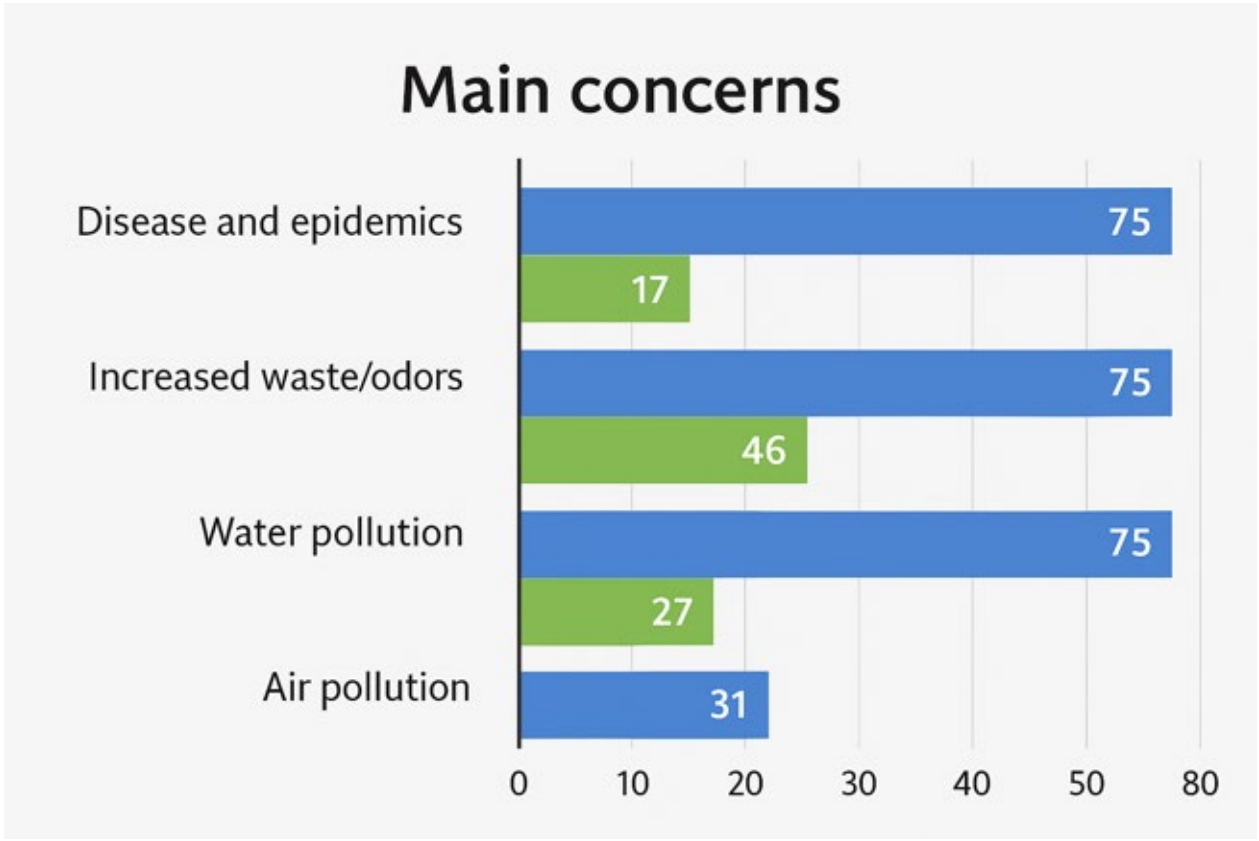
Below is a visualization of the key findings from the survey.

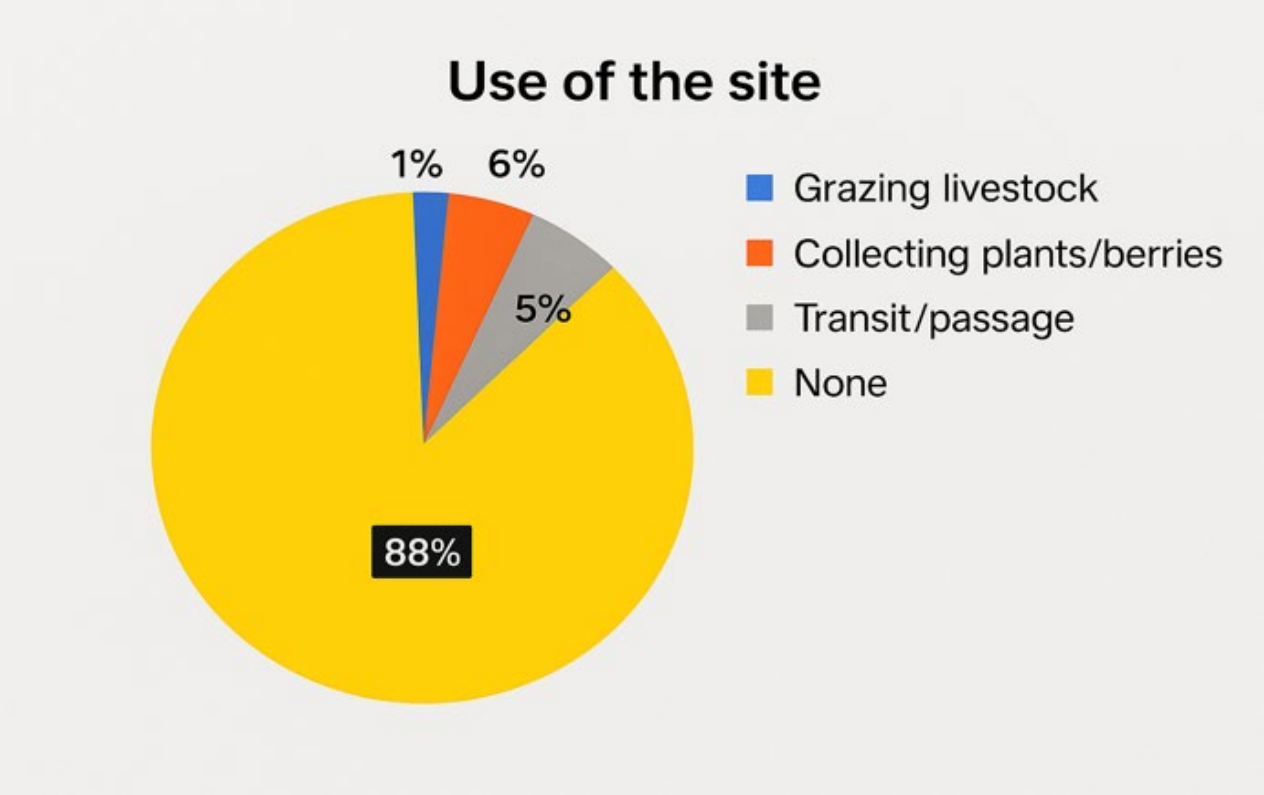







Important working conditions
Safety
39
Food and transport
38
Medical insurance
46
Benefits
46
Official employment
58
0
10
20
30
40
50
60


Main concerns
Disease and epidemics
75
17
Increased waste/odors
75
46
Water pollution
75
27
Air pollution
31
0
10
20
30
40
50
80



PART II. Key Findings: In-Depth Interview and Focus Group Analysis
Key topics:
Participants' understanding of the Poultry house and Feed Mill Construction Project in Kemin District

- **Practices ensuring project transparency and public awareness**
- **Assessment of environmental risks**
- **Impact on the district's socio-economic landscape**
- **Degree of engagement by residents and local government bodies**
- **Recommendations for project improvement**

1. **Kutpidin Abdyrahmanovich Shakirov, Head of Kemin District State Administration**

Focus: Local government perspectives on the Agro Kush poultry complex project and related social and environmental dimensions

Interview Objective: - To assess the district administration's position on the project, identify perceived risks and benefits, understand public perception, and gather recommendations for potential donors-particularly in regard to environmental sustainability.

Main Interview Topics:

1. **General attitude towards the project**
2. **Economic and infrastructure-related expectations**
3. **Risks and public concerns**
4. **Engagement with local communities**
5. **Recommendations for donors**

Key Findings:
1. Positive Attitude Toward the Project

- **The district administration supports the project,** citing its potential contributions to food security and job creation**.**

- The official noted **no public opposition**, suggesting early social acceptance.

2. Economic Benefits

- Expected benefits include increased **district revenues**, new employment opportunities, and development of the agricultural sector.
- The mention of a **large average bird weight (3–3.5 kg)** indicates a commercially-oriented and potentially high-yield operation.

3. Environmental Concerns

- Concerns have been raised **about possible odors and environmental impacts**, despite general approval of the project.
- This is a key aspect that **donors should pay attention to when supporting the project**, especially in terms of financing treatment facilities and waste control.

4. Social and Infrastructure Pressures

- The region **is developing in the direction of tourism** (Ak-Tuz, Orlovka, Chon-Kemin), the number of tourists is growing.
- **Infrastructure improvements** are mentioned – road construction, the Kemin City project, the development of schools and kindergartens.
- At the same time, **there is a burden on social infrastructure**, which requires an integrated approach to territorial development.

5. The position of the authorities as a mediator

- The head of the Regional Governmental Authority **is ready to be a link** between the company and residents, which has a positive effect on the potential sustainability of the project.
- This indicates **the authorities' readiness for dialogue and conflict resolution** if they arise.

6. Recommendations and wishes

- Direct recommendation: **Agro Kush should be environmentally responsible.**
- It was emphasized that **it is important to have a waste disposal system,** even if it is currently "not visible."
- The emphasis is that **donors should support the project** if it meets environmental requirements and standards.

Conclusion

The project is perceived positively by the district authorities and, in their opinion, by the population. However, there are **direct indications of potential environmental risks** that should be taken into account. The authorities are ready to cooperate, coordinate and act as a mediator between the population and investors.

Recommendations based on interviews (for inclusion in donor report):

1. **Ensure the environmental sustainability of the project:** provide funding for the installation of treatment facilities, odor monitoring, and safe waste disposal.
2. **Strengthen the infrastructure connection** with the tourist areas, take into account the social loads on roads, kindergartens, and schools.
3. **Maintain open interaction with residents** and local government bodies, including the participation of the akim as a mediator in cases of misunderstanding or conflict.
4. **Integrate the project into the regional development strategy** with a focus on ecology, agricultural production and tourism.

2. Kairat Zamirbekovich Abdyvaliev, mayor of Kemin

Experience as mayor: 4 years (since June 14, 2021)

General observations

The interview demonstrates the mayor's openness and active participation in the life of the city, his personal involvement in the development of infrastructure and improving the population's quality of life. His answers are honest, sometimes improvisational, which indicates an informal management style close to the population.

Socio-economic context

Key achievements of the mayor's office

- Attracting large investments through projects of Kemin District Development Fund.
- Implementation of infrastructure projects: parks, roads, schools, transition to electric heating.
- Reconstruction of 90 collapsed apartments - occupancy expected.
- Construction and development of workout and children's playgrounds.
- Participation in the formation of housing policy: identification of ownerless lands.

Challenges

- The first 1.5–2 years – lack of experience and funding.
- Shortage of agricultural land and the impossibility of city expansion due to **the 2009 moratorium** on land transformation.
- The problem of **"unaccounted" lands** and weak land management documentation.

The AgroKush Project - Mayor's Assessment

Positive attitude

- The mayor **supports** the implementation of the project.
- Notes **the political will** and importance for food security in the region.
- Emphasizes the importance **of creating jobs,** tax revenues and **producing local products.**

Expected benefits

- Increasing the city budget.
- Possibility of opening **a brand store** with AgroKush products at reduced prices for the population.
- Potential for interaction with other companies (e.g. biologistics, mineral fertilizers).

Concern

- **Environmental risks:** odors from the poultry farm. Although the mayor believes that the smell will not reach residential areas, he notes the importance of sanitary standards.
- Residents of the nearest 12 houses could potentially be unhappy.
- It is important to ensure **sanitary and epidemiological control** and compliance with all standards in the design documentation.

Interaction with the population

- The mayor describes good feedback through **face-to-face meetings,** digital channels and active work by municipal services.
- The city actively uses **WhatsApp groups.**
- There is a willingness **to explain to residents the goals and content of the project.**

The role of the City Hall in the future management of the project

- The mayor **does not consider it necessary to create an independent coordinating group** between AgroKush and the population.
- Relies on **legislative procedures** and believes that interaction with private investors should proceed strictly according to the law.
- However, **the city administration is supporting** the project and is ready to promote the interests of residents.

Political context

- The mayor appeals to the words of President Sadyr Japarov about supporting investments.
- Demonstrates an understanding of **the government's food security agenda.**
- Uses political discourse (“at the republican level”, “within the framework of the law”) to legitimize the project.

Recommendations

For the project "AgroKush"

- Take into account the risks of discontent among residents of nearby houses - **provide sanitary buffers** and provide proper information.
- Implement the mayor's proposal for **an Agro Kush brand store** with products at cost or at discounted prices for vulnerable groups of the population.
- Include **awareness and transparency** as part of the strategy – reach out to the public through existing digital channels (WhatsApp).
- Maintain **formal communication with the mayor's office** and invite the mayor to dialogue at key stages of project implementation.

For donors and recommendation developers

- Take into account **the economic and social efforts of the mayor's office** in supporting the development of the city.
- Propose **a partnership model** with the mayor's office: perhaps in the future, **a council at the mayor's office** to assess corporate social commitments.
- Support the mayor's office in solving **land and cadastral issues** if expansion or support for future projects is planned.

Conclusion

The Mayor of Kemin demonstrates an active civic position, a systemic approach to the development of city and is open to investment. He sees the AgroKush project as part of a comprehensive strategy for the modernization of the city's infrastructure and economy. Meanwhile, he emphasizes the importance of compliance with sanitary standards, legitimacy and transparency.

The mayor's main message is that the project will go ahead if it brings benefits and does not disturb the peace of the city's residents.

3. **Kopzhasharov Kydyrbek Tologonovich, deputy of the local Council**

Purpose of the interview

- Get **the opinion of a local deputy** on the poultry farm construction project.
- Assess **environmental and social risks** and the local authorities' perception of the project.
- Understand the mechanisms **of communication between the deputy and the population,** as well as expectations from the investor.
- Collect materials for a report to donors on the social and environmental acceptability of the project.

Interview method

- **Type:** in-depth semi-structured interview.
- **Language:** mixed (Russian, Kyrgyz).
- **Role of interviewer:** researcher seeking support for the project and comments from a trusted figure in the population.
- **Role of informant:** deputy, chairman of the Council social commission, representative of the interests of the population.

Key topics and agendas

Support the project

- The deputy **supports the project,** emphasizing the creation of **100 jobs.**
- Quotes support from the president: *"any project must be supported."*
- Sure, that **sanitary standards will be observed,** since there will be an environmental passport and a SES conclusion.

Environmental risks

- The main risk mentioned is odor, but the deputy believes that everything will be within normal limits.
- Reliance on the opinions **of the sanitary and epidemiological station** and **the environmental report.**

Social Expectations and Benefits

- **Potential jobs** are the main expected effect.
- After launch, the deputy plans to approach investors with requests for assistance **to the poor, vulnerable groups,** and **disabled** - to the extent the company can.
- Until the company has started work, **additional requirements are considered inappropriate.**

Feedback with residents

- Meetings **once every three months** or unscheduled.
- The main requests are **one-time financial assistance,** requests to solve local problems (water, roads).
- Uses **WhatsApp groups** as a digital communication channel and recognizes their importance.

Accountability and transparency

- Does not consider it necessary for company to submit regular reports to the Council.
- The main thing is **information,** so that “everyone knows what they are doing.”

Trust between the population and the investor

- **Job creation** and **compliance with sanitary standards** are key factors of trust.
- The people must "support" if all conditions are met.

Conclusions

Positivity

- The project is perceived **positively and with trust.**
- **Political support** from local authorities is ensured.
- The deputy is **involved and loyal,** ready to facilitate dialogue with the population.

Restraint

- Until the enterprise is launched, **expectations from social investments are moderate.**
- There is no emphasis on **business transparency** or public reporting.

Digitalization

- **Digital channels are already in place,** creating the opportunity to communicate with residents in real time.

Recommendations

For the investor

- **Create jobs as a priority for local people.**
- Prepare **public environmental and social reporting.**
- Organize **informational meetings** with residents (including digital channels).
- After the launch, consider **social investments** (support for vulnerable groups through the Council).

For local authorities

- **Continue regular consultations** with residents.
- Strengthen digital feedback (WhatsApp bot, Telegram channel).
- Develop **protocols for interaction** with investors in case of complaints or conflicts.

4. **Sultashev Zamir Zhusupbekovich, Director of the Kemin branch of State Agency for Land Resources, Cadastre and Geodesy**

1. **The purpose of the interview** is to obtain information about the legal status of land, site history, transformation procedure and environmental risks associated with AgroKush poultry farm project, as well as to formulate recommendations for donors and investors.

2. Key findings

History of the land plot

- Land was provided back in Soviet times - by decree of Council of Ministers of the USSR in 1987 - for the needs of the linoleum plant.
- Site was originally intended for industrial use and was allocated on the territory of a transboundary river bed, which required approval at the government level.
- Production was not operating for a long time; there was virtually no activity on the site.
- After privatization, the asset changed several owners (including the planned Bilimkana project, which did not receive support due to technical limitations).
- Currently, site belongs to the company "AgroKush", which plans to establish a poultry farm.

Legal and cadastral status

- Site actually belongs to industrial lands, despite references to “subsidiary farming”.
- There are contradictions in the interpretation: on the one hand, the land is not intended for agricultural use, on the other hand, it is used for agricultural production.
- The Land Code allows for different interpretations, creating legal uncertainty.
- Work is underway to transform the land in order to bring the status of the site into line with current legislation.

Environmental risks and context

- The site is located near populated areas and is exposed to wind - it is important to take into account the "wind rose".
- Area already smells of wastewater treatment plants in Kant - there is a risk of increased negative perception on the part of the local population.
- Additional restrictions are imposed on construction due to the presence of spillways and protected lands.

Role and functions of State Agency for Land Resources, Cadastre, Geodesy, and Cartography (SALRCGC)

- The Agency currently functions as a registration and cadastral authority, rather than as an authority that distributes or allocates land.
- The powers for land transformation and allocation were redistributed to other departments (including the Ministry of Agriculture).
- Nevertheless, the system’s “muscle memory” remains – specialists continue to be trusted in the field.

Recommendations and expert position

- Legislation must be transparent and unambiguous: the lack of clear “rules of the game” scares off investors and creates corruption risks.
- Reform of land mechanisms and coordination between departments is required.
- The state must play a proactive role: if the project is important, it must promptly provide legal and administrative support.

3. Risks and problems

Category	Description
Legal uncertainty	Contradictions in the interpretation of the purpose of the land; the complexity of transformation
Environmental load	Possible odors, impact on microclimate, protected areas
Institutional Complexities	Separation of functions between different departments; loss of coherence
Reputational risks	Potential complaints from local residents, decreased confidence in the project

4. Recommendations (based on interview results)

For donors:

- **Support projects on legal transformation of lands,** including legal expertise and support;

- **Fund an environmental assessment** taking into account the microclimate, wind rose and population sensitivity;
- **Include a provision for transparency and legal purity of land ownership** in grant agreements;
- **Pay attention to institutional coordination:** mandatory approvals from environmental, architectural and land authorities.

For investors:

- Conduct **legal due diligence** of the site taking into account the historical context and current regulations;
- Consider **alternative technologies** for waste disposal and odor filtration;
- Participate in **local discussions and inform residents** to reduce the risk of resistance to the project;
- Achieve **official transformation of the site** before the start of major construction.

5. Conclusion

The interview with the director of the Kemin branch provided valuable information on the history of the site, its current legal status, institutional dynamics and environmental risks. A clear legal framework, transparent procedures and strategic coordination between the state, business and local population are necessary for the successful implementation of the project.

5. Osoev Zhyrgalbek Osoevich, head of the Kemin District Veterinary Department

Interview date: 11.06.2025
Place: Keminsky District Veterinary Department
Format: In-person interview
Duration: ~40 minutes
The purpose of the interview is to collect expert opinions on potential veterinary and sanitary risks associated with the implementation of the Agro Kush poultry farm project in the Kemin District, as well as to assess the level of readiness of services for monitoring and control.

Key Themes and Conclusions

1. Structure of the veterinary system and area of responsibility

- **a four-level system of veterinary services** in Kyrgyzstan:
    1. State (district level);
    2. Municipal (village administration);
    3. Private (under contracts with farmers);
    4. Departmental (internal veterinarians of enterprises).
- The Kemin Veterinary Service acts as **a supervisory body,** serving 2 cities and 4 village administration.
- Reporting on veterinary activities is received **from private and departmental veterinarians through the village administration.**

“We are presenting a plan for veterinary and preventive work… and demanding its implementation.”

2. The state of the epizootic situation

- In the 5–6-year period, epizootic health remains stable with regard to major diseases (foot-and-mouth disease, plague, smallpox).
- **There are cattle burial grounds,** but they are preserved and pose no risk.
- **6 Becker pits** in operation for the disposal of dead animals.

"We currently have a favorable situation with regard to particularly dangerous diseases"

3. Risk assessment from the Agro Kush project

- In the presence of **a closed production cycle,** the risks for an epizootic situation are assessed as **zero.**
- Basic requirements:
    - no access by unauthorized persons;

- compliance with sanitary and veterinary standards;
- backup equipment and autonomy.

"One infection and production can be lost. Only our own should have access"

4. Control and inspection system

- **Scheduled inspections** of large production facilities are carried out **once a year** if the facility is recognized as low-risk.
- **Unscheduled inspections** are possible if threats or violations are identified.
- The signing of the commissioning takes place **jointly with 6-7 government agencies.**

"There will definitely be monitoring. It's impossible without it."

5. The role of interdepartmental monitoring

- The idea of creating **a coordination platform was supported:** veterinary service, SES, phytosanitary specialists, environmentalists, firefighters.
- Previous experience of interdepartmental visits (inspections) has been recognized as effective.

"Previously, there were three of us: sanitary, veterinary, and phytosanitary services."

6. Socio-economic significance of the project

- The head of the veterinary service expressed support for the project:
  - jobs are created;
  - Social Fund revenues are increasing;
  - economic development of the region is stimulated.

"This is a great help for the region… We wish you nothing but good luck."

Recommendations:

1. **Strengthen veterinary safety protocol at the design stage:**
   - provide for zoning and sanitary barriers;
   - enable the list access system;
   - establish a vaccination and reporting plan.
2. **To consolidate the format of interdepartmental monitoring** as a permanent component of the project with annual verification.
3. **Take into account the experience of other poultry farms in the region** that are under the supervision of the veterinary service and adapt their best practices.

6. **Zemfira Ryskulovna Kochmambetova, Head of Kemin District Center for Disease Prevention and State Sanitary and Epidemiological Surveillance**

The goal is to identify risks, barriers and recommendations related to sanitary and epidemiological safety.

Key Themes and Insights

1. General situation and resources of the department

- The new management is actively involved in the work and demonstrates initiative.
- Serious shortage of personnel and resources:
  - One doctor (the head of department herself).
  - One driver, one company car.
  - Equipment (e.g. **sound level meter)** is missing.
  - Problems with accommodation for new employees.
- The area is large - it covers 2 cities and 4 rural districts. Complex logistics.

Conclusion: The institutional weakness of the department reduces the ability to respond quickly and exercise sanitary control.

Assessment of sanitary risks of the Agro Kush project

- The manager has not yet visited the site in person, but:

- Supports the project idea while observing the standards.
- Indicates **a number of potential risks:**
  - Failure to comply **with sanitary standards for the distance** from poultry farm to the nearest populated area (a farm with about 100 people).
  - **Deratization** is mandatory: *"Where there are chickens, there are rats."*
  - **Odors** from feed production and manure.
  - **Wastewater** and its potential contamination (require monitoring for cholera and other infections).
  - No one has accurately determined the wind rose, which increases the uncertainty in terms of environmental risks.
- Emphasizes the need to obtain a sanitary certificate before opening.

Conclusion: There is awareness of risks, but there is no clear monitoring and preliminary audit. A preventive inspection of the facility and an assessment of compliance with Sanitary and epidemiological rules and regulations are required.

Community engagement and awareness

- The service itself **did not carry out** any work with the population on this project.
- Responsibility for educational activities is assigned to the Health Promotion Office (HPO) department and other partner services.
- The need for **a preventive information campaign** among residents (especially the village) is noted.

Conclusion: Insufficient work with public opinion can cause social tension. There is a risk of protests or mistrust without communication.

Requests to donors

- **Financing of sanitary monitoring** during the construction and launch of the factory.
- Supporting the **public awareness program** on sanitary standards, risks and prevention.

Conclusion: The service needs to be strengthened - both in infrastructure and in the organization of sanitary supervision due to the scale of the project.

Conclusions on In-depth interview

Category	Conclusion
General impression	Energetic, motivated leader, willing to collaborate, but working under resource constraints.
Project risks	Odors, rats, sewage, distancing, social tension.
Engagement	There is poor interaction with population. There is no active preventive work.
Recommendations for donors	Financing sanitary examinations, support for information campaigns and environmental education.

In-depth interview -based recommendations

1. **Conduct an independent sanitary and hygienic assessment of the territory** before the start of active construction phase.
2. **Develop and implement a communications strategy** to inform residents of Kemin and village.
3. **Calculate sanitary zones taking into account sanitary regulations** and the local settlement.
4. **Allocate funds for monitoring pest control, wastewater and sanitary hygiene** of production.

7. Head of Kemin Local Power Authority (LPA) Mirlan Esengul uulu

(in the context of assessing infrastructure risks and energy supply for a future poultry farm). The structure and language comply with the standards of sociological qualitative analysis.

Report on the results of the in-depth interview
Interview date: 11.06.2025
Place: Kemin LPA
Format: In-person in-depth interview
Duration: ~40 minutes

The purpose of the interview is to collect expert opinions on the energy load on the region in the context of the possible construction of a poultry farm, assess the infrastructure readiness and risks, and develop recommendations on the energy security of the facility.

Key Themes and Insights

1. Energy situation in the area

- According to the head of LPA, there is **a power shortage throughout Kyrgyzstan, including Kemin,** especially in the autumn-winter period.
- **Equipment deterioration is 70–80%,** which can affect the reliability of power supply.
- **Network stability** is maintained through planned and unplanned outages, but interruptions are possible.

"We need to generate electricity... It's especially difficult in winter, of course."

2. Potential load from poultry farm

- An accurate assessment is impossible without design data. However, it was noted that 24-hour production (ventilation, lighting, etc.) requires significant capacity.
- LPA is ready to give an official conclusion only after receiving the technical characteristics.

"It could be 100 kW, or it could be 2000 kW... It's difficult to estimate without a project."

3. Recommendations for energy sustainability of the facility

- The object requires:
  - **Dedicated power lines** (two-way);
  - **Backup power supply** via diesel or solar generators;
  - **Alternative solutions** to minimize risks during blackouts.

"If one line goes down, they switch to another. And the third is diesel generators."

4. Readiness for coordination

- The head of LPA expressed his readiness to participate in **the Coordination Council** if an interdepartmental platform is created (mayor's office, sanitary authorities, energy specialists, etc.).

"No problem. We are ready to participate."

5. Environmental concerns and perceptions of the population

- There have been complaints from the population about odors from another poultry farm;
- **environmental standards** are emphasized, especially regarding manure and feed;
- **of a grant application** from Agro Kush for environmental equipment is supported.

"The feed mill smells the worst; it has an ammonia system. There must be alternatives."

Conclusions and recommendations:

1. **The poultry farm must include in the project:**
   - Three-level power supply system;
   - Line maintenance and rapid diagnostics plan;
   - Integration into the regional energy map for 3–5 years.
2. **The project can initiate the creation of a Coordination Council** with the participation of the LPA, the mayor's office and environmental services, if necessary.
3. **Environmental and odor issues must be formally recorded** in technical specifications and tender documentation.

8. **Kapashev Mederbek Kurmankozhoevich, Deputy Mayor of the city of Kemin, Chief of Staff**

Focus: Interaction of the mayor's office with the company "Agro Kush", informing the population, environmental aspects, institutional control mechanisms and recommendations to donors

The purpose of the interview is to collect expert opinions from a local government representative on key issues of implementing the poultry farm project:

- level of awareness of the mayor's office and the population;
- perception of environmental risks;
- institutional mechanisms of interaction;
- assessment of the work of supervisory authorities;
- Formation of recommendations for donors.33

Key Topics

1. Interaction with the investor
2. Informing and responding to the population
3. Readiness for coordination and monitoring
4. Environmental risks and perceptions
5. The role of supervisory authorities
6. Recommendations and wishes for the donor

Key findings

1. Effective interaction with the investor

- The Deputy Mayor **highly appreciates the interaction with the company representative**; the cooperation is stable and trusting.
- It is emphasized that **the mayor's office is constantly aware of the plans and stages of the project.**

2. Informing the population through neighborhood committees

- **The system of communication with the population through the local community leaders** and their WhatsApp groups has proven its effectiveness.
- According to the mayor's office, **the population is aware of the project,** and the launch of the factory is known to residents.
- There is no mention of any expressed resistance or protests.

3. Readiness for coordination

- The Deputy Mayor **confirms his readiness to become a platform for coordination** between residents, investors and technical services.
- However, he **does not see the need to create a separate coordinating body** - the current mechanisms are considered sufficient.

4. Environmental concerns - moderate

- The issue of odors and environmental impact **is not denied,** especially for residents of the nearby village.
- Meanwhile, there is uncertainty about the direction of winds and **absence of serious grounds for panic:** “we’ll see until they start working.”
- The opinion on the acceptability of odor level is subjective and requires further environmental assessment.

5. Supervisory authorities are active but not centralized

- Interaction with **sanitary and epidemiological station and veterinary service occurs regularly,** but is **rather formal and fragmentary in nature.**
- Deputy mayor does not personally **know the new head physician,** which indicates a certain gap in the personal level of communication, despite general cooperation.

- Veterinary service and phytosanitary authorities **perform prescriptive functions,** but do not act as active participants in strategic control.

6. Recommendations and wishes for donors

- **Most significant document is considered to be the ecological passport** (ecopassport). Obtaining this document is considered to be **a guarantee of ecological safety** and, according to the deputy mayor, the key to removing most of the issues.
- Other aspects (e.g. odors, waste disposal, sanitary standards) **are not considered critical** if there is an eco-passport.

Conclusion

A representative of the mayor's office **positively evaluates the project and interaction with company.** Level of public awareness is quite high, thanks to the involvement of neighborhood committees. However, **environmental risks are underestimated** and often interpreted through the prism of "permitting documentation" rather than through a systematic approach to environmental monitoring. **Role of supervisory authorities is limited,** coordination is fragmented.

Recommendations based on interviews

1. **Do not limit yourself to issuing an eco-passport.** Encourage donors to maintain **continuous monitoring and preventive environmental measures,** especially on odors and waste.
2. **Strengthen interdepartmental cooperation** between the mayor's office, the veterinary service, the SES and the investor - up to the formation of a temporary working group for the period of launching and stabilizing production.
3. **Use quarterly committees as a feedback channel** by providing regular reports, meetings and public discussions.
4. **Provide training to city hall staff and neighborhood representatives** on basic environmental monitoring so that they can respond quickly.
5. **Include a clause on environmental auditing in recommendations to donors,** especially in the first 6-12 months after launch.

Focus group discussions

FGD No. 1. Local farmers

Participants: Local farmers, representatives of company “Agro Kush” and “Adyl Azyk”, moderator

Topic: Local farmers' perception of establishment of a poultry farm and interaction with agribusiness

Place: Kemin

Objectives of FGD

- To identify attitude of farmers towards the construction of a large agro-industrial facility (poultry farm)
- Assess expected benefits and concerns
- Discuss opportunities for cooperation between local producers and businesses
- Determine conditions for effective interaction and preferred control mechanisms

Key findings

Positive Expectations / Opportunities

Opportunity	Description
Litter as fertilizer	Fertilizer is seen as a valuable resource for agricultural land
Purchase of feed from farmers	Possibility of supplying soybeans, corn, wheat for the feed shop of a poultry farm
Job creation	Employment growth and local processing development expected
Sales through branded stores	It would be nice to have discount stores in Kemin with local products
Improving agricultural technologies	Participants express hope for new technologies and “green” production

Opportunity	Description
Tour of Openness	The company invites farmers on a tour, which is received positively

Voiced risks and concerns

Risk / Worry	Comments from participants
Odors and air pollution	One of the main fears is an unpleasant smell and possible deterioration of the sanitary situation
Livestock health risks and disease spread	Flies are mentioned as carriers of animal diseases
Insufficient control	Desire to see independent environmental and sanitary supervision
Potential imbalance of interests	Concerns that big business will not take into account the interests of locals
Unclear prospects for interaction	Farmers want clarity on procurement mechanisms, contractual relationships and participation in processes

Expectations from interaction

- **Openness and transparency:** trust is built through information, tours, open meetings
- **Independent oversight:** Participants want independent monitors in addition to company promises
- **Contractual relationships:** interest in creating direct contracts between farmers and the company
- **Purchasing local products:** farmers are interested in the possibility of supplying raw materials (soybeans, corn, wheat, additives)
- **Fair prices and local priority:** Local purchasing is expected to be prioritized and stores will sell products at reduced prices

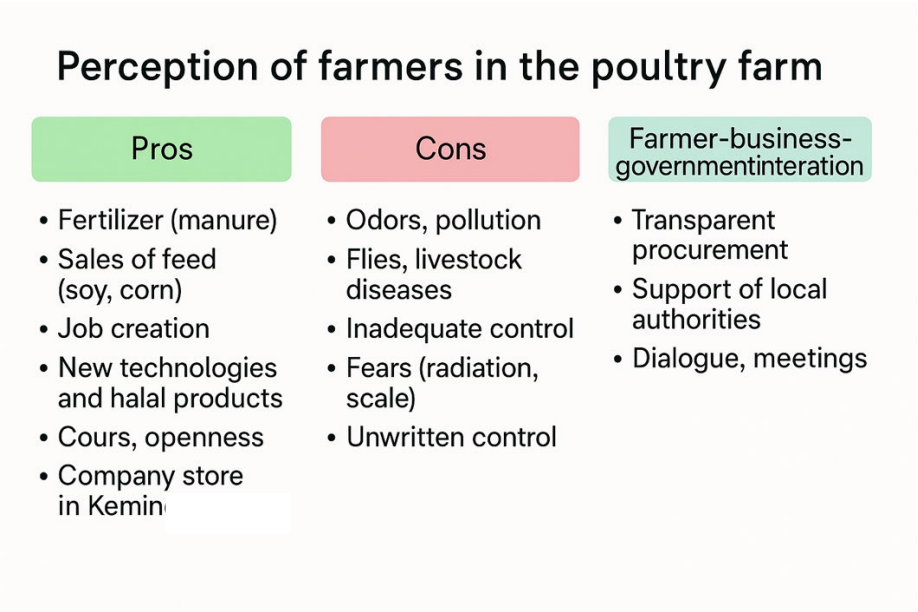
"The pros are fertilizers. The cons are odors, diseases, flies."
"If soybeans are processed, it's a great opportunity for farmers."

Social and psychological climate

- Participants show **preliminary positivity,** but remain **wary**
- **Trust is conditional** and must be maintained through regular communication and transparency of actions.
- General attitude: “Yes, if there are guarantees of cleanliness, safety and benefits for locals.”

Recommendations based on the results of FGD

1. **Creation of a coordinating council at the mayor's office** with the participation of farmers, residents, businesses and sanitary services
2. **Conducting regular meetings and information sessions** (tours, emissions reports, development plans)
3. **Developing templates for agreements with local farmers** to ensure equal access to cooperation
4. **Creation of a transparent environmental monitoring system** (including odors, sanitary standards, waste management)
5. **Opening a brand store with fixed discount prices** and clear pricing mechanisms
6. **Launch of feedback (hotline, online form, meeting)** to collect complaints and suggestions



Conclusion

Farmers perceive the project as **an opportunity** with **control, open dialogue** and **mutual benefit.** Strengths are the potential for developing cooperation and agribusiness. Weaknesses are sanitary and environmental concerns. Successful integration of business into the local environment depends on **the level of public participation** and **transparency of management.**

FGD No. 2. Activists within the framework of the project perception.

Participants: Quarterly, activists, public representatives

Format: Face-to-face meeting, semi-formalized discussion

The purpose of FGD is to collect opinions from local population and active citizens regarding construction of Agro Kush poultry farm, to identify risks, expectations, concerns and points of interaction between community and enterprise.

Key themes and conclusions

1. Sanitary and environmental agenda

- **The general sanitary condition of the city is assessed positively:** garbage removal is carried out regularly, 3 units of vehicles are used.
- The main requests from residents' concern:
  - access to **irrigation water;**
  - **blockages of ditches** and canals;
  - household and communal problems.

"Every day they clean. Even on holidays the vehicle comes out"

"Irrigation water is the main complaint. We solve the Murabs quickly"

2. Expectations and concerns from the Agro Kush project

- The public **considers the project promising,** but expresses the following **concerns:**
  - odors from manure and feed;
  - pollution of Chu River;
  - appearance of flies and other carriers;
  - risk of livestock diseases and deterioration of sanitary conditions.

"It is important for us that the air is clean, that children breathe healthy air."

"If everything is closed, it is fine. But if there are emissions into the river, it is a disaster."

4. Communication with the population and transparency

- **Residents heard details of the project for first time only at this meeting.**
- Before this, information was spread through **rumors** and word of mouth.

- The need is emphasized:
  - regular informing of the population;
  - creation of an open communication platform.

"We only found out about this when construction started. Before that, no meetings."
"We need more meetings where we can ask questions directly."

5. Mechanisms of public control

- **The initiative to create an independent monitoring commission was supported unanimously.**
- According to the participants, the commission should include:
  - representatives of quarterly committees;
  - youth (as initiators of control);
  - environmentalists, representatives of the Ministry of Emergency Situations, veterinary services, city hall, independent experts.

"We are the old men. And the youth should rule. We trust them. There should be a commission."

6. Social responsibility of company

- Participants expressed hope for the company's participation in the life of the community:
  - assistance in emergency situations (fires, floods);
  - support for low-income and large families;
  - sponsorship and charity;
  - creation of jobs.

"If someone's house burns down, let them help rebuild it."
"We need work. Our youth are sitting around doing nothing."

Recommendations based on interview results

1. **Create a permanent independent monitoring commission** with participation of neighborhood officials, farmers and youth.
2. **Develop a plan for regular communication with public,** including informational meetings, leaflets, online groups.
3. **Create a list of potential points of cooperation with local farmers** - purchase of feed, logistics, fertilizers.
4. **Provide a mechanism for social support of the population** at the CSR (corporate social responsibility) level.
5. **Conduct an environmental assessment and publish it in the public domain** to give residents confidence.

FGD No. 3. Energy companies are studying perceptions of the Project against the backdrop of problems with energy infrastructure and a possible electricity shortage.

Topics discussed:

- The state of electric power in the Kemin district
- Real consequences of deterioration of power transmission lines and substations
- Risks for agriculture, especially for poultry farming
- Perception of a major investment initiative (Agro Kush poultry farm)
- Opportunities for transition to alternative energy
- Responsibility of state and the private sector

Comparison of the views of different groups

Group of participants	Main positions
Residents of Kemin	There was no particular skepticism based on personal experience of interruptions. Concerns that "they will build it for their own again, and we will have accidents" were voiced, but were outshone by other participants "If they (Agro Kush) install a generator from the very beginning, there will be no problems at all."

Group of participants	Main positions
Local government and local officials	They recognize the problem, but talk about the lack of resources. They support the project, but emphasize the need for integration with infrastructure programs.
Youth, farmers	Interested in jobs, but doubtful about the real preparation of the energy system. Discussed hybrid solutions, especially solar panels.
Environmentalists and activists	They talk about the region's complex vulnerability due to climate and outdated hydroelectric power plants. They expect a systemic approach: "Without energy, there is no environmental sustainability."

General trends, points of contention and differences in perception:

- **The general trend** is the recognition that energy is a key resource; a project without a sustainable energy base risk causing discontent and protests.
- **Points of contention:**
  - Who should modernize the networks – the investor or the state?
  - Is it possible to connect without overloading an already weak system?
- **Differences in perception:**
  - Local residents evaluate everything through the prism of possible power outages, which, in principle, have not been observed for a long time - they warn in advance that there will be power outages for some time, as a rule, during preventive work.
  - Climate risks must be taken into account in design.

Emotional markers and value attitudes:

- Frequently heard words: **“risks”, “disconnections”, “not up to par”, “autumn-winter period”, “we need to work in advance in this direction”.**
- Values: reliability, safety, transparency, participation, technology.

Barriers and motivations for participation in the initiative:

- **Barriers:**
  - Average level of confidence in energy systems due to deterioration of equipment at power plants.
  - Lack of awareness about energy auditing and design sustainability
- **Motivations:**
  - New jobs for the population
  - Possibility of development of agricultural cooperation
  - Hope for investor-led infrastructure modernization

6. Conclusions

Summary of key insights:

- The issue of energy security **has become a central point of discussion,** even more important than the environment or employment.
- Attitude towards the Project strongly depends on how reliable and stable the energy supply will be, and most importantly, availability of generators within production facility.

Perception of the investment initiative:

- **Twofold:** on the one hand, hope for development, on the other, fear that the old networks "will not cope". The emphasis is on the fact that investors will install a generator of sufficient capacity.

The role of the human factor (trust, personal motivation):

- High dependence of attitudes towards the project on local **opinion leaders and public explanations.**

Strengths and weaknesses of the current implementation of the Company

Strengths	Weaknesses
Investor's readiness to build from very beginning	Possible integration with energy realities
Potential for employment and local economic growth	Ignoring the risks of energy shortages in communications
Possibility of feed diversification (soybean, corn raw materials)	Lack of dialogue on backup power supply

7. Recommendations

For government agencies (Ministry of Water Resources, Agriculture, Energy):

- **Conduct an energy consumption audit of all agricultural investment projects** with the aim of integrating them into national grid modernization plans.
- **Initiate a public-private partnership (PPP)** in Kemin district to strengthen substations.
- Support local mini-hydroelectric and renewable energy projects (including for the needs of Agro Kush).

For civil society:

- Conduct **public discussions** on the topic of energy security in relation to each investment project.
- Create **initiative groups to monitor** energy quality and availability.
- Nominate representatives to working groups on infrastructure development.

For market participants:

- Assess **real infrastructure capabilities** before launching new production facilities.
- **Include energy sustainability in the business plan** and feasibility study of the project.
- Consider long-term contracts for the supply of electricity with guaranteed volumes.

For Project teams:

- Conduct **a transparent energy audit** and publish the results to the community.
- Install **backup power sources** before starting the production cycle.
- **Inform the population** about mechanisms for protection against failures (reserves, automation, sanitary and epidemiological safety).
- Involve local residents in **energy sustainability** (solar panels, microgrids, participation in equipment installation).

Analytical summary based on all focus group discussions (FGD) and in-depth interviews (ID) conducted within the framework of the research under the Project

Summary of key insights

1. **Energy infrastructure is the main limiting factor:**

All participants, regardless of social and professional background, emphasized the critical importance of a stable energy supply. Deterioration of power lines, interruptions in winter, overloads of substations raise serious concerns about the stability of any production project, especially related to the agro-industrial cycle.

2. **Climate change increases the vulnerability of infrastructure:**

Low-water periods directly affect the operation of hydroelectric power plants and threaten not only local projects, but also the functioning of entire regions. The issue of the sustainability of energy systems is considered in direct connection with climate change.

3. **Social sensitivity increases the reaction to risks:**

People live in conditions of limited resources, low incomes and lack of social protection. Any threat to stability (for example, mass bird deaths or rising tariffs due to new connections) is perceived as potentially dangerous and gives rise to protest sentiments.

4. **Investment project is perceived as an opportunity, but not a guarantee of development:**

The perception is dual: on the one hand, there is hope for jobs and revitalization of the area, on the

other, there is fear that “they will build again without us” and “everything will end up with the investor.”

Perception of the investment initiative as such

- **Positive attitude** among active and economically motivated groups (youth, farmers, representatives of local government): the project is perceived as a rare chance to revive Kemin and create a “new growth point”.
- **Cautious skepticism** from more vulnerable sections of the population: low trust in the state, fear that infrastructure problems will remain on the shoulders of locals.
- **The need for real involvement:** people do not want to be just “observers from the outside” - regular communication, participation in decision-making, access to information is important.
- **Investment initiatives are assessed through prism of historical experience:** people remember past projects that did not lead to the promised changes, and against this background, their expectations are restrained.

The role of the human factor (trust, personal motivation)

- **Trust is a condition for success of a project.** Without it, any technological guarantees or public reports are perceived as a declaration.
- **Role of local opinion leaders** is enormous: rural elders, local entrepreneurs, school principals or veterinarians – they all shape public opinion much more powerfully than official channels.
- **People are motivated:** they want stable work, regular income, confidence in the future. But this motivation can be paralyzed by mistrust or lack of information.
- **Personal safety and family care** are the top priorities when evaluating any initiative. If people feel that a project “may cause harm,” they will resist or distance themselves.

Pros and Cons of the current implementation of the Project

Pros	Cons
An ambitious and large-scale initiative in line with food security priorities	Insufficient consideration of infrastructure risks at the start
Potential creation of new jobs and development of the processing industry	Weak information campaign - low public awareness or weak involvement of vulnerable groups in the overall awareness picture
Opportunity for diversification of agriculture and employment in Kemin	Lack of a public strategy for energy risk management
Potential for integration with state import substitution programs	Concerns about environmental sustainability, especially when using backup energy sources
Chance to attract international partners and technologies	Weak and/or absent mechanisms for public participation and feedback

In the photo: FGD participants – activists, district members, etc. 06/10/2025

Abstract to the report of the sociological research on the Project
Key findings
Understanding of the essence of the Project by the participants

- Most respondents understand the project as **local production** with the potential to create jobs and increase food availability.
- Participants expressed interest in the focus on "**adal" (fresh or proper) products,** export orientation, and production chains.
- However, **some residents and farmers are poorly informed** about the technical details and stages of the project.

Transparency and information openness

- The openness of mayor's office and investors to dialogue is welcomed, however:
  - **There are no mechanisms for continuous communication and feedback yet.**
  - Information is often **spread informally,** creating rumors and anxiety.
  - Participants emphasize the need for **independent environmental monitoring and information meetings.**

Environmental risks

- The main fear is **smells, insects, water and air pollution.**
- There are **doubts about the ability of regulatory authorities to prevent harm,** especially in the event of technology violations.
- **of preventive monitoring and reporting of environmental impacts** is emphasized.

Socio-economic impact

- The prospects are assessed positively:
  - **Job creation** (including for women and youth),

  - **Purchase of agricultural products from local farmers** (soybeans, wheat, corn),
  - **Increase in tax revenues to the district budget.**
- At the same time, some farmers express **concerns about competition and the loss of traditional markets.**

Level of involvement

- City administration actively supports the project, but **institutionalized forms of involvement (councils, public hearings)** have not yet been created.
- **Low initiative on the part of residents and local communities,** except for individual activists.
- Participants see potential in creating **a public monitoring group and an independent coordinating council.**

Suggestions for improvement

- Creation of **a regular platform for dialogue** between the company, farmers, residents and authorities;
- Conducting **public hearings and information sessions** with the participation of sanitary and environmental services;
- **Brand store with affordable prices for the population of Kemin;**
- Support for **farmers through the purchase of feed and raw materials;**
- Ensuring **institutional transparency:** publication of reports, complaints mechanisms, work of the environmental safety service;
- Consideration of **a model of social partnership** with local schools, medical institutions, and cultural initiatives.

Thus, the Project is perceived mostly positively, as a chance to revive the region's agro-industrial potential, but requires **deeper involvement of residents and a focus on social and environmental responsibility.** Creating a sustainable platform for feedback, monitoring and community involvement is key to long-term success.

Key findings: focus group analysis

Topics discussed

1. Understanding the essence and goals of the Project
2. Impact on the local community: economy, employment, prices
3. Environmental risks and sanitary standards
4. Opportunities for farmers: cooperation, purchase of raw materials
5. Transparency, trust, availability of information
6. The role of local authorities and public participation
7. Options for improving the project and participating in it

Comparison of the views of different groups

Group	Project evaluation	Expectations/Fears	Engagement
Residents	Cautious optimism	They are afraid of smells, garbage, flies; they hope for discounts, jobs	Passive participation, high dependence on informal information
Farmers	Interest in sales opportunities	Fear of competition, loss of land/resources	Willingness to cooperate under transparent conditions
Officials (local government, city hall)	Support the project	Interested in taxation, employment, investment flow	Active participation, but weak systemic approach
Project team / investors	Result-oriented	Lack of understanding of local perceptions	High activity, but not always localized communication

General trends, controversial points and differences in perception

- **General positive expectations** for the economic development of the region;
- **Points of contention:** environmental risks, real participation of farmers in supplies, confidence in control;
- **Differences:**
  - Residents are more concerned about **the environment and safety** than the economy;
  - Farmers focus on **economic benefits** and clarity of purchasing conditions;
  - The authorities are confident of a positive effect, but **underestimate the need for feedback from the population.**

Emotional markers and value attitudes

- Common emotions: **hope, caution, uncertainty, curiosity, mistrust;**
- Emphasis on **the values of safety, trust, environmental friendliness, accessibility,** especially for future generations;
- Emphasis on **local identity** and the desire to maintain **farmer independence.**

Barriers and motivations for participation in the initiative

Barriers

- Lack of information
- Lack of participation channels and feedback mechanisms
- Fear of "capture" of resources by big business
- Distrust of official statements without supporting facts

Motivation

- Possibility of product supply
- Getting a stable income/job
- Local economic growth
- Direct contact with the investor, access to technology

Summary of key insights

- The project is perceived as potentially **useful,** but its implementation requires **deep social adaptation.**
- People want to understand **what environmental safety guarantees** and **real benefits** they will receive.
- **Engagement is low,** despite interest, due to lack of transparent information and participation mechanisms.

Perception of the investment initiative as such

- Investment is perceived **not as an external threat, but as a conditionally positive opportunity,** if it does not disturb the ecological balance and leads to transparent cooperation.

The role of the human factor

- The key role is played by **trust in specific people (the mayor, the investor, the district council),** and not in systems.
- **Personal motivation** to participate (for example, in deliveries) is higher among those who have already had contact with project representatives.

Strengths of the current implementation

- Support at the mayor's office and local government level
- Openness to dialogue on the part of the project team
- Strategic vision and export potential

Weaknesses

- Lack of systemic communication
- Poor preparation for public perception of the project
- Insufficient level of transparency of environmental assessment
- Lack of clarity about the model of work with farmers

CONCLUSION

Systematic recommendations based on the analysis of all FGDs, interviews and the context of the Agro Kush project are presented below.

Recommendations for government agencies

(Ministry of Water Resources, Agriculture and Processing Industry of the Kyrgyz Republic, Ministry of Energy, local governments, State Environmental and Technical Inspectorate, etc.)

1. **Develop environmental monitoring standards** and publish regular project reports;
2. Provide **interdepartmental support for the project,** especially at the launch stage;
3. Support the creation of **cooperatives or farmer unions** to participate in the supply chain.
4. **Develop a mechanism for preliminary energy assessment of large investment projects** – Introduce mandatory assessment of the availability and sustainability of energy supply before issuing permits for the construction of large industrial facilities.
5. **Invest in the modernization of energy networks in rural areas** – Include the Kemin district in priority plans for the renovation of transformers, power lines, substations (including through PPP and international aid).
6. **Strengthen environmental oversight with local community participation** – Ensure transparency and independence of monitoring of emissions, noise, waste; introduce the practice of regular environmental audits with publication of results.
7. **Form an interdepartmental working group** – to support highly energy-dependent projects, uniting representatives of ministries, local governments, investors and the civil sector.
8. **Support the creation of mini-hydroelectric power plants and renewable energy sources for local use** – Provide preferential taxation and subsidies for the installation of alternative energy sources for agro-industrial enterprises.

Recommendations for civil society

(NGOs, local initiative groups, media, trade unions, environmental movements)

1. Promote **information and legal literacy** among the population on issues of participation in decisions;
2. Initiate **public supervisory boards** during the implementation of large investment projects;
3. Support **inclusive dialogue** and monitoring of impacts
4. **Act as intermediaries between the population and investors** – Form initiative groups that help residents participate in public discussions and defend their interests (including compensation, ecology and employment).
5. **Participate in environmental monitoring and education** – Educate local populations on the basics of environmental and energy literacy, monitor potential violations and raise concerns in a timely manner.
6. **Promote a mechanism for public reporting of projects** – Introduce the practice of civil “expert sessions” – open discussions of plans and reports of the Agro Kush company with the invitation of independent experts.
7. **Conduct a dialogue with government agencies** – Achieve the introduction of a mandatory procedure for coordinating industrial projects with local residents and NGOs (public hearing and community consent).

Recommendations for market participants

(investors, construction companies, raw material and energy suppliers, farmers, contractors)

1. Prepare for **cooperation and quality standards,** participate in training and certification;

2. Form **a unified proposal for the project** – price, volumes, logistics;
3. Initiate **working groups to interact with the enterprise.**
4. **Assess resilience to infrastructure risks at the planning stage** – Conduct comprehensive feasibility studies, including analysis of the state of the power grid, hydrological risks and availability of labor resources.
5. **Invest in energy independence for your facilities** – Budget for backup generators, solar panels and energy storage systems to minimize production downtime.
6. **Conclude social partnership agreements with local governments** – Include local infrastructure support components in the project: repair of roads, medical centers, schools; participate in the development of the region.
7. **Develop local supply chains** – Contract with local farmers for corn, soybeans, use local construction resources and labor.

Recommendations for the Project Team

(managers, engineers, PR department, technical staff)

1. **Build transparent and continuous communication with local population** – Regular meetings, open reports, hotline, mobile response teams. Visual materials, information boards in villages.
2. Conduct **excursions, open days,** presentations for local residents;
3. Implement **participation through mechanisms: surveys, feedback, citizen hearings;**
4. **Train local representatives** for further work with the population (eco-ambassadors, agricultural managers).
5. **Conduct training events for employees and residents** - Training in the safe handling of equipment, environmental and social responsibility standards, energy conservation.
6. **Strengthen the position of a dedicated community liaison officer** – His job is to promptly respond to residents' requests, facilitate dialogue and help resolve conflicts.
7. **Strengthen internal risk management systems** – Develop plans for power outages, epidemics, supply interruptions. Install backup systems (backup power, autonomous water supply).
8. **Prepare visual communication materials for a wide audience** – Explain in simple terms: how the poultry farm works, what is the ecology, where to go if there is a complaint, what will this give to the region.

Appendix No. 1. Questions for sociological research
QUESTIONNAIRE FOR RESIDENTS
(social survey)
within the framework of the project "Agro Kush" LLC

The survey is anonymous and voluntary.

1. Socio-demographic section

1. Age:
   ☐ up to 18 ☐ 18–30 ☐ 31–45 ☐ 46–60 ☐ 60+
2. Gender:
   ☐ Male ☐ Female
3. Education:
   ☐ Secondary ☐ Secondary specialized ☐ Higher ☐ Other: _____
4. Occupation/profession: _____
5. Duration of residence in the village: _____ years

2. Project awareness

6. Have you heard about the Agro Kush project - construction of a poultry farm and feed mill?
   ☐ Yes ☐ No
7. How did you hear about the project?
   ☐ Village Council ☐ Media ☐ Social networks ☐ Friends/acquaintances ☐ Other: _____
8. How do you feel about the project in general?
   ☐ Positive ☐ Neutral ☐ Negative ☐ Difficult to answer

3. Impact on life and economy

9. How do you think the project will impact:
   (rate on a scale of 1 to 5: 1 - negative, 5 - positive)

Question	Rating (1–5)
Income level in the village	
Employment Opportunities	
Prices for housing, food, services	
General development of the village	

10. Would you/your family members like to work at Agro Kush?
    ☐ Yes ☐ No ☐ I don't know
11. What working conditions are important to you?
    (You can choose several)

__Fair pay
__ Official employment
__ Social package
__ Health insurance
__ Food and transportation
__ Security
__ Other: _____

4. Environmental and sanitary concerns

12. Do you have any concerns about the AgroKush project?
    (You can select several)

__Air pollution
__Water pollution
__Threat to pastures/fields
__Increased waste/odors
__Incidence of diseases and epidemics
__No concerns

13. What environmental protection measures do you consider important?

---

5. Impact on resources and infrastructure

14. Do you use the proposed construction site for:
    ☐ Grazing livestock
    ☐ Picking herbs/berries
    ☐ Transit/passage
    ☐ No use
15. How will the project affect roads, water supply, electricity, transport?

---

6. Information and participation

16. Do you receive enough information about the AgroKush project?
    ☐ Yes ☐ No ☐ I don't know
17. What method of information is convenient for you?
    ☐ Announcements ☐ Meetings in the village administration ☐ WhatsApp ☐ Leaflets ☐ Other: _____
18. Would you like to participate in public discussions of the project?
    ☐ Yes ☐ No

7. General opinion and suggestions

19. Which vulnerable groups do you think require special attention?
    ☐ Women ☐ Youth ☐ Elderly ☐ Low-income ☐ People with disabilities ☐ Other: _____
20. Do you have any suggestions or wishes for improving the project?

Thank you for participating in the survey!

Appendix No. 2. Questions for focus group discussions

Guide. Representatives of other industries located near the project
Objective: to identify expectations, possible conflicts, the impact of the project on the business environment, competition, resources and potential for cooperation.

Questions:

1. General information

1. Please tell us what your company does? How many employees do you have?
2. How many years have you been working on this territory? In what status do you use the land/building?

2. Perception of the project

3. What do you know about the new project (Adal Azyk ™ Toiboss/ Agro Kush)?
4. Where did you get information about him?
5. How do you feel about the fact that a new large production facility will appear nearby?

3. Potential impact on your business

6. In your opinion, will the project affect:
    - Road access and logistics?
    - Access to electricity, water?
    - Competition for labor?
    - Environmental conditions (odor, noise, dust)?
7. Do you have concerns about resource or customer redistribution?

4. Opportunities and interactions

8. Is there a possibility of cooperation or partnership between you and the new project? In what exactly?
    - Supply of raw materials or services?
    - Shared infrastructure?
    - Cooperation with staff?
9. What could influence a positive interaction between you and the project?

5. Information channels and offers

10. Do you participate in public discussions of the project?
11. Would you like to receive information directly from the company or participate in a dialogue?
12. What recommendations could you give to the project to take into account the interests of existing industries?

Note to the interviewer

- Record the type of production, legal status (individual entrepreneur, limited liability company, etc.), location and direction of work
- Clarify not only the problems, but also possible **points of cooperation**
- Identify **formal and informal risks:** competition, rumors, labor influx, traffic flows

Appendix #3. Questions for in-depth interviews

1. Questions to the Akim or representatives of the Village Administration of Kemin District

The goal is to understand the administrative position on the project, identify risks, interests and willingness to cooperate.

Questions:

1. How did you hear about the project and what were your first impressions?
2. What are the main pros and cons you see for the village?
3. What are the expectations of residents? Are there any complaints or concerns?
4. How do you assess the impact of the project on:
    - roads and transport?
    - water supply and sewerage?
    - jobs?
    - social load (kindergartens, schools)?
5. Have there been public discussions yet? How did they go?
6. How transparent is the process of informing the public?
7. What are your proposals to the company or investors?
8. What kind of support do you expect from the project as an administration?
9. How do you see the participation of the village administration at all stages of the project?
10. Are you ready to become a link between the project and the residents?

2. Local council deputies

The goal is to understand the political support for the project, the interests of the groups represented, and the mood in the community.

Questions:

1. Your personal and parliamentary position on the project: do you support it?
2. Which groups of the population contact you with questions or complaints?
3. What risks do you see (environmental, land, social)?
4. What opportunities does the project provide for rural development?
5. Were you involved in decisions regarding land allocation/distribution?
6. How is feedback from residents organized?
7. What social or infrastructure investments would you like to offer the company?
8. Which of the deputies support the project? Is there an opposition?
9. How important is the issue of transparency and accountability of the project for your electorate?
10. What actions could strengthen trust between the population and the company?

3. Land surveyors (State Register)

The goal is to find out the details of land use, conflicts, access to resources, and the land allocation process.

Questions

1. Tell us what lands were or are planned to be transferred for the project?
2. Who made the decision to allocate them? Were there open discussions?
3. Was this land used by local residents (pastures, herb collection, etc.)?
4. Are there any conflict situations with neighboring areas?
5. What is the status of the boundaries and cadastral data on these lands?
6. How does coordination with GASI, GARK and other services take place?
7. Were there any appeals/complaints to the commission or village administration?
8. Are there any concerns about land shortages for other uses?
9. What measures to minimize conflict do you consider reasonable?
10. What would you recommend to an investor for the “correct” integration into the land landscape?

4. Representatives of other industries nearby (no such)

The goal is to identify expectations, possible conflicts, the impact of the project on the business environment, competition, resources and potential for cooperation.

Questions

1. Please tell us what your company does? How many employees do you have?
2. How many years have you been working in this area? In what status do you use the land/building?
3. What do you know about the new project (Adal Azyk ™ Toiboss/Agro Kush)?
4. Where did you get information about him?
5. How do you feel about the fact that a new large production facility will appear nearby?
6. Do you think the project will have an impact on

- Access to roads and logistics?
-Access to electricity, water?
-Competition for labor?
- Environmental conditions (smell, noise, dust)?

7. Do you have any concerns about resource or customer redistribution?
8. Is there a possibility of cooperation or partnership between you and the new project? In what exactly?

-Supply of raw materials or services?
-Shared infrastructure?
- Cooperation with staff?

9. What could influence a positive interaction between you and the project?
10. Do you participate in public discussions of the project?
11. Would you like to receive information directly from the company or participate in a dialogue?
12. What recommendations could you give to the project to take into account the interests of existing industries?

Note for the interviewer - record the type of production, legal status, location and direction of work. Clarify points of cooperation and hidden risks (competition, rumors, resource flows).

5. **Representatives of the veterinary service of Kemin district.**

Questions

- How do you assess the current level of veterinary control and epidemiological safety in the Kemin district?
- What are the main challenges you see in connection with the implementation of the Agro Kush project?
- What potential epidemiological risks could the construction of a large poultry farm entail?
- Is there sufficient capacity and resources in the area to control disease outbreaks in poultry?
- How important are sanitary gaps (minimum distance to populated areas)? Are they respected in the project?
- At what stage did the project team begin interacting with your service?
- What interdepartmental coordination procedures (for example, with environmentalists, the SES, local administration) do you consider most important for such facilities?
- Is the level of material and technical equipment of local veterinary services sufficient to control such production?
- What additional resources or training would make you more effective as you launch a large business?
- How do you see the mechanism for continuous monitoring of the health status of poultry and the sanitary condition of production?
- How can reporting and public information systems in the event of disease outbreaks be improved?
- How important is it to inform the public and farmers about biosecurity measures?
- How do you assess the current level of public trust in the work of the veterinary service?
- What can you recommend to the project team to minimize risks?
- What measures (at the legislative or municipal level) could strengthen your service in the context of such projects?

6. **Mayor of Kemin**

Questions

- How do you generally assess the project to build a poultry farm and feed mill by the Agro Kush company?
- What, in your opinion, are the key benefits and risks it brings for the city and the region?
- What economic and social changes do you expect after the launch of the project?
- What is the expected role of the project in increasing local employment?
- Are there any plans to integrate this project into the overall development strategy of the city/region?
- To what extent is the city's infrastructure (electricity grids, roads, water supply) ready for the emergence of such a facility?
- Are there any plans to upgrade or expand infrastructure in connection with the project?
- What problems with electricity or water supply do you consider to be the most critical?
- To what extent do you think city residents are informed about the essence of the project?
- Were there any complaints, appeals, public discussions – and how were they organized?
- How do you assess the level of trust of residents in investors?
- How is work organized with representatives of the company "Agro Kush"?
- Is there support from central government agencies (for example, the Ministry of Agriculture, Energy)?
- What measures are being taken to ensure transparency and accountability in project implementation?
- How concerned are you about the potential environmental impacts of the project?
- Who, in your opinion, should monitor compliance with sanitary and environmental standards?
- Does the city have the resources to monitor such sites?
- What do you think is the role of the mayor's office in supporting or monitoring the implementation of such initiatives?
- Do you plan to participate in programs to attract investment or develop local industry?
- What steps do you consider necessary for the successful implementation of the project?
- What do you think could be improved in communication between the government, the population and the investor?

Appendix No. 4. List of experts (interviews)

No.	Full name	Job title	Photo during interview
1	**Shakirov Kutpidin Abdyrakhmanovich**	Head of Kemin District State Administration	
2	**Abdyvaliev Kairat Zamirbekovich**	Mayor of Kemin	No photo
3	**Kopzhasharov Kydyrbek Tologonovich**	Deputy of the local Council.	

4	**Sultashev Zamir Zhusupbekovich**	Director of Kemin branch of State Agency for Land Resources, Cadastre and Geodesy	
5	**Osoev Zhyrgalbek Osoevich**	Head of Kemin District Veterinary Department	
6	**Kochmambetova Zemfira Ryskulovna**	Head of the Kemin District Center for Disease Prevention and State Sanitary and Epidemiological Surveillance	
7	**Mirlan Esengul uulu**	Head of Kemin LPA	No photo.
8	**Kapashev Mederbek Kurmankozhoevich,**	Deputy Mayor of the City of Kemin, Chief of Staff	No photo.

Appendix No. 5. Statistical analysis of questionnaires (excel file) - see separately

Annex 3. Engineering and Geological Surveys

ЭЛИТАГЕО
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Client – LLC «Agro Kush»

«Feed mill Kemin town, Naberezhnay street 1»

ENGINEERING AND GEOLOGICAL REPORT OF THE SITE FOR THE PREPARATION OF DESIGN DOCUMENTATION

Engineering and Geological Surveys

-EGS-

Bishkek
2025

ЭЛИТАГЕО
Инженерные изысканя

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ENGINEERING AND GEOLOGICAL REPORT OF THE SITE FOR THE PREPARATION OF DESIGN DOCUMENTATION

Engineering and Geological Surveys

-EGS-

General Director **Atykenova E.E.**

stamp «__» may 2025

Bishkek
2025

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Signature and date
Inventory No.

Chng	No of part	List	Doc No.	Signature	Date	-EGS--	List 3

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Engineering and Geological Conclusion.

I. Site location

According to Terms of Reference from LLC "Agro Kush," specialists from the Engineering and Geological Survey Department of LLC "ElitaGeo" conducted engineering and geological surveys in May 2025 at the site: "Feed Mill in Kemin, 1 Naberezhnaya Street." **(Annex 2)**

Engineering survey site is located in the northern part of Kemin, approximately 700 meters north of Bishkek–Balykchy highway, near Chu River (former linoleum factory). Administratively, the area belongs to Kemin District of Chuy Region. **(Photo 1)**

Photo 1. Site Location Diagram

Purpose of the engineering and geological surveys is to obtain reliable information about geological, hydrogeological, and engineering-geological conditions of construction site. These surveys are necessary to ensure safety, reliability, and durability of the future structure.

Engineering and geological surveys' results are used to justify design decisions, select optimal construction technologies, and ensure safe operating conditions throughout the entire service life.

To determine the lithological structure and hydrogeological conditions, four boreholes were drilled to a depth of 15 meters using a URB 2A-A rig and a 110 mm diameter pneumatic hammer. Additionally, geophysical surveys were conducted, including one seismic sounding point and three physical points of vertical electrical sounding (VES).

Investigation depth is 15 meters, in accordance with CN&R KR 11-01-98 "Engineering Surveys for Various Types of Construction," clause 6.39, Table 25.

Geologic-lithological column of the borehole has been digitized and is provided in **Annex 9**. Engineering and geological section is presented in **Annex 10.**

II. Brief Climate Characteristics

Climate is continental, with a dry, hot summer and moderately cold winter. Average temperature in July is 25 °C. Autumn is dry and warm, followed by a sharp transition to winter. Snow cover is inconsistent. Number of days per year with snow cover is 52, and the average snow depth within the elevation range of 0.8–1.3 km is 16 cm.

Annual precipitation is about 400 mm, with approximately 40% falling during spring period. In Chon-Kemin basin, at elevations between 1.5 and 2.5 km, snow cover ranges from 10 to 35 cm in depth, with 110 to 143 days per year having snow cover.

For northern slope of Kyrgyz ridge, snow accumulation data vary with increasing elevation as follows: at 1000 m – snow depth 15 cm, 68 days of snow cover per year; 1500 m – 20 cm, 85 days; 2000 m – 25 cm, 103 days; 2500 m – 40 cm, 135 days; 3000 m – 75 cm, 189 days; 3500 m – 154 cm, 278 days. Similar pattern is observed on northern slopes of Kungey Ala-Too in Chon-Kemin basin, with difference that snow accumulation occurs under somewhat different conditions and there is a small elevation shift of about 500 m upward due to the valley's protection from northwestern winds.

Standard depth of seasonal soil freezing beneath an open, snow-free horizontal surface is as follows: for loams and clays – 120 cm; for sandy loams, fine and silty sands – 146 cm; for gravelly, coarse, and medium sands – 156 cm; for coarse-fragmented soils – 177 cm.

Full climatic characteristics of the area are provided in textual Annex No. 1 based on data from "Shabdan" meteorological station. **(Annex 1)**

III. Geomorphological Conditions

Area terrain is an accumulative flat valley with river terraces, formed by Chu River. Here, Chu River flows relatively calmly through a wide valley, which promotes accumulation of vast masses of various loose alluvial deposits filling Chuy Depression.

Relief is flat with extensive development of the Chu River terraces. River flows through a narrow channel in river gravels among terraced banks, gradually lowering in elevation as it moves away from the Boom Gorge.

Engineering survey site is located within a single geomorphological element — on the surface of first (I) left-bank alluvial terrace of Chu River (*al-Q4* deposits), in area of Kemin.

Terrace surface gently slopes toward Chu River with a gradient of 0.005 to 0.01 and is dissected by a network of shallow water erosion features — ravines, gullies, and stream channels up to 3–5 meters deep and 100–150 meters wide. Absolute elevations range from 1075.37 to 1076.53 meters.

It should be noted that the natural terrain of the site has been disturbed due to human economic activities. **(Annex 8)**

IV. Lithological Structure

Surveyed area is located within Chuy Basin, so its geological study history is directly connected to the research history of entire Chuy Depression.

Engineering survey site is situated on the first (I) left-bank floodplain terrace of Chu River and consists of modern alluvial deposits (*al-Q4*).

Soil profile is composed of coarse-fragmented deposits with gravel composition and up to 20% sand filler. Content of boulders measuring 200–500 mm in diameter reaches 30%. Clastic material is unweathered, well-rounded, and mainly consists of igneous and metamorphic rocks. Gravel layer thickness is approximately 12 meters. A more detailed description of geological-lithological structure is provided in graphical **Annexes No. 8–9.**

V. Hydrogeological Conditions

Within proposed construction site, a groundwater-bearing horizon is developed in alluvial gravel soils of modern age (*al-Q4*) on the first (I) left-bank floodplain terrace of Chu River.

The aquifer is located in modern alluvial deposits (al-Q4).

Groundwater in alluvial deposits is associated with the lower floodplain terraces and river floodplains. Water-bearing formations consist of boulder-gravel, gravel, and sandy-loam deposits.

This aquifer is recharged by infiltration of surface water and atmospheric precipitation, as well as by underground inflow from other aquifers. Groundwater flow direction coincides with the direction of the river valleys. Average hydraulic gradient is 0.035. In the mountainous and foothill parts of the area, groundwater in the river valleys circulates within gravel and boulder-gravel deposits underlain by bedrock. Their water capacity depends on the thickness, composition of the deposits, and recharge conditions. Filtration coefficient of modern alluvial deposits ranges from 20 to 160 meters per day or more. According to pumping test data in test pits, the filtration coefficient of these soils is between 1.9 and 3.5 m/day.

Free water exchange and high permeability of the deposits determine good quality of the aquifer. Groundwater is chemically bicarbonate-calcium type, fresh, with mineralization less than 1 g/l.

At survey site (former linoleum factory), groundwater was not encountered down to a depth of 15 meters in the drilled boreholes. Based on above, the construction site territory, according to clause 2.97 of "Guidelines for the Design of Foundations for Buildings and Structures," is classified as potentially free from groundwater flooding.

VI. Geophysical Surveys

Geophysical work at the site: "Feed mill in Kemin, Naberezhnaya street 1" was carried out in May 2025.

To address the assigned tasks on the surveyed area, the following geophysical investigations were conducted:

1. To determine the depth of lithological layers, their specific electrical resistivities, and the corrosion activity of soils relative to carbon steel, according to GOST 9.602-89, the Vertical Electrical Sounding (VES) method was applied at 3 points. Measurements were performed using a symmetric four-electrode Schlumberger setup with an AE-72 auto-compensator and a PT-1 current transformer. Maximum length of power line spreads was up to 80 meters. Data interpretation was carried out using Pylyaev's charts and IPI2WIN software. Results are presented in the "VES Method Results Table" (**Annex 6**)

2. Additionally, to determine the propagation velocities of longitudinal and transverse waves (Vp and Vs), 1 point of seismic survey by the refraction correlation method RCM was conducted. Seismic survey was performed using "Talgar-3" seismic station, employing refracted waves method. Elastic vibrations were generated by striking an 8 kg hammer on a metal plate, with accumulation of 10 to 40 impacts depending on array length and complexity of seismic profile. Observations were made according to the ZZ scheme (vertically directed impact and vertically oriented seismodetector axis) and the YY scheme (horizontally directed impact and horizontally oriented seismodetector axis).

Seismodetector were placed at 2-meter intervals. Length of the seismic survey spread was 50 meters.

On the seismograms, longitudinal P-waves were identified. Seismic survey was conducted in accordance with "Instruction on the Use of Seismic Survey in Engineering Investigations" (RSN-45-77) and RSM-85 standards.

Bulk density of gravelly soil was calculated using formula: t/m³ = $\frac{11 + Vp(км/с)}{5.7}$ Formula is taken from "Instructions for the Application of Seismic Surveying in Engineering Investigations.".

Results of VES and RCM methods, specifically by points, indicating identified intervals and thicknesses, apparent resistivity, corrosive aggressiveness, propagation velocities of refracted waves Vp and Vs, and bulk density of fragmental soils are compiled in the corresponding table and presented in Annex 6.

VII. Hydrological Conditions

Hydrographic network of Chuy region belongs to the basins of Chu and Naryn rivers. Main water artery of the region is Chu River, which forms within Kochkor basin from confluence of Dzhuwan-Aryk and Kochkor rivers.

Along its entire course, Chu River forms numerous meanders and branches, receiving several tributaries, the largest within Kyrgyzstan being the Chon-Kemin River (length 110 km). Below their confluence, the river's average multi-year discharge is about 53 m³/s. The total length of Chu River within Kyrgyzstan is 221 km.

River flows through several gorges and basins, among which the key ones are Boom Gorge and valley near Tokmok. Flow in upper reaches is predominantly fast, with rapid currents and steep banks.

Section between Boom Gorge and the city of Kemin, the river valley widens to 6–8 km. Riverbed is well-formed; in this area, water losses due to filtration are minimal, thanks to the close occurrence of bedrock along the riverbed. Further downstream, bedrock submerges under a thick layer of loose debris deposits, which increases filtration losses.

To reduce water losses, a concrete canal 37 km long with a capacity of up to 50 m³/s was constructed along the left bank of Chu River from Kemin HPP to Tokmok.

Catchment basin of Chu River is located in the high-mountain areas of the Terskey Ala-Too, Kungey Ala-Too, and Kyrgyz ridges. Primary source of water is snow and glacier melt. In summer, river's alimentation source is melting snow and glaciers, while during the rest of the year, it is sustained by groundwater and subterranean water.

According to long-term observations at the Dzhil-Aryk hydrological station (1912–1938), average monthly discharge of Chu River ranged from 32.7 to 94.2 m³/s. Maximum recorded value was 170.0 m³/s in June 1934.

VIII. Physicomechanical Properties of Soils

In accordance with GOST 20522-2012 and GOST 25100-2020, one engineering-geological element (EGE) has been identified within the surveyed area.

EGE-1. Gravel soils with a slightly moist sandy filler up to 20% and containing boulders with a diameter of 200–500 mm up to 30%. The clastic material is unweathered, represented by well-rounded fragments of igneous and metamorphic rocks. From a depth of 8.0 m, the sandy filler content increases to 30%.

Results of particle-size distribution analysis and water extract tests are provided in Text **Appendix 5.**

Normative and design values of specific cohesion, internal friction angle, and deformation modulus for gravel soil—based on generalized results of previously performed fieldwork by OJSC "KyrgyzGIIz" in Chuy Region and as given in temporary methodological guidelines VSN-88 and VSN-89—are recommended as follows:

Cn = 30.0 kPa (0.30 kgf/cm²), CI = 18.0 kPa (0.18 kgf/cm²), CII = 22.0 kPa (0.22 kgf/cm²);

φn = 38°, φI = 31°, φII = 33°;

En = 74 MPa (740 kgf/cm²).

Design soil bearing capacity Ro = 6.0 kgf/cm² (600 kPa).

Specific electrical resistivity (SER) of the fill and gravel soils ranges from 310 Ω·m to 3000 Ω·m. According to GOST 9.602-2005, the corrosion aggressiveness of the EGE-1 gravel soils is classified as low **(Appendix 6).**

Soils are non-aggressive to concretes made with Portland cement in accordance with GOST 10178-76*, water permeability grade W4, based on sulfate content. Based on chloride content, the soils are non-aggressive to reinforcement in reinforced concrete structures.

Groundwater is non-aggressive to concretes made with Portland cement in accordance with GOST 10178-76, water permeability grade W4.

Numbers of engineering–geological elements are indicated on engineering–geological cross-sections in the graphical appendices.

IX. Site Seismicity

According to Appendix G, Table G.1, item 1722 of the Construction Standards of the Kyrgyz Republic (CN KR) 20-02:2024 “Seismic-Resistant Construction. Design Standards”, approved and enacted on March 29, 2024, by Order No. 68-npa of the State Construction Committee of the Kyrgyz Republic dated March 7, 2024, based on delegated authority in accordance with Resolution No. 115 of the Cabinet of the Ministry of Construction of the Kyrgyz Republic dated March 3, 2023, replacing CN&R 20-02:2009 “Seismic-Resistant Construction. Design Standards” and CN KR 20-02:2018* “Seismic-Resistant Construction. Design Standards”. The territory of the planned construction site, located in the city of Kemin, has an initial seismicity rating of 9 points.

Based on the specific geological and lithological structure of the site determined during the engineering–geological surveys, the soil condition type is classified as IB according to seismic properties, as per Table 6.1 of CN KR 20-02:2024 “Seismic-Resistant Construction. Design Standards”.

According to Table 6.2 of CN KR 20-02:2024 “Seismic-Resistant Construction. Design Standards”, the refined seismicity for the construction site is recommended to be taken as 9 points, with a design acceleration ag (as a fraction of g) of 0.400 for soil condition type IB.

X. Conclusion

1. Engineering survey site is located within a single geomorphological element—on the surface of first (I) left-bank alluvial terrace of the Chu River (*al-Q4 deposits*), in the area of Kemin (former linoleum plant).
2. Climate is continental, with dry, hot summers and moderately cold winters. Average July temperature is 25 °C. Autumn is dry and warm, followed by an abrupt transition to winter. Snow cover is inconsistent. Number of days per year with snow cover is 52, and average snow depth in the 0.8–1.3 km elevation range is 16 cm. Standard depth of seasonal soil freezing beneath an open, snow-free horizontal surface is as follows: loams and clays — 120 cm; sandy loams, fine and silty sands — 146 cm; gravelly, coarse, and medium sands — 156 cm; coarse fragmental soils — 177 cm.
3. Within the proposed construction site, a groundwater-bearing horizon occurs in modern alluvial gravel soils (*al-Q4*) of first above-floodplain terrace of Chu River. In investigation area (former linoleum plant), groundwater was not encountered to a depth of 15 meters in the drilled boreholes. Based on above, the construction site, in accordance with clause 2.97 of the Guidelines for the Design of Building and Structure Foundations, is classified as potentially not

subject to groundwater flooding.

4. Soil profile is composed of coarse clastic deposits of gravel composition with a sand filler of up to 20%. Content of boulders 200–500 mm in diameter reaches 30%. Clastic material is unweathered, well-rounded, and predominantly represented by igneous and metamorphic rocks.

5. Foundation base will consist gravel soils with a sand filler, classified as a single engineering-geological element (EGE) in accordance with GOST 20522-2012 and GOST 25100-2020. Their physical and mechanical properties are provided in Chapter VIII. Soil groups for manual excavation are presented in geological-lithological columns of boreholes and on the engineering-geological cross-sections in the graphical appendices.

5. According to Table No. 6.2 of CN KR 20-02:2024 Seismic-Resistant Construction. Design Standards*, the refined seismicity of the construction site is recommended to be taken as 9 points, with a design acceleration ag (in fractions of g) for soil condition type IB set at 0.400.

6. In the event of significant changes to surface due to vertical grading, or to its technical characteristics, this engineering-geological report must be revised in accordance with the altered conditions.

7. If soils that do not correspond to this report are encountered at the foundation levels, they must be inspected by a representative of ElitaGeo LLC, with an inspection report prepared.

Prepared by: Hydrogeological Engineer  Mazymkanova A.N.

TEXT ANNEXES

Annex 1

Climatic characteristics according to the Shabdan (Novorosiika) meteorological station (absolute elevation 1532.0 m)

N	Justification for the given characteristic	Source of the given characteristic	Climate characteristics
1	2	3	4
	CN&R 23-02-00	CN&R KR 23-02-00 table 3	Average monthly air temperature

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
-9.5	-7.3	0.0	7.4	11.4	14.8	16.9	16.0	11.6	5.4	-1.4	-6.4

2	-//-	2. Average annual air temperature,°C [4.9]
3	Table 1	3. Absolute minimum air temperature, °C[- 34]
4	Table 2	4. Absolute maximum air temperature,°C [38]
5	-//-	5. Average maximum temperature of the hottest month, °C[26.2]
6	Table 1	6. Temperature of the coldest five-day period with a probability of 0.98, °C[-22]
7	-//-	7 Temperature of the coldest five-day period with a probability of 0.90 °C[-20]
8	-//-	8. Temperature of the coldest day with probability, 0.98, °C[-27]
9	-//-	9. Temperature of the coldest day with probability, 0.92, °C[-25]
10	-//-	10. Average temperature of the coldest period (ventilation), °C[-14]
11	-//-	11. Duration of the period with average daily air temperature, $\frac{\leq 8°C}{<10°C}$ days. $\frac{195}{219}$
12	-//-	12. Duration of the period with average daily air temperature ≤ °C, days - 126
13	-//-	13. Average temperature of the period with average daily air temperature, $\frac{\leq 8°C}{\leq 10°C}$, days . $\frac{[-2,6]}{[-1,6]}$
14	CN&R 2.01.01-82 Appendix 2	CN&R 2.01.01-82 Appendix 2

14. Temperature fluctuation amplitude $\frac{medium}{maximum}$, °C by month

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII

15	CN&R 2.01.01-82 Appendix	CN&R 2.01.01-82 Appendix 3	15. Water vapor pressure of outdoor air by month, hPa

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII

16	CN&R KR 23-02-	CN&R KR 23-02-00 Table 1 Table 2	16. Average relative humidity of the outside air at 15:00: $\frac{coldest\ moth\ of\ year, \% - 54}{coldest\ moth\ of\ year, \% - 40}$
17		Table 1	17. Average amount of precipitation for the period: November - March, mm -10; for April – October, mm - 361

N	Justification for the given characteristic	Source of the given characteristic	Climate characteristics
1	2	3	4
		Table 2	
18	CN&R 2.01.-82 Appendix 3		18. Amount of liquid precipitation per year, mm - 462
19	CN&R KR 23-02-00 table 2		19. Daily maximum precipitation, mm -59
20	CN&R II – 6-74 p. 5.2	RSN 1-87	20. Weight of snow cover per 1 m^2 horizontal ground surface (average value of annual maximum water reserves), kgf/m^2 - 34
21	CN&R II – 6-74 p. 6.4	Letter of the State Construction Supervision Authority No. 366 dated 27.03.85	21. Wind speed at a height of 10 m above the ground, m/s
22			22. Wind speed coefficient -
23	CN&R 2.01.01-82	CN&R 2.01.01-82 Appendix 4	23. Maximum of average speeds by compass for January, m/s -
24	CN&R 23-02-00	CN&R KR 23-02-00 table 2	24. Maximum of average speeds by compass for January, m/s – 0.2
25		-//- Table 4	25. Total solar radiation (direct and diffuse) arriving at a horizontal surface under cloudless skies for each month of the year, MJ/m^2

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	year
316	395	619	782	940	949	937	828	654	501	322	260	7504

26		CN&R KR 23-02-00 Appendix G

26. Total solar radiation (direct and diffuse) reaching a vertical surface under cloudless skies for each month of the year, MJ/m^2

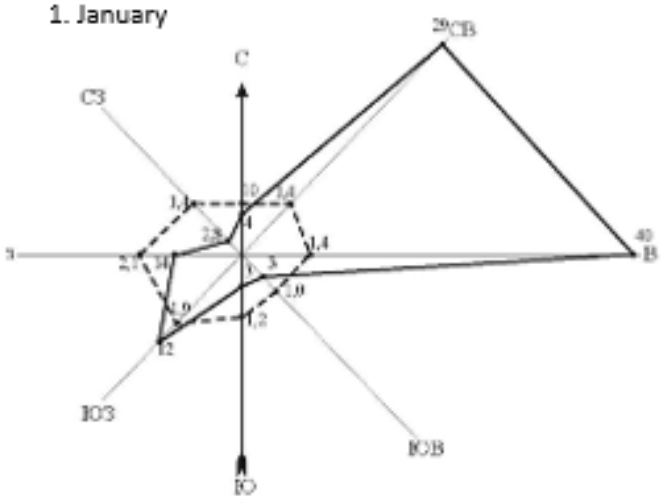
Orientation	months											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
North	-	-	-	115	164	196	196	134	-	-	-	-
North – East	-	-	185	256	325	345	328	276	208	156	-	-
East	210	256	390	435	481	467	479	445	375	321	224	189
South – East	481	477	558	505	475	426	420	478	489	521	456	424
South	652	613	648	484	366	291	227	416	505	621	623	622
South – West	481	477	558	505	475	426	420	478	489	521	456	424

N	Justification for the given characteristic	Source of the given characteristic	Climate characteristics											
1	2	3	4											
			West	210	256	390	435	481	467	470	445	375	321	224	189
			North - West	-	-	185	256	325	345	328	276	208	156	-	-
27	CN&R II – 31-74 p. 8.28, p. 8.31	Graph of the dependence of the maximum depth of zero isotherm penetration on altitude, compiled by UGKS of the Kyrgyz SSR.	27. The maximum depth of penetration of the zero isotherm under natural snow cover is 111 cm.											
28	CN&R – 2.0.2.01 – 83 p. 2.25; 2.26		28. The standard depth of seasonal soil freezing under an open, snow-free horizontal surface is as follows: loams and clays – 120 cm; sandy loams, fine and silty sands – 146 cm; gravelly, coarse, and medium sands – 156 cm; coarse-grained soils – 177 cm.											
29	CN&R KR 23-02-00	CN&R KR 23-02-00 table 6	29. Wind frequency and average wind speed in m/sec in directions for January and July are shown on the wind roses.											

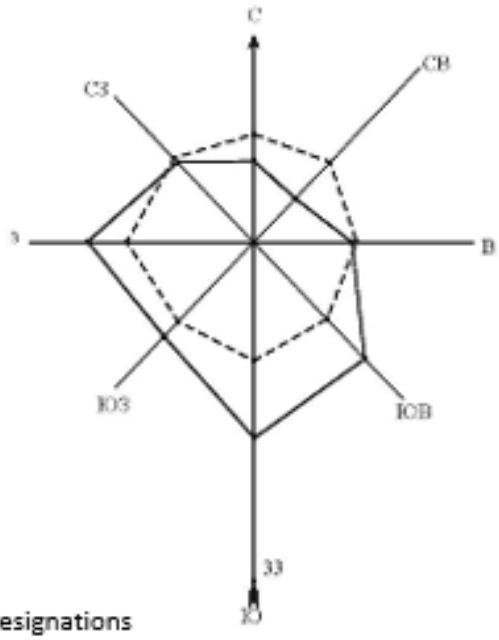
Annex 1

Wind rose

1. January



2. July



conventional designations

wind repeatability

Average wind speed

Scale: Wind repeatability 1 cm: 5% of cases. Average wind speed 1 cm: 1 m/sec

Annex 2.

Terms of Reference
LLC «ElitaGeo»
For engineering surveys conduction

Client – LLC «Agro Kush»

Object's name: **«Feed mill in Kemin, Naberezhnaya street 1»**

1. Design stage Paperwork
2. Head constructor
3. Available information on previous site survey works: *none*

Requirements for Engineering Survey conduction

1. Carry out engineering and geological surveys in accordance with Table No. 1 and the master plan (Annex No. 1), following the requirements of CN&R KR 11-01-98 "Engineering surveys for various types of construction" and CR KR 50-101-2025 "Foundations of buildings and structures."

2. Determine the aggressiveness of soils and groundwater with respect to concrete and reinforced concrete structures, corrosive aggressiveness toward steel, lead and aluminum cable sheaths (underline as appropriate).

3. Refine the seismicity of the site for the planned construction.

4. Drill boreholes in accordance with the applicable СНиП (Construction Norms and Regulations).

Project's Head Engineer

« » 2025

Main Designed Buildings and Structures and Their Technical Specifications

Table 1

№№ п/п	Name of Building / Structure	Responsibility Level	Quantity	Length, m;Width, m; Height, m. (Number of Floors)	Foundation	Depth from Ground Surface, m	Load on Foundation, kN/m кН/м	Load on Support, kN	Presence of Wet Technological Process	Basement Depth from Ground Surface, m	Amount of Cuts, Earthworks
1	Room 1	2	1	24x30x30м (5 floor)	--	--	--	--	--	--	--
2	Room 2	2	1	24x12x6,5 (1 floor)	--	6,5	--	--	--	--	--
3	Room 3	2	1	26x27,5 x6,5 (1 floor)	--	--	--	--	--	--	--

Presence of Dynamic Loads on Soils – Yes (No) (underline as applicable)

Routes of Engineering Utilities

Table 2

№ п/п	Types of Utilities	Length, km	Burial Depth, m	Utility Material	Additional Information
-	-	-	-	-	-

Annex № 3. License of LLC "ElitaGeo".

КЫРГЫЗ РЕСПУБЛИКАСЫНЫН
МИНИСТРЛЕР КАБИНЕТИНЕ
КАРАШТУУ АРХИТЕКТУРА, КУРУЛУШ
ЖАНА ТУРАК-ЖАЙ-КОММУНАЛДЫК
ЧАРБА МАМЛЕКЕТТИК АГЕНТТИГИ

ГОСУДАРСТВЕННОЕ АГЕНТСТВО
АРХИТЕКТУРЫ, СТРОИТЕЛЬСТВА И
ЖИЛИЩНО-КОММУНАЛЬНОГО
ХОЗЯЙСТВА ПРИ КАБИНЕТЕ МИНИСТРОВ
КЫРГЫЗСКОЙ РЕСПУБЛИКИ

ЛИЦЕНЗИЯ

Каттоо номери, лицензиялардын реестр боюнча сериясы
Регистрационный номер, серия по реестру лицензий
серия КРЦ-1 № 012070 от 13.02.2025 г.

Берилди
Выдана
Обществу с ограниченной ответственностью «ЭлитаГео»

Лицензияттын адреси
Адрес лицензиата
Кыргызская Республика г. Бишкек, ул. Байтик Баатыра, 49

Мамлекеттик каттоо күбөлүгү
Свидетельство о государственной регистрации
№ 312725-3301-ООО от 27.01.2025 г. Чуй-Бишкекское управление юстиции Министерства юстиции Кыргызской Республики

Идентификациялоо коду
Идентификационный код
02701202510482

Төмөндөгүдөй ишкердикке уруксат берилди:
Разрешено заниматься деятельностью:

I. Градостроительные, проектно-изыскательские работы

Лицензиянын мөөнөтү
Срок действия лицензии
без ограничения срока действия

Лицензиянын территориялык жарактыгы
Территория действия лицензии
Кыргызская Республика

Лицензияны башка бирөөгө берүүгө болбойт
Лицензия является неотчуждаемой

Лицензионные условия: Содержание видов строительной деятельности, включенных в настоящую лицензию установлено в соответствии с прилагаемым Перечнем работ

Л № 000179

						-EGS--	List 17
Chng	Noofpart	List	DocNo.	Signature	Date		

Inventory No. | Signature and date | Inventory No.

ПРИЛОЖЕНИЕ К ЛИЦЕНЗИИ

СЕРИИ КРЦ-1 № 012070

ВЫДАННОЙ 13 ФЕВРАЛЯ 2025 ГОДА

Обществу с ограниченной ответственностью

«ЭлитаГео»

Перечень работ, являющихся содержанием
строительных видов деятельности, разрешенных данной лицензией

I. ГРАДОСТРОИТЕЛЬНЫЕ, ПРОЕКТНО-ИЗЫСКАТЕЛЬСКИЕ РАБОТЫ

Третьего уровня ответственности:

Инженерно-геологические изыскания;

1.04. Инженерно-геологические работы под объекты строительства

МИНИСТР **Н.К. ОРУНТАЕВ**

Н.№ 000179

Chng	Noofpart	List	DocNo.	Signature	Date	-EGS--	List 18

Inventory No. | Signature and date | Inventory No.

КЫРГЫЗ РЕСПУБЛИКАСЫНЫН МИНИСТРЛЕР КАБИНЕТИНЕ КАРАШТУУ АРХИТЕКТУРА, КУРУЛУШ ЖАНА ТУРАК-ЖАЙ – КОММУНАЛДЫК ЧАРБА МАМЛЕКЕТТИК АГЕНТТИГИ

ГОСУДАРСТВЕННОЕ АГЕНТСТВО АРХИТЕКТУРЫ, СТРОИТЕЛЬСТВА И ЖИЛИЩНО-КОММУНАЛЬНОГО ХОЗЯЙСТВА ПРИ КАБИНЕТЕ МИНИСТРОВ КЫРГЫЗСКОЙ РЕСПУБЛИКИ

МАМЛЕКЕТТИК КВАЛИФИКАЦИЯЛЫК

ГОСУДАРСТВЕННЫЙ КВАЛИФИКАЦИОННЫЙ

СЕРТИФИКАТ

серия ИЗ-2.1 № 033037

БУЛ МАМЛЕКЕТТИК ЖАРОО ДАРАЖАЛЫК СЕРТИФИКАТ БЕРИЛДИ

НАСТОЯЩИЙ ГОСУДАРСТВЕННЫЙ КВАЛИФИКАЦИОННЫЙ СЕРТИФИКАТ ВЫДАН

Мазымкановой Алтынай Нурлановне

НА ОСУЩЕСТВЛЕНИЕ ПРОФЕССИОНАЛЬНОЙ ДЕЯТЕЛЬНОСТИ В КАЧЕСТВЕ

инженера — гидрогеолога

для целей строительства

БУЛ СЕРТИФИКАТ ЖАРАКЧА МЕНЕН АЛЫНГАН ЛИЦЕНЗИЯНЫ ЖОК БОЛСО, БАШКА ИШКЕРДИК ЖУМУШТАРГА УКУК БЕРБЕЙТ

СЕРТИФИКАТ НЕ ДАЕТ ПРАВА ЗАНИМАТЬСЯ ПРЕДПРИНИМАТЕЛЬСКОЙ ДЕЯТЕЛЬНОСТЬЮ БЕЗ ЛИЦЕНЗИИ, ПОЛУЧЕННОЙ В УСТАНОВЛЕННОМ ПОРЯДКЕ

СЕРТИФИКАТ "18" января 2027 ж. ЧЕЙИН ЖАРАЙТ

СЕРТИФИКАТ ДЕЙСТВИТЕЛЕН ДО г.

Директор Т. Сатышов

С № 027682

Determination of the granulometric (grain) composition of sandy soils using the sieve method.

№П/П	Well No. (Pit)	Depth of selection, m	Grain (granulometric) composition in %. Fraction size in mm								Humidity, %		Number plasticity, p J %	Natural humidity, W%	Flow index, J p in fractions of units	Name of soil
			>10	10-5	5-2	2-1	1-0.5	0.5-0.25	0.25-0.1	<0.1	At the yield point W_L	At the rolling boundary W_p				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Well - 1	2.3-2.6	54.4	23.3	9.7	2.5	2.6	3.7	3.6	2,2	**not plastic,**					gravel soil with sand filling.
2	Well - 1	4.5-4.8	52.5	20.4	10.8	2.9	2.6	4.0	4.5	2.6	**not plastic,**					gravel soil with sand filling.
3	Well - 1	10.1-10.3	54.2	7.0	8.8	5.2	3.4	7.0	7.0	7.4	**not plastic,**					gravel soil with sand filling.
4	Well - 1	14.7-15.0	58.5	8.2	4.5	3.1	8.7	4.7	6.5	5.8	**not plastic,**					gravel soil with sand filling.
5	Well-2	1.9-2.1	55.2	16.0	9.5	8.2	2.6	3.1	2.9	2.6	**not plastic,**					gravel soil with sand filling.
6	Well-2	4.9-5.2	54.5	13.4	12.3	3.1	4.7	4.2	4.4	3.3	**not plastic,**					gravel soil with sand filling.
7	Well-2	7.9-8.3	51.4	10.7	6.5	7.1	6.9	6.8	6.5	3.8	**not plastic,**					gravel soil with sand filling.
8	Well-2	11.4-11.8	50.7	10.0	8.7	9.2	8.0	5.7	4.1	3.6	**not plastic,**					gravel soil with sand filling.
9	Well-2	14.8-15.0	52.7	10.1	11.1	7.0	8.1	5.8	2.7	2.7	**not plastic,**					gravel soil with sand filling.
10	Well-3	2.2-2.4	52.1	12.5	16.6	5.1	3.3	4.6	3.5	2.4	**not plastic,**					gravel soil with sand filling.
11	Well-3	3.8-4.1	51.4	15.4	12.7	6.6	3.4	2.5	3.6	4.1	**not plastic,**					gravel soil with sand filling.
12	Well-3	6.3-6.5	52.1	13.2	11.8	4.1	3.6	5.2	5.4	4.4	**not plastic,**					gravel soil with sand filling.
13	Well-3	12.8-13.1	50.3	10.5	8.5	7.6	5.3	4.9	7.3	5.2	**not plastic,**					gravel soil with sand filling.
14	Well-4	1.6-1.9	57.1	15.4	4.7	3.8	4.1	4.8	4.6	5.0	**not plastic,**					gravel soil with sand filling.
15	Well-4	3.5-3.7	54.3	12.9	14.3	3.1	3.6	3.2	5.3	3.7	**not plastic,**					gravel soil with sand filling.
16	Well-4	6.4-6.7	50.8	14.6	10.3	7.4	6.4	3.2	4.1	3.2	**not plastic,**					gravel soil with sand filling.
17	Well-4	10.5-10.8	51.0	8.8	10.7	7.8	7.1	6.8	4.3	3.5	**not plastic,**					gravel soil with sand filling.
18	Well-4	14.7-14.9	52.3	11.6	8.9	8.6	5.4	6.6	7.5	2.0	**not plastic,**					gravel soil with sand filling.

***Data from laboratory work carried out in a similar area (former linoleum plant)*

Analysis of Water Extract from Soils According to GOST 26423-85

№№p/p	Location and depth of sampling	Units, pH GOST-26423-85	Unit of measurement per 100 g of dry product	Cations			Anions					Rigidity	Dry residue	½ Summarized HCO_3 %	Water-soluble humus			Salinity	Gypsum	Note
				Ca	Mg	$Fe^{II}+Fe^{III}$	$CO3^{II}$	HCO3I	CI^{I}	SO_4^{II}	NO_3^{I}				Blank sample	KM nO 4	Humus			
1	2	3	4	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	III-1	8.08	MI	0.60	0.15	1,0000		0.30	0.10	0,0014		0.75	0.054	0.052		-1.0	-1.0			
	1.0																			

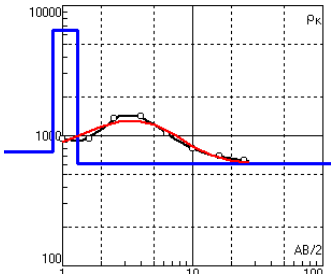
№№ p / p	Location and depth of sampling	Units, p H GOST-26423-85	Unit of measurement per 100g of dry product	Cations			Anions					*Dense residue GOST 9.015-74*	*Summed ½ HCO_3 %	* Water-soluble humus, %	*Gypsum, % GOST P 59540-2021	Note
				CG II GOST 26428 – 85	Mg II GOST 26428 – 85	Fe total GOST 9.015-74*	$CO3^{II}$ GOST 26428 – 85	HCO_3^{I} GOST 26428 – 85	CI^{I} GOST 26428 – 85	SO_4^{II} GOST 26428 – 85	NO_3^{I}, % GOST 9.015-74*					
1	2	3	4	6	7	8	9	10	11	12	13	14	15	16	17	18
1	III-1	8.08	Mg- eq /100g	0,600	0,150			0,600	0,100	0.240						
	1.0		%	0,012	0.002		abse nt	0.037	0.004	0,012		0.05 4	0.052			
U	Mg- eq /100g	±0,2		±0,018	±0,27			±0,000	±0,021	±0,034		±0,00				

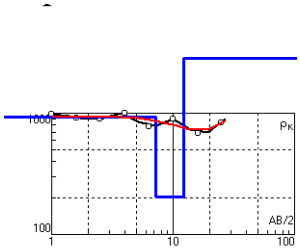
Annex 6.

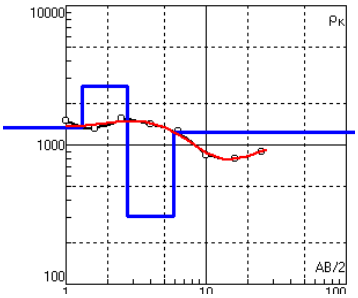
Table of Vertical Electrical Sounding Results

VESN№	Depth interval (m)	Layer thickness (m)	ρ (Ohm·m)	Corrosion aggressiveness	Lithology
VES-1	00-0,8	0,8	756	Low	Fill soil
	0,8-1,3	0,5	6400	Low	Gravel with sandy-clayey filler, boulders 25%
	1,3-15,0	13,7	610	Low	Gravel with sandy-clayey filler, boulders 10%
VES-2	00-7,2	7,0	940	Low	Fill soil, gravel, boulders 10%
	7,2-12,1	4,9	250	Low	Gravel with sandy-clayey filler, boulders 25%
	12,1-15,0	2,9	1000	Low	Gravel with sandy-clayey filler, boulders 10%
VES-3	00-1,3	1,3	1330	Low	Fill soil
	1,3-2,8	1,5	2620	Low	Gravel with sandy-clayey filler, boulders 25%
	2,8-5,9	3,1	310	Low	Gravel with sandy-clayey filler, boulders 10%
	5,9-15,0	9,1	1233	Low	Gravel with sandy-clayey filler, boulders 25%

VES curves







Ves – 1 VES-2 VES-3

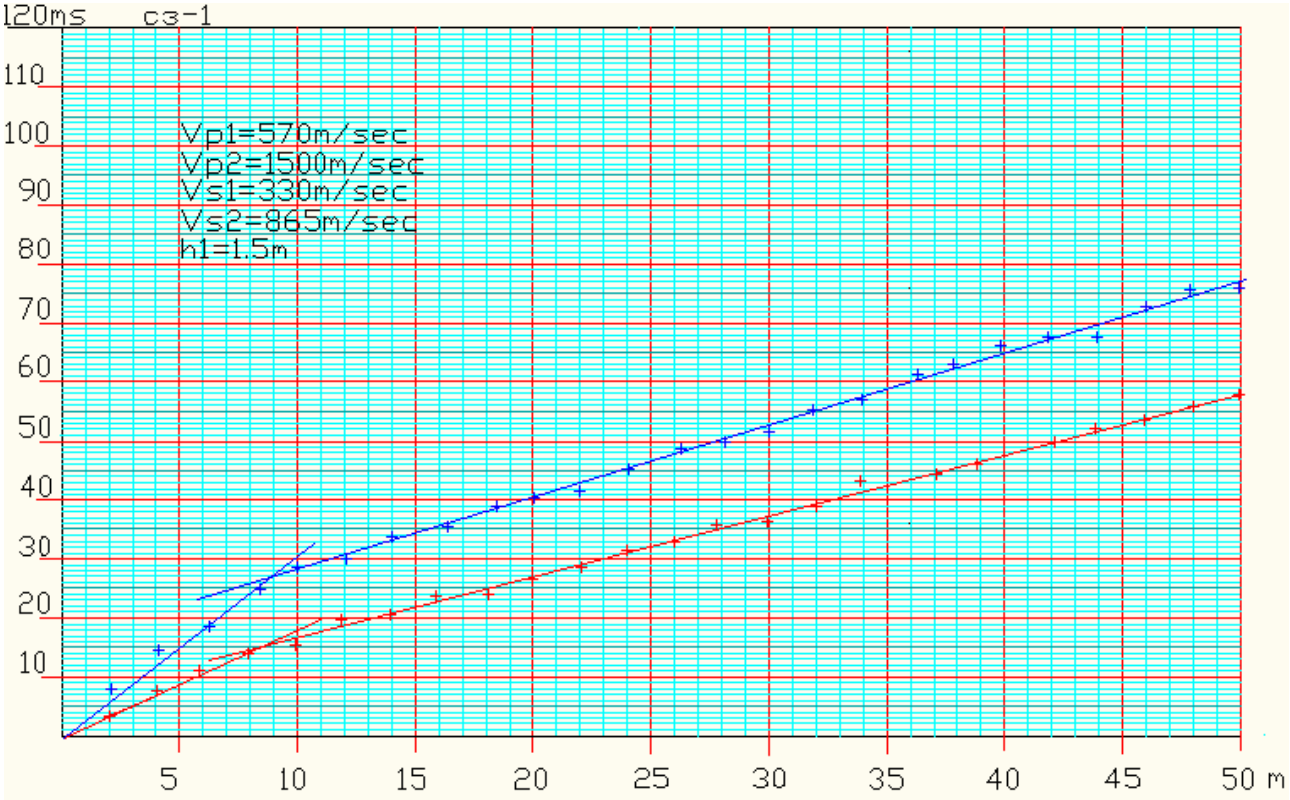
Black graph – curve of field values ρk
Red graph – theoretical (palette) curve
Blue graph – values of ER (electrical resistivity) and layer depths

Table of Average Values of Seismic Survey Results (Seismic Method,)

№	Depth interval (m)	Vp (m/s)	Vs (m/s)	Bulk density (t/m³)	Poisson's ratio μ	Young's modulus E (MPa)	Shear modulus G (MPa)	
	00-1,5	570	330		0,25	0,56	0,67	Fill soil
	1,5-15,0	1500	865	2,19	0,27	4,11	4,11	Gravel

Seismogram

Hodograph



Annex 7.

Photo documentation

Photo 1. Survey site

Photo 2. Seismic station "Talgar-3". Seismic survey points

Photo 3. VES points

Photo 4. Borehole drilling

Inventory No.

Signature and date

Inventory No.

						-EGS--	List
Chng	No of part	List	Doc No.	Signature	Date		26

Graphic Annexes

Annex 11.

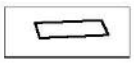
Условные обозначения

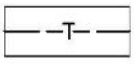
Каменное жилое здание

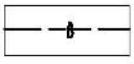
Каменное нежилое здание

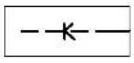

Лестница

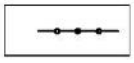

Навес

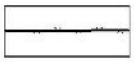

Площадка

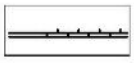

Тепло- трасса

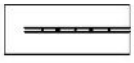

Водопровод

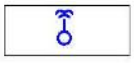

Канализация

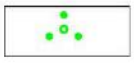

Ограды металические на каменном, бетонном фундаменте


Ограды проволочной сеткой


Заборы деревянные на каменном фундаменте


Ограды каменные и железобетонные

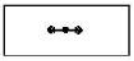

Фонтан


Кустарник


Клумба


Полосы деревесных насаждений


выходы скальных пород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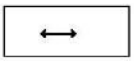
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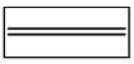
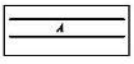
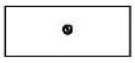

Дорожка

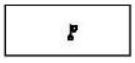

Ель

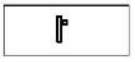

Сосна


Дерево одельно стоящие


Асфальтная дорога

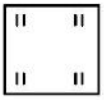

Люк


Фонарь осветительный


КОЛОНКА


болото


песок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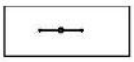
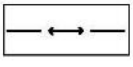

линия связи


Электрокабели подземные высокого напряжения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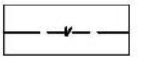

Линии связи подземные кабельные

Inventory No.

Signature and date

Inventory No.

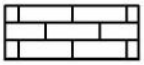
						-EGS--	List
Chng	Noofpart	List	DocNo.	Signature	Date		28

ОБОЗНАЧЕНИЯ, ПРИНЯТЫЕ В МАТЕРИАЛАХ ИНЖЕНЕРНО-ГЕОЛОГИЧЕСКИХ ИЗЫСКАНИЙ

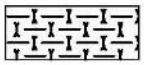
А. УСЛОВНЫЕ ОБОЗНАЧЕНИЯ К ИНЖЕНЕРНО-ГЕОЛОГИЧЕСКИМ РАЗРЕЗАМ И ЛИТОЛОГИЧЕСКИМ КОЛОНКАМ.

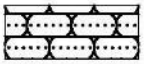
1. ЛИТОЛОГИЧЕСКИЕ (ПЕТРОГРАФИЧЕСКИЕ) ТИПЫ ПОРОД

а) Скальные и полускальные


Известняк

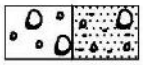

Сланцы


Кампыштар

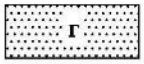

Песчаник


Конгламерат

б) Крупнообломочные и песчаные

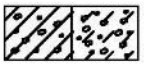

Валуны и валунный грунт.


Галечниковый грунт с песчаным и гравийно-песчаным заполнителем

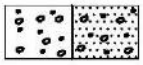


Пески гравелистые


Глыбы и глыбовый грунт.

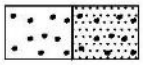

То же - с суглинистым или супесчаным заполнителем.

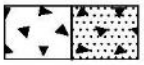
Пески крупные и средней крупности


Гравий и гравийный грунт.

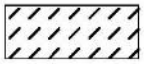

Щебень и щебнистый грунт.

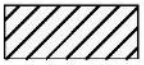
Пески мелкие и пылеватые


Галька и галечниковый грунт.


Дресва и дресвяный грунт.

в) Глинистые


Супесь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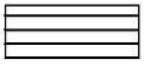
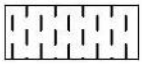
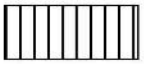

Глина

г) Породы особого состава, состояния и свойства

Лессовые


Лессовидная супесь

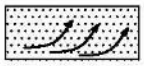

Лессовидный суглинок

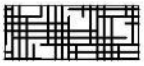

Лёсс

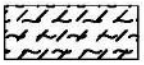
Прочие

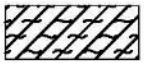

Почвенно-растительный слой

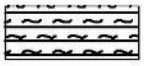

Торф


Плывуны


Насыпные грунты (антропогенные)

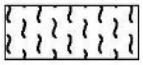

Ил супесчанный

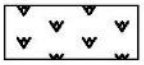

Ил суглинистый


Ил глинистый

д) Характерные особенности горных пород

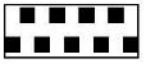
(изображаются редкими знаками на фоне обозначений литологического типа пород)

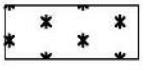

Гумус


Ожелезнение

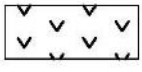

Включение гравия, гальки валунов.

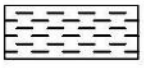

Засоление


Цементация пород


Включение карбонатных конкреций


Повышенное содержание пылеватых частиц

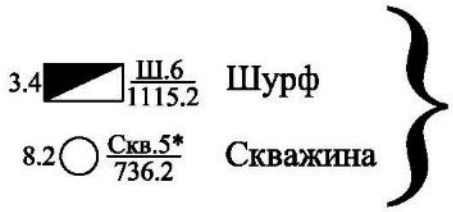

Включение гипса


То же - глинистых частиц

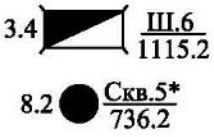
ПРИМЕЧАНИЕ: Подобная характеристика грунтов производиться в текстовой части материалов изысканий и на литологических колонках выработок. Сочетание различных знаков указывает на состав и особенности пород.

Б. УСЛОВНЫЕ ОБОЗНАЧЕНИЯ К КАРТЕ (СХЕМЕ, ПЛАНУ) ФАКТИЧЕСКОГО МАТЕРИАЛА

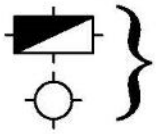
1. ГОРНЫЕ ВЫРАБОТКИ, ПУНКТЫ РЕЖИМНЫХ НАБЛЮДЕНИЙ И ОПЫТНЫХ РАБОТ.



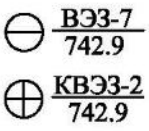
Справа: вверху - номер выработки, внизу - абсолютная отметка устья.
Слева - глубина выработки.
Звездочкой при номере обозначаются только выработки изысканий прошлых лет.



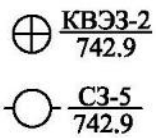
Шурфы и скважины, вскрывшие грунтовые воды.



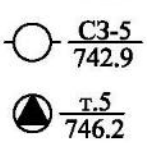
Технические выработки (опробованные).



Точка вертикального электрического зондирования.
Справа: вверху-номерточки, внизу-абсолютная отметка.

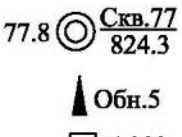


Точка кругового электрического зондирования.
Справа: вверху-номерточки, внизу-абсолютная отметка.



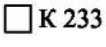
Точка сейсмического зондирования КМПВ.
Справа: вверху-номерточки, внизу-абсолютная отметка.

Точка замера удельного электрического сопротивления грунта прибором МС-08.

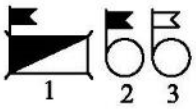


Глубокие разведочные (структурные на воду, или эксплуатационные) скважины. Цифры справа: вверху - номерскважины по каталогу, внизу - абсолютная отметка устья., слева - общая глубина скважины.

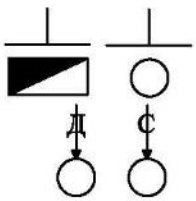
Обнажение горных пород и его номер.



Колодец грунтового питания и его номер.



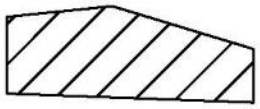
Пункты наблюдения за режимом подземных вод в выработках (1,2) и источниках (3).



Пункты проведения испытаний грунтов опытными нагрузками.

Пункты проведения динамического и статического зондирования грунтов.

2. ГРАНИЦЫ, КОНТУРЫ, ЛИНИИ.



Граница и площадь исследуемой территории.

Контур и номера проектируемых объектов по экспликации плановых материалов.

Линия и номер инженерно-геологического разреза.

2. СОСТОЯНИЕ ПОРОД

Консистенция глинистых пород
Суглинки

Твердая
Полутвердая
Тугопластичная
Мягкопластичная
Текучепластичная
Текучая

Супеси

Твердая
Пластичная
Текучая

Степень влажности
Песков

Маловлажные
Влажные
Насыщенные водой

3.ИНДЕКСЫ ГЕНЕТИЧЕСКИХ ТИПОВ ЧЕТВЕРТИЧНЫХ ОТЛОЖЕНИЙ

a - аллювиальные
p - пролювиальные
d - делювиальные
a-p - аллювиально - пролювиальные
d-p - делювиально - пролювиальные
e - озерные
g - гляциальные
fg - флювиогляциальные
h - биогенные (болотные)
Ant - антропогенные

4. СТРАТИГРАФИЯ ЧЕТВЕРТИЧНЫХ ОТЛОЖЕНИИ

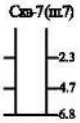
Q_I - нижнечетвертичный комплекс
Q_{II} - среднечетвертичный комплекс
Q_{III} - верхнечетвертичный комплекс
Q_{IV} - современный комплекс
Q_{III-IV} - нерасчленный верхне-четвертично современный комплекс

(1) *Номер инженерно–геологического элемента (ИГЭ)*

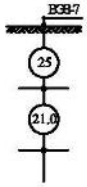
(36В) *Группа грунтов по трудности их разработкц согласно СНиП 4–02–91*

palII *Генетический тип отложений и их возраст*

5. ПРОЧИЕ ОБОЗНАЧЕНИЯ НА РАЗРЕЗАХ



Скважина (шурф)
Верху - номер выработки
Справа - глубина залегания слоев и конечнаяглубина выработки м.

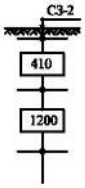


Геоэлектрический разрез по данным ВЭЗ

В кружке - удельное электрическое сопротивление горизонта в мм.

▼2.7 VI-1972 Установившийся уровень грунтовых вод (УГВ) в м от поверхности земли в период изысканий.

▼2.7 VI-1972 Приведенный уровень грунтовых вод в м. от поверхности земли в период наиболее высокого стояния.



Сейсмический разрез по данным КМПВ

В прямоугольнике - скорость упругих волн Vp м/сек.

(2) Строительная группа грунтов по СНиП 4-02-91.

ОПРОБОВАНИЕ ВЫРАБОТОК

Отобран образец ненарушенной структуры.

То же, нарушенной структуры.

Отобрана проба воды. (Цифры вверху - интервал опробования, внизу - лабораторный номер образца).

Интервал опробования для определения гранулометрического состава и объемного веса крупнообломочных пород.

ЛИТОЛОГИЧЕСКИЕ ГРАНИЦЫ

Установленные.

Предполагаемые

Литолого-фациальная изменчивость.

ЭЛИТАГЕО
Инженерные изыскания

Kyrgyz Republic
Bishkek, Baitik Baatyr street 49
E-mail: elita_kg@mail.ru
Licence КРЦ-1 №012070

Client – LLC «Agro Kush»

«Poultry farm in city Kemin, Chuy Region»

ENGINEERING AND GEOLOGICAL REPORT OF THE SITE FOR THE PREPARATION OF DESIGN DOCUMENTATION

Engineering and Geological Surveys

-EGS-

Bishkek
2025

Kyrgyz Republic
Bishkek, Baitik Baatyr street 49
E-mail: elita_kg@mail.ru
Licence КРЦ-1 №012070

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ENGINEERING AND GEOLOGICAL REPORT OF THE SITE FOR THE PREPARATION OF DESIGN DOCUMENTATION

Engineering and Geological Surveys

-EGS-

General Director **Atykenova E.E.**

stamp «__» July 2025.

Bishkek
2025

Inventory No

Signature and date

Inventory No.

Chng.	No of part	List	Doc No	Signature	Date	-EGS-	List

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Engineering and Geological Conclusion

I. Site location

According to the technical assignment from LLC “Agro Kush,” specialists from the Engineering and Geological Survey Department of LLC “ElitaGeo” carried out engineering and geological surveys in June 2025 at the site: “Poultry Farm in city Kemin, Chuy Region.” **(Annex 2)**

Engineering survey site is located in the northern part of Kemin, approximately 300–500 meters north of Bishkek–Balykchy highway, in the strip between Chu River and Kemin HPP canal, to east of former linoleum plant. Administratively, the area belongs to Kemin District of Chuy Region. **(Photos 1, 2)**

Photo 1. Layout diagram of Site No. 1

Photo 2. Layout diagram of Site No. 2

Purpose of engineering and geological survey is to obtain reliable information about geological, hydrogeological, and engineering-geological conditions of the construction site. This survey is necessary to ensure the safety, reliability, and durability of the future structure.

Results of the engineering and geological survey are used to justify design decisions, select optimal construction technologies, and ensure safe operating conditions throughout the entire service life.

To determine the lithological structure and hydrogeological conditions, the following were carried out on Site No. 1: 12 test pits and 6 physical survey points, including 5 VES points and 1 seismic survey point. A similar number of workings were carried out on Site No. 2.

The test pits were excavated mechanically without shoring. VES physical survey points were carried out using a symmetrical four- and three-electrode Schlumberger configuration with an AE-72 autocompensator and a PT-1 current converter. Seismic prospecting works (CMPW – seismic survey) were performed with the “Talgar-3” seismic station using the refraction wave method.

Survey depth is 10 meters, in accordance with CN&R KR 11-01-98 “Engineering surveys for various types of construction, “clause 6.39, table 25.

Geological-lithological column of borehole is digitized and provided in **Annex 9**. Engineering-geological cross-section is presented in **Annex 10.**

II. Brief Climate Characteristics

Climate is continental, with a dry, hot summer and a moderately cold winter. The average July temperature is 25°C. Autumn is dry and warm, followed by an abrupt transition to winter. Snow cover is inconsistent. Number of days per year with snow cover is 52, and the average snow depth, within the elevation range of 0.8–1.3 km, is 16 cm.

Annual precipitation amounts to about 400 mm, with approximately 40% falling during

the spring period. For Chon-Kemin basin, at elevations between 1.5 and 2.5 km, the snow cover height ranges from 10 to 35 cm, and number of days with snow cover per year is between 110 and 143.

For northern slope of the Kyrgyz ridge, snow accumulation changes with increasing elevation as follows: at 1000 meters, snow depth is 15 cm with 68 days of snow cover per year; at 1500 meters, 20 cm and 85 days; at 2000 meters, 25 cm and 103 days; at 2500 meters, 40 cm and 135 days; at 3000 meters, 75 cm and 189 days; and at 3500 meters, 154 cm and 278 days. A similar pattern occurs on the northern slopes of Kungey Ala-Too in Chon-Kemin basin, except that snow accumulation happens under somewhat different conditions here, with a slight upward elevation shift of about 500 meters due to the valley being sheltered from northwestern winds.

Standard depth of seasonal soil freezing under an open, snow-free horizontal surface is as follows: for loams and clays – 120 cm; for sandy loams, fine sands, and silty soils – 146 cm; for gravelly, coarse, and medium sands – 156 cm; and for coarse-fragmented soils – 177 cm.

Full climatic characterization of the area is provided in textual Annex No. 1 based on data from “Shabdan” meteorological station. **(Annex 1.)**

III. Geomorphological Conditions

Area terrain is classified as an accumulative flat valley with river terraces, formed by Chu River. Chu River flows here relatively calmly through a wide valley, which promotes the accumulation of large masses of various loose alluvial deposits that fill the Chuy depression.

Relief is flat, with extensive development of Chu River terraces. River flows through a narrow channel in river pebble deposits among terraced banks, gradually descending as it moves away from the Boom Gorge.

Sites No. 1 and No. 2 of the engineering survey are located within a single geomorphological element — on surface of the I (first) left-bank floodplain alluvial terrace of Chu River *(al-Q4 deposits*), in the area of Kemin.

Terrace surface is gently sloped toward the Chu River with a gradient of 0.005–0.01 and is dissected by a network of shallow water erosion features — ravines, gullies, and stream channels up to 3–5 meters deep and 100–150 meters wide. Absolute elevations range from 1095.37 to 1093.53 meters. **(Annex 8)**

IV. Lithological Structure

Surveyed area is located within the Chuy depression, so its geological survey history is directly connected to the research history of entire Chuy depression.

Engineering survey site is located on I left-bank floodplain terrace of Chu River and is composed of modern alluvial deposits (*al-Q4*).

Soil profile begins with a surface layer of soil and vegetation cover (SVC), followed by a cover loam layer. Beneath the loam, throughout the exposed thickness, there are coarse-fragmented gravel deposits with a silt-clay and sandy matrix of up to 20%. Content of boulders measuring 200–500 mm in diameter reaches 25–30%. Fragmented material is unweathered, well-rounded, and mainly consists of igneous and metamorphic rocks. Gravel layer thickness is approximately 10 meters.

More detailed description of the geological-lithological structure is provided in graphical **Annexes No. 8–9**.

V. Hydrogeological Conditions

Within the area of proposed construction site, a groundwater-bearing horizon is developed in modern alluvial gravel soils (*al-Q4*) of first floodplain terrace of Chu River.

Aquifer is located in modern alluvial deposits (al-Q4).

Groundwater in alluvial deposits is associated with lower floodplain terraces and river floodplains. Water-bearing formations consist of boulder-gravel, gravel, and sandy loam sediments.

Recharge of this aquifer horizon is provided by the infiltration of surface waters and atmospheric precipitation, as well as by the inflow of groundwater from other aquifer horizons. Groundwater flow direction coincides with direction of the river valleys. Average groundwater gradient is 0.035. In the mountainous and foothill parts of the area, groundwater in river valleys circulates within gravel and boulder-gravel deposits underlain by bedrock. Their water yield depends on thickness, rock composition, and recharge conditions. The filtration coefficient of modern alluvial deposits ranges from 20 to 160 meters per day and higher. According to test flooding data in test pits, the filtration coefficient of these soils is 1.9–3.5 meters per day.

Free water exchange and high filtration properties of the soils determine the good quality of aquifer. Groundwater is bicarbonate-calcium type, fresh, with mineralization less than 1 g/L.

Groundwater was not encountered down to a depth of 10 meters in the excavations carried out at the survey site.

Based on the above, the construction site territory, according to clause 2.97 of the "Guidelines for the Design of Foundations of Buildings and Structures," is classified as potentially not susceptible to groundwater flooding.

VI. Geophysical Surveys

Methodology and work techniques.

Geophysical work at the site “Kemin Poultry Farm” was carried out in June 2025.

To address the assigned tasks on surveyed area, the following geophysical surveys were conducted:

To determine the depths of lithological layers, their specific electrical resistivities, and corrosion activity of soils in relation to carbon steel according to GOST 9.602-89, the Vertical Electrical Sounding (VES) method was used. Ten points were surveyed. Measurements were carried out using a symmetrical four-electrode Schlumberger array with an AE-72 autocompensator and a PT-1 current converter (see Figure 1). Length of the feeding line offsets reached up to 80 meters. Data interpretation was performed using Pylaev’s charts and the IPI2WIN program. Results are presented in “VES Method Results Table.”.

Photo 3. Electrical Resistivity Survey Equipment.

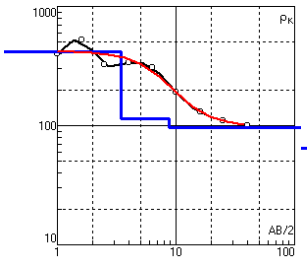
2. In addition, to determine the propagation velocities of longitudinal and transverse waves (Vp and Vs), two seismic survey points using the RCM refraction correlation method were conducted. Seismic survey was carried out with the “Talgar-3” seismic station (see Figure 2), using the refracted wave method. Elastic waves were generated by strikes with an 8 kg sledgehammer on a metal plate, accumulating from 10 to 40 impacts depending on the setup length and complexity of the seismic section. Observations were made using the ZZ scheme (vertically directed impact and vertically oriented seismic receiver axis) and YY scheme (horizontally directed impact and horizontally oriented seismic receiver axis).
Seismic receivers were spaced 2 meters apart. Length of the seismic survey array was 50 meters.

Longitudinal P-waves were identified on seismograms. Seismic survey was conducted in accordance with “Instructions for Use of Seismic Exploration in Engineering Surveys” (RSN-45-77) and RSM-85 standards.

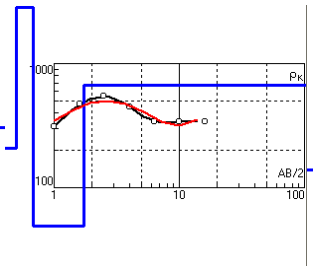
Photo 4. “Talgar-3” seismic station:

VES curves

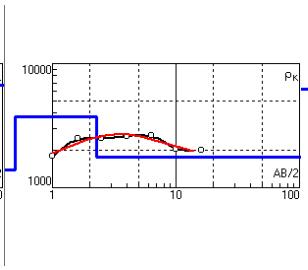
VES-1



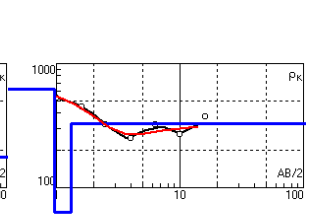
VES-2



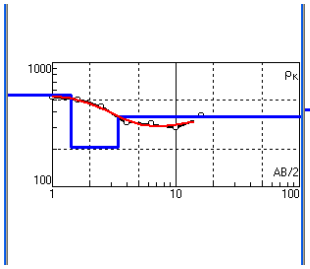
VES-3



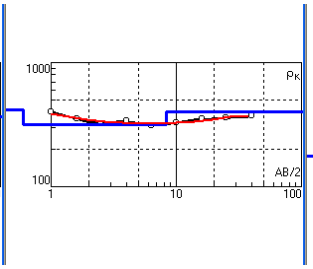
VES-4



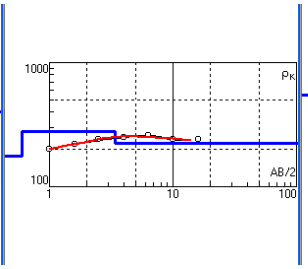
VES-5



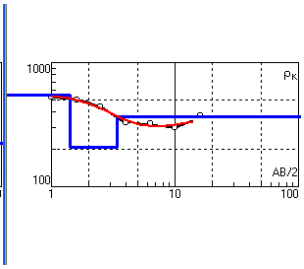
VES-6



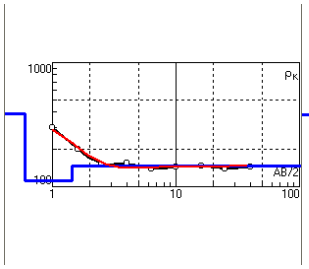
VES-7



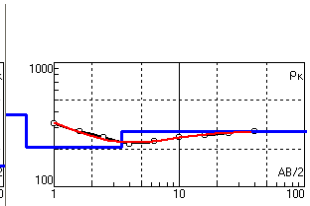
VES-8



VES-9



VES-10



Inventory No

Signature and date

Inventory No.

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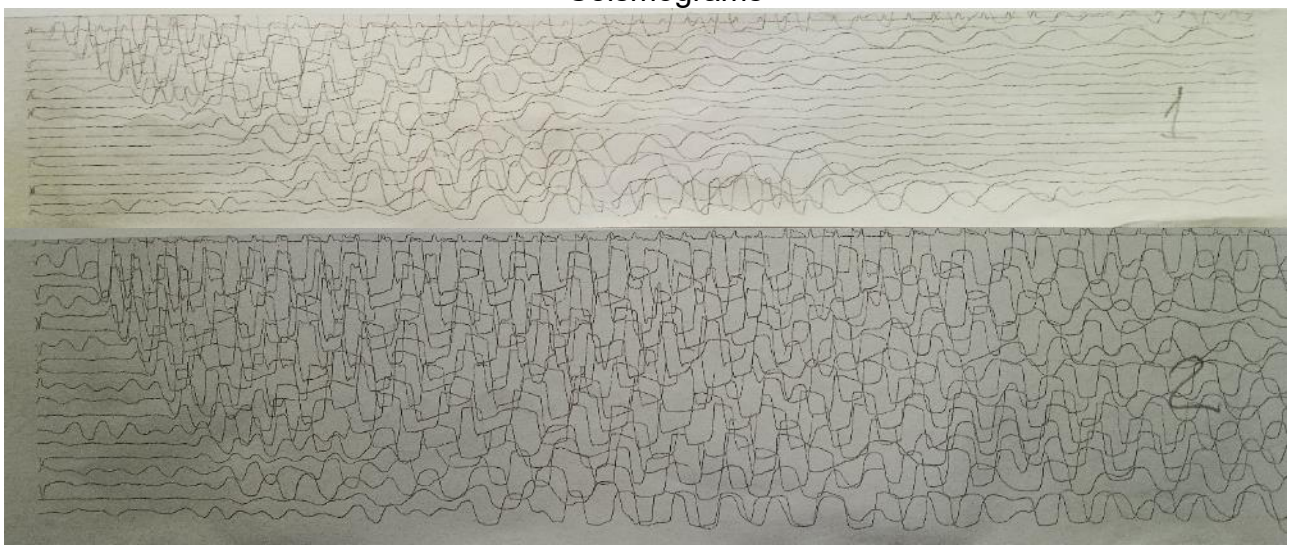
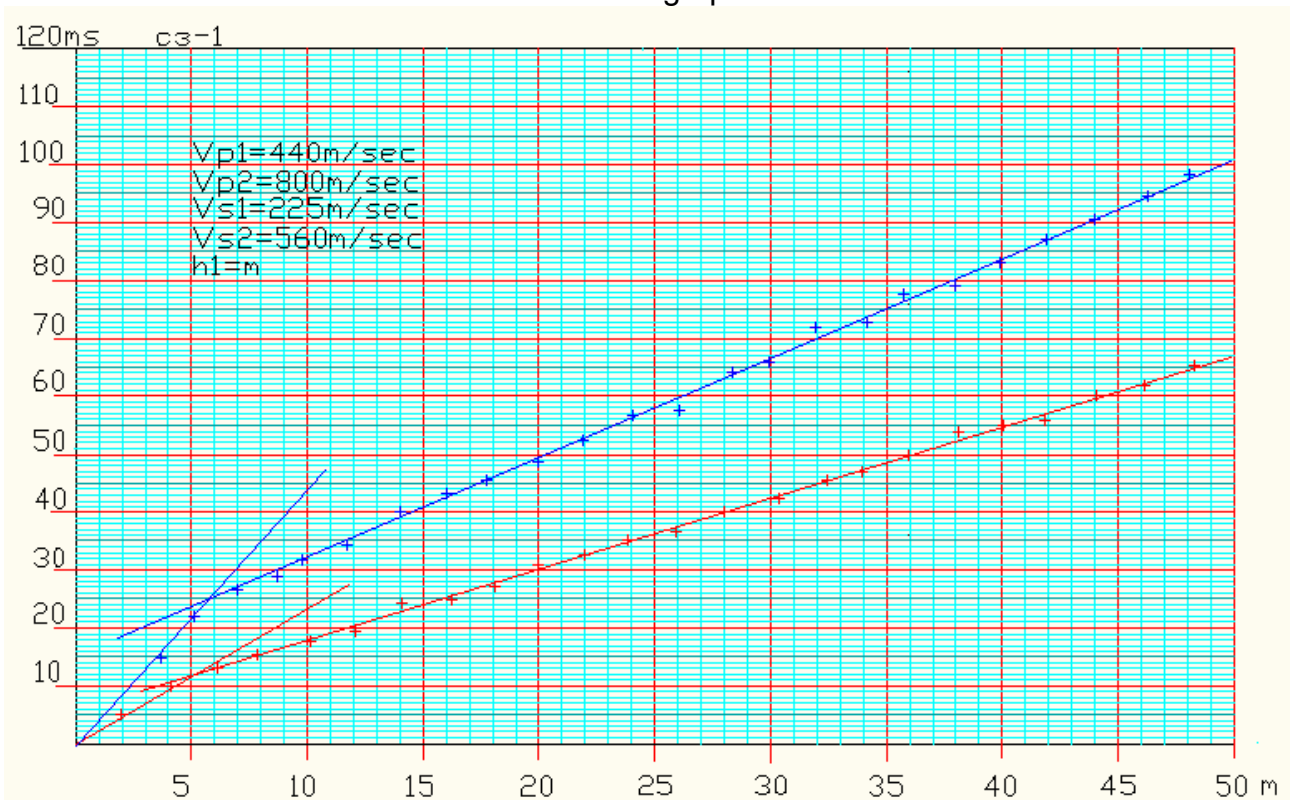
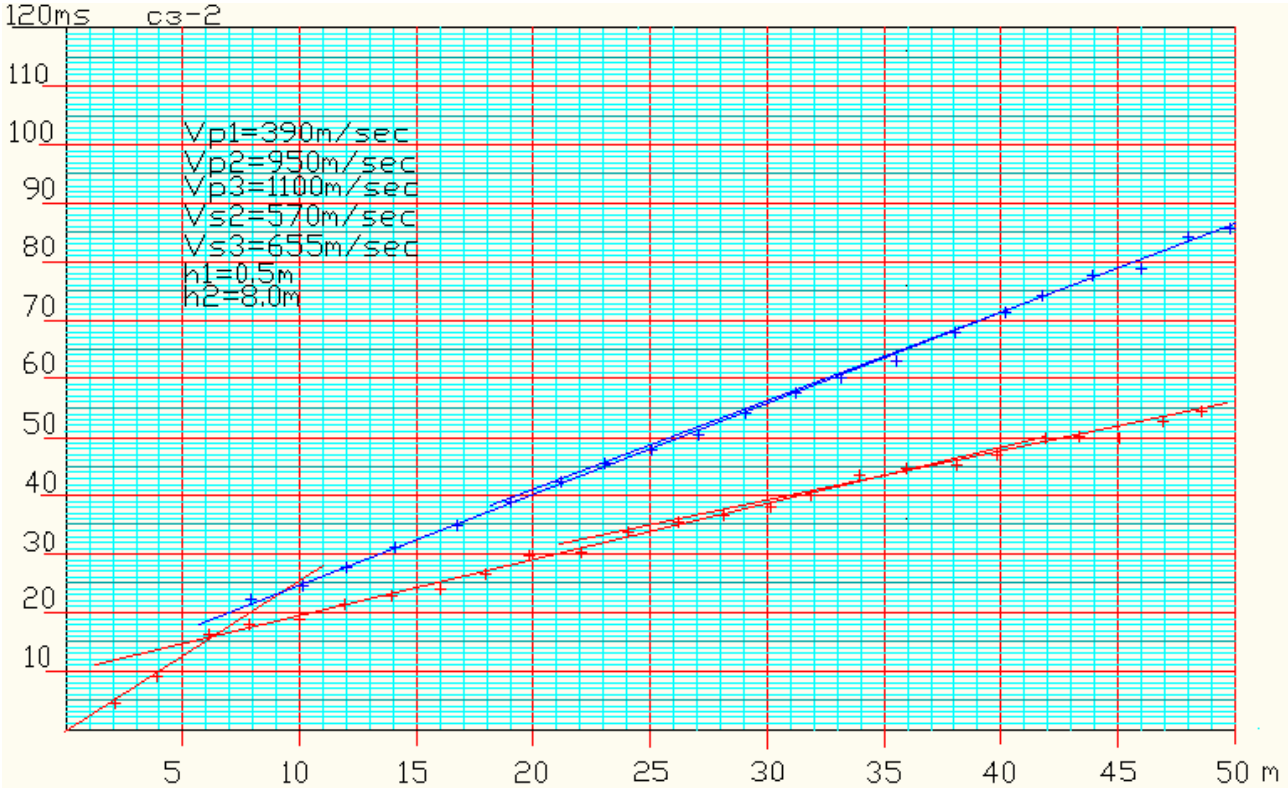
Black graph – curve of field values ρk
Red graph – theoretical (palette) curve
Blue graph – values of ER (electrical resistivity) and layer depths

Seismograms



Hodograph





Red graph – hodograph of the longitudinal refracted wave Vp
Blue graph – hodograph of the transverse refracted wave Vs

The bulk density of gravelly soil was calculated using the formula: t/m³ = $\frac{11 + Vp(км/с)}{5.5}$ taken from *Instruction on the Application of Seismic Survey in Engineering Investigations*.

The results of VES and seismic survey methods, specifically by points with indication of identified intervals and thicknesses, resistivity (ρ), corrosion aggressiveness, velocities of refracted waves Vp and Vs, and packing density of clastic soils, are summarized in the corresponding table.

VII. Hydrological Conditions

Hydrographic network of Chuy region belongs to Chu and Naryn river basins. Main water artery of region is Chu River, forming within Kochkor Basin from confluence of Juvan-Aryk and Kochkor rivers.

Along entire course, Chu River forms numerous meanders and branches, receiving several tributaries, the largest within Kyrgyzstan being Chon-Kemin River (length 110 km). Below their confluence, average long-term flow of Chu River is about 53 m³/s. Total length of river within Kyrgyzstan is 221 km.

River flows through several gorges and basins, among which key ones are Boom Gorge and valley near Tokmok city. Flow character in upper reaches is predominantly rapid, with swift current and steep banks.

On stretch between Boom Gorge and Kemin city, river valley widens to 6–8 km. Channel is well-formed; water losses due to filtration are minimal here, thanks to close bedrock presence beneath riverbed. Downstream, bedrock dips under thick layer of loose deposits, causing filtration losses to increase.

To reduce water losses, on left bank of Chu River from Kemin HPP to Tokmak city, a partially concreted canal 37 km long with capacity up to 50 m³/s was constructed.

Along southern part of site No. 1, canal has a break in concreting with earthen berms.

Chu River catchment basin is located in high-mountain areas of Terskey Ala-Too ridge, Kungey Ala-Too ridge, and Kyrgyz ridge. The main type of feed is snow-glacial. In summer, feeding occurs mainly from melting snow and glaciers; during other periods, it is supplied by groundwater and subterranean waters.

According to long-term observations at the Djil-Aryk hydrological station (1912–1938), the average monthly flow of Chu River ranged from 32.7 to 94.2 m³/s. Maximum value was recorded in June 1934 and amounted to 170.0 m³/s.

VIII. Physicomechanical Properties of Soils`

According to GOST 20522-2012 and GOST 25100-2020, one engineering-geological element (EGE) is distinguished in the studied area.

EGE-1. Gravel soils with sandy filler.

The soil-vegetation layer, developed in the profile from the surface to a depth of 0.2–0.3 m, according to the technical assignment, will be cut through by the excavation. Loess-like collapsible loam (Type I), developed in the profile to a depth of 0.3–0.8 m, and gravel soil with silty-clayey filler, developed in the profile to a depth of 1.1 m, have low bearing capacity. They must be fully removed during excavation. Therefore, their physical and mechanical properties were not studied.

EGE-1. Gravel soils with low-moisture sandy filler up to 20% and boulder content with diameters of 200–500 mm up to 30%. The clastic material is unweathered, represented by well-rounded fragments of igneous and metamorphic rocks.

Results of granulometric composition and water extraction analysis of soils are provided in textual **Annex 5**.

Standard and design values of specific cohesion, internal friction angle, and deformation modulus of gravelly soil, based on the summary of previously conducted field works by JSC "KyrgyzGIIZ" in Chuy region and those presented in temporary methodological guidelines VSN-88 and VSN-89, are recommended as follows:

C_n = 30.0 kPa (0.30 kgf/cm²), C_i = 18.0 kPa (0.18 kgf/cm²), C_{ii} = 22.0 kPa (0.22 kgf/cm²); φ_n = 38°, φ_i = 31°, φ_{ii} = 33°;

E_n = 74 MPa (740 kgf/cm²).

Estimated soil resistance R_0 = 6.0 kgf/cm² (600 kPa).

Specific electrical resistance (SER) of fill gravelly soils ranges from 310 to 3000 ohm·m. According to GOST 9.602-2005, corrosive aggressiveness of gravelly soils of EGE-1 is low. **(Annex 6)**

Soils are non-aggressive to Portland cement concretes according to GOST 10178-76* with permeability grade W4 regarding sulfate content. Regarding chloride content, soils are non-aggressive to reinforcement in reinforced concrete structures.

Groundwater is non-aggressive to Portland cement concretes according to GOST 10178-76, permeability grade W4.

Numbers of engineering-geological elements are indicated on engineering-geological cross-sections in graphical annexes.

8. Corrosive activity of soils. According to GOST 25100-2020, the soils of the site are non-saline (see Appendix 1 in the text) and non-aggressive in terms of sulfate and chloride content toward concrete of grade W4 in water resistance, in accordance with CN&R 2.03.11-85 (see Table 4).

According to GOST 9.602-2016, Table 1, the corrosive activity of soils toward carbon steel is recommended as medium for loam and low for gravel soil (see Table 5 and VES table). It is recommended to provide anticorrosion protection of the foundation.

9.Soil groups by manual excavation difficulty, according to CN&R IV-5-82, are recommended as follows:

Topsoil — Group II (clause 9b);

Hard loam — Group II (clause 33v);

Gravel soil with boulder inclusions up to 20% — Group IV (clause 6g).

IX. Site Seismicity

According to Appendix G, Table G.1, position 1722 of SN KR 20-02:2024 “Seismic-Resistant Construction. Design Standards”, approved and enacted on March 29, 2024 by order of Gosstroy KR dated March 7, 2024, No. 68-npa, based on the delegated authority in accordance with Resolution of the Cabinet of the Ministry of Construction of the Kyrgyz Republic dated March 3, 2023, No. 115, which replaces CN&R 20-02:2009 “Seismic-Resistant Construction. Design Standards” and *CN KR 20-02:2018* “Seismic-Resistant Construction. Design Standards”, the territory of the proposed construction, located in Kemin city, has a baseline seismicity of 9 points.

Based on the specific geo-lithological structure of the site revealed during engineering-geological surveys, the soil conditions are classified as type II in terms of seismic properties, according to Table 6.1 of CN KR 20-02:2024 “Seismic-Resistant Construction. Design Standards.”

According to Table 6.2 of CN KR 20-02:2024 “Seismic-Resistant Construction. Design Standards,” the refined seismic intensity for the construction site is recommended as 9 points, and the design acceleration ag (in fractions of g) for soil conditions type II is 0.440.

X. Conclusion

1. Investigation sites are located in northern part of Kemin city, approximately 300–500 meters north of Bishkek–Balykchy highway, in the strip between Chu River and Kemin HPP canal, east of former linoleum factory.
Investigation sites №1 and №2 are located within a single geomorphological element — on the surface of first (I) left-bank alluvial terrace of Chu River (*al-Q4* deposits), between Chu River and Kemin HPP canal.
2. Climate is continental with hot dry summers and moderately cold winters. Average July temperature is 25 °C. Autumn is dry and warm, followed by a sharp transition to winter. Snow cover is irregular. Number of days per year with snow cover is 52, with snow depth averaged over an elevation range of 0.8–1.3 km being 16 cm. Standard depth of seasonal soil freezing under open, snow-free horizontal surfaces is as follows: loams and clays – 120 cm; sandy loams, fine and silty sands – 146 cm; gravelly, coarse, and medium sands – 156 cm; coarse-grained soils – 177 cm.
3. Within the boundaries of the planned construction site, a groundwater-bearing horizon is developed in modern alluvial gravel soils (*al-Q4*) of the first floodplain terrace of the Chu River. At the research site (former linoleum factory), groundwater up to a depth of 10 m was not encountered in the drilled wells. Based on the above, the construction site, according to clause 2.97 of the “Guidelines for Design of Building Foundations and Structures,” is classified as potentially free from groundwater flooding.
4. Soil profile is represented by a heterogeneous layer of coarse-grained gravelly deposits with silty-clayey and sandy matrix up to 20%, overlying a loess-like clay layer. The content of boulders with a diameter of 200–500 mm reaches 30%. The coarse material is unweathered, well-rounded, and predominantly composed of igneous and metamorphic rocks.

5. The foundation will rest on gravelly soils with a sandy matrix, classified as a single engineering-geological element (EGE) according to GOST 20522-2012 and GOST 25100-2020. Their physical and mechanical properties are presented in Chapter VIII. Soil groups for manual excavation are shown in the geological-lithological columns of the boreholes and on the engineering-geological sections in the graphic appendices.
5. According to Table № 6.2 of CN KR 20-02:2024 "Seismic-Resistant Construction. Design Standards," the updated seismic intensity for the construction site is recommended to be 9 points, with a design acceleration ag (in fractions of g) for soil condition type II of 0.440.
6. In case of significant changes to the surface due to vertical grading or modifications of its technical characteristics, this engineering-geological report must be revised in accordance with the altered conditions.
7. If soils differing from those described in this report are encountered at foundation levels, they must be inspected by a representative of LLC "ElitaGeo" with an official act drawn up.

Prepared by: Hydrogeological Engineer  Mazymkanova A.N.

Text annexes

Annex 1

Climatic characteristics according to the Shabdan (Novorosiika) meteorological station (absolute elevation 1532.0 m)

N	Justification for the given characteristic	Source of the given characteristic	Climate characteristics
1	2	3	4
	CN&R 23-02-00	CN&R KR 23-02-00 table 3	Average monthly air temperature

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	-9.5	-7.3	0.0	7.4	11.4	14.8	16.9	16.0	11.6	5.4	-1.4	-6.4

2	CN&R 23-02-00	-//-	2. Average annual air temperature,°C [4.9]
3		Table 1	3. Absolute minimum air temperature, °C[- 34]
4		Table 2	4. Absolute maximum air temperature,°C [38]
5		-//-	5. Average maximum temperature of the hottest month, °C[26.2]
6		Table 1	6. Temperature of the coldest five-day period with a probability of 0.98, °C[-22]
7		-//-	7 Temperature of the coldest five-day period with a probability of 0.90 °C[-20]
8		-//-	8. Temperature of the coldest day with probability, 0.98, °C[-27]
9		-//-	9. Temperature of the coldest day with probability, 0.92, °C[-25]
10		-//-	10. Average temperature of the coldest period (ventilation), °C[-14]
11		-//-	11. Duration of the period with average daily air temperature, $\frac{\leq 8°C}{<10°C}$ days. $\frac{195}{219}$
12		-//-	12. Duration of the period with average daily air temperature ≤ °C, days - 126
13		-//-	13. Average temperature of the period with average daily air temperature, $\frac{\leq 8°C}{\leq 10°C}$, days . $\frac{[-2.6]}{[-1.6]}$
14	CN&R 2.01.01-82 Appendix 2	CN&R 2.01.01-82 Appendix 2	14. Temperature fluctuation amplitude $\frac{medium}{maximum}$, °C by month

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII

15	CN&R 2.01.01-82 Appendix	CN&R 2.01.01-82 Appendix 3	15. Water vapor pressure of outdoor air by month, hPa

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII

16	CN&R KR 23-02-	CN&R KR 23-02-00 Table 1 Table 2	16. Average relative humidity of the outside air at 15:00: $\frac{coldest\ moth\ of\ year, \% - 54}{coldest\ moth\ of\ year, \% - 40}$
17		Table 1	17. Average amount of precipitation for the period: November - March, mm -10; for April – October, mm - 361

N	Justification for the given characteristic	Source of the given characteristic	Climate characteristics
1	2	3	4
		Table 2	
18	CN&R 2.01.-82 Appendix 3		18. Amount of liquid precipitation per year, mm - 462
19	CN&R KR 23-02-00 table 2		19. Daily maximum precipitation, mm -59
20	CN&R II – 6-74 p. 5.2	RSN 1-87	20. Weight of snow cover per 1 m² horizontal ground surface (average value of annual maximum water reserves), kgf/m² - 34
21	CN&R II – 6-74 p. 6.4	Letter of the State Construction Supervision Authority No. 366 dated 27.03.85	21. Wind speed at a height of 10 m above the ground, m/s
22			22. Wind speed coefficient -
23	CN&R 2.01.01-82	CN&R 2.01.01-82 Appendix 4	23. Maximum of average speeds by compass for January, m/s -
24	CN&R 23-02-00	CN&R KR 23-02-00 table 2	24. Maximum of average speeds by compass for January, m/s – 0.2
25		-//- Table 4	25. Total solar radiation (direct and diffuse) arriving at a horizontal surface under cloudless skies for each month of the year, MJ/m ²

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	year
316	395	619	782	940	949	937	828	654	501	322	260	7504

26		CN&R KR 23-02-00 Appendix G	26. Total solar radiation (direct and diffuse) reaching a vertical surface under cloudless skies for each month of the year, MJ/m²

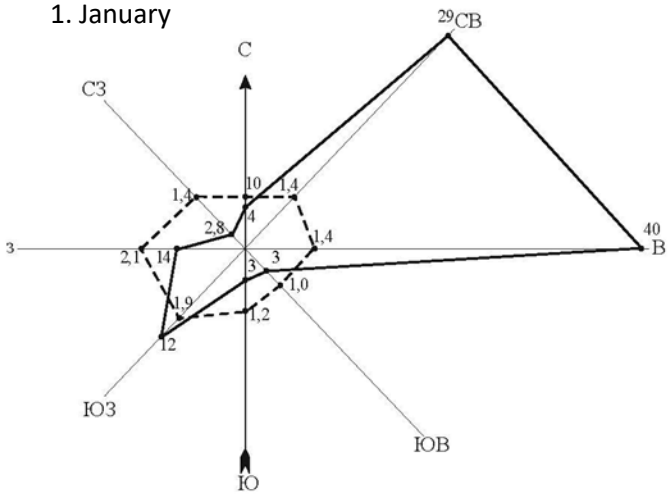
Orientation	months											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
North	-	-	-	115	164	196	196	134	-	-	-	-
North – East	-	-	185	256	325	345	328	276	208	156	-	-
East	210	256	390	435	481	467	479	445	375	321	224	189
South – East	481	477	558	505	475	426	420	478	489	521	456	424
South	652	613	648	484	366	291	227	416	505	621	623	622
South – West	481	477	558	505	475	426	420	478	489	521	456	424

N	Justification for the given characteristic	Source of the given characteristic	Climate characteristics											
1	2	3	4											
			West	210	256	390	435	481	467	470	445	375	321	224	189
			North - West	-	-	185	256	325	345	328	276	208	156	-	-
27	CN&R II – 31-74 p. 8.28, p. 8.31	Graph of the dependence of the maximum depth of zero isotherm penetration on altitude, compiled by UGKS of the Kyrgyz SSR.	27. The maximum depth of penetration of the zero isotherm under natural snow cover is 111 cm.											
28	CN&R – 2.0.2.01 – 83 p. 2.25; 2.26		28. The standard depth of seasonal soil freezing under an open, snow-free horizontal surface is as follows: loams and clays – 120 cm; sandy loams, fine and silty sands – 146 cm; gravelly, coarse, and medium sands – 156 cm; coarse-grained soils – 177 cm.											
29	CN&R KR 23-02-00	CN&R KR 23-02-00 table 6	29. Wind frequency and average wind speed in m/sec in directions for January and July are shown on the wind roses.											

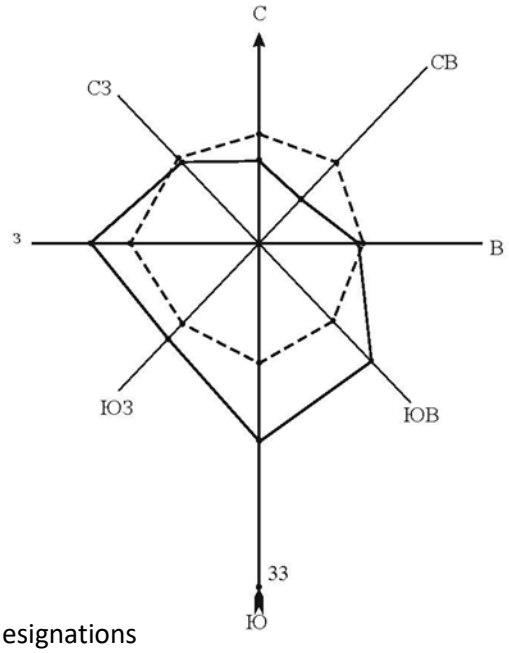
Annex 1

Wind rose

1. January



2. July



conventional designations

wind repeatability

Average wind speed

Scale: Wind repeatability 1 cm: 5% of cases. Average wind speed 1 cm: 1 m/sec

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Signature and date								
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	Chng.	Noofpart	List	DocNo	Signature	Date		

Annex 2.

Terms of Reference
LLC «ElitaGeo»
For engineering surveys conduction

Client – LLC «Agro Kush»

Object's name: **«Poultry farm in city Kemin, Chuy Region»**

1. Design stage Paperwork
2. Head constructor
3. Available information on previous site survey works: *none*

Requirements for Engineering Survey conduction

1. 1. Carry out engineering and geological surveys in accordance with Table No. 1 and the master plan (Annex No. 1), following the requirements of CN&R KR 11-01-98 "Engineering surveys for various types of construction" and CR KR 50-101-2025 "Foundations of buildings and structures."

2. Determine the aggressiveness of soils and groundwater with respect to concrete and reinforced concrete structures, corrosive aggressiveness toward steel, lead and aluminum cable sheaths (underline as appropriate).

3. Refine the seismicity of the site for the planned construction.

4. Drill boreholes in accordance with the applicable CN&R (Construction Norms and Regulations).

Project's Head Engineer

« » 2025

Inventory No | Signature and date | Inventory No.

Chng.	No of part	List	Doc No	Signature	Date	-EGS-	List

Main Designed Buildings and Structures and Their Technical Specifications

Table 1

№№ п/п	Name of Buildings and Structures	Level of Responsibility	Quantity	Length, m; Width, m; Height, m (number of floors)	Foundation Type	Foundation Depth from Ground Surface, m	Loads on Foundation, kN/m	Loads on Support, kN	Presence of Wet Technological Process	Basement Depth from Ground Surface, m	Excavation/Planning Work
1	Workshops	II	24	120.75x 15,40 (1 floor)	Strip	--	--	--	--	--	--
2							--	--	--	--	--
3							--	--	--	--	--

Presence of dynamic loads on soils – yes (no) (underline as appropriate)

Routes of Engineering Utilities

Table 2

№ п/п	Types of Utilities	Length, km	Burial Depth, m	Utility Material	Additional Information
-	-	-	-	-	-

КЫРГЫЗ РЕСПУБЛИКАСЫНЫН
МИНИСТРЛЕР КАБИНЕТИНЕ
КАРАШТУУ АРХИТЕКТУРА, КУРУЛУШ
ЖАНА ТУРАК-ЖАЙ-КОММУНАЛДЫК
ЧАРБА МАМЛЕКЕТТИК АГЕНТТИГИ

ГОСУДАРСТВЕННОЕ АГЕНТСТВО
АРХИТЕКТУРЫ, СТРОИТЕЛЬСТВА И
ЖИЛИЩНО-КОММУНАЛЬНОГО
ХОЗЯЙСТВА ПРИ КАБИНЕТЕ МИНИСТРОВ
КЫРГЫЗСКОЙ РЕСПУБЛИКИ

ЛИЦЕНЗИЯ

Каттоо номери, лицензиялардын реестр боюнча сериясы
Регистрационный номер, серия по реестру лицензий
серия КРЦ-1 № 012070 от 13.02.2025 г.

Берилди
Выдана
Обществу с ограниченной ответственностью «ЭлитаГео»

Лицензияттын адреси
Адрес лицензиата
Кыргызская Республика г. Бишкек, ул. Байтик Баатыра, 49

Мамлекеттик каттоо күбөлүгү
Свидетельство о государственной регистрации
№ 312725-3301-ООО от 27.01.2025 г. Чуй-Бишкекское управление юстиции Министерства юстиции Кыргызской Республики

Идентификациялоо коду
Идентификационный код
02701202510482

Төмөндөгүдөй ишкердикке уруксат берилди:
Разрешено заниматься деятельностью:

I. Градостроительные, проектно-изыскательские работы

Лицензиянын мөөнөтү
Срок действия лицензии
без ограничения срока действия

Лицензиянын территориялык жарактыгы
Территория действия лицензии
Кыргызская Республика

Лицензияны башка бирөөгө берүүгө болбойт
Лицензия является неотчуждаемой

Лицензионные условия: Содержание видов строительной деятельности, включенных в настоящую лицензию установлено в соответствии с прилагаемым Перечнем работ

Л № 000179

Inventory No.	Signature and date	Inventory No

Chng.	Noofpart	List	DocNo	Signature	Date	-EGS-	List

ПРИЛОЖЕНИЕ К ЛИЦЕНЗИИ

СЕРИИ КРЦ-1 № 012070

ВЫДАННОЙ 13 ФЕВРАЛЯ 2025 ГОДА

Обществу с ограниченной ответственностью

«ЭлитаГео»

Перечень работ, являющихся содержанием
строительных видов деятельности, разрешенных данной лицензией

I. ГРАДОСТРОИТЕЛЬНЫЕ, ПРОЕКТНО-ИЗЫСКАТЕЛЬСКИЕ РАБОТЫ

Третьего уровня ответственности:

Инженерно-геологические изыскания;

1.04. Инженерно-геологические работы под объекты строительства

МИНИСТР **Н.К. ОРУНТАЕВ**

П.№ 000179

Inventory No.	Signature and date	Inventory No

Chng.	Noofpart	List	DocNo	Signature	Date	-EGS-	List

КЫРГЫЗ РЕСПУБЛИКАСЫНЫН МИНИСТРЛЕР КАБИНЕТИНЕ КАРАШТУУ АРХИТЕКТУРА, КУРУЛУШ ЖАНА ТУРАК-ЖАЙ – КОММУНАЛДЫК ЧАРБА МАМЛЕКЕТТИК АГЕНТТИГИ

ГОСУДАРСТВЕННОЕ АГЕНТСТВО АРХИТЕКТУРЫ, СТРОИТЕЛЬСТВА И ЖИЛИЩНО-КОММУНАЛЬНОГО ХОЗЯЙСТВА ПРИ КАБИНЕТЕ МИНИСТРОВ КЫРГЫЗСКОЙ РЕСПУБЛИКИ

МАМЛЕКЕТТИК КВАЛИФИКАЦИЯЛЫК

ГОСУДАРСТВЕННЫЙ КВАЛИФИКАЦИОННЫЙ

СЕРТИФИКАТ

серия ИЗ-2.1 № 033037

БУЛ МАМЛЕКЕТТИК ЖАРОО ДАРАЖАЛЫК СЕРТИФИКАТ БЕРИЛДИ

НАСТОЯЩИЙ ГОСУДАРСТВЕННЫЙ КВАЛИФИКАЦИОННЫЙ СЕРТИФИКАТ ВЫДАН

Мазымкановой Алтынай Нурдиновне

НА ОСУЩЕСТВЛЕНИЕ ПРОФЕССИОНАЛЬНОЙ ДЕЯТЕЛЬНОСТИ В КАЧЕСТВЕ

инженера — гидрогеолога

для целей строительства

БУЛ СЕРТИФИКАТ ТАРТИБИ МЕНЕН АЛЫНГАН ЛИЦЕНЗИЯСЫ ЖОК БОЛСО, БАШКА ИШКЕРДИК ЖУМУШТАРГА УКУК БЕРБЕЙТ

СЕРТИФИКАТ НЕ ДАЕТ ПРАВА ЗАНИМАТЬСЯ ПРЕДПРИНИМАТЕЛЬСКОЙ ДЕЯТЕЛЬНОСТЬЮ БЕЗ ЛИЦЕНЗИИ, ПОЛУЧЕННОЙ В УСТАНОВЛЕННОМ ПОРЯДКЕ

СЕРТИФИКАТ "18" января 2027 ж. ЧЕЙИН ЖАРАЙТ

СЕРТИФИКАТ ДЕЙСТВИТЕЛЕН ДО г.

Директор Т. Сатышов

С № 027682

Inventory No.	Signature and date	Inventory No

Chng.	Nocofpat	List	DocNo	Signature	Date	-EGS-	List

Annex 5.

Determination of the granulometric (grain) composition of sandy soils using the sieve method.

№П/П	Well No. (Pit)	Depth of selection, m	Grain (granulometric) composition in %. Fraction size in mm								Humidity, %		Number plasticity, p J %	Natural humidity, W%	Flow index, J p in fractions of units	Name of soil
			>10	10-5	5-2	2-1	1-0.5	0.5-0.25	0.25-0.1	<0.1	At the yield point W_L	At the rolling boundary W_p				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Well - 1	2.3-2.6	54.4	23.3	9.7	2.5	2.6	3.7	3.6	2,2	**not plastic,**					gravel soil with sand filling.
2	Well - 1	4.5-4.8	52.5	20.4	10.8	2.9	2.6	4.0	4.5	2.6	**not plastic,**					gravel soil with sand filling.
3	Well - 1	10.1-10.3	54.2	7.0	8.8	5.2	3.4	7.0	7.0	7.4	**not plastic,**					gravel soil with sand filling.
4	Well - 1	14.7-15.0	58.5	8.2	4.5	3.1	8.7	4.7	6.5	5.8	**not plastic,**					gravel soil with sand filling.
5	Well-2	1.9-2.1	55.2	16.0	9.5	8.2	2.6	3.1	2.9	2.6	**not plastic,**					gravel soil with sand filling.
6	Well-2	4.9-5.2	54.5	13.4	12.3	3.1	4.7	4.2	4.4	3.3	**not plastic,**					gravel soil with sand filling.
7	Well-2	7.9-8.3	51.4	10.7	6.5	7.1	6.9	6.8	6.5	3.8	**not plastic,**					gravel soil with sand filling.
8	Well-2	11.4-11.8	50.7	10.0	8.7	9.2	8.0	5.7	4.1	3.6	**not plastic,**					gravel soil with sand filling.
9	Well-2	14.8-15.0	52.7	10.1	11.1	7.0	8.1	5.8	2.7	2.7	**not plastic,**					gravel soil with sand filling.
10	Well-3	2.2-2.4	52.1	12.5	16.6	5.1	3.3	4.6	3.5	2.4	**not plastic,**					gravel soil with sand filling.
11	Well-3	3.8-4.1	51.4	15.4	12.7	6.6	3.4	2.5	3.6	4.1	**not plastic,**					gravel soil with sand filling.
12	Well-3	6.3-6.5	52.1	13.2	11.8	4.1	3.6	5.2	5.4	4.4	**not plastic,**					gravel soil with sand filling.
13	Well-3	12.8-13.1	50.3	10.5	8.5	7.6	5.3	4.9	7.3	5.2	**not plastic,**					gravel soil with sand filling.
14	Well-4	1.6-1.9	57.1	15.4	4.7	3.8	4.1	4.8	4.6	5.0	**not plastic,**					gravel soil with sand filling.
15	Well-4	3.5-3.7	54.3	12.9	14.3	3.1	3.6	3.2	5.3	3.7	**not plastic,**					gravel soil with sand filling.
16	Well-4	6.4-6.7	50.8	14.6	10.3	7.4	6.4	3.2	4.1	3.2	**not plastic,**					gravel soil with sand filling.
17	Well-4	10.5-10.8	51.0	8.8	10.7	7.8	7.1	6.8	4.3	3.5	**not plastic,**					gravel soil with sand filling.
18	Well-4	14.7-14.9	52.3	11.6	8.9	8.6	5.4	6.6	7.5	2.0	**not plastic,**					gravel soil with sand filling.

***Data from laboratory work carried out in a similar area (former linoleum plant)*

Analysis of water extraction from soils according to GOST 26423-85

№№p/p	Location and depth of sampling	Units, pH GOST-26423-85	Unit of measurement per 100 g of dry product	Cations			Anions					Rigidity	Dry residue	½ Summarized HCO_3 %	Water-soluble humus			Salinity	Gypsum	Note
				Ca	Mg	$Fe^{II}+Fe^{III}$	$CO3^{II}$	HCO3I	Cl^{I}	SO_4^{II}	NO_3^{I}				Blank sample	KM nO_4	Humus			
1	2	3	4	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	III-1	8.08	MI	0.60	0.15	1,0000		0.30	0.10	0,0014		0.75	0.054	0.052		-1.0	-1.0			
	1.0																			

№№ p / p	Location and depth of sampling	Units, p H GOST-26423-85	Unit of measurement per 100g of dry product	Cations			Anions					*Dense residue GOST 9.015-74*	*Summed ½ HCO_3 %	* Water-soluble humus, %	*Gypsum, % GOST P 59540-2021	Note
				CG^{II} GOST 26428 – 85	Mg^{II} GOST 26428 – 85	Fe total GOST 9.015-74*	$CO3^{II}$ GOST 26428 – 85	HCO_3^{I} GOST 26428 – 85	Cl^{I} GOST 26428 – 85	SO_4^{II} GOST 26428 – 85	NO_3^{I}, % GOST 9.015-74*					
1	2	3	4	6	7	8	9	10	11	12	13	14	15	16	17	18
1	III-1	8.08	Mg- eq /100g	0,600	0,150			0,600	0,100	0.240						
	1.0		%	0,012	0.002		absent	0.037	0.004	0,012		0.054	0.052			
U	Mg- eq /100g	±0,2		±0,018	±0,27			±0,000	±0,021	±0,034		±0,00				

Inventory No

Signature and date

Inventory No.

Chng.	No of part	List	Doc No	Signature	Date	-EGS-	List

Table of Vertical Electrical Sounding Results

VES№	Depth interval (m)	Layer thickness (m)	Resistivity (Ω·m)	Corrosion aggressiveness	Lithology
VES-1	00-3,4	3,4	418	low	gravel
	3,4-8,7	5,3	115	low	loam
	8,7-10,0	1,3	97	low	gravel aquic
VES-2	00-0,7	0,7	300	low	gravel
	0,7-1,7	1,0	49	medium	loam
	1,7-10,0	8,3	667	low	gravel
VES-3	00-0,5	0,5	1493	low	gravel
	0,5-4,2	3,7	3254	low	boulder -gravel
	4,2-10,0	5,8	1122	low	gravel
VES-4	00-1,0	1,0	616	low	gravel
	1,0-1,3	0,3	63	low	loam
	1,3-10,0	8,7	328	low	gravel
VES-5	00-1,4	1,4	550	low	gravel
	1,4-3,4	2,0	200	low	gravel with silty clay fill
	3,4-10,0	6,6	370	low	gravel
VES-6	00-0,2	0,2	418	low	п.р.с.
	0,2-8,4	8,2	314	low	gravel
	8,4-10,0	1,6	400	low	gravel
VES-7	00-0,2	0,2	177	low	п.р.с.
	0,2-3,4	3,2	279	low	gravel
	3,4-10,0	6,6	224	low	gravel
VES-8	00-0,2	0,2	918	low	п.р.с.
	0,2-4,6	4,4	167	low	gravel with silty clay fill
	4,6-10,0	5,4	244	low	gravel
VES-9	00-0,2	0,2	400	low	gravel
	0,2-1,4	1,2	110	low	gravel with silty clay fill
	1,4-10,0	8,6	150	low	gravel
VES-10	00-0,2	0,2	380	low	п.р.с.
	0,2-3,5	3,3	207	low	gravel
	3,5-10,0	6,5	280	low	gravel

TABLE of Seismic Survey Results (Refraction Method – SZ)

SZ Point №	Depth Interval (m)	Vp Velocity (m/s)	Vs Velocity (m/s)	Bulk Density (t/m³)	Notes
SZ-1	00-1,0	440	225		Loam
	1,0-10,0	800	560	2,16	Gravel
SZ-2	00-0,5	390			Loam
	0,5-8,0	950	570	2,17	boulder-gravel
	8,0-10,0	1100	655	2,20	Gravel

Annex 7.

Photo documentation

No 1 Site *surveys*

Photo 1. No 2 Site surveys

Photo 2. Seismostation "Talgar-3". SZ Points

Inventory No

Signature and date

Inventory No.

Chng.	No of part	List	Doc No	Signature	Date	-EGS-	List


Photo 3. VES points



Photo 4. Trenching of test pits – Site 1.

Photo 5. Trenching of test pits – Site 2.

Graphic Annexes

Annex 11.

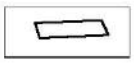
Условные обозначения

Каменное жилое здание

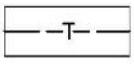
Каменное нежилое здание

Лестница

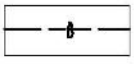
Навес



Площадка



Тепло- трасса



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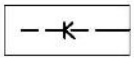
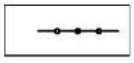
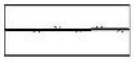


Канализация



Ограды металические на каменном, бетонном фундаменте



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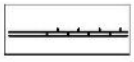
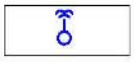
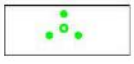


Заборы деревянные на каменном фундаменте

Ограды каменные и железобетонные



Фонтан

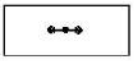


Кустарник

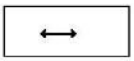
Клумба

Полосы деревесных насаждений

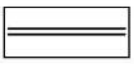
выходы скальных пород



ЛЭП Высокого напряжения



ЛЭП Низкого напряжения

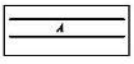


Дорожка

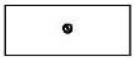
Ель

Сосна

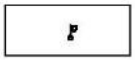
Дерево одельно стоящие



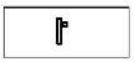
Асфальтная дорога



Люк



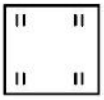
Фонарь осветительный



КОЛОНКА

болото

песок



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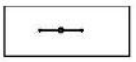
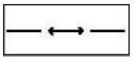


линия связи

Электрокабели подземные высокого напряжения



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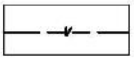


Линии связи подземные кабельные

Inventory No

Signature and date

Inventory No.

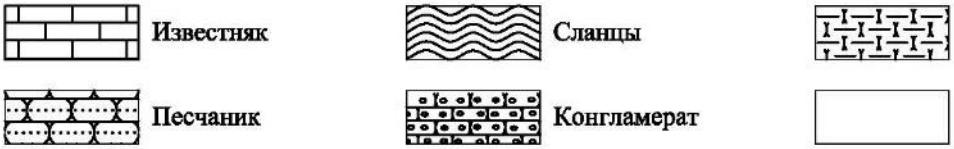
Chng.	Noofpart	List	DocNo	Signature	Date	-EGS-	List

ОБОЗНАЧЕНИЯ, ПРИНЯТЫЕ В МАТЕРИАЛАХ ИНЖЕНЕРНО-ГЕОЛОГИЧЕСКИХ ИЗЫСКАНИЙ

А. УСЛОВНЫЕ ОБОЗНАЧЕНИЯ К ИНЖЕНЕРНО-ГЕОЛОГИЧЕСКИМ РАЗРЕЗАМ И ЛИТОЛОГИЧЕСКИМ КОЛОНКАМ.

1. ЛИТОЛОГИЧЕСКИЕ (ПЕТРОГРАФИЧЕСКИЕ) ТИПЫ ПОРОД

а) Скальные и полускальные

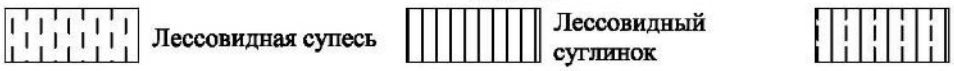


б) Крупнообломочные и песчаные

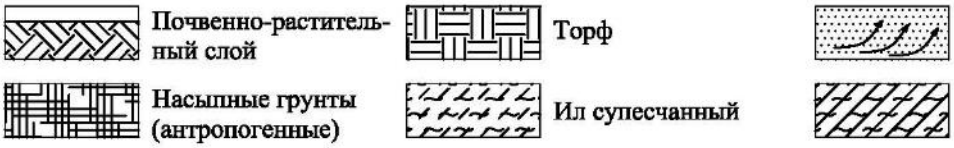
в) Глинистые

г) Породы особого состава, состояния и свойства

Лессовые



Прочие



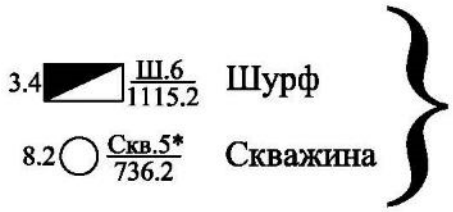
д) Характерные особенности горных пород

(изображаются редкими знаками на фоне обозначений литологического типа пород)

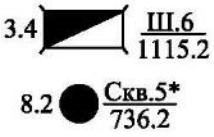
ПРИМЕЧАНИЕ: Подобная характеристика грунтов производиться в текстовой части материалов изысканий и на литологических колонках выработок. Сочетание различных знаков указывает на состав и особенности пород.

Б. УСЛОВНЫЕ ОБОЗНАЧЕНИЯ К КАРТЕ (СХЕМЕ, ПЛАНУ) ФАКТИЧЕСКОГО МАТЕРИАЛА

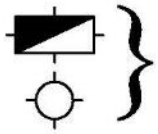
1. ГОРНЫЕ ВЫРАБОТКИ, ПУНКТЫ РЕЖИМНЫХ НАБЛЮДЕНИЙ И ОПЫТНЫХ РАБОТ.



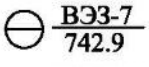
Справа: вверху - номер выработки, внизу - абсолютная отметка устья.
Слева - глубина выработки.
Звездочкой при номере обозначаются только выработки изысканий прошлых лет.



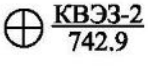
Шурфы и скважины, вскрывшие грунтовые воды.



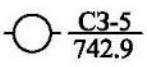
Технические выработки (опробованные).



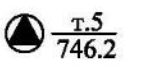
Точка вертикального электрического зондирования.
Справа: вверху-номерточки, внизу-абсолютная отметка.



Точка кругового электрического зондирования.
Справа: вверху-номерточки, внизу-абсолютная отметка.



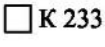
Точка сейсмического зондирования КМПВ.
Справа: вверху-номерточки, внизу-абсолютная отметка.



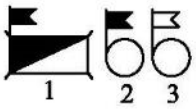
Точка замера удельного электрического сопротивления грунта прибором МС-08.

Глубокие разведочные (структурные на воду, или эксплуатационные) скважины. Цифры справа: вверху - номерскважины по каталогу, внизу - абсолютная отметка устья., слева - общая глубина скважины.

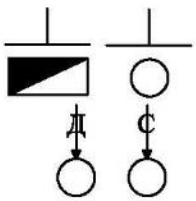
Обнажение горных пород и его номер.



Колодец грунтового питания и его номер.



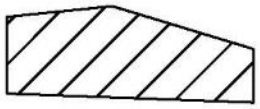
Пункты наблюдения за режимом подземных вод в выработках (1,2) и источниках (3).



Пункты проведения испытаний грунтов опытными нагрузками.

Пункты проведения динамического и статического зондирования грунтов.

2. ГРАНИЦЫ, КОНТУРЫ, ЛИНИИ.



Граница и площадь исследуемой территории.

Контур и номера проектируемых объектов по экспликации плановых материалов.

Линия и номер инженерно-геологического разреза.

2. СОСТОЯНИЕ ПОРОД

Консистенция глинистых пород
Суглинки

Твердая
Полутвердая
Тугопластичная
Мягкопластичная
Текучепластичная
Текучая

Супеси

Твердая
Пластичная
Текучая

Степень влажности
Песков

Маловлажные
Влажные
Насыщенные водой

3.ИНДЕКСЫ ГЕНЕТИЧЕСКИХ ТИПОВ ЧЕТВЕРТИЧНЫХ ОТЛОЖЕНИЙ

a - аллювиальные
p - пролювиальные
d - делювиальные
a-p - аллювиально - пролювиальные
d-p - делювиально - пролювиальные
e - озерные
g - гляциальные
fg - флювиогляциальные
h - биогенные (болотные)
Ant - антропогенные

4. СТРАТИГРАФИЯ ЧЕТВЕРТИЧНЫХ ОТЛОЖЕНИИ

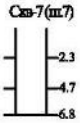
Q_I - нижнечетвертичный комплекс
Q_{II} - среднечетвертичный комплекс
Q_{III} - верхнечетвертичный комплекс
Q_{IV} - современный комплекс
Q_{III-IV} - нерасчленный верхне-четвертично современный комплекс

(1) *Номер инженерно–геологического элемента (ИГЭ)*

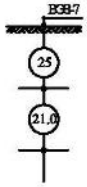
(36В) *Группа грунтов по трудности их разработкц согласно СНиП 4–02–91*

palII *Генетический тип отложений и их возраст*

5. ПРОЧИЕ ОБОЗНАЧЕНИЯ НА РАЗРЕЗАХ



Скважина (шурф)
Верху - номер выработки
Справа - глубина залегания слоев и конечнаяглубина выработки м.

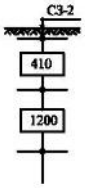


Геоэлектрический разрез по данным ВЭЗ

В кружке - удельное электрическое сопротивление горизонта в мм.

▼2.7 VI-1972 Установившийся уровень грунтовых вод (УГВ) в м от поверхности земли в период изысканий.

▼2.7 VI-1972 Приведенный уровень грунтовых вод в м. от поверхности земли в период наиболее высокого стояния.



Сейсмический разрез по данным КМПВ

В прямоугольнике - скорость упругих волн Vp м/сек.

(2) Строительная группа грунтов по СНиП 4-02-91.

ОПРОБОВАНИЕ ВЫРАБОТОК

Отобран образец ненарушенной структуры.

То же, нарушенной структуры.

Отобрана проба воды. (Цифры вверху - интервал опробования, внизу - лабораторный номер образца).

Интервал опробования для определения гранулометрического состава и объемного веса крупнообломочных пород.

ЛИТОЛОГИЧЕСКИЕ ГРАНИЦЫ

Установленные.

Предполагаемые

Литолого-фациальная изменчивость.

Chng.	Nocfpart	List	DocNo	Signature	Date	-EGS-	List

Inventory No
Signature and date
Inventory No.

Annex 4. Report on the State of Biodiversity

Report on the State of Biodiversity in the Areas Planned for the Construction of the Poultry Farm in Kemin.

Prepared by Ph.D. (Biology) S.V. Kulagin

1. Introduction

Poultry farming is a highly efficient branch of animal husbandry, characterized by rapid reproduction rates and playing a significant role in providing the population with high-quality food products. The poultry development program in the Kyrgyz Republic aims to address several key objectives:

- Ensuring the population has access to environmentally safe eggs and poultry meat;
- Increasing production and population of agricultural poultry;
- Technical re-equipment of the poultry sector;
- Developing the private sector for poultry production;
- Addressing socio-economic issues related to the creation of additional jobs.

Main goals and tasks set out in the technical assignment were:

- Survey of the current state of biodiversity in the area designated for construction of a feed mill and production areas for poultry houses;
- Identification of animals listed in the Red Book of Kyrgyz Republic within construction area;
- Assessment of risks to wild animals inhabiting the area;
- Evaluation of the project's impact on the environment;
- Description of measures to mitigate impacts on wildlife and manage risks.

2. Political and Legal Framework (National and International Standards)

Regulatory framework includes a list of laws and normative documents governing general environmental protection and specific fauna, including:

- Law of the Kyrgyz Republic "*On Specially Protected Natural Areas*";
- Law of the Kyrgyz Republic "*On Environmental Protection*";
- Law of the Kyrgyz Republic "*On Wildlife*";

3. **Survey methodology** (data collection methods, fieldwork, information sources)

Birds are the most species-rich group of terrestrial vertebrates.
They are an important component of ecosystems and can serve as sensitive indicators of ecosystem dynamics.
Birds have proven to be a convenient model group for developing general principles of ecological and biogeographical studies of animal populations. Monitoring bird population numbers and density can have significant practical value in connection with conservation and economic issues.
There are many forms of bird survey organization, and the choice of a specific method depends on the goals and objectives of the Survey (including requirements for detection accuracy and representativeness), season, habitat characteristics, and other factors.

Based on the spatial organization of surveys, the following types are distinguished:

- Point counts – surveys conducted by an observer standing in one place, i.e., without moving through the area;
- Plot counts – surveys conducted on plots that are sequentially visited by an observer (or observers) moving across the entire plot;
- Transect counts – surveys conducted by an observer moving along a linear route.

In this area, we used point counts as the most practical method for limited space.

During point counts, either all birds available for observation can be recorded (regardless of their distance from the stationary observer), or only those within a certain distance from the observer (circular count), or within a clearly defined area marked by reference points (e.g., a well-visible section of a river valley, a glade, etc.).
For bird surveys, binoculars are used, preferably 8× magnification.

4. **Baseline conditions** (description of current environmental, social, and biodiversity status)

Location and description of sites in Kemin

The territories allocated for the construction of the feed mill and poultry facilities of “Adal Azyk” are located in Kemin District, Chuy Region, near the town of Kemin. The sites have good accessibility to existing infrastructure.

General Information

- The total number of hangars to be built in Kemin is 24 at two sites (12 hangars at 42°47'13.6"N 75°44'10.0"E and 12 hangars at 42°47'24.9"N 75°42'57.6"E).
- The annual broiler production capacity at each site in Kemin will not exceed 2.5 million broilers per year.
- Coordinates of the feed mill in Kemin: 42.792291, 75.710523 (existing site of the former linoleum factory).

Planned feed mill will be located on the territory of the former linoleum factory. The main area of the mill will occupy a site with existing foundations and other remnants of block structures from the factory. Construction of the mill will require dismantling these structures and foundations, removal of construction debris, and proper disposal. Chu River flows northwest at a distance of 150 m from the former linoleum factory site. The territory is fenced with concrete slabs.
Territories for planned poultry houses will be located separately, near the planned feed mill, on the land between Chu River and Bystrov Canal. Total width of the sites between these two water bodies ranges from 300 to 550 meters. Based on the field survey of this area, the following was observed:
- Site for Poultry Complex №1 is located approximately 500 meters from the planned feed mill. This site is an agricultural field previously used for grain cultivation.
- Site for Poultry House Complex №2 is located 1.5 km from the planned feed mill. This area is a deserted plot with no existing structures; an old dried-up channel of the Chu River is nearby (map – diagram Fig. 1).
Visual inspection of the site indicated that at the former linoleum factory, where the feed mill is planned, the dominant birds are synanthropic species. Large numbers of domestic pigeons’ nest in partially ruined buildings of the former factory. Field sparrows and mynas were also observed, and a small number of chukar partridges were noted outside the fenced area. Among mammals, the following were observed: Tolai hare, long-eared hedgehog, house and field mice; during evening and night hours, some bat species may be present. Among predatory mammals, jackals and foxes may occur in the adjacent area, along with stray dogs and domestic cats.

On territory allocated for the construction of poultry houses, the following animals were observed.
On territory allocated for the construction of poultry house №1, the birds observed include crested larks, chukar partridges, field sparrows, and magpies. Among mammals, house and field mice were noted, as well as traces of dogs. The territory is used as an agricultural field.
On territory allocated for the construction of poultry house №2, the following species were recorded: birds – black kite, magpies, masked wagtail, black crow. Among mammals – field mice, hedgehogs, ground squirrel burrows, and traces of jackal. According to shepherds who graze livestock in this area, hares are also present, and muskrats inhabit the Bystrov Canal. The territory represents a deserted area of the former Chu River channel. Vegetation in this area is very sparse, with no woody plants present.

Map-scheme (Fig. 1)

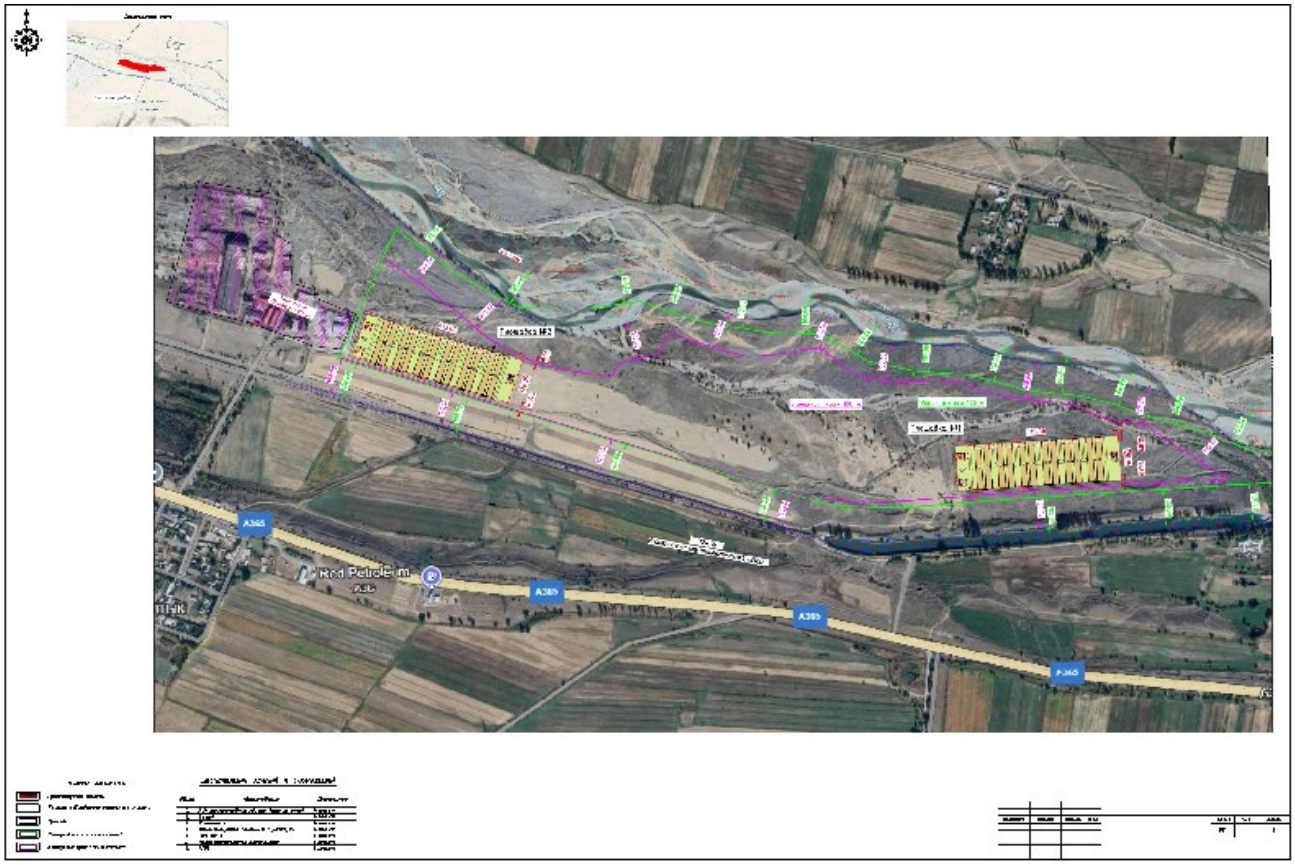


Fig. 1. Planned location of the facilities

5. Measures to mitigate impacts and manage risks.

We identified and described the anticipated and potential risks that may arise from the activities of these facilities. Recommendations are also provided on aspects that require attention during the design and construction process.

Main risks for the feed production facility site are:

- Hydrological (groundwater level);
- Sanitary (presence of a large number of domestic pigeons and other synanthropic birds, as well as mice and rats, which may be carriers of various diseases).

Poultry farm areas on Sites 1 and 2 are characterized by the following risks:

- related to sanitary protection zones;
- water protection zones (especially Site 2);
- sanitary (presence of rodent-like pests, magpies, crows, pigeons).

To reduce these risks, it is necessary to carefully control the population of rodent-like pests on these sites, completely prevent contact of pigeons, sparrows, and other birds with feed within the feed mill area, as well as within the poultry farm areas with chicken populations.

MEASURES TO ENSURE BIOSECURITY

- Compliance with and implementation of strict biosecurity rules will help prevent:
- Infection of poultry with infectious diseases;
- Equipping buildings with airlocks and wire mesh to prevent contact with wild birds;
- Implementation of a rodent control plan;
- Sanitary control at building entrances, provision of professional clothing for workers used exclusively on the farm, washing and disinfection of vehicles upon entry, etc.;
- Cleaning and disinfection of buildings and equipment before each new batch of chicks;
- Adherence to sanitary and veterinary control.

IMPACT ON THE BIOLOGICAL ENVIRONMENT

Impact resulting from project implementation is mainly associated with changes in the characteristics of the local landscape due to the construction of facilities on the designated area. The anticipated landscape change involves the construction of buildings intended for poultry farming.

Company must ensure integration of the project into the natural environment without harming the surrounding area; in this case, the impact on the landscape of the project site will be minimal.

IMPACT ON FLORA

Project implementation will have an indirect impact through the clearing of vegetation on microfauna and soil protection from various forms of soil erosion.

IMPACT ON WILDLIFE

Overall, this project will not have a significant impact on fauna, as the effect on wildlife is very limited due to the small size of the site relative to the ecosystem as a whole.

HAZARD IDENTIFICATION RELATED TO LIVESTOCK PRODUCTION

Potential hazards in poultry farming include a wide range of pathogens that can be transmitted from wild animals, such as avian influenza, avian chlamydiosis, avian tuberculosis, salmonellosis, fowl cholera (Pasteurellosis), staphylococcal infections, campylobacteriosis, and others. Many of these zoonoses can be dangerous to humans.

Frequency of primary transmission of avian zoonoses remains low; however, the incidence of secondary infections-caused by pathogens present, for example, in bedding, cleaning water, and other farm materials-is significantly higher and should be considered as a sanitary risk.

MEASURES TO REDUCE IMPACT ON TERRESTRIAL VEGETATION

To mitigate the impact on terrestrial vegetation near the project site, it is necessary to plant trees and shrubs, which will also help settle dust and serve a windbreak function.

ENVIRONMENTAL MONITORING PROGRAM

Environmental monitoring is an activity aimed at ensuring compliance with environmental obligations and duties, in particular legislative and regulatory requirements, throughout the entire project implementation period. This includes ensuring effective implementation of the mitigation and compensatory measures recommended in this Survey. The monitoring program defines the indicators planned to be used for tracking the actual impact of the project on specific environmental components.

Effective implementation of the monitoring program requires, among other things, defining a set of indicators that allow tracking the evolution of specific environmental components affected by the project. For this purpose, the baseline (or zero) condition must be characterized by parameter values measured before the project begins. Traditional environmental monitoring methods include measurements and analyses (water, soil, etc.), inventories (flora, fauna), and the use of bioindicators (plants, animals).

6. Summary and recommendations.

Conclusions from the preliminary visual inspection of the site for the feed mill and poultry farms:

- Currently, the areas designated for the feed mill and Poultry Farm №1 are anthropogenically transformed. In the first case, it is the territory of the former linoleum factory, and in the second case, it is an agricultural field. The wildlife in these areas consists of abundant synanthropic species.
- The area designated for Poultry Farm №2 is barren and unattractive to birds and other animals.
- During the site inspection, no species listed in the Red Book of Kyrgyzstan were observed.
- The construction of the facilities will not affect the population of wild animals inhabiting the project area, as the designated territory is generally insignificant for their surrounding natural habitat.
- The main flight paths in this area do not pass through the site.
- Measures to mitigate impacts on wildlife should ensure compliance with environmental standards during construction and operation of the facilities.

This environmental impact assessment for the project on the construction of specialized poultry farms was conducted in accordance with legislation regarding the Survey of environmental impacts. During the Survey,

the main potential impacts on the natural environment were identified, and measures for their mitigation were proposed.

Implementation of the proposed mitigation measures will contribute to a significant improvement in the state of the environment and public health resulting from this activity.

As a result of the project's implementation, key socio-economic issues will be addressed, including:

Increasing the efficiency and competitiveness of the poultry sector;

Creating jobs and supporting local farmers, who will be able to sell the grain crops they grow;

Supplying high-quality poultry meat to the market;

Contributing to applied research and development focused on processing enterprise waste, aimed at ensuring sustainable poultry production while maintaining environmental protection.

Annex

Premises of a former linoleum factory.

Site where the feed mill will be built.

Site for the construction of poultry house No. 1

Site for the construction of poultry house No. 2

Bystrov Canal

Gopher holes near site No. 2

Annex 5. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

1. Introduction

This Environmental and Social Management Plan (ESMP) has been developed as part of the preparation for the construction project of the Agro-Industrial Complex “Agro Kush” LLC in the Kemin District, Chuy Region, Kyrgyz Republic.

The ESMP serves as a tool for implementing the results of the Environmental and Social Impact Assessment (ESIA) and defines specific measures to prevent, reduce, and control risks at all stages of the project life cycle - from design and construction to commissioning and operation.

The main goal of the ESMP is to ensure the project’s compliance with the requirements of the legislation of the Kyrgyz Republic, international environmental protection and social safeguard standards (including IFC Performance Standards PS 1–6), as well as to incorporate recommendations obtained during the ESIA preparation process and stakeholder engagement.

The ESMP establishes the responsibilities of parties, monitoring procedures, reporting systems, and the management structure for the enterprise’s environmental and social aspects.

The ESMP integrates:

- mitigation measures for identified impacts;
- monitoring and regular analysis of environmental parameters;
- clear allocation of responsibilities and duties among project participants;
- a system for staff training and capacity building.

This ESMP is a living document and will be subject to regular review and updates as the project evolves, design documentation is prepared, and based on monitoring and audit results. All changes and additions to the ESMP will be made under the established project management procedure to ensure the relevance of mitigation measures and compliance with national legislation and IFC standards. Updated versions of the ESMP will be provided to stakeholders and regulatory authorities as part of the project’s reporting obligations.

2. Structure of the Plan

The Plan covers all key categories of project impacts: air, water, and soil protection; waste management; biosecurity; occupational health and safety; and interaction with the local population and government authorities. For each stage of project implementation, corresponding risk management measures and monitoring programs are defined.

The Plan takes into account the specifics of the designed facilities - two broiler production sites and a feed mill - their location characteristics, the presence of sanitary protection and water protection zones, as well as the direct and indirect areas of influence on the environment and the local population.

All mitigation measures are presented in tabular form to ensure the consistent implementation of activities during the design, construction, and operation stages. The table contains specific actions, objectives, timelines, performance indicators, responsible parties, and reporting forms

Table 1. Measures to mitigate environmental and social risks

No.	Environmental and Social Parameters	Impact	Proposed Actions/ Mitigation Measures	Institutional Responsibility for Mitigation Actions	Cost of Mitigation Actions	Indicator
	Design					
1	**Location of the facility near the Chu River**	Risk of flooding, pollution, and violation of protection zones	Adjustment of layout: setback ≥100 m, design of drainage for stormwater management	Designer / Environmental and Social manager	The cost of drainage works shall be included in the cost estimate based on the Bill of Quantities (BoQ)	Setback and drainage provided in the design
2	**Sanitary Protection Zone (SPZ)**	Risk of odour, noise, dust for the population	Establish SPZ of 300 m for the poultry farm, 100 m for the feed mill; include buffer green plantings	Designer / Sanitary and Epidemiological Service (SES)	The cost of landscaping and protective measures shall be included in the cost estimate based on the BoQ	SPZ confirmed, landscaping plan prepared
3	**Flooding of the site**	Risk of flooding due to improper site selection	Exclude flood-prone areas; provide for drainage system	Designer	The cost of drainage works shall be included in the cost estimate based on the BoQ	Flooding analysis and drainage considered
4	**Erosion and slope instability**	Landslides, slope washout	Include slope and bank protection measures	Designer	The cost of reinforcement works shall be included in the cost estimate based on the BoQ	Slope protection provided
5	**Compliance with legislation**	Absence of required permits and approvals	Obtain all permits, approvals, and state acts on land reclassification	Management	Within the design documentation cost	All permits obtained
6	**Biosecure layout**	Risk of disease and pest spread	Ensure sanitary zoning, pest protection, and hygienic barriers	Designer / Veterinarian	The cost of hygienic barriers and protective measures shall be included in the cost estimate based on the BoQ	Biosecurity considered in the design
	Construction					
7	**Atmospheric air**	Dust and emissions from machinery	Watering of dusty areas, speed limit for construction transport, use of well-maintained equipment, covering dusty materials with tarpaulins	Contractor	The cost of delivered water and watering works shall be included in the cost estimate based on the Bill of Quantities (BoQ)	Watering log or other document recording watering frequency; visual inspection of road condition;

						equipment maintenance records
8	**Water resources**	Pollution of surface and groundwater	Arrangement of local drainage, installation of temporary cesspits/biotoilets, timely removal of liquid waste, protection of surface runoff	Contractor / Environmental and Social manager	The cost of installation and maintenance of temporary sanitary facilities, and waste removal, shall be included in the cost estimate based on the BoQ	Visual monitoring, presence of appropriate facilities, waste removal records
9	**Bank erosion**	Slope washout, soil instability	Temporary drainage, slope reinforcement	Contractor / Environmental and Social manager	The cost of drainage and reinforcement works shall be included in the cost estimate based on the BoQ	Visual monitoring
10	**Flora and fauna**	Loss of green plantings and habitats	Minimize tree cutting, protect green areas	Contractor / Environmental and Social manager	If required - the cost of transplantation or compensatory planting shall be included in the cost estimate based on the BoQ	Visual monitoring
11	**Influx of workforce, social tension**	Social conflicts, gender inequality	Code of conduct; priority for local residents, women, and youth; gender-sensitive conditions; prohibition of child/forced labour; equal pay and non-discrimination	Contractor / HR Officer	Within contractor's contract cost	Personnel records, absence of complaints
12	**Unauthorized access to site**	Injuries, theft, vandalism	Installation of fences, signs; informing local residents	Contractor	The cost of fences, signs, and their maintenance shall be included in the cost estimate based on the BoQ	Integrity of fences and presence of signs
13	**Occupational health and safety risks**	Injuries, accidents	OHS Plan: PPE, briefings, control of hazardous works	Contractor / OHS Specialist	The cost of PPE and training shall be included in the cost estimate based on the BoQ	Availability of PPE, safety briefing records, incident reports
14	**Damage to roads and utilities**	Disruption of infrastructure	Pre-construction inspections, protection, restoration in case of damage	Contractor	The cost of restoration and repairs shall be included in the cost estimate based on the BoQ	Infrastructure protected and restored
15	**Traffic risks**	Road accidents	Traffic management plan: movement routes, signs, work schedule	Contractor / Engineer	Within contractor's contract cost	Traffic plan implemented, no recorded accidents

16	**Soil contamination (historical)**	Risk of contamination during earthworks	Identification and removal of contaminated soil for disposal at a licensed facility	Contractor / Environmental and Social manager	The cost of removal and disposal of contaminated soil shall be included in the cost estimate based on the BoQ	Contaminated soil removed, disposal records available
17	**Waste management**	Site pollution, unsanitary conditions	Sorting, storage, and removal to a licensed landfill	Contractor	The cost of containers and waste removal shall be included in the cost estimate based on the BoQ	Containers for sorting available, waste removed properly
18	**Site maintenance**	Pollution of the site	Cleaning and restoration of landscaping	Contractor	The cost of cleaning and landscaping works shall be included in the cost estimate based on the BoQ	Site clean and restored
19	**Chance finds of cultural heritage objects**	Violation of legislation, loss of heritage	Application of “chance finds” procedure: stop works, protect site, notify authorities	Contractor	If required - the cost of protective and conservation measures shall be included in the cost estimate based on the BoQ	Found objects documented
20	**Public complaints**	Conflicts with local residents	GRM: receipt and processing of complaints; registration of grievances	Contractor / GRM Manager	Within contractor’s contract cost	Number of complaints, recorded in the log
	Operational					
21	**Odours and ammonia emissions**	Air pollution, discomfort	Ventilation, biofilters, optimization of manure handling	Engineer / Environmental and Social manager	Include in annual operating budget; for upgrades – in capital investment plan	NH_3 < MAC; odour minimization
22	**Waste management (manure, bedding, carcasses)**	Pollution, unsanitary conditions	Waste management plan: safe storage, composting, removal to licensed facilities; sanitary control	Manager / Environmental and Social manager	Include in annual operating budget and annual procurement plan	Cleanliness of storage areas; confirmed waste removal
23	**Animal diseases, zoonoses**	Risks to animals and humans	Biosecurity: sanitary inspections, pest protection, veterinary supervision	Veterinarian / Manager	Include in annual operating budget and annual procurement plan	Inspection logs; veterinary records
24	**Attraction of rodents, birds**	Product damage, disease vectors	Pest management plan: sanitation, barriers, traps, inspections	Environmental and Social manager	Include in annual operating budget and annual procurement plan	Inspections carried out; no complaints

25	**OHS risks**	Injuries, accidents	OHS Plan: PPE, workwear, ventilation, medical check-ups, safety briefings	Manager / OHS Specialist	Include in annual operating budget and annual procurement plan	Compliance with requirements; health records of workers
26	**Public complaints**	Social tension	Maintain GRM; timely review of complaints	GRM Specialist	Within current operating budget	GRM log up to date; complaints resolved
27	**Transport risks**	Road accidents, injuries	Traffic management plan for site: routes, schedule, road safety measures	Transport Manager	Include in annual operating budget	Plan implemented; no accidents
28	**Cumulative impacts**	Overall negative effects	Landscaping, routing, monitoring	Manager / Environmental and Social manager	Include in annual operating budget; for expanded landscaping – in capital investment plan	Confirmed impact reduction
29	**Extreme weather conditions**	Damage, heat stress	Insulation, ventilation, flexible schedule, contingency plans	Manager	Include in annual operating budget; for additional equipment – in capital investment plan	No cases of heat stress; measures documented
30	**Insects and disease vectors**	Sanitation and health risks	Pest management plan: sanitation, pest control, inspections	Contractor / Environmental and Social manager	Include in annual operating budget and annual procurement plan	No complaints; inspections completed
31	**Poor sanitary condition of the territory**	Pollution, unsanitary conditions	Cleaning, inspections	Contractor	Within current operating budget	Site cleanliness
32	**Labour disputes**	Social tension	Transparent recruitment; priority for locals, women, and youth; equal pay; non-discrimination	HR / Manager	Within current operating budget	Employment records; absence of disputes
33	**Negative perception of the project**	Loss of trust, conflicts	Activities with local residents once a year or as needed	Management / GRM	Include in annual operating budget	Activities conducted; minutes available

3. Institutional Structure for ESMP Implementation

The ESMP will be implemented under the supervision of the Chief Environmental Officer of the enterprise, who will oversee the Environmental Protection and Social Responsibility Unit. This unit will be responsible for planning activities, ensuring compliance with regulations, and liaising with contractors, local communities, and regulatory authorities.

All contractors working on the project will be required to comply with ESMP requirements, participate in training sessions, and submit reports on the fulfillment of their environmental protection and social responsibility obligations.

To ensure the effectiveness of ESMP implementation, an internal audit system will operate with regular inspections at all project sites.

The project has established an institutional management structure that includes key functions and clearly assigned responsibilities, ensuring a high level of process control.

Table 3. Functional control blocks

No.	Management component	Description of functions
1	General Management of the enterprise	Strategic management, plan approval, external communications
2	Environmental and social manager	Implementation and control of environmental protection measures
3	GRM manager	Interaction with the population and the GRM Receiving, processing and resolving complaints from interested parties
4	Occupational Health and Safety Specialist	Providing health and safety, keeping logs and monitoring safety procedures
5	Environmental and social manager	Data analysis, parameter control, reporting

Table 4. Distribution of responsibilities and accountability

Position / Department	Main responsibilities	Accountability
Management of the company	– Making strategic decisions – Interaction with investors and government agencies – Approval of plans and reports	To Owners / Board of Directors
Environmental and social manager	– Emissions, waste and monitoring control – Reporting and interaction with regulatory authorities	To the management of the company
GRM manager	– Interaction with the population – Management of the GRM and implementation of SEP – Social reporting – Registration, processing and resolution of complaints – Maintaining a database of complaints and analytics	To the management of the company
Occupational Health and Safety Specialist	– Conducting briefings and trainings	To the management of the company

	– Monitoring working conditions and compliance with occupational safety standards	
Environmental and social manager	– Monitoring of all parameters (environmental, social, institutional) – Preparation of quarterly and annual reports	To the management of the company

Table 5. Interaction structure

Direction	Responsible	Who reports / interacts with	Interaction tools
Environmental control	Environmental and social manager	Management, regulatory authorities	Journals, reports, acts, monitoring protocols
Social activities	Environmental and social manager, GRM manager	Management, population, GRM manager	Meeting minutes, complaint database, engagement plan
Complaints and suggestions	Responsible for GRM	GRM manager	GRM magazine, database, feedback
Occupational safety and health	Health and Safety Engineer	Management	Briefings, logbooks, inspection reports
Environmental and social monitoring	Environmental and social manager	Management, donors	Summary reports, presentations, internal audit

Table 6. Training program

Topic	Target group	Frequency	Format of the event	Responsible
Environmental protection	Contractors, engineering and technical workers	Annually	Internal and external trainings	Environmental and social manager
Social interaction and GRM	Contractors, engineering and technical workers	Quarterly	Seminars, simulations	Environmental and social manager, GRM manager
Occupational Health and Safety	All employees, contractors	Every 6 months	Instructions, knowledge testing	Health and Safety Specialist
Environmental and social monitoring	Internal monitoring staff, Environmental and social manager, GRM manager	Quarterly	Workshops, learning new techniques	Environmental and social manager

The management of these aspects will be carried out within the framework of the approved institutional structure of the project and the ESMP procedures. Responsible specialists will ensure the integration of all mitigation measures and subsequent monitoring of compliance of project decisions with established requirements, including the final approval of land plot boundaries and restricted use zones (SPZ and WPZ), as well as the formalization of the legal status of land plots within the project area

1. Road and Dusty Area Watering Log

No.	Date	Start Time	End Time	Watered Area	Water Volume (m³)	Responsible Person	Signature	Remarks

2. Occupational Health and Safety (OHS) Instruction Log

No.	Date	Type of Instruction (Introductory / Initial / Recurrent / Unscheduled)	Name of Trainee	Position	Name of Instructor	Trainee's Signature	Instructor's Signature	Remarks

3. Complaints and Suggestions Log

No.	Date Received	Source of Complaint (In-person / Phone / E-mail / Other)	Name or Organization	Complaint Details	Responsible Person for Review	Review Deadline	Response Date	Measures Taken	Responsible Person's Signature

4. Sanitary Zones, Equipment, and PPE Inspection Log

No.	Date	Object /Zone Inspected	Inspection Parameters	Condition (Compliant / Non-compliant)	Observations	Corrective Actions	Responsible Person	Deadline for Correction	Signature

5. Waste Disposal Act Form

ACT No. ___

on Waste Removal to Licensed Landfill

Date: **_____ 20__**

We, the undersigned, certify that **[Company Name]** removed waste in the amount of ___ tons / m³ to **[Landfill Name]**.

- Type of Waste: _____
- Hazard Class: _____
- Transport Company: _____
- Vehicle Plate Number: _____
- Loading Location: _____
- Disposal Location: _____

Signatures:

Contractor Representative _____ /Name/

Landfill Representative _____ /Name/

6. Equipment Maintenance Act Form

ACT No. ___

on Equipment Maintenance

Date: **_____ 20____**

- Equipment Name: _____
- Inventory Number: _____
- Location: _____
- Type of Maintenance: Scheduled / Unscheduled
- Performed Work: _____
- Equipment Condition After Maintenance: _____

Signatures:

Executor _____ /Name/

Responsible for Equipment _____ /Name/

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