

GAZİANTEP KIZILHİSAR WASTEWATER TREATMENT PLANT (WWTP) CAPACITY INCREASE

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)

KALİ ENERGY ENGINEERING & CONSULTANCY

August 2025

DOCUMENT CHECK PAGE

Project: Gaziantep Kızılhisar WWTP Capacity Increase ESIA

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Revision No	Date	Prepared By	Controlled By	Notes
00	10/04/2025	Kali Energy Engineering & Consultancy Ltd.	ILBANK	
01	07/05/2025	Kali Energy Engineering & Consultancy Ltd.	ILBANK	Revised as per ILBANK's comments
02	15/05/2025	Kali Energy Engineering & Consultancy Ltd.	ILBANK	Revised as per ILBANK's comments
03	12/06/2025	Kali Energy Engineering & Consultancy Ltd.	ILBANK	Revised as per ILBANK's comments
04	07/08/2025	Kali Energy Engineering & Consultancy Ltd.	ILBANK	Revised as per EIB's comments

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LIST OF ABBREVIATIONS

Abbreviation	
AoI	Area of Influence
BAT	Best Available Techniques
BMP	Biodiversity Management Plan
C	Carbon
CBR	Climate Bank Roadmap
CFE	Carbon Footprint Exercise
CIA	Cumulative Impact Assessment
CRVA	Climate Risk and Vulnerability Assessment
E&S	Environmental and Social
EIA	Environmental Impact Assessment
EIB	European Investment Bank
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
EU	European Union
EUNIS	European Nature Information System
GASKİ	Gaziantep Water and Sewerage Administration
GBV	Gender-Based Violence
GHG	Greenhouse Gas
GIS	Geographic Information Systems
GM	Grievance Mechanism
IFI	International Financing Institution
ILBANK	ILBANK Incorporated Company
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
KPI	Key Performance Indicator
MoEUCC	Ministry of Environment, Urbanization, and Climate Change
Mw	Moment Magnitude Scale
N	Nitrogen
NGO	Non-Governmental Organizations
O.G.	Official Gazette

Abbreviation	
OHS	Occupational Health and Safety
P	Phosphorous
P.E.	Population Equivalent
PGA	Peak Ground Acceleration
PID	Project Identification Document
PIU	Project Implementation Unit
PPE	Personal Protective Equipment
SDS	Safety Data Sheets
SEA/SH	Sexual Exploitation, Abuse and Sexual Harassment
SEP	Stakeholder Engagement Plan
SHW	Directorate of State Hydraulic Works
SuTP	Syrians under Temporary Protection
TURKSTAT	Turkish Statistical Institute
VEC	Valued Environmental and Social Components
WGM	Worker Grievance Mechanism
WWTP	Wastewater Treatment Plant

EXECUTIVE SUMMARY

This Environmental and Social Impact Assessment (ESIA) Report has been prepared for the Gaziantep Kızılhisar Wastewater Treatment Plant (WWTP) 2nd Stage Capacity Increase Project, located in Gaziantep Province, Türkiye. The Project is coordinated by İller Bankası (ILBANK) with Gaziantep Water and Sewerage Administration (GASKİ) acting as the Implementing agency.

The Kızılhisar Wastewater Treatment Plant (WWTP) 2nd Stage Project is a key infrastructure initiative under Türkiye's earthquake "State Grant" Program[1], and the International Financing Institution (IFI) is the European Investment Bank (EIB). The project aims to enhance wastewater treatment capacity in the south and southwest regions of Gaziantep Centrum, addressing both post-earthquake reconstruction needs and the challenges posed by rapid population growth, particularly due to the influx of Syrian refugees.

Gaziantep was one of the most affected provinces in the February 2023 earthquakes, which caused severe destruction to both the built environment and essential infrastructure. The province experienced significant loss of life, with approximately 4,000 casualties and 25,000 injuries. The disaster exacerbated existing challenges, including municipal service pressures, as Gaziantep already housed a substantial refugee population, accounting for 17% of the total residents as of 2024 (Ministry of Interior, Directorate General of Migration Management).

The existing Kızılhisar WWTP (1st Stage), commissioned in 2008, was originally designed with a 150,000 P.E. capacity (26,000 m³/day) to serve the south and southwest regions of Gaziantep Centrum. However, due to rapid urban expansion, including new residential projects like the Güneyşehir mass housing project, the plant's capacity is being increasingly strained. To maintain adequate wastewater treatment standards, prevent environmental pollution, and comply with Türkiye's Urban Wastewater Treatment Regulation, the 2nd Stage expansion has been identified as an urgent short-term priority investment by Gaziantep Water and Sewerage Administration (GASKİ) and İLBANK.

The Gaziantep Kızılhisar WWTP 2nd Stage project will increase treatment capacity to 400,000 P.E., implementing an advanced biological treatment process (extended aeration) with Nitrogen (N), Phosphorous (P), and Carbon (C) removal as similar to 1st stage process.

Baseline environmental and social conditions were carefully assessed through detailed field studies and desktop studies. Air quality measurements, surface and groundwater sampling, soil analysis, noise assessment, and socio-economic surveys were conducted. Results indicate that baseline air quality meets national standards, and surface water shows localized pollution upstream from the discharge point. Ambient noise levels are low, and the project area is characterized by semi-urban and agricultural land use with moderate socio-economic status.

Environmental and social risks were systematically identified for both construction and operational phases. Key risks include such as dust emissions, noise pollution, soil and groundwater contamination, generation of construction and domestic waste, occupational health and safety risks, and minor traffic disruptions. These risks were addressed in a

[1] The term "State Grant" refers to those funds made available to the water authorities of earthquake affected cities by Turkish Government in the form of grant. The source of these funds could be various IFIs where the Turkish Government is the debtor. For the proposed Project, IFI will be **European Investment Bank (EIB)**.

comprehensive Environmental and Social Management Plan (ESMP) developed for the Project.

Table 1 presents the key issues/factors that generate medium or higher significance adverse impacts for both construction and operation phases before the application of any mitigation measures. A summary of the mitigation measures to manage these impacts is also provided. For detailed information regarding potential environmental and social impacts and mitigation measures, please refer to Section 6.4, Section 6.5, and Section 7 of this report.

Table 1. ESIA and Summary of Mitigation Measures

Potential Impact	Mitigation Measures
Pre-Construction and Construction Phase	
Loss of Topsoil	• GASKİ will ensure that the contractor will prepare and implement a Soil Management Plan before the construction. • A temporary top-soil storage area will be designated within the WWTP boundaries prior to the commencement of excavation activities. • The temporary storage area will be located at a safe distance from the creek that feeds Sacır Stream. • The storage site will have a maximum slope of 5% to ensure stability and minimize erosion risk. • Topsoil striping will be the first activity carried out prior to excavation and will be implemented in the designated areas. • Topsoil will not be stripped earlier than necessary in order to prevent erosion by wind and water. • The topsoil will be stripped to a sufficient depth. • Stripping will not be carried out on wet soil to avoid compaction. • The side slope of the stockpiles will not exceed a ratio of 3:1 (height : width). • The striped topsoil will be reused for landscaping purposes at the end of the construction phase. • The stored topsoil will not be used for agricultural purposes.
Erosion Control	• GASKİ will ensure that the contractor will prepare and implement a Soil Management Plan before the construction. • An appropriate drainage system will be established on site to minimize the potential impacts of surface runoff. In this context, drainage channels will be constructed in accordance with the site's topographic characteristics. • Construction activities, particularly excavation works, will be carried out preferably under dry weather conditions to minimize soil disturbance and erosion risk. • Topsoil stripping will not be conducted earlier than necessary, in order to avoid erosion caused by wind and water. • To prevent wind erosion, disturbed areas and topsoil stockpiles will be kept moist, and the height of stockpiles will not exceed 3 meters. • Upon completion of construction at each location, the topography will be restored immediately to ensure slope stabilization and minimize erosion risk.

Potential Impact	Mitigation Measures
	• All erosion control measures will be designed and implemented with due consideration of the project's location within the Oğuzeli Major Plain Protection Area to avoid off-site sediment transport and protect adjacent agricultural lands. • The contractor will conduct regular inspections of erosion and sediment control measures, particularly after heavy rainfall events, and implement any necessary maintenance or corrective actions.
Soil Contamination	• GASKİ will ensure that the contractor will prepare and implement a Soil Management Plan before the construction. • The amount of soil potentially subject to compaction or contamination will be minimized by strictly limiting the movement of construction machinery, equipment, and personnel to designated working zones and access routes within the project site. • No construction materials or waste will be stored outside the permitted boundaries of the WWTP area. • Given the project's location within the Oğuzeli Major Plain Protection Area, all soil contamination prevention and response measures will be designed and implemented to ensure that no adverse impacts extend beyond the project boundaries. • Fuels required for construction machinery and equipment will primarily be supplied from nearby fuel stations. If on-site storage becomes necessary, it will be carried out only in dedicated storage areas equipped with impermeable flooring and secondary containment measures to prevent leakage or infiltration. • In case of accidental fuel or oil spills, the area will be immediately isolated, and spill kits or absorbent materials will be used to prevent dispersion into the soil. All staff will be trained in emergency spill response procedures. • All machinery and equipment will undergo routine inspections of potential fuel or oil leaks. Any identified issue will be addressed promptly to prevent environmental contamination. • All waste and wastewater generated during construction will be managed in a controlled and traceable manner. • In the event of a potential soil contamination incident, the operator GASKİ will notify the MoEUCC. If the site is officially classified as contaminated and in need of remediation, remediation works will be conducted by MoEUCC-authorized contractors, and GASKİ will be responsible for overseeing and ensuring full cleanup. • During any potential remediation process, the following measures will be taken: o All vehicles carrying contaminated soil will be covered and sealed to prevent dust emissions and leakage during transport. o Only licensed waste carriers will be permitted to transport contaminated soil to an authorized treatment or disposal facility. o Illegal dumping of contaminated material will be strictly prohibited. o Speed limits will be enforced for trucks transporting

Potential Impact	Mitigation Measures
	contaminated soil. o Use of contaminated soil for landscaping or green areas will be strictly prohibited.
Noise Pollution	• GASKİ will ensure that the contractor will prepare and implement a Noise Management Plan before the construction. • In order to reduce cumulative noise exposure, machinery and equipment will not be operated simultaneously at the section of the WWTP area closest to the nearest buildings (southwest boundary). Special attention will be given to selecting low-noise equipment wherever feasible. • Construction machinery and equipment will be regularly maintained to ensure efficient and quiet operation. Regulatory speed limits will be adhered to for all construction vehicles, and these measures will be included in the Traffic Management Plan to be prepared by the contractor. • Construction activities will be carried out only during daytime hours. Nighttime construction will be avoided unless strictly necessary and approved by the relevant authorities. • A formal grievance mechanism will be established to manage complaints related to construction noise. Any complaints received will be documented, investigated, and addressed accordingly. • The machinery and equipment to be used during the pre-construction and construction phases will, where possible, be spatially distributed across the site to prevent localized noise concentration. • In the event of any noise-related grievance, noise measurements will be carried out by a licensed environmental laboratory. Depending on the results, mitigation measures such as the installation of temporary noise barriers, the rescheduling of noisy operations, or the substitution of quieter equipment may be implemented.
Waste Generation	• GASKİ will ensure that the contractor will prepare and implement a Waste Management Plan before the construction. • Waste to be generated within the scope of the Project will be managed in accordance with the waste management hierarchy principles. • Waste will be separated according to its type (i.e., hazardous / non-hazardous, recyclable / non-recyclable) and stored in designated temporary storage areas within the Project site. • Throughout the Project activities, all operations involving the collection, temporary storage, transportation, and disposal of waste will be conducted in a manner that avoids any threat to personnel health, public health, and environmental safety. • Waste recycling, transportation, and final disposal will be carried out through licensed companies and/or in cooperation with the relevant municipality. • Incineration or uncontrolled burial of waste at the construction or operation site, as well as illegal dumping of waste into nearby lands,

Potential Impact	Mitigation Measures
	roads, or water bodies, will be strictly prohibited. • Waste that is temporarily stored on-site will be delivered to licensed transport vehicles appropriate to the type of waste for proper disposal. All operations related to waste transfer and disposal will be recorded and the records will be kept systematically in the administrative offices. • Excavated material that is not to be reused for backfilling purposes will be removed from the construction site at regular intervals without stockpiling unnecessarily. Such materials will be transported to the nearest licensed disposal facility by licensed transportation companies. • Waste oils originating from construction machinery and operational equipment (e.g., blowers) will be collected and stored in impervious, labeled, red-colored containers/tanks placed on impermeable concrete foundations in compliance with the Regulation on the Control of Waste Oils. Tanks will be equipped with overflow prevention systems and appropriate filling level indicators. • Disposal of waste oils will be coordinated under the supervision of GASKİ, and waste oil transport and disposal will be undertaken by authorized and licensed companies. • Waste batteries generated at the construction site and accumulators from construction and operational vehicles will be disposed of in compliance with the consumer responsibilities outlined in Article 13 of the Regulation on the Control of Waste Batteries and Accumulators. Used batteries will be collected separately from municipal waste and delivered to an authorized battery collection system (e.g., TAP). • All other hazardous materials will be managed and disposed of in accordance with the requirements of the Waste Management Regulation. • Hazardous waste temporarily stored on site will be properly labeled, indicating the type of waste, waste code, quantity, and storage date. Segregation will be maintained to prevent chemical reactions among incompatible wastes. • The Temporary Waste Storage Area will be constructed on an impermeable surface, equipped with proper drainage for accidental spills or leaks, have adequate top covering, and separate designated sections for different waste types. If necessary, a storage permit for this Temporary Waste Storage Area will be obtained from the Gaziantep Provincial Directorate of Environment, Urbanization and Climate Change. • Spill kits will be available at the Temporary Waste Storage Area at all times, and necessary precautions will be taken against potential fire risks, including the provision of appropriate firefighting equipment. • Regular inspections and training on waste management practices will be carried out to ensure proper implementation of waste segregation, storage, and disposal measures.

Potential Impact	Mitigation Measures
Habitat Loss due to Land Clearing	• Land clearing will be strictly limited to within the boundaries of the existing Kızılhisar WWTP designated expansion area. No clearing activities will occur outside the allocated construction footprint. • Any existing trees or shrubs within the Project boundary will be preserved where feasible. • The stripped topsoil will be stockpiled and reused during the landscaping and restoration activities after construction, promoting the re-establishment of local vegetation.
Displacement of Flora and Fauna	• Since the Project site does not constitute a critical habitat and is not located within any designated ecological protection area, significant displacement of wildlife is not anticipated. • Nevertheless, prior to land clearing, a site inspection will be carried out by specialists to detect and safely relocate any small mammals, reptiles, or bird species present. • During construction, access to surrounding agricultural lands and natural features will be minimized to prevent disturbance of adjacent fauna. • Construction activities will be restricted to daylight hours to avoid disturbing nocturnal species, if possible.
Infrastructure Damage	• Waste and construction materials transport will be handled by licensed contractors. Any damage to public infrastructure will be promptly repaired or compensated by the contractors, in coordination with the relevant authorities such as the General Directorate of Highways, the Gaziantep Metropolitan Municipality or relevant district municipalities. • To address potential concerns from the community, a grievance mechanism will be implemented during the construction phase to ensure that local residents can voice complaints and receive timely responses.
Plant/unit shutdown due to construction works	• In the event that certain treatment units must be taken offline during construction (e.g., for rehabilitation or integration works), the contractor will plan such shutdowns at least one week in advance and notify GASKİ in a timely manner to allow for operational adjustments.
GBV and SEA/SH risk	• Implement and enforce a Code of Conduct for all workers, • Provide mandatory training on GBV and SEA/SH awareness and prevention, • Establish a confidential and accessible grievance mechanism, • Ensure that workers understand the consequences of misconduct and the zero-tolerance policy. • GASKİ will monitor the Contractor's compliance with these measures throughout the construction period.
Exposure of workers to work-related occupational health and safety risks	• Before the construction phase, an OHS Management Plan will be prepared in compliance with EIB E&S standards and Turkish legislation. The plan will focus on creating a safe working environment by minimizing risks related to natural disasters, accidents, and equipment failures.

Potential Impact	Mitigation Measures
	• Development and enforcement of risk mitigation procedures and adherence to national regulations. • Worker awareness programs and OHS training sessions. • Provision and proper use of Personal Protective Equipment (PPE). • Installation of warning signs and implementation of fire safety protocols. • Availability of first-aid trained staff and emergency response measures. • Ensuring technical compliance of all machinery and equipment, including protective measures for moving parts. • Management of personal safety risks (e.g., long hair, jewelry) and traffic safety through proper training and signage. • Restriction of access to excavation areas to authorized personnel. • Establishment of an OHS organizational structure with designated officers. • Regular risk assessments and daily site inspections, with updates to plans and trainings as needed.
Operation Phase	
Sludge generation	• A Sludge Management Plan will be developed and implemented. • Dewatered sludge will be stored only in specially designated containers intended specifically for sludge storage. • The dewatered sludge will be transported by licensed trucks to a cement factory, where it will be utilized as an alternative fuel through co-processing.
Public health risks such as epidemics due to improper handling of waste/sludge	• Waste generated within the scope of the Project will be managed in accordance with the waste management hierarchy. • The Waste Management Plan will be updated by GASKİ prior to the start of the operation phase to reflect operational conditions. The relevant measures defined for the construction phase will also be applicable for the operation phase. The updated plan will provide procedures for the management of wastes other than sludge. Recycling, transportation, and disposal of wastes will be carried out by licensed companies and/or the relevant municipality.
Exposure of workers to work-related occupational health and safety risks	• Basic and technical OHS training, including environmental and social training, will be completed by employees. • A sufficient OHS organizational structure, as defined by local regulations, will be established, and the necessary number of OHS officers will be assigned to the site during working hours. • OHS staff will carry out site inspections, and if additional risks are identified, relevant plans and training will be updated. • Records of work accidents and near-miss incidents will be systematically maintained after each event. • Root cause analysis will be conducted to implement corrective actions to prevent recurrence. • An accident report must be drafted at the accident site in case of a work-related injury.

Potential Impact	Mitigation Measures
	• The relevant official authority must be notified within three (3) days from the date of the accident, as specified by local regulations. • No work will be allowed to continue until the identified faulty condition or behavior determined through root cause analysis, is corrected. • After a work accident, debriefing training will be conducted. The injured worker must be re-examined by the workplace physician and only return to work after receiving a fitness-for-duty health certificate. • The OHS team will include an OHS specialist with an A-class certification and a workplace physician. • Emergency response training will be provided, and drills will be conducted. • Workers involved in asphalt operations will receive training on potential hazards, emergency measures, and safe working practices. The training programs will also include information on the contents of asphalt mixtures, which may vary based on usage and requirements. Safety precautions related to these materials will also be included.

In addition to these measures, climate-related risks were assessed. The Project integrates climate adaptation considerations by designing infrastructure to withstand extreme weather events, improving the resilience of wastewater management systems to prolonged droughts and intense rainfall, and contributing to water resource protection. A Greenhouse Gas (GHG) assessment was conducted according to EIB's Project Carbon Footprint Methodologies. The estimated total GHG emissions from the Project are approximately 10,594 tCO_2e/year, which is well below the reporting threshold of 20,000 tCO_2e/year.

A cumulative impact assessment was conducted within a 2 km radius around the Project site. No other major existing or planned developments were identified within this area, and therefore cumulative impacts are expected to be negligible.

Key Performance Indicators (KPIs) have been established for monitoring project compliance, including ambient air and noise quality, water quality monitoring, proper waste management, occupational safety records, and community grievance management. Compliance with national laws and EIB environmental and social standards will be maintained throughout the Project lifecycle. Regular reporting and independent audits will ensure transparency and accountability.

Additionally, the following management plans and procedures will be prepared for the Project. GASKİ will ensure that the Contractor(s) prepare their own management plans and procedures **prior to the construction phase:**

- Pollution Prevention Management Plan
- Emergency Preparedness and Response Plan
- Occupational Health and Safety Management Plan
- Waste Management Plan
- Hazardous Materials Management Plan (including Spill Response Procedure)

- Labor Management Plan
- Community Health and Safety Management Plan
- Traffic Management Plan
- Camp Management Plan
- Security Management Plan
- Soil Management Plan
- Chance Find Procedure
- Air Quality Management Plan
- Noise Management Plan
- Biodiversity Management Plan

Before the operation phase, GASKİ will prepare and update the following management plans:

- Sludge Management Plan
- Air Quality Management Plan
- Waste Management Plan
- Traffic Management Plan

1 INTRODUCTION

1.1 Project Background

Gaziantep Kızılhisar Wastewater Treatment Plant (WWTP) 2nd Stage Project (the Project) is a key infrastructure initiative under Türkiye's earthquake "State Grant" Program[2], and the International Financing Institution (IFI) is the European Investment Bank (EIB). The project aims to enhance wastewater treatment capacity in the south and southwest regions of Gaziantep Centrum, addressing both post-earthquake reconstruction needs and the challenges posed by rapid population growth, particularly due to the influx of Syrian refugees.

Gaziantep was one of the most affected provinces in the February 2023 earthquakes, which caused severe destruction to both the built environment and essential infrastructure. The province experienced significant loss of life, with approximately 4,000 casualties and 25,000 injuries. The disaster exacerbated existing challenges, including municipal service pressures, as Gaziantep already housed a substantial refugee population, accounting for 17% of the total residents as of 2024 (Ministry of Interior, Directorate General of Migration Management).

The existing Kızılhisar WWTP (1st Stage), commissioned in 2008, was originally designed with a 150,000 P.E. capacity (26,000 m³/day) to serve the south and southwest regions of Gaziantep Centrum. However, due to rapid urban expansion, including new residential projects like the Güneyşehir mass housing project, the plant's capacity is being increasingly strained. To maintain adequate wastewater treatment standards, prevent environmental pollution, and comply with Türkiye's Urban Wastewater Treatment Regulation, the 2nd Stage expansion has been identified as an urgent short-term priority investment by Gaziantep Water and Sewerage Administration (GASKİ) and İLBANK.

The Gaziantep Kızılhisar WWTP 2nd Stage project will increase treatment capacity to 400,000 P.E., implementing an advanced biological treatment process (extended aeration) with Nitrogen (N), Phosphorous (P), and Carbon (C) removal as similar to 1st stage process.

The design phase was completed by FENSA Engineering Ltd. in 2021 and approved by İLBANK on May 24, 2023. The project will be implemented under the coordination of GASKİ and İLBANK, ensuring alignment with national regulations and international financing requirements. Once completed, the expanded WWTP will play a crucial role in improving wastewater management, enhancing environmental sustainability, and supporting Gaziantep's long-term resilience against both natural disasters and demographic shifts.

1.2 Scope and Objectives of the Project

General objective of the proposed project is support of GASKİ to better respond to significant increase in demands for municipal services, which has risen from the increasing population.

Proposed Gaziantep Kızılhisar WWTP 2nd Stage Project scope covers construction of 2nd Stage and capacity increase of the WWTP from 150,000 P.E. to 400,000 P.E. As similar to Kızılhisar WWTP 1st Stage, proposed 2nd Stage Plant will have extended aeration biological

[2] The term "State Grant" refers to those funds made available to the water authorities of earthquake affected cities by Turkish Government in the form of grant. The source of these funds could be various IFIs where the Turkish Government is the debtor. For the proposed Project, IFI will be **European Investment Bank (EIB)**.

treatment which enables N and P removal as well as C removal. The specific objectives of the proposed project are:

- Ensure effective treatment of whole wastewater in Kızılhisar wastewater collection basin till design horizon.
- Maintain wastewater treatment levels and reduce risks to public health, environment and natural sources.
- Contribute achievement of compliance with Türkiye's Urban Wastewater Treatment Regulation.
- Protection of the integrity of the treatment process and operation/maintenance requirements with the Kızılhisar WWTP 1st Stage.
- Introduction of disinfection process for the effluent wastewater (through UV units) in order to prevent interfusion of pathogens to irrigation water and reduce risks to public health, the environment and natural resources.

By integrating international environmental and social standards, the Gaziantep Kızılhisar WWTP 2nd Stage Project aims to enhance wastewater treatment capacity, improve public health and environmental protection, and support sustainable urban development in Gaziantep.

1.3 Purpose and Scope of the ESIA

According to Türkiye's Environmental Impact Assessment (EIA) Regulation (Official Gazette No. 31907, dated July 29, 2022), WWTPs with a daily capacity exceeding 50,000 m³/day fall under Annex-I, requiring a full EIA report. Facilities with a capacity of more than 30,000 m³/day but below 50,000 m³/day are classified under Annex-II, meaning they are subject to an EIA screening process to determine whether a full EIA study is required.

However, the Kızılhisar WWTP 1st Stage (existing WWTP) was initiated before 2008 and had already been included in the investment program of Türkiye in 1991. Due to these factors, the project was granted exemption from EIA requirements under the regulations in effect at that time. The official exemption document confirming this status is provided in Appendix-1.

The Kızılhisar WWTP 2nd Stage has been designed with a capacity of 400,000 P.E., equivalent to 67,200 m³/day. Given this capacity, the project falls under the scope of the EIA Regulation Annex-1. However, in accordance with Temporary Article 2 of the current EIA Regulation, projects that were included in the state investment program before June 23, 1997, and commenced operation by May 29, 2013, *along with the structures and facilities necessary for their implementation*, are exempt from EIA requirements. As the planned capacity increase for the WWTP was originally included in the state investment program in 1991, it qualifies for EIA exemption under this regulation. Since the expansion is considered a necessary facility for the realization of the original project, an official request for opinion was submitted to the Gaziantep Governorship, Provincial Directorate of Environment, Urbanization, and Climate Change. Following the evaluation, the EIA exemption was officially granted for capacity increase. The official exemption document confirming this status is provided in Appendix-2.

To align with both national legislations, EIB's Environmental and Social Standards (E&S Standards) and the Environmental and Social Management Framework (ESMF) November 2024 that was prepared by ILBANK for the sub-projects to be financed by Earthquake Reconstruction Framework Loan Project and approved by EIB a comprehensive Environmental and Social Impact Assessment (ESIA) Report has been prepared. This ESIA aims to identify and assess the potential environmental and social impacts of the proposed project, provide appropriate mitigation measures, monitoring activities and also ensure compliance throughout the project's subsequent phases. The ESIA study utilized relevant literature, observations during field study, previously prepared reports (Project Identification Document and Cost Benefit Analysis), and collected data, with impact assessments conducted through mathematical analyses, geographic information systems (GIS), and expert evaluations.

A baseline assessment was carried out to establish the existing physical environment, biological environment, and socio-economic conditions of the project area before implementation. The physical baseline includes factors such as geology, hydrology, air quality, noise levels, soil quality, water quality and climate conditions, providing insights into how the project may interact with natural systems. The biological baseline evaluates the presence of flora, fauna, and biodiversity, identifying any ecologically sensitive areas. The socio-economic baseline examines demographic structure, economic activities, infrastructure, and community well-being, ensuring that potential social impacts are properly assessed. This baseline serves as a critical reference for evaluating project impacts and developing appropriate mitigation measures.

The report also includes a comprehensive Environmental and Social Management Plan (ESMP), which evaluates the potential impacts of the project on existing conditions, as well as the expected effects during the construction and operation phases. Additionally, it outlines impact mitigation measures, reflecting the mitigation hierarchy and determining the monitoring arrangements.

Furthermore, the report provides technical details on the selected wastewater treatment technology, including information on the treatment units to be constructed, technical specifications, design calculations, and alternative comparisons to ensure optimal efficiency and sustainability.

1.3.1 Structure of the ESIA Report

This report has been structured into key sections to provide a comprehensive assessment of the ESIA within the scope of the best available data. The main chapters and their explanation briefly are as follows:

- **Chapter 1: Introduction** – Introduces the project and the ESIA study, outlining the project's objectives, scope, and the ESIA structure.
- **Chapter 2: Legislative Framework** – Explains the national and international legal requirements, including relevant environmental laws, policies, and agreements applicable to the project, ensuring regulatory compliance.
- **Chapter 3: Project Description** – Provides a detailed overview of the project's location, components, technical specifications, and associated construction and

operation activities, along with a proposed implementation schedule.

- **Chapter 4: Baseline Conditions** – Defines the existing environmental and socio-economic characteristics of the project area and its close vicinity before implementation.
- **Chapter 5: Assessment of Project Alternatives** – Evaluates feasible alternatives related to the project site, technology, design, and operational approaches. This section also includes an analysis of the "no project" scenario, assessing the potential environmental and social implications if the project were not implemented.
- **Chapter 6: Environmental and Social Impacts** – provides identification and assessment of the potential positive and negative environmental and social impacts that may arise from the project during both the construction and operation phases.
- **Chapter 7: Environmental and Social Management Plan (ESMP)** – Outlines the framework for managing and mitigating environmental and social impacts identified in the assessment. This chapter details specific mitigation measures, monitoring activities, roles and responsibilities, and compliance requirements to ensure that potential risks are effectively addressed throughout the construction and operation phases.
- **Chapter 8: Stakeholder Engagement and Public Consultation** – Summarizes stakeholder interactions, public consultations, key concerns raised, and how feedback was integrated into project planning.
- **Chapter 9: Reporting and Compliance** – Describes the environmental and social management structure, including roles, responsibilities, key performance indicators, reporting to ensure effective implementation of environmental and social measures.
- **Chapter 10**: **Conclusion and Recommendations** - Provides a summary of the key findings from the environmental and social impact assessment, highlighting the main potential impacts and the measures proposed to mitigate them.

The appendices include baseline data, site photographs, technical studies, records of consultations, regulatory permits, and monitoring documents, along with a site inspection report conducted by the consultant company.

1.4 Site Visit Summary

As part of the ESIA process, a site visit was conducted on 6 March 2025 to the Kızılhisar WWTP site. The purpose of the visit was to observe existing conditions, assess the readiness of the site for construction activities, and verify locations relevant to baseline environmental monitoring. During the visit, the project footprint and areas designated for temporary storage of topsoil and excavation materials were inspected. It was noted that site organization and general housekeeping were of a high standard, and no significant environmental concerns such as odor or visual pollution were observed. Measurement locations for baseline parameters, air quality, noise, water, and soil, were identified and confirmed.

The surrounding environment primarily comprises agricultural land used for pistachio, olive, and grape cultivation, with some livestock activities in the broader vicinity. No sensitive

receptors such as schools or health facilities were identified near the site; however, one residential building was observed approximately 75 meters from the project boundary. The proposed location for the worker accommodation area, situated within the project perimeter, was also visited. The discharge point to Sacır Stream was visually inspected. Overall, the site visit verified that preliminary preparations for construction and environmental management were progressing adequately. Further details and photographs from the visit are provided in Appendix-3: Site Visit Summary.

2 LEGISLATIVE FRAMEWORK

This section provides an overview of the applicable legal and regulatory requirements for environmental and social impact assessment. In this project, in addition to determining which standards to follow, a gap analysis is conducted between national legislation and the EIB's E&S standards is carried out and how these gaps will be closed in this project. Various national legislation and international conventions and standards explained in the following sections are also to be complied with during different stages of the Project, including pre-construction, construction and operation.

2.1 National Legislation

Türkiye's environmental and social legislation has been developed in alignment with national and international frameworks, incorporating European Union (EU) Directives as part of the country's pre-accession efforts. Many regulations have recently been revised to enhance compliance with international standards, especially with the EU standards.

Since the early 2000s, Türkiye has been actively engaged in aligning its national environmental legislation with the EU acquis, guided by the "Türkiye-EU Integrated Environmental Approximation Strategy (2006–2023)".

Although no official national strategy document has been published after 2023, the majority of the environmental regulations applicable to this Project were enacted after the EU approximation process was well underway and are already aligned with relevant EU directives.

Therefore, no significant issues or delays are anticipated in terms of compliance, and the ongoing status of Türkiye's EU alignment process is not expected to adversely affect the Project's ability to comply with applicable environmental legislation.

The Turkish Environmental Law (Law No. 2872, published in the Official Gazette No. 18132 on August 11, 1983) provides a comprehensive framework for environmental protection, pollution prevention, and control. Complementary laws address related aspects such as occupational health and safety, labor rights, and social security, including the Occupational Health and Safety Law (Law No. 6331), Labor Law (Law No. 4857), and the Social Security and General Health Insurance Law (Law No. 5510).

The EIA Regulation (Official Gazette No. 31907, dated July 29, 2022) outlines the administrative and technical procedures for the EIA process and is largely aligned with the EU EIA Directive. Under this regulation, project developers are responsible for obtaining necessary permits, including an EIA Report, depending on the nature, capacity, and location of the facility. As explained in Section 1.3, EIA exemptions have been granted for both Stage 1 and Stage 2 of the project. Although EIA exemption has been granted, the exemption

document explicitly states that compliance with the Environmental Law and all related regulations issued under this law is mandatory.

National environmental and social regulations must be followed in the implementation of project-related activities and management plan execution, ensuring full compliance with national legislative requirements. These regulations, their official gazette (O.G) date and numbers are given in Table 2.

Table 2. National Legislation related to the Project

Legislation	O.G Date	O.G No	Impacts / Aims
Environmental Permitting, Management and Planning			
Environmental Law	11.08.1983	18132	The protection of the environment in line with the principles of sustainable environment and sustainable development
Regulation on Environmental Impact Assessment	29.07.2022	31907	Administrative and technical procedures and principles to be followed in the EIA process.
Regulation on Environmental Permit and License	10.09.2014	29115	Permits and licenses required at all stages of the project
Regulation on Environmental Audit	12.06.2021	31509	Procedures and principles regarding inspections & audits of facilities or activities aimed at environmental protection, the qualifications of personnel conducting the inspections, the identification of violations, and the implementation of administrative sanctions
Waste Management			
Waste Management Regulation	02.04.2015	29314	Management of all waste during land preparation, construction and operation
Zero Waste Regulation	12.07.2019	30829	Efficient management of materials and natural resources during all phases
Regulation on the Management of Waste Oils	21.12.2019	30985	Management of waste oil generated during all phases
Regulation on the Control of Vegetable Waste Oils	06.06.2015	29378	Management of vegetable waste oils generated during all phases
Regulation on the Control of Packaging Waste	26.06.2021	31523	Management of packaging waste generated during all phases
Regulation on the Control of Medical Waste	25.01.2017	29959	Management of medical waste generated during all phases
Regulation on the Control of End-of-Life Vehicles	30.12.2009	27448	Management of end-of-life vehicles generated during all phases

Legislation	O.G Date	O.G No	Impacts / Aims
Regulation on the Control of Waste Electrical and Electronic Equipment	26.12.2022	32055	Management of waste electrical and electronic equipment generated during all phases
Regulation on the Control of End-of-Life Tires	25.11.2006	26357	Management of end-of-life tires generated during all phases
Regulation on the Control of Waste Batteries and Accumulators	31.08.2004	25569	Management of waste batteries and accumulators generated during all phases
Regulation on the Control of Excavation Soil, Construction, and Demolition Waste	18.03.2004	25406	Generation of excavation soil, construction wastes, especially during the construction phase of the Project
Regulation on the Use of Domestic and Urban Wastewater Treatment Sludge in Soil	03.08.2010	27661	Management of the final sludge generated during the operation phase
Regulation on the Incineration of Waste	06.10.2010	27721	Management of the final sludge generated during the operation phase
Regulation on Landfills (Regular Storage of Wastes)	26.03.2010	27533	Management of the final sludge generated during the operation phase
Water & Wastewater Quality Control and Management			
Regulation on Water Pollution Control	31.12.2004	25687	To ensure the prevention of water pollution for the protection and optimal utilization of groundwater and surface water resources potential
Regulation on Water Efficiency	27.12.2024	32765	Establishment, monitoring, and certification of the water efficiency system of GASKİ
Regulation on the Water Intended for Human Consumption	17.02.2005	25730	Drinking and utility water provided to personnel in all phases
Regulation on the Control of Pollution Caused by Hazardous Substances in and around Water Environment	26.11.2005	26005	Detection, prevention, and gradual reduction of pollution caused by hazardous substances in water and its surroundings
Regulation on Urban Wastewater Treatment	08.01.2006	26047	Effluent water quality and treatment efficiencies required to be met during the operation phase
Regulation on the Protection of Groundwater against Pollution and Deterioration	07.04.2012	28257	Preservation of the status of groundwater in good condition, and prevention of groundwater pollution and degradation
Regulation on Surface Water Quality	30.11.2012	28483	Discharge of treated wastewater during the operation phase & Wastewater generated by construction site personnel during the construction phase and by

Legislation	O.G Date	O.G No	Impacts / Aims
			operation personnel during the operation phase
Regulation on the Monitoring of Surface Waters and Groundwater	11.02.2014	28910	Procedures and principles for determining the current status of all surface water and groundwater across the country in terms of quantity, quality, and hydromorphological elements, monitoring the waters with an ecosystem integrity-based approach, ensuring standardization in monitoring, and coordinating institutions and organizations involved in monitoring
Regulation on Determination of Sensitive Water Bodies and the Areas Affecting these Bodies and Improvement of Water Quality	23.12.2016	29927	Identification of nutrient-sensitive water bodies and the urban and nitrate-sensitive areas affecting them, establishment of related principles and guidelines, and determination of necessary measures to improve water quality in sensitive water bodies
Regulation on Wastewater Collection and Disposal Systems	06.01.2017	29940	Planning, design, project development, construction, and operation of wastewater collection and disposal systems
Communiqué on Technical Procedures in Wastewater Treatment Plants	20.03.2010	27527	Fundamental technical procedures and practices for the treatment of wastewater originating from settlements, including the selection of wastewater treatment plant technology, design criteria, disinfection of treated wastewater, its reuse, and the disposal of sludge
Communiqué on Technical Personnel Working in Wastewater Treatment Plants	23.05.2019	30782	Procedures and principles regarding the qualifications, certification, duties, authorities, and responsibilities of technical personnel to be employed to ensure the effective, efficient, and legally compliant operation of WWTPs
Communiqué on Administrative Procedures of the Regulation on Water Pollution Control	10.10.2009	27372	Administrative procedures and practices related to the responsibilities and permit requirements stipulated by the Regulation on Water Pollution Control
Air Quality Control and Management			
Regulation on the Air Quality Assessment and Management	06.06.2008	26898	Air quality during the construction and operation phases
Regulation on Industrial Air Pollution Control	03.07.2009	27277	Air quality during the construction and operation phases
Regulation on the Control of Odor Causing Emissions	19.07.2013	28712	Odorous emissions generated during the operation phase

Legislation	O.G Date	O.G No	Impacts / Aims
Regulation on Exhaust Gas Emission Control	11.03.2017	30004	Exhaust gas emissions sourced from project vehicles, machinery and equipment
Regulation on the Control of Air Pollution from Heating	13.01.2005	25699	Air emissions from heating purposes
Noise Control and Management			
Regulation on the Control of Environmental Noise	30.11.2022	32029	Prevention of the negative impacts of environmental noise on the environment and human health, and implementation of noise control measures to reduce environmental noise
Regulation on Environmental Noise Emissions Generated by Equipment Used in Open Areas	30.12.2006	26392	Implementation of noise emission standards related to noise generated by equipment used in open areas, collection of technical documents and information, procedures for conformity assessment, and regulations regarding labeling
Soil Quality Control and Management			
Regulation on the Control of Soil Pollution and Contaminated Sites with Point Sources	08.06.2010	27605	Prevention of soil pollution as a receiving environment, identification of existing or potential contaminated sites and sectors, and establishment of principles for the remediation and monitoring of contaminated soils and sites
Chemical and Hazardous Material Management			
Regulation on the Classification, Labelling and Packaging of Materials and Mixtures	11.12.2013	28848	Chemicals and mixtures to be used during the lifetime of the Project
Regulation on the Transport of Dangerous Goods by Road	18.06.2022	31870	Dangerous goods to be transported during the lifetime of the Project
Regulation on Registration, Evaluation, Authorization, and Restriction of Chemicals	23.06.2017	30105	To ensure a high level of protection of human health and the environment during the construction and operation phases, to evaluate the damages of the substances used, to have information on the registration, evaluation, permission and restriction of those chemicals
Biodiversity and Ecosystem Conservation Management			
Wildlife Hunting Law	11.08.2003	25165	General rules on biodiversity and ecosystem conservation
Aquaculture Law	04.04.1971	13799	

Legislation	O.G Date	O.G No	Impacts / Aims
Regulation on the Protection of Hunting and Wildlife and Procedures and Principles for Combating Harmful Species	24.10.2005	25976	
Regulation on the Protection of Wetlands	04.04.2014	28962	
Forestry Law	08.09.1956	9402	
Cultural Heritage			
Law on the Conservation of Cultural and Natural Assets	23.07.1983	18113	To determine the definitions related to movable and immovable cultural and natural assets that need to be protected, to organize the transactions and activities to be carried out, to determine the establishment and duties of the organization that will take the necessary principles and implementation decisions in this regard
Traffic and Community Health and Safety Management			
Highways Traffic Law	18.10.1983	18195	To ensure traffic order in terms of life and property safety on highways and to determine the measures to be taken regarding all matters related to traffic safety
Regulation on the Highways Traffic	18.07.1997	23053	This regulation applies to ensuring traffic orders on the highways during all phases of the Project
Regulation on Traffic Signs	19.06.1985	18789	This regulation applies to traffic signs for the purpose of ensuring traffic order and safety during all phases of the Project
Regulation on Preparation, Completion, and Cleaning Works	28.04.2004	25446	Working conditions in preparation, completion, and cleaning tasks that are mandatory to ensure the main work in a workplace is carried out in an orderly, healthy, and safe manner
General Sanitation Law	06.05.1930	1489	This law applies to taking measures on health and sanitation during all phases of the Project
Occupational Health and Safety			
Occupational Health and Safety Law	30.06.2012	28339	This law applies on occupational health and safety measures to be taken during lifetime of the Project
Regulation on the Protection of Buildings from Fire	19.12.2007	26735	This regulation applies to measures to be taken for fire protection during construction and operation phases

Legislation	O.G Date	O.G No	Impacts / Aims
Türkiye Building Earthquake Regulation	18.03.2018	30364	Necessary rules and minimum conditions for the design and construction of all or parts of building-type structures under the influence of earthquakes and for the evaluation and strengthening of the performances of existing buildings under the influence of earthquakes during pre-construction and construction phases
Communiqué on Workplace Hazard Classes Regarding Occupational Health and Safety	26.12.2012	28509	This Communiqué applies on determination of hazard classes
Regulation on Risk Assessment for Occupational Health and Safety	29.12.2012	28512	Preparation of occupational health and safety risk assessment and all related principles to be followed
Regulation on Health and Safety Conditions Regarding the Use of Work Equipment	25.04.2013	28628	Ensuring the health and safety conditions for the use of work equipment to be used
Regulation on Manual Handling Operations	24.07.2013	28717	Health and safety measures to be taken during manual handling activities
Regulation on the Use of Personal Protective Equipment in Workplaces	02.07.2013	28695	This regulation applies to personal protective equipment to be used in the lifetime of the Project
Regulation on Personal Protective Equipment	01.05.2019	30761	Personal protective equipment to be used during construction and operation phases
Regulation on the Protection of Workers Against the Dangers of Explosive Environments	30.04.2013	28633	Measures to be taken in case the use of explosive usage during pre-construction and construction phases
Regulation of Emergency Situations in Workplaces	18.06.2013	28681	Measures to be taken during emergency situations
Regulation on Health and Safety Precautions Regarding Working with Chemicals	12.08.2013	28733	Chemical handling and necessary precautions
Regulation on the Methods and Essentials of Occupational Health and Safety Trainings for Workers	15.05.2013	28648	Health and safety training to be performed
Regulation on the Protection of Workers from Noise Related Risks	28.07.2013	28721	Health and safety measures to be taken against the noise impacts
Regulation on the Protection of Workers from Vibration Related Risks	22.08.2013	28743	Health and safety measures to be taken against the vibration impacts

Legislation	O.G Date	O.G No	Impacts / Aims
Regulation on Combating Dust	05.11.2013	28812	Management of to be generated dust during pre-construction and construction phases
Regulation on Health and Safety Signs	11.09.2013	28762	Health and safety signs to be placed during the lifecycle of the project
Regulation on Occupational Health and Safety for Temporary or Fixed-Term Jobs	23.08.2013	28744	Health and safety measures to be taken for temporary workers during lifetime of the Project
Regulation on Occupational Health and Safety in Construction	05.10.2013	28786	Constructional health and safety measures to be taken during construction phase
Regulation on First Aid	29.07.2015	29429	In case of a first aid requirement during construction and operation phases
Labor and Working Conditions			
Labor Law	10.06.2003	25134	This main law applies to the rights and responsibilities of the workers employed based on the labor contract with the employers, regarding the working conditions and working environment during the lifetime of the Project
International Workforce Law	13.08.2016	29800	Regarding work permits and work permit exemptions for foreigners
Labor Courts Law	25.10.2017	30221	Labor courts in Türkiye are authorized to resolve disputes arising from employment relations
Trade Unions and Collective Bargaining Agreement Law	07.11.2012	28460	The procedures and principles regarding the establishment, management, operation, supervision, working, and organization of worker and employer unions and confederations
Regulation on the Procedures and Principles of Employment of Children and Young Workers	06.04.2004	25425	To determine the principles of working conditions for children and young workers without endangering their health and safety, physical, mental, moral, and social development, or education, and to prevent their economic exploitation
Social Security and General Health Insurance Law	16.06.2006	26200	To ensure the protection of individuals in terms of social insurance and general health insurance
Regulation on the Work Permits of Foreigners under Temporary Protection (2016/8375)	26.04.2016	29695	Establishes the procedures and principles regarding the employment of foreigners under temporary protection, in accordance with Article 91 of the Law on Foreigners and International Protection No. 6458, dated April 4, 2013.

Legislation	O.G Date	O.G No	Impacts / Aims
Regulation on the Employment of International Protection Applicants and Holders of International Protection Status	26.04.2016	29695	Aims to define the procedures and principles regarding the employment of foreigners under temporary protection, in accordance with Article 91 of the Law on Foreigners and International Protection No. 6458, dated April 4, 2013.
Law on Foreigners and International Protection	11.04.2013	28615	This law ensures to regulate the procedures and principles regarding the entry, stay, and exit of foreigners in Turkey, as well as the scope and implementation of the protection to be provided to foreigners requesting protection from Türkiye
Stakeholder Engagement			
Right to Information Law	24.10.2003	25269	Citizens and foreigners residing in Turkey, provided that the principle of reciprocity is observed, have the right to submit written applications to the relevant authorities and the Grand National Assembly of Turkey regarding their personal or public concerns, including requests and complaints. In relation to the Project, citizens and foreigners within the Area of Influence have the right to submit written applications to the İLBANK and the Grand National Assembly of Turkey regarding their requests and complaints concerning themselves or the public
Law on the Exercise of the Right to Petition	10.11.1984	18571	
Law on the Ombudsman Institution	29.06.2012	28338	
Regulation on Environmental Impact Assessment	29.07.2022	31907	The investing public is informed about the project to gather their opinions and suggestions through a Public Participation Meeting, where participants can express their concerns and raise issues related to the project. However, since the project is exempt from the EIA requirement, a Public Participation Meeting has not been conducted
Other Legislation			
Expropriation Law	04.11.1983	18215	All expropriation procedures before the 1st stage have been carried out in accordance with this law
Soil Conservation and Land Use Law	19.07.2005	25880	Management of change in the land use during the planning phase of the Project

Legislation	O.G Date	O.G No	Impacts / Aims
Regulation on the Protection, Usage and Planning of Agricultural Lands	09.12.2017	30265	Management of change in the land use during the planning phase of the Project. Provisions regarding the protection of lands within Major Plain Conservation Areas are also included in this Regulation.
Regulation on the Implementation of the Law Concerning Private Security Services	07.10.2004	25606	This regulation applies to private security services to be used during construction and operation
Regulation Concerning the Increase in the Efficiencies of Energy Consumption and Energy Resources	27.10.2011	28097	Procedures and principles regarding the effective use of energy, prevention of energy waste, and increasing efficiency in the use of energy resources and energy to protect the environment
Regulation Concerning the Ozone Depleting Substances	07.05.2017	30031	This regulation applies to ozone depleting substances to be used during construction and operation phases
Regulation on Fluorinated Greenhouse Gases	15.10.2024	32693	It regulates the labeling, data collection, leakage controls, and reporting of fluorinated greenhouse gases and other fluorinated substances, including those contained in products and equipment
Civil Law	01.01.2002	24607	The law ensures equality between women and men, eliminates gender-based discrimination, and grants women equal rights in both family life and society
Penal Law	01.06.2005	25611	Include modern arrangements with respect to gender equality and violence against women
Agricultural Law	18.05.2006	26149	This Law establishes policies and regulations to develop and support the agricultural sector and rural areas in line with development plans and strategies

2.2 EIB's Environmental and Social Standards

In 2022, the EIB introduced its comprehensive E&S Standards, designed to robustly evaluate and manage the environmental, social, climate, and human rights impacts associated with development projects. These sophisticated standards incorporate detailed procedures that aim to minimize adverse effects while actively promoting beneficial outcomes.

At their core, these standards emphasize rigorous assessment of environmental and social risks, proactive prevention and mitigation of potential negative impacts, steadfast commitment to human rights, and the enhancement of benefits for communities directly or indirectly impacted by projects.

Project promoters hold critical responsibilities, including the execution of thorough Environmental and Social Impact Assessments (ESIA), maintaining proactive, transparent, and effective stakeholder engagement, and facilitating accessible grievance and feedback mechanisms for all affected individuals and groups.

The E&S Standards consist of 11 key standards:

- **Standard 1 – Environmental and Social Impacts and Risks:** This Standard promotes an integrated approach to impact assessment and risk management by ensuring that environmental, climate, social and human rights considerations are addressed and taken into account in the decision-making processes.
- **Standard 2 – Stakeholder Engagement:** This Standard recognizes the importance of stakeholder engagement, as a means to ensure respect for the rights to access to information; public participation in decision-making processes; and access to justice.
- **Standard 3 – Resource Efficiency and Pollution Prevention:** his Standard recognizes the contribution of resource efficiency to relieve pressures on the environment and climate change whilst bringing increased competitiveness through cost savings from improved efficiency, commercialization of innovation and better management of resources over their whole life cycle.
- **Standard 4 – Biodiversity and Ecosystems:** This Standard recognizes that protecting and conserving biodiversity and ecosystems and maintaining the ecological functions and processes of such ecosystems are fundamental to environmental and social sustainability.
- **Standard 5 – Climate Change:** This Standard recognizes the importance and urgency of combating climate change, which poses a major global threat and is a common concern of humankind, as rising temperatures increasingly result in severe, pervasive and irreversible negative impacts for people, economic activities, ecosystems and the regenerative capacity of the planet.
- **Standard 6 – Involuntary Resettlement:** This Standard outlines the promoter's responsibilities to manage involuntary resettlement risks and impacts. *Not applicable for this Project.*
- **Standard 7 – Vulnerable Groups, Indigenous Peoples and Gender:** The overall objective of this Standard is to address inequalities, including those that are gender based, and other factors contributing to vulnerability, marginalization and/or discrimination within the context of an EIB project, and to facilitate equitable access to effective mitigation and/or compensation measures as well as project benefits for project-affected individuals and groups.
- **Standard 8 – Labor Rights:** This Standard outlines the promoter's responsibilities with regard to the assessment, management and monitoring of labor-related impacts and risks associated with projects. It recognizes workers and employers as both rights-holders and duty-bearers.
- **Standard 9 – Health, Safety and Security:** This Standard recognizes that project activities, equipment and infrastructure can expose workers and community to hazards, risks and impacts in terms of occupational and public health, safety and

security.

- **Standard 10 – Cultural Heritage:** This Standard recognizes that protecting and conserving cultural heritage, which is a source of valuable historical and scientific information, an asset for economic and social development and an integral part of people's cultural rights, identity and practices, is fundamental to environmental and social sustainability.
- **Standard 11 – Intermediated Finance:** This Standard sets out how the environmental, climate and social impacts and risks arising from sub-projects shall be identified, assessed for their significance, managed and monitored, in line with applicable requirements and commensurate with the sub-project's size, nature, socioeconomic context, location and sector sensitivity to impacts and risks.

Projects are required to comply not only with national legislation but also with EIB's elevated standards. To ensure adaptive management, Environmental and Social Management Plans (ESMP) must be developed and periodically refined.

Furthermore, project promoters must establish robust environmental and social management systems covering the entire lifecycle of the project. Regular, transparent, and meaningful communication and consultation with affected communities and relevant stakeholders are vital to ensure accountability and foster trust.

2.3 Comparison of National Legislation and EIB's E&S Standards

In Türkiye, environmental impact assessment processes are carried out within the framework of national legislation, primarily under the EIA Regulation. EIB, on the other hand, applies its own E&S Standards to ensure that the projects it finances align with sustainable development principles. This section will compare the relevant legal framework in Türkiye with the EIB's policies and standards, highlighting similarities and differences between the two systems.

Table 3. Comparison of National Legislation and EIB's E&S Standards

EIB's E&S Standards	National Legislation	Measures to fill the gaps
Standard 1 - Environmental and Social Impacts and Risks		
General Requirements: All projects in the EU, EFTA, Candidate, and potential Candidate countries must comply with national and EU legislation, with significant environmental, health, and social impact projects subject to assessment under the EIA Directive. Additional assessments may be required under EU directives on biodiversity, water, and marine protection, as well as for topics like climate change, cultural heritage, and social impacts.	Türkiye's environmental and social legislation has been developed in alignment with national and international frameworks, incorporating EU Directives as part of the country's pre-accession efforts. Many regulations have recently been revised to enhance compliance with international standards, especially with the EU standards. As previously mentioned, the EIA Regulation has been considered within the scope of the project, and an EIA exemption decision has been obtained from the MoEUCC.	The EIA Regulation in Türkiye primarily focuses on environmental aspects. To ensure alignment with the EIB's E&S Standards, this ESIA report has been prepared. Also, preparation of this ESIA is not that the EIA regulation focuses only on environmental issues, but also that there is no available impact assessment report for the Project due to the EIA exemption letter.
EIA process for projects located in the EU, EFTA, Candidate and potential Candidate Countries: For projects in the EU, EFTA, Candidate, and potential Candidate countries, EIA Directive applies. Projects listed in Annex I and certain Annex II projects must undergo an EIA, with promoters required to submit an EIA Report, ensure public participation, obtain competent authority decisions, and implement mitigation measures. If an EIA is not required, promoters must provide relevant documentation and take preventive measures. The EIB may request updates or confirmations on report accuracy. In Candidate and potential Candidate countries, promoters must also consider EU environmental compliance timelines and integrate social aspects into the EIA process.	Please see above.	Please see above.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
Promoter's Organization Capacity and Competencies: The promoter must establish an Environmental and Social Management System (ESMS) that is adaptive and proportionate to the project's risks and impacts. ESMS should ensure compliance with legal, environmental, climate, and social standards, including EIB requirements and best international practices. It may be subject to external audits if required. A clear organizational structure with defined roles, responsibilities, and sufficient human and financial resources must be maintained to ensure continuous improvement. Responsibilities related to Paris Agreement alignment follow the EIB Paris Alignment of Counterparties Framework.	The EIA Regulation primarily focuses on identifying and mitigating environmental impacts of projects, with less emphasis on social impacts. The regulation does not explicitly require the establishment of an ESMS, nor does it mandate an assessment of organizational capacity or the competencies of personnel in managing environmental and social risks.	In this ESIA, organization capacity and competencies are given in Section 9. Additionally, this report defines the preliminary framework required for the establishment of an ESMS. The ESMP developed within the scope of this report outlines the requirements, plans, and procedures that must be followed throughout the project lifecycle to ensure compliance with environmental and social standards. Also, the implementation of the ESMS may be subject to external audits, where relevant and as deemed necessary by the EIB.
Standard 2 - Stakeholder Engagement		
General Requirements: Projects in EU, EFTA, Candidate, and potential Candidate countries must comply with national and EU legislation, while projects elsewhere must adhere to national laws and EIB standards, which align with EU principles on stakeholder engagement. Early engagement in the decision-making process is required to ensure stakeholders' opinions are considered. The process must respect human rights, including privacy and data protection, and be culturally sensitive, free from intimidation or coercion. It should also be gender-responsive, inclusive, and non-discriminatory, addressing potential barriers faced by vulnerable or marginalized groups to ensure their full and equitable participation.	In the Turkish EIA Regulation, public consultation is required for the purpose of "preliminary scope determination" only for projects requiring EIA, and for this purpose, only the environmental assessment must be announced with its justification.	To meet stakeholder engagement requirements, the project will implement a Stakeholder Engagement Program, ensuring transparent communication, meaningful consultation, and inclusive participation. The program will define the purpose and timing of engagement, establish a strategy for information disclosure through accessible formats and appropriate channels, and outline consultation methods tailored to different stakeholder groups. A dedicated team will oversee the implementation, ensuring sufficient resources and responsibilities for effective engagement.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
Projects located in the EU, EFTA, Candidate and potential Candidate countries: For projects subject to the EIA Directive, the promoter must support competent authorities in conducting public participation processes, including transboundary consultations if required. This includes providing the EIB with evidence of timely information disclosure, details of the consultation process, and a summary of results showing how public input was considered in decision-making. If an EIA is not required, the promoter must demonstrate that this determination has been made publicly available. Beyond formal EIA requirements, the promoter must engage with stakeholders throughout the EIB project cycle and supplement official processes with additional engagement actions as needed.	A public participation meeting is held at a centrally accessible location, determined by the MoEUCC, with the participation of accredited institutions and the project owner to inform the public and gather feedback. The meeting is announced in local and national newspapers at least 10 days in advance. It is chaired by the provincial director or representative, and public comments are recorded and submitted to the MoEUCC. Additionally, a Stakeholder Engagement Plan (SEP) must be prepared as part of the EIA application, with the Ministry able to request additional public engagement activities if needed.	Since the project has received an EIA exemption decision, a public participation meeting has not been conducted. However, as outlined above, a Stakeholder Engagement Program has been developed to ensure transparent communication, meaningful consultation, and active participation of relevant stakeholders. This program outlines strategies for information disclosure, consultation methods, and grievance mechanisms, ensuring that stakeholders are informed and engaged throughout the project lifecycle, in alignment with best practices and international standards.
Identification and analysis of the stakeholders: The promoter must identify, analyze, and document all relevant stakeholders, with a focus on vulnerable groups that may be disproportionately affected. The analysis should prioritize stakeholders with differing concerns, risks, and engagement needs, while also considering potential risks of reprisals against those expressing opinions about the project. Legitimate stakeholder representatives should be involved to facilitate communication. For projects with transboundary environmental, climate, or social impacts, affected stakeholders in neighboring or downstream countries must also be considered. The stakeholder analysis should be comprehensive to define the scope and approach of the engagement process effectively.	To inform the public about the project and its potential impacts, as well as to gather public opinions and suggestions, a SEP is prepared by accredited institutions/organizations authorized by the MoEUCC. This plan is submitted as part of the EIA application file. The SEP outlines a comprehensive framework for stakeholder engagement, detailing all relevant stakeholders, communication channels, and methods to be used throughout the project lifecycle. It ensures that all affected and interested parties have access to information and the opportunity to participate meaningfully in the decision-making process.	Since the project has received an EIA exemption decision, no SEP has been prepared. Within the scope of this ESIA study, identification and analysis of stakeholders has been conducted.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
Grievance Mechanism (GM): GM is a system established by the promoter to allow stakeholders, especially affected communities, to raise concerns regarding the environmental and social performance of the project and seek redress. The project-level GM must be set up as early as possible and remain active throughout the EIB project cycle, ensuring a clear, step-by-step process with defined timelines, monitoring, and reporting requirements. The mechanism can build existing formal or informal systems, supplemented by project-specific arrangements if needed. It must be inclusive, free from intimidation, and gender-responsive, addressing access barriers for vulnerable and marginalized groups while ensuring privacy and anonymity. Information about the GM should be publicly available in relevant languages and accessible formats. The process must be fair, transparent, and culturally appropriate, providing appeal options and not restricting complainants' access to judicial or administrative remedies, including the EIB Complaints Mechanism.	Under Turkish legislation, the grievance mechanism is governed by the Law on the Right to Petition (No. 3071), which grants Turkish citizens and foreign residents in Turkey the right to submit written petitions to the Grand National Assembly of Türkiye and other relevant authorities regarding their personal concerns or public matters. This law ensures that grievances and complaints are formally registered and reviewed by the competent authorities. The system provides an official channel for stakeholders to voice their concerns, ensuring that they receive a response within a legally defined timeframe. Through this framework, affected individuals and communities can engage with public institutions in a structured and transparent manner to seek resolutions for their grievances. However, there is no legislation about the project-specific GM.	As part of this ESIA, the framework for establishing a GM has been provided, including a detailed description of grievance handling procedures, accessibility for affected communities, and monitoring and reporting mechanisms. This ensures that stakeholders have a transparent, accessible, and structured process to raise concerns and seek resolutions throughout the project lifecycle.
Engagement Planning: For projects with significant environmental, climate, or social impacts, or if required by the EIB, the promoter must develop a SEP to ensure effective and inclusive engagement. The SEP outlines the entire stakeholder engagement process, specifying activities, roles, resources, and timelines throughout the EIB project cycle. It must be developed early, disclosed for feedback, and tailored to stakeholders' needs, ensuring meaningful participation. The SEP details	According to the EIA regulation, to inform the public about the project and its potential impacts, as well as to gather public opinions and suggestions, a SEP is prepared by accredited institutions/organizations authorized by the MoEUCC. This plan is submitted as part of the EIA application file. The SEP outlines a comprehensive framework for stakeholder engagement, detailing all relevant stakeholders, communication	Since the project has received an EIA exemption decision, no SEP has been prepared. Within the scope of this project, a Stakeholder Engagement Program will be implemented, ensuring transparent communication, meaningful consultation, and inclusive participation. The program will define the purpose and timing of engagement, establish a strategy for information disclosure through accessible formats and appropriate channels, and outline consultation

EIB's E&S Standards	National Legislation	Measures to fill the gaps
the consultation process, including information disclosure, engagement methods, timelines, and grievance mechanisms. If there are risks of reprisals, a prevention and response strategy should be included. The SEP may start as a framework approach, evolving as more project details emerge, and must be regularly reviewed and updated, with significant revisions made publicly available.	channels, and methods to be used throughout the project lifecycle. It ensures that all affected and interested parties have access to information and the opportunity to participate meaningfully in the decision-making process.	methods tailored to different stakeholder groups. A dedicated team will oversee the implementation, ensuring sufficient resources and responsibilities for effective engagement.
Disclosure of Information: To ensure effective stakeholder participation, the promoter must publicly disclose key project information as early and accessible as possible. This includes: the project's purpose, scale, duration, potential impacts and risks (especially for vulnerable groups), proposed mitigation measures, the stakeholder engagement process, consultation opportunities, and grievance mechanisms (including the EIB Complaints Mechanism). Where relevant, benefit-sharing opportunities should also be shared. Information must be accurate, understandable, culturally appropriate, and accessible to all stakeholders, including illiterate or vulnerable individuals. Any significant changes to the project's scope or impacts must also be disclosed and discussed with stakeholders.	EIA Regulation requires the disclosure of project information and public participation at specific stages, mainly through a Public Participation Meeting organized early in the process. The final decision, along with the EIA report, is published on the MoEUCC's official website. However, the regulation does not include a formal grievance mechanism for stakeholders to submit concerns or complaints during project implementation, nor does it provide for ongoing, two-way engagement throughout the project lifecycle.	This ESIA report will be disclosed in the GASKİ's website.
Meaningful Consultation: Meaningful consultation is a two-way, inclusive, and ongoing process that begins early and continues throughout the EIB project cycle. It involves the timely disclosure of accurate, accessible, and culturally appropriate information and ensures the participation of all stakeholders, including vulnerable and	To inform the public about the project and its potential impacts, as well as to gather public opinions and suggestions, a SEP is prepared by accredited institutions/organizations authorized by the MoEUCC. This plan is submitted as part of the EIA application file. The SEP outlines a comprehensive framework	A Stakeholder Engagement Program will be implemented, ensuring transparent communication, meaningful consultation, and inclusive participation. The program will define the purpose and timing of engagement, establish a strategy for information disclosure through accessible formats and appropriate channels,

EIB's E&S Standards	National Legislation	Measures to fill the gaps
underrepresented groups. Consultations must be free from manipulation or intimidation, tailored to stakeholders' needs, and provide clear opportunities for feedback. The promoter must respond to stakeholders' concerns, document the process, and disclose how their input has been addressed. In sensitive contexts, adapted, safe consultation methods should be used, and stakeholders must be informed of the available grievance mechanism.	for stakeholder engagement, detailing all relevant stakeholders, communication channels, and methods to be used throughout the project lifecycle. It ensures that all affected and interested parties have access to information and the opportunity to participate meaningfully in the decision-making process.	and outline consultation methods tailored to different stakeholder groups. A dedicated team will oversee the implementation, ensuring sufficient resources and responsibilities for effective engagement.
Monitoring and Reporting: The promoter is required to regularly monitor the stakeholder engagement process in line with the agreement made with the EIB, using the findings to identify areas for improvement. This may include revisions to the SEP or adjustments to the grievance mechanism. When possible, the promoter is encouraged to involve third parties such as community organizations, civil society, external experts, or local authorities in the monitoring process. Upon request by the EIB, the promoter must maintain open communication with stakeholders regarding the project's environmental and social performance and provide reports detailing the implementation of engagement measures, key challenges, and the nature and volume of grievances received.	Under EIA Regulation, public participation is limited to a specific stage of the EIA process, typically through a one-time Public Participation Meeting held early in the procedure. There is no requirement for a continuous or monitored stakeholder engagement process throughout the project lifecycle. Furthermore, there are no formal provisions for independent monitoring, involvement of third parties, or regular communication with stakeholders regarding the environmental and social performance of the project. As such, mechanisms for ongoing dialogue, systematic grievance tracking, or improvement of engagement practices are not embedded in the current regulatory framework.	This project will implement a comprehensive and ongoing stakeholder engagement process. A detailed Stakeholder Engagement Program has been prepared, outlining regular communication activities, consultation methods, and roles and responsibilities. The SEP will be regularly reviewed and updated based on stakeholder feedback and project developments. In addition, a project-level grievance mechanism will be established to receive, document, and respond to concerns throughout the project lifecycle. To strengthen transparency and accountability, stakeholder engagement activities will be monitored, and summary reports, including the number and nature of grievances, will be shared with the EIB as requested.
Standard 3 – Resource Efficiency and Pollution Prevention		
General Requirements: Projects in the EU, EFTA, Candidate, and potential Candidate countries must comply with both national and EU environmental legislation. In Candidate and potential Candidate	Türkiye's environmental and social legislation has been developed in alignment with national and international frameworks, incorporating EU Directives as part of the country's pre-	Although national regulations are generally aligned with EU legislation, within the scope of this report, project-specific standards will be defined under the relevant sections and will be

EIB's E&S Standards	National Legislation	Measures to fill the gaps
countries, promoters must also consider agreed timelines for alignment with EU laws under bilateral agreements or action plans. If national standards are more stringent than EU requirements such as for environmental quality or emission limits the national standards prevail.	accession efforts. Many regulations have recently been revised to enhance compliance with international standards, especially with the EU standards.	followed throughout the project. These standards will ensure that the project is implemented in accordance with both national requirements and the expectations of the EIB.
Resource Efficiency and Circular Economy: The promoter assesses the efficient use of materials, natural resources, and energy throughout the project and product life cycle, aiming to minimize environmental impacts. Based on this assessment, preventive and mitigation measures will be taken to protect natural resources and ensure long-term availability. These measures include reducing inefficiencies in resource use, enhancing the durability and recyclability of products, promoting waste prevention and recycling in line with the waste hierarchy, and avoiding activities that significantly increase waste generation, incineration, or disposal.	Turkish legislation addresses the efficient use of natural resources and raw materials, waste reduction, and recovery through various regulations, such as the Waste Management Regulation, the Energy Efficiency Law, and the Regulation on the Control of Industrial Air Pollution. These aims to promote resource efficiency and minimize waste generation. In EIA Reports, which are mandatory for certain project types, project-specific information related to resource use and environmental impacts are included. However, the overall regulatory approach remains focused on activity-specific compliance and does not explicitly require a life cycle assessment or systematic consideration of product durability, reusability, or recyclability.	This ESIA adopts a more integrated and project-wide perspective, detailing specific measures related to the efficient use of natural resources, energy efficiency, and waste management. The report outlines how the project will minimize environmental impacts across its entire life cycle, promoting principles such as reuse, recycling, and long-term sustainability.
Pollution Prevention and Control: For projects involving activities listed in Annex I of the Industrial Emissions Directive (IED) and subject to an EIA process, the promoter must provide the EIB with: the EIA Report including details on proposed technologies, use of Best Available Techniques (BAT), and measures to reduce emissions, waste, and resource use; the official decision from the competent authority under both EIA and IED; and the	Urban and/or domestic wastewater treatment plants with a capacity of 20,000 m^3/day or more are classified under Annex-1 of Türkiye's Environmental Permit and License Regulation. As such, they are required to obtain an environmental permit specifically for their wastewater discharge activities, in accordance with applicable legislation. However, these facilities are exempt from the requirement to	In this project, the facility has already obtained the environmental permit for wastewater discharge, fulfilling its legal obligations under the Environmental Permit and License Regulation and it is given in Appendix-4. By securing this permit, the facility ensures compliance with national requirements related to the discharge of treated effluent. Although it is exempt from obtaining separate permits for air emissions and

EIB's E&S Standards	National Legislation	Measures to fill the gaps
IED permit, including emission monitoring results if available. For modifications or extensions not subject to EIA, the promoter must submit the IED permit and, upon request, details on the facility, material and energy use, emissions, use of BAT, and pollution prevention measures. Environmental conditions and monitoring requirements must be fully implemented.	obtain environmental permits related to air emissions and environmental noise, as they are listed among the facility types considered to have negligible impact in these areas. This means that while wastewater discharge is regulated and subject to permitting, the air and noise emissions of such facilities are not deemed significant enough to require separate environmental permits.	environmental noise, this ESIA report includes additional monitoring and mitigation measures for these and other environmental aspects. These measures are designed to ensure that the facility operates in line with the best international practices and maintains a high level of environmental performance throughout the project lifecycle. Also, GASKİ will prepare a detailed Pollution Prevention Management Plan.
Emergency Prevention, Preparedness and Response: The promoter must establish effective management systems and control measures to prevent and respond to incidents, accidents, and emergencies, in line with legal requirements and best international practices. This includes a major accident prevention policy, a safety management system, and a contingency plan that identifies disaster risks and outlines timely and effective response measures. The promoter is also expected to support competent authorities in developing external emergency plans, ensuring that affected communities and stakeholders are properly consulted and involved where necessary.	Emergency preparedness and accident response are addressed through several legal frameworks, most notably the Regulation on the Control of Major Industrial Accidents, which is aligned with the EU Seveso Directive. This regulation requires facilities handling hazardous substances above specified thresholds to establish a Major Accident Prevention Policy, a Safety Management System, and both internal and external emergency response plans in coordination with relevant authorities. Additionally, broader legal instruments such as Environmental Law and Occupational Health and Safety Law include provisions for risk assessment, preventive measures, and emergency planning. These frameworks collectively aim to ensure that facilities are well-prepared to prevent accidents and respond effectively when necessary.	Within the scope of the project, compliance with both national regulations and relevant EU standards will be ensured. A comprehensive Emergency Preparedness and Response Plan will be developed, and regular drills will be conducted to test preparedness. All personnel will receive ongoing occupational health and safety (OHS) training to ensure awareness and readiness. In addition, a detailed Occupational Health and Safety Management Plan will be prepared, which will outline these measures and provide further guidance on the implementation of safety procedures throughout the project lifecycle.
Management of Waste: For projects generating waste with significant environmental impact, the promoter must include a Waste Management Plan,	Turkish legislation is largely aligned with EU standards in the field of waste management. Waste Management Regulation sets out the	For this project, information related to waste management has already been provided within the ESIA report. In addition to this, GASKİ will

EIB's E&S Standards	National Legislation	Measures to fill the gaps
outlining measures for waste prevention, reuse, recycling, and recovery in line with the waste hierarchy. Where relevant, life cycle assessment methods should be used to evaluate environmental impacts related to materials, energy, and emissions. Hazardous waste must be minimized and, if not avoidable, managed safely under strict control measures, including labeling, monitoring, and record-keeping, as required by EU standards and international treaties. The promoter must regularly report waste quantities and ensure the use of licensed contractors for off-site disposal.	principles of waste prevention, minimization, reuse, recycling, and recovery, consistent with the waste hierarchy approach. It also includes detailed provisions for the management of hazardous waste, including labelling, tracking, record-keeping, and disposal through licensed facilities. Facilities are required to report waste quantities and ensure that disposal is carried out by authorized waste management companies. These regulations provide a comprehensive framework for environmentally sound waste management in compliance with both national and EU-level obligations.	prepare its own Waste Management Plan, detailing project-specific procedures and measures for the handling, reduction, recycling, and safe disposal of waste in line with both national regulations and international best practices.
Sound Management of Hazardous Substances and Materials: The promoter should aim to avoid, reduce, or eliminate the use and storage of hazardous substances, and where possible, substitute them with less hazardous alternatives that are economically and technically viable. If substitution is not feasible, the promoter must ensure the safe use, handling, and storage of such substances by following EU chemicals legislation and international best practices and apply appropriate risk management measures to minimize exposure and environmental release.	Turkish legislation is generally aligned with EU chemicals regulations, particularly through the implementation of the Regulation on the Registration, Evaluation, Authorization and Restriction of Chemicals, which mirrors the EU REACH Regulation. This regulation governs the safe use, storage, and handling of hazardous substances, and includes requirements for risk assessment, labelling, record-keeping, and, where applicable, substitution with safer alternatives. Additionally, other related regulations provide a framework for the control of hazardous chemicals and materials, supporting safe management practices in line with international standards.	For this project, information regarding the use and management of hazardous substances has been addressed within the ESIA report. In addition, GASKİ will prepare a Hazardous Materials Management Plan, which will outline project-specific measures for the safe handling, storage, and risk management of hazardous substances, in compliance with national regulations and aligned with international standards. Where feasible, the use of such substances will be avoided or minimized, and safer alternatives will be considered to reduce potential impacts on human health and the environment.
Pesticide Use and Management: When pesticide use is involved, the promoter must follow sustainable pesticide use principles, including reducing health	In Türkiye, the use of pesticides is regulated under the Regulation on the Placing on the Market and Use of Plant Protection Products,	Pesticide will not be used in this project.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
and environmental risks, promoting Integrated Pest Management (IPM), and encouraging non-chemical alternatives. Special care must be taken to prevent water pollution, particularly in sensitive areas like drinking water sources. Pesticides, including their packaging and remnants, must be safely handled and stored in line with EU legislation and international best practices to avoid hazardous exposure and accidental releases.	issued by the Ministry of Agriculture and Forestry. This regulation aligns with EU standards and aims to ensure the safe use, storage, and disposal of pesticides, while minimizing risks to human health, the environment, and non-target organisms. It promotes principles of Integrated Pest Management and restricts pesticide use in sensitive areas, such as drinking water protection zones. The regulation also includes provisions for licensing, training of users, labelling, and proper packaging and disposal of pesticide products and waste, supporting safe and sustainable pest control practices.	
Standard 4 – Biodiversity and Ecosystems		
Assessment of significant impacts and risks affecting biodiversity and ecosystems: The promoter must assess and manage biodiversity and ecosystem impacts, considering direct, indirect, cumulative, and in-combination effects of the project and associated activities. This includes threats such as habitat loss, fragmentation, pollution, species decline, and climate change impacts. A thorough baseline assessment with field surveys, including seasonal variations, is required, along with analysis of ecosystem integrity and land/seascape-level effects. The promoter should apply the mitigation hierarchy avoidance, minimization, restoration, and compensation if necessary and follow the precautionary principle when scientific certainty is lacking. A Biodiversity Management Plan (BMP)	In Turkish legislation, biodiversity and ecosystem impacts are assessed primarily through the EIA Regulation. EIA reports are required to include a baseline study and an evaluation of potential impacts on flora, fauna, habitats, and natural sites. However, in practice, these assessments may sometimes be limited in scope, lacking detailed, seasonally based field surveys or comprehensive analysis of cumulative and indirect impacts. While the regulation includes provisions for impact mitigation, it does not explicitly mandate the preparation of a BMP or the application of the mitigation hierarchy (avoidance, minimization, restoration, offset). Furthermore, concepts such as adaptive management, long-term monitoring, and	As part of this ESIA report, a baseline assessment and impact analysis related to biodiversity have been conducted. Based on the findings, a set of mitigation measures has been proposed to minimize potential negative effects on ecosystems and species.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
could be developed based on the assessment results, including measures to minimize loss and enhance biodiversity, with room for adaptive management over time. Stakeholder engagement is essential, especially with communities that rely on ecosystem services, and findings should inform both the assessment and mitigation strategies. Monitoring and implementation of the BMP may be integrated into the project's ESMS.	extensive stakeholder engagement in the context of biodiversity are not systematically required.	
Protection and conservation of high-value biodiversity: If the project is expected to cause significant, adverse, and irreversible impacts on areas of high-value biodiversity, it can only proceed under strict conditions. These include demonstrating that there are no viable alternatives in areas with lower biodiversity value, ensuring the project is permitted under applicable environmental legislation, and conducting meaningful consultation with relevant experts and stakeholders. In addition, the promoter must apply the mitigation hierarchy to prevent biodiversity loss and, where necessary, achieve a Net Positive Impact, ensuring measurable and positive conservation outcomes for affected habitats and species.	In Turkish legislation, the protection of high-value biodiversity areas is primarily addressed through the EIA Regulation, as well as specific laws related to protected areas, such as the National Parks Law, the Law on the Protection of Cultural and Natural Assets, and the Regulations on Special Environmental Protection Areas. Projects planned within or near such sensitive areas are subject to stricter evaluation, and in some cases, may not be permitted. The EIA process requires an assessment of potential impacts on flora, fauna, and natural habitats, and mandates that mitigation measures be proposed. However, the legislation does not explicitly require the demonstration of no viable alternatives, Net Positive Impact, or the application of a structured mitigation hierarchy as defined in international standards. While consultation with institutions may be part of the permitting process, formal stakeholder engagement focused specifically on biodiversity is not systematically required.	For this project, no areas classified as high-value biodiversity zones such as legally protected habitats or ecologically sensitive areas have been identified within the project's area of influence. The potential impacts on biodiversity are not expected to be significant, adverse, or irreversible, based on the baseline studies and impact assessments conducted as part of this ESIA. However, in alignment with international best practices and the precautionary principle, a range of preventive and mitigation measures have still been proposed within ESIA to ensure that any potential negative effects on local flora, fauna, and ecosystems are minimized. These measures will guide the project implementation process and contribute to maintaining biodiversity integrity throughout the lifecycle of the project.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
Protection and Conservation of Critical Habitat: Critical habitats are the most sensitive types of high-value biodiversity areas, including threatened ecosystems, and habitats essential for endangered, endemic, migratory, or culturally significant species. Projects in or near critical habitats can only proceed if there are no viable alternatives, and if they do not cause measurable harm to the habitat's ecological status or lead to a decline in vulnerable species. The promoter must ensure meaningful stakeholder consultation, achieve a Net Positive Impact through appropriate mitigation and compensation measures, and implement a long-term biodiversity monitoring program. For species protected under the EU Habitats Directive, official derogation documents must be provided where applicable.	While the legal system ensures that important natural areas are taken into account during project planning, it does not specifically define or categorize areas as "critical habitat" in the way international standards do. Likewise, while impact avoidance and mitigation are required, there is no formal obligation to demonstrate a Net Positive Impact; however, protective measures are still expected to minimize harm and preserve ecological integrity.	As part of this ESIA, critical habitat assessment has been conducted to determine whether any ecologically sensitive, rare, or high-conservation-value habitats exist within the project's area of influence.
Compensation and Offsets: Compensation and offsets are used only as a last resort, after all other mitigation measures have been applied. For critical habitats, a Net Positive Impact must be achieved. Projects that could compromise such habitats must be redesigned. A detailed compensation plan is required, including actions, monitoring, and long-term support, and may need an independent review if critical habitats are affected.	In Turkish legislation, compensation measures for biodiversity are generally addressed through the EIA process, where mitigation is prioritized. While projects may propose rehabilitation or reforestation in cases of habitat loss, there is no formal framework for biodiversity offsetting or achieving no net loss/Net Positive Impact.	Within the scope of this ESIA, potential residual impacts on biodiversity have been considered. Although the project is not expected to cause significant loss or affect critical habitats, the ESIA includes a precautionary approach, outlining possible compensation or restoration measures if needed.
Legally Protected areas and/or internationally recognized areas of biodiversity value: Projects likely to significantly affect Natura 2000 sites, protected areas, or Key Biodiversity Areas must undergo an Appropriate Assessment under the EU Habitats Directive, evaluating impacts considering conservation objectives and proposing measures to	The protection of high-value biodiversity areas is primarily addressed through the EIA Regulation, as well as specific laws related to protected areas, such as the National Parks Law, the Law on the Protection of Cultural and Natural Assets, and the Regulations on	For this project, there are no Natura 2000 sites, nationally designated protected areas, or Key Biodiversity Areas within or near the project's area of influence. Although the project will not be located in the Natura 2000 sites Declaration Forms for Sites of Natural Conservation (Forms A and B as given in the Appendix-15) shall be

EIB's E&S Standards	National Legislation	Measures to fill the gaps
prevent or reduce harm. In Candidate and potential Candidate countries, relevant compliance timelines with EU directives must be considered. Promoters must provide, upon request, the screening outcome, the Appropriate Assessment, and any compensatory measures, if applicable. If done alongside the EIA, the Appropriate Assessment must be clearly identified in the report. It must also ensure compliance with EU water and marine directives.	Special Environmental Protection Areas.	conducted and shared with the relevant Competent Authority/ies to receive approval before the construction phase. Furthermore, biodiversity considerations have still been integrated into the ESIA process, and relevant precautionary measures have been proposed to ensure the protection of local ecosystems.
Invasive alien species: The promoter must assess and manage the risk of invasive alien species during the project, avoiding intentional introduction unless legally permitted. Known invasive species are strictly prohibited, and measures must be taken to prevent, control, or eliminate their spread within project areas.	Although there is no dedicated law, existing biodiversity regulations aim to prevent the spread of invasive species and protect native ecosystems in line with international commitments.	Within the scope of this ESIA, the potential risk of invasive alien species has been considered, and relevant preventive and control measures have been included.
Ecosystem services assessment: The promoter must assess how the project affects and depends on ecosystem services, considering input from local communities and applying a gender-sensitive and inclusive approach. The ESIA should identify key services, evaluate impacts and community dependence, and, where feasible, include a socioeconomic assessment of the benefits provided.	The concept of ecosystem services is not explicitly defined; however, the EIA process includes the evaluation of natural resource use and environmental impacts. Elements such as community dependence on ecosystem services, gender differences, or the socioeconomic value of these services are not systematically addressed.	Within the scope of this ESIA, both biodiversity and ecosystem services have been assessed, along with their social dimensions.
Supply Chains: The promoter must assess and manage supply chain risks to biodiversity, ensuring that all natural resources are legally and sustainably sourced. Suppliers should follow recognized standards, and where unavailable, international good practices must be applied. Risks must be monitored and addressed based on the promoter's level of influence.	There is no regulation on this subject.	The mitigation measures on the management of supply chains are given in this ESIA.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
Sustainable management and use of living natural resources: Renewable natural resources must be managed sustainably, ensuring they meet current needs without compromising future generations. The promoter must apply good practices and recognized standards, and where certifications exist, work toward obtaining them. If no standards are available, international best practices should be followed.	Turkish legislation supports the sustainable use of natural resources through various environmental and sectoral regulations. While aligned with international principles, it does not mandate certification or independent verification for sustainable management in all sectors.	The ESIA report includes measures to ensure the sustainable use of natural resources. Good management practices have been outlined to minimize environmental impact and support long-term resource efficiency throughout the project lifecycle.
Standard 5 – Climate Change		
Assessment and minimization of GHG emissions: The promoter must provide the EIB with all necessary data on the project's greenhouse gas (GHG) emissions and/or sequestration, to ensure alignment with the EIB Climate Bank Roadmap and the EU Taxonomy's Do No Significant Harm Principle. Upon request, the promoter must also show that alternatives to reduce GHG emissions such as energy efficiency, use of renewables, or best available techniques have been considered.	In Turkish legislation, the issue of GHG emissions is addressed under the Regulation on the Monitoring of Greenhouse Gas Emissions. However, this project does not fall within the scope of the regulation	The project considered climate-related impacts within the ESIA, and relevant measures have been proposed to support energy efficiency and low-emission practices.
Physical climate risk assessment and minimization: The promoter must provide the EIB with information on physical climate risks to assess the project's alignment with the Climate Bank Roadmap and the EU Taxonomy's adaptation objectives. If the project is deemed at risk, a Climate Risk and Vulnerability Assessment (CRVA) must be conducted to evaluate potential climate impacts on the project and its context, and to identify adaptation measures. The scope of the CRVA and required	Turkish legislation has recently begun integrating climate risk considerations into broader sustainability reporting frameworks and national climate policy instruments. However, under the current regulatory framework, such requirements are generally applicable to large-scale or high impact sectors and are not mandatory for small-scale infrastructure projects.	Although a formal CRVA is not required for this project due to its scale and risk level, the ESIA still takes into account potential climate-related risks and proposes adaptation measures where relevant.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
information should match the project's scale, complexity, and the availability of climate data.		
Climate-related aspects of economic analysis: Upon request, the promoter shall provide the EIB with relevant climate-related information to support the economic assessment of the project. This may include data on greenhouse gas emissions with and without the project, the cost of carbon, and the change in exposure to climate risks as a result of adaptation measures. Where feasible, the analysis should also consider how the project's climate impacts affect different segments of society, with particular attention to vulnerable groups, especially in projects primarily driven by climate objectives.	Turkish legislation has started incorporating climate risk into sustainability reporting and national policies. However, such requirements generally apply to large-scale or high-impact projects and are not mandatory for small-scale infrastructure. Therefore, the inclusion of climate-related economic analysis is not required under current national regulations for this project.	The ESIA takes potential climate risks into consideration and, where relevant, proposes adaptation measures that can contribute to the project's long-term resilience and cost-effectiveness.
Standard 6 – Involuntary Resettlement		
Not applicable for this Project.		
Standard 7 - Vulnerable Groups, Indigenous Peoples and Gender		
Requirements relating to vulnerable groups for projects located in EU, EFTA, Candidate and potential Candidate countries: The promoter must assess whether the project may disproportionately affect vulnerable or marginalized groups, or impact community health, welfare, or cultural identity. If such risks are identified and not fully covered by the EIA, additional actions or assessments must be carried out, as required by the EIB, to ensure proper mitigation or compensation measures are in place.	In Turkish legislation, the EIA process includes a general assessment of impacts on public health and well-being but does not specifically require the identification or analysis of disproportionate impacts on vulnerable or marginalized groups. As a result, group-specific social sensitivities are not systematically addressed in current regulations.	The ESIA for this project has been prepared in line with international standards, considering the potential for disproportionate impacts on vulnerable and marginalized groups. Where relevant, the report includes measures to prevent or mitigate such impacts and promote social inclusion and equity throughout the project lifecycle.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
Standard 8 – Labor Rights		
Management of working relationships and Terms and conditions of employment: The promoter must establish and maintain labor management policies and procedures suited to the project's size and workforce. These must cover working conditions, health and safety, non-discrimination, wages, grievance mechanisms, and compliance with national labor laws. All project workers must have written contracts detailing employment terms. Civil servants involved in the project remain under their original public sector agreements unless legally transferred. Employment records must be kept up to date, respecting workers' privacy and data protection rights.	In Turkish legislation, labor rights and working conditions are comprehensively regulated under the Labor Law No. 4857, the Occupational Health and Safety Law No. 6331, and related secondary legislation. These laws require written employment contracts, define standards for wages, working hours, leave rights, and ensure occupational health and safety, non-discrimination, and social security registration. Employers are also obligated to maintain employment records and comply with data protection rules under the Personal Data Protection Law. Overall, Turkish legislation is largely aligned with international labor standards.	Within the scope of this ESIA, key labor-related issues such as working conditions, non-discrimination, health and safety, and grievance mechanisms have been addressed in line with both national legislation and international standards. Following this assessment, GASKİ will develop a dedicated Labor Management Plan, which will outline the project's approach to recruitment, employment terms, worker rights, and compliance procedures throughout the project lifecycle.
Child Labor and Forced Labor: The promoter must prohibit child labor in line with ILO Conventions, following the minimum age requirements, unless national laws are stricter. Children under 18 may only work after a risk assessment and must be regularly monitored. Informal child labor is not allowed, regardless of cultural norms. If child labor is identified, the promoter must take immediate corrective action and report it to the EIB. Contractors are also required to adhere to the same standards. The promoter must ensure that forced or compulsory labor including bonded labor, human trafficking, or coercive practices is not used in any part of the project, including by contractors and suppliers. Attention must be given to workers at higher risk of	The Constitution of the Republic of Türkiye prohibits forced labor, stating that no one shall be compelled to work, and that forced or unpaid labor is forbidden. Exceptions apply only in cases such as prison labor, national emergencies, or civic duties. The Turkish Penal Code criminalizes human trafficking and violations of the right to work. Türkiye has ratified ILO Conventions No. 29 and 105 on forced labor. The Labor Law prohibits child labor, setting the minimum working age at 15, though 14-year-olds may work in light jobs. Those under 18 and women are not allowed to work in underground or underwater jobs. Türkiye is also a party to the UN Convention on the Rights of the Child, protecting children	There is no gap. All national and international standards will be taken into account in the Project.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
exploitation. The promoter must also respect workers' freedom of movement and prohibit any form of abuse or coercion. If forced labor is identified, it must be immediately stopped, reported to authorities, and corrective actions must be taken and reported to the EIB.	from hazardous work.	
Migrant workers: The promoter must ensure that migrant workers receive equal treatment and rights as non-migrant workers, including equal pay and opportunities. Any form of coercion, including restricting movement or holding identity documents, is prohibited. The promoter should also promote these principles among primary suppliers.	In Turkish legislation, the working conditions of migrant workers are regulated under the International Labor Force Law and the Labor Law. Legally employed foreign workers are entitled to the same rights and protections as Turkish workers, including equal pay, working conditions, social security, and protection against discrimination. Practices such as forced labor, withholding identity documents, or restricting freedom of movement are strictly prohibited.	Given that Gaziantep is a region with high levels of inward migration, there is a possibility that refugee workers may be employed during the project. In such cases, the project will ensure full compliance with both national legislation and international standards, guaranteeing that refugee workers receive equal treatment, rights, and protections as non-refugee workers throughout all phases of the project. In addition to International Labor Force Law, Regulation on the Work Permits of Foreigners under Temporary Protection, Regulation on the Employment of International Protection Applicants and Holders of International Protection Status, and Law on Foreigners and International Protection will be followed to fulfill the national requirements and secure the rights of refugee workers.
Non-discrimination and equality of opportunity and treatment: The promoter must ensure non-discrimination and equal opportunity in all labor practices, with decisions based solely on skills and qualifications. Workers must be treated fairly and equally, regardless of personal or socioeconomic characteristics such as gender, ethnicity, religion, disability, or migration status. Labor policies must include specific measures to prevent gender	Turkish legislation guarantees equality before the law and prohibits discrimination based on language, race, gender, religion, political opinion, and other personal characteristics. Discrimination in employment is a criminal offense under the Penal Code. The Law on the Human Rights and Equality Institution of Türkiye prohibits discrimination based on gender, ethnicity, religion, disability, and age.	The project will fully comply with both national legislation and international standards on non-discrimination, equal opportunity, and workplace rights. A comprehensive Labor Management Plan and supporting labor procedures will be developed to ensure fair and inclusive employment practices, as well as the prevention of harassment and discrimination throughout the project.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
discrimination and ensure that career development is not impacted by gender or reproductive roles. The promoter must also establish policies and mechanisms to prevent and respond to violence, harassment, and exploitation, including gender-based violence.	The Labor Law bans both direct and indirect discrimination in recruitment, dismissal, and working conditions, including protections against harassment. Employers are legally responsible for preventing psychological and sexual harassment in the workplace.	
Workers' organizations: The promoter must respect workers' rights to freedom of association and collective bargaining in line with ILO Conventions 87 and 98. Workers must be informed of their right to form or join organizations and elect representatives. The promoter must engage in good faith dialogue, support consultation mechanisms, and not interfere with or retaliate against workers for exercising these rights. In countries where these rights are restricted, alternative ways to express concerns must be allowed.	Under Turkish legislation, workers have the right to join and form trade unions, and discrimination based on union membership or activity is prohibited. Trade unions can be established within one of the 20 officially recognized sectors and must meet minimum representation thresholds to gain the authority to engage in collective bargaining. Collective agreements cover working conditions, wages, and social rights. The authority and representation of unions are determined annually by the Ministry of Labor and Social Security and are subject to legal appeal.	The project will fully comply with both national legislation and international standards on this issue.
Collective dismissals: Before any collective dismissal, the promoter must assess alternatives and, if unavoidable, prepare a dismissal plan aligned with national laws and existing agreements. The plan must aim to mitigate negative impacts and be shared with the EIB. Consultation with workers, unions, and authorities is required. Dismissals must follow fair, objective, and transparent criteria, and include proper notice and timely payments as per national law.	According to Article 29 of the Turkish Labor Law No. 4857, if an employer plans a collective dismissal, they are legally required to notify the employee trade union (if any), the Regional Directorate of Labor, and İŞKUR (Turkish Employment Agency) at least 30 days in advance in writing. This process ensures that relevant institutions and stakeholders are informed and that necessary procedures for consultation and support are initiated.	If a collective dismissal becomes necessary during the project, all actions will be carried out in full compliance with both Turkish labor legislation and international standards. The procedures, responsibilities, and mitigation measures related to such a situation will be clearly outlined in the project's Labor Management Plan, ensuring transparency, fairness, and proper consultation with all relevant stakeholders.
Grievance Mechanism: The promoter must establish a grievance mechanism for project workers	In Turkish legislation, the right to file complaints and seek redress is protected	For this project, a project-level grievance mechanism will be established specifically for

EIB's E&S Standards	National Legislation	Measures to fill the gaps
that is effective, gender-responsive, and culturally appropriate. It must be accessible, allow for anonymous and confidential complaints, and protect workers from retaliation, especially in cases involving harassment or discrimination. Workers must be informed of the mechanism upon hiring and allowed to participate or be represented. The mechanism should match the scale and risks of the project and must not limit workers' access to other legal or administrative remedies.	under the Constitution and the Law on the Right to Petition. Additionally, the Labor Law provides employees the right to raise workplace concerns through internal channels, trade unions, or judicial mechanisms. While there is no specific legal requirement for employers to establish a formal grievance mechanism, workers have access to labor courts, mediation, and institutions like the Human Rights and Equality Institution of Türkiye to report issues such as discrimination, harassment, or unfair treatment.	project workers, ensuring it is confidential, accessible, and culturally appropriate. Workers will be informed and trained on how to use the mechanism at the time of hiring and encouraged to raise concerns without fear of retaliation. The system will include provisions for handling sensitive cases such as harassment or discrimination.
Third-party and supply chain workers: The promoter must ensure that contractors and intermediaries are legally operating and capable of meeting their employment responsibilities. Contracts must include requirements aligned with relevant labor standards. The promoter must set up monitoring systems for third-party performance and ensure all workers have access to an effective grievance mechanism. If contractors do not provide one, the promoter must offer it. Contractors are also required to regularly report on compliance.	In Turkish legislation, contractors and subcontractors are recognized under the Labor Law, which holds the main employer (promoter) jointly responsible for ensuring that subcontractors comply with labor rights and obligations. This includes wages, social security registration, and working conditions. The main employer must also ensure that subcontractors operate legally and are registered with the relevant authorities. However, Turkish law does not specifically require monitoring systems or grievance mechanisms for third-party workers.	This ESIA outlines relevant measures to ensure the fair treatment and oversight of third-party workers, including those employed through contractors or intermediaries. Additionally, these issues will be further detailed in the Labor Management Plan, which will include provisions for compliance monitoring, grievance mechanisms, and ensuring that all third-party workers are treated in line with national legislation and international labor standards.
Standard 9 – Health, Safety and Security		
Health and Safety Management: The promoter must establish a Health and Safety Management System (HSMS), including a plan based on project-specific risks, aligned with the best international practices (e.g. ILO-OSH 2001). It should be	Turkish law, particularly Law No. 6331, requires employers to assess workplace risks, implement safety measures, provide training and PPE, and report work-related accidents and diseases. Compensation for occupational	There is no gap with the national and EIB's standard. For the project, an Occupational Health and Safety Management Plan will be prepared.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
adequately resourced and managed by qualified personnel. From the early stages of design, health, safety, and security risks including those related to hazardous materials and vulnerable groups must be assessed. Controls should follow the risk hierarchy (elimination, substitution, engineering, administrative, PPE). Climate-related risks and adaptive management must also be considered. The promoter is required to provide inclusive training, track and report health and safety data, and ensure timely compensation for work-related injuries or illnesses in line with national law.	injuries is ensured under the social security system.	
Workplace: The promoter must ensure a safe and healthy work environment for all workers and site visitors by enforcing compliance with health and safety plans. Risk assessments, accident reporting, and worker participation in health and safety matters are required. Workers must be empowered to report unsafe conditions without fear of retaliation. The promoter must consider gender-specific risks, mental health, and ensure respect for dignity and hygiene in the workplace. A specific health and safety plan should be developed and regularly reviewed. Workers must also receive medical and employment injury benefits as needed.	Turkish legislation, primarily under Law No. 6331 on Occupational Health and Safety, requires employers to ensure a safe and healthy working environment, conduct risk assessments, establish emergency procedures, and provide workers with health surveillance, medical support, and occupational accident and disease insurance. Employers must also establish health and safety committees in workplaces above a certain size and ensure worker participation in safety-related matters. Gender-specific and psychosocial risks are not explicitly detailed but fall under general obligations to protect all workers' physical and mental well-being.	In the Occupational Health and Safety Plan to be developed for the project, all relevant requirements will be addressed in line with both national legislation and international standards. The plan will specifically consider gender-specific risks and psychosocial factors, ensuring a safe, inclusive, and supportive work environment for all project workers throughout the project lifecycle.
Personal Protective Equipment: The promoter must provide certified and task-appropriate Personal Protective Equipment (PPE) to all project workers free of charge, based on prior risk assessments and	Turkish legislation requires employers to provide suitable and certified PPE free of charge, based on workplace risk assessments. PPE must be appropriate for the type of task and the physical characteristics of	There is no gap. All national and international standards will be taken into account in the Project.

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following the hierarchy of controls. PPE must also suit the physical characteristics of the workers.	the worker. Employers are also responsible for training workers, ensuring correct use, and maintaining the equipment in good condition.	
Health and Safety Training for Project Workers: The promoter must ensure that all project workers are informed of work-related risks and trained in appropriate health and safety measures. Training must be adequate, timely, regularly updated, and provided before workers begin any project-related activity.	Turkish legislation requires employers to provide health and safety training to all employees before they start work, when their job or workplace changes, and periodically as needed. Training must be appropriate to the specific risks of the job, updated regularly, and documented. Only workers who have received proper training are allowed to perform tasks with occupational risks.	There is no gap. All national and international standards will be taken into account in the Project.
Community health and safety: The promoter must identify and assess any risks to community health and safety related to the project, especially for vulnerable groups. Based on the level of risk, appropriate mitigation and prevention measures must be developed in coordination with relevant authorities and affected communities. If certain responsibilities lie with public authorities, the promoter must clarify its role and ensure proper communication and cooperation in line with national laws.	Turkish legislation requires project developers to assess public health and safety risks as part of the environmental impact assessment process. While community-specific health and safety planning is not explicitly detailed, general responsibilities related to public safety, emergency response, and risk communication are regulated through various sectoral laws and require coordination with local authorities. Responsibilities are typically shared between the project owner and public institutions, depending on the nature of the risk.	This ESIA has taken community health and safety risks into account, including potential impacts on vulnerable groups. In addition to the measures outlined in the ESIA, GASKİ will prepare a dedicated Community Health and Safety Management Plan, which will detail actions for risk prevention, mitigation, and emergency response, in coordination with relevant authorities and in line with both national regulations and international standards.
Risks Associated with the Influx of Workers: The promoter must manage the risks from the influx of workers, including impacts on public health, community safety, and natural resources. Measures to prevent sexual harassment and gender-based	Turkish legislation does not have a specific regulation for labor influx but addresses risks related to community health and safety and natural resource impacts through general occupational health and safety and EIA processes. Risks related to the influx of	The Community Health and Safety Management Plan to be developed for the project will detail measures to address the risks related to the influx of workers, including impacts on public health, safety, and natural resources. Some preventive measures have already been outlined in this

EIB's E&S Standards	National Legislation	Measures to fill the gaps
violence should include training programs and confidential reporting channels.	workers, such as pressure on local resources and public health, are assessed during the EIA. Measures against gender-based violence and harassment are taken under general health and safety rules.	ESIA, and these will be further expanded and implemented in the Community Health and Safety Plan to ensure the well-being of local communities and mitigate any potential adverse effects.
Traffic and Road Safety: The promoter must address traffic and road safety during project planning to minimize risks to workers, communities, and road users. Measures should follow EU standards and ISO 39001. Regular monitoring of incident reports is required to resolve safety issues. For projects using machinery on public roads, the promoters must take steps to reduce risks to both workers and the public.	Turkish legislation requires traffic and road safety to be considered during project planning and design. Workplace safety regulations must be followed, with measures to prevent traffic accidents for both workers and the public. Accident reports must be regularly monitored, and precautions must be taken to minimize risks when using machinery on public roads.	For this project, a Traffic Management Plan will be developed to address traffic and road safety concerns. These aspects have also been considered and included in the ESIA, ensuring that appropriate measures are in place to manage traffic risks and minimize impacts on both workers and the public.
Natural hazards and Natural Hazards Triggering Technological Disasters: The promoter must identify and assess the health and safety risks posed by natural hazards (e.g., floods, earthquakes, heatwaves) relevant to the project. This includes assessing the project's vulnerability to these risks and developing adaptation and resilience measures for the project's preparation, implementation, and operation. The promoter should also consider the interaction between natural disasters and industrial accidents, and ensure preventive measures such as land use planning, disaster risk reduction, and emergency preparedness are in place.	Under Turkish legislation, natural hazards and technological accidents are addressed through the Environmental Law and the Occupational Health and Safety Law. Employers are required to identify risks associated with natural disasters and develop emergency preparedness plans and contingency measures for projects. Additionally, disaster risk reduction and prevention of technological accidents must include appropriate land use planning, safety measures, and emergency response strategies, ensuring community resilience in affected areas.	For this project, an Emergency Preparedness and Response Plan will be developed to address potential risks from natural hazards and technological accidents. This plan will ensure proper mitigation and response measures are in place to protect both the workers and the affected communities, in line with relevant national regulations and best practices.
Exposure to Diseases: The promoter must assess the risk of occupational and communicable diseases for workers and affected communities, considering	Turkish legislation requires health and safety measures to manage occupational and communicable diseases. Employers must take	This ESIA has taken exposure to diseases into account, including potential risks to both project workers and affected communities. In addition to

EIB's E&S Standards	National Legislation	Measures to fill the gaps
factors like age, gender, and health status. If necessary, a health impact assessment should be conducted. Measures to prevent the spread of diseases (e.g., HIV/AIDS, malaria) should include training, codes of conduct, and collaboration with public authorities and NGOs. For endemic diseases, the promoter should work with health authorities to reduce their incidence among workers and the community.	preventive actions against pandemics and endemic diseases, ensuring training and hygiene standards. Coordination with health authorities is required for managing disease risks in the workplace and communities.	the measures outlined in the ESIA, GASKİ will prepare a Community Health and Safety Management Plan.
Essential Sanitary Facilities: The promoter must ensure that all project workers have access to adequate, safe, and hygienic basic welfare facilities, including drinking water, sanitation, and washing facilities. Qualified first-aid must be available at all times, and in cases where the nature of the work demands it, medical care should be provided. The promoter should consider gender-specific needs and the requirements of people with disabilities in providing these services.	According to Turkish legislation, under the Occupational Health and Safety Law, employers are required to provide all workers with adequate, safe, and hygienic basic health services. This includes provisions such as drinking water, sanitation, and washing facilities. Additionally, first-aid services must be available at all times, and medical care must be provided when necessary, depending on the nature of the work.	For this project, all measures will be taken with attention to gender-specific needs and vulnerable groups. This includes equal access to health and safety services, training programs on gender-based violence, and the establishment of confidential reporting channels. Special care will be given to people with disabilities, ensuring accessible and inclusive facilities and protections throughout the project.
Worker Accommodation: The promoter must ensure that worker accommodation is safe, hygienic, and in line with industry's best practices. The accommodation should be inclusive of women and persons with disabilities, with safeguards against harassment and gender-based violence. Workers' freedom of movement must not be unreasonably restricted.	Turkish legislation does not provide specific detailed regulations regarding worker accommodation. However, under the Occupational Health and Safety Law, employers are required to ensure that basic living conditions for workers are safe, healthy, and hygienic. While there are no specific provisions for gender or disability needs in accommodation, the general principles of worker safety and health apply to all living	For this project, international standards will be considered for worker accommodation. A Camp Management Plan will be developed to ensure that the accommodation provided is safe, hygienic, and meets the basic needs[3] of all workers. The plan will include provisions for gender-sensitive requirements and accessibility for workers with disabilities, while also addressing health and safety standards and ensuring equal opportunity in accommodation facilities. Workers'

[3] Including minimum space for each worker, supply of water, adequate sewage and garbage disposal system, appropriate protection against heat, cold, damp, noise, fire and other hazards, adequate sanitary and washing facilities, ventilation, cooking and storage facilities and natural and artificial lighting, provision of first care and basic medical services.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
	conditions provided by the employer.	freedom of movement to and from the promoter-provided accommodation shall not be unreasonably restricted.
Security: The promoter must ensure that all security management arrangements, whether by public or private providers, respect human rights and fundamental freedoms. Security risks and threats to project assets, workforce, and local communities must be identified and assessed as part of the ESIA. Proportional security measures must be put in place, ensuring that security arrangements do not cause harm to workers or communities, especially vulnerable groups. The promoter should comply with applicable laws, follow international best practices for security personnel conduct, and ensure security personnel training aligns with these standards. If governmental security services are involved, the promoter must collaborate to ensure compliance with these principles. Finally, contracts with security providers should include these requirements, ensuring personnel are not linked to past abuses.	Turkish legislation requires that security management complies with human rights and public safety regulations. Security measures must adhere to principles of proportionality and non-discrimination. Security personnel must be properly trained and follow conduct rules in line with legal standards. If government security services are involved, the promoter must collaborate to ensure compliance with these principles. Additionally, contracts with security providers should include these requirements.	For this project, a Security Management Plan will be developed, addressing all relevant security risks and ensuring compliance with human rights and public safety principles. These considerations have also been taken into account in the ESIA, ensuring that security arrangements are proportionate, non-discriminatory, and properly managed throughout the project.
Information Dissemination and Consultation & Grievance Mechanism: The promoter must ensure that both project workers and affected communities are properly identified, consulted, and informed about their rights regarding health, safety, and security in an accessible format. The promoters must also ensure that these groups can freely express their views on project risks, impacts, and the proposed health and safety management plans**.**	Please refer to ESS2 - Stakeholder Engagement section of this table.	Please refer to ESS2 - Stakeholder Engagement section of this table.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
Accident and Incident Reporting System: The promoter must establish procedures and systems for investigating, recording, and reporting accidents and incidents before construction and operation. This includes accidents that affect both workers and the public, as well as road and traffic accidents related to the project. The system should address health and safety concerns promptly and not prevent access to other complaint mechanisms. In the event of an accident, investigation and documentation should occur, and preventive actions should be taken. If required by national law, the promoter must notify relevant authorities and cooperate with them. For major accidents, an investigation should be conducted, potentially with an independent third party to identify root causes and define corrective actions.	Under Turkish legislation, employers are required to report, investigate, and record accidents and incidents in the workplace. In the case of work accidents, near-misses, hazardous events, breaches of health and safety regulations, injuries, permanent disabilities, or fatalities, the employer must document, analyze, and take preventive measures. Employers are also required to cooperate with relevant authorities and fulfill any legal reporting obligations. Following major accidents, an independent third party may need to investigate the root causes and develop a corrective action plan.	There is no gap. All national and international standards will be taken into account in the Project.
Third Party and Supply Chain Workers: The promoter must ensure that third-party workers comply with the requirements of this Standard. This includes assessing contractors' capacity before contracting, requiring compliance through contractual clauses, and ensuring competent agencies are hired if necessary. For supply chain workers, the promoter must assess health and safety risks and ensure primary suppliers comply with the standards. If risks are identified, the promoter must require mitigation measures and periodically monitor their effectiveness. If risks remain unresolved, the promoter must switch to a compliant supplier.	In Turkish legislation, contractors and subcontractors are recognized under the Labor Law, which holds the main employer (promoter) jointly responsible for ensuring that subcontractors comply with labor rights and obligations. This includes wages, social security registration, and working conditions. The main employer must also ensure that subcontractors operate legally and are registered with the relevant authorities. However, Turkish law does not specifically require monitoring systems or grievance mechanisms for third-party workers.	This ESIA outlines relevant measures to ensure the fair treatment and oversight of third-party workers, including those employed through contractors or intermediaries. Additionally, these issues will be further detailed in the Labor Management Plan, which will include provisions for compliance monitoring, grievance mechanisms, and ensuring that all third-party workers are treated in line with national legislation and international labor standards.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
Standard 10 – Cultural Heritage		
Projects located in EU, EFTA, Candidate and potential Candidate countries: The promoter must assess the potential impacts on cultural heritage throughout the EIA process, ensuring that the views of relevant stakeholders are considered. If a cultural heritage impact assessment is required, the promoter should provide information prepared by qualified professionals, which includes identifying cultural heritage assets, compiling an inventory, and evaluating both direct and indirect impacts on heritage. The promoter must apply a mitigation hierarchy to avoid or reduce significant effects and implement a management and monitoring plan to ensure the preservation of cultural heritage. If the project is not subject to an EIA but cultural heritage assets may exist, the EIB may require the promoter to provide additional information and, if necessary, a more detailed assessment.	During the EIA process, the cultural heritage assets found in the project area are assessed, and measures are taken to protect these assets. The project owner must present impact assessments conducted by experts to determine the effects on the protection of cultural heritage.	For this project, an assessment of cultural heritage has been conducted as part of the ESIA. The evaluation includes identifying cultural heritage assets, assessing potential impacts, and defining mitigation measures to protect these assets.
Stakeholder Engagement: The promoter must conduct meaningful consultation with affected communities that have used or continue to use cultural heritage for long-standing cultural purposes, paying attention to both tangible and intangible cultural heritage. This consultation should identify important cultural heritage, incorporate community views into the project design, and assess risks and impacts, while applying the mitigation hierarchy. The promoter should also explore opportunities for benefit-sharing with the community. Relevant stakeholders, including national or local authorities	There is no specific regulation on this subject.	Cultural heritage has been considered as part of the ESIA, and consultations with stakeholders regarding potential impacts on cultural heritage have been conducted within the scope of social impact assessment.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
responsible for the protection of cultural heritage, must be involved in the process.		
Protected cultural heritage areas: For projects in legally protected cultural heritage areas or buffer zones, the promoter must comply with relevant regulations, consult with stakeholders (including area managers and local communities), and implement measures to minimize impact, including visual ones, while supporting the conservation goals of the area.	In Turkish legislation, the protection of cultural heritage areas is primarily addressed through the EIA Regulation, as well as specific laws related to protected areas, such as the National Parks Law, the Law on the Protection of Cultural and Natural Assets, and the Regulations on Special Environmental Protection Areas.	There are no legally protected cultural heritage areas within the project site.
Chance finds procedures: The promoter must implement procedures for chance findings, ensuring proper notification to authorities, training for personnel, and securing the site. The area should not be disturbed until a qualified specialist assesses the find and appropriate actions are taken in line with national legislation and standards.	If cultural heritage is discovered unexpectedly during a project, the promoter must notify the relevant authorities, such as the Ministry of Culture and Tourism. The site must be secured to prevent further damage, and an assessment by a qualified specialist must be carried out before any actions are taken.	For this project, a Chance Find Procedure will be developed prior to construction. This procedure will ensure compliance with relevant regulations, including notifying authorities in the event of unexpected discoveries, securing the site, and conducting assessments by qualified specialists before any actions are taken.
Project's use of cultural heritage: If a project proposes to use a local community's cultural resources, knowledge, or practices for commercial purposes, the promoter must provide clear and accessible information to the community about their rights, the scope of the development, and potential consequences. Commercialization can proceed only after good faith negotiations with the community, documenting their informed participation, and ensuring fair and equitable benefit-sharing consistent with their traditions.	There is no regulation on this subject.	There will be no use of cultural heritage for commercial purposes in this project.

EIB's E&S Standards	National Legislation	Measures to fill the gaps
Standard 11 - Intermediated Finance		
This standard requires financial intermediaries (FIs) to assess, manage, and monitor the environmental, climate, and social risks of sub-projects financed with EIB support. Sub-projects must comply with national law and EIB standards, including grievance mechanisms (including for SEA/SH), and ensure transparency. High-risk projects may be referred to the EIB for review.	-	Based on the requirements of EIB Standard 11, this ESIA has been prepared in full alignment with applicable national legislation, relevant EU directives, and EIB Environmental and Social Standards. All potential gaps between these frameworks have been identified and addressed to ensure full compliance with EIB requirements for intermediated finance.

2.4 International Environmental Conventions that Türkiye is a Contracting Party

Türkiye's national policy on the protection of especially cultural heritage and conservation of biological resources is based on international agreements that the country has ratified or acceded to through national laws and regulations. In line with these agreements, there are also various national laws and regulations aimed at protecting natural habitats, wildlife, and cultural heritage.

The main international agreements and conventions that Türkiye has ratified regarding the conservation of biodiversity, cultural heritage, environment, and social issues and related to this Project include:

- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) – 1979
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) – 1973 (entered into force in 1975)
- Convention on Biological Diversity (CBD / Rio Convention) – 1992 (entered into force in 1993)
- Bern Convention on the Conservation of European Wildlife and Natural Habitats – 1979 (entered into force in Türkiye in 1982)
- Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat – 1971 (entered into force in Türkiye in 1994)
- Convention Concerning the Protection of the World Cultural and Natural Heritage (UNESCO / Paris Convention) – 1972
- European Cultural Convention – 1954
- Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict – 1954
- UNESCO Convention on Measures to Prevent and Prohibit the Unlawful Import, Export and Transfer of Ownership of Cultural Property – 1970 (ratified in Türkiye in 1979)
- UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage – 2003 (ratified in Türkiye in 2006)
- UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions – 2005
- UNESCO Convention for the Protection of the World Cultural and Natural Heritage – 1972 (ratified in Türkiye in 1983)
- Convention on Long-Range Transboundary Air Pollution – 1979
- Protocol on the Financing of EMEP under CLRTAP – 1984
- Vienna Convention for the Protection of the Ozone Layer – 1985
- Montreal Protocol on Substances that Deplete the Ozone Layer – 1987 (entered into force in Türkiye in 1990)
- United Nations Framework Convention on Climate Change – 1992 (entered into force in Türkiye in 2004)

- Kyoto Protocol – 1997 (ratified by Türkiye in 2009)
- United Nations Convention to Combat Desertification – 1994 (entered into force in Türkiye in 1996)
- European Landscape Convention – 2000
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal – 1989 (entered into force in Türkiye in 1994)
- Stockholm Convention on Persistent Organic Pollutants – 2001
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides – 1998 (entered into force in Türkiye in 2004)
- Convention on the Civil Liability for Nuclear Damage – 1960
- Protocol to the Nuclear Liability Convention – 1964
- Convention on Radiological Protection – 1960
- Convention on the Transboundary Effects of Industrial Accidents (UNECE) – 1992 (ratified in Türkiye in 2000)
- Aarhus Convention: Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters – 1998 (ratified in Türkiye in 2001)
- Convention for the Protection of Human Rights and Fundamental Freedoms - 1950
- ILO Convention No. 29 on Forced Labor – 1930
- ILO Convention No. 87 on Freedom of Association – 1948
- ILO Convention No. 98 on the Right to Organize and Collective Bargaining – 1949
- ILO Convention No. 100 on Equal Remuneration – 1951
- ILO Convention No. 105 on Abolition of Forced Labor – 1957
- ILO Convention No. 111 on Discrimination (Employment and Occupation) – 1958
- ILO Convention No. 138 on Minimum Age – 1973
- ILO Convention No. 182 on Worst Forms of Child Labor – 1999

3 PROJECT DESCRIPTION

The earthquakes of February 2023, which struck the southern region of Türkiye, caused widespread devastation across 11 provinces, significantly impacting the built environment and disrupting the lives of approximately 14 million people. Given the extensive scale of destruction and the enormous financial burden of reconstruction, the Government of Türkiye engaged with IFIs.

Gaziantep was among the 11 provinces severely affected by the earthquakes, suffering significant structural and infrastructural damage, as well as economic setbacks. The disaster claimed approximately 4,000 lives and left 25,000 people injured in the province. Even before the earthquake, Gaziantep and its water and wastewater authority, GASKİ, faced challenges due to the growing infrastructural demands driven by the rapid population increase following the Syrian war.

The location of Gaziantep is given in Figure 1.



Figure 1. The Location of Gaziantep

In Gaziantep's central area, wastewater is collected from multiple basins. The majority of wastewater from the Alleben basin is treated at the Gaziantep Main Advanced Biological Wastewater Treatment Plant (WWTP), which has a capacity of 2,000,000 Population Equivalent (P.E.). Additionally, another basin in the southern and southwestern parts of Gaziantep collects wastewater that is treated at the Kızılhisar 2nd Advanced Biological Wastewater Treatment Plant (Kızılhisar WWTP). The existing Kızılhisar WWTP Stage 1 serves to 150,000 P.E.

The proposed project will serve to some neighborhoods of Şahinbey District of Gaziantep Province. These neighborhoods are Körkün, Abdülhamidhan, Akkent, Bağlarbaşı, Beştepe, Küçükkızılhisar, Mavikent, and Serince. The proposed WWTP area is inside Oğuzeli District borders inside Gaziantep Centrum (Figure 2).

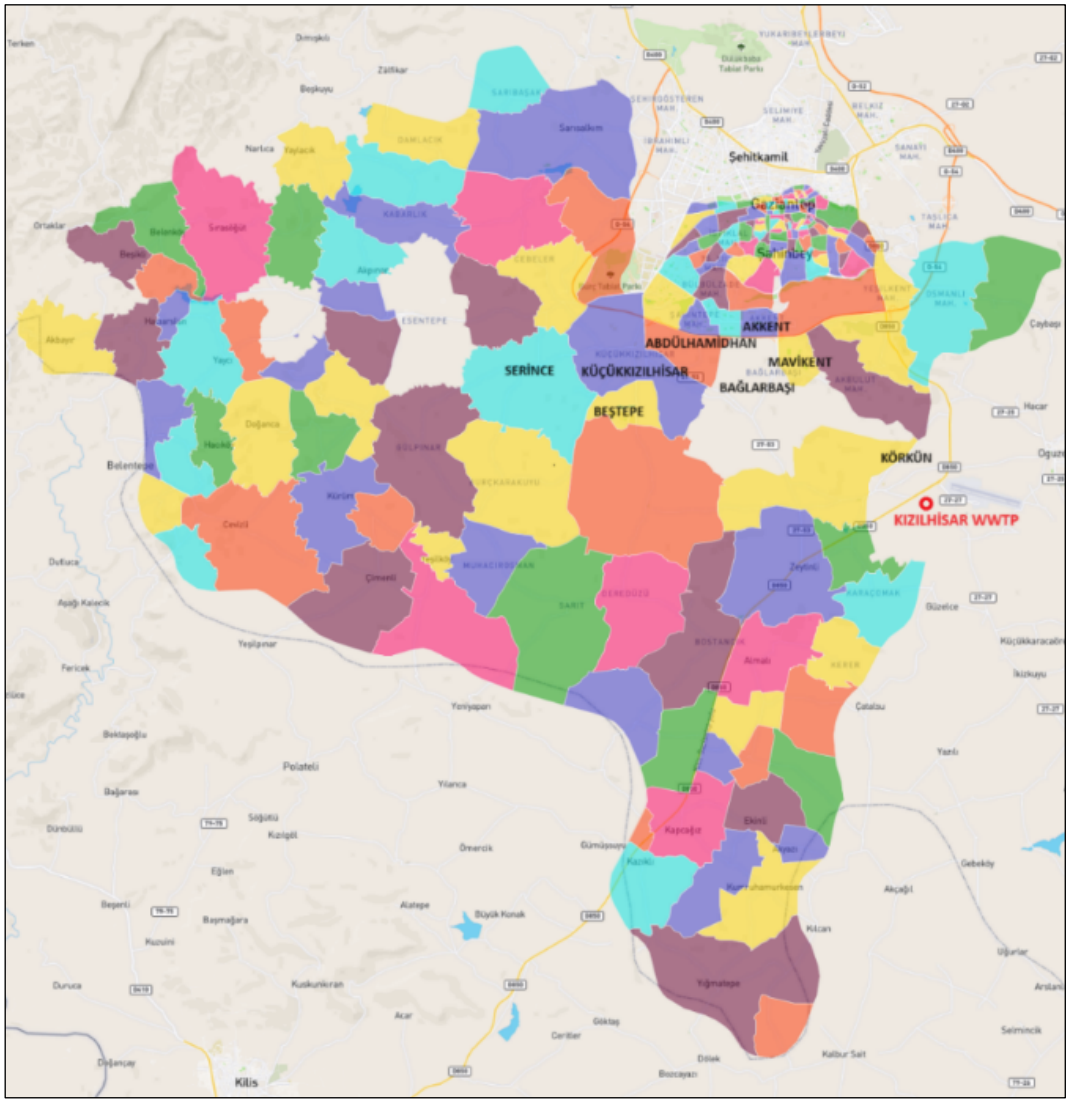


Figure 2. Project Neighborhoods and Kızılhisar WWTP Area

With new residential developments, such as the Güneyşehir mass housing projects, currently under construction in the southern part of Gaziantep, the extension of the Kızılhisar WWTP Stage-2 has become an urgent necessity. This expansion is essential to ensure the continued effective operation of the treatment plant while safeguarding public health, the environment, and natural resources.

The proposed Gaziantep Kızılhisar WWTP Stage-2 project will employ advanced biological treatment processes, including nitrogen, phosphorus, and carbon removal, that is similar to the Stage-1.

The satellite map of the existing WWTP and proposed Project is given in Figure 3.



Figure 3. Kızılhisar WWTP Stage-1 (existing), and Stage-2 Expansion (proposed)

The proposed Gaziantep Kızılhisar WWTP Stage-2 Project aims to expand the existing treatment capacity from 150,000 P.E. to 400,000 P.E. through the construction of the second stage of the facility. Similar to the WWTP Stage-1, the proposed Stage-2 will incorporate an extended aeration biological treatment system, facilitating the removal of nitrogen (N), phosphorus (P), and carbon (C) to ensure high-quality effluent standards.

The project's key objectives include:

- Ensuring the effective treatment of all wastewaters within the Kızılhisar wastewater collection basin until the designated design horizon.
- Maintaining wastewater treatment standards while minimizing risks to public health, the environment, and natural resources.
- Supporting compliance with Türkiye's Urban Wastewater Treatment Regulation and relevant environmental standards.
- Safeguarding the integrity of the treatment process, ensuring seamless operation and maintenance compatibility with Kızılhisar WWTP Stage-1.
- Implementing a disinfection process for treated effluent through UV disinfection units, preventing the infection of pathogens into irrigation water and further reducing risks to public health, the environment, and natural resources.

This project is a critical investment in enhancing wastewater treatment capacity, environmental sustainability, and public health protection in Gaziantep city.

3.1 Project Location and Land Use

The Project is located in Gaziantep province in the south-eastern region of Türkiye. There is an inconsistency in the definition of the administrative region of the project site due to inconsistencies between different data sources. According to the official administrative maps available on online geographic information platforms, the site is located in Şahinbey district, while the online parcel query system shows that the relevant land parcels are located in Oğuzeli district. However, when the physical title deeds of these parcels are examined, it is confirmed that they are officially registered in the jurisdiction of Şahinbey district. However, according to the information received from GASKI, the project area is located in Oğuzeli district. This discrepancy is probably due to asynchronous updates between cadastral data and administrative boundary definitions or different institutional data sources. Such discrepancies are occasionally encountered in peri-urban or rural areas in Türkiye. Geographically, Kızılhisar WWTP is located approximately 7 kilometers southwest of Oğuzeli district center and approximately 2 kilometers southeast of Şahinbey district center in a semi-rural area characterized by agricultural activity and low-density residential development.

The site encompasses the current parcel/lot numbers 1156/20 through 1156/29, which correspond to the former parcel numbers 1916, 1917, 1918, 1919, 1920, 1922, 1927, and 1932 under the former administrative boundaries of Şahinbey District, Körkün Neighborhood. The land was previously under private ownership and was expropriated in 2007. It has since been registered by GASKİ. Therefore, no new land acquisition will be required for the project. The note provided under the "Annotations, Declarations, and Easement Information" section of title deeds indicates that the parcels are located within the Oğuzeli Plain Protection Area. However, it can be stated that the necessary procedures for the removal of this existing annotation are underway. Moreover, the area is already owned by GASKİ, and it had previously been allocated for the construction of the WWTP. GASKİ's formal commitment regarding this matter is also provided in the Appendix-5.

The title deeds are given in Appendix-6, and the Kızılhisar WWTP, 1st and 2nd Stages' Area Parcel Numbers are given in the Figure 4. Also, the project location map is given in the Figure 5.

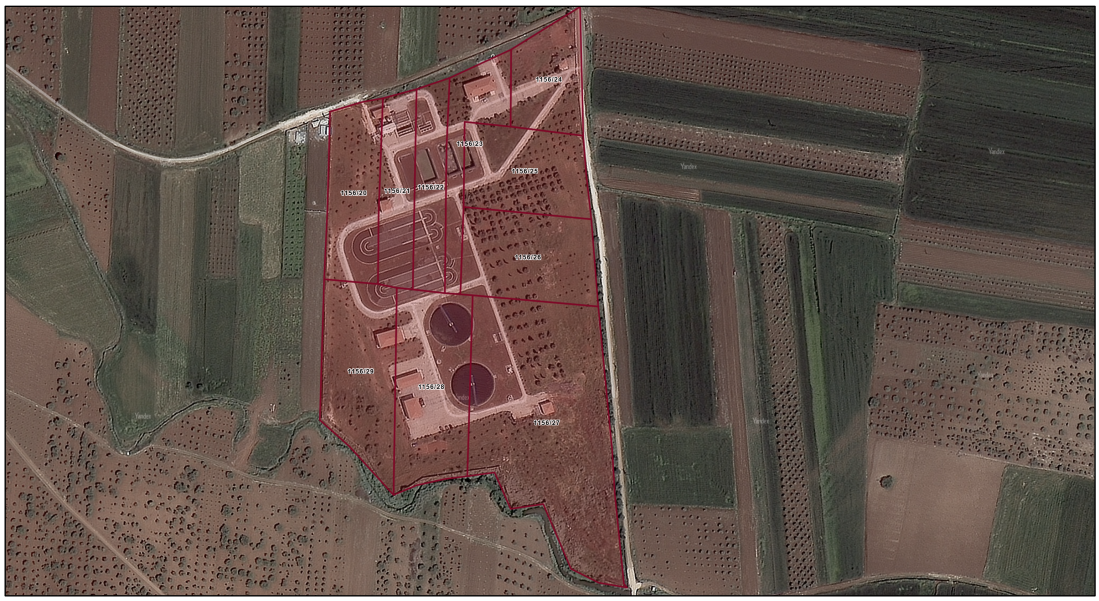


Figure 4. Kızılhisar WWTP, 1st and 2nd Stages' Area Parcel Numbers

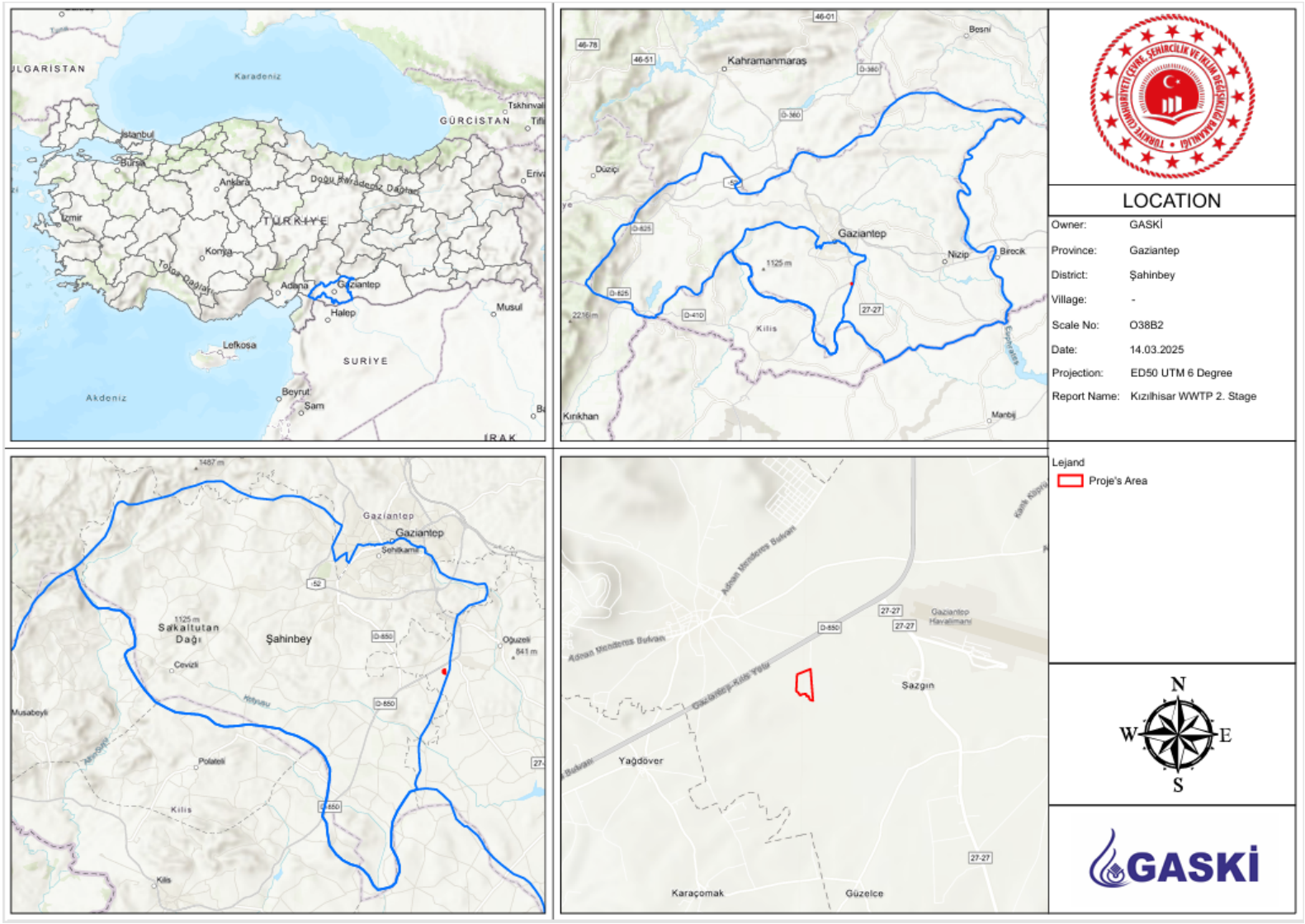


Figure 5. Project Location

3.2 Project-related Permits and Licenses

For the implementation of the Project, the following permits and official procedures will be undertaken in accordance with national legislation:

- Preparation and submission of a Project Approval File and Technical Report to the Ministry of Industry and Technology for obtaining WWTP Project Approval.
- Obtaining a Construction Permit from the relevant municipality prior to commencement of construction works.
- Renewal of the existing Environmental Permit for Wastewater Discharge, which is currently valid until 2027, to reflect the increased capacity.
- Updating the Capacity Report and Process Flow Diagram in order to support the renewal of the Business and Operating License (GSM Permit).
- Preparation and submission of a Waste Management Plan to the Provincial Directorate of Environment, Urbanization and Climate Change, to be updated every three years.
- The Project site is located within the Oğuzeli Plain Protection Area, and accordingly, the title deeds include an annotation stating that the land cannot be used for non-agricultural purposes. However, in accordance with Article 19 of the Regulation on the Protection, Use and Planning of Agricultural Lands, *"Agricultural lands located within areas designated as Major Plain Protection Areas by Council of Ministers' decision cannot be used for non-agricultural purposes. However, subject to the condition that no alternative land is available and a favorable opinion is provided by the relevant board(s), the Ministry may grant permission for non-agricultural use for: (a) agricultural structures; (b) activities deemed to be of public interest, jointly confirmed by the Ministry and the relevant Ministry upon request."* Based on this provision, it is possible to obtain approval for non-agricultural use from the Ministry of Agriculture and Forestry. In this regard, a joint decision will be taken between the Ministry of Agriculture and Forestry and the relevant Ministry (MoEUCC - Ministry of Environment, Urbanization and Climate Change). GASKİ has already initiated the required procedures and correspondence with the Provincial Directorate of Agriculture and Forestry, and has formally committed to obtaining all necessary permits prior to project implementation (Appendix-5).

All of the above permits and documentation are planned to be obtained prior to the relevant phases of the project, and compliance with applicable legal and administrative requirements will be ensured throughout the implementation.

3.3 The Existing Plant: Kızılhisar WWTP Stage-1

In Gaziantep, the Kızılhisar WWTP Stage-1, commissioned by GASKİ in 2008, was designed to treat domestic wastewater using advanced biological processes, including nitrogen and phosphorus removal. Constructed in two phases over a total area of 98,000 m², the first stage of the facility was completed as an advanced biological wastewater treatment plant.

The first phase has a treatment capacity of 26,000 m³/day, corresponding to a population of approximately 150,000 people. Raw wastewater is conveyed to the facility via a Ø 1400 mm gravity-fed collector line. The plant comprises Physical Treatment, Biological Treatment, and Sludge Dewatering units.

Situated on a 98,000 m² site—13,650 m² of which is covered and 84,350 m² open—the Kızılhisar WWTP discharges treated effluent into the Sacır Stream[4] (see Figure 3). In addition to the core process units, the facility also includes a Maintenance and Repair Workshop, an Administrative Building, a Wastewater Analysis Laboratory, a Continuous Wastewater Monitoring System *(Sürekli Atıksu İzleme Sistemi (SAIS))* Control Cabin, and Temporary Storage Areas for Hazardous Waste.

The existing Kızılhisar WWTP is subject to regular monitoring to ensure compliance with national wastewater discharge standards. To verify the effectiveness of the treatment process and adherence to regulatory limits, effluent samples are analyzed routinely by an accredited Wastewater Analysis Laboratory. Based on the most recent analysis results, the treated effluent complies with the limits set forth in the Water Pollution Control Regulation. The laboratory test reports confirming compliance are provided in Appendix-7.

The existing plant, Kızılhisar WWTP Stage-1 consists of the units below:

- Inlet Structure
- Physical Treatment Units
    - Mechanical Screens
    - Aerated Grit and Grease Removal Pond
- Biological Treatment Units
    - Anaerobic Ponds
    - Distribution and Collection Structures
    - Aeration Ponds
    - Settling Ponds
- Sludge Return and Excess Sludge Pumping Station
- Sludge Dewatering Unit
- Effluent Pumping Station

3.3.1 Inlet Structure

It is the structure where raw wastewater enters the plant from 714.5 m ground level with Ø 1400 mm collector line. The substances and objects carried by the inlet cover in this structure are transferred to the physical treatment unit for treatment. There is a bypass line in cases where hydraulic, toxic and organic loads may affect the operating conditions.

The existing inlet structure is given in the Figure 6.

[4] The treated effluent from the wastewater treatment plant is discharged into a seasonal creek, which is shown on the official 1:25,000 scale topographic maps but remains unnamed. Approximately 7 kilometres downstream to the east, this creek flows into the Sacır Stream. Accordingly, for consistency and clarity, the effluent discharge has been referred to as discharging into the Sacır Stream throughout the report.



Figure 6. Inlet Structure

3.3.2 Physical Treatment Units

Physical Treatment Units in the facility include mechanical screens and an aerated grit and grease removal pond, which serve as the initial stage of the wastewater treatment process. The mechanical screens are designed to remove large solid particles and debris from the incoming wastewater, protecting downstream equipment and ensuring efficient operation of the treatment plant. Following screening, the wastewater passes through the aerated grit and grease removal pond, where grit particles such as sand and gravel settle due to their weight, and grease and oils are separated and collected at the surface. The aeration ensures better separation efficiency by maintaining turbulence that prevents organic matter from settling along with the grit. This pretreatment phase significantly reduces the load on biological treatment units and improves overall plant performance.

3.3.2.1 Mechanical Screens

The incoming wastewater undergoes two-stage mechanical screening, consisting of coarse and fine screens. The wastewater entering the plant from the collector line passes through a 1.20 m wide open channel and then passes through a mechanically cleaned coarse screen. The open channel is divided into two channels before the coarse screens. Considering the expansion project, 2 coarse screens were designed and currently one of them has been installed.

It prevents clogging of the pumps by separating the solids and garbage in the wastewater at the inlet of the plant and improves the appearance of the wastewater by separating the floating materials. The waste materials captured in the coarse screen are transferred to the container by horizontal conveyor belt. The screen bars consist of 10x50 mm stainless steel slats and are designed to make an angle of 80° with the horizontal. The bar spacing is 5.0 cm and the screen channel width is 1.00 m.

Fine screens are designed as mechanically cleaned in 4 pieces, bars are made of 10x50 mm stainless steel slats, bar spacing is 1.00 cm and 80° angle with the horizontal.

The wastewater passing through the coarse screens passes through fine screens with a channel width of 0.80 m. In order to protect the scrapers and pumps in the physical treatment pond, there are 2 fine screens in the 1st stage.

The waste collected in the fine screens consisting of two parallel lines operating automatically are transferred to the container by horizontal belt conveyor. The wastewater passing through the fine screens and separated from smaller materials enters the grit trap structure.

The coarse and fine screens is given in the Figure 7.



Figure 7. Coarse (left) and Fine (right) Screening

3.3.2.2 Aerated Grit and Grease Removal Pond

Sand, gravel, slag, and other heavy inorganic solids present in the wastewater characterized by a higher specific gravity than organic matter are removed in the designed grit chamber. Air is supplied via diffusers installed along one side of the chamber, operated by three blowers (two duty and one standby), each capable of delivering air at 3,450 rpm with a power rating of 4 kW. This aeration system generates a spiral flow within the chamber, facilitating the separation process: heavier particles settle into the grit hopper at the bottom, while lighter materials such as oils rise to the surface and are directed to an oil collection tank.

The sand that settles at the bottom of the grit chamber ponds is conveyed to the sand collection zone by scrapers mounted on an overhead bridge. From there, it is transferred to the sand separation hopper via submersible pumps with a flow rate of 20 m³/h and a power capacity of 1.5 kW. Finally, the separated sand is discharged into a sand container through a screw conveyor system.

In addition, the oil accumulated on the surface is removed by a surface scraper mounted on the bridge, collected in a dedicated chamber, and pumped to the oil collection tank using 0.75 kW pumps with a flow rate of 10 m³/h.

Following preliminary treatment, the wastewater flows through the Parshall flume and approaches the channel into the anaerobic ponds. An ultrasonic level meter is installed in this section to enable real-time flow monitoring. Based on the measured flow rate, the operational capacity of downstream equipment is regulated, and both hydraulic retention time and process control are ensured. The hydraulic retention time at this stage is approximately 3 to 4 minutes.

The aerated grit and grease removal structure is given in the Figure 8.



Figure 8. Aerated Grit and Grease Removal

3.3.3 Biological Treatment Units

The biological treatment units are designed to achieve effective biological removal of nitrogen and phosphorus. The A²/O process comprises a sequential arrangement of anaerobic, anoxic, and aerobic (aeration) ponds, followed by a final settling pond. The system includes a sludge recirculation line that returns settled sludge from the settling pond to the inlet of the anaerobic pond, as well as an internal recirculation line that directs effluent from the aerobic pond back to the inlet of the anoxic zone, facilitating denitrification.

3.3.3.1 Anaerobic Ponds

At the initial stage of the biological process, an anaerobic environment is established to facilitate the removal of phosphorus compounds from wastewater.

This unit comprises two ponds, each with a volume of 2,025 m³, resulting in a total capacity of 4,050 m³. In this zone, the incoming BOD is mixed with recirculated sludge to promote the activity of polyphosphate-accumulating organisms (PAOs). These microorganisms hydrolyze intracellular polyphosphate and simultaneously absorb the BOD load. As a result, phosphate is released into the water in the form of inorganic phosphate, increasing the concentration of dissolved phosphate and preparing the conditions necessary for subsequent biological uptake in the aeration pond.

The anaerobic ponds is given in the Figure 9.



Figure 9. Anaerobic ponds

In addition, in order to prevent sedimentation in the pool, the wastewater is mixed with banana type mixers, one in each pool, to keep the wastewater suspended and a homogeneous mixture is obtained. The propeller diameter of these mixers is 770 mm, the engine power is 18.5kW and the speed is 35rpm. Hydraulic holding time is 1.5 - 2 hours.

3.3.3.2 Distribution and Collection Structures

The facility includes three existing distribution and collection structures, each serving a critical role in the staged conveyance of wastewater throughout the treatment process. These structures are strategically designed to ensure uniform flow distribution, enabling balanced hydraulic loading and optimized process performance.

- Inlet and Recycle Flow Distribution Structure: This structure is responsible for distributing the combined plant influent and recirculated flow to the anaerobic ponds. It comprises three compartments:
    - The first compartment receives flow from the discharge and recirculation pumping stations. A submersible curtain directs the flow toward the sluice chamber.
    - The second compartment (sluice chamber) manages flow via adjustable sliding gates.
    - Flow is then sliced through four sharp-edged rectangular weirs, each 2.00 meters in length, and evenly distributed to the anaerobic ponds. The crest elevation of the weirs is set at 711.82 meters.
- Anaerobic to Aeration Pond Distribution Structure: This structure conveys flow from the anaerobic ponds to the aeration ponds. It consists of two compartments:

- The first compartment features four 2.50-meter-wide sharp-edged rectangular weirs designed to ensure even flow distribution.
- The crest elevation of these weirs is 710.58 meters.

- Aeration to Sedimentation Pond Distribution Structure: This structure transfers flow from the aeration ponds to the final sedimentation ponds. It also includes two compartments:
  - The first compartment is equipped with four 2.50-meter-wide sharp-edged rectangular weirs to maintain uniform distribution.
  - The weir crest elevation is 709.27 meters.

Each distribution structure has been carefully engineered to maintain hydraulic balance and consistent flow splitting, which is essential for the stable operation of subsequent treatment stages.

The distribution and collection structures is given in the Figure 10.



Figure 10. Distribution and Collection Structures

3.3.3.3 Aeration Ponds

The aeration ponds are designed as oxidation ditches, comprising sequential anoxic (denitrification) and aerobic (nitrification) sections. There are two ponds in Stage 1 and two in Stage 2, totaling four ponds—each containing four anoxic and twelve aerobic sections. Each pond has a volume of 10,885 m³.

If the level of dissolved phosphate in the wastewater from the anaerobic pond increases upon entering the aerobic zone, specific microorganisms oxidize the previously absorbed BOD to remove phosphate from the water. Simultaneously, in the aerobic sections, organic nitrogen compounds are oxidized first into nitrite, then into nitrate in the presence of oxygen. Denitrification occurs in the anoxic sections. To supply the carbon source needed for denitrification, these units are placed before the nitrification zones, and a return line connects the nitrification outlet back to the anoxic pond inlet. This configuration is used because, at this

stage, the biochemical degradation of carbon compounds has not yet reached significant levels.

As a result, the system yields treated water that is free from BOD, phosphorus, and nitrogen, along with sludge that is rich in phosphorus.

To prevent the settling of wastewater, improve aeration efficiency by extending the path of air bubbles, and ensure a homogeneous mixture, banana-type mixers with a blade span of 2500 mm have been installed. These mixers have a motor power of 7.5 kW and operate at a speed of 35 revolutions per minute (rpm).

For aeration, each pond is equipped with 2,564 fine-bubble diffusers of 9-inch size, placed 30 cm above the bottom of the pond, with an oxygen transfer capacity of 18 grams $O_2/Nm^3 \cdot m$.

Air is supplied to the diffusers by three blowers located in the blower building. Each blower has a power rating of 250 kW and operates at 1500 rpm.

The hydraulic retention time is between 9 and 10 hours. The aeration ponds are given in the Figure 11.



Figure 11. Aeration Ponds

3.3.3.4 Settling Ponds

The primary objective in this section is to separate the sludge from the biologically treated water through a complete sedimentation process. Wastewater arriving from the aeration tanks is directed to the distribution structure and enters two settling tanks, each with a volume of 3,978 m³, a diameter of 39 meters, and a depth of 2.25 meters. The flow enters the settling ponds through the central inlet and is distributed via the Stengel structure, which consists of 18 pipes with a diameter of Ø 400 mm.

The final settling ponds are equipped with rotating half-bridge scrapers, which operate continuously. These bridges include bottom scrapers that transport settled sludge to the central sludge collection cone and surface scrapers that direct any foam or scum to the surface collection channel. The settled sludge is gravity-fed from the central sludge collection cone to the return sludge pumping station and then recirculated back to the inlet of the anaerobic pond.

The hydraulic retention time is between 3 and 4 hours. The settling ponds are given in the Figure 12.



Figure 12. Settling Ponds

3.3.4 Sludge Return and Excess Sludge Pumping Station

Sludge from the final settling tanks is pumped back to the inlet of the anaerobic pond via the sludge return pumping station. This operation is carried out by five pumps—four operational and one standby—each with a power rating of 48 kW and an operating speed of 1464 rpm.

Additionally, excess sludge is pumped to the sludge dewatering unit using three mono pumps with flow capacities of 10/22/26 m³/h, operating speeds of 155/333/392 rpm, motor power of 5.5 kW, and 2860 rpm.

3.3.5 Sludge Dewatering Unit

To reduce the volume of treatment sludge and minimize leachate, the sludge dewatering unit produces approximately 35 m³ of biosolids per day. When the sludge in the storage pond reaches an appropriate level, it is drawn by sludge feed pumps located in the dewatering building and transferred to the decanters. Two decanters are installed to perform this operation, one with a maximum capacity of 20 m³ and the other 60 m³.

Effective conditioning of the sludge is a key factor for the optimal performance of the dewatering equipment. In the facility, cationic polyelectrolyte is used as a sludge conditioner. The water-polyelectrolyte mixture, prepared in the polyelectrolyte preparation unit, is fed to the decanters to promote flocculation of the sludge. The polyelectrolyte dosing unit is designed with a capacity of 10 m³/h.

The output sludge cake from the decanters is monitored to ensure a minimum solid content of approximately 22%. Sludge generated at the existing Kızılhisar WWTP is managed through an established agreement with ÇİMKO Cement Plant, a licensed facility authorized for energy

recovery through co-processing. In accordance with this agreement, which is provided in Appendix-13, the dewatered sludge is regularly transported off-site and used as an alternative fuel in the cement production process. Sludge is transported to the ÇİMKO plant using licensed vehicles in accordance with applicable waste management regulations.

The sludge dewatering unit is given in the Figure 13.



Figure 13. Sludge Dewatering Unit

3.3.6 Emergency Discharge Pumping Stations

These units enable the discharge of plant units when necessary. The discharge procedures for each unit are summarized below:

- Grit Removal Unit Discharge: The grit removal unit is designed with four channels. To discharge one of the channels, the sluice gate in front of it is closed to prevent water intake. Then, submersible grit pumps located at the bottom of the channel are used to evacuate the grit.

- Anaerobic and Nitrification (Anoxic) Pond Discharge: First, the inlet gate on the channel leading to the pond to be discharged is closed. Then, the valve on the discharge pipe is opened to direct the water to the discharge pumping station.

- Settling Pond Discharge: The sluice gate at the distribution structure of the settling tank to be discharged is closed to stop the inflow. Discharge is carried out via the sludge removal valve and sludge lines, transferring the contents to the return sludge pumping station.

- Return Sludge Pumping Station Chamber Discharge: First, the sludge inlet is cut off by closing the sludge removal valves from the settling tanks. Then, the water in the chamber is emptied using the return pumps. The pump head is designed to allow

hydraulic discharge of the chamber.

There are a total of three pumps, two duty and one standby, each with a capacity of 46 kW and 21 m³/h, responsible for providing discharge.

3.4 The Proposed Expansion: Kızılhisar WWTP Stage-2

The Kızılhisar WWTP (Phase 1) currently serves the southern and southwestern regions of Gaziantep city center. The existing facility is fully operational and meets the discharge standards outlined in Türkiye's Urban Wastewater Treatment Regulation.

However, as explained above sections, the rapid urban development in the area has led to infrastructure systems reaching their capacity limits sooner than anticipated. New residential developments—such as the Güneyşehir mass housing project—are either in the planning phase or under construction in these regions. To ensure the continued effectiveness of wastewater treatment in terms of both quality and capacity, the expansion of the existing Kızılhisar WWTP has become an urgent short-term investment priority for GASKİ. This expansion is critical to safeguarding public health, protecting the environment, and preserving natural resources.

3.4.1 Wastewater Calculations According to Approved Detailed Design

In agreement with GASKİ and similar to 1st Stage design criteria per capita water consumption rate is assumed as 200 l/capita-day. It is accepted that 80% of the calculated water consumption will return to sewage and then to the treatment plant. There will be no specific extra industrial wastewater connection (no point loading) since there is no industrial facility nearby in the project area.

As the pipes were assumed to be impermeable, the infiltration flow rate was not considered in the project. Storm water through the control manholes is assumed as 10% of the total wastewater. Daily domestic wastewater amounts increased by 5% in order to add the wastewater sourced from the WWTP and the permeate water of the sludge dewatering unit.

1st Stage is constructed to serve 150,000 P.E. However, because of the rapid development area, hydraulic control of the process units for 200,000 P.E. has been conducted and detailed design of the 2nd Stage has been decided for 400,000 P.E.

Accordingly daily wastewater flow is calculated as below.

Table 4. Wastewater Generation (Design Basis)

Item	**Unit**	**2022 (1st Stage)**	**2042 (2nd Stage)**
Population	capita	200,000	400,000
Unit Capita Consumption	lcd	200	200
Water Demand	m^3/d	40,000	80,000
Wastewater Return Ratio	%	80	80
Total Daily Wastewater Generation	m^3/d	32,000	64,000
WWTP Internal Wastewater	%	5	5
WWTP Capacity	**m^3/d**	**33,600**	**67,200**

According to the İLBANK specifications, design hourly flow rates that will be used during dimensioning of the units are calculated.

Table 5. Hourly Wastewater Generation Calculations (Design based)

Item	Unit	2022 (1st Stage)	2042 (2nd Stage)
Minimum Flowrate Q_{min}	m^3/d	908.11	1,816.22
	l/s	252.25	504.50
Average Flowrate Q_{avg}	m^3/d	1,400	2,800
	l/s	388.89	777.78
Design Flowrate Q_{design}	m^3/d	2,100	4,200
	l/s	583.33	1,166.67
Maximum Flowrate Q_{max}	m^3/d	2,933	5,866
	l/s	814.81	1,629.63

3.4.2 Wastewater Characterization

The most important parameter in the process selection of the WWTPs and the sizing of the units is to determine the characteristics of the wastewater. In this regard, on site wastewater sampling and characterization analysis is one of the key studies in WWTP design.

For this reason, considering previous wastewater analysis results, calculations are made for 2022 with 200,000 P.E. (in other words 33,600 m^3/d) and 2042 with 400,000 P.E. (67,200 m^3/d).

Table 6. Average Concentrations used in the Calculations

Parameter	Unit	Concentration
BOD_5	mg/l	250
COD	mg/l	500
TSS	mg/l	300
TN	mg/l	40
TP	mg/l	7

Using these average concentrations, Kızılhisar WWTP 2nd Stage influent pollution design parameters are calculated.

Table 7. Influent Pollution Design Parameter

	2022 (1st Stage)			2042 (2nd Stage)		
	Flowrate (m^3/d)	**Avg. Conc. (mg/l)**	**Avg. Conc. (kg/d)**	**Flowrate (m^3/d)**	**Avg. Conc. (mg/l)**	**Avg. Conc. (kg/d)**
BOD_5	33,600	250	8,400	67,200	250	16,800
COD	33,600	500	16,800	67,200	500	33,600
TSS	33,600	300	10,080	67,200	300	20,160
TN	33,600	40	1,344	67,200	40	2,688
TP	33,600	7	253.20	67,200	7	420.40

3.4.3 Effluent Standards

Effluent discharge standards have been established in accordance with applicable national environmental legislation. The Urban Wastewater Treatment Regulation provides the overarching framework for the collection, treatment, discharge, and monitoring of urban wastewater, in line with the principles of the EU Urban Wastewater Directive.

The discharge standards of the Project are given below.

Table 8. Discharge Standards

Parameter	**Unit**	**Discharge Concentration**
BOD_5	mg/l	25
COD	mg/l	125
TSS	mg/l	35
TN	mg/l	10
TP	mg/l	1

3.4.4 Selected and Proposed Technical Solution

The existing units within the scope of the project have been analyzed in terms of both hydraulic capacity and process requirements, taking into account the current flow rate based on the 2022 population and the projected flow rate for the 2042 population. As a result of this analysis, additional units will be constructed where the existing ones are found to be insufficient.

The selected treatment units for the Kızılhisar WWTP are as follows:

- Screen Approach Channel
- Coarse Screen and Fine Screen
- Aerated Grit and Grease Removal Unit
- Parshall Flume
- Flow Distribution – Collection Chambers
- Anaerobic Tanks (for P removal)
- Aeration Tanks
- Sedimentation Tanks
- Treated Wastewater Flow Measurement and Sampling Unit
- Return and Excess Pump Station
- Blower Building
- Sludge Dewatering Building
- UV Disinfection
- Transformer – Generator Building
- Auxiliary Buildings (Guard House and Entrance Building, Administration Building)

Kızılhisar WWTP 2nd Stage will have the same advanced biological wastewater treatment process and additionally disinfection of the effluent (through UV units) will be delivered to the system. According to the information provided by GASKİ, the treated wastewater from Kızılhisar WWTP is not currently planned to be used for irrigation purposes. However, the second stage of the WWTP includes a UV disinfection unit as an additional treatment step. This advanced disinfection is integrated into the system to ensure that, even if treated effluent were to be used for irrigation in the future, it would not pose a risk to public health, agricultural products, or the environment.

The general layout of the plant is given Appendix-8.

A simplified flow diagram illustrating the overall operation of the plant is presented in the Figure 14 and a brief description of each treatment unit is provided in the following sections.

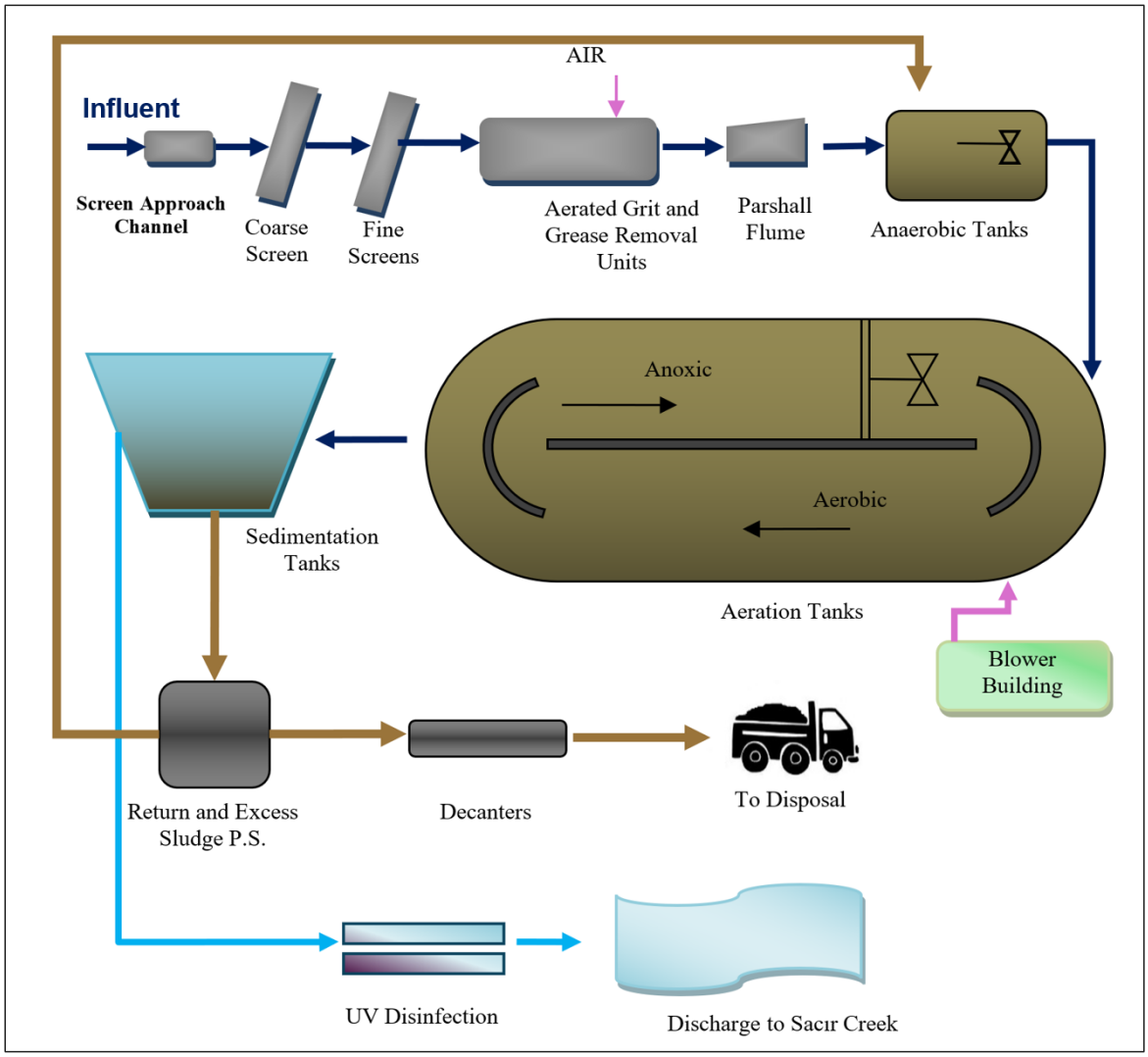


Figure 14. Process Flow Diagram

3.4.4.1 Screen Approach Channel, Coarse and Fine Screens

All pre-treatment units—including coarse screens, fine screens, and the grit removal unit—were originally constructed in 2008 and currently remain in place. However, additional mechanical equipment will be installed as part of the expansion. The design consultant has reviewed key design parameters, such as flow velocity and water depth, and has confirmed their suitability for the 2nd Stage of the project.

Incoming wastewater, conveyed via a Ø1400 concrete pipeline, will be directed to the screening units through an open approach channel. The width of this channel is 1.20 m and the maximum water depth is 0.81 m.

Large materials such as stones, wood, and plastics are removed by the coarse and fine screens. This process prevents the entry of such materials into downstream units, thereby protecting the electromechanical equipment and ensuring the efficient operation of subsequent treatment processes.

Table 9. Screens' Characteristics

	Course Screens	Fine Screens
Type	Mechanical coarse screen	Perforated
Screen Number	2 duty (existing for all stages)	4 duty (existing for all stages)
Bar Spacing	40 mm	10 mm
Bar Width	10x50 mm	10x50 mm
Screen Channel Width	1 m	0.8 m
Angle	80°	80°

3.4.4.2 Aerated Grit and Grease Removal Unit

In wastewater treatment, the accumulation of easily settleable inorganic materials such as sand and gravel can cause blockages and damage to equipment, thereby disrupting the overall operation of the facility. To mitigate this risk, an aerated grit and grease removal unit is positioned downstream of the fine screens.

In this unit, air is introduced through blowers along one side of the tank to generate a spiral flow. This flow keeps lighter organic matter suspended while allowing grease to rise to the surface. A scraper bridge, which moves back and forth, is equipped with submersible pumps to collect sand and grit settled at the bottom, while simultaneously skimming grease and foam from the surface.

The grit and grease removal unit has been designed in accordance with ATV standards. During Phase 1, two tanks were constructed for both the 1st and 2nd stages. In the 2nd stage, only the electromechanical equipment such as mixers and cranes will be supplied and installed.

Table 10. Grit and Grease Removal Unit's Characteristics

	Grit and Grease Removal Unit
Type	Aerated Grit and Grease Removal Unit
Number of Units	2+2 (1st and 2nd Phase)
Length	14 m
Width	4 m
Grit Pump Capacity	20 m^3/h
Sand Pump Capacity	10 m^3/h
Pump Type	Submersible
Diffuser Number	10 diffusers/tank (2 m, Ø50mm stainless steel)

3.4.4.3 Anaerobic Tank

Biological phosphorus removal consists of two steps: phosphorus release in the absence of an electron acceptor (anaerobic) environment and storage of more of the released phosphorus in the presence of an electron acceptor (anoxic and oxic tanks). In order for phosphorus release to take place, the readily decomposable dissolved organic carbon in the influent water

needs to be stored in the cell; in the presence of an electron acceptor, the stored carbon will be used for the continuation of microorganism activities and excess phosphorus storage will occur for ATP production again.

In order to monitor the maintenance of anaerobic conditions in the tanks, the oxidation-reduction potential will be measured with redox meters placed in each tank. At the same time, the oxygen concentration at the tank inlet is required to be zero; one oxygen meter will be provided to the first tank to measure the oxygen concentration at the inlet.

Biological phosphorous removal process is designed based on ATV-DVWK-A-131 standard using anaerobic tanks. According to ATV Process Specification, retention time in the reactor (for Q_{des}+ Q_{RS}) is considered between 0.5 - 0.75 hours.

Two tanks for the 1st Stage and two tanks for the 2nd Stage were constructed during the 1st Stage. Only electromechanical equipment (i.e. mixer and crane) shall be supplied during the 2nd Stage.

No additional chemical precipitation will be required for phosphorous removal.

Table 11. Anaerobic Tank's Characteristics

	Anaerobic Tank
Number	2 duty (1. Stage), 4 duty (2. Stage)
Retention Time	0.75 hour
Length x Width x Depth (h_{water})	30 m x 13.5 m x 5 m
Volume	2,025 m^3
Mixers	21 kW, banana mixer

3.4.4.4 Aeration Tanks

WWTP process has been selected as "Extended Aeration Activated Sludge". Process will enable both Carbon and Nitrogen removal. Biological treatment will be carried out in two stages as nitrification and denitrification. In addition to BOD_5 removal in the aerobic zone, the nitrification process (oxidation of nitrogen to nitrite, then to nitrate); In the anoxic zone, nitrogen removal, which is reduced to nitrate, takes place. The biological removal process is designed based on ATV-DVWK-A-131 standard.

Submersible mixers will be mounted on the bottom of the tanks to prevent precipitation in the tanks and volume losses due to the dead zones to be formed by precipitation, and to provide the desired flow characteristics. Oxygen meters will be placed in each tank to monitor the anoxic - oxic conditions in the tanks. According to the oxygen concentration measured by oxygen meters, air to be supplied from the blowers will be controlled automatically, so that when oxygen is needed, it can be intervened quickly, or when there is excess, the amount of air will be reduced to save energy.

Two tanks were constructed in the scope of 1. Stage. Additional two tanks shall be constructed. The design characteristics of the aeration tank summary are provided below.

Table 12. Aeration Tank Summary Design Characteristics

Item	1st Phase	2nd Phase
Tank Number	2	2
Width	29 m	29 m
Circular Side Diameter	14.5 m	14.5 m
Length	58 m	58 m
Water Depth	5 m	5.7 m
Tank Volume	11,615 m^3	13,240 m^3
Total Volume	23,230 m^3	26,480 m^3
Sludge Age	10.41 hours	10.41 hours
Blowers	3 blowers - 10,000 m^3/h	Additional 2 blowers - 13,000 m^3/h
Mixers	8 x 35 kW	16 x 35 kW

3.4.4.5 Sedimentation Tanks

The final sedimentation process serves to separate treated water from the colloidal activated sludge produced in the aeration tank, while also facilitating the collection of gravity-settled sludge. The clarified effluent is directed toward the treatment plant's outlet. The secondary sedimentation tanks are circular in design with conical bottoms. Settled sludge is conveyed to the center of each tank by a scraper system mounted on an overhead travelling bridge, from where it flows by gravity to the return and excess sludge pumping station.

Each tank is equipped with surface scrapers, collection sumps, and transmission lines to manage the removal of floating sludge. This material is transported to the return and excess sludge pumping station using dedicated foam pumps.

The secondary sedimentation tanks have been designed in accordance with the ATV-DVWK-A-131 standard. During the first stage, two tanks were constructed and are currently in operation. An additional two tanks will be constructed in the second stage.

Table 13. Sedimentation Tank's Characteristics

	Sedimentation Tank
Type	Circular
Number of Tanks	2 existing (1st Phase) & 2 additional (2nd Stage)
Tank Diameter	39 m
Clear Water Depth	0.5 m
Separator and Return Flow Part Depth	2.34 m
Dense flow and storage part depth	1.05 m
Thickening and sludge disposal depth	2.15 m
Volume of tank	9,056 m^3
Retention Time	8.62 hours

3.4.4.6 Return and Excess Sludge Pump Station

Return and excess sludge pump station is planned as 1 for all stages. The return sludge ratio will be 100%. There will be return pumps in the pump station as well as excess sludge pumps that will convey the sludge that needs to be removed from the system to the sludge dewatering building. The return pump type will be submersible, and the excess sludge pumps will be mono pump type. There will be a mixer inside the station to prevent sedimentation.

Table 14. Sludge Pumps' Characteristics

	Return Sludge Pumps	**Excess Sludge Pumps**
Type	Submersible (dry type)	Monopump
Quantity	7	3
Qp	273 l/s	60 m^3/h

3.4.4.7 UV Disinfection

Wastewater is disinfected by exposing it to ultraviolet (UV) light within the UV disinfection unit, effectively reducing the number of pathogenic microorganisms or inhibiting their activity to levels below regulatory thresholds.

A two-channel UV disinfection unit has been designed to serve both the 1st and 2nd stages of the Kızılhisar WWTP. The specifications of the unit have been selected based on technical data provided by the manufacturer. The system will consist of two channels and a total of four lamp benches, and it will be equipped with an automatic cleaning system to ensure continuous and efficient operation. The UV Disinfection Unit Characteristics are provided below.

Table 15. UV Disinfection Unit Characteristics

Item	**Value**	**Unit**
1st Stage Q_{max}	2,933.33	m^3/h
2nd Stage Q_{max}	5,866.67	m^3/h
UV type	Channel Type	-
Lamp Type	High Density Low Pressure	
Inlet total fecal coliform	100,000	CFU/100 ml
Effluent total fecal coliform	200	CFU/100 ml
Minimum UV dose (at the end of lamp life)	<17	mJ/cm^2 T1 RED
Minimum transmission	60	%
Number of channels	2	-
Number of benches per channel	2	-
Number of lamps per bench	24	-
Total number of UV lamps	96	-

3.4.4.8 Sludge Dewatering

Excess sludge extracted from the secondary sedimentation tanks will be conveyed to the return and excess sludge pumping station, from where it will be transferred to the sludge dewatering units via installed sludge pumps. Centrifugal decanters will be utilized for sludge dewatering. In these units, excess sludge with an initial dry solids content of approximately 0.7–1.0% will be thickened to a minimum dry solids concentration of 25% for removal from the system.

In the first stage, a sludge dewatering system comprising one duty and one standby decanter is currently in operation. In the second stage, two duty decanters will be commissioned to meet the increased sludge load. The sludge management approach for the proposed second stage of the Kızılhisar WWTP will continue as in the first stage, following the same procedures and operational agreements. As in the current system, dewatered sludge will be transferred to ÇİMKO Cement Plant, a licensed facility authorized for co-processing and energy recovery. Sludge is transported to the ÇİMKO facility using licensed vehicles in accordance with applicable waste management regulations.

Table 16. Sludge Dewatering

	Sludge Dewatering
Decanter Type	Centrifuge 2 duty (1. & 2. Stage)
Decanter Capacity	50 m^3/h
PE Preparation	1,000 l/h
PE Dosing	0-1000 l/s

3.4.4.9 Effluent Flowmeter

An electromagnetic type of flowmeter (4-20 mA) shall be used and installed on Ø1000 mm effluent pipe.

3.5 Project Schedule and Workforce

Proposed project schedule is given below.

During the construction phase, approximately 20 workers will be employed. Considering the use of local labor, a workers' accommodation camp with a capacity of 15 people will be established. Currently, 19 personnel are employed during the operational phase. Following the commencement of the second phase of operations, the total number of operational staff is expected to increase to 32. The construction period is estimated to take 24 months.

The project schedule is given in the Figure 15.

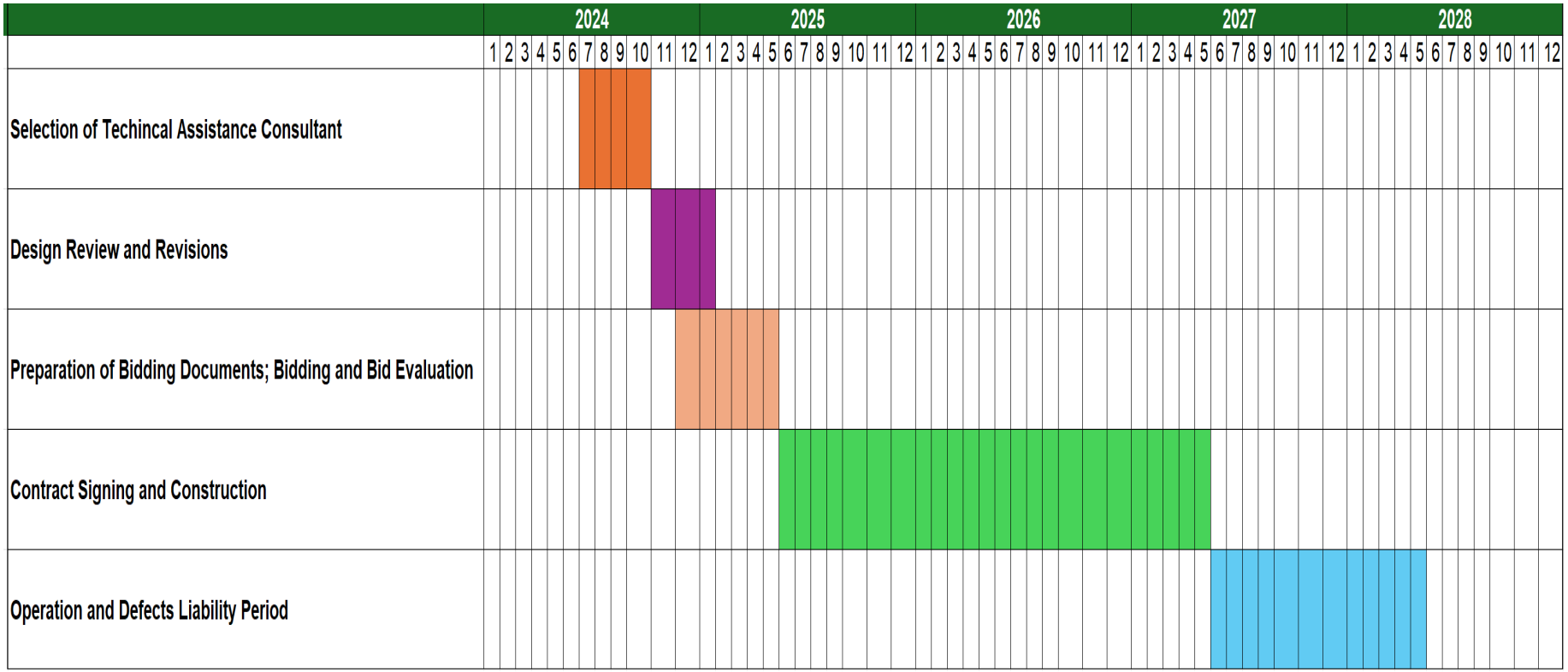


Figure 15. Project Schedule

3.6 Associated Facilities

In the context of this Project, no external energy transmission lines, water supply lines, collector pipelines or discharge lines will be constructed or utilized. The only associated facility identified is the temporary workers' accommodation camp required during the construction phase.

This accommodation camp will be located within the Project area boundaries and will serve to house non-local workers. Although temporary in nature, it is considered an associated facility as it is essential for the implementation of the construction works and would not exist independently of the Project.

The planning, installation, and operation of the accommodation camp will be carried out in accordance with the requirements of the EIB's Standard 9 – Health, Safety and Security. Measures will be taken to ensure the safety, security, and well-being of workers.

4 BASELINE CONDITIONS

4.1 Physical Environment

4.1.1 Land Use and Property

Gaziantep Province covers a total area of approximately 682,280 hectares. The predominant land use category is agricultural land, which accounts for 345,415 hectares or 50.6% of the province's total area. Forest areas cover around 119,710 hectares (16.5%), while pasture and rangelands constitute 53,190 hectares, representing 7.7% of the land. The remaining 163,965 hectares (25.2%) are classified as non-agricultural areas, which include urban, industrial, infrastructural, and other land uses. This distribution highlights the province's strong agricultural character, while also indicating significant areas of ecological and economic importance such as forests and pastures.

The project site is located within an area classified as agricultural land. The land use map of the Project is given in the Figure 16.

The site encompasses the current parcel/lot numbers 1156/20 through 1156/29, which correspond to the former parcel numbers 1916, 1917, 1918, 1919, 1920, 1922, 1927, and 1932 under the former administrative boundaries of Şahinbey District, Körkün Neighborhood. The land was previously under private ownership and was expropriated in 2007. It has since been registered by GASKİ. Therefore, no new land acquisition will be required for the project.

Additionally, the project site is not subject to any informal use. During the site visit conducted on 6 March 2025, no indications of informal settlement, cultivation, or other unauthorized use were observed within the boundaries of the designated WWTP area. The land is securely fenced and clearly demarcated for institutional use by GASKİ. Site visit report is provided in Appendix-3: Site Visit Summary.

The expropriation process for the project site was fully completed in 2007, and the land has since been officially registered under the name of GASKİ. The title deeds clearly indicate that the parcels were acquired through expropriation. Therefore, there is no outstanding issue related to land acquisition. The relevant title deed documents confirming the expropriation are provided in Appendix-6. The note provided under the "Annotations, Declarations, and Easement Information" section of title deeds indicates that the parcels are located within the Oğuzeli Plain Protection Area.

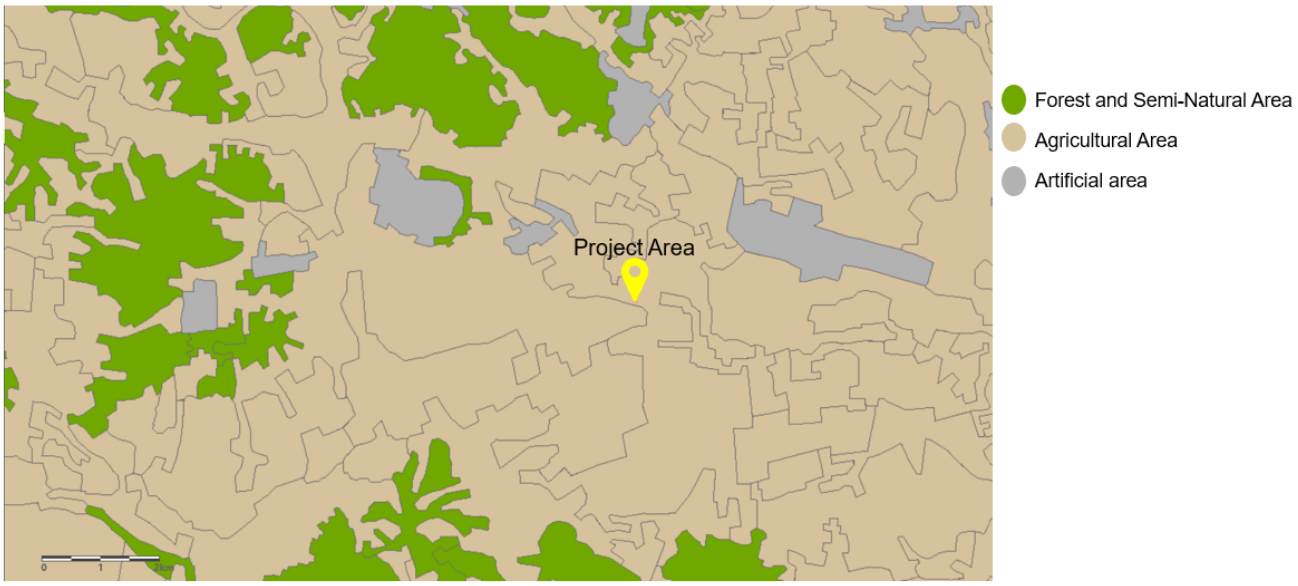


Figure 16. Land Use Map

4.1.2 Topography and Geology

The formation of the Anatolian Block and its neotectonic units have been described, while the general geological characteristics have been examined at a 1:100,000 scale and the regional geological characteristics at a 1:25,000 scale.

4.1.2.1 General Geology

The Anatolian Block is located within the Alpine-Himalayan orogenic belt, which was formed as a result of the northward movement of the African/Arabian and Indian plates and their collision with the Eurasian Plate. It is bordered by the Eurasian Plate to the north and the African and Arabian plates to the south. Central Anatolia represents a region escaping westward along the North Anatolian and East Anatolian fault systems, dominated by strike-slip tectonics with a normal faulting component (Şengör, 1979; Şengör et al., 1985)[5].

The new tectonic phase in the Anatolian Block began with the closure of the Neotethys Ocean, starting in the east during the Middle–Late Miocene and in the west during the Late Pliocene–Quaternary (Şengör and Yılmaz, 1981; Bozkurt, 2001)[6]. The eastern part of the Anatolian Block is undergoing continental shortening as a result of being compressed between the northward-moving African-Arabian plates and the relatively stable Eurasian Plate. Due to the Arabian Plate's inability to move westward until the Early Pliocene, constrained by the African Plate, and the resulting north-south compression, the Anatolian-Iranian plateau has thickened and uplifted by up to 2 kilometers (Dewey et al., 1973)[7].

[5] Şengör, A. M. C., 1979, The North Anatolian Transform Fault, Its Age Offset and Tectonic Significance, Journal of Geological Society London, 136, 269-282, London, UK. & Şengör, A. M. C., Görür, N., and Şaroğlu, F., 1985, Strike-Slip Faulting and Related Basin Formation in Zones of Tectonic Escape: Turkey as a Case Study, In: Strike-Slip Deformation, Basin Formation and Sedimentation, Society of Economic Paleontologist and Mineralogist, Special Publication, Volume 37, p 227-264, USA.
[6] Şengör, A. M. C., and Yılmaz, Y., 1981, Tethyan Evolution of Turkey: A Plate Tectonic Approach, Tectonophysics, 75, 181-241, Amsterdam, The Netherlands. & Bozkurt, E., 2001, Neotectonics of Turkey – A Synthesis, Geodinamica Acta, Volume 14, Number 3, p 3-30, London, UK.
[7] Dewey, J. F., Pitman, W. C., Ryan, W. B. F., and Bonnin, J., 1973, Plate Tectonics and Evolution of the Alpine System, Geological Society of America Bulletin, Volume 84, Number 10, 3137-3180, USA.

The Anatolian Plate comprises remnants of Neotethyan oceanic basins, located with an east-west orientation between metamorphic massifs and/or platform carbonates. These remnants, significant in the evolution of the Neotethys, are represented by ophiolites, metamorphic rocks of the ophiolitic basement, and ophiolitic mélanges from bottom to top (Dilek and Moores, 1990; Robertson, 2002).[8]

Ophiolites located within orogenic belts are fragments of ancient oceanic lithosphere that have been emplaced onto continental crust along former plate boundaries (suture zones). Ophiolites are classified based on their internal structures, geochemical properties, and tectonic settings into mid-ocean ridge ophiolites and supra-subduction zone ophiolites (Robertson, 2002; Pearce et al., 1984; Pearce, 2008)[9]. Subduction-related ophiolites are further divided into subduction zone and volcanic arc ophiolites, while non-subduction-related ophiolites are classified as mid-ocean ridge, continental margin, and mantle plume ophiolites. Supra-subduction zone ophiolites are categorized as back-arc, continental back-arc, back-arc/fore-arc, and fore-arc ophiolites.

The activation of the North Anatolian Fault System, an intracontinental transform fault that began during the Late Miocene in eastern Anatolia and propagated westward throughout the Pliocene (Barka, 1992), and the younger East Anatolian Fault System, thought to have formed during the Late Pliocene (Şaroğlu et al., 1992), initiated the westward extrusion of the eastern Anatolian Block along these two major fault zones.

In western Anatolia, an extensional regime dominates, and the region rotates counterclockwise (Westaway, 1994), moving southward/southwestward and overriding the African Plate.

As a result of these movements, four new tectonic provinces have been identified within Türkiye (Şengör et al., 1985; Bozkurt, 2001):

- the Central Anatolian Plateau Region, which is tectonically relatively inactive,
- the North Anatolian Region, displaying the weakest tectonic activity,
- the East Anatolian Compression Region, affected by north-south compression, and
- the West Anatolian Extension Region, shaped by north-south extensional tectonics.

The neotectonic units of Türkiye are presented in the Figure 17. The 1:100,000 scale geological map of the region, produced by the General Directorate of Mineral Research and Exploration (MTA), is presented, and the 1:25,000 scale geological map is shown in other sections.

[8] Dilek, Y., and Moores, E. M., 1990, Regional Tectonics of the Eastern Mediterranean Ophiolites, In: Malpas, J., Moores, E. M., Panayiotou, A., and Xenophontos, C., (Eds.), Ophiolites, Oceanic Crustal Analogues, Proceedings of the Symposium “Troodos 1987” Geological Survey Department, p 295-309, Nicosia, Cyprus. & Robertson, A. H. F., 2002, Overview of the Genesis and Emplacement of Mesozoic Ophiolites in the Eastern Mediterranean Tethyan Region, Lithos, Volume 65, p 1-67, Germany.

[9] Robertson, A. H. F., 2002, Overview of the Genesis and Emplacement of Mesozoic Ophiolites in the Eastern Mediterranean Tethyan Region, Lithos, Volume 65, p 1-67, Germany. & Pearce, J. A., Harris, N. B. W., and Tindle, A. G., 1984, Trace Element Discrimination Diagram for the Tectonic Interpretation of Granitic Rocks, Journal of Petrolgy, Volume 25, Issue 4, p 956-983, United Kingdom. & Pearce, J. A., 2008, Geochemical Fingerprinting of Oceanic Basalts With Applications to Ophiolite Classification and the Search for Archean Oceanic Crust, Lithos, Volume 100, p 14-48, Germany.

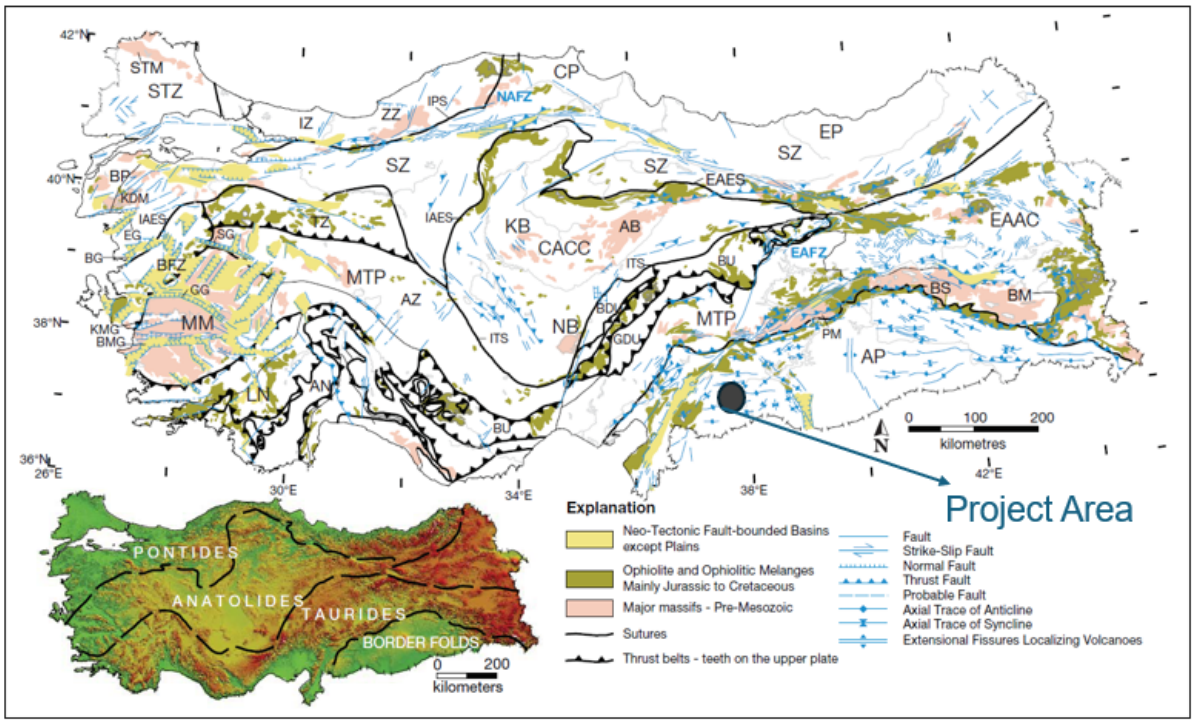


Figure 17. The Neotectonic Units of Türkiye

4.1.2.2 Regional Geology

In the study area Güneydoğu Anadolu autochton succession comprises marine and terrestrial deposits and volcanic rocks, age of which varies from Cretaceous to Miocene. There are Gaziantep Formation and Alluvium units in the study area. Gaziantep Formation of Priabonian-Early Oligocene is composed of an alternation of clayey, chalky limestone and cherty limestone. All geological units are coveredd by Quaternary Alluvium unit with an angular uncorformity.

Gaziantep Formation (Tmga)

This unit consists of argillaceous limestone, limestone and chalk as defined and named by Wilson and Krummenacher (1957). The surface of the formation is in the form of argillaceous limestone, limestone and chalky limestone in soft topography. In some places, there is thick-layered limestone instead of this argillaceous and chalky limestone.

The argillaceous limestone is whitish grey-cream-off-yellow in color, with thin-medium layers, grained structure and with algea and coral in some places. Argillaceous limestone and chalky limestone is settled in micro-facies environment “on the edge of the basin or on the edge of deep shelf”, and limestone is settled in “turbulent shallow water micro-facies environment”. The thickness of the formation varies between 100-250 m. There is contact with the overlying Fırat Formation.

Alluvium (Qal)

These are sediments composed of gravel, sand, silt, and clay, deposited in riverbeds, valley floors, and plains. They consist of loosely consolidated, unconsolidated materials ranging in size from blocks and gravel to sand, silt, and clay. The Quaternary-aged, recent slope debris and alluvial fan deposits consist of poorly sorted and unconsolidated materials of various

lithologies, including gravel, sand, silt, and clay-sized particles. Where observed, these units unconformably overlie all older formations. Alluvium represents the youngest surface deposits observed in the region.

The 1/100,000 and 1/25,000 scaled geology maps are given in the Figure 18 and Figure 19, respectively.

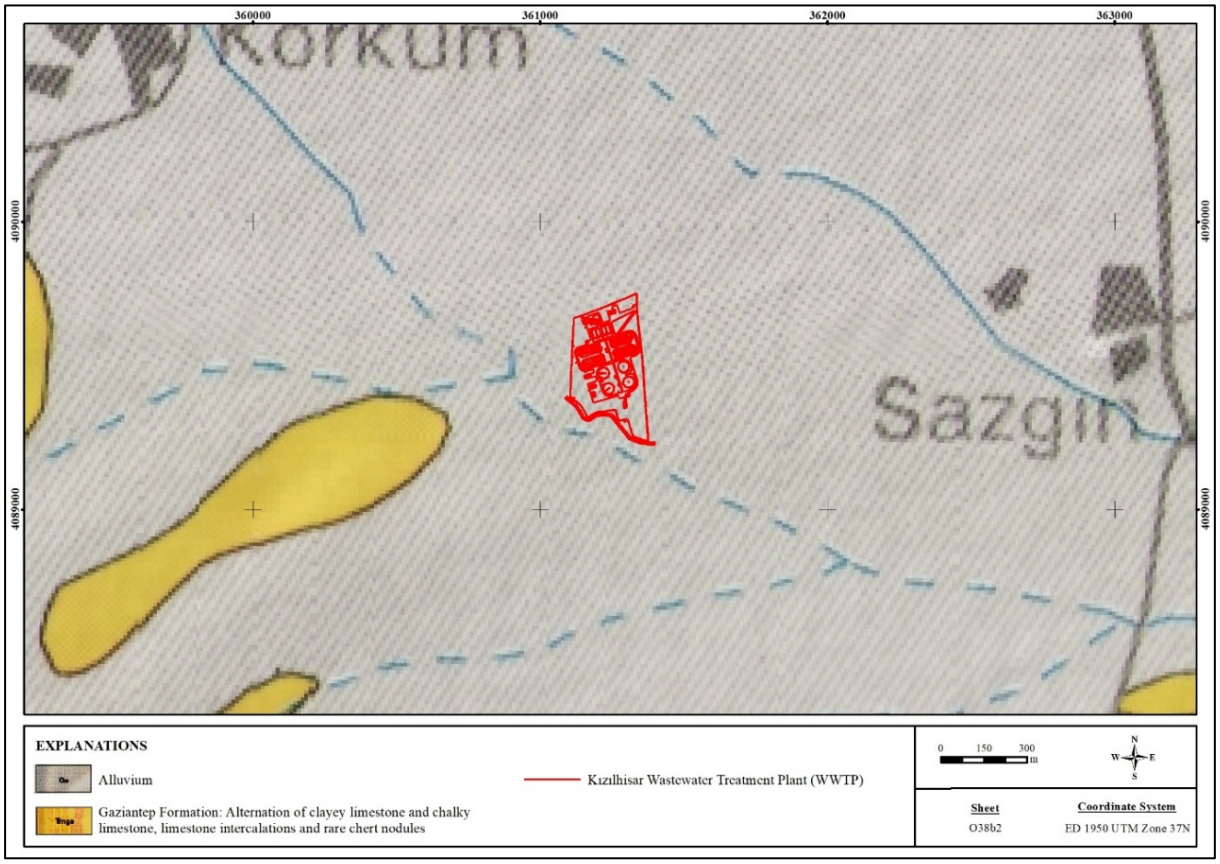


Figure 18. 1/100,000 Scaled Geology Map

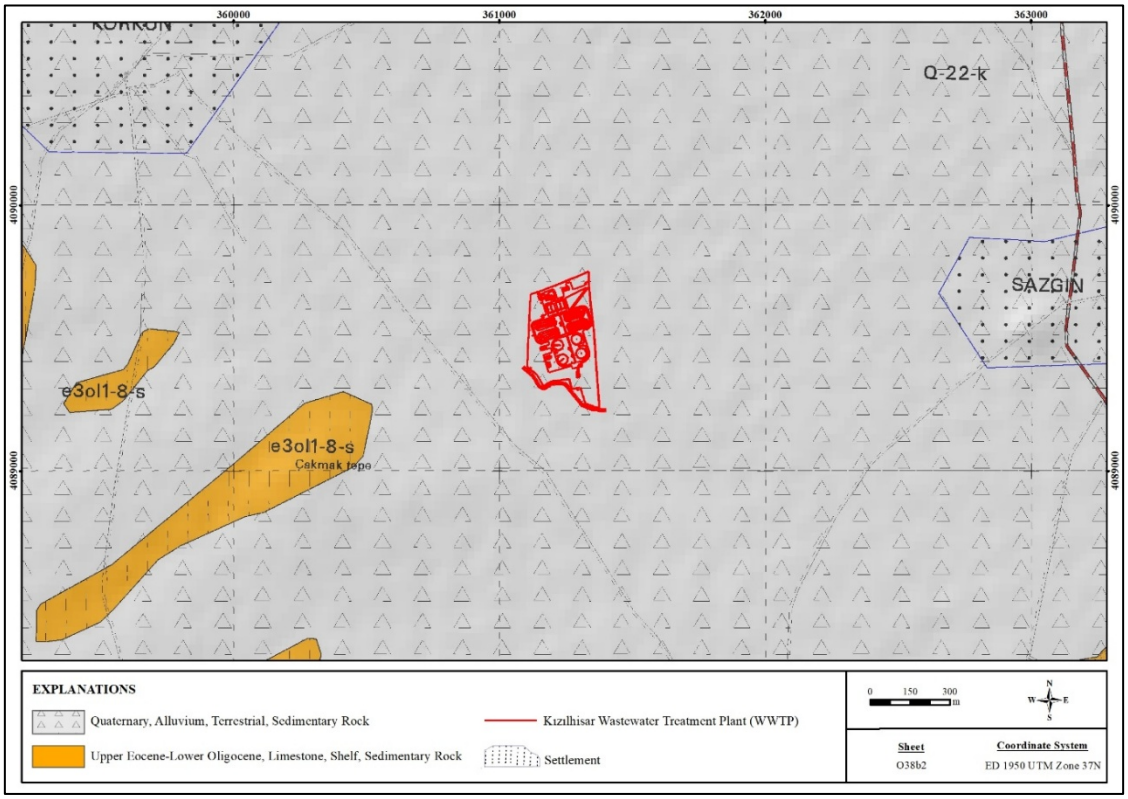


Figure 19. 1/25,000 Scaled Geology Map

Stratigraphy

The stratigraphic section, which presents the rock sequences, the differentiation and naming of formations and members, the thicknesses of the units, their mutual relationships, and the unconformities and discontinuities within the succession, is providedin the Figure 20.

System	Serie	Epoch	Group	Formation	Symbol	Section	Explanation
Qua-ternary					Qe, Qa		Qe, Qa, Old alluvium, alluvium **Kızılhisar WWTP Located Area**
Tertiary	Miocene	Upper		Yavuz-eli	Ty		Ty: Yavuzeli Basalt, basalt and phyroclastic rocks
		Middle		Şelmo	Ts		Ts: Şelmo Formation, conglomerate, sandstone, Siltstone, tuffite, marl, fluvial and lacustrine deposits
		Lower	Midyat	Fırat	Tmf		Tmf: Fırat Formation, cream colored, massive and very thick bedded reefal limestone
	Oligocene	Middle					
		Upper		Gaziantep	Tmga		Tmga: Gaziantep Formation, alteration of clayey limestone and chalky limestone, limestone intercalations and rare chert nodules **Gaziantep Formation is located on the geological map**
	Eocene	Upper					

Figure 20. Stratigraphic Section

4.1.3 Hydrogeology

The general geological characteristics of the "hydrogeological group" areas identified within the basin, as shown on the Hydrogeological Map of Turkey prepared by the General Directorate of State Hydraulic Works (SHW), have been described. Taking into account the types and formation ages of the lithological units forming these groups, a hydrogeological interpretation was made within the framework of existing definitions, and the values of hydrogeological and geohydraulic parameters were determined.

The hydrogeological map, based on the geological information from the Geological Map of Türkiye prepared by the General Directorate of Mineral Research and Exploration (MTA), classifies different formations, lithostratigraphic units, or regionally dominant rock types according to their different groundwater storage (aquifer) capacities, based on groundwater storability criteria accepted by SHW.

The hydrogeological maps take into account the color schemes published by the SHW in the "Symbols for the Hydrogeological Map of Türkiye" and conform to the standards of the International Association of Hydrogeologists.

Formations, lithostratigraphic units, and rocks with differences in groundwater storage capacity are categorized into six groups on the map, represented by three different colors (blue, green, brown) and their light and dark shades, indicating relative differences in "groundwater storage capacity."

The color standards used in the hydrogeological map are explained as follows: *blue* represents permeable granular medium ("Gçt"), *light blue* represents semi-permeable granular medium ("gçt"), *green* represents permeable rock medium ("Gçk"), *light green* represents semi-permeable rock medium ("gçk"), *light brown* represents semi-impermeable medium ("gz"), and *brown* represents impermeable medium ("Gz"). Based on these classifications, the definitions and naming of "geohydraulic environments" have been established.

Furthermore, the spatial relationships between these newly defined geohydraulic environments have been analyzed to assess groundwater storability within the basin.

Aquifer Potential Classification

The Aquifer Classification proposed by Struckmeyer & Margat (1995) was applied. The scheme distinguishes six categories according to the Aquifer Potential (productivity and lateral extension) and type of Groundwater flow (intergranular or fissured). A description of each category (A to F) is given in the Figure 21.

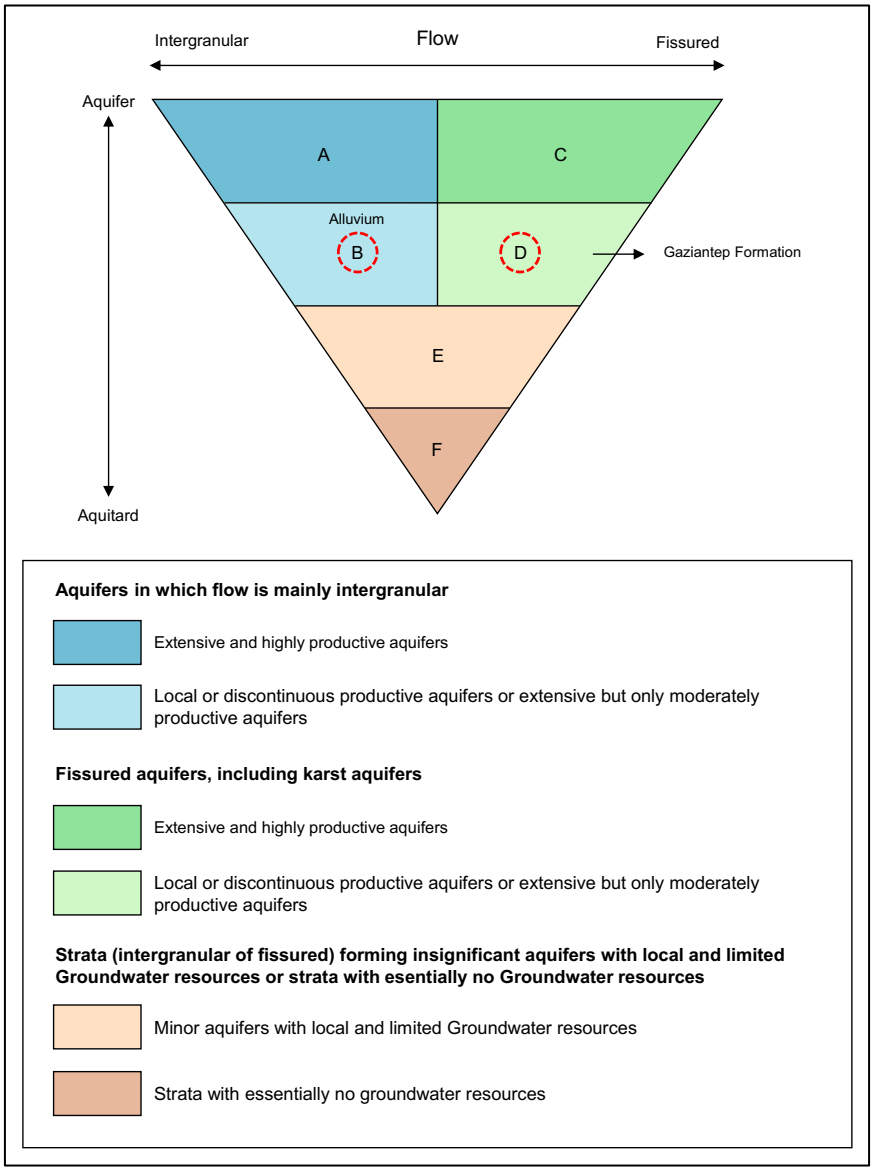


Figure 21. Aquifer Classification System (modified after Struckmeyer & Margat, 1995)

An attempt was made in the table below to give practical examples for the possible use of groundwater resources for each category. Roughly, the categories differentiate aquifers with “high”, “moderate”, “limited” and “essentially no” potential. Aquifers with a high Potential (categories A and C) for example may permit withdrawals of regional importance such as supply to major towns or large-scale irrigation. Aquifers with limited Potential (category E) could suffice for the supply of water to rural villages with handpump. The table also provides characteristics values for specific capacity, transmissivity, permeability and approximate expected yield for each category. However, it has to be remembered that hydraulic Parameters may vary widely, even in areas with relatively uniform lithology, but particularly in areas where Groundwater flow is controlled by zones of intense fracturing and faulting.

As shown in the groundwater potential table below, the project site is located within an area classified as having “moderate” groundwater potential, which is highlighted in red in the table below. Areas with moderate potential are typically suitable for local water supply needs such as smaller communities or small-scale irrigation. This classification indicates that while the

aquifer system can support basic local demand, it is not considered appropriate for large-scale or regional withdrawals. Importantly, the WWTP project does not involve any groundwater abstraction, and no interference with groundwater resources is anticipated during either construction or operation phases.

Table 17. Hydraulic Characterisation of the Aquifer Categories

Aquifer Category	Specific Capacity (L/s/m)	Transmissive (m^2/d)	Hydraulic Conductivity (m/d)	Very Approx. Expected Yield (L/s)	Groundwater Potential
A, C	> 1	> 75	> 3	> 10	**High:** Withdrawals of regional importance (supply to towns, irrigation)
B, D	0.1 - 1	5 - 75	0.2 - 3	1 – 10	**Moderate:** Withdrawals for local water supply (smaller communities, small-scale irrigation etc.)
E	0.0. – 0.1	0.05 - 5	0.002 – 0.2	0.01 – 1	**Limited:** Smaller withdrawals for local water supply (supply through handpump, private consumption)
F	< 0.001	< 0.05	< 0.002	< 0.01	**Essentially none:** Sources for local water supply are difficult to ensure

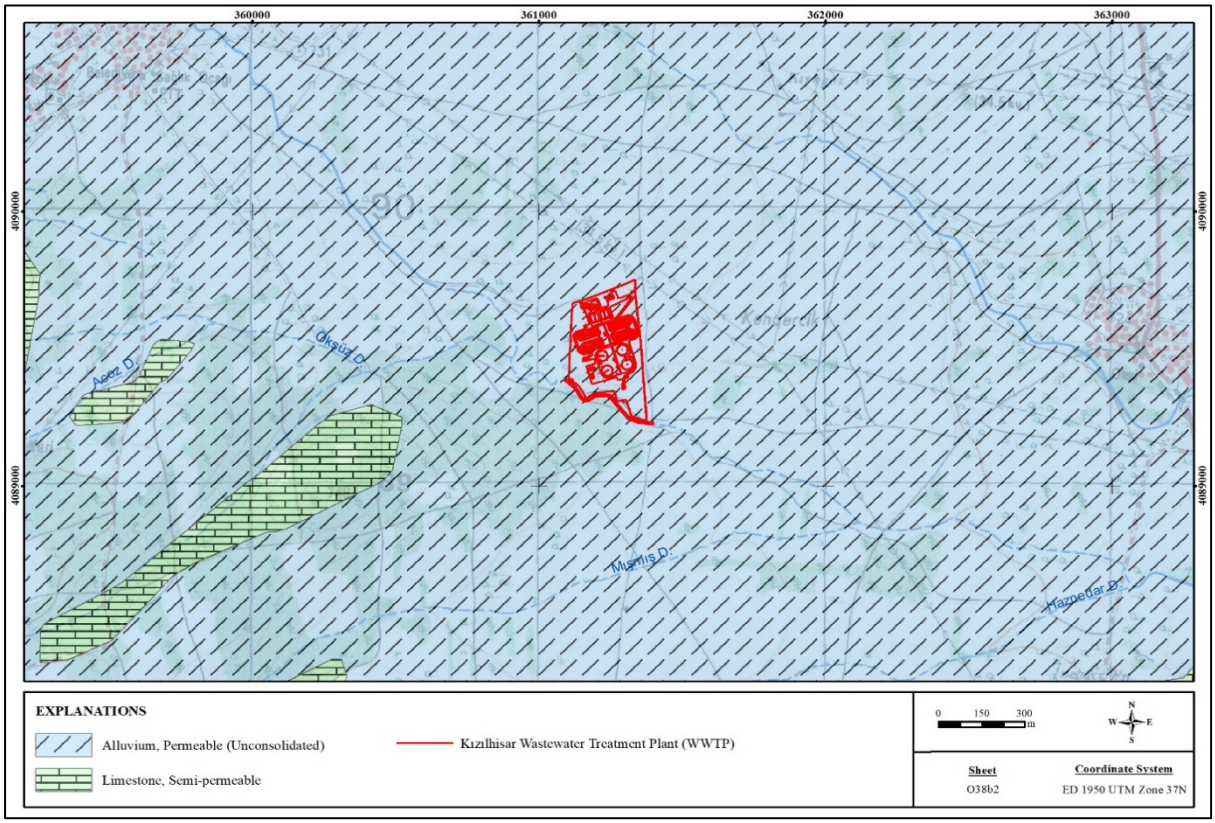


Figure 22. 1/25,000 Scale Hydrogeology Map

4.1.4 Hydrology

In Gaziantep, surface water resources generally consist of rivers, ponds, and dam reservoirs. Due to the terrain and climatic conditions, rivers are relatively few in number in Gaziantep. However, dry valleys are common in the region, where flow can be observed during periods of heavy rainfall, especially in the winter and autumn months, but these valleys typically dry up during the summer.

The most important river in the region is the Euphrates River, which forms the boundary between Gaziantep and Şanlıurfa, and many small streams in the area flow into the Euphrates. The hydrology map of Gaziantep is given in the Figure 23.

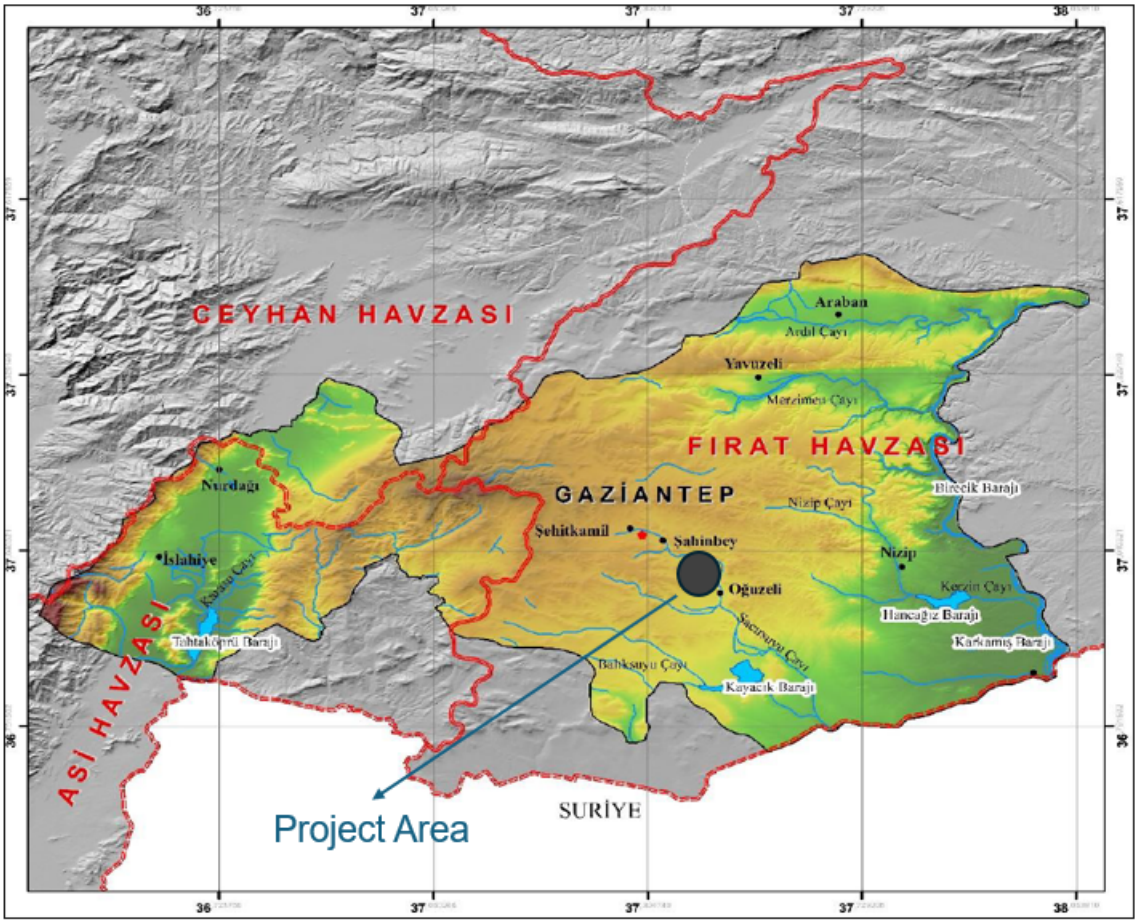


Figure 23. Hydrology Map of Gaziantep

In the Araban Plain, the Karasu River flows from west to east for 64 kilometers; the Merzimen Stream flows through the Yavuzeli Plain; the Nizip Stream, together with its tributaries, extends over 100 kilometers; and the Sacır Stream, including its tributaries, has a length of 80 kilometers within the province. All of these rivers are major watercourses that discharge into the Euphrates River.

Other significant rivers of the province include the Alleben Stream, which originates from Mount Sof; the Karaçay Stream, which originates from Karagöl, located north of İslahiye; and the Balıksuyu Stream, which rises from the southwestern part of the Gaziantep Plateau.

Other rivers in the province include the Afrin Stream and the Sabur Stream, both located near Burç Town, and the Karasu Stream located in İslahiye District, which eventually flows into the Amik Plain.

In order to study the main components and water resources of the hydrological system, the hydrological basin characteristics of the region are examined in this section. To facilitate comprehensive research on water resources, Türkiye has been divided into 25 hydrological basins based on its topographic structure. The project area is located within the Euphrates–Tigris Basin.

The Euphrates–Tigris Basin is a transboundary river basin. The area of the Euphrates and Tigris rivers' basin within the borders of Türkiye is approximately 185,000 km². The basin's

annual average flow is about 52.94 km³, which corresponds to approximately 28.5% of Türkiye's total water potential. In terms of water potential and drainage area, it is the largest river basin in Türkiye. From a holistic perspective, a micro-basin constitutes a very small part of the hydrological system.

The map showing the surface water resources is presented in the Figure 24.

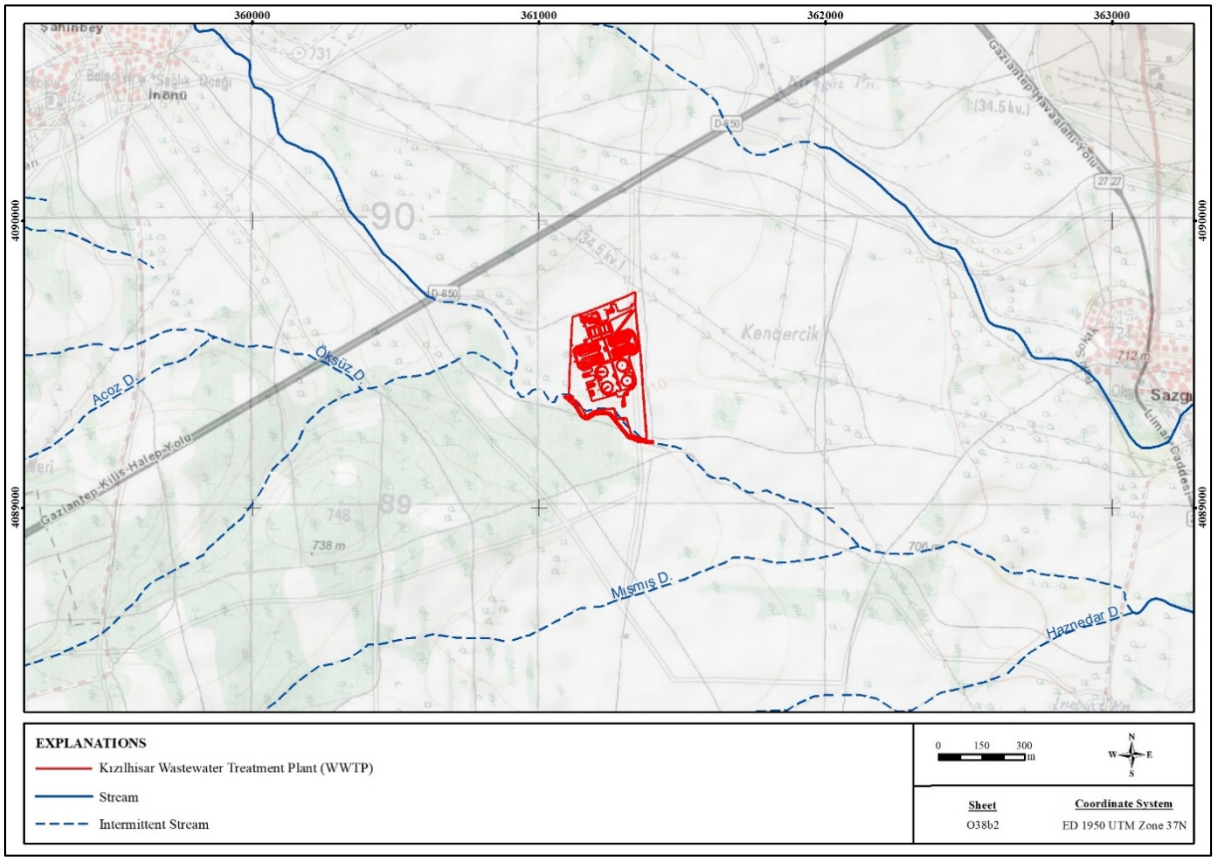


Figure 24. Surface Water Map

The unnamed creek located within the project area flows downstream and eventually converges with several other named creeks that are identified on the map. As previously mentioned, these creeks collectively discharge into the Sacır Stream at the basin outlet. Although the creek itself does not have an official name, its hydrological connection to the Sacır Stream through the merging of multiple watercourses has been recognized and taken into account in the assessment of the surface water network and basin drainage patterns.

There are no natural or artificial, permanent or temporary, still or flowing, fresh, brackish, or saline waters; no waters with tidal fluctuations where the water depth does not exceed 6 meters during low tide; no wetlands, marshes, reed beds, or peatlands that serve as critical habitats for wildlife, particularly waterfowl; and no areas ecologically considered wetlands extending inland from the shoreline. Similarly, there are no lakes, rivers, groundwater operation areas, or any designated "irrigation areas" established by special provisions within the project area.

Within the micro-basin where the Kızılhisar WWTP is located, and along the downstream flow paths draining the region, there are no Flow Observation Stations that are currently operational, closed, or have historical measurements that could represent the basin flow. At

the basin scale, there is also no Flow Observation Station that can provide representative data in terms of distance, data quality, or monitoring frequency. Therefore, since there are no available Flow Observation Station data capable of representing the rainfall/flow relationship within the micro-basin, no detailed assessment can be conducted in this context.

4.1.5 Seismicity and Natural Hazards

Gaziantep Province is located in a tectonically active region of southeastern Türkiye, influenced by the nearby East Anatolian Fault (EAF), a major strike-slip fault system that accommodates the relative movement between the Anatolian and Arabian tectonic plates. This structural context results in significant seismic potential throughout the region.

According to the Türkiye Earthquake Hazard Map published by the Disaster and Emergency Management Authority (AFAD) in 2019, seismic hazard assessments are now based on probabilistic ground motion parameters rather than regional zoning. Site-specific peak ground acceleration (PGA) and spectral acceleration values are determined based on local soil conditions, distance to active faults, and return periods of earthquake scenarios. The PGA value is 0.153 g for the Project area.

The project site is located in an area with relatively low expected ground motion values compared to the northern districts of the province. However, seismic risk remains present and must be accounted for through compliance with national seismic design standards, which require site-specific assessments for structural safety.

On 6 February 2023, two major earthquakes (Mw 7.8 and Mw 7.5) struck southeastern Türkiye, causing extensive damage across Gaziantep and adjacent provinces. These events underscored the necessity of earthquake-resilient infrastructure, even in areas with lower predicted ground motion values.

A seismic hazard map indicating the location of the project area is provided in the Figure 25.

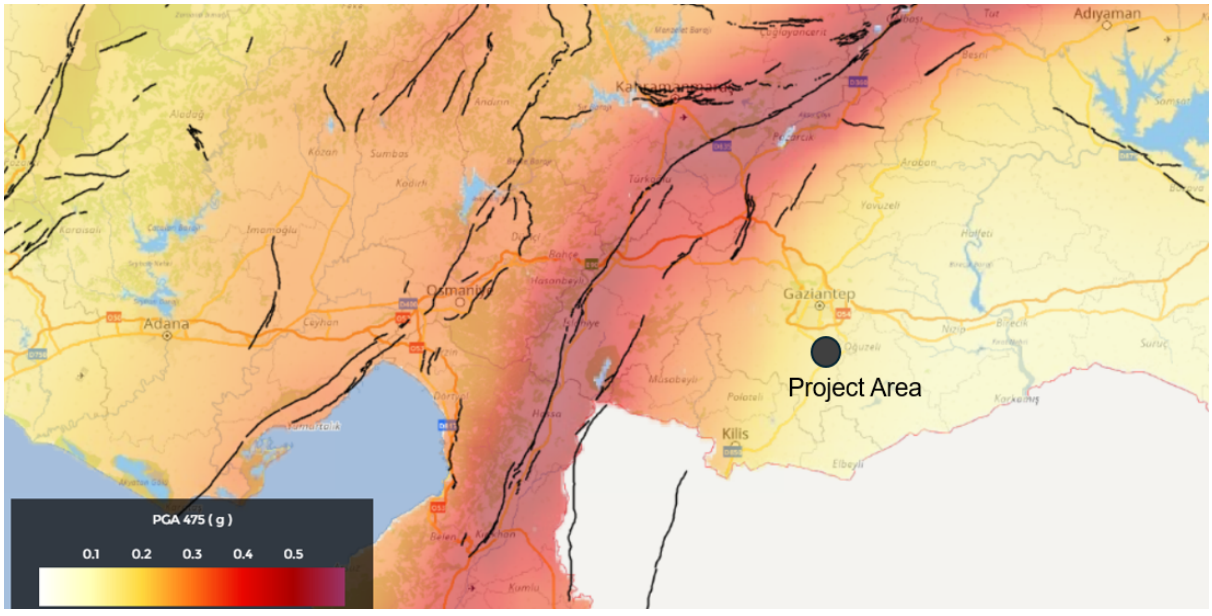


Figure 25. Seismic Hazard Map

In addition to seismic risks, Gaziantep is also exposed to various natural hazards that may affect the project area. These include flash floods during periods of intense rainfall, localized landslides in areas with sloped terrain, prolonged drought conditions during the summer months, and occasional dust storms, particularly in spring and summer when dry winds transport dust from southern arid regions. However, compared to the overall Gaziantep region, the flood risk at the project site is considered lower. Furthermore, the nearby creeks in the vicinity of the project area do not have a continuous flow throughout the year, which further reduces the potential flood hazard for the site. The flood intensity map of the Gaziantep is given in the Figure 26.

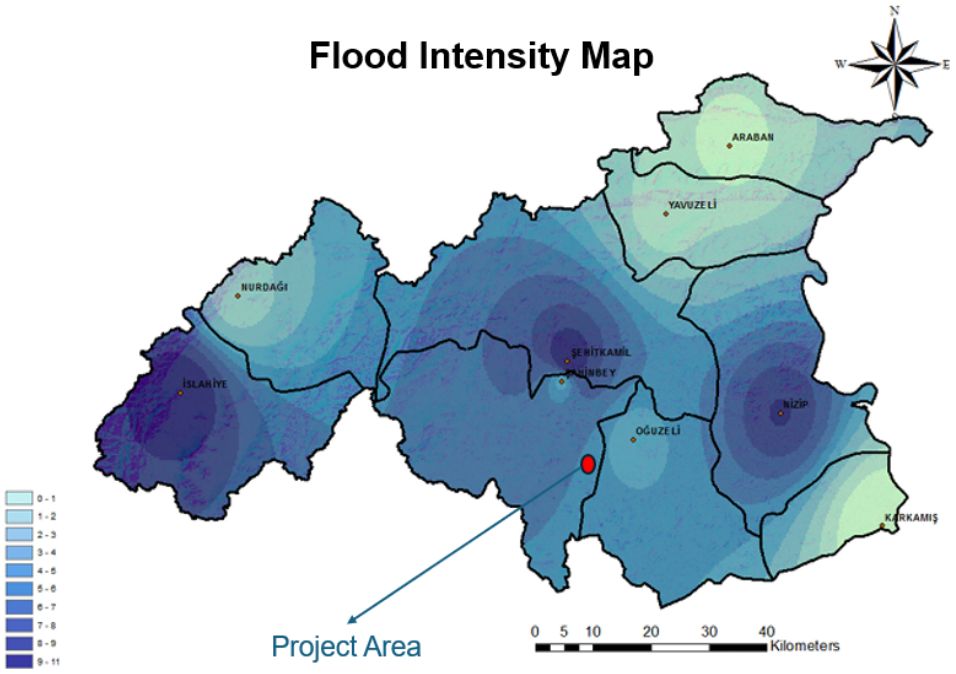


Figure 26. Flood Intensity Map

4.1.6 Soil and Soil Quality

Soil

The project area is currently located within the Oğuzeli Plain Protection Area. The Oğuzeli Plain has been designated as a Major Plain Protection Area by Council of Ministers' Decision No. 2016/9620. The relevant decision was published in the O.G. dated 21 January 2017, No. 29955.

Major Plain Protection Areas are zones designated under the *Regulation on the Protection, Use, and Planning of Agricultural Lands*, characterized by high agricultural production potential, an integrated agricultural landscape, and requiring conservation.

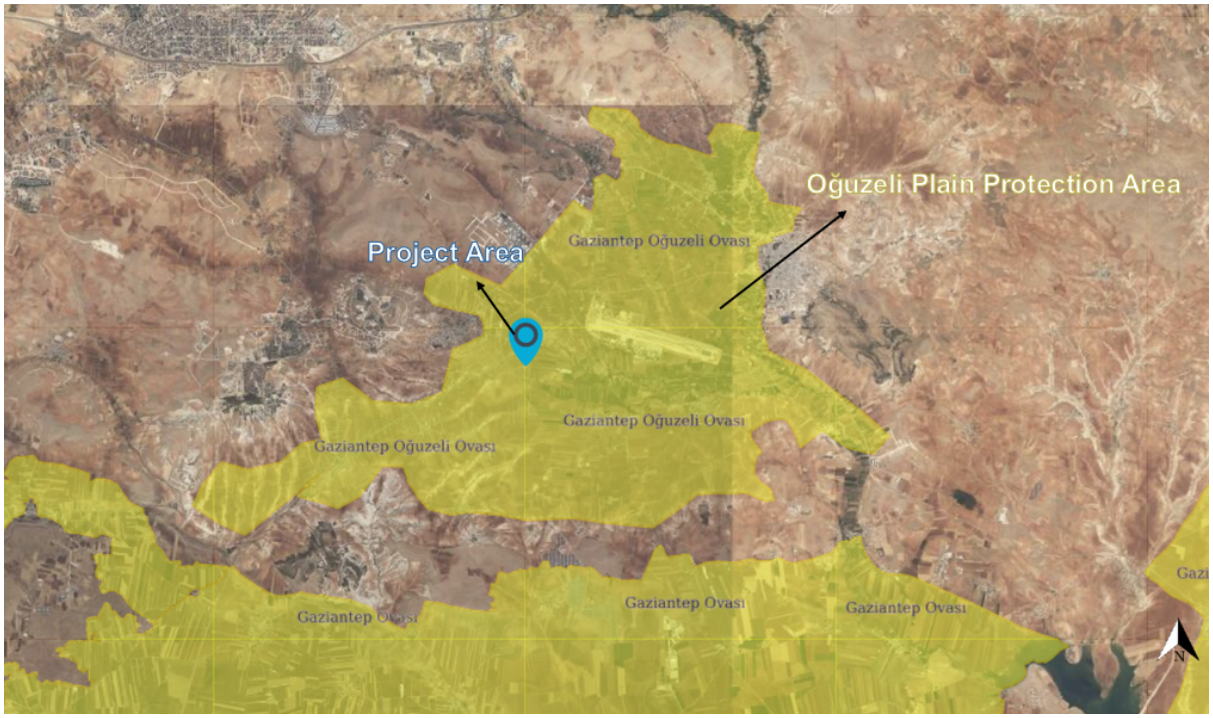


Figure 27. Project Area and Oğuzeli Plain Protection Area

Soil Quality

No visible signs of soil contamination were observed during the site visit conducted on 6 March 2025. The surface of the project area appeared undisturbed and free of spills, discoloration, or other indicators typically associated with soil pollution. However, in order to verify this visual assessment and to detect any potential subsurface contamination, a soil quality analysis was carried out as part of the baseline studies. The location of the sampling point was selected near the effluent discharge point.

Table 18. Soil Sampling Location

Location	Date	Coordinates
S1	24.03.2025	36°56'17.27"N - 37°26'31.42"E

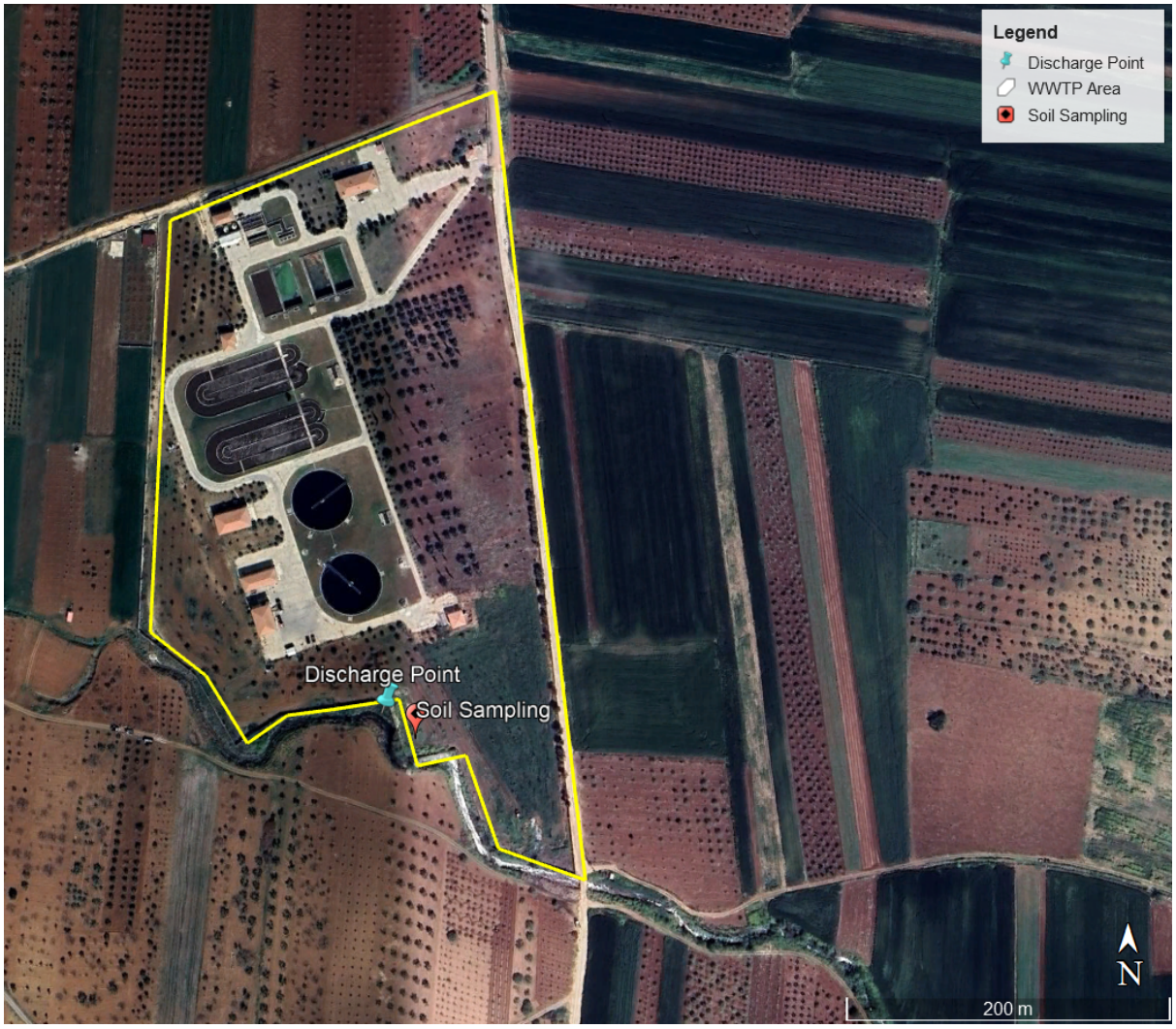


Figure 28. Soil Sampling Location

As can be seen in the table, almost all parameter values are below the detection limits. Analysis report is given in Appendix-9. A comparison of the analysis results with the limit values set out in the Regulation on the Control of Soil Pollution and Sites Contaminated by Point Sources has also been provided. Due to high detection limits for certain parameters, comparisons with regulatory threshold values could not be performed for all substances. However, for the parameters where quantifiable results were obtained, no exceedance of the applicable regulatory limits was identified.

Table 19. Soil Quality analysis results together with the limit values

Parameters	Unit	Results	Absorption through ingestion of soil and skin contact	Outdoor inhalation of volatile substances	Outdoor inhalation of fugitive dust	Transport of contaminants into groundwater and consumption of groundwater	
						SF=10	SF=1
Antimony	mg/kg	<2.5	31	-	-	2	0.2
Arsenic	mg/kg	<2.5	0.4	-	471	3	0.3
Copper	mg/kg	<2.5	3129	-	-	514	51

Parameters	Unit	Results	Absorption through ingestion of soil and skin contact	Outdoor inhalation of volatile substances	Outdoor inhalation of fugitive dust	Transport of contaminants into groundwater and consumption of groundwater	
						SF=10	SF=1
Barium	mg/kg	<2.5	15643	-	433702	288	29
Beryllium	mg/kg	<2.5	0.1	-	843	0.1	0.01
Boron	mg/kg	<2.5	-	-	-	-	-
Benzene	mg/kg	<0.1	12	1	-	0.006	0.0006
BTEX	mg/kg	<0.1	-	-	-	-	-
Ethylbenzene	mg/kg	<0.1	7821	14	-	4	0.4
m-Xylene	mg/kg	<0.1	156429	-	-	444	80
0-Xylene	mg/kg	<0.1	156429	-	-	297	81
Toluene	mg/kg	<0.1	6257	925	-	5	0.5
Mercury	mg/kg	<0.025	23	3	-	3	0.6
Zinc	mg/kg	<2.5	23464	-	-	6811	681
Silver	mg/kg	<2.5	391	-	-	16	2
Cadmium	mg/kg	<0.25	70	-	1124	27	3
Tin	mg/kg	<2.5	46929	-	-	54794	5479
Cobalt	mg/kg	<2.5	23	-	225	5	0.5
Chrome	mg/kg	<2.5	235	-	24	900000	1
Lead	mg/kg	<2.5	400	-	-	135	14
Molybdenum	mg/kg	<2.5	391	-	-	14	1
Nickel	mg/kg	<2.5	1564	-	-	13	1
pH	-	8.23	-	-	-	-	-
Selenium	mg/kg	<2.5	391	-	-	0.5	0.05
Thallium	mg/kg	<2.5	5	-	-	2	0.2
Titanium	mg/kg	6.88	312857	-	-	-	146029
TOX	mg/kg	<10	-	-	-	-	-
VOC	mg/kg	<0.2	-	-	-	-	-
Vanadium	mg/kg	<2.5	548	-	-	2556	256
Oil and Grease	mg/kg	<50	-	-	-	-	-

4.1.7 Climate and Meteorology

Gaziantep Province is located in southeastern Türkiye and is characterized by a transitional climate between the Mediterranean and continental climate zones. According to the Köppen-Geiger classification, the region falls under the Csa category, which denotes a hot-summer Mediterranean climate. This climate type is defined by long, hot, and dry summers and mild, wet winters.

Based on long-term meteorological data from the Turkish State Meteorological Service (MGM) and international climate datasets, the average annual temperature in Gaziantep is approximately 15.7°C. The hottest months are July and August, with average daily maximum

temperatures often exceeding 35°C, while the coldest month is January, with average temperatures ranging between 1°C and 5°C.

The average temperature map of Gaziantep is given in the Figure 29.

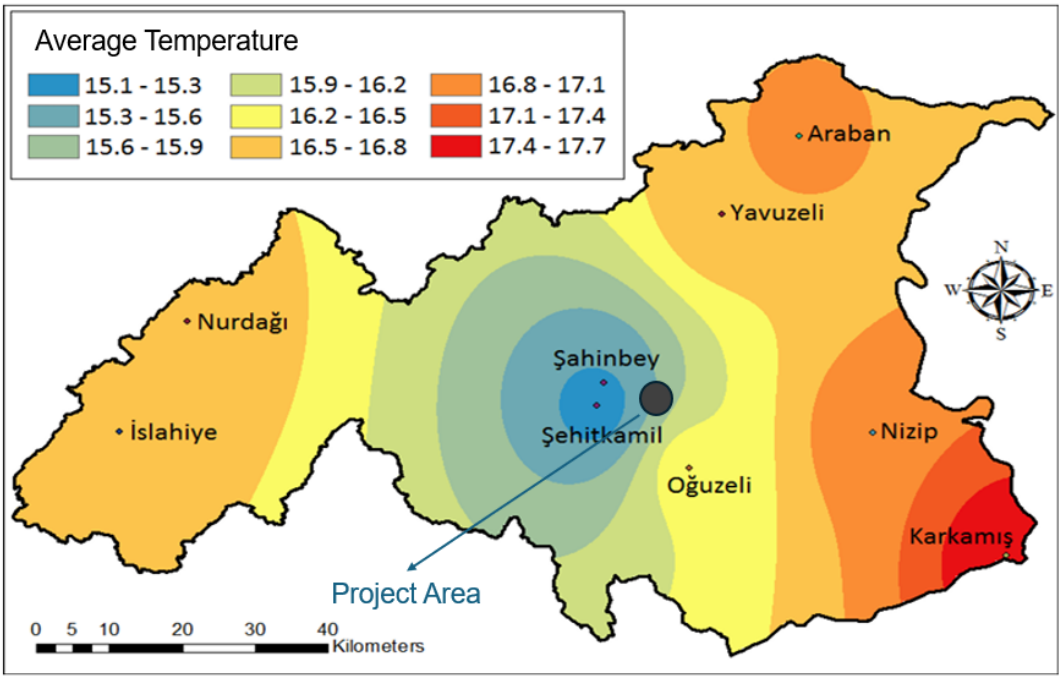


Figure 29. Average Temperature Map

Annual precipitation averages around 500 mm, with the majority of rainfall occurring between November and March. The summer months, particularly July and August, are notably dry, often recording less than 5 mm of monthly precipitation. Snowfall may occur occasionally in winter, though it is generally limited and short-lived.

Prevailing winds in the region are generally from the northwest and west, with average wind speeds ranging between 2–4 m/s. However, during transitional seasons, southerly winds may bring dust-laden air masses from Syria and Iraq, contributing to reduced air quality and visibility.

Climate trends over the past two decades suggest a gradual increase in average temperatures and more frequent occurrence of extreme heat events, consistent with broader patterns of climate change observed across southeastern Türkiye.

4.1.8 Air Quality

In order to establish a comprehensive understanding of the baseline air quality conditions in the Project Area, continuous PM10 monitoring was conducted over a period of 72 hours. A total of two measurement points, 75 m and 450 m from the WWTP, strategically selected to represent sensitive receptors and the surroundings of the Project site, were used during this campaign (Figure 30). The measurement report is given in Appendix-10.

The location of the monitoring points is given below.

Table 20. Air Quality Monitoring Location

Location	Sampling Date	Coordinates
PM10 1. Point	11-12-13.03.2025	36°56'18.75"N - 37°26'24.77"E
PM10 2. Point	11-12-13.03.2025	36°56'29.30"N - 37°26'7.62"E

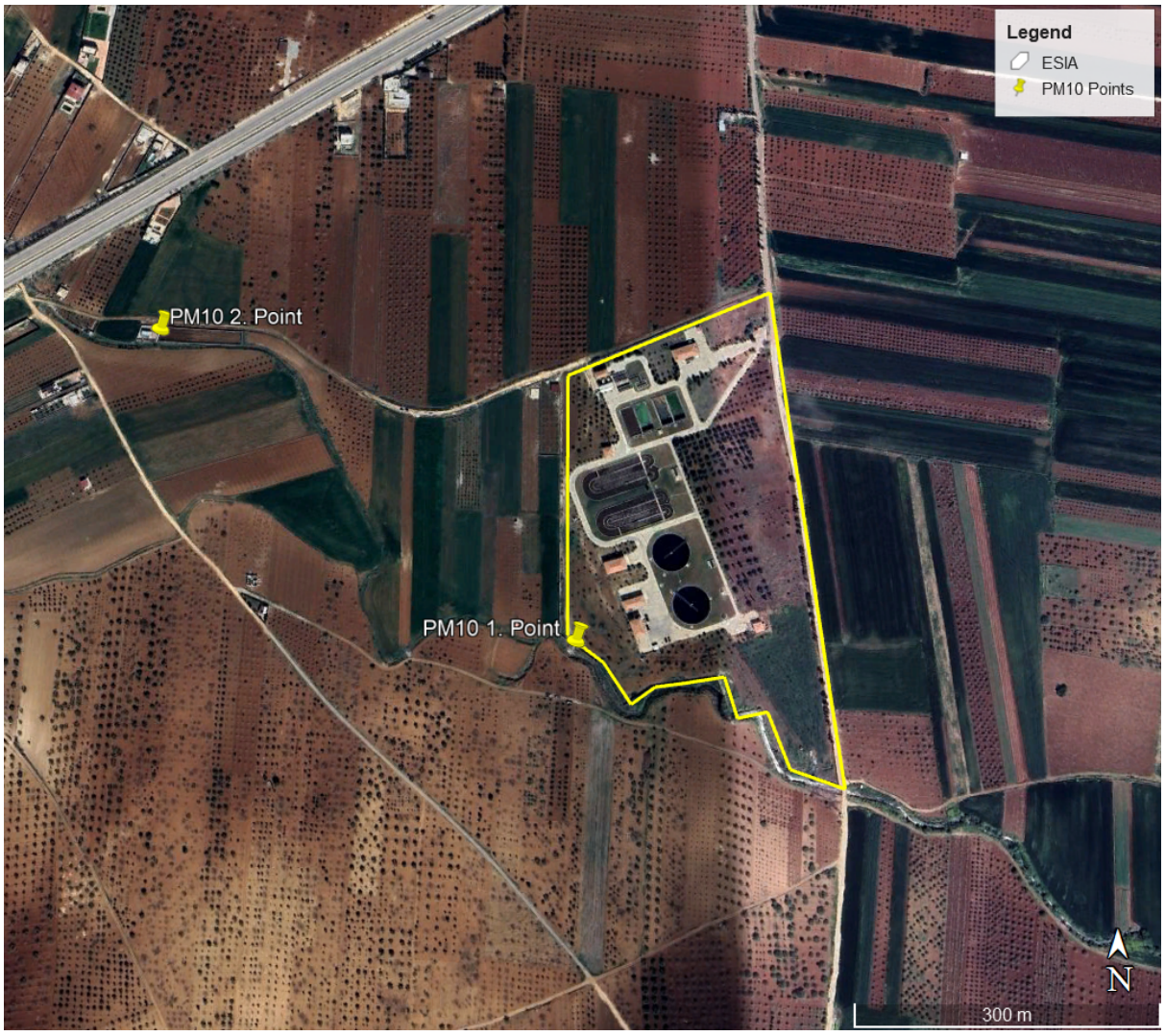


Figure 30. PM10 Measurement Locations

The monitoring activities were performed by ANKALAB Environmental Analysis Laboratory, accredited under TS EN ISO/IEC 17025:2017 standards, ensuring the accuracy and reliability of the results. PM10 concentrations were measured using reference methods aligned with TS EN 12341 standards.

The purpose of this campaign was to characterize the existing ambient air quality through quantitative measurements and to establish a reference point for future air quality management during the construction and operational phases of the Project.

The results of the PM10 measurements are presented below. Limit value is taken from Regulation on the Air Quality Assessment and Management.

Table 21. PM10 Baseline Measurement Results

Date	PM10 Result (µg/m^3)	Limit (µg/m^3)
1. Point		
11.03.2025	27.18	50
12.03.2025	27.12	50
13.03.2025	26.24	50
Average	26.85	50
2. Point		
11.03.2025	26.98	50
12.03.2025	26.93	50
13.03.2025	27.20	50
Average	27.04	50

All PM10 measurement results obtained during the monitoring period were significantly below the regulatory limit of 50 µg/m³ (24-hour average).

4.1.9 Water Quality

In order to establish the current environmental inventory and to determine the existing quality of the receiving environment, a water sampling campaign was conducted on 12 March 2025.

As part of the study, a total of three water samples were collected: one surface water sample upstream of the discharge point, one surface water sample downstream, and one groundwater sample from a well located within the boundaries of the WWTP (Figure 31). The analysis report is given in Appendix-11.

The location of the sampling points is given below.

Table 22. Water Quality Sampling Location

Location	Sampling Date	Coordinates
Upstream	12.03.2025	36°56'17.83"N - 37°26'26.35"E
Downstream	12.03.2025	36°56'17.74"N - 37°26'30.55"E
Well	12.03.2025	36°56'30.19"N - 37°26'33.16"E



Figure 31. Water Sampling Locations

The sampling activities were carried out in accordance with internationally recognized methodologies and relevant national standards. The collected samples were subsequently sent to an accredited laboratory for detailed physicochemical and microbiological analysis.

The results of the laboratory analyses will serve as a reference baseline to assess potential future impacts of the Project on surface water and groundwater resources and to ensure compliance with applicable national water quality regulations during the construction and operational phases.

Table 23. Surface Water Quality

Parameters	Unit	Upstream	Downstream	Surface Water Quality Regulation Water Quality Classes		
				I (very good)	II (good)	III (moderate)
Color (436 nm)	m-1	161.3 Pt-Co[10]	86.8 Pt-Co	≤1.5	3	4.3
Color (525 nm)	m-1			≤1.2	2.4	3.7
Color (620 nm)	m-1			≤0.8	1.7	2.5
pH	-	7.2	7.21	6 - 9	6 - 9	6 - 9
Conductivity	µS/cm	1430	1.302	<400	1000	>1000
Oil and Grease	mg/L	13.3	23.4	<0.2	0.3	>0.3
Dissolved Oxygen	mg/L	2.3	6.03	>8	6	<6
COD	mg/L	221.7	352.8	<25	50	>50
BOD_5	mg/L	51.21	79.73	<4	8	>8
Ammonium (NH_4^+)	mg/L	0.49	1.38	<0.2	1	>1
Nitrate (NO3-)	mg/L	0.128	4.78	<3	10	>10
Total Kjeldahl Nitrogen	mg/L	1.73	7.12	<0.5	1.5	>1.5
Total Nitrogen	mg/L	1.87	13.46	<3.5	11.5	>11.5
Orthophosphate	mg/L	1.007	1.582	<0.05	0.16	>0.16
Total Phosphorus (TP)	mg/L	1.327	2.819	<0.08	0.2	>0.2
Floride	µg/L	<100	<100	≤1000	1500	>1500
Manganese	µg/L	89.13	28.7	≤100	500	>500
Selenium	µg/L	8,63	0.4	≤10	15	>15
Sulphur	µg/L	<2	<2	≤2	5	>5

[10] The colour parameter of the sample was analysed according to the Platinum-Cobalt (Pt-Co) scale and measured as. However, in the relevant regulation, the colour parameter is defined in units of m^{-1} (inverse meters). Due to the difference in measurement methods and units, the analysis result could not be directly compared with the regulatory limit values.

According to the classification of surface water quality:

- **Class I** waters are of very high quality. These waters have the potential to be used as drinking water sources, for recreational purposes including activities involving body contact such as swimming, for trout farming, and for livestock and farm needs.
- **Class II** waters are considered to be of good quality. They can serve as potential drinking water sources after appropriate treatment, be used for recreational activities, support fish farming (excluding trout), and be used for irrigation provided that irrigation water quality standards are met according to current regulations.
- **Class III** waters are classified as moderate quality and are regarded as polluted waters. Following proper treatment, these waters can be used for aquaculture (excluding sensitive applications like food and textile production requiring higher water quality) and for industrial water supply.

As seen in Table 23, both upstream and downstream surface water samples generally correspond to Class III quality for most analyzed parameters. This indicates that the water quality is moderate and polluted and would require significant treatment before being suitable for use such as industrial processes or certain types of aquacultures.

In addition to surface water sampling, a groundwater sample was collected from an existing well located within the Kızılhisar WWTP. According to information received from GASKİ, the well was likely drilled many years ago by local villagers for irrigation purposes. However, due to insufficient water yield, the well has not been in use for a long time and is currently inactive for any form of abstraction.

This sample was analyzed to establish the baseline groundwater quality prior to the Project's implementation.

Table 24. Groundwater Quality

Parameters	Unit	Well
Color	Pt-Co	49.22
pH	-	8.24
Conductivity	µS/cm	0.384
Oil and Grease	mg/L	11.7
Dissolved Oxygen	mg/L	6.2
COD	mg/L	152.6
BOD_5	mg/L	34.18
Ammonium (NH_4^+)	mg/L	0.22
Nitrate (NO3-)	mg/L	0.015
Total Kjeldahl Nitrogen	mg/L	0.98
Total Nitrogen	mg/L	0.998
Orthophosphate	mg/L	0.939
Total Phosphorus (TP)	mg/L	1.11
Floride	µg/L	<100

Parameters	Unit	Well
Manganese	µg/L	0.7
Selenium	µg/L	0.2
Sulphur	µg/L	<2

In addition to physicochemical analyses, microbiological analyses were conducted to assess the microbial quality of surface and groundwater within the Project area. The parameters analyzed included E. coli, fecal coliform, total coliform, and fecal streptococcus.

Table 25. Microbiological Analysis Results

Parameters	Unit	Upstream	Downstream	Well
E. coli	cfu/100 ml	>1600	23	7.8
Fecal coliform	cfu/100 ml	>1600	23	13
Total coliform	cfu/100 ml	>1600	23	13
Fecal Streptococcus	cfu/100 ml	70	<1.8	<1.8

The results indicate significantly elevated microbiological contamination levels at the upstream sampling point, particularly for E. coli, fecal coliform, and total coliform, all of which exceeded 1600 cfu/100 ml. In contrast, the downstream sampling point and the well located within the WWTP site exhibited substantially lower concentrations.

These results indicate that the upstream surface water body has been exposed to significant fecal contamination, most likely originating from anthropogenic. Based on field observations and regional land use characteristics, intensive agricultural activity and livestock farming are practiced in the upstream vicinity of the Project site. These activities include open grazing, animal shelters, and the use of organic fertilizers, which may contribute to the direct or indirect discharge of fecal matter into nearby surface water bodies, particularly during rainfall events. As such, the elevated microbiological parameters observed in upstream samples are consistent with the land use profile of the surrounding semi-rural area.

4.1.10 Noise Environment

During the construction phase, noise will mainly be generated by the activities of construction machinery and equipment. Background noise levels should be known to determine the impact significance. Therefore, a noise level measurement study was conducted to determine the background levels around the WWTP site. The study was conducted on 11-12 March 2025 at the nearest receptors located 75 m and 450 m from the WWTP (Figure 32). The receptor at 75 m is a residential dwelling with a permanent inhabitant and was therefore selected as a key point for baseline measurements and impact evaluation.

The location of the monitoring points is given below.

Table 26. Noise Monitoring Location

Location	Sampling Date	Coordinates
1. Point	11-12.03.2025	36°56'18.75"N - 37°26'24.61"E
2. Point	11-12.03.2025	36°56'29.42"N - 37°26'7.37"E



Figure 32. Noise Measurement Locations

Table 27. Background Noise Measurements – Leq

Locations	Distance	Measurement Results and Limit Values (Leq) (dBA)		
11.03.2025		**Day (07.00-19.00)**	**Evening (19.00-23.00)**	**Nighttime (23.00-07.00)**
1	75 m	43.4	43.6	44.9
2	450 m	47.8	48.6	48.6
12.03.2025		**Day (07.00-19.00)**	**Evening (19.00-23.00)**	**Nighttime (23.00-07.00)**
1	75 m	43.4	43.7	43.4
2	450 m	47.1	47.5	48.0
Project Standard*		**65**	**60**	**55**

**According to the Regulation on the Control of Environmental Noise*

Table 28. Background Noise Measurements – LCmax

Locations	Distance	Measurement Results and Limit Values (LCmax) (dBC)		
11.03.2025		**Day (07.00-19.00)**	**Evening (19.00-23.00)**	**Nighttime (23.00-07.00)**
1	75 m	69.2	69.9	55.9
2	450 m	70.2	73.1	84.1
12.03.2025		**Day (07.00-19.00)**	**Evening (19.00-23.00)**	**Nighttime (23.00-07.00)**
1	75 m	77.9	65.9	64.8
2	450 m	79.8	82.2	76.3
Project Standard*		**100**	**100**	**100**

**According to the Regulation on the Control of Environmental Noise*

Background noise measurement results were found to be below the permissible limits set forth in the Regulation on the Control of Environmental Noise. The background environmental noise measurement analysis report is given in Appendix-12. Additionally, WWTP was in operation during the site visit; however, no significant noise sources were observed from the facility. The operational equipment was functioning at normal capacity, but did not generate noticeable noise levels beyond immediate vicinity.

4.2 Biological Environment

4.2.1 Legally Protected Areas of High Biodiversity Value

The International Union for Conservation of Nature (IUCN) proposes the following definition for a protected area, which today is widely used around the globe:

> *"A protected area is a clearly defined geographical space, recognized, dedicated and managed, through legal or other impactive means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values."*

Legally protected areas constitute an integral part of biodiversity conservation efforts, as well as ecosystem services provided by ecological functions they convey. In Türkiye, Ministry of Agriculture and Forestry is the main official body responsible for development and implementation of national biodiversity conservation policies, action plans, designation of conservation areas, and many other related tasks conducted by its central and local directorates within the Ministry's organizational structure. IUCN Protected Area Management Categories were adopted to restructure the Turkish Protected Area System in 2006 through the Biodiversity and Natural Resource Management Project undertaken by the Ministry's General Directorate of Nature Conservation and National Parks. The IUCN Protected Area Management Categories provide a global framework and is recognized by the Convention on Biological Diversity, with an initial objective of creating a common understanding of protected areas within and between countries. Categorization is done according to the primary management objectives for a protected area, based on the principles listed as following:

- assignment to a category is a not a commentary on management impactiveness,
- the categories systems are international; national names for protected areas may vary, and
- all categories are important; and gradation of human intervention is implied.

Accordingly, legally protected areas in Türkiye, were re-classified under the 6 protected area management categories defined by the IUCN Guidelines, which identify the main reasons for management as the following:

- **I** Strict protection [Ia) Strict nature reserve and Ib) Wilderness area]
- **II** Ecosystem conservation and protection (i.e., National Park)
- **III** Conservation of natural features (i.e., Natural monument)
- **IV** Conservation through active management (i.e., Habitat/species management area)
- **V** Landscape/seascape conservation and recreation (i.e., Protected landscape (seascape)
- **VI** Sustainable use of natural resources (i.e., Managed resource-protected area)

Legally protected areas around the Project Area and their IUCN protected area categories are given in table below and demonstrated in the Figure 33. Considering the distance between the Project Area and the legally protected areas in the region, it is considered that there will be no Project-related impacts on these areas.

Table 29. Legally Protected Areas near the Project Area

Protected Area	IUCN Protected Area Category	Distance to the Project Route (km)
Dülükbaba Nature Park	V	21.35
Yamaçtepe Nature Park	V	19.32
Burç Nature Park	V	16.02
Gaziantep National Struggle Nature Park	V	9.03
Tahta Bridge Wildlife Development Area	IV	61.48
Karkamış Flood Plain Wetland of National Importance	IV	38.08

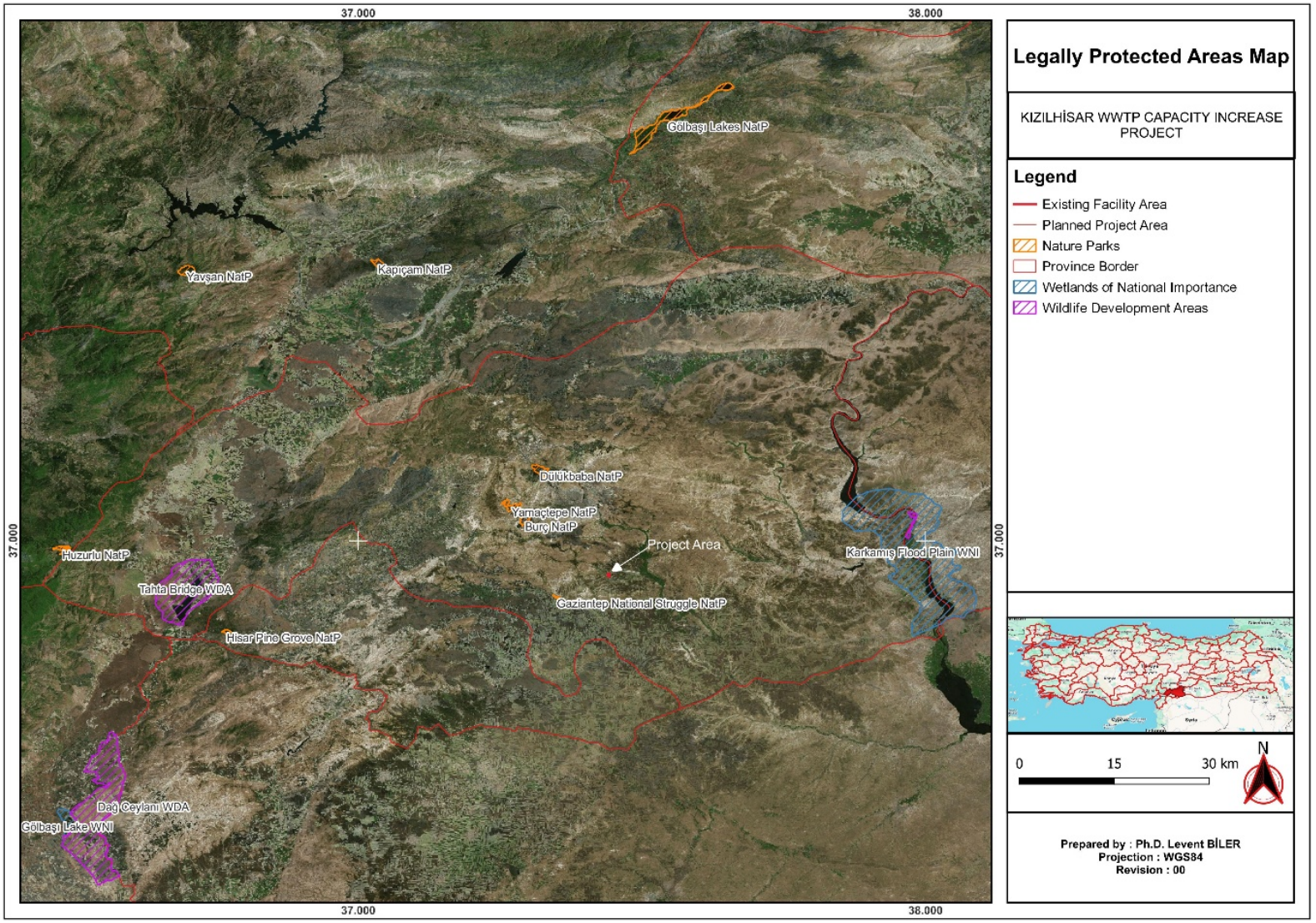


Figure 33. Legally Protected Areas near the Project Area

4.2.2 Internationally Recognized Areas of High Biodiversity Value

In Türkiye, besides the Ministry's official work, there are various non-governmental organizations (NGOs), academic entities, as well as individual researchers and professionals who work in collaboration or independently to better understand Türkiye's natural resources and put forward effective conservation strategies to ensure survival of habitats and species, some of which constitute unique ecosystems of global conservation value.

Doğa Derneği, published an inventory on Key Biodiversity Areas (KBAs) in Türkiye in 2006 in collaboration with then the former Ministry of Environment and Forestry, integrating survey results across the country with expert opinions. The preparation of the inventory was the first time the KBA approach was applied at a national scale, which was based on principles developed by BirdLife International for bird species in their "Important Bird Areas" studies. One of the fundamental functions of the inventory is defined as "providing resource for areas and species that should be worked upon to reach zero extinction".

According to Standard 4 – Biodiversity and Ecosystems, Projects likely to significantly affect Natura 2000 sites, protected areas, or Key Biodiversity Areas must undergo an Appropriate Assessment under the EU Habitats Directive, evaluating impacts considering conservation objectives and proposing measures to prevent or reduce harm. Although the project will not be located in the Natura 2000 sites Declaration Forms for Sites of Natural Conservation (Forms A and B as given in the Appendix-15) shall be conducted and shared with the relevant Competent Authority/ies to receive approval before the construction phase.

Internationally Recognized Areas around the Project Area are demonstrated in the Figure 34. Considering the distance between the Project Area and Internationally Recognized Areas in the region, it is considered that there will be no Project-related impacts on these areas.

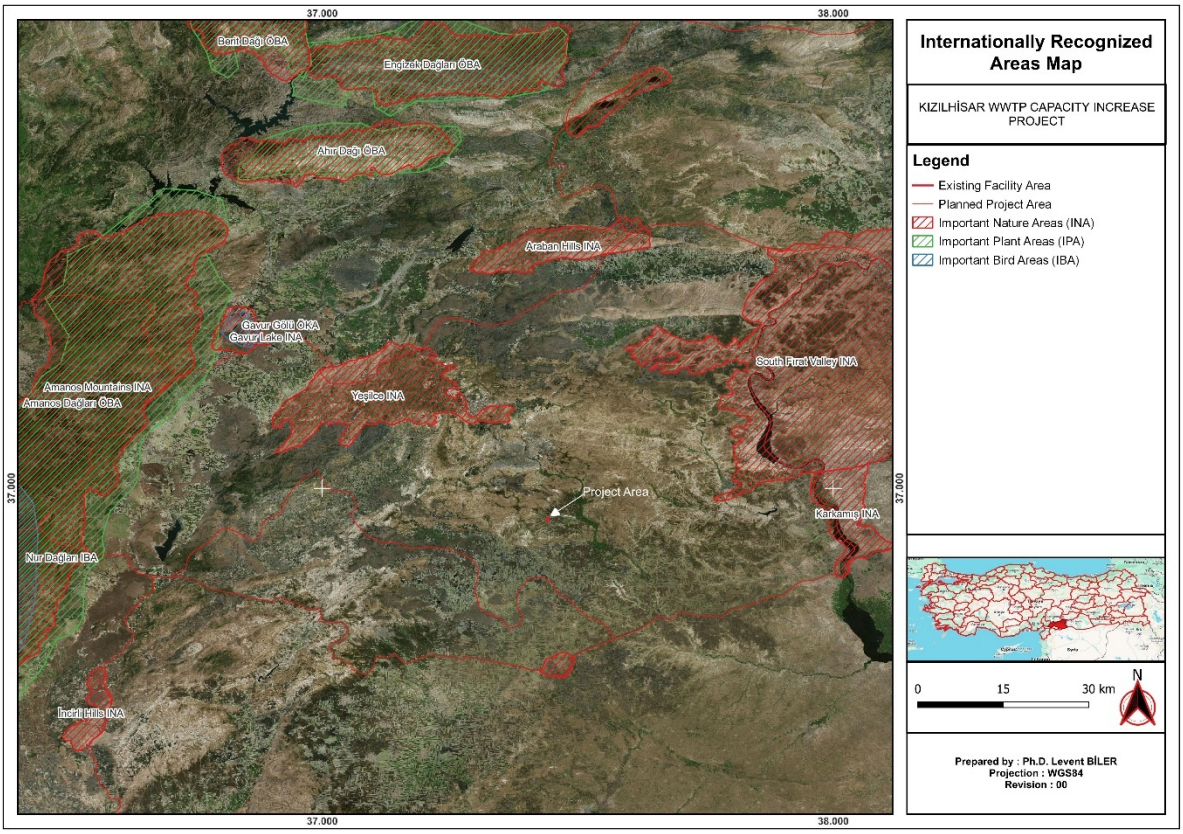


Figure 34. Internationally Recognized Areas near the Project Area

4.2.3 Methodology for Biodiversity Studies

Flora, Habitat and Ecosystems

Data on flora and vegetation were acquired via standardized quadrate method (Sutherland, 2006) to estimate population abundance (number), density, frequency and distributions.

Floristic lists were given according to the phylogenetic order in the Flora of Türkiye in the form of Pteridophyta, Gymnospermae, and Angiospermae, and families under each group were sorted in accordance with the phylogenetic order in the Flora of Türkiye. Species were given with their auteur names and if any, names in Turkish, English, phytogeographical region, whether it is endemic or not, danger categories of endemic and rare species, elevations they grow within the habitat, their habitat, and abundance of each species within the area were given respectively.

Plants collected from the study area were determined using relevant floras, the work Flora of Türkiye and the East Aegean Islands (Davis, 1965-1988) being the first. In order to determine endemic species and endangered species although they are not endemic, Red Book of Turkish Plants (Ekim et al., 2000) was taken as reference. Since Red Book of Turkish Plants was prepared in accordance with the criteria of IUCN 1994, danger categories were revised in accordance with IUCN 2001.

It has been investigated whether there is any endemic, rare, and internationally protected species, as well as important habitats, among the identified species. Accordingly, relevant mitigation measures will be proposed.

Mammals

Although small terrestrial mammals are abundant, they are hardly observed, their prints are hardly seen, and species are determined with difficulty. However, they can be caught easily with traps at a sufficient number (e.g., standard Sherman live animal trap). Species specific to habitat types shall be determined by setting live animal traps at sufficient number, in order to represent habitat types.

Observation method is suitable for medium and large mammals: especially (i) direct observation and (ii) excretion analysis, prints, or identifying other signs.

Priority aim in site studies shall be to find out species diversity in locations to be determined according to habitat types along the line.

Monitoring studies for mammals were performed due to the breeding periods by walking 500 m - 2 km direct transects to be determined in different habitats. It is possible to find different habitat types even in such an area of 1 km^2. In such cases, sampling areas of 20 x 50 m (2500 m^2) were determined in areas where different features are found within a larger area, and inside of these areas was walked by minimum 30 minutes to record all mammal traces (nest, excretion, food remnants, physically seeing the animal, etc.).

According to previous reports including ecological studies and biodiversity assessments conducted for the Gaziantep region and available in the literature, there are no breeding areas determined for mammals. Previously prepared reports were revised by comparing the determined species with previous studies.

Birds

Observations were performed using point and line transects method. In addition to determination of bird species by observation during the field studies, the existence of habitats eligible for preferences of birds such as mud flat and rocky places, bird traces (nests-fledglings, feathers, claw prints, vomits and excretions, identifiable bone parts), and feeding signs were utilized in determining bird species.

Previously prepared reports including ecological studies and biodiversity assessments conducted for the Gaziantep region and available in the literature were revised by comparing the determined species with previous studies. If the presence of an endemic or rare species is detected, necessary precautions and information about the species are given in detail.

Reptiles

Reptiles are ectothermic like Amphibians. This means they require an external ‘boost’ to their body temperature to become fully active. Reptiles achieve this effect by positioning themselves in places of increased warmth. This can involve ‘basking’ on a heat gathering surface in the sunshine (in the open or amongst some vegetation) or under objects (refugia) that absorb heat. Much of this behavior occurs during the morning and late afternoon but potentially at any time of the day depending on season and weather patterns. This presents us with an opportunity to lead to their discovery.

The best survey timing varies with location, weather patterns and species, but generally reptiles are active from March to October. The best time to survey is a mixture of time of year, time of day and weather conditions. The reptiles may appear near hibernation sites if conditions are suitable in March and April. Late August to late September can be useful for seeing juvenile animals. July and early August are generally less useful months for surveying due to the days being hotter (even reptiles can get too hot and seek shade). Time of day: In late June, when the weather is generally warmer, reptiles may be found earlier in the morning and later in the afternoon. Weather conditions: peak air temperature is between 9-20°C. Bright sunshine is favorable on cooler days and hazy or intermittent sunshine is favorable when warmer. Rain or wind is unsuitable. Also, weather sequence is important: a hot spell after several days of cold weather or showery weather after a prolonged dry period are favorable.

Reptile habitat generally has open aspect areas, is well drained and south facing, is mostly sunny, sheltered and relatively undisturbed. Therefore, grasslands, open woodland, forests, sand dunes, disused corners/edges of allotments, road and rail verges/embankments garden walls should therefore be searched. However, under refugia such as logs, and large stones are also checked. Each sampling location was searched for about 30-90 minutes in duration. For each sampling point, identified species were recorded.

Previously prepared reports including ecological studies and biodiversity assessments conducted for the Gaziantep region and available in the literature were revised by comparing the determined species with previous studies. If the presence of an endemic or rare species is detected, necessary precautions and information about the species are given in detail.

Amphibians

Within the scope of the Project, determination of the Amphibian species within the project area and impact area contained three main techniques for surveying.

Visual search of water body and surrounding area

During the daytime, at any water body in project area, the water body edge and surrounding terrestrial habitat were walked and looked for Amphibians in the water – including tadpoles and newt efts. The amphibians can travel several hundred meters away from the water body; therefore, they were searched far away from the water body and under refugia such as logs and large stones. Amphibians' calling is species-specific. Therefore, species identification can be made from the Amphibian calling. If an Amphibian call is heard during the herpetological survey, the species were also identified from calling.

Netting in pond

Netting can be useful for detecting: Adult newts, frogs and toad tadpoles. A net was used with a rigid frame and a mesh of approximately 2 mm. The net was swept in a strong agitating motion through vegetation at the water body edge every two meters. The animals were avoided to be touched, and they were quickly released back into the water after they are photographed.

Night Survey

Some Amphibians are nocturnal and most active after dark, and advertising calling is more frequent at night. A powerful torch (lights) is an effective way to spot them in open water. A

powerful torch in the range of 500,000 to 1 million candlepower was used. The waterbody was searched by torchlight from the banks.

Previously prepared reports including ecological studies and biodiversity assessments conducted for the Gaziantep region and available in the literature were revised by comparing the determined species with previous studies. If the presence of an endemic or rare species is detected, necessary precautions and information about the species are given in detail.

4.2.4 Baseline Conditions

Baseline studies conducted in the Project Area, rely on previously conducted studies, literature information on habitats and species, as well as direct observations and Project-specific data collected on site by field experts. Field methodologies developed by each of these experts and study results are presented in the previous sections. Some of the general methodologies for field surveys can be listed as the following:

- In determining sampling/vantage points, locations that represent different habitat types and those that had been identified to be significant to species were considered.
- Some of the flora and fauna species were recorded through direct observations.

Habitat Classification

The European Nature Information System (EUNIS) puts forward a system for identification and classification of European habitat types. Classification area is quite large including the entire European mainland and seas including islands that are close to the mainland (except for Cyprus, Iceland and Greenland), EU states' archipelagos (Canary Islands, Madeira Islands and Azore Islands) and the European mainland to the west of Ural Mountains that cover Türkiye and the Caucasus. The main objective of the EUNIS habitat classification is to create a European reference set of habitat types including a description of all types and hierarchical classification.

Habitats within the Biodiversity Study Area were evaluated in accordance with the EUNIS classification, which is useful in terms of not only relating the national classifications to international level, but in terms of corresponding EUNIS habitats to habitats listed in Annex I of Habitats Directive for "designation of special areas of conservation" and the European Red List of Habitats (Janssen, 2016) for the critical habitat assessment.

There are no natural habitat types in the Project Area. There are modified and artificial habitats that can be listed as; J4.2 - Road networks, J5.9 - Waste deposits, and G5.2 – Coniferous plantations.

Aquatic Ecosystem

As stated before, the treated effluent from the wastewater treatment plant is discharged into a seasonal creek that appears on official 1:25,000 scale topographic maps but is unnamed. Approximately 7 kilometers downstream, this creek joins the Sacır Stream; thus, for consistency, the discharge is referred to as entering the Sacır Stream throughout the report. During field observations, no signs of aquatic life were detected in the seasonal creek near the discharge point. The water quality in this area is already significantly degraded due to upstream agricultural runoff and livestock-related activities. As such, the seasonal creek into which the effluent is discharged does not support aquatic ecosystems.

Terrestrial Flora

To identify the flora composition of the Project Area, the first sampling points representing different habitat types in the area were determined. For assessment of Project-related impacts, field surveys were conducted. At each of the sampling locations, habitats were studied in detail, and flora species were identified based on related findings and observations.

A total of 14 plant taxa were identified during flora surveys conducted at the Project Area, which belongs to 7 plant families. Plant families in each group are provided in phylogenetic order. Species are listed with their Common names, Turkish names, endemism level, Red List categories for endemic and rare species, Bern and CITES statuses in Table 30.

According to the surveys carried out in the area no endemic and rare species were determined. Before construction the planted tree species, 152 *Pinus brutia* (Turkish pine) tree species and 53 *Olea europaea* (Commen Olive) should be re-located. The Turkish pine trees identified as suitable for relocation will be determined and transplanted by the Municipality. Those that cannot be relocated will be removed and handed over to the Municipality. Olive trees, on the other hand, will be transplanted to suitable locations within the project area.

Terrestrial Fauna

The terrestrial fauna list includes species according to their fauna groups. According to the findings 3 reptiles, 8 birds, and 3 mammal species were identified. Only the tortoise is listed as Vulnerable (VU). The species should be re-located before and during construction. Please refer to the Table 31.

Table 30. Flora Species Identified in the Project Area

Family	Species	Common Name	Turkish Name	Endemism	IUCN	CITES	BERN
Cistaceae	*Cistus parviflorus*	Rock Rose	Domuz Karağanı	-	NE	-	-
Cistaceae	*Cistus salviifolius*	Sage-Leaved Rock-Rose	Kartli	-	NE	-	-
Fabaceae	*Medicago radiata*	Ray-Podded Medick	Hilâl Yonca	-	NE	-	-
Fabaceae	*Trifolium spumosum*	Mediterranean Clover	Kese Yonca	-	NE	-	-
Fabaceae	*Trifolium stellatum*	Star Clover	Yıldız Yonca	-	NE	-	-
Fabaceae	*Vicia cracca*	Tufted Vetch	Kuş Fiği	-	NE	-	-
Fabaceae	*Vicia crocea*	-	Safran Fiği	-	NE	-	-
Oleaceae	*Olea europaea*	Common Olive	Zeytin	-	DD	-	-
Pinaceae	*Pinus brutia*	Turkish pine	Kızıl Çam	-	LC	-	-
Polygonaceae	*Polygonum cognatum*	Madimak	Madımak	-	NE	-	-
Rosaceae	*Crataegus monogyna*	Hawthorn	Yemişen	-	LC	-	-
Rosaceae	*Prunus spinosa*	Blackthorn	Çakal Eriği	-	LC	-	-
Rubiaceae	*Galium haussknechtii*	-	Çit İplikçiği	-	NE	-	-
Rubiaceae	*Galium spurium*	Stickwilly	Arsız İplikçik	-	NE	-	-

Table 31. Fauna Species Identified in the Project Area

Group	Family	Scientific Name	Turkish Name	Common Name	Endemism	IUCN	CITES	BERN	MAKK	Statue	RDB
Reptiles	Testudinidae	*Testudo graeca*	Tosbağa	Mediterranean Spur-Thighed Tortoise	-	VU	II	II			
Reptiles	Viperidae	*Macrovipera lebetina*	Koca Engerek	Levantine Viper, Blunt-Nosed Viper	-	NE	-	II			
Reptiles	Agamidae	*Stellagama stellio*	Dikenli Keler	Roughtail Rock Agama	-	LC	-	II			
Birds	Strigidae	*Athene noctua*	Kukumav	Little Owl	-	LC	II	II	-	Local	A.2
Birds	Passeridae	*Passer domesticus*	Serçe	House Sparrow	-	LC	-	-	II	Local	A.5
Birds	Accipitridae (Kartalgiller)	*Buteo rufinus*	Kızıl Şahin	Long-Legged Buzzard	-	LC	II	III	-	Local	A.3
Birds	Falconidae	*Falco tinnunculus*	Kerkenez	Common Kestrel	-	LC	II	II	-	Local	A.2
Birds	Accipitridae	*Milvus migrans*	Kara Çaylak	Black Kite	-	LC	II	III	-	Transit	A.3
Birds	Paridae (Baştankaragiller)	*Parus major*	Büyük Baştankara	Great Tit	-	LC	-	II	-	Local	A.3.1
Birds	Pycnonotidae	*Pycnonotus xanthopygos*	Arapbülbülü	White-Spectacled Bulbul	-	LC	-	III	-	Local	A.2
Birds	Sturnidae	*Sturnus vulgaris*	Sığırcık	Common Starling	-	LC	-	-	I	Winter Visitor	A.5
Mammals	Leporidae (Tavşan, tavşangiller)	*Lepus europaeus*	Yabani Tavşan	European Hare	-	LC	-	III	II	Local	
Mammals	Canidae (Köpekgiller)	*Vulpes vulpes*	Kızıl Tilki	Red Fox	-	LC	-	-	II	Local	
Mammals	Erinaceidae (Kirpigiller)	*Erinaceus concolor*	Kirpi	Southern White-Breasted Hedgehog	-	LC	-	-	-	Local	

4.2.5 Critical Habitat Assessment

Critical Habitat Concept

As stated by AIB Standard 4, habitats constitute “a terrestrial, freshwater or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the non-living environment”. To meet AIB Standard 4, clients would have different obligations for different kinds of habitats. This enables to provide a better understanding of specific species and habitat requirements and establish meaningful management units to define a mitigation strategy. These habitat types are modified, natural and critical, which can be a subset of natural or modified habitats. These habitat types refer to the biodiversity value of a given area, as determined by species, ecosystems and ecological processes, and are required to be identified within a project’s area of influence (AoI) to define habitat-specific requirements accordingly.

Modified habitats, in the most general sense, are those that have been subject to some form of alteration, often resulting in agricultural land. Despite the fact that some modified habitats might lose all of their natural characteristics, it is still required to minimize further impacts. Natural habitats are composed of plant and/or animal species that are mostly of native origin, where human activity has not been significant enough to modify ecological functions and species composition within. In areas of natural habitat mitigation measures are required to be designed to achieve no net loss of biodiversity.

Critical habitats are those that are of high biodiversity value. Both natural and modified habitats may contain high biodiversity values qualifying as critical habitat. While habitat types are defined by the degree of human-induced modification, this is not necessarily an indicator of the biodiversity value of a habitat as per AIB Standard 4.

Critical habitat criteria are as follows:

Criterion 1: Critically Endangered (CR) and/or Endangered (EN) species
Criterion 2: Endemic or restricted-range species
Criterion 3: Migratory or congregatory species
Criterion 4: Highly threatened and/or unique ecosystems
Criterion 5: Key evolutionary processes

AIB Standard 4 requires the promoter not to implement any project activities in areas of critical habitat unless all of the following are demonstrated:

- No other viable alternatives for the project exist either in terms of location or design, and there is rigorous justification of overriding public interest based on human health, public safety considerations, and/or beneficial consequences of primary importance for the environment
- The project does not lead to measurable adverse impacts that will result in any detrimental effect on the ecological and conservation status of the critical habitat, and impacts are avoided and minimized to the extent possible through changes in footprint or design
- The project does not lead to a net reduction in the population of any vulnerable,

endangered, or critically endangered species over a reasonable period of time

- Stakeholders are consulted in accordance with Standards 2 and 7, as defined in paragraph 11
- Positive conservation outcomes (Net Positive Impact) and continued ecological functionality are achieved through appropriate compensation measures for residual impacts that would otherwise occur despite impact avoidance, minimization, and restoration measures
- A robust, appropriately designed, and long-term biodiversity monitoring and evaluation program aimed at assessing the status of the critical habitat is integrated into the promoter's adaptive management program.

It should also be noted that Critical Habitat Assessment is independent of a project's potential impacts on biodiversity value within its AoI or an extended area. The outcome of the Critical Habitat Assessment does not indicate a particular impact associated with project activities or requirement for a mitigation measure. Rather it provides a thorough analysis of the existing biodiversity value in a given area and informs the applicability of AIB Standard 4 requirements. For project-related impacts a mitigation hierarchy is to be applied, and measures are required to be defined for different phases of a project.

Critical Habitat Methodology

In order to identify the statuses of species that have been identified based on literature data and assessed through expert judgement, besides the IUCN Red List of Threatened Species utilized to determine endangered and critically endangered species, other criteria were also used in critical habitat assessment, wherever applicable. In determining "highly threatened and unique ecosystems", IUCN Red List categories for ecosystems were used as the main reference.

Since international, even European biodiversity assessments do not always cover Turkish habitats and species, experts' judgment was often consulted to interpret data. Since international, even European biodiversity assessment do not always cover Turkish habitats and species, experts' judgment was often consulted to draw conclusions on the current statuses of biodiversity components. Local expert judgment was also referred to due to the fact that there are no officially established or widely accepted national evaluations on threat and conservation statuses of habitats and species in Türkiye.

Criterion 1: Critical (CR) and/or Endangered (EN) Species

Species threatened with global extinction and listed as Critically Endangered (CR) and Endangered (EN) on the IUCN Red List are considered as part of Criterion 1. Critically Endangered species face an extremely high risk of extinction, while Endangered species face a very high risk of extinction in the wild.

Quantitative data on potential critical habitat triggering species' populations were assessed, which not only consider global conservation priorities but also nationally or regionally significant concentrations of species. Accordingly,

- (a) areas that support globally-important concentrations of an IUCN Red-listed EN or CR species (≥0.5% of the global population AND (≥5% reproductive units of a CR or

EN species)

- (b) areas that support globally important concentrations of an IUCN Red-listed Vulnerable species, the loss of which would result in the change of the IUCN Red List status to EN and meet these thresholds

- (c) as appropriate, areas containing important concentrations of a nationally or regionally listed EN or CR species, trigger designation of critical habitat.

In determining CR and EN species at the Biodiversity Study Area, the IUCN Red List of Threatened Species, European Red Lists, and the only IUCN correspondence in Türkiye; the Red Data Book of Turkish Plants have been utilized as the main references. Regional statuses of species, supported by expert judgment on species' current population trends in Türkiye, have also been assessed.

Criterion 2: Endemic and/or Restricted-Range Species

The term endemic as restricted-range, which refers to a limited extent of occurrence (EOO) as such:

- For terrestrial vertebrates and plants, a restricted-range species is defined as those species which have an EOO less than 50,000 km^2.

- For marine systems, restricted-range species are provisionally considered those with an EOO of less than 100,000 km^2.

- For coastal, riverine and other aquatic species in habitats that do not exceed 200 km width at any point, restricted-range is defined as having a global range less than or equal to 500 km linear geographic span.

An area can be designated as critical habitat, if it holds ≥10 percent of the global population size and ≥10 reproductive units of an endemic and/or restricted-range species. Terrestrial species identified at the Biodiversity Study Area were assessed with respect to their EOOs and population sizes, based on the IUCN Red List, IUCN European assessments, and expert judgment.

Criterion 3: Migratory or Congregatory Species

Migratory species are defined as any species of which a significant proportion of its members cyclically and predictably move from one geographical area to another (including within the same ecosystem). Congregatory species are those whose individuals gather in large groups on a cycle or otherwise regular and/or predictable basis. The thresholds are as following:

- (a) areas known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle.

- (b) areas that predictably support ≥10 percent of the global population of a species during periods of environmental stress.

The significant groups of migratory and congregatory species that are potential critical habitat triggers in the area are birds. The timing of site surveys was not suitable for identification of

migratory species and defining their habitat use and preferences. Assessments for Criterion 3 can be made following detailed pre-construction migration surveys.

Criterion 4: Highly Threatened or Unique Ecosystems

To identify highly threatened or unique ecosystems, EIB requires the Client to use the IUCN Red List of Ecosystems (RLE) where formal assessments have been performed, and if not to use assessments using systematic methods at the national/regional level, carried out by government bodies, recognized institutions and/or other relevant qualified organizations. The thresholds are:

- (a) areas representing ≥5 percent of the global extent of an ecosystem type meeting the criteria for IUCN status of CR or EN.
- (b) other areas, not yet assessed by IUCN, but determined to be of high priority for conservation by regional or national systematic conservation planning.

As the Project is not located within a KBA, it will not trigger Criterion 4.

Criterion 5: Key Evolutionary Processes

Evolutionary processes are defined as structural attributes of a region, such as its topography, geology, soil, temperature, and vegetation and combinations of these variables can influence evolutionary processes that give rise to regional configurations of species and ecological properties. The significance of structural attributes in a landscape that may influence evolutionary processes are required to be determined on a case-by-case basis, and determination of habitat that triggers this criterion will rely on scientific knowledge.

Examples to spatial features associated with evolutionary processes can be listed as; landscapes with high spatial heterogeneity, ecotones, edaphic interfaces, connectivity between habitats, and sites of demonstrated importance to climate change adaptation either for species or ecosystems.

The Project Area is not associated with key evolutionary processes. Neither hosts flora and/or fauna species that have distinct evolutionary histories with populations that show proven phylogenetic divergence from other species' other known populations.

Critical Habitat Triggering Biodiversity Features

Criterion 1: Critical (CR) and/or Endangered (EN) Species and Criterion 2: Endemic and/or Restricted-Range Species

CR, EN, VU and endemic species that were identified during the site surveys and are also presumed present based on literature data were assessed against the IUCN Red List, European Red Lists, and The Red Data Book of Turkish Plants, in terms of their global and regional threat statuses. To reach an understanding of the current statuses of species in the area, expert judgement was also consulted. Endangered and endemic species that are potential critical habitat triggers are presented below.

Table 32. Potential Critical Habitat Triggering Taxa as per Criterion 1 and 2

Biodiversity Feature	IUCN Red List Category	Endemic / Restricted-Range
Reptiles		
Testudo graeca	VU	-
IUCN Category: **VU: Vulnerable**		

1 species were evaluated as potential critical habitat triggering species.

The vulnerable species *Testudo graeca* uses, especially in the surrounding area. Which means the Project Area is the most suitable area for this species. The habitat does not carry critical habitat features, but actions have to be taken, like carrying the species out of the construction area.

According to the evaluations made for the Criterion evaluations of the triggering species, none of the species were evaluated as triggering species. Due to active use of the area and no evidence of potential triggering species being observed in the area, triggering species were not evaluated.

Criteria 3: Migratory or Congregatory Species

The Project area does meet the critical habitat criteria according the “Criterion 3: Migratory or congregatory species based on direct observations.

Criterion 4: Highly Threatened or Unique Ecosystems

At the Project area, only modified habitats were identified. Therefore, it will not trigger Criterion 4.

4.3 Socio-Economic Environment

4.3.1 Population and Economy

According to the 2024 Address-Based Population Registration System (ADNKS) data, Şahinbey District of Gaziantep Province, the primary residential area within the project’s area of influence, ranks as Türkiye’s third most populous district, following Esenyurt (Istanbul) and Çankaya (Ankara), with a population of 946,812. The gender distribution within the district mirrors the demographic patterns observed in the neighborhoods included in the project impact area, reflecting a balanced composition. As of 2024, women constitute 49.93% of the total district population.

Gaziantep Province has experienced a significant influx of migrants since the onset of the Syrian civil war in 2011. As a result, the population of Şahinbey District has increased by approximately 200,000 people since April 2011, when migration flows began. Given that ADNKS data encompasses all residents living within the district, this total includes Syrians under Temporary Protection (SuTP).

In this context, it is evident that analyzing socio-economic data at the district and neighborhood levels, rather than at the provincial scale, ensures a more accurate and representative assessment. Considering Şahinbey’s distinct demographic and economic mobility within the

broader context of Gaziantep, this report adopts the district as the primary unit of analysis to provide a more focused and insightful evaluation.

Şahinbey District, covering an area of 960 square kilometers and comprising 181 neighborhoods, surpasses many provinces in Türkiye both in terms of population and administrative subdivisions. Accordingly, the coverage area of the WWTP, which is the final output of the project, is limited to specific neighborhoods: Abdülhamid Han, Akkent, Bağlarbaşı, Beştepe, Küçükkızılhisar, Mavikent, and Serince. Additionally, Körkün neighborhood, located in the neighboring district of Oğuzeli, also falls within the WWTP's area of influence and service. Formerly designated as a town, Körkün was reclassified as a neighborhood in 2012 under Law No. 6360. Situated approximately 5 kilometers from Gaziantep Airport, Körkün has witnessed an increase in low-rise residential developments such as villas and is anticipated to become one of the city's emerging settlement zones.

Situated at the heart of Gaziantep, Şahinbey District hosts a number of historical and touristic landmarks, making it a focal point of year-round tourism activity. As a result, the district experiences periodic surges in population due to an influx of short-term visitors. These fluctuations contribute to a significant, yet difficult to quantify, increase in the use of transportation, healthcare, and infrastructure services, not solely by residents but also by temporary visitors. This factor has been taken into consideration within the scope of the project.

In terms of its economic structure, although Şahinbey is predominantly driven by industrial and commercial activities, agriculture continues to play a notable role. In line with broader provincial trends, both dry and irrigated farming practices are present in the district. The rural areas located on the periphery of Şahinbey cultivate a variety of crops including pistachios (a regional hallmark), wheat, olives, barley, grapes, chickpeas, and other fruits and vegetables. Additionally, animal husbandry, particularly livestock farming, remains a key livelihood activity. The project's area of influence is particularly relevant to small ruminant production, which holds economic significance in these rural neighborhoods[11].

Given the district's central location and proximity to urban centers, small-scale industrial production has developed extensively and represents a core component of the local economy. Alongside enterprises engaged in the production of food, textiles, and cleaning products, gastro-tourism businesses, benefiting from the district's cultural and culinary heritage, also play a growing role in the local economic landscape. The presence of historically and geographically significant landmarks further reinforces tourism as a major economic pillar. Sites such as the Burç Forests, Gaziantep Castle, historic inns and mansions, and numerous museums contribute to a steady influx of visitors and generate substantial tourism revenues for the district[12].

4.3.2 Demography of Project Affected Area

The Project site locates in boundary of Şahinbey and Oğuzeli Districts of Gaziantep while the end product will serve mainly to some neighborhoods of Şahinbey. These neighborhoods are

[11] The information presented in this section has been compiled by integrating data obtained through a phone inquiry with the Provincial Directorate of Agriculture, along with the annual briefing notes available on their official website. https://gaziantep.tarimorman.gov.tr/Belgeler/2023/Koordinasyon/Brifing_2022%20yılı%2029.03.2023.pdf

[12] Şahinbey Municipality's official website used for gathering general information about the district. Please note that the data gathered from here combined with the information of relevant institutions. https://www.sahinbey.bel.tr/idet/357/1056/turizm

Körkün, Abdülhamid Han, Akkent, Bağlarbaşı, Beştepe, Küçükkızılhisar, Mavikent, and Serince and the population information of these is given in the table below.

Table 33. Population of the Neighborhoods

Neighborhood	Population
Körkün	840
Abdülhamid Han	10,407
Akkent	34,013
Bağlarbaşı	831
Beştepe	16,319
Küçükkızılhisar	2,229
Mavikent	25,619
Serince	1,368
Total	91,626

The ratio of women to men varies by neighborhood, changes from %51.8 to %49.2 in men and vice versa for women, but on average it is seen that the population is approximately half and half. Total resident population of the beneficiary neighborhoods is 91,626 according to Address-Based Population Registration System (ADNKS in Turkish) 2024 data. In addition to this population Güneyşehir neighborhood, which hosts the great mass housing projects of the city, is planned to have 14,000 houses. Considering that the average household size in Gaziantep is 3.97, a population increase of approximately 55,000 people can be expected if all of the houses to be built in the mentioned amount are inhabited. Therefore, projected population of the affected area of Kızılhisar WWTP Project is almost 150,000 people. This projected number will increase considering that the province is densely populated by refugees who came to Türkiye after the civil war in Syria that started in 2011 and according to studies, the average household size of Syrian families is 5.52.[13]

According to the data gathered from Ministry of Interior Presidency of Migration Management (dated 03.04.2025) Gaziantep hosts 391,715 Syrians under Temporary Protection (SuTP) and this amount composes the 15.15% of the total population (2,585,078 including the SuTP)[14]. How many SuTP lives in the project affected neighborhoods is unknown so the province level data will be used as a calculation base. In addition to Syrians, it is known that Gaziantep also hosts International Protection Application Holders (mainly Iraqis) too but unfortunately there is no official data about province-based population of these population.

In the light of this information, it can be said that calculated number of approximately 150,000 affected people could increase up to 160,000 considering the increase of household population of %15.15 of the Güneyşehir neighborhood houses with possible SuTP residents.

4.3.3 Education

This chapter prepared according to the official website data of Ministry of National Education Provincial and District Directorates as well as the statistics provided annually by Turkish Statistical Institute (TURKSTAT). According to 2023 data from TURKSTAT, the general educational attainment levels in Gaziantep Province are summarized below. As shown in the

[13] Not belong to this year but most recent academic work representing Gaziantep can be found in: https://dergipark.org.tr/en/download/article-file/1439333

[14] Most recent data gathered from the official responsible institution: https://www.goc.gov.tr/gecici-koruma5638

table, the majority of the population are graduates of primary, lower secondary, and upper secondary schools.

Table 34. Education Level of Gaziantep

Education Level	Number of People	Percentage of Total
Illiterate	50,349	2.62%
Literate but No Formal Education	248,032	12.89%
Primary School	428,158	22.25%
Secondary School or Equivalent Vocational School	419,859	21.82%
Elementary Education	157,360	8.18%
High School or Equivalent Vocational School	357,259	18.56%
Postgraduate and above	29,644	1.54%
Unknown	13,316	0.69%

While the nationwide illiteracy rate stood at 2.4% in both 2022 and 2023, Gaziantep's rate was slightly higher at 2.62%, indicating a continuing need for progress in the field of education across the province.

Within the boundaries of Şahinbey District, there are 399 schools and educational institutions operating under the Ministry of National Education. These institutions employ a total of 14,373 teachers who serve 310,974 students across 8,156 classrooms. Given that the national average number of students per classroom (regardless of education level) is 25.18, Şahinbey's corresponding figure of 38.12 is considerably higher. This discrepancy highlights the district’s dense population and high number of school-age children, underscoring the rapidly developing demographic structure of the area.

Out of the four universities in Gaziantep Province, two (Hasan Kalyoncu University and Gaziantep Islamic Science and Technology University) are located within Şahinbey District.

In addition, the Serince neighborhood, which lies within the project’s area of influence, has been selected as the location for the new campus of SANKO University, one of Gaziantep’s largest higher education institutions. This development is expected to have a significant transformative impact on the local demographic structure.

All neighborhoods within the project’s area of influence have at least one primary and one lower secondary school. Except for Serince, all other neighborhoods also host at least one upper secondary school. Given the ease of inter-neighborhood transportation, students are able to attend preferred types of high schools such as vocational and technical high schools, anatolian high schools, and science high schools, even if located outside their immediate neighborhood. Taken as a whole, the project-affected neighborhoods appear to be adequately served in terms of educational infrastructure, with no major deficiencies observed when compared to national standards.

4.3.4 Healthcare

The largest hospital in Gaziantep Province, Gaziantep City Hospital, is located within the boundaries of Şahinbey District, approximately 12 kilometers from the project area. Additionally, Gaziantep University Hospital, which serves as an education and research hospital, is also situated within the district. Other notable healthcare facilities in Şahinbey

include Abdulkadir Yüksel State Hospital and Şahinbey Oral and Dental Health Center. The Provincial Public Health Laboratory's central building is also located within the district.

There are 39 Family Health Centers throughout the district, serving the residents of their respective neighborhoods. Specifically, in the project's area of influence, the Körkün neighborhood is served by one Family Health Center with two family physicians, Abdülhamid Han neighborhood by one center with three family physicians, Akkent neighborhood by three centers with 15 family physicians, Mavikent neighborhood by two centers with seven family physicians, and Beştepe neighborhood by one center with five family physicians[15]. In total, 32 doctors provide services across eight Family Health Centers in the district.

Residents of the neighborhoods of Bağlarbaşı, Küçükkızılhisar, and Serince access healthcare services from Family Health Centers in nearby areas. Şahinbey District is home to 11 private hospitals[16], and there is a significant number of private clinics in the area. Given the available healthcare infrastructure, it can be concluded that the district provides sufficient access to healthcare services relative to its population, positioning the project area as one of the focal points for healthcare in the province.

The nearest healthcare facilities to the project area are Oğuzeli District Hospital and Şahinbey Family Health Center, located approximately 6 km and 8 km from the site, respectively. These facilities serve the surrounding population and represent the closest institutional health infrastructure in the project vicinity. A map showing the related locations of the project site and the nearest healthcare centers is provided below.

[15] The data presented is based on the information provided by the Gaziantep Provincial Directorate of Health website. https://gaziantepism.saglik.gov.tr/TR-95835/gaziantep-aile-sagligi-merkezleri-iletisim-bilgileri.html
[16] https://shgmozelhasdb.saglik.gov.tr/TR-53567/ozel-hastane-listesi-faal.html

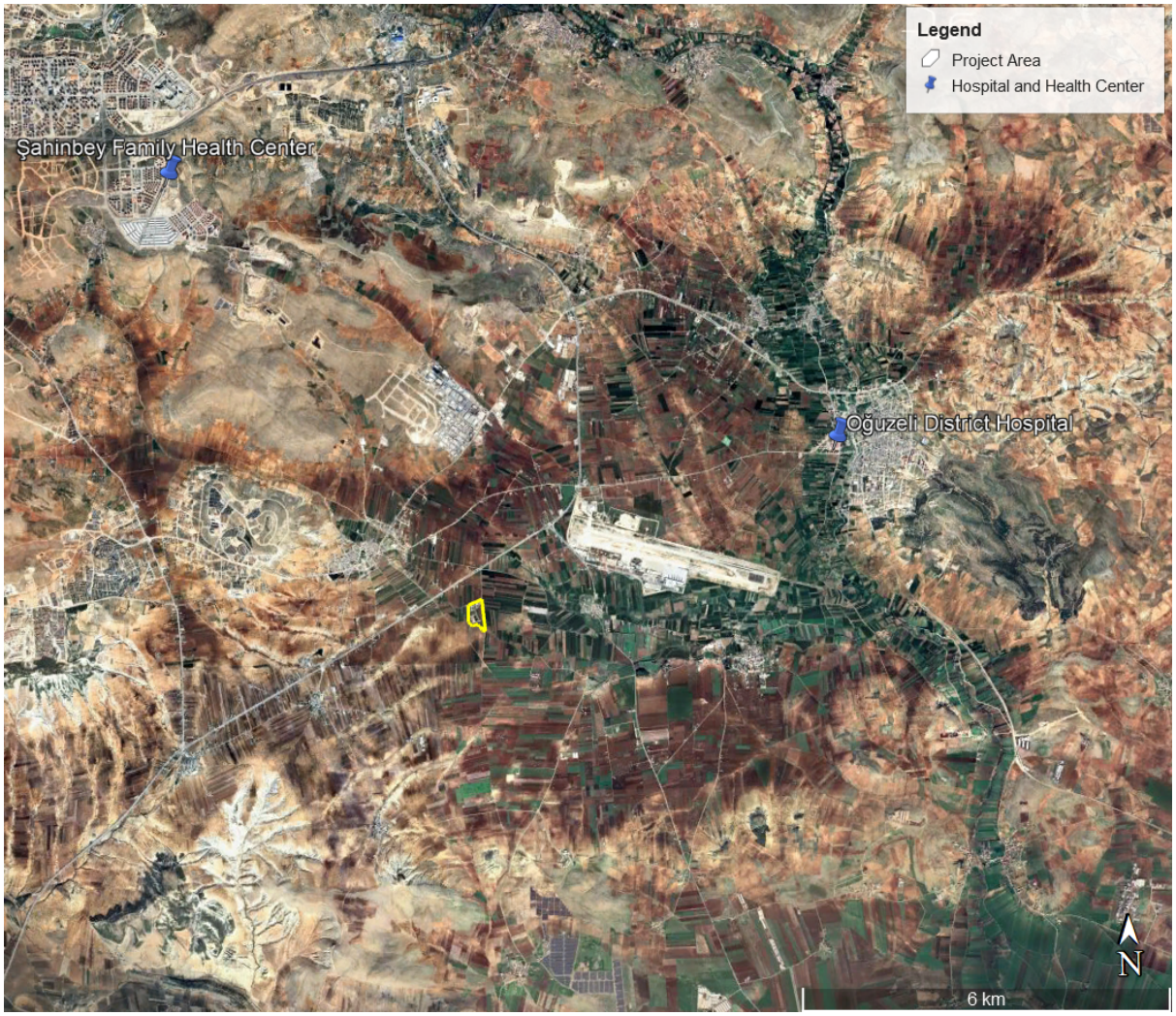


Figure 35. Nearest Health Centers and the Project Area

4.3.5 Cultural Heritage

The Project site is located in a semi-rural area of Gaziantep province, at the boundary between Şahinbey and Oğuzeli districts. A review of national legislation, site-specific data, and regional environmental assessments confirms that the project area does not intersect with any nationally or internationally designated cultural heritage or natural protection zones.

According to the EIA Regulation (Annex-V), as well as data from the Gaziantep Provincial Environmental Status Report (2022), there are no national parks, nature parks, nature monuments, nature conservation areas, or special environmental protection zones within or near the project area.

There are no registered cultural heritage sites, archaeological sites, or urban conservation areas in the immediate vicinity of the project footprint. Most of Gaziantep's officially registered cultural heritage assets, including the Gaziantep Castle and surrounding conservation zones, are located within the city center and well outside the project's zone of influence.

While 10 monumental trees have been registered in the province under Law No. 2863 on the Conservation of Cultural and Natural Assets, none of them are located near the project site.

In addition, although eight potential natural site areas have been identified within the province, none are situated within or near the project area.

5 ASSESSMENT OF PROJECT ALTERNATIVES

5.1 No-Project Alternative

The No-Project Alternative considers the scenario in which the proposed 2nd Stage of the Kızılhisar WWTP is not implemented. This scenario is not limited to the absence of construction activities but also includes the short- and long-term environmental, public health, and service-related consequences of not addressing the increasing wastewater treatment demand in the region.

As detailed in earlier sections, the existing Kızılhisar WWTP (1st Stage), with a design capacity of 150,000 P.E., is currently under pressure due to significant population growth in the south and southwest regions of Gaziantep, largely driven by urban expansion and the substantial Syrian refugee population. Without the proposed expansion, the WWTP will be unable to meet the growing inflow, resulting in the risk of untreated or insufficiently treated wastewater being discharged into the receiving environment.

This would likely lead to:

- Increased pollution of surface and groundwater resources, including potential degradation of downstream ecosystems.
- Non-compliance with Türkiye's Urban Wastewater Treatment Regulation and EU-aligned environmental standards.
- Public health risks due to potential exposure to pathogens, especially in areas where treated effluent is reused for agricultural irrigation.
- Operational inefficiencies and overloading of the existing WWTP infrastructure, reducing its service life and increasing maintenance needs.

From a short-term environmental perspective, the No-Project scenario would avoid temporary construction-related impacts such as dust, noise, and increased vehicle movement. Additionally, there would be no increase in greenhouse gas emissions or energy consumption typically associated with the construction and operation of an expanded treatment facility.

However, these minor short-term environmental gains are outweighed by the long-term negative consequences of failing to expand wastewater treatment capacity. In the absence of the project, GASKİ would not be able to meet growing service demands, posing serious risks to environmental sustainability and public health resilience, especially in the aftermath of the February 2023 earthquakes, which already placed considerable strain on Gaziantep's infrastructure.

Considering these factors, the No-Project Alternative is not deemed a viable or sustainable option. The proposed 2nd Stage of Kızılhisar WWTP is essential for ensuring continuity of wastewater services, protecting environmental and public health, and increasing the city's resilience against future demographic and environmental challenges.

5.2 Site Alternatives

The construction of the existing Kızılhisar WWTP 1st Stage was completed in 2008, and the facility has been fully operational since then. During the initial planning phase of the WWTP, both the 1st and 2nd Stages were taken into account in the site selection process. The selected location was identified as the most suitable site in terms of environmental, technical, and operational criteria, and the layout was planned to accommodate future capacity expansions.

In line with this foresight, land requirements for the future 2nd Stage were addressed during the original land acquisition process. Designated areas within the plant boundaries were allocated for future treatment units and equipment foreseen under the 2nd Stage. As a result, no additional land acquisition is required for the implementation of the proposed expansion project.

The expropriation process for the project site was fully completed in 2007, and the land has since been officially registered under the name of GASKİ. The title deeds clearly indicate that the parcels were acquired through expropriation.

Given that the project involves a capacity increase rather than the establishment of a new facility, and the 2nd Stage (proposed project) will be constructed within the boundaries of the existing WWTP site, consideration of alternative sites is not applicable. The proposed location is already integrated into existing wastewater infrastructure and is fully aligned with long-term development and operational plans prepared by GASKİ and İLBANK.

In conclusion, no alternative site is considered for the proposed project, as the current site was pre-identified and reserved during the planning phase for the 2nd Stage development.

5.3 Technology Alternatives

The technological configuration of the Kızılhisar WWTP was originally planned to include both Stage 1 and Stage 2 expansions. The selected treatment process “Extended Aeration Activated Sludge” has been successfully implemented in the 1st Stage and remains fully compliant with Türkiye’s Urban Wastewater Treatment Regulation and the EU Urban Wastewater Treatment Directive (91/271/EEC). Therefore, no change is considered in the core treatment technology for Stage 2.

In this context, this section focuses on the evaluation of sludge management alternatives, which are critical for ensuring the environmental sustainability and operational efficiency of the expanded WWTP.

5.3.1 Overview of Sludge Disposal Alternatives

Sludge management is a critical component of the wastewater treatment process, both in terms of operational sustainability and environmental compliance. Several sludge disposal options are available, each with its own technical and regulatory considerations.

5.3.1.1 Landfilling

Disposal of dewatered sludge in sanitary landfills is a legacy method still practiced in some regions. However, this approach is increasingly restricted. According to the Regulation on Landfilling of Waste, Temporary Article 4 allowed the landfilling of non-hazardous sludge

without meeting the Dissolved Organic Carbon (DOC) limit until 1 January 2025, provided the sludge met other parameters such as minimum 50% dry matter content and odor control. After this date, stricter acceptance criteria, particularly for Total Organic Carbon (TOC) levels, will apply, potentially disqualifying many sludge types from landfill disposal. This introduces future regulatory uncertainty.

From an environmental perspective, landfilling poses risks such as leachate generation, methane emissions, and long-term liability. Technically, the high moisture content and organic load of sludge make it a suboptimal landfill material. Economically, the increasing costs of landfill space and potential taxes on organic waste disposal further reduce its viability.

5.3.1.2 Agricultural Reuse

Stabilized sludge can be used as a soil conditioner or fertilizer, owing to its nutrient content (N, P, and organic matter). However, this option requires compliance with strict thresholds for heavy metals, pathogens, and micropollutants. Public acceptance is also a barrier, especially in peri-urban areas like Gaziantep where concerns about food safety and odor persist.

In Türkiye, although agricultural reuse is technically permitted under specific conditions, the lack of a robust monitoring and certification system limits large-scale implementation. Furthermore, seasonal and climatic constraints restrict year-round application. This method is thus limited in scope and feasibility.

5.3.1.3 Composting

Composting involves the aerobic stabilization of sludge, resulting in a humus-like product that can be used in landscaping or agriculture. This process reduces sludge volume and recovers organic material. However, composting requires substantial land area, operational time, and odor management systems.

In addition, market demand for composted sludge remains low in Türkiye. Quality assurance and public perception issues persist, making this option less favorable for large WWTPs such as Kızılhisar.

5.3.1.4 Co-Incineration in Cement Kilns

The currently implemented method at the Kızılhisar WWTP is the transport of dewatered sludge to a licensed cement factory located approximately 50 km away from the project site, where it is co-incinerated as an alternative fuel or for disposal. The contract with the cement factory is given Appendix-13.

The sludge received by ÇİMKO Cement Factory is analyzed by the facility itself to determine its suitability either for use as alternative fuel or for direct disposal. ÇİMKO holds valid environmental permits for both co-processing and waste disposal, as indicated in the permit documents included at the end of Appendix-13. GASKİ does not conduct any specific sludge composition analysis for ÇİMKO, as the evaluation and acceptance process is entirely handled by the cement facility.

According to information provided by GASKİ, no problems have been encountered so far in the implementation of the current sludge management method. The transportation of dewatered sludge via licensed vehicles to the cement factory and its use as alternative fuel

has proven to be a reliable and efficient practice and is therefore considered fully applicable for the 2nd Stage of the WWTP as well.

This option offers several advantages:

- High-temperature combustion (~1450°C) ensures complete destruction of pathogens and organic contaminants.
- No secondary waste is produced; the mineral content is integrated into the clinker.
- Energy recovery supports circular economy goals and reduces fossil fuel use.
- Fully compliant with the EU Waste Framework Directive (2008/98/EC).
- Logistically feasible due to existing agreements with local cement producers.

According to Fytili & Zabaniotou (2008)[17], sludge co-incineration in cement kilns is among the most efficient and sustainable disposal methods, especially when other options are constrained by regulations or public resistance.

5.3.1.5 Selection of Sludge Disposal Method

Considering the environmental, regulatory, and operational context, co-incineration of sludge in cement kilns remains the most technically and economically viable option for the Kızılhisar WWTP. Other alternatives are either restricted by regulation (landfilling), limited by feasibility (agricultural use, composting), or face infrastructural and public acceptance challenges. The selected option aligns with Türkiye's waste valorization goals and offers a sustainable, long-term sludge management solution.

[17] Fytili, D., & Zabaniotou, A. (2008). Utilization of sewage sludge in EU application of old and new methods—A review. *Renewable and Sustainable Energy Reviews*, 12(1), 116–140.

Table 35. Overview of Sludge Disposal Alternatives

Option	Technical Feasibility	Environmental Impact	Regulatory Compliance	Economic Sustainability	Local Applicability	Remarks
Landfilling	Moderate	High methane emissions, leachate risk	Increasingly restricted post-2025	Low	Low	Subject to stricter limits post-Jan 2025; long-term liability
Agricultural Reuse	Moderate	Nutrient recycling potential, pathogen risk	Limited; requires monitoring and public acceptance	Moderate	Low to Moderate	Seasonally limited; low adoption in practice
Composting	Moderate	Organic recovery, high odor, land intensive	Compliant, but market-dependent	Moderate to High	Low	Low market demand; needs large area and odor control
Cement Kiln Co-Incineration	High	Minimal residuals, high energy recovery	Fully compliant; proven EU-aligned method	High	High	Already in use; most suitable option under current condition

6 ENVIRONMENTAL AND SOCIAL IMPACTS

6.1 Scoping of Environmental and Social Risks and Impacts

The scoping process for the ESIA was designed to identify and prioritize the key environmental and social aspects to be addressed in the study. This process considered the nature of the proposed project activities and their potential interactions with environmental and social receptors within the Project's Area of Influence (AoI).

Based on the characteristics of the Kızılhisar WWTP Project and its potential interactions with environmental and social receptors, the following key areas have been identified for impact assessment:

- Environmental Risks and Impacts
    - Air quality
    - Soil and contaminated land
    - Water resources and use
    - Noise and vibration
    - Resources and waste
    - Landscape and visual impacts
    - Climate Change
- Biological Environment
- Social Risks and Impacts
    - Labor and Working Conditions
    - Infrastructure and Services

- Demographic Structure
- Community Health and Safety
- Cultural Heritage

6.2 Impact Assessment Methodology

The purpose of the impact assessment and the identification of mitigation measures is to evaluate and characterize potential environmental and social impacts, both beneficial and adverse, associated with the proposed Project. The assessment aims to determine the significance of identified impacts on relevant environmental and social receptors, and to propose measures to avoid, reduce, or offset negative effects while enhancing potential benefits. It also considers the residual impact significance following the implementation of mitigation measures.

The assessment has been based on a combination of desktop studies, field observations, stakeholder consultations, and expert judgment, in accordance with national and international standards and guidance. The following criteria were applied in characterizing each impact:

- **Nature of Impact:** Positive (+) or Negative (–)
- **Type of Impact:** Direct, Indirect, or Cumulative
- **Extent of Impact:** Project footprint, Local, Regional, or National
- **Duration of Impact:** Short-term, Medium-term, Long-term, or Permanent
- **Likelihood of Impact Occurrence:** Very likely/certain, Likely, or Unlikely

The magnitude and severity of each impact were determined based on the criteria above. The overall significance of an impact was then assessed by combining its magnitude with the sensitivity of the affected receptor or resource. Sensitivity refers to the degree to which a receptor or environment is likely to be affected by the proposed activity.

A significance matrix was used to guide this assessment. For each identified impact, the significance was first evaluated before mitigation measures (pre-mitigation). Then, with proposed mitigation measures applied, residual impact significance was determined. This approach helps ensure that impact management strategies are proportional to nature and severity of potential impacts.

Social Risks and Impacts on the other hand determined according to the baseline background of the socio-economic environment and the risks and impacts of similar projects on resembling environments. Since each social sample is sui generis in its own context, when identifying social risks and impacts, firstly local level findings were considered, and these were compared with similar samples and missing and possible possibilities were added.

Table 36. Significance Matrix

Sensitivity of Receptor	**Magnitude of Impact**			
	High	**Medium**	**Low**	**Negligible/None**
High	High	High	Medium	Negligible/None
Medium	High	Medium	Low	Negligible/None
Low	Medium	Low	Low	Negligible/None

6.3 Area of Influence

In accordance with good international practices, the Area of Influence (AoI) for the Project has been defined by considering:

- (i) The direct footprint of the Project, including the project site itself, nearby airspace, surface water bodies, groundwater resources, and associated transportation corridors (e.g., access roads, material borrow and disposal areas, construction camps) that are owned, operated, or managed (including by contractors) by the Project Sponsor
- (ii) Unplanned but reasonably foreseeable developments induced by the Project that may occur later or at a different location
- (iii) Indirect impacts of the Project on biodiversity and ecosystem services that are critical for the livelihoods of Affected Communities.

Additionally, associated facilities, those not financed as part of the Project, but which would not have been constructed or expanded if the Project did not exist and which are essential for Project viability, are also considered part of the AoI.

Based on this framework and given the Project's characteristics and the available level of information, a 1 km radius around the Kızılhisar WWTP site has been defined as the primary AoI. This boundary ensures that all potential direct, indirect, and cumulative impacts associated with the Project's activities are adequately assessed, including any effects on surrounding land uses, water bodies, and nearby communities. The AoI of the Project is given in the Figure 36.

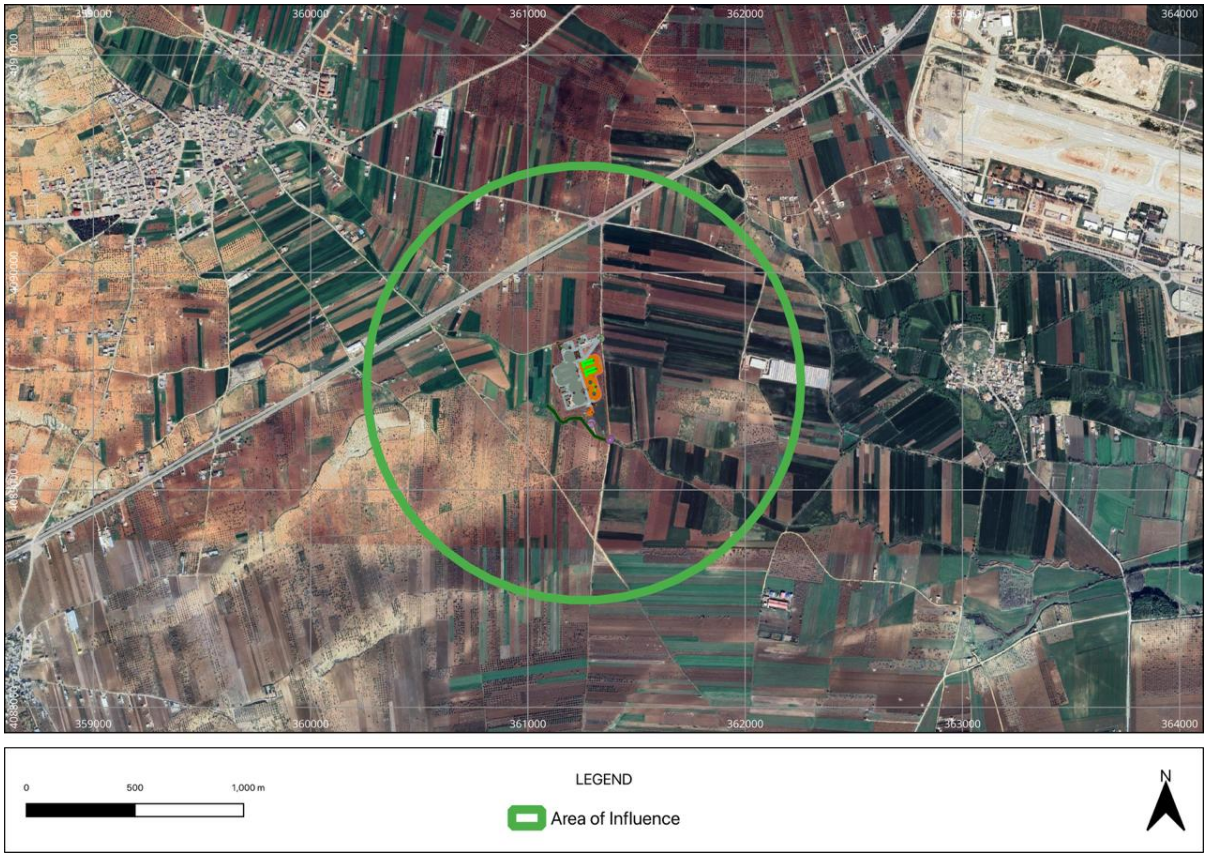


Figure 36. Area of Influence

6.4 Determination of Environmental and Social Impact Level and Significance

An assessment of environmental and social impacts for the Project has been carried out across all three main phases of the project lifecycle: pre-construction, construction, and operation. For each phase, the potential impacts on environmental and social receptors have been identified, and their significance has been evaluated using the methodology described in Section 6.2.

The sensitivity of receptors has been assessed based on baseline conditions, national regulations, international standards, relevant environmental and social guidelines, and expert judgment.

For each identified interaction, the impact significance has been determined before and after mitigation, taking into account the sensitivity of the receptor and the magnitude of the potential effect.

Table 37. Matrix Table with Identification of Impact Level in Terms of Environmental and Social Attributes

No	Environmental and Social Attributes	Impacts																	
		Nature		Type			Extent				Duration				Occurrence			Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without Mitigation Measures	Impact Significance with Mitigation Measures
		Positive	Negative	Direct	Indirect	Cumulative	Project Footprint	Local	Regional	National	Short term	Midterm	Long term	Permanent	Very likely /certain	Likely	Unlikely				
PRE-CONSTRUCTION AND CONSTRUCTION PHASE																					
Air Quality																					
1	Increase in dust concentration		X	X			X				X				X			**Low**	**Low**	**Low**	**Low**
2	Increase in exhaust emissions (CO, SO_2 etc.)		X	X			X				X				X			**Low**	**Low**	**Low**	**Low**
Soil and Contaminated Land																					
1	Loss of topsoil		X	X			X							X		X		**Medium**	**Medium**	**Medium**	**Low**
2	Erosion control		X	X			X						X			X		**Medium**	**Medium**	**Medium**	**Low**
3	Soil contamination		X	X			X						X			X		**Medium**	**Medium**	**Medium**	**Low**
Water Resources and Use																					
1	Change in surface water quality		X	X				X			X						X	**Medium**	**Low**	**Low**	**Low**
2	Change in groundwater water quality		X	X				X			X						X	**Medium**	**Low**	**Low**	**Low**
Noise and Vibration																					
1	Noise pollution		X	X				X			X				X			**Medium**	**Medium**	**Medium**	**Low**
Resources and Waste																					
1	Waste generation		X	X				X			X				X			**Medium**	**Medium**	**Medium**	**Low**
2	Resources used during the construction		X	X				X			X				X			**Low**	**Low**	**Low**	**Negligible/None**
Landscape and Visual Impacts																					
1	Impairment of quality of life due to the overall presence of annoying construction works and activities, and alteration of the landscape		X	X				X			X					X		**Low**	**Low**	**Low**	**Negligible/None**
Biological Environment																					
1	Habitat loss due to land clearing		X	X			X							X	X			**Medium**	**Medium**	**Medium**	**Low**
2	Displacement of flora		X	X				X			X				X			**Medium**	**Medium**	**Medium**	**Low**

No	Environmental and Social Attributes	Impacts																		
		Nature		Type			Extent				Duration				Occurrence					
		Positive	Negative	Direct	Indirect	Cumulative	Project Footprint	Local	Regional	National	Short term	Midterm	Long term	Permanent	Very likely /certain	Likely	Unlikely	Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without Mitigation Measures	Impact Significance with Mitigation Measures
	and fauna																				
3	Introduction of invasive species		X	X				X						X			X	Low	Low	Low	Low
Socioeconomic																					
1	Employment and local supply	X		X				X			X					X		Positive Impact			
2	Infrastructure damage		X		X			X				X				X		Medium	Medium	Medium	Low
Community Health and Safety																					
1	Plant/unit shutdown due to construction works		X	X				X			X					X		Medium	Medium	Medium	Low
2	GBV and SEA/SH risk		X	X				X			X						X	Medium	Medium	Medium	Low
Labor and Working Conditions																					
1	Exposure of workers to work-related occupational health and safety risks		X	X			X						X			X		High	High	High	Medium
Cultural Heritage																					
1	Chance find cultural assets		X	X			X				X						X	Low	Low	Low	Low
OPERATIONAL PHASE																					
Air Quality																					
1	Odorous gas emission		X	X				X					X		X			Medium	Low	Low	Low
2	Increase in exhaust emissions (CO, SO_2 etc.)		X	X			X				X				X			Low	Low	Low	Low
Soil and Contaminated Land																					
1	Contamination of Soil		X	X			X						X				X	Medium	Low	Low	Negligible/None
Water resources and use																					
1	Change in Sacır Stream water quality	X		X					X				X		X			Positive Impact			
2	Change in groundwater quality		X	X				X			X						X	Medium	Low	Low	Low
Noise and vibration																					

No	Environmental and Social Attributes	Impacts																		
		Nature		Type			Extent				Duration				Occurrence			Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without Mitigation Measures	Impact Significance with Mitigation Measures
		Positive	Negative	Direct	Indirect	Cumulative	Project Footprint	Local	Regional	National	Short term	Midterm	Long term	Permanent	Very likely /certain	Likely	Unlikely				
1	Noise Pollution		X	X			X							X		X		Medium	Low	Low	Low
Resources and waste																					
1	Waste generation		X	X				X					X			X		Medium	Low	Low	Low
2	Sludge generation		X	X				X					X		X			High	Medium	High	Low
3	Resource used in operation		X	X				X					X		X			Low	Low	Low	Low
Biological Environment																					
1	Fauna loss in the Sacır Stream		X	X				X						X			X	Medium	Low	Low	Low
2	Fauna loss around the Project area		X	X				X						X			X	Medium	Low	Low	Low
Socioeconomic																					
1	Employment and local supply	X		X				X					X		X			Positive Impact			
2	Infrastructure damage		X	X				X			X					X		Low	Low	Low	Low
Community Health and Safety																					
1	Public health risks such as epidemics due to improper handling of waste/sludge		X	X				X			X					X		High	High	High	Medium
2	Traffic increases due to waste and sludge disposal		X	X				X			X					X		Medium	Low	Low	Low
3	GBV and SEA/SH risk		X	X				X				X			X			Medium	Low	Low	Low
Labor and Working Conditions																					
1	Exposure of workers to work-related occupational health and safety risks		X	X				X					X				X	Medium	Medium	Medium	Low

6.5 Impacts on the Physical Environment

In this section the impacts only are given and mitigation measures are given in the Section 7 Environmental and Social Management Plan.

6.5.1 Air Quality

6.5.1.1 Project Standards

The applicable Turkish air quality legislation for the project's air quality assessment includes:

- Regulation on Assessment and Management of Air Quality
- Regulation on Control of Industrial Air Pollution

The applicable European legislation for the project's air quality assessment includes:

- Directive (EU) 2024/2881 of the European Parliament and of the Council of 23 October 2024 on Ambient Air Quality and Cleaner Air for Europe

The project maximum allowable limits in relation to ambient air quality are presented below, which includes applicable European Union and National legislation.

Table 38. Ambient Air Quality Standards

Parameter	Period	Unit	Maximum Allowable Limit		
			Türkiye (after 01.01.2024)	EU (until 11 December 2026)	Project Limit
SO_2	Hourly	$\mu g/m^3$	350 (not to be exceeded more than 24 times per calendar year)	350 (not to be exceeded more than 24 times per calendar year)	350 (not to be exceeded more than 24 times per calendar year)
	Daily		125	125 (not to be exceeded more than 3 times per calendar year)	125
	Annual		60	-	60/20
			20 (Winter season Oct 1st – March 31st)		
NO_2	Daily	$\mu g/m^3$	200 (not to be exceeded more than 18 times per calendar year)	200 (not to be exceeded more than 18 times per calendar year)	200 (not to be exceeded more than 18 times per calendar year)
	Annual		40	40	40
PM 10	Daily	$\mu g/m^3$	50 (not to be exceeded more than 35 times per calendar year)	50 (not to be exceeded more than 35 times per calendar year)	50 (not to be exceeded more than 35 times per calendar year)
	Annual		40	40	40
PM 2.5	Annual	$\mu g/m^3$	-	25	-

Parameter	Period	Unit	Maximum Allowable Limit		
			Türkiye (after 01.01.2024)	EU (until 11 December 2026)	Project Limit
Settled Dust	Daily	mg/m^2-day	390	-	390
	Annual		210		210

6.5.1.2 Pre-Construction and Construction Phase

For the proposed Project, after the baseline air quality measurements, air quality dispersion modelling study has been conducted. Air Quality Modelling Report is given in Appendix-14. A summary of this modelling study is given in this section.

The specific objectives of this air quality impact assessment are to:

- Identify the main sources of potential impact to air quality arising from the construction of the project.
- Determine, quantitatively and qualitatively, whether air emissions will impact sensitive receptors in the vicinity of the project area.
- Assess the air quality dispersion modelling results against the project standards, which have been defined based on Turkish law.

Emission Sources

- Dust emissions together with their impact on human health and their potential cause nuisance to those exposed.
- Emissions of potentially polluting gases: sulfur dioxide (SO2), and oxides of nitrogen (NOX) and their potential impact on human health.

Spatial Scope

A 20.25 km^2 study area (4.5 km x 4.5 km) covers the project area and encompasses the potentially-affected settlements within the social study area: Yiğitbey Dairy and Livestock Farm, Kadıoğlu Dairy and Livestock Farm, Agriculture and Gastronomy School, Yağdöver Village, Güzelce Village, Gedik Village, Oğuzeli Organized Industrial Zone and Körkün District. These settlements were identified as having the potential to be affected by air quality impacts from project construction activities.

Table 39. Coordinates of the modelling area

Projection	UTM	
Coordinate System	WGS 84 – ZONE 37N	
Coordinates of the modelling area		
1	359020	4087090
2	359020	4091590
3	363520	4087090
4	363520	4091590

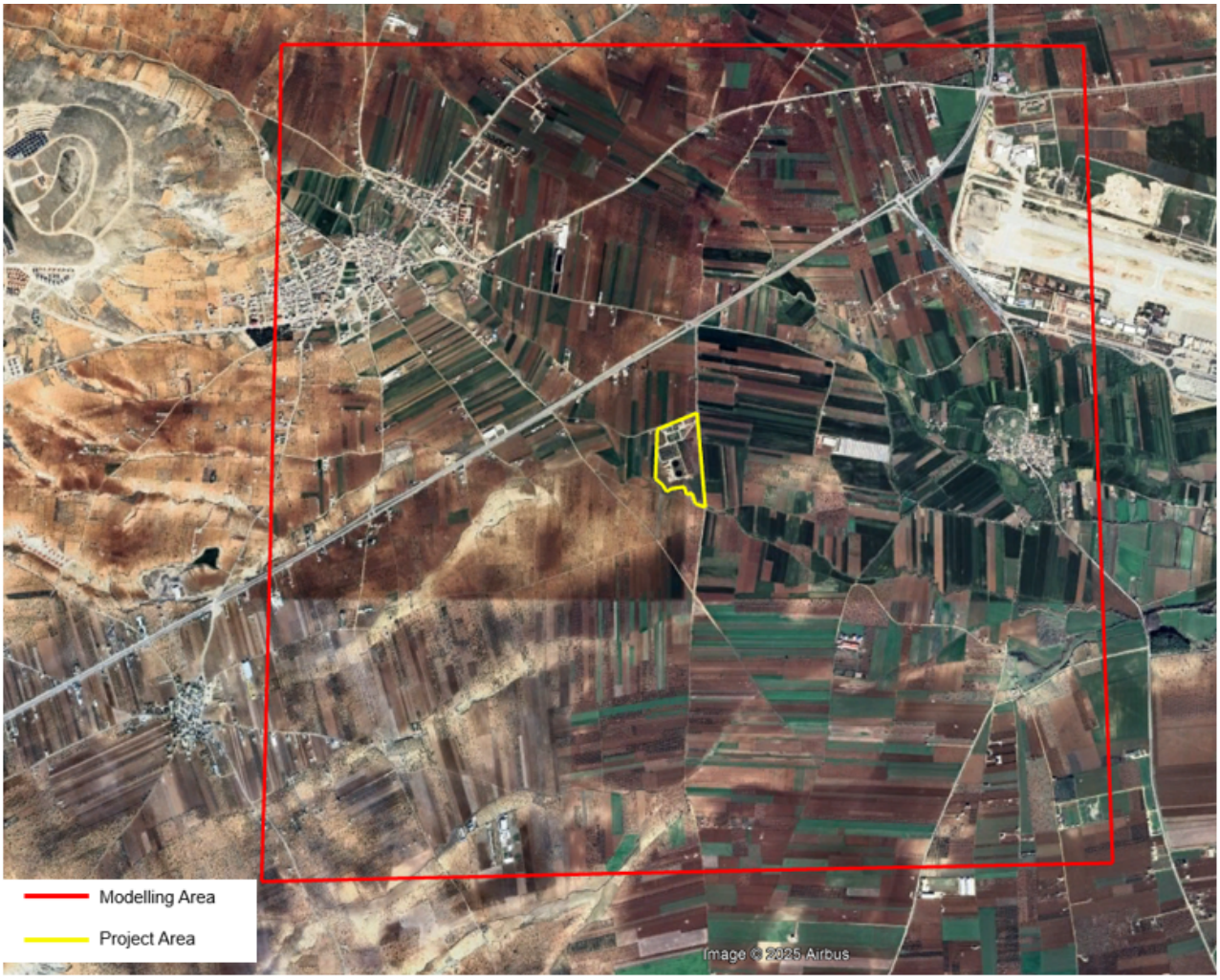


Figure 37. Air Quality Modelling Study Area

Sources and Hourly Emission

- **Dust Emissions:**

The hourly emission of dust that will be released during construction was calculated using the following formulas:

$$Dust\ Emission\ \left(\frac{kg}{h}\right) = Emission\ Factor\ \left(\frac{kg}{ton}\right) x\ Excavation\ Amount\ \left(\frac{ton}{h}\right)$$

$$Dust\ Emission\ \left(\frac{kg}{h}\right) = Emission\ Factor\ \left(\frac{kg}{km-trip}\right) x\ Transporting\ Distance\ \left(\frac{km-trip}{h}\right)$$

$$Dust\ Emission\ \left(\frac{kg}{h}\right) = Emission\ Factor\ \left(\frac{kg}{ha-day}\right) x\ Storage\ Area\ \left(ha * \frac{day}{24\ h}\right)$$

The emission factors used during calculations are given below.

Table 40. Dust Emission Factors

Source	Emission Factors	
	Uncontrolled	Controlled
Blasting	0.08 kg/ton	
Excavation	0.025 kg/ton	0.0125 kg/ton
Loading	0.010 kg/ton	0.005 kg/ton
Transporting	0.7 kg/km-trip	0.35 kg/km-trip
Unloading	0.010 kg/ton	0.005 kg/ton
Storage	5.8 kg/ha-day	2.9 kg/ha-day
Primary Crusher	0.243 kg/ton	0.0243 kg/ton
Secondary Crusher	0.585 kg/ton	0.0585 kg/ton
Tertiary Crusher	0.585 kg/ton	0.0585 kg/ton

Source: Regulation on Control of Industrial Air Pollution, Annex 12, Table 12.6

The excavation phase of the construction will take approximately 60 days, over 8 hours per day. The amount of soil that will be excavated per hour is calculated below.

Table 41. Annual, Daily and Hourly Excavation Amounts During Construction

Period	Excavation Amount (m^3)	Excavation Amount* (ton)
Annual	50,000	70,000
Daily	833.33	1,166.67
Hourly	104.17	145.83

* The density of soil is approximately 1.4 ton/ m^3

Emissions from Excavation of Soil

Uncontrolled = 145.83 ton/h x 0.025 kg/ton = 3.65 kg/h

Controlled = 145.83 ton/h x 0.0125 kg/ton = 1.82 kg/h

Emissions from Loading of Soil

Uncontrolled = 145.83 ton/h x 0.01 kg/ton = 1.46 kg/h

Controlled = 145.83 ton/h x 0.005 kg/ton = 0.73 kg/h

Approximately 20% of the excavated soil (10,000 m^3 / 14,000 tons) will be stored in a temporary storage area to be used in site reclamation. The remaining soil (40,000 m^3 / 56,000 tons) will be transported to a construction waste disposal facility.

Emissions from Transporting Soil to Construction Waste Disposal Facility

Transporting amount = 40,000 m^3 / 60 days = 666.67 m^3/day

Truck capacity = 15 m^3/trip

Number of trips = 666.67 m^3/day / 15 m^3/trip = 45 trips/day

Uncontrolled = 0.7 kg/km-trip x 0.8 km x 2 x 45 trips/day / 8 h/day = 6.3 kg/h

Controlled = 0.35 kg/km-trip x 0.8 km x 2 x 45 trips/day / 8 h/day = 3.15 kg/h

Emissions from Transporting Soil to Temporary Storage Area

Transporting amount = 10,000 m^3 / 60 days = 166.67 m^3/day

Truck capacity = 15 m^3/trip

Number of trips = 166.67 m^3/day / 15 m^3/trip = 11 trips/day

Uncontrolled = 0.7 kg/km-trip x 0.1 km x 2 x 11 trips/day / 8 h/day = 0.19 kg/h

Controlled = 0.35 kg/km-trip x 0.1 km x 2 x 11 trips/day / 8 h/day = 0.10 kg/h

Emissions from Unloading Soil to Temporary Storage Area

Uncontrolled = 29.17 ton/h x 0.01 kg/ton = 0.29 kg/h

Controlled = 29.17 ton/h x 0.005 kg/ton = 0.15 kg/h

Emissions from Storing Soil at Temporary Storage Area

Uncontrolled = 0.3 ha x 5.8 kg/ha-day / 24 h/day = 0.07 kg/h

Controlled = 0.3 ha x 2.9 kg/ha-day / 24 h/day = 0.04 kg/h

Emissions from Loading Soil from Temporary Storage Area

Uncontrolled = 29.17 ton/h x 0.01 kg/ton = 0.29 kg/h

Controlled = 29.17 ton/h x 0.005 kg/ton = 0.15 kg/h

Emissions from Transporting Soil to Rehabilitation Area

Transporting amount = 10,000 m^3 / 60 days = 166.67 m^3/day

Truck capacity = 15 m^3/trip

Number of trips = 166.67 m^3/day / 15 m^3/trip = 11 trips/day

Emissions from Unloading Soil

Uncontrolled = 29.17 ton/h x 0.01 kg/ton = 0.29 kg/h

Controlled = 29.17 ton/h x 0.005 kg/ton = 0.15 kg/h

Table 42. Total Dust Emissions

Source	Uncontrolled (kg/h)	Controlled (kg/h)
Emissions from Excavation of Soil	3.65	1.82
Emissions from Loading of Soil	1.46	0.73

Source	Uncontrolled (kg/h)	Controlled (kg/h)
Emissions from Transporting Soil to Construction Waste Disposal Facility	6.30	3.15
Emissions from Transporting Soil to Temporary Storage Area	0.19	0.10
Emissions from Unloading Soil to Temporary Storage Area	0.29	0.15
Emissions from Storing Soil at Temporary Storage Area	0.07	0.04
Emissions from Loading Soil from Temporary Storage Area	0.29	0.15
Emissions from Transporting Soil to Rehabilitation Area	0.19	0.10
Emissions from Unloading Soil	0.29	0.15
Total	**12.74**	**6.37**

- **Gaseous Emissions:**

Exhaust emission factors for SO2 and NO2 for construction vehicles and machinery were calculated using USEPA coefficients[18], which are presented below.

Table 43. Exhaust Emission Factors

Machinery / Equipment	Engine Power (HP)	Emission Factors (g/hp-h)	
		SO_2	NO_2
Truck	360	0.8	4.5
Excavator	260	0.8	4.5
Loader	200	0.8	4.5
Grader	200	0.4	4.5
Roller	50	0.8	5.0
Compactor	260	0.8	4.5
Road Paver	225	0.8	4.5

Table 44. Exhaust Emission Factors for Project

Machinery / Equipment	Engine Power (HP)	Number of Machinery	Emission (kg/h)	
			SO_2	NO_2
Truck	360	5	1.44	0.72
Excavator	260	2	0.42	0.21
Loader	200	1	0.16	0.08
		Total	**2.02**	**1.01**

Since total SO_2 and NO_2 emissions are lower than the thresholds (6 kg/h and 4 kg/h, respectively) defined in the Regulation on Control of Industrial Air Pollution-Annex 2-Table 2.1, these pollutants were excluded from the modelling study.

[18] Emission values from vehicles have been sourced from the Exhaust Emission Factors for Non-Road Engine Modelling (Report No.NR-009A) from the United States Environmental Protection Agency (EPA).

- **Background Concentrations:**

Data for the assessment of the ambient air quality baseline conditions in the study area was collected via field sampling for PM10 at the closest settlements to the project. Modelled results at the baseline measurement locations and ambient air quality measurement were assessed cumulatively using long term values.

Total Pollution Value (TPV) has been calculated by adding the Air Pollution Contribution Value (Background Concentration) and the Long-Term Value (Annual Value) of air quality modeling.

TPV = Background Concentration + Annual Value

Model (AERMOD) Inputs

Table 45. Emission Sources and Calculated Hourly Emissions

Source	No	Explanation	Uncontrolled (kg/h)	Controlled (kg/h)
Excavation	1	Loading/Unloading	5.979	2.990
	2	Transport	6.685	3.343
Storage	3	Storage	0.073	0.036
		Total	**12,737**	**6,368**

Table 46. Emission Sources and Emission Amounts Used in AERMOD

Source	Explanation	No	Mass Flow (kg/h)	Mass Flow (g/sec)	Area (m^2)	Mass Flow Rate Entered AERMOD (g/sec.m^2)
EXCAV	Loading/Unloading	1	2.9896	0.8304	14130.4	5,877E-05
TRANSPORT	Transport	2	3.3425	0.9285	10350.9	8,970E-05
STORAGE	Storage	3	0.0363	0.0101	300	3,367E-05

Results

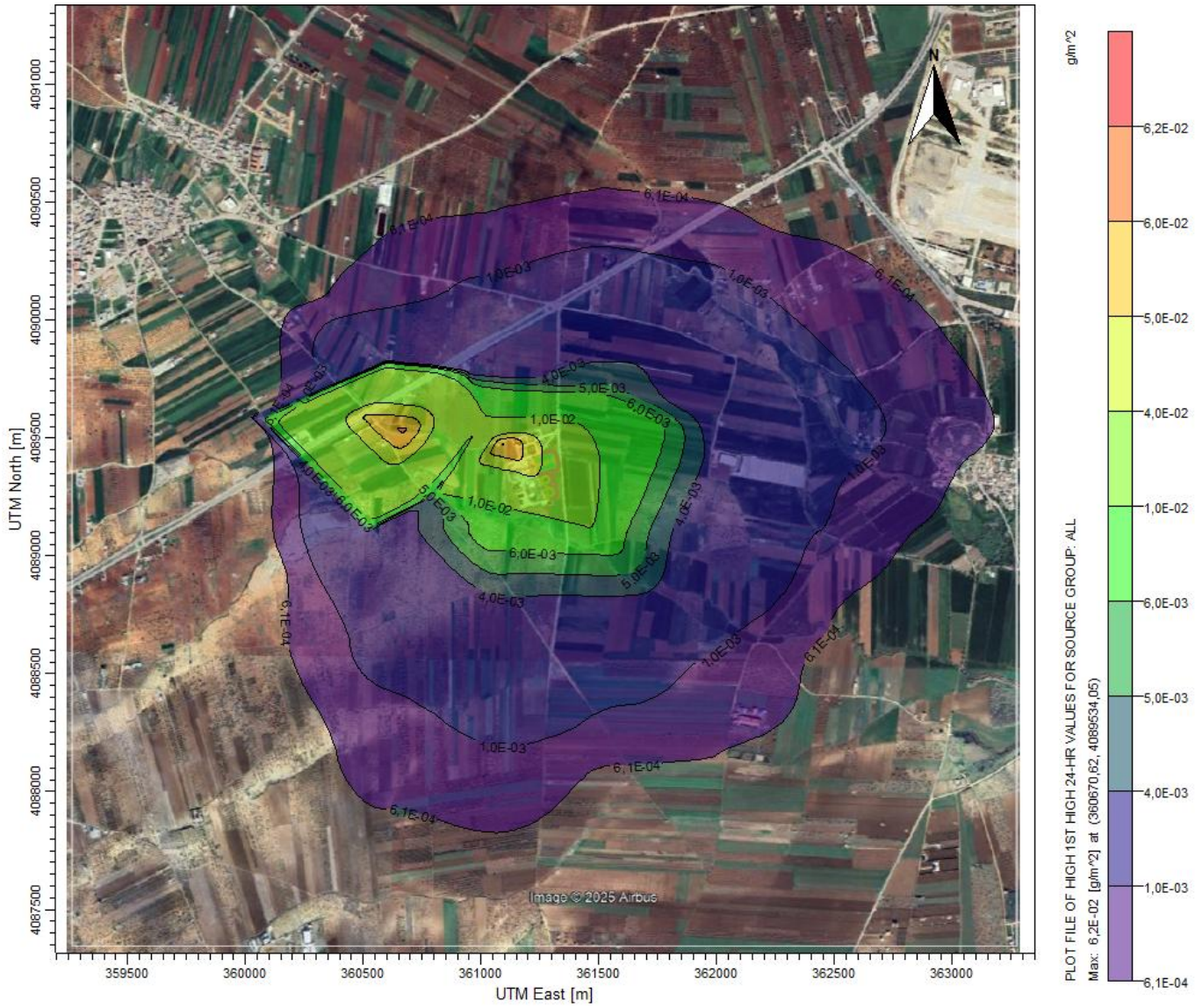


Figure 38. Daily Maximum Dust Emission Values (µg/m³)

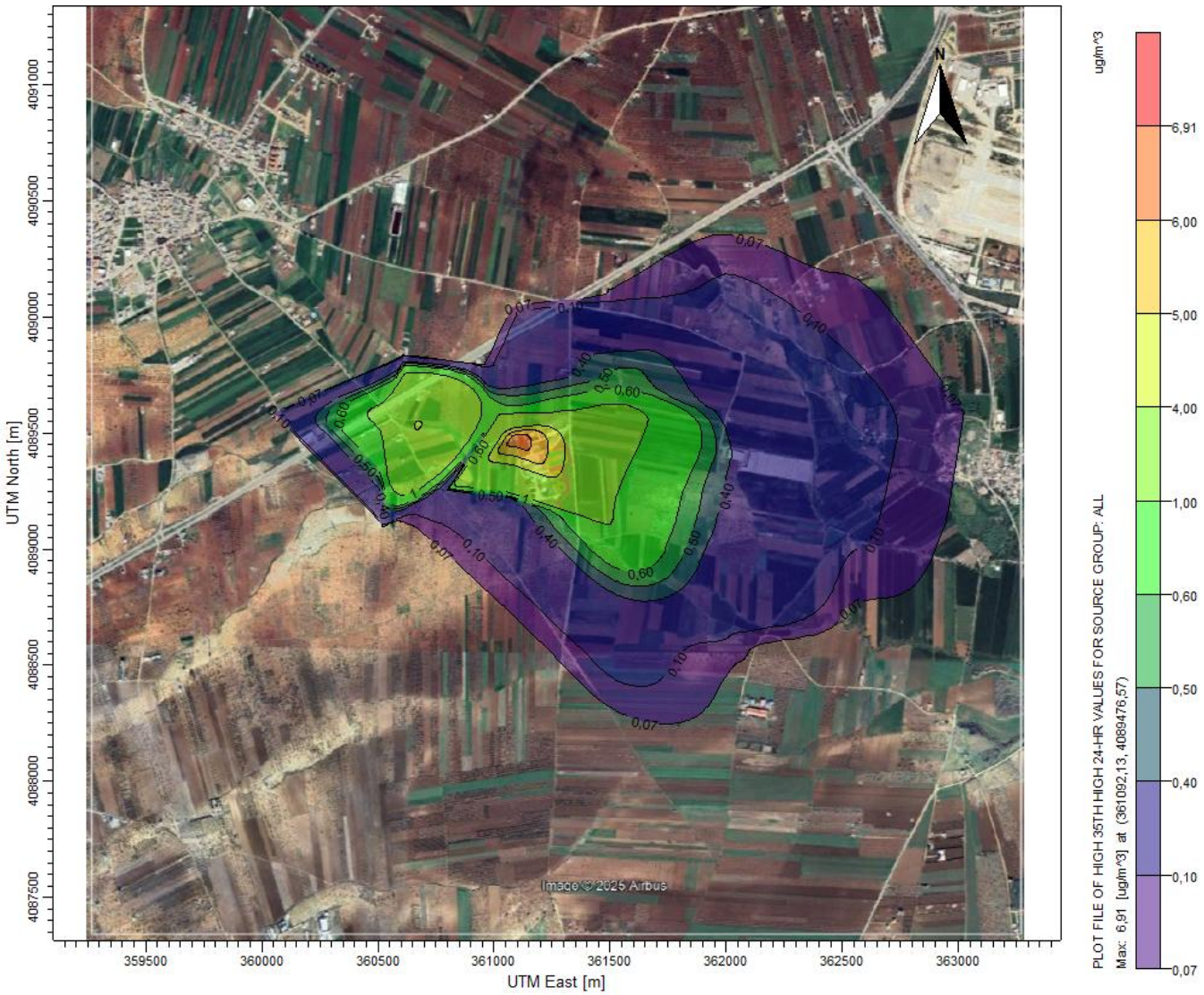


Figure 39. Daily 35th Highest Dust Emission Values (µg/m^3)

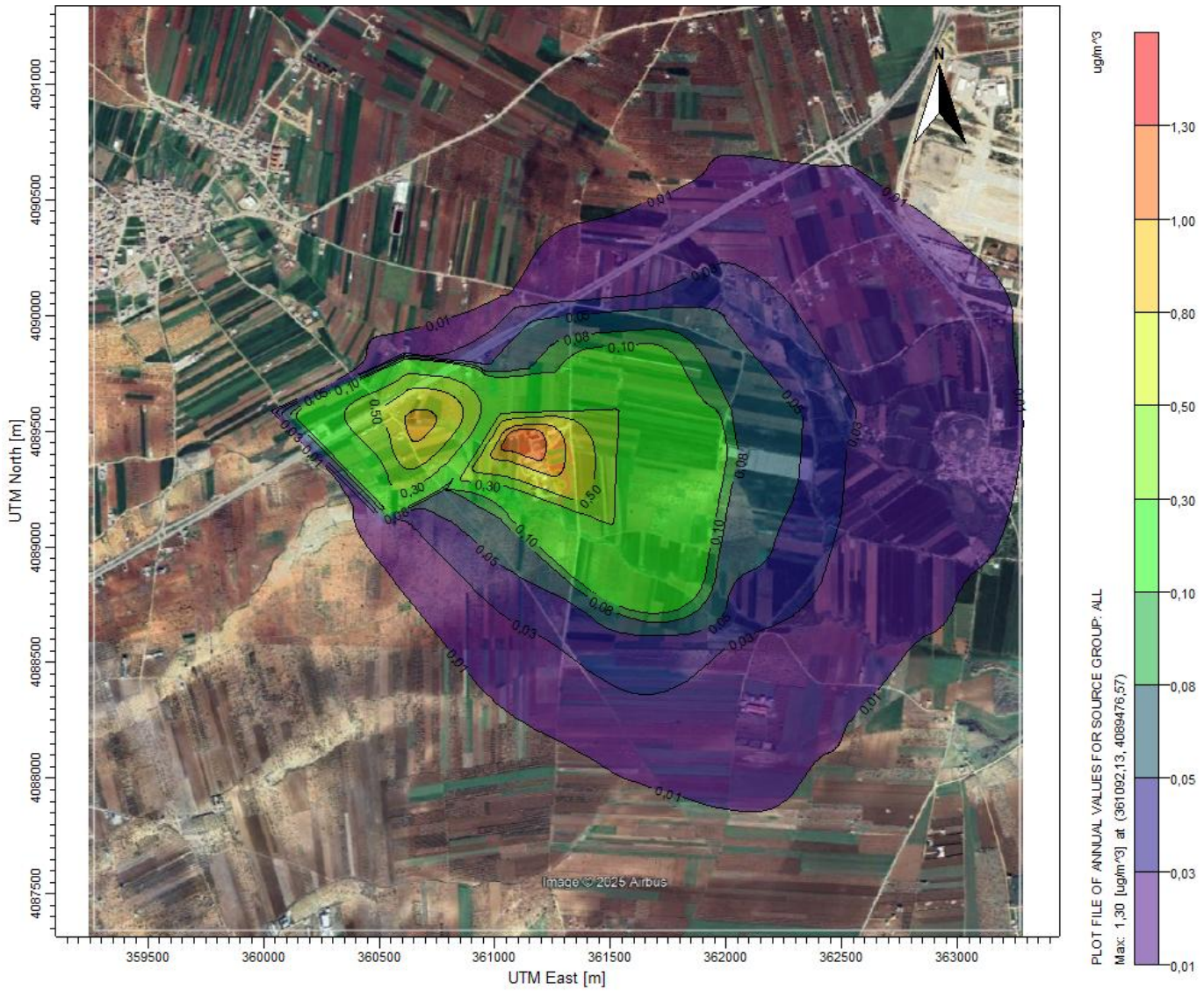


Figure 40. Annual Highest Dust Emission Values (µg/m^3)

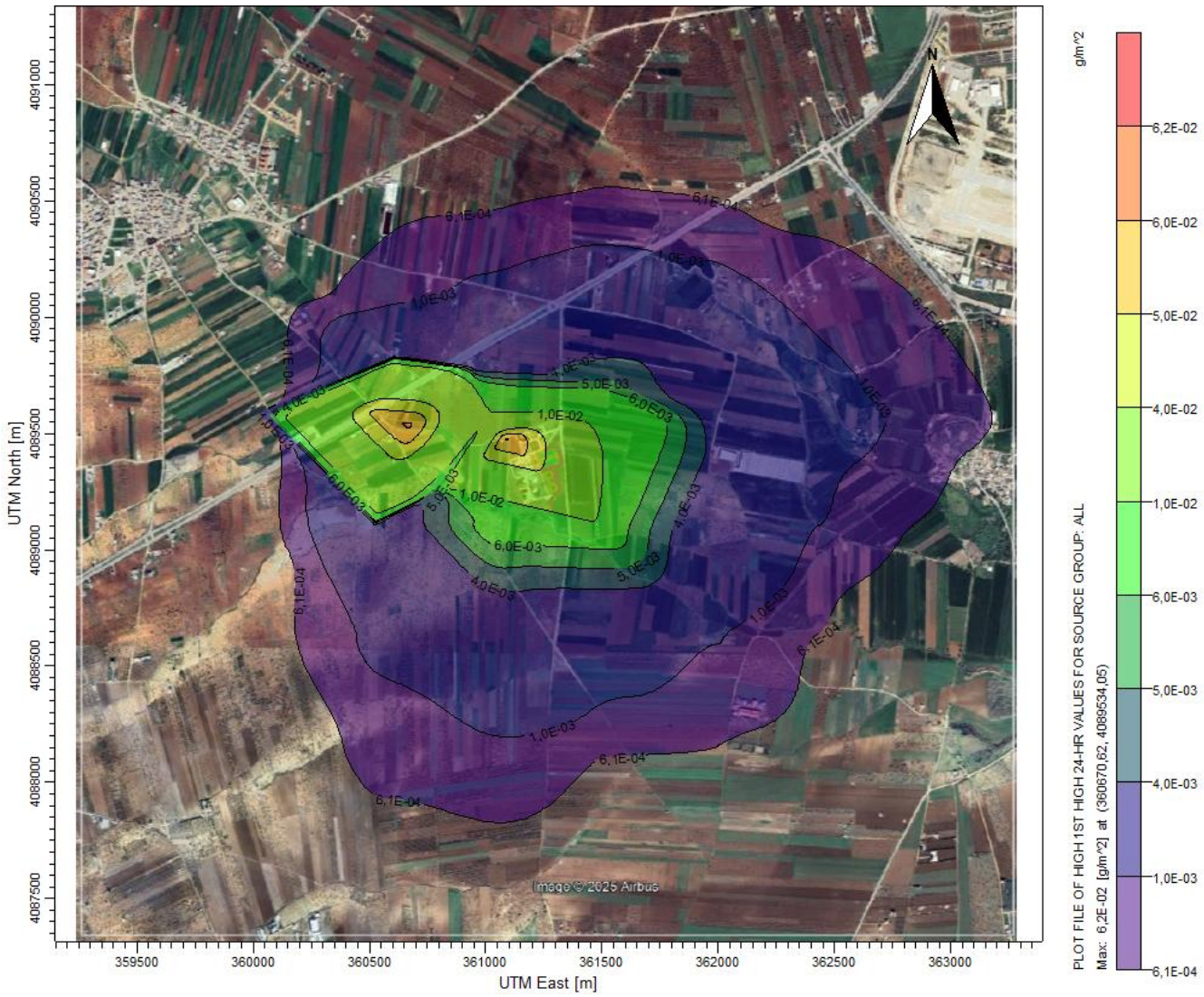


Figure 41. Monthly Maximum Settling Dust Emission Values (gr/m^2)

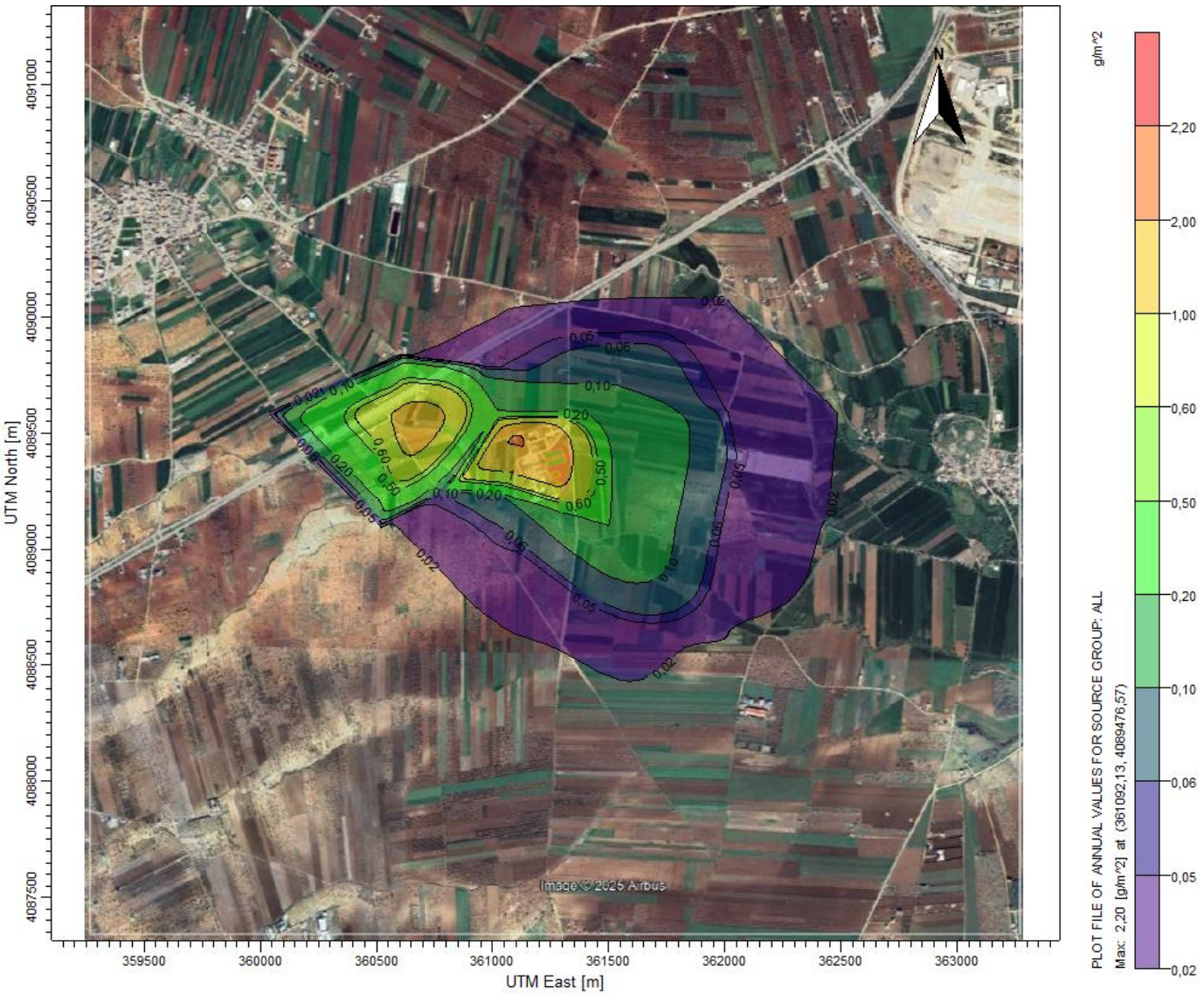


Figure 42. Annual Maximum Settling Dust Emission Values (gr/m^2)

The highest emission values calculated according to the modeling study are given below.

Table 47. Ambient Air Quality Standards and Modeling Results Comparison

Parameter	Period	Limit Value	Model Result
PM 10 (µg/m^3)	Daily (not to be exceeded more than 35 times per calendar year)	50	11.60 (No exceedance) 35th Value 6.91 (**Figure 38**) (**Figure 39**)
	Annual	40	1.30 (**Figure 40**)
Settled Dust (mg/m^2-da)	Daily*	390	61.89 (**Figure 41**)
	Annual**	210	6.03 (**Figure 42**)

* The unit of modeling outputs is g/m^2 and daily results were multiplied by 1000 to convert to, mg/m^2-day

** The unit of modeling outputs is g/m^2, to convert to mg/m^2-day, annual results were divided by 365, the number of days in a year, and multiplied by 1000 to convert to milligrams.

Table 48. The Comparison of Modeling Results at Settlements Near the Project Area

Receptor	Coordinates		PM 10 – 35th Value (µg/m³)		Settled Dust (mg/m²-day)	
	East	North	Daily	Annual	Daily*	Annual **
Yiğitbey Dairy and Livestock Farm	360246	4090292	-	-	0.38	-
Kadıoğlu Dairy and Livestock Farm	360263	4087391	-	-	0.34	-
Agriculture and Gastronomy School	362059	4089401	0.35	0.08	2.81	0.13
Yağdöver Village	359352	4087833	-	-	0.12	-
Güzelce Village	362718	4087391	0.02	0.01	0.26	0.01
Gedik Village	363233	4087441	0.02	0.01	0.22	0.01
Körkün District	360608	4089840	-	0.02	1.91	0.05
Oğuzeli Organized Industrial Zone	360980	4091558	-	0.00	0.14	-
HOUSE1	361092	4089477	6.91	1.30	60.69	6.04
HOUSE2	360787	4089244	0.18	0.07	4.48	0.17
HOUSE3	361550	4089716	0.58	0.15	5.08	0.25
HOUSE4	360942	4089798	0.05	0.04	2.78	0.12
HOUSE5	361042	4089222	0.31	0.12	10.09	0.27
HOUSE6	360671	4089534	4.23	1.00	61.89	4.15
Limit Value			**50**	**40**	**390**	**210**

* The unit of modeling outputs is g/m² and daily results were multiplied by 1000 to convert to, mg/m²-day

** The unit of modeling outputs is g/m², to convert to mg/m²-day, annual results were divided by 365, the number of days in a year, and multiplied by 1000 to convert to milligrams.

According to the daily PM10 modeling results, it is seen that the limit values of the Regulation on Control of Industrial Air Pollution are met at all daily PM10 receptors in each grid points (100 + 14 discrete receptor points) within a calendar year.

Cumulative Values and The Total Pollution Value

Modelled results at the background measurement locations (Closest houses near the project area) and the ambient air quality measurement results were assessed cumulatively.

The cumulative results for PM10 are given below. According to these results, PM10 concentration remains below the limit values.

Table 49. PM_{10} Total Pollution Value

Sampling Point	Measurement Date	Sampling Result	Model Result	Total Pollution Value	Limit Value
		(µg/m³)			
1	11.03.2025 12.03.2025 13.03.2025	27 (average)	1.30	28.30	40

Sampling Point	Measurement Date	Sampling Result	Model Result	Total Pollution Value	Limit Value
		(µg/m³)			
2	11.03.2025 12.03.2025 13.03.2025	27 (average)		28.30	

Given the low sensitivity of the surrounding receptors and the limited intensity of construction activities, the potential impacts on air quality, i.e. dust generation and exhaust emissions, are assessed to remain at a low level with the implementation of the mitigation measures. The mitigation measures are given in Section 7.

6.5.1.3 Operation Phase

During the operational phase of the Kızılhisar WWTP 2nd Stage, potential impacts on air quality are mainly associated with odor emissions arising from biological treatment units and particulate and gaseous emissions from ancillary systems such as aeration equipment and sludge handling facilities.

The treatment process is based on the Extended Aeration Activated Sludge system, which includes long retention time biological reactors and secondary clarifiers. These units are typically open to the atmosphere, and as such, are potential sources of odor emissions, especially under high ambient temperatures and low wind dispersion conditions. Odor sources may include volatile organic compounds (VOCs) and reduced sulfur compounds (e.g., hydrogen sulfide, mercaptans), particularly from inlet structures, aeration tanks, and sludge thickening/dewatering areas.

Blower systems, used for aeration in the extended aeration process, may contribute to localized air emissions due to energy consumption and mechanical ventilation. However, these are not expected to generate significant atmospheric pollutants unless fuel-powered or connected to stacks. In typical configurations using electrically driven blowers, air emissions are minimal and considered negligible under standard operating conditions.

The sludge generated at the facility is dewatered on-site and transported to a cement kiln facility for co-incineration. Since no thermal sludge treatment (e.g., incineration or drying) is carried out within the WWTP premises, there are no direct combustion-related emissions from sludge handling operations.

In addition, the facility is equipped with UV disinfection units for treated effluent. Although UV systems do not emit pollutants directly, they contribute indirectly to air quality management by preventing biological degradation of effluent, thereby reducing the potential for post-discharge odor formation, especially in downstream reuse scenarios such as irrigation.

No significant contribution to dust, NOx, SO_2, or particulate matter (PM_{10} and $PM_{2.5}$) levels is anticipated during normal operation. Any odor or air quality-related impacts will be localized, and largely dependent on meteorological conditions such as wind direction, temperature, and humidity.

For the odor gas emissions, although the sensitivity is considered medium, the magnitude and significance of the impact are low, and with the implementation of odor control measures, the overall impact level is assessed as low.

For the exhaust gas emissions, due to the low sensitivity of the surrounding environment and minimal exhaust emissions expected during operation, the impact is considered to remain at a low level with the mitigation in place. The mitigation measures are given in Section 7.

6.5.2 Soil and Contaminated Land

6.5.2.1 Pre-Construction and Construction Phase

Potential impacts on soil and land resources during the pre-construction and construction phases of the Kızılhisar WWTP 2nd Stage Project are anticipated to be direct and confined within the project footprint. These impacts arise primarily from earth-moving activities and the use of construction machinery. It is also noted that the project area is located within the Oğuzeli Major Plain Protection Area, designated as an area of high agricultural value and sensitivity under national legislation. Accordingly, particular attention will be given to ensuring that construction activities do not adversely affect the surrounding agricultural lands or soil resources beyond the project boundaries. Although no impacts are expected outside the defined project footprint, additional precautionary measures will be implemented to safeguard the adjacent agricultural lands.

The following soil-related impacts may occur:

- Disturbance of the natural soil profile and landform due to stripping of topsoil, grading, excavation, and backfilling activities
- Mixing of soil layers, which may reduce fertility or alter infiltration characteristics
- Risk of soil contamination from potential leaks and spills of fuel, lubricants, hydraulic oils, and construction chemicals (e.g., paint, solvents)
- Improper handling or disposal of solid and liquid waste, potentially leading to local soil pollution
- Incorrect replacement or compaction of excavated soil, which may hinder vegetation regrowth or future landscaping efforts
- Soil erosion resulting from top-soil removal, slope instability, or lack of ground cover during construction.

During the pre-construction phase, topsoil stripped from the site will be stored within designated areas inside the WWTP and later reused for landscaping and green space development within the same zone. The topsoil thickness in the project area is estimated at approximately 40 cm, and it is anticipated that about 10,000 m³ of topsoil will be stripped during site preparation. With a typical bulk density of 1,400 kg/m³, this corresponds to an approximate total mass of 14,000 metric tons of topsoil to be handled.

A temporary top-soil storage area will be allocated within the WWTP boundaries prior to excavation activities. This area will be located at a safe distance from the creek that feeds the Sacır Stream and will have a maximum slope of 5%.

In addition, all hazardous and non-hazardous waste generated during the construction phase will be temporarily stored in GASKİ-approved storage areas, and appropriate mitigation measures will be implemented to prevent accidental discharge or infiltration into the ground.

Also, GASKİ will ensure that the contractor prepares and implements a Soil Management Plan, which will include measures for:

- Topsoil stripping, storage, and reuse procedures
- Excavation soil management
- Spill prevention and response
- Proper waste management and disposal
- Erosion and sediment control
- Post-construction site stabilization.

The contractor will be specifically required to address the sensitivity of the project location within its Soil Management Plan and to adopt enhanced management practices aimed at preserving the quality of both on-site and adjacent agricultural soils.

During the construction phase, potential impacts on soil, such as topsoil loss, erosion, and contamination, are associated with medium sensitivity and medium magnitude. However, through the implementation of the mitigation measures including topsoil management, erosion control, and proper handling of construction materials, the overall impact on soil and land quality is expected to remain at a low level. The mitigation measures are given in Section 7.

6.5.2.2 Operation Phase

During the operational phase of the Project, no significant physical interaction with soil or land is expected due to the nature of the facility's operations. The project site is entirely covered by engineered infrastructure, and all treatment activities will take place within dedicated, impermeable areas.

Dewatered sludge generated as a by-product of the treatment process will be transported by licensed vehicles to a cement factory, where it will be utilized as an alternative fuel in co-processing. The handling and transfer of sludge will be regularly monitored by the operator GASKİ, and therefore, no uncontrolled disposal or associated soil contamination is anticipated.

However, under routine operations, there may be a minor risk of localized soil contamination due to accidental leaks or spills of fuel, oil, or other fluids from operational machinery (e.g., sludge handling equipment or service vehicles). Such risks will be minimized through proper housekeeping, secondary containment measures, and regular inspection and maintenance practices.

Given that the project is located within a Major Plain Protection Area, particular attention will be paid to ensuring that operational practices do not result in unintended impacts on adjacent agricultural lands or soil resources. Routine visual monitoring will include checks for potential leaks or soil contamination in areas adjacent to the project boundary. The GASKİ will be ensure that all relevant operational staff are trained in spill prevention and rapid response procedures.

Beyond this, no significant impacts on topography, soil quality, or land use are expected during normal operating conditions of the facility.

During the operation phase, the potential for soil contamination is considered to have medium sensitivity but low magnitude and significance. With proper operational practices and routine monitoring in place, the residual impact on soil is expected to be negligible. The mitigation measures are given in Section 7.

6.5.3 Water Resources and Use

6.5.3.1 Pre-Construction and Construction Phase

During the construction phase of the Project, water will be required primarily for two purposes: (i) meeting the domestic needs of construction personnel, and (ii) dust suppression on unpaved surfaces.

Water supply to the project site will be provided through the existing municipal water network, and this method will continue to be used throughout the construction period.

The daily domestic water demand is calculated based on the expected number of workers during the peak period of construction and the average daily water use per person. According to TURKSTAT (2022), the per capita domestic water use in Türkiye is 228 liters/person/day. Assuming a workforce of 20 employees, the estimated daily water demand for personnel is:

$$20 \text{ persons} \times 228 \text{ L/person/day} = 4{,}560 \text{ L/day} = 4.56 \text{ m}^3\text{/day}$$

In addition to domestic use, an estimated 10 m³/day of water will be required for dust suppression, particularly during earthworks and material handling under dry and windy conditions.

Thus, the total estimated water demand during the construction phase is approximately 14.56 m³/day.

Drinking water for personnel will be provided via bottled water, and its quality will comply with the provisions of the Regulation on Water Intended for Human Consumption, as well as WHO and EU standards.

No significant impact on regional surface or groundwater resources is expected, as water supply will rely entirely on the existing municipal distribution system, and all usage will be metered and controlled.

Water used for dust suppression during construction will be absorbed by the soil or lost through evaporation. Therefore, no surface runoff or wastewater generation is expected as a result of watering activities.

However, construction activities involving the use, transport, or storage of petroleum-based products, such as diesel fuel, hydraulic fluids, and lubricants, present a potential risk of accidental release or leakage. To minimize the risk of contamination of soil, surface water, and groundwater, all chemical storage containers, including fuel tanks and hazardous liquid waste containers, will be located on impermeable, bunded platforms.

Limited amounts of domestic wastewater (e.g., from worker camps) generated during construction will be discharged to the existing Kızılhisar WWTP.

In some phases of construction, partial or complete shutdown of treatment units may be required for connection or modification works. During such activities, there is a potential risk of short-term discharges of untreated or partially treated wastewater into the creek that feeds Sacır Stream. However, this impact has not been assessed as high in significance. Baseline data indicate that the difference in physicochemical water quality parameters between upstream and downstream of the discharge point is not substantial. Moreover, the receiving water body is already classified as Class III (moderate quality) under the Turkish Surface Water Quality Regulation, indicating that it is subject to a certain level of anthropogenic pressure. Additionally, microbiological analysis results show that upstream water quality is poorer than downstream due to existing agricultural and livestock activities in the upper catchment. Given the short duration and low likelihood of such discharge events, as well as the effectiveness of the planned mitigation measures, the overall impact is considered manageable and not of high significance. Nevertheless, to avoid or minimize this risk, the following precautions will be implemented:

- All shutdown requirements will be planned at least one week in advance by the contractor.
- Advance notice will be provided to GASKİ to allow for appropriate operational adjustments (e.g., flow diversion, temporary storage).
- Work schedules will be arranged to carry out shutdowns during low-flow or off-peak hours whenever feasible.
- Monitoring of effluent quality will be intensified during the shutdown and start-up phases to detect any deterioration.

To ensure environmental protection, a Pollution Prevention Management Plan will be developed prior to the start of construction.

During the construction phase, potential impacts on both surface and groundwater quality are associated with medium sensitivity and low magnitude. With the application of mitigation measures such as proper runoff management and spill prevention, impacts on water quality are expected to remain at a low level. The mitigation measures are given in Section 7.

6.5.3.2 Operation Phase

During the operational phase of the Project, water demand will arise primarily from employee use and operational needs of the treatment plant.

Water will be supplied through the municipal water network. The facility currently employs 19 personnel, and this number is expected to increase to 32 employees following the commissioning of the 2nd Stage. Based on the per capita daily water consumption of 228 L/person/day (TURKSTAT, 2022), the total daily water demand for personnel is calculated as:

$$32 \text{ employees} \times 228 \text{ L/person/day} = 7{,}296 \text{ L/day} = 7.3 \text{ m}^3\text{/day}$$

In addition to staff water use, the facility will require:

- 6 m³/day for irrigation of green areas,
- 4 m³/day for process needs such as cleaning of screens and internal surfaces,
- 15 m³/day for areas including sludge dewatering, chemical preparation, hazardous waste storage, and maintenance workshops,
- 4 m³/day for cleaning of concrete floors and internal roads.

The total estimated daily water demand during operation is approximately 36.3 m³/day.

The WWTP effluent, treated with an UV disinfection unit, will meet reuse standards, thus allowing the possibility for treated water to be used in non-potable applications such as irrigation, reducing reliance on freshwater resources over time.

The facility will use and store several chemicals such as acids and bases for pH adjustment, as well as maintenance chemicals for pumps, engines, and mechanical units. All chemicals will be stored in accordance with their Safety Data Sheets (SDS), in concrete-based storage areas with proper secondary containment and ventilation. Spill kits, absorbent pads, and absorbent sands will be kept nearby to contain any accidental leaks.

All these measures are designed to minimize the risk of soil, surface water, or groundwater contamination during the operation of WWTP.

All wastewater generated during the operational phase will be treated at the Kızılhisar WWTP, and the final effluent will comply with all applicable discharge standards (please refer to Table 8). A full shutdown of the facility is not anticipated. In the unlikely event of disruption (e.g., due to a breakdown or natural disaster), the plant will have adequate buffer capacity to retain influent temporarily, and emergency measures will be taken to avoid uncontrolled discharge.

GASKİ will ensure that a site-specific Emergency Preparedness and Response Plan is developed and implemented. In case of any emergency, corrective actions will be initiated immediately to contain and mitigate the impact.

A minor risk of groundwater contamination may occur in localized areas where maintenance is performed, due to accidental leaks of oil or fuel or improper waste handling. In such cases, appropriate mitigation measures will be taken, including:

- Personnel training on spill response,
- Implementation of spill control procedures,
- Soil and/or groundwater monitoring in case of major incidents.

In conclusion, the overall impact of the WWTP's operational phase on water resources is considered positive, as the wastewater is treated to required standards before being discharged, and treated effluent has the potential to be reused, thus contributing to sustainable water management.

6.5.4 Noise and Vibration

6.5.4.1 Pre-Construction and Construction Phase

No significant vibration-generating activities are anticipated during the phases of the Project. Therefore, vibration impacts are not expected, and no further assessment has been deemed necessary.

On the other hand, the construction phase of the project is associated with a range of activities that generate noise. Noise will potentially be produced by transportation vehicles, machinery, and outdoor equipment used for site preparation, trenching, and drilling operations.

An indicative list of the machinery and equipment expected to be used during the site preparation and construction phase, along with their quantities and noise intensity levels, is provided below.

Table 50. Noise Levels of Machinery/Equipment

Equipment Type	Quantity	Lwi (dBA)
Truck	5	108
Excavator	2	104
Loader	1	115

To assess the noise impacts of the activities to be carried out during the construction phase, total noise emissions are calculated based on a worst-case scenario and compared with relevant national regulations and EIB requirements.

The following formulas have been used in the calculation of noise levels related to the site preparation and construction phase of the Project.

The total equivalent noise level created by noise sources is calculated with the help of the formula given below.

$$L_{wT} = 10 \times \log \sum_{i=1}^{n} 10^{\frac{L_{wi}}{10}} \quad (1)$$

Where;

n : Number of noise sources
L_{wi} : Noise level (dBA) of each source
L_{wT} : Total equivalent noise level

The noise level originating from the machine/equipment and reaching a certain distance is calculated by the formula below.

$$L_p = L_{wT} + 10 \times \log \frac{Q}{4\pi r^2} \quad (2)$$

Where;

Q: 1
r: Distance (m)
Lp: Noise level (dBA)

Accordingly, a noise emission calculation has been conducted below using the worst-case scenario assumption. This scenario assumes that all machinery and equipment operate simultaneously at their maximum noise intensity levels within the Project Area, particularly at the boundary of the WWTP site.

Using the information and formula numbered 1, the total equivalent noise level is calculated as 115.63 dBA.

The calculation of the noise level at the nearest residence located 75 m from the boundary of the WWTP area is as follows:

$Lp = 115.63 + 10*\log(1/(4*3.14*75^2) = 67.14$ dBA

Subtracting the topographic absorption at 75 meters, the total Lp is 57.77 dBA.

Topographic absorption for a distance of 75 meters is calculated as follows:

$C1 = 5 \times \log_{10}(1 / 75) = -9.38$ dBA

In addition, distance dependent noise levels for the pre-construction and construction phases were calculated using formula 2 and are given below.

The results of the noise calculations demonstrate that, under conservative conditions, without accounting for topographic absorption, compliance with the applicable project noise standard, based on the most stringent threshold, the nighttime limit, is achieved at distances beyond approximately 250 meters from the noise source.

When topographic absorption is factored into the propagation model, compliance is attained at significantly shorter distances, approaching 100 meters from the source.

Given that the regulatory noise limit for daytime construction activities is 65 dBA, it can be concluded with confidence that the anticipated noise emissions during the construction phase will remain well within applicable legal thresholds and are not expected to result in significant adverse environmental or community impacts.

Table 51. Noise Levels Depending on Distance

Distance (m)	Lp (dBA)	Lp (dBA) with topographic absorption	Noise limit value identified as Project Standard (dBA)
50	70.66	62.17	55
100	64.64	54.64	55
250	56.68	44.69	55
500	50.66	37.17	55
1000	44.64	29.64	55
2000	38.62	22.12	55
3000	35.10	17.71	55

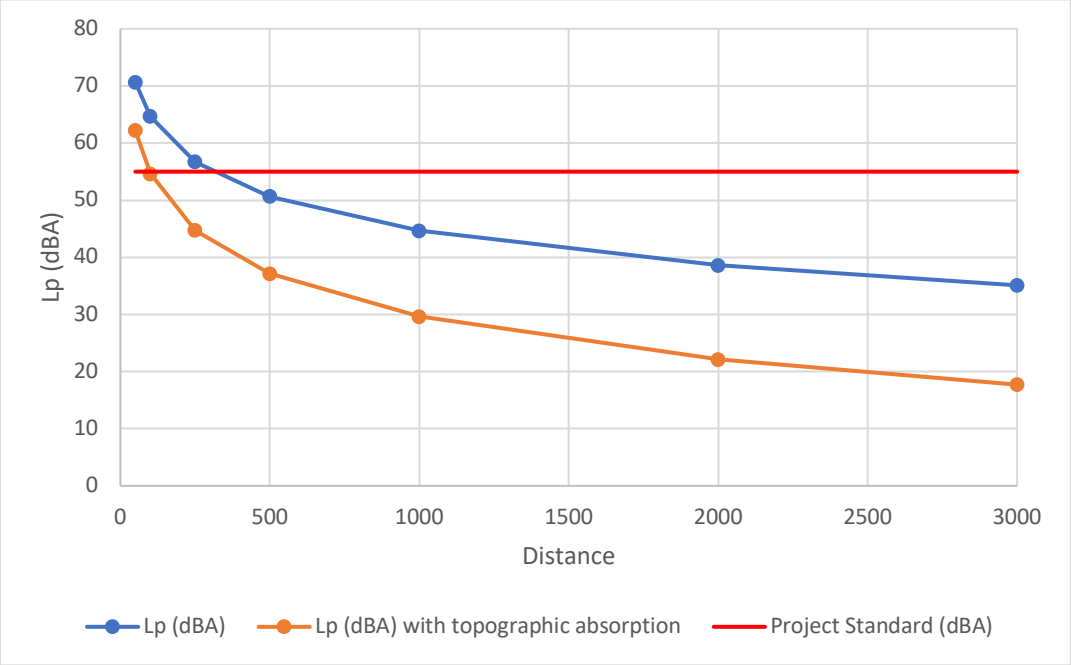


Figure 43. Noise Levels Depending on Distance

Due to the medium sensitivity of nearby receptors and medium levels of construction-related activities, the potential for noise pollution is present; however, with standard noise control measures in place, the overall impact is assessed to remain at a low level. The mitigation measures are given in Section 7.

6.5.4.2 Operation Phase

No significant vibration-generating activities are anticipated during the phases of the Project. Therefore, vibration impacts are not expected, and no further assessment has been deemed necessary.

On the other hand, during the operation phase of the Gaziantep Kızılhisar WWTP 2nd Stage Project, noise will be generated primarily from wastewater treatment equipment such as motors, compressors, pumps, and blowers. As the facility will operate on a continuous basis (24 hours/day), the noise levels emitted by the equipment are expected to remain relatively constant throughout the day and night.

The noise-generating equipment will be housed within enclosed and acoustically insulated buildings, and some components, such as certain mechanical units, will be submerged in wastewater, which will contribute to the reduction of airborne noise emissions.

Noise measurements conducted during the operation of the existing Kızılhisar WWTP (1st Stage) have shown low noise levels at the nearest receptors. As the new equipment to be installed under the 2nd Stage expansion will be similar in type and operation to the existing units, noise levels are not expected to increase significantly or exceed regulatory thresholds once the expanded facility becomes operational.

Furthermore, since the commissioning of the existing WWTP, no noise-related complaints have been reported to GASKİ by surrounding communities. This suggests that operational noise impacts have historically been negligible.

As good practice, during the procurement process for new equipment, the specified noise levels provided in technical datasheets will be reviewed and taken into consideration to ensure that the operational noise profile of the plant remains within acceptable limits.

Although the sensitivity of nearby receptors to operational noise is considered medium, the expected noise emissions from the WWTP are low in magnitude, and with mitigation measures applied, the overall impact is assessed as low. The mitigation measures are given in Section 7.

6.5.5 Resources and Waste

6.5.5.1 Pre-Construction and Construction Phase

During the construction phase, activities will require the consumption of resources such as concrete, reinforcement steel, structural steel, ferrocement, prestressed concrete, energy, and similar materials. To contribute to sustainable development, it is essential that these resources are used efficiently. Various studies have indicated that the construction phase of a wastewater treatment plant contributes negligibly (i.e., less than 1%) to the total environmental burden over its life cycle, with the most significant impact occurring during the operational phase (Kalbar et al., 2013). Therefore, the environmental impacts related to resource consumption during the construction phase are considered negligible.

Construction phase activities will include vegetation clearing, grading, construction and installation of the main operational units and auxiliary facilities, procurement, transportation, and installation of units and equipment. The types of waste expected to be generated during these activities include municipal waste, packaging waste from system equipment (e.g., wood, cardboard, plastic), hazardous waste, special waste, excavation and construction waste (e.g., scrap metal, wood, concrete debris), and discarded system equipment (e.g., panels, cables, electronic components).

For waste management, the waste management hierarchy which is given below will be followed. Based on this hierarchy, the priority is to prevent waste generation. In order to achieve this, the use of packaging materials suitable for biodegradation and recycling, the use of the least possible packaging material, and the return of non-biodegradable packaging and remaining products by the manufacturer or material suppliers can be ensured.

If the prevention of waste generation is not possible, minimum waste generation by reducing at source shall be preferred. Reducing the amount of waste at source is an important philosophy of waste management practices. The amount of waste generated can be reduced by eliminating wastage and unnecessary use.

Reuse and recycling of generated waste is very important for reducing the consumption of energy and natural resources. After deciding whether the current waste can be evaluated for energy recovery, the disposal (destruction) shall be applied as the last resort.



Figure 44. Waste Management Hierarchy

Hazardous and special waste may consist of chemical-contaminated materials (e.g., packaging materials and cloths contaminated with paint or solvents), waste oils, solvents, batteries, accumulators, filters, and machine parts arising from the operation and maintenance of machinery and vehicles.

Table below provides a list of potential waste types and corresponding waste codes anticipated during the pre-construction and construction phases.

Table 52. Possible Waste to be Generated in Pre-construction and Construction

Waste Type	Waste Code	Description
Waste from Coating Applications	08 01 11*	Waste paint and varnish containing organic solvents or other hazardous substances
Waste from Coating Applications	08 01 12	Waste paint and varnish other than those mentioned in 08 01 11
Waste from Coating Applications	08 03 17*	Waste printing toners containing hazardous substances (e.g., cartridges)
Waste Oils	12 01 12*	Used waxes and greases (grease oils)
Waste Oils	13 01 13*	Other hydraulic oils
Waste Oils	13 02 08	Other engine, gear, and lubricating oils
Packaging Waste	15 01 01	Paper and cardboard packaging
Packaging Waste	15 01 02	Plastic packaging
Packaging Waste	15 01 07	Glass packaging
Contaminated Packaging Waste	15 01 10*	Packaging containing residues of or contaminated by hazardous substances
Contaminated Packaging Waste	15 01 11*	Metallic packaging containing a porous matrix (e.g., asbestos), including empty pressure containers
Contaminated Textiles	15 02 02*	Absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances

Waste Type	Waste Code	Description
Vehicle Maintenance	16 01 07*	Waste oil filters
Waste Batteries and Accumulators	16 06 01*	Lead batteries and accumulators
Construction and Demolition Waste	17 01 01	Concrete
Construction and Demolition Waste	17 01 02	Bricks
Construction and Demolition Waste	17 01 03	Tiles and ceramics
Construction and Demolition Waste	17 01 06*	Mixtures of, or separate fractions of concrete, bricks, tiles, and ceramics containing hazardous substances
Construction and Demolition Waste	17 01 07	Mixtures of, or separate fractions of concrete, bricks, tiles, and ceramics other than those mentioned in 17 01 06
Construction and Demolition Waste	17 02 01	Wood
Construction and Demolition Waste	17 02 02	Glass
Construction and Demolition Waste	17 02 04	Wood, glass, and plastic containing or contaminated with hazardous substances
Construction and Demolition Waste	17 04 05	Iron and steel
Construction and Demolition Waste	17 04 07	Mixed metals
Construction and Demolition Waste	17 04 09*	Metal waste contaminated with hazardous substances
Construction and Demolition Waste	17 05 03*	Soil and stones containing hazardous substances
Construction and Demolition Waste	17 05 04	Soil and stones other than those mentioned in 17 05 03
Construction and Demolition Waste	17 06 01*	Insulation materials containing asbestos
Construction and Demolition Waste	17 06 03*	Other insulation materials consisting of or containing hazardous substances
Construction and Demolition Waste	17 06 05*	Construction materials containing asbestos
Medical Waste	18 01 03*	Healthcare waste
Municipal Waste	20 03 01	Mixed municipal waste
Vegetable Oil Waste	20 01 26*	Animal and vegetable oils and fats other than those mentioned in 20 01 25
Electrical and Electronic Waste	20 01 35*	Discarded electrical and electronic equipment containing hazardous components other than those mentioned in 20 01 21 and 20 01 23

Waste Type	Waste Code	Description
Electrical and Electronic Waste	20 01 36	Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23, and 20 01 35

**Hazardous Waste*

Municipal waste, as defined under the Waste Management Regulation, includes domestic waste as well as commercial, industrial, and institutional waste that are similar in nature and composition to domestic waste. These wastes are classified under waste code 20 in the Waste List provided in Annex-4 of the Regulation, and their management responsibility lies with the respective Municipality. Accordingly, municipal waste will be stored separately from hazardous and recyclable waste and will be collected regularly by the municipality.

The management of municipal waste during the project activities will follow the current practices implemented within WWTP. According to the information provided by GASKİ and the observations on the site visit, municipality is taken the municipal waste regularly from the site and municipal waste management is in compliance with the legal requirements.

During the construction phase of the Project, approximately 20 workers will be employed at the site. A Waste Management Plan will be prepared by the construction contractor prior to the commencement of construction activities to manage the waste generated effectively.

According to TURKSTAT data (2022)[19], the average daily municipal waste generation per capita is 1.03 kg/person/day. Based on this figure, the estimated daily amount of municipal waste generated during the construction phase is calculated as:

20 workers × 1.03 kg/person/day = 20.6 kg/day

This estimated waste quantity includes biodegradable waste as well as separately collected recyclable fractions such as paper, cardboard, plastic, glass, and metals.

According to the results of the municipal solid waste composition study conducted within the framework of the National Solid Waste Master Plan, the general composition of municipal waste in Türkiye is typically as follows: approximately 34% of municipal waste consists of food waste, and 25% consists of separately collected and recyclable fractions (paper, cardboard, glass, metal, plastic, etc.).

[19] https://data.tuik.gov.tr/Bulten/Index?p=Atik-Istatistikleri-2022-49570

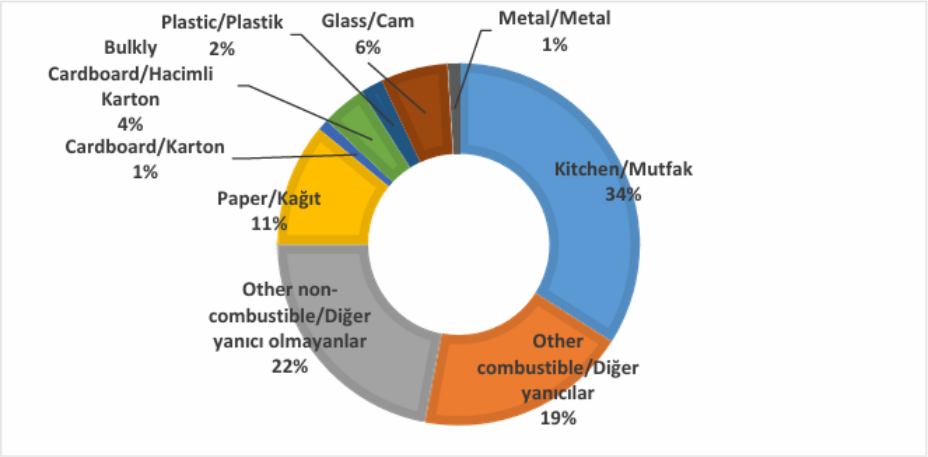


Figure 45. Composition of Municipal Waste (former Ministry of Science, Industry and Technology, 2014)

At this stage, it is not yet confirmed whether a cafeteria facility will be established within the construction site.

If a cafeteria is provided on-site, the waste composition is expected to align with the general municipal solid waste composition determined in Türkiye, where approximately 34% of the total municipal waste typically consists of food waste, and around 25% consists of separately collected recyclable fractions such as paper, cardboard, plastics, glass, and metals.

On the other hand, if no cafeteria is established and meals are supplied through an external catering service, food preparation activities on-site will be significantly limited. In such case, the proportion of food waste is expected to decrease substantially, and it is assumed that food waste will constitute approximately 5% of the total waste generated during the construction phase. Accordingly, a revised waste composition has been prepared, considering this reduced food waste fraction.

Considering that no cafeteria will be available, it is assumed that the food waste ratio will be reduced to 5% for the Project.

Accordingly, the revised waste composition for the Project is estimated as:

Table 53. Waste Type and Estimated Percentages

Waste Type	Estimated Percentage
Food Waste	5%
Other Combustible Waste	27%
Other Non-combustible Waste	31%
Paper	16%
Cardboard	2%
Bulk Carboard	6%
Plastic	3%
Glass	8%
Metal	2%

In terms of waste tires, tire changes required for construction machinery and vehicles will be carried out at authorized service centers outside the Project site. Therefore, no waste tire generation or storage is anticipated within the construction site.

Regarding medical waste, a field infirmary will not be established. In case of a medical emergency, the Oğuzeli District Hospital, located approximately 6 km from the Project Area, will be utilized. As such, no significant medical waste generation is expected at the construction site. Only negligible amounts of medical waste may arise from basic first aid interventions.

For excavation and construction debris, minor vegetation clearing and site grading activities will be conducted during site preparation. There will not be any demolition of the existing units during the construction. All activities related to excavation storage, transportation, and reuse will be carried out in full compliance with the Regulation on the Control of Excavation Soil, Construction and Demolition Wastes.

In terms of waste batteries, based on data from the Ministry of Environment and Urbanization (2009), the annual average waste battery generation per capita is approximately 140 grams. Therefore, it is estimated that the annual waste battery generation from 20 workers would be:

20 × 0.14 kg = 2.8 kg/year

Considering the nature and scale of the Project, the waste generation during the construction phase is expected to be short-term. Nevertheless, a range of mitigation measures have been proposed to prevent or minimize potential environmental impacts related to waste generation.

Waste generation during the construction phase presents moderate sensitivity and magnitude; however, with the implementation of proper waste segregation, storage, and disposal practices, the impact is expected to remain at a low level. The mitigation measures are given in Section 7.

6.5.5.2 Operation Phase

As in the construction phase, the waste management hierarchy will also be applied during the operation phase, prioritizing waste minimization, reuse, recycling, energy recovery, and, as a last resort, disposal.

During the operation phase of the Project, municipal waste will be generated primarily from the daily activities of the employees.

In addition to typical municipal waste, the generation of additional recyclable waste streams such as packaging waste, paper, cardboard, plastics, and scrap metals is expected to occur. These will mainly result from routine administrative activities and maintenance operations.

To estimate the amount of municipal waste generated during the operation phase, the calculation below has been made. As previously indicated, the average daily municipal waste generation per capita is considered as 1.03 kg/person/day based on TURKSTAT (2022) data.

The number of personnel planned for the operation phase is 32 people. Thus, the estimated daily municipal waste generation will be:

32 persons × 1.03 kg/person/day = 32.96 kg/day

This quantity includes biodegradable fractions as well as separately collected recyclable fractions such as paper, cardboard, glass, metals, and plastics.

During periodic maintenance and repair works, or in case of mechanical failures, a limited quantity of waste will also be generated from damaged, worn-out, or end-of-life equipment and materials. Additionally, packaging waste will arise from the procurement and use of new equipment, spare parts, and materials such as chemicals (e.g., flocculants, disinfectants).

Furthermore, limited quantities of waste will be generated from the use of personal protective equipment (PPE), work clothes, and cleaning clothes during regular maintenance activities.

A small amount of waste oil will also be generated due to periodic oil changes required for certain equipment such as blowers.

The most significant waste type generated during the operation phase will be sludge, resulting from the wastewater treatment processes. The solid content of the sludge will be increased through sludge dewatering units. Dewatered sludge generated as a by-product of the treatment process will be transported by licensed vehicles to a cement factory, where it will be utilized as an alternative fuel in co-processing. The handling and transfer of sludge will be regularly monitored by the operator, GASKİ, and therefore, no uncontrolled disposal or associated soil contamination is anticipated.

During the operation phase, potential impacts related to resource consumption and waste generation are expected to vary in significance. General waste generation is associated with medium sensitivity but low magnitude, resulting in a low level of impact. In contrast, sludge generation is characterized by high sensitivity and medium magnitude, due to the volume produced and the importance of safe handling and disposal. Nevertheless, with the implementation of established operational procedures, such as routine removal by licensed carriers and use in energy recovery, the residual impact is expected to remain at a low level. Additionally, the use of resources such as electricity and chemicals is limited in scale, and with efficiency measures in place, the overall impact is also assessed to be low. The mitigation measures are given in Section 7.

6.5.6 Landscape and Visual Impacts

6.5.6.1 Pre-Construction and Construction Phase

During the construction phase of the Project, the operation of construction machinery and equipment may disturb the landscape of the Project Area. Activities such as vegetation clearing, soil excavation, and trenching may cause landscape and visual impacts. To minimize impacts on the landscape during construction, the following measures will be implemented:

- Prior to the commencement of works, only the vegetation within the designated working areas will be stripped in order to prevent unnecessary clearing.
- After the completion of construction activities, the landscaping of the facility area will be restored using the stripped topsoil.

During the construction phase, potential landscape and visual impacts, such as temporary visual disturbance and reduced quality of life due to construction activities, are associated with low sensitivity and magnitude, and with standard construction management practices in

place, the residual impact is expected to be negligible. The mitigation measures are given in Section 7.

6.5.6.2 Operation Phase

Since the maintenance activities will be limited to specific areas and conducted periodically, they are not anticipated to cause any substantial alteration to the site's overall landscape. Furthermore, considering that the wastewater treatment plant is already operational and integrated into the existing industrial setting, additional visual or landscape impacts are expected to be minimal.

Nevertheless, during maintenance works, clear working zones will be designated, and activities will be strictly confined within these zones in order to minimize any disturbance to the surrounding landscape features. Any temporary disruption will be restored immediately upon the completion of maintenance tasks to ensure the preservation of the site's visual integrity.

The landscaped areas within the plant boundary will continue to be maintained regularly to support the facility's environmental sustainability goals and to contribute to the overall visual appearance of the site.

6.5.7 Climate Change

6.5.7.1 Greenhouse Gas Emissions

Greenhouse gas (GHG) emissions for the Project have been calculated by considering EIB's Project Carbon Footprint Methodologies.

According to the guideline, not all investment projects require a carbon footprint assessment to be undertaken. Only investment projects with significant emissions must be assessed according to the EIB methodologies, and these carbon footprints are included in the Carbon Footprint Exercise (CFE). Based on the results of the GHG footprint pilot, it was decided to set minimum project thresholds for inclusion in the GHG footprint at 100,000 tonnes CO_2e/year for absolute emissions and 20,000 tonnes CO_2e/year (positive or negative) for relative emissions. Investment projects were included if either of the thresholds are crossed. When included, both absolute and relative emissions need to be calculated and reported. The coverage of these thresholds was reassessed in 2018, and the threshold for absolute emissions was lowered to guarantee the desired level of coverage for the EIB. The thresholds are as follows:

- Absolute emissions or carbon sequestration exceeding 20,000 tonnes CO_2e/year
- Relative emissions exceeding 20,000 tonnes CO_2e/year (positive or negative)

As stated in the guideline, large wastewater treatment plants generally require a GHG assessment. Therefore, a GHG footprint calculation has been conducted for the Gaziantep Kızılhisar WWTP 2nd Stage Project using the methodology and default emission factors provided in the guideline.

In the guideline for WWTP, GHG types are defined as follows:

- **CH_4:** from degradation of organic material in wastewater under anaerobic conditions,

- **CO_2:** emissions from the consumption of electricity in the treatment process,
- **N_2O:** as an intermediate product from the degradation of nitrogen components in wastewater.

Furthermore, according to the guideline:

- **INCLUSION:** Scope 1 and 2 emissions for a typical year of operation.
- **EXCLUSION:** Scope 1 and 2 emissions associated with the commissioning, construction and decommissioning of the project.
- **EXCLUSION:** Scope 3 emissions.
- **INCLUSION:** Scope 3 emissions from 100% dedicated sources upstream or downstream that would not otherwise exist, and a number of specific cases below. An example of the first case would be a power plant that exists solely to supply the project (upstream) or a waste disposal site for the exclusive use of the project (downstream) that would not have otherwise existed.

Accordingly, only emissions during the operation phase have been considered. In addition, although Scope 3 emissions are generally excluded, sludge disposal emissions have been included as they are directly linked to the project.

In this study, emission estimations have been performed in accordance with ANNEX 6: Calculation of Carbon Footprint for Wastewater Treatment Facilities provided in the EIB guideline, using the default coefficients and the Project's P.E. value.

The P.E. value has been considered as 250,000, since the current capacity is 150,000 P.E., and it will be increased to 400,000 P.E. after the completion of the 2nd Stage Project.

Scope 1 Emissions:

Carbon footprint wastewater treatment (CFWW) Direct Emission Coefficient: 0.01

Scope 1 Direct Emissions = 0.01 × 250,000 = 2,500 tCO_2e/year

Scope 2 Emissions:

Indirect emissions (ID) Coefficient: 0.0086. However, according to the EIB, ID is the CO_2e indirect emissions produced by the consumed electricity per P.E. The electricity was evaluated for every process, and for the emissions the grid factor used was the EU average of 245 gCO_2/kWh. ID can be increased or reduced proportionally to the grid factor of the country's project.

Considering Türkiye's national grid emission factor of 438 gCO_2/kWh, the adjusted Scope 2 emissions are calculated as:

Adjusted ID = (438/245) × 0.0086 = 0.01537

Thus, the Scope 2 emissions are:

0.01537 × 250,000 = 3,844 tCO_2e/year

Scope 3 Emissions:

Although Scope 3 emissions are generally excluded, for completeness, sludge-related Scope 3 emissions are calculated as:

Scope 3 Emissions = 0.017 × 250,000 = 4,250 tCO_2e/year

Total GHG Emissions:

The total GHG emissions for the Project are calculated as:

Total Emissions = 2,500 + 3,844 + 4,250 = 10,594 tCO_2e/year

Conclusion:

The total emissions of the Project are calculated as 10,594 tCO_2e/year, which is well below the EIB threshold of 20,000 tCO_2e/year for inclusion in the CFE.

Thus, although a GHG footprint assessment was carried out following the EIB methodology to demonstrate good environmental practice, the Project is not required to be included in the EIB CFE.

6.5.7.2 Physical Climate Risk Assessment

In accordance with the requirements of the EIB and the EIB Group Climate Bank Roadmap (CBR), this section provides relevant information regarding potential physical climate risks associated with the Project. This information is intended to support the EIB's determination of the Project's alignment with the CBR and consistency with the "Do No Significant Harm" (DNSH) principle to climate change adaptation objectives, as set out in the EU Taxonomy Regulation.

Should the EIB determine that the Project is exposed to material physical climate risks, GASKİ will undertake a detailed Climate Risk and Vulnerability Assessment (CRVA) in line with EIB requirements and standards. The CRVA will assess how climate change may affect the Project and the system in which it operates and will identify appropriate adaptation measures to mitigate the identified risks.

The Project is located in Gaziantep Province, a region in southeastern Türkiye characterized by a semi-arid climate. The main physical climate risks for the region include prolonged droughts, extreme heatwaves, occasional flash floods during periods of intense rainfall, and dust storms, particularly during the spring and summer seasons when dry winds transport dust from southern arid regions.

Among these risks, drought and increasing temperatures are considered the most significant. The region has experienced a steady rise in average annual temperatures, with summers becoming increasingly hotter and drier. Water scarcity resulting from prolonged droughts could place additional pressure on municipal water and wastewater infrastructure. To address these risks, WWTP has been designed with resilience measures, including flexible process operations capable of handling variable influent quality and volume.

Although flash floods occur in the wider Gaziantep region, the specific flood risk at the Project site is considered low. Field assessments confirm that the nearby creek does not exhibit

continuous flow throughout the year, significantly reducing the potential for flood hazards. Additionally, the WWTP area is not located within an officially designated floodplain, and effective stormwater drainage systems have been integrated into the design to further minimize flood-related risks.

The selected extended aeration activated sludge treatment process ensures operational robustness under varying climatic conditions. Moreover, dewatered sludge generated during operations will be transferred to a cement factory for use as an alternative fuel, supporting circular economy principles and reducing environmental impacts.

In response to regional and local climate risks, GASKİ has integrated several resilience measures into the Project's design, including:

- Designing civil structures and treatment units to withstand extreme weather conditions such as heavy rainfall and temperature extremes
- Installing effective drainage systems to prevent surface water accumulation during extreme precipitation events
- Utilizing an extended aeration activated sludge process with nitrogen and phosphorus removal, ensuring treatment stability under varying influent and ambient conditions
- Implementing sludge dewatering processes with subsequent co-processing of sludge in a cement factory
- Regularly monitoring influent quality and operational parameters to proactively address climate-driven variations
- Planning for energy-efficient operations and considering the future integration of renewable energy sources to enhance sustainability.

Through these measures, the Project will contribute positively to climate adaptation efforts by protecting surface and groundwater resources in a region increasingly affected by water scarcity. These efforts are consistent with the climate adaptation criteria outlined in the EU Taxonomy Regulation and broader resilience objectives.

GASKİ is committed to continuously monitoring potential climate risks throughout the Project's lifecycle and to implementing adaptive management strategies as necessary.

6.5.7.3 Paris Agreement Alignment

The Project has considered climate risks and greenhouse gas (GHG) emissions in its planning and assessment processes. While these elements are addressed, the Project also acknowledges the need to align with the overarching objectives of the Paris Agreement, particularly the goal of limiting global temperature rise to 1.5°C above pre-industrial levels.

To this end, the Project is committed to contributing to a low-carbon and climate-resilient development pathway, consistent with the principles outlined in the EIB's PATH Framework. Although the Project is not in a high-emitting sector, it incorporates energy-efficient design features, promotes renewable energy integration where applicable, and minimizes its carbon footprint throughout its lifecycle.

The Project Owner will continue to monitor climate-related developments and ensure that the Project's environmental and social performance remains aligned with evolving international best practices, including the EU Green Deal objectives and the goals of the Paris Agreement.

6.6 Impacts on the Biological Environment

WWTPs can have both positive and negative impacts on biodiversity, depending on their design, location, and operational practices. Below is a breakdown of the key impacts:

Habitat Loss and Degradation

Site clearance: Construction may result in the loss of natural or semi-natural habitats, affecting flora and fauna. 152 *Pinus brutia* (Turkish pine) tree species and 53 *Olea europaea* (Common Olive) will be re-located. The Turkish pine trees identified as suitable for relocation will be determined and transplanted by the Municipality. Those that cannot be relocated will be removed and handed over to the Municipality. Olive trees, on the other hand, will be transplanted to suitable locations within the project area.

Tree Relocation Methodology for *Pinus nigra* and *Olea europaea*

1. Objective

The objective of this methodology is to ensure the effective and sustainable relocation of *Pinus nigra* and *Olea europaea* trees from the planned construction areas to suitable new locations, minimizing ecological disturbance and ensuring post-relocation survival.

2. Tree Species and Estimated Numbers

Species	Estimated Number	Age Range	Average DBH (cm)
Pinus nigra	~50 trees	10–30 years	20–45
Olea europaea	~53 trees	20–100 years	15–60

Note: The final numbers will be confirmed after detailed site inventory.

3. Relocation Area

- Location: A designated green buffer zone within the project site and municipal reforestation plots.
- Criteria for Site Selection:
    - Soil type compatibility (well-drained, slightly alkaline for olives; loamy, acidic-neutral for pines).
    - Sunlight exposure.
    - Accessibility for transplanting equipment.
    - Proximity to water sources or irrigation infrastructure.

4. Pre-Relocation Activities

- Tree Health Assessment: Certified arborists will assess each tree for viability of relocation.

- Soil Testing: Both source and target locations will be tested for nutrient compatibility and drainage capacity.
- Root Pruning (if needed): For older or sensitive trees, root pruning will be performed 1–3 months before relocation to stimulate fibrous root growth.

5. Equipment and Resources

Equipment/Material	Purpose
Hydraulic tree spade	For digging and lifting small to medium trees.
Excavators and cranes	For large or mature trees
Tree wrapping materials	To protect roots and branches
Water tanks and hoses	Irrigation during and after relocation
Mulch and fertilizers	To support post-relocation recovery

6. Relocation Schedule

- Preparation Period: 2–4 weeks (site assessment, pruning, logistics)
- Relocation Period:
  - Pinus nigra: Preferably in late autumn or early spring (October–November / March–April)
  - Olea europaea: Winter dormancy period (December–February)
- Estimated Duration:
  - 3–5 trees/day depending on size and logistics.
  - Total process expected to take 4–6 weeks.

7. Relocation Process Steps

- Mark and label trees to be relocated.
- Dig around the root ball (minimum 10x DBH in cm) and prepare for transport.
- Wrap the root ball in burlap or secure in a spade.
- Carefully lift and transport using cranes or trucks.
- Place trees in pre-dug holes, adjusting orientation and depth.
- Backfill, water thoroughly, and mulch around base.

8. Post-Relocation Monitoring and Maintenance

- Immediate Care:
  1. Watering twice weekly during the first 3 months.
  2. Stabilization with supports to avoid wind damage.

- Monitoring Schedule:
    3. Monthly inspections for 6 months.
    4. Quarterly health checks for up to 2 years.
- Parameters Monitored:
    5. Leaf wilt or discoloration
    6. New shoot growth
    7. Pest or disease signs
- Remedial Actions:
    8. Fertilization, pruning, pest control as needed.

9. Reporting

A relocation and monitoring report will be submitted biannually to the project authority, detailing tree survival rates, health status, and corrective measures taken.

Barrier to species movement: Infrastructure (pipes, tanks, fences) can fragment landscapes, restricting wildlife movement and migration corridors.

Water Quality and Aquatic Ecosystem Impacts

- Altered nutrient levels from discharge of treated effluent.
- Potential chemical contamination, if not properly managed.
- Thermal pollution from warm effluents affecting fish and aquatic life.

Noise, Light, and Air Pollution

Noise disturbances: Pumps, aerators, and vehicles can disrupt wildlife communication and breeding (e.g., amphibians, birds, bats).

Light pollution: Artificial lighting may affect nocturnal species like bats and insects.

Odors & air emissions: Hydrogen sulfide (H_2S), ammonia (NH_3), and volatile organic compounds (VOCs) can impact nearby flora and fauna.

Invasive Species & Pathogens

Introduction of invasive species: Wastewater can carry seeds or eggs of invasive species, which can outcompete native biodiversity in receiving ecosystems.

Pathogen spread: Untreated or partially treated water may introduce bacteria, viruses, or parasites that affect aquatic and terrestrial organisms.

As a conclusion, construction activities may result in moderate impacts on the biological environment, particularly due to habitat loss and temporary displacement of flora and fauna, both of which are associated with medium sensitivity and magnitude. However, with appropriate site management, clearance limitations, and restoration practices, these impacts are expected to remain at a low level. Additionally, the risk of introducing invasive species is

considered low, both in sensitivity and magnitude, and is likewise expected to result in a low level of residual impact. The mitigation measures are given in Section 6.6.1 and Section 7.

On the other hand, for the operation, potential impacts on fauna in the Sacır Stream and in the vicinity of the Project area are associated with medium sensitivity but low magnitude. With proper operation of the WWTP and compliance with discharge standards, the residual impacts on local fauna are expected to remain at a low level. The mitigation measures are given in Section 6.6.1 and Section 7.

6.6.1 Mitigation Measures

1. Land Preparation Phase

- Habitat loss due to land clearing.
- Displacement of flora and fauna.
- Soil compaction and erosion risks.
- Introduction of invasive species.

Mitigation Measures:

- Controlled Clearing
- Remove vegetation in phases to allow fauna relocation.
- Restrict clearing to the minimum necessary area.
- Soil Protection: Implement erosion control measures (e.g., silt fences, cover crops).
- Invasive Species Management: Prevent introduction of invasive species by cleaning construction equipment before use.

2. Construction Phase

- Disturbance of fauna due to noise, vibration, and light pollution.
- Water pollution from runoff, chemicals, and spills.
- Habitat fragmentation.

Mitigation Measures:

- *Noise & Light Management:*

  Schedule noisy activities outside of breeding seasons.

  Use shielded and directional lighting to minimize light pollution.
- *Water Protection Measures:*

  Install sediment traps and silt fences to prevent runoff.

  Store and handle hazardous materials away from water bodies.
- *Waste & Pollution Management:*

  Implement spill prevention plans for hazardous materials.

  Manage solid waste to avoid attracting scavenger species.

3. Operation Phase

- Effluent discharge affecting water quality.
- Altered hydrology impacting wetlands and aquatic ecosystems.
- Risk of fauna mortality (e.g., birds trapped in tanks).

Mitigation Measures:

- Effluent Quality Control:
  Regular water monitoring to ensure compliance with discharge standards.
  Use nature-based solutions (e.g., constructed wetlands) to enhance treatment.
- Wildlife Safety Measures:
  Install barriers or nets over treatment tanks to prevent fauna entrapment.
  Provide escape ramps for small animals.
- Habitat Restoration & Management:
  Restore riparian buffer zones around water bodies.
  Replant native vegetation to enhance biodiversity.

6.7 Impacts on the Socio-Economic Environment

Infrastructure projects bring both positive and negative socioeconomic impacts. On the negative side, construction activities can lead to increased traffic, the use of heavy machinery, waste generation, and elevated levels of noise and dust. On the positive side, such projects often create employment opportunities and stimulate the local economy through procurement of goods and services. This section provides a separate overview of the potential positive and negative impacts during both the construction and operational phases.

6.7.1 Employment and Procurement Opportunities Created by the Project

6.7.1.1 Impacts During the Construction Phase

The workforce required during the construction phase (approximately 20 people) will be sourced locally, regionally, and nationally. Due to the technical nature of the project, it is expected that both skilled and unskilled labor can be provided from local or at least regional sources. However, considering the small number of personnel to be employed, the project is not expected to generate significant employment for the region.

Another benefit of the project may be the creation of indirect employment opportunities, primarily associated with the project's supply chain (goods and services) and the local spending of construction workers. Yet, this impact is also expected to remain limited due to the low number of staff.

In addition to employment, the project will require the procurement of certain goods and services. Where feasible and practical, prioritizing local procurement is expected to have minor positive impacts on the regional level.

6.7.1.2 Impacts During the Operation Phase

Although the number of operational staff is expected to increase from 19 to 32, the overall employment impact is still anticipated to be low, considering the limited number of positions relative to the local population and the potential difficulty in finding suitably qualified local personnel.

6.7.1.3 Mitigation Measures

GASKİ will ensure that all employment and labor practices comply with Turkish legislation and international standards. Where possible, the project will aim to maximize local employment (including SuTPs) to enhance local benefits. Recruitment processes will be transparent, publicly announced, and non-discriminatory, ensuring equal opportunity regardless of ethnicity, religion, language, or gender.

The construction contractor and subcontractors will advertise job opportunities through various channels, including local mukhtars (village/neighborhood heads) and community associations, particularly in settlements within the project's area of influence. Preference will be given to these areas during recruitment.

6.7.2 Infrastructure and Services

6.7.2.1 Construction Phase Impacts

Construction activities will require the transport of materials and equipment, leading to an increase in heavy vehicle traffic on existing roads. Given that the project is located along the main route to the airport, this could have broader implications for both Gaziantep and the surrounding region.

Added traffic may cause delays and exacerbate congestion, especially in already busy areas, and may result in financial losses for individuals missing flights due to these delays.

Heavy construction vehicles may also accelerate the deterioration of existing roads, particularly unpaved or poorly maintained sections. During the construction phase, there is a moderate potential for infrastructure damage; however, with proper planning, supervision, and adherence to safety protocols, the residual impact is expected to remain at a low level. The mitigation measures are given in the Section 6.7.2.3 and Section 7.

6.7.2.2 Operation Phase Impacts

Unlike the construction phase, operational traffic will be limited mainly to the periodic transport of dewatered sludge, rather than continuous heavy vehicle movement. Therefore, considering the lower frequency and intensity of vehicle use, the sensitivity of the receptors and magnitude of impact are both assessed as low, and with proper route planning and vehicle maintenance, the residual impact on traffic and road infrastructure is expected to remain at a low level. The mitigation measures are given in the Section 6.7.2.3 and Section 7.

6.7.2.3 Mitigation Measures

Both the construction activities and the operational phase sludge and waste transport will be handled by contractors. Any damage to public infrastructure will be promptly repaired or compensated by the contractors, in coordination with the relevant authorities such as the

General Directorate of Highways, the Gaziantep Metropolitan Municipality or relevant district municipalities.

To address potential concerns from the community, a grievance mechanism will be implemented during the construction phase to ensure that local residents can voice complaints and receive timely responses.

6.7.3 Demographic Structure

6.7.3.1 Impacts During the Construction Phase

The primary impact of the project on the local population during the construction phase will stem from temporary direct and indirect employment opportunities, with an estimated workforce requirement of around 20 people. Given the relatively small number of workers involved, the project is not expected to pose any significant risks to the demographic structure or social cohesion of nearby communities.

6.7.3.2 Impacts During the Operation Phase

Since the number of jobs created during the operational phase will be quite limited in relation to the overall population, no notable impacts on demographic structure or social cohesion are anticipated.

6.7.3.3 Mitigation Measures

To prevent population influx into nearby settlements, priority will be given to local residents during recruitment in the construction phase.

Further details regarding mitigation measures can be found in the table under Section 7 of this report.

6.7.4 Labor and Working Conditions

EIB E&S Standard 2 requires the preparation of a Labor Management Plan (LMP) to comply with EIB standards and national legislation on Working Conditions and Labor Relationship Management, and to act in accordance with this LMP throughout the pre-construction, construction and operation phases. This process is related to all of the sub-headings in Section 6.7 and details of risk mitigation measures are provided in Section 7.

6.7.5 Community Health and Safety

Since the WWTP Capacity Increase is considered as a stand-alone public health project, the positive benefits that the project will provide in this area and the risks and problems that may be encountered during the construction and operation processes are discussed in detail under social impact within the scope of the project.

6.7.5.1 Impacts During the Construction Phase

The construction phase may pose several risks to community health and safety due to emissions (both gaseous and dust), elevated noise levels, poor handling of construction waste, and the possible need to temporarily close certain facility units or the entire site.

Additionally, increased activity and movement of heavy machinery and equipment could disrupt traffic and heighten the risk of accidents.

Traffic-related incidents, including those with serious or even fatal consequences, may occur during the transportation of materials and equipment to and from the construction site. These risks are considered moderate in severity, but they can be mitigated effectively through the implementation of well-planned preventive measures.

Construction activities within the existing WWTP site may lead to temporary shutdowns of certain units or disruptions in plant operations. Given the moderate sensitivity and magnitude of such interruptions, these impacts are considered medium in the absence of mitigation. However, with proper planning, phased construction scheduling, and coordination with operational teams, the overall impact is expected to remain at a low level.

During the construction phase, the presence of a temporary workforce, including external contractors and construction personnel, may increase the risk of Gender-Based Violence (GBV) and Sexual Exploitation, Abuse, and Sexual Harassment (SEA/SH) in the surrounding communities. These risks may particularly affect women, children, and other vulnerable groups, especially in semi-rural areas with limited access to protection services. However, these risks are considered to be of medium sensitivity and magnitude, given that there are no highly sensitive receptors such as schools or dense residential areas in the immediate vicinity, and the workforce is expected to be accommodated within the project site. With proper implementation of mitigation measures, such as a contractor-enforced Code of Conduct, mandatory training, and a confidential grievance mechanism, the residual impact level is expected to remain low.

6.7.5.2 Impacts During the Operation Phase

In the operational phase, the primary risks to community health and safety will be linked to wastewater discharges potentially exposing agricultural workers to health hazards, inadequate waste and sludge management practices, increased traffic from transport operations, and unexpected malfunctions at the facility.

Similar to the construction phase, any improper handling or disposal of waste could have adverse consequences for public health. However, operational risks are more directly tied to the ongoing management of sludge; failure to manage it correctly or to dispose of it in a controlled manner could pose significant health and environmental risks. However, with strict adherence to regular sludge removal, and disposal by licensed facilities, the residual impact is expected to remain at a medium level.

Also, the transportation of waste and sludge may lead to minor increases in local traffic volumes; yet, considering the low frequency and controlled nature of these movements, the impact is assessed to be low.

Although the risk level is generally lower during operation compared to construction, GBV and SEA/SH risks may still emerge, especially through contracted service providers involved in waste or sludge transportation or site maintenance. Preventive measures similar to those in the construction phase will continue to apply.

The mitigation measures are given in the Section 6.7.5.3 and Section 7.

6.7.5.3 Mitigation Measures

To ensure the protection of community health and safety throughout both construction and operation phases, the Project will implement a set of preventive and control measures aligned with international standards and good industry practices. During construction, mitigation efforts will focus on managing emissions, dust, and noise through regular site watering, equipment maintenance, and limiting noisy activities to daytime hours. Safe traffic planning, installation of warning signage, and speed control on access roads will help minimize accident risks. Furthermore, potential disruptions to WWTP operations will be addressed through advance planning, coordination with GASKİ, and the use of temporary bypass or flow control systems where necessary.

In addition, specific attention will be given to GBV and SEA/SH risks associated with workforce presence during construction and contracted services during operation. Mitigation measures will include the enforcement of a Code of Conduct, provision of mandatory training for all workers and contractors, and the establishment of an accessible and confidential grievance mechanism. All sludge and waste management operations will be strictly monitored, ensuring that licensed facilities are used and that there is no prolonged on-site storage.

Further details regarding mitigation measures can be found in the table under Section 7 of this report.

6.7.6 Cultural Heritage

6.7.6.1 Construction Phase Impacts

Since the first phase of the wastewater treatment plant began operations in 2008 and the new project will be implemented within the same site, the discovery of unknown archaeological sites or artifacts is not anticipated. Nonetheless, a chance find procedure will be in place during construction to ensure that any unexpected cultural heritage discoveries are properly managed, keeping the overall impact at a low level.

6.7.6.2 Operation Phase Impacts

Aside from minor maintenance and repair activities, no major operations are expected during the operational phase; therefore, no significant impacts on archaeological or cultural heritage are foreseen.

6.7.6.3 Mitigation Measures

Although the likelihood of encountering archaeological remains during construction is considered low, a Chance Find Procedure will be developed and implemented by the construction contractor. This protocol will ensure that any unexpected archaeological discoveries are managed appropriately and in accordance with national regulations.

6.8 Cumulative Impact Assessment

There is no universally standardized methodology for the assessment of cumulative impacts; however, several guidance documents, including the IFC Good Practice Handbook on Cumulative Impact Assessment (CIA) and Management, provide widely recognized approaches. The methodology applied in this section has been developed based on relevant international good practices, previous experience, the nature and scale of the Project, and

information obtained from Türkiye's online EIA database concerning other proposed developments within the AoI.

Cumulative impacts are defined as "...those impacts that result from the successive, incremental, and/or combined effects of an action, project, or activity when added to other existing, planned, and reasonably foreseeable future developments" (IFC Good Practice Handbook: CIA and Management).

Such impacts can arise through several mechanisms, including:

- Accumulation of multiple impact factors on a single receptor at a specific location or during a particular period, for example, simultaneous noise, air emissions, visual disturbances, and impacts on water resources during both construction and operation phases
- Impacts on the same receptor across different geographic locations, such as the cumulative degradation of habitats across a species' distribution range
- Combined impacts from the Project and other concurrent developments, such as dust emissions from both the construction activities of the Project and other nearby infrastructure projects (e.g., roadworks, industrial facility expansions).

According to the IFC, CIA involves:

- Analyzing the potential impacts and risks of the Project in conjunction with impacts from other human activities and natural environmental or social drivers affecting valued environmental and social components (VECs) over time
- Identifying and proposing effective measures to avoid, minimize, or mitigate cumulative impacts and associated risks wherever possible.

The Cumulative Impact Assessment for this Project has been conducted following the six-step framework proposed in the IFC Good Practice Handbook, ensuring a systematic and comprehensive evaluation of cumulative impacts relevant to the Project (Figure 46).

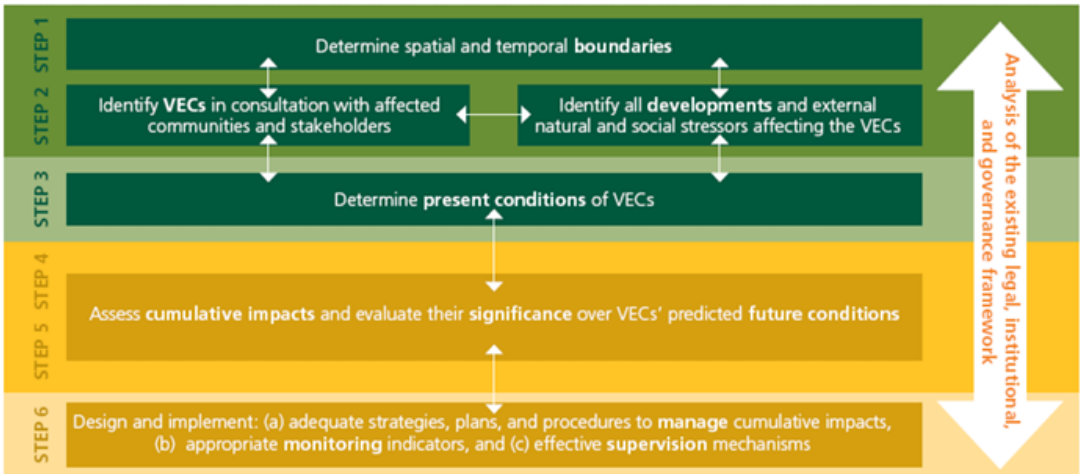


Figure 46. Cumulative Impact Assessment Methodology

This chapter presents the implementation of the stepwise methodology detailed in the CIA Handbook and the results of the CIA for Project. The above-mentioned steps are listed below:

- Step 1: Scoping Phase I – VECs, Spatial and Temporal Boundaries
- Step 2: Scoping Phase II – Other Activities and Environmental Drivers
- Step 3: Establish Information on the Baseline Status of VECs
- Step 4: Assess Cumulative Impacts on VECs
- Step 5: Assess the Significance of Predicted Cumulative Impacts
- Step 6: Management of Cumulative Impacts

6.8.1 Step 1 – VECs, Spatial and Temporal Boundaries

In the first step of this CIA study, objectives are listed as:

- Identifying and agreeing on VECs in consultation with stakeholders.
- Determining the time frame (temporal boundaries) for the analysis.
- Establishing the geographic scope (spatial boundaries) of the analysis.

VECs:

VECs are defined as fundamental elements of the physical, biological or socio-economic environment, including the air, water, soil, terrain, vegetation, wildlife, fish, birds and land use that may be affected by a proposed project.

The potential identified VECs for the Project can be listed for construction and operation phases below:

- **Construction:** Noise, Air Quality, Community Health and Safety, Labor Influx, Local Labor
- **Operation:** Visual, Water Quality, Local Economy, Labor Management

Temporal Boundaries:

The temporal boundary of the CIA contains the entire Project lifecycle (i.e., from construction until the end of decommissioning and closure). However, the capability of reasonably predicted future actions and tendencies (including the planning/implementation of other relevant projects in the region) limits the CIA process.

Therefore, for this CIA, consideration is given to the scope that is practical for discussion and assessment of cumulative impacts with the other projects for the construction and operation phases.

Spatial Boundaries:

The spatial boundaries have been determined based on the likely extent of environmental and social receptors potentially affected by the Project. Taking into account the proximity of the nearest sensitive receptors and potential cumulative interactions with other developments, a spatial boundary of a 2-kilometer radius around the Project site has been defined.

This radius has been selected to ensure that all relevant environmental and social impacts, including those on water resources, air quality, noise levels, biodiversity, and local communities, are appropriately assessed in relation to both the Project's activities and any existing or reasonably foreseeable developments in the surrounding area.

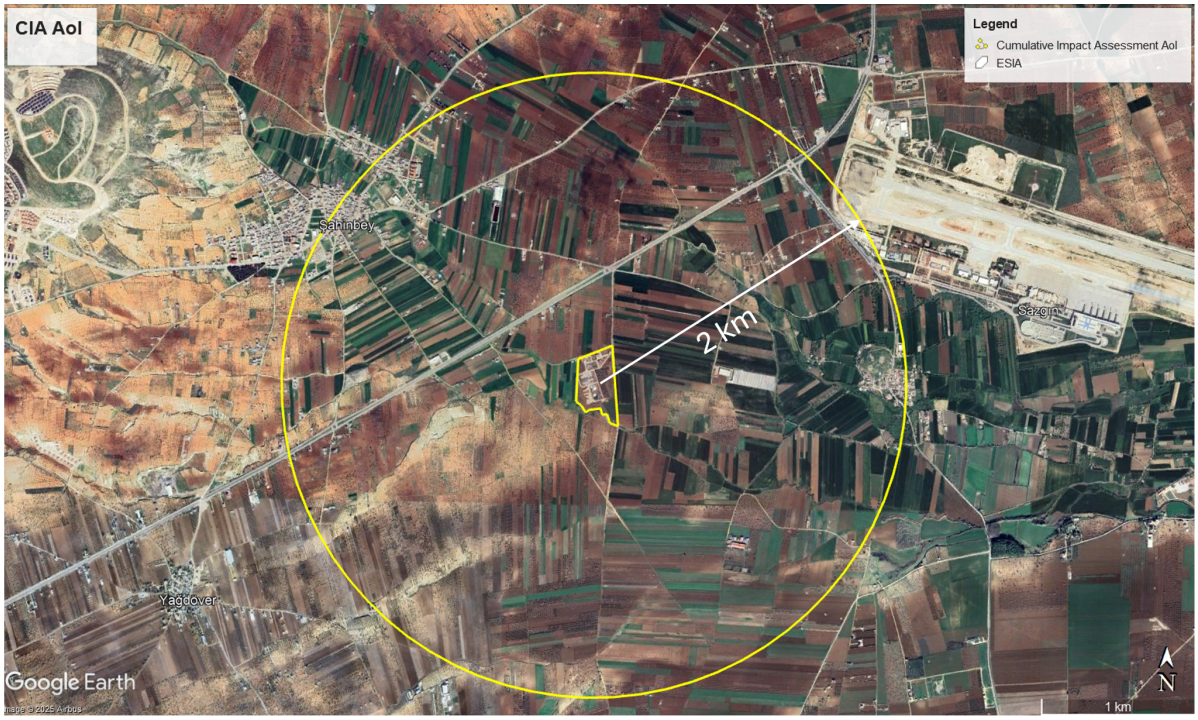


Figure 47. Cumulative Impact Assessment AoI

6.8.2 Step 2 – Identification of Other Activities and Environmental Drivers

The objective of Step 2 is to:

- Identify past, existing, or planned activities within the defined spatial boundaries, and
- Assess the potential presence of natural or social external influences and stressors.

Other Activities

Within the scope of the CIA, an evaluation was conducted to identify past, ongoing, and planned projects and activities located within the defined 2-kilometer spatial boundary, in accordance with the spatial and temporal criteria outlined above.

Potential cumulative interactions were considered for any activity that could reasonably overlap or interact with the Project's activities during the construction or operation phases.

The following sources were used to identify relevant activities and developments:

- The Online EIA Platform of the MoEUCC
- Satellite imagery analysis using Google Earth
- Internet-based searches for regional projects and developments.

Based on the findings from these sources, it has been determined that there is no significant past, existing, or reasonably foreseeable future developments within the defined area that would likely contribute to cumulative impacts in combination with the Project.

This conclusion is supported by the general socio-economic profile of the surrounding region, which is characterized by moderate development levels and limited investment capacity for major infrastructure projects. Moreover, the area surrounding the Kızılhisar WWTP site is not currently considered a focal point for significant external investors.

Therefore, no other developments have been identified that would require detailed cumulative impact interaction analysis for the purposes of this study.

6.8.3 Step 3 – Baseline Information on VECs

Baseline information regarding the VECs has been established primarily based on the data collected for each environmental and social topic assessed within the scope of this ESIA study.

Since no other past, existing, or planned projects have been identified within the defined AoI, the baseline conditions for the CIA correspond to the baseline conditions already described in the relevant sections of this ESIA Report.

Thus, the existing environmental and social setting documented for the Project site and its surroundings, including data on air quality, noise levels, water resources, soil conditions, biodiversity, and socio-economic aspects, also serves as the baseline for evaluating potential cumulative impacts.

6.8.4 Step 4 – Assessment of Potential Cumulative Impacts on VECs

The CIA is inherently forward-looking. The assessment does not compare the Project's impacts against the historical baseline conditions of the VECs, but rather evaluates the difference between:

- the future anticipated condition of the VECs under the influence of all other existing or reasonably foreseeable external factors (projects and environmental drivers), and
- the future anticipated condition of the VECs with the addition of the Project's contributions.

The prediction of the Project's cumulative impacts, together with the findings of the ESIA, informs the need for Project-specific mitigation measures. In contrast, the overall predicted cumulative impact across multiple developments highlights the need for mitigation measures to be undertaken collectively by different project owners or responsible entities. These measures aim to ensure that the combined pressures on VECs remain consistent with national/regional plans or at least aligned with environmental quality standards necessary for the intended use of the affected resources.

Since no other existing or planned projects were identified within the defined CIA study area that could potentially affect the selected VECs, it has been concluded that there are no likely cumulative impacts on any of the VECs as a result of the Project.

7 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The Environmental and Social Management Plan (ESMP) outlines the key mitigation, monitoring, and management measures that will be implemented throughout the Project's lifecycle to minimize potential environmental and social risks and impacts. The ESMP serves as a practical tool to ensure that all activities are carried out in accordance with national legislations, EIB standards, and good international industry practices. It assigns clear responsibilities for the implementation and monitoring of mitigation measures to the Project Owner, contractors, and other relevant stakeholders.

In line with EIB requirements (Standard 1 - paragraph 30), the implementation of the ESMS may be subject to external audits, where relevant and as deemed necessary by the EIB.

The ESMP presented in this section is structured around identified environmental and social risks and impacts under Section 6 and associated with the construction and operation phases. It includes specific mitigation actions, responsible parties, monitoring indicators.

The implementation and monitoring arrangements defined in the ESMP are also fully aligned with the provisions set out in the Environmental and Social Management Framework (ESMF, November 2024), which aims to set out the principles, guidelines and procedures for screening, assessing, managing and monitoring the potential environmental and social impacts of sub-projects financed under Earthquake Reconstruction Framework Loan Project. In particular, the ESMP reflects the roles and responsibilities, reporting procedures, and oversight mechanisms defined in the ESMF, ensuring consistency between project-level commitments and the programme-level framework. These institutional arrangements, including coordination with the ILBANK Project Implementation Unit (PIU), are further detailed in Section 9 of this report.

Table 54. Pre-Construction and Construction Phases ESMP

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures-Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
Physical Environment						
Air Quality – Dust	• GASKİ will ensure that the contractor will prepare and implement an Air Quality Management Plan before the construction. • Open area sources such as stockpiles and unpaved surfaces will be controlled through moisture management and covering. Where feasible, stockpiles will be covered, and the surface moisture content will be maintained at approximately 10% to prevent dust generation. • Speed limits will be enforced within and around the construction site. Vehicle speeds are proposed to be limited to 20 km/h on unpaved surfaces. • The drop height of dust-generating materials during loading and unloading will be kept as low as possible. • Dust suppression systems (e.g., pressurized watering or misting systems) will be used when necessary. • Wind barriers and protective panels will be installed, when necessary, around high-risk areas such as material storage zones. • Solid screens or barriers, at least as high as the stockpiles on site, will be constructed along the boundaries of the construction area adjacent to agricultural fields, when necessary. • Alternative transport routes will be selected where possible to avoid passing through residential or agricultural areas. • Excavation and construction materials transported off-site will be covered with tarpaulin or coarse materials to prevent dust dispersion during transit. • In locations with active traffic or pedestrian flow, continuous dust suppression will be carried out to maintain visibility and ensure road safety. • In the event of grievances from nearby residents or landowners regarding dust or air quality, dust measurements will be conducted at the relevant site. Based on the findings, additional mitigation measures will be implemented, such as increasing the frequency of watering or reducing vehicle speeds. • If dust emissions or insufficient suppression measures cause verified damage to agricultural crops or local infrastructure, the contractor will be responsible for providing full compensation to the affected parties. • Loading and unloading operations will be performed without throwing/scattering. The top of the trucks will be covered with tarp when carrying construction materials. • The asphalt roads will be used as much as possible.	Air Quality Management Plan – before the construction	GASKİ (Management and Coordination) Contractor (Implementation)	Air Quality Management Plan and its revisions	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)
		Dust measurements – in the event of grievances		PM10 measurements	In the event of grievances	
		Other mitigation measures – continuously		Visual checks	Continuously	
Air Quality – Exhaust Emissions	• All construction machinery and transport vehicles to be used on site will be well-maintained and regularly serviced to ensure operational efficiency and to minimize emissions. • All vehicles to be used for transportation and excavation will be required to undergo regular vehicle inspections, including exhaust gas emission measurements, in accordance with national regulations. • Idling of engines while waiting to enter the site or during on-site downtime will not be permitted. This will reduce unnecessary fuel consumption and prevent localized air pollution.	Regular vehicle inspection records – when necessary	GASKİ (Management and Coordination) Contractor (Implementation)	Regular vehicle inspection records	When necessary (based on the vehicle type)	GASKİ (Management and Coordination) Contractor (Implementation)

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures-Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
	• Speed limits will be imposed for all construction vehicles, especially on unpaved or narrow access roads, to reduce both exhaust emissions and dust generation. • Energy consumption associated with construction equipment and vehicles will be monitored and recorded where possible. • The optimal and efficient use of construction machinery will be ensured to reduce greenhouse gas (GHG) emissions and fuel use. Where technically feasible, machinery with low-emission engines or alternative fuels will be prioritized. • Training sessions will be organized for construction personnel and equipment operators on the best practices for energy efficiency and minimizing fuel-related emissions.	Other mitigation measures – continuously		Visual checks	Continuously	Supervision Consultant (monitoring)
Soil – Loss of topsoil	• GASKİ will ensure that the contractor will prepare and implement a Soil Management Plan before the construction. • A temporary top-soil storage area will be designated within the WWTP boundaries prior to the commencement of excavation activities. • The temporary storage area will be located at a safe distance from the creek that feeds Sacır Stream. • The storage site will have a maximum slope of 5% to ensure stability and minimize erosion risk. • Topsoil striping will be the first activity carried out prior to excavation and will be implemented in the designated areas. • Topsoil will not be stripped earlier than necessary in order to prevent erosion by wind and water. • The topsoil will be stripped to a sufficient depth. • Stripping will not be carried out on wet soil to avoid compaction. • The side slope of the stockpiles will not exceed a ratio of 3:1 (height : width). • The striped topsoil will be reused for landscaping purposes at the end of the construction phase. • The stored topsoil will not be used for agricultural purposes.	All mitigation measures - Before the construction	GASKİ (Management and Coordination) Contractor (Implementation)	Visual checks Soil Management Plan and its revisions	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)
Soil - Erosion	• GASKİ will ensure that the contractor will prepare and implement a Soil Management Plan before the construction. • An appropriate drainage system will be established on site to minimize the potential impacts of surface runoff. In this context, drainage channels will be constructed in accordance with the site's topographic characteristics. • Construction activities, particularly excavation works, will be carried out preferably under dry weather conditions to minimize soil disturbance and erosion risk. • Topsoil stripping will not be conducted earlier than necessary, in order to avoid erosion caused by wind and water. • To prevent wind erosion, disturbed areas and topsoil stockpiles will be kept moist, and the height of stockpiles will not exceed 3 meters. • Upon completion of construction at each location, the topography will be restored immediately to ensure slope stabilization and minimize erosion risk. • All erosion control measures will be designed and implemented with due consideration of the project's location within the Oğuzeli Major Plain Protection Area to avoid off-site sediment transport and protect adjacent agricultural lands. • The contractor will conduct regular inspections of erosion and sediment control measures,	Drainage system and topsoil striping – before construction Other mitigation measures – continuously	GASKİ (Management and Coordination) Contractor (Implementation)	Visual checks Soil Management Plan and its revisions	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures-Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
	particularly after heavy rainfall events, and implement any necessary maintenance or corrective actions.					
Soil – Soil contamination	• GASKİ will ensure that the contractor will prepare and implement a Soil Management Plan before the construction. • The amount of soil potentially subject to compaction or contamination will be minimized by strictly limiting the movement of construction machinery, equipment, and personnel to designated working zones and access routes within the project site. • No construction materials or waste will be stored outside the permitted boundaries of the WWTP area. • Given the project's location within the Oğuzeli Major Plain Protection Area, all soil contamination prevention and response measures will be designed and implemented to ensure that no adverse impacts extend beyond the project boundaries. • Fuels required for construction machinery and equipment will primarily be supplied from nearby fuel stations. If on-site storage becomes necessary, it will be carried out only in dedicated storage areas equipped with impermeable flooring and secondary containment measures to prevent leakage or infiltration. • In case of accidental fuel or oil spills, the area will be immediately isolated, and spill kits or absorbent materials will be used to prevent dispersion into the soil. All staff will be trained in emergency spill response procedures. • All machinery and equipment will undergo routine inspections of potential fuel or oil leaks. Any identified issue will be addressed promptly to prevent environmental contamination. • All waste and wastewater generated during construction will be managed in a controlled and traceable manner. • In the event of a potential soil contamination incident, the operator GASKİ will notify the MoEUCC. If the site is officially classified as contaminated and in need of remediation, remediation works will be conducted by MoEUCC-authorized contractors, and GASKİ will be responsible for overseeing and ensuring full cleanup. • During any potential remediation process, the following measures will be taken: ○ All vehicles carrying contaminated soil will be covered and sealed to prevent dust emissions and leakage during transport. ○ Only licensed waste carriers will be permitted to transport contaminated soil to an authorized treatment or disposal facility. ○ Illegal dumping of contaminated material will be strictly prohibited. ○ Speed limits will be enforced for trucks transporting contaminated soil. ○ Use of contaminated soil for landscaping or green areas will be strictly prohibited.	All mitigation measures - Continuously	GASKİ (Management and Coordination) Contractor (Implementation)	Visual checks Number of spills Soil analysis (if needed, will depend on the extent of the spill; while parameters to be analyzed will be determined based on the type of spill) - *In the case of major spills, the Soil Commission established by the MoEUCC is authorized to define the required parameters and analysis methods.* Equipment and vehicle inspection records Soil Management Plan and its revisions	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures-Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
Water – Surface and Groundwater Water Pollution	• GASKİ will ensure that the contractor will prepare and implement a Pollution Prevention Plan before the construction. • No surface runoff or wastewater generation will occur due to dust suppression activities, as water used will either be absorbed by the soil or lost through evaporation. • The limited amount of domestic wastewater generated by site personnel during construction will be directly connected to the existing line to the existing Kızılhisar WWTP for treatment, preventing direct discharge to the environment. • All process units and tanks that come into contact with water, wastewater, or chemicals will be constructed using durable, high-quality concrete with appropriate cement content to ensure full impermeability of basement structures. This will prevent any leakage into soil or groundwater during the operational phase. • All chemical storage containers, including diesel fuel tanks and hazardous liquid waste drums, will be placed in impermeable, bunded secondary containment areas within the temporary storage zones to minimize the risk of contamination. • Any pre-construction activities involving petroleum-based products (such as lubricants, hydraulic fluids, or fuels) will be carefully managed to avoid accidental releases during storage, handling, or equipment use. • In the event that certain treatment units must be taken offline during construction (e.g., for rehabilitation or integration works), the contractor will plan such shutdowns at least one week in advance and notify GASKİ in a timely manner to allow for operational adjustments. • All activities will be coordinated in accordance with the Emergency Preparedness and Response Plan, which will also address potential risks of spills, leakages, or overflows.	Pollution Prevention Plan – before the construction Other mitigation measures – continuously	GASKİ (Management and Coordination) Contractor (Implementation)	Pollution Prevention Plan and its revisions Visual checks Water analysis in the case of incident (parameters to be analyzed depend on the incident type)	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)
Noise Pollution	• GASKİ will ensure that the contractor will prepare and implement a Noise Management Plan before the construction. • In order to reduce cumulative noise exposure, machinery and equipment will not be operated simultaneously at the section of the WWTP area closest to the nearest buildings (southwest boundary). Special attention will be given to selecting low-noise equipment wherever feasible. • Construction machinery and equipment will be regularly maintained to ensure efficient and quiet operation. Regulatory speed limits will be adhered to for all construction vehicles, and these measures will be included in the Traffic Management Plan to be prepared by the contractor. • Construction work schedule will be announced and coordinated (if required) with sensitive receptors before construction activities. • Construction activities will be carried out only during daytime hours. Nighttime construction will be avoided unless strictly necessary and approved by the relevant authorities. • A formal grievance mechanism will be established to manage complaints related to construction noise. Any complaints received will be documented, investigated, and addressed accordingly. • The machinery and equipment to be used during the pre-construction and construction phases will, where possible, be spatially distributed across the site to prevent localized noise concentration. • In the event of any noise-related grievance, noise measurements will be carried out by a licensed environmental laboratory. Depending on the results, mitigation measures such as the installation of temporary noise barriers, the rescheduling of noisy operations, or the substitution of quieter equipment may be implemented.	Noise Management Plan – before the construction Noise measurements – in the event of grievances Other mitigation measures – continuously	GASKİ (Management and Coordination) Contractor (Implementation)	Noise Management Plan and its revisions Noise measurements (Leq and LCmax) Visual checks	Continuously In the event of grievances Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures-Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
Resources and Waste – Waste generation	• GASKİ will ensure that the contractor will prepare and implement a Waste Management Plan before the construction. • Waste to be generated within the scope of the Project will be managed in accordance with the waste management hierarchy principles. • Waste will be separated according to its type (i.e., hazardous / non-hazardous, recyclable / non-recyclable) and stored in designated temporary storage areas within the Project site. • Throughout the Project activities, all operations involving the collection, temporary storage, transportation, and disposal of waste will be conducted in a manner that avoids any threat to personnel health, public health, and environmental safety. • Waste recycling, transportation, and final disposal will be carried out through licensed companies and/or in cooperation with the relevant municipality. • Incineration or uncontrolled burial of waste at the construction or operation site, as well as illegal dumping of waste into nearby lands, roads, or water bodies, will be strictly prohibited. • Waste that is temporarily stored on-site will be delivered to licensed transport vehicles appropriate to the type of waste for proper disposal. All operations related to waste transfer and disposal will be recorded and the records will be kept systematically in the administrative offices. • Excavated material that is not to be reused for backfilling purposes will be removed from the construction site at regular intervals without stockpiling unnecessarily. Such materials will be transported to the nearest licensed disposal facility by licensed transportation companies. • Waste oils originating from construction machinery and operational equipment (e.g., blowers) will be collected and stored in impervious, labeled, red-colored containers/tanks placed on impermeable concrete foundations in compliance with the Regulation on the Control of Waste Oils. Tanks will be equipped with overflow prevention systems and appropriate filling level indicators. • Disposal of waste oils will be coordinated under the supervision of GASKİ, and waste oil transport and disposal will be undertaken by authorized and licensed companies. • Waste batteries generated at the construction site and accumulators from construction and operational vehicles will be disposed of in compliance with the consumer responsibilities outlined in Article 13 of the Regulation on the Control of Waste Batteries and Accumulators. Used batteries will be collected separately from municipal waste and delivered to an authorized battery collection system (e.g., TAP). • All other hazardous materials will be managed and disposed of in accordance with the requirements of the Waste Management Regulation. • Hazardous waste temporarily stored on site will be properly labeled, indicating the type of waste, waste code, quantity, and storage date. Segregation will be maintained to prevent chemical reactions among incompatible wastes. • The Temporary Waste Storage Area will be constructed on an impermeable surface, equipped with proper drainage for accidental spills or leaks, have adequate top covering, and separate designated sections for different waste types. If necessary, a storage permit for this Temporary Waste Storage Area will be obtained from the Gaziantep Provincial Directorate of Environment, Urbanization and Climate Change. • Spill kits will be available at the Temporary Waste Storage Area at all times, and necessary precautions will be taken against potential fire risks, including the provision of appropriate firefighting equipment. • Regular inspections and training on waste management practices will be carried out to ensure proper implementation of waste segregation, storage, and disposal measures.	Waste Management Plan & Temporary Waste Storage Area – Before the construction Other mitigation measures – continuously	GASKİ (Management and Coordination) Contractor (Implementation)	Waste Management Plan and its revisions & Available Temporary Waste Storage Area Visual checks, waste records, training records	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures-Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
Resources and Waste – Resources used during the construction	• In order to minimize the area occupied during the construction phase, GASKİ will supervise the selection of the most appropriate raw materials by the construction contractor through the evaluation of cleaner production options. • Starting from the construction phase, considering that the existing WWTP is operational, GASKİ will seek assistance from İLBANK and/or technical consultants to reduce energy consumption and related costs through the optimization of: o Energy saving o Process efficiency o Aeration devices and oxygen transfer o Process flow configuration o Biogas quantities o Biogas utilization o Daily energy consumption	All mitigation measures - Before the construction	GASKİ (Management, Coordination, Implementation)	Types and quantities of materials used	Continuously	GASKİ (Management, Coordination, Implementation) Supervision Consultant (monitoring)
Landscape and Visual - Impairment of quality of life due to the overall presence of annoying construction works and activities, and alteration of the landscape	• Prior to the commencement of works, only the vegetation within the designated working areas will be stripped in order to prevent unnecessary clearing. • After the completion of construction activities, the landscaping of the facility area will be restored using the stripped topsoil.	All mitigation measures - Before and after the construction	GASKİ (Management and Coordination) Contractor (Implementation)	Visual checks	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)
Biological Environment						
Habitat loss due to land clearing	• Develop and implement a Biodiversity Management Plan to also include methods for tree relocation activities and train the workers. • Land clearing will be strictly limited to within the boundaries of the existing Kızılhisar WWTP designated expansion area. No clearing activities will occur outside the allocated construction footprint. • Any existing trees or shrubs within the Project boundary will be preserved where feasible. • The stripped topsoil will be stockpiled and reused during the landscaping and restoration activities after construction, promoting the re-establishment of local vegetation.	All mitigation measures - Before the construction	GASKİ (Management and Coordination) Contractor (Implementation)	Biodiversity Management Plan and its revisions Visual checks	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)
Displacement of flora and fauna	• Since the Project site does not constitute a critical habitat and is not located within any designated ecological protection area, significant displacement of wildlife is not anticipated. • *Pinus nigra* and *Olae europae* species will be re-located according to the Procedure given in Section 6.6. • Nevertheless, prior to land clearing, a site inspection will be carried out by Contractor's environmental specialists to detect and safely relocate any small mammals, reptiles, or bird species present. • During construction, access to surrounding agricultural lands and natural features will be minimized to prevent disturbance of adjacent fauna. • Construction activities will be restricted to daylight hours to avoid disturbing nocturnal	All mitigation measures - Before and during the construction	GASKİ (Management and Coordination) Contractor (Implementation)	Visual checks	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures-Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
	species, if possible.					
Introduction of invasive species	• All construction equipment and vehicles will be cleaned before being mobilized to the Project site to prevent the introduction of invasive plant seeds or organisms. • Materials such as soil, gravel, or sand used at the site will be sourced from certified suppliers to avoid contamination with invasive species. • The landscaping plan will avoid the use of non-native or potentially invasive plant species; only native or locally adapted drought-tolerant species will be planted.	All mitigation measures - Before, during and after the construction	GASKİ (Management and Coordination) Contractor (Implementation)	Visual checks	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)
Socioeconomic Environment						
Employment and Local Procurement Opportunities	• Throughout the project's lifecycle it will be ensured that all employment and labor practices comply with Turkish legislation and international standards. Whenever possible, to enhance local benefits, efforts will be made to provide employment opportunities from the local environment (including SuTPs). Child labour and forced labour must be avoided. • Recruitment processes will be transparent, public, and non-discriminatory, ensuring equal opportunities regardless of ethnicity, religion, language, and/or gender. • During the project's lifespan, priority will be given to working with local suppliers and engaging local workers for services in sectors such as fuel supply, vehicle maintenance, food and beverage, and spare parts procurement, among others.	Continuously	GASKİ (Management and Coordination) Contractor (Implementation)	Percentage of local employment Percentage of local suppliers	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)
Infrastructure Damage	• Waste and construction materials transport will be handled by licensed contractors. Any damage to public infrastructure will be promptly repaired or compensated by the contractors, in coordination with the relevant authorities such as the General Directorate of Highways, the Gaziantep Metropolitan Municipality or relevant district municipalities. • To address potential concerns from the community, a grievance mechanism will be implemented during the construction phase to ensure that local residents can voice complaints and receive timely responses.	Continuously	GASKİ (Management and Coordination) Contractor (Implementation)	Grievance Records Official Correspondence Report Findings	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)
Labor and Working Conditions	• A comprehensive Labor Management Plan will be developed at the contractor level, covering the following key aspects: • Fair Treatment: Ensuring equal treatment, non-discrimination, and equal opportunities for workers in all aspects of employment. • Worker-Management Relations: Establishing, maintaining, and enhancing strong relationships between workers and management. • Compliance with National Laws: Adherence to national labor and employment laws. • Code of Conduct: Implementation of a behavioral code to ensure ethical and respectful conduct in the workplace. • Health and Safety: Promoting safe and healthy working conditions, prioritizing the protection and improvement of workers' health and safety. • Prevention of Forced and Child Labor: Preventing forced labor and child labor as defined	Continuously	GASKİ (Management and Coordination) Contractor (Implementation)	Labor Grievance Records Monitoring report findings Training records Social Security Institution records	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures-Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
	by national and international regulations. • Training: Providing employees with orientation on the code of conduct, including training on requirements of the EIB E&S Standards. • Workers will be provided with clear and understandable information about their rights under national labor laws, including collective agreements, working hours, wages, overtime, compensation, and benefits provided from the start of employment and any material changes that occur thereafter. • Workers will not be discouraged from selecting their representatives, forming or joining trade unions of their choice, or engaging in collective bargaining. No discrimination or retaliation will be allowed against workers participating in these activities. • Special attention will be given to the principles of non-discrimination and equal opportunity. Wages, working hours, and other benefits will comply with Turkish Labor Law. • Efforts will be made to prevent informal employment, particularly considering the presence of the population under temporary protection in the region. • A workers' grievance mechanism will be implemented allowing workers to raise concerns about their workplace. Workers will be informed about this grievance mechanism during recruitment, and easy access to the mechanism will be ensured. • Training on Codes of Conduct: Training sessions on Behavioral Codes of Conduct will be conducted to address SEAH (Sexual Exploitation, Abuse, and Harassment) and GBV (Gender-Based Violence) risks. • Security Measures for Female Workers: Appropriate and proportionate security measures will be implemented for female workers (e.g., adequate lighting, alarms, separate toilets). • Complaint Mechanism: A confidential complaint process will be established to address GBV/SEA/SH concerns. This process will be accessible to both workers and the local community and will be regularly communicated to ensure the effective management of risks related to GBV/SEA/SH within the context of the project site and workforce flow.					
Increased risk of traffic accidents	• Although the project will take place within a closed area, the use of access roads for the transportation of people and materials during construction will increase traffic-related risks. A Traffic Management Plan, in line with the details outlined under EIB Standard 9, will be developed and should include the following information: • Consultation with Local Authorities and Communities: Local authorities and residents in the project area will be consulted, and they will be informed before the establishment of any detour or alternative public traffic routes for construction purposes. • Minimizing Traffic Disruptions: Efforts will be made to minimize disruptions to traffic and road transport. The contractor will ensure that roads remain open to traffic during construction activities. • Traffic and Pedestrian Safety: Before construction activities begin, the contractor will install necessary signage, barriers, and control devices to ensure the safe use of roads leading to the factory site for both vehicles and pedestrians. • Identification of Disposal Areas and Transportation Routes: Disposal sites and transportation routes will be designated and coordinated with local authorities to ensure safe and efficient operations. • Grievance Mechanism: A grievance mechanism will be implemented to collect complaints related to traffic disruptions. • Driver Training: Project drivers will undergo training focused on traffic safety.	Traffic Management Plan – before the construction Other mitigation measurements - continuously	GASKİ (Management and Coordination) Contractor (Implementation)	Traffic Management Plan and its revisions Number of traffic accidents Vehicle maintenance schedule Traffic signs Training records Grievance records	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures-Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
GBV and SEA/SH Risk	• Implement and enforce a Code of Conduct for all workers, • Provide mandatory training on GBV and SEA/SH awareness and prevention, • Establish a confidential and accessible grievance mechanism, • Ensure that workers understand the consequences of misconduct and the zero-tolerance policy. • GASKİ will monitor the Contractor's compliance with these measures throughout the construction period.	Code of Conduct, trainings, and grievance mechanism – before the construction Other mitigation measures – continuously	GASKİ (Management and Coordination) Contractor (Implementation)	Code of Conduct signed Training records Grievance records	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)
Community Health & Safety	• GASKİ will ensure that the contractor will prepare and implement a Community Health and Safety Management Plan. • A Traffic Management Plan will be developed to regulate construction traffic. Measures will include vehicle speed limits near residential areas, designated truck routes, and time restrictions for haulage activities. • Regular watering and covering of dusty areas and stockpiles will be implemented. • Project boundaries will be secured with fencing and access control points to prevent unauthorized public access and minimize safety risks. • An accessible and confidential GM will be established for local residents to submit complaints, suggestions, or reports related to health and safety concerns. Responses will be tracked and monitored. • An Emergency Preparedness and Response Plan (EPRP) will be in place, including coordination with local health services and authorities, especially for fire, accidents, or spills that could affect the community.	Community Health and Safety Management Plan & Traffic Management Plan – before the construction Other mitigation measures – continuously	GASKİ (Management and Coordination) Contractor (Implementation)	Community Health and Safety Plan and its revisions Traffic Management Plan and its revisions Emergency Preparedness and Response Plan and its revisions Grievance records	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)
Land Use	• Construction activities will be confined strictly within the WWTP project boundaries. No additional agricultural or residential land will be affected. • Temporary storage areas and construction camps will be placed on already disturbed or degraded lands where possible. • Topsoil stripped during excavation will be stored in designated, protected storage areas and reused in landscaping or greenbelt development at the end of construction. • All project areas will be fenced, marked, and monitored to prevent unintentional encroachment or unauthorized land use by third parties.	Continuously	GASKİ (Management and Coordination) Contractor (Implementation)	Visual checks	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)
Occupational Health and Safety	• Before the construction phase of the project, an OHS Management Plan will be prepared in accordance with the requirements of the EIB E&S Standards and national legislation. • Risk Minimization: Safe working environments will be created at the worksite to minimize potential risks and hazards to human health and safety (e.g., natural disasters, accidents, equipment failures, etc.). Physical hazards and risks will be proactively addressed. • Compliance with National Regulations: Relevant plans and procedures required by Turkish legislation will be developed, and the contractor will adhere to these OHS measures and practices. • Worker Awareness: Workers will be informed about potential hazards associated with their work, thus promoting a safer working environment. • OHS Training: Workers will undergo OHS training, with a detailed training program	OHS Management Plan – before the construction Other mitigation measurements - continuously	GASKİ (Management and Coordination) Contractor (Implementation)	OHS Management Plan and its revisions Incident Records Number of nonconformities Training records	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures-Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
	developed and records kept. • Personal Protective Equipment (PPE): All workers will be provided with appropriate PPE and will receive training on its proper use. • Warning Signs: Work areas will be equipped with warning signs relevant to the nature of the work and associated risks. • Fire Safety: Smoking will be prohibited in areas at risk of fire. All workers will be trained on fire safety protocols and know what to do in case of a fire emergency. • First Aid Training: The project staff will include personnel trained in first aid. In case of emergencies, staff will be transported to the nearest health facility using appropriate vehicles. • Equipment Safety: The contractor will ensure that all machinery, equipment, and tools used meet the required technical standards. • Machinery Safety: Moving parts of machines and equipment will be equipped with protective systems (e.g., metal shields) to minimize the risk of injury or damage to operators. • Personal Factors and Risks: Personal factors that could pose risks during activities (e.g., long hair, jewelry, inappropriate clothing) will be addressed through site-specific management regulations. Workers will be informed about these regulations as part of the training program. • Driver and Operator Training: Drivers and operators will receive training to comply with traffic rules and ensure their vehicles and equipment are safe from traffic-related risks and hazards. Proper traffic signs will be placed on the project site and surrounding areas, and operators will be educated on these signs. • Access Restrictions: Excavation sites will be restricted to authorized personnel only. Loading and unloading operations will be conducted under supervision by responsible personnel. • OHS Organization: An OHS organizational structure will be defined in accordance with local legislation, with a sufficient number of OHS officers assigned to monitor the site during working hours. • Risk Assessment: A risk assessment will be conducted before work begins, and workers will be trained on identified risks. • OHS Monitoring: OHS personnel will conduct daily inspections of the site. If new risks are identified, the relevant plans and training will be updated accordingly.			Work permits Monitoring Report Findings Health and Safety reports Health and Safety meetings Emergency drillings		
Stakeholder Engagement and Grievance Mechanism	• A Grievance Resolution Mechanism will be established in line with the ILBANK GM for Public, accessible to all project personnel, including subcontractor employees. Workers will be informed that anonymous grievances are permitted (Workers' grievance mechanism). • An External Grievance Mechanism will also be created for stakeholders outside the project area, including local residents and institutions in line with the ILBANK GM for Employees. After identifying key contacts, information notices will be posted in local settlements, workplaces, and mukhtars' offices within the project's impact area. Regular checks will be conducted to ensure these notices remain in place. • Grievance resolution procedures will follow the guidelines, timelines, and transparency established in the mechanism (excluding GBV grievances). All records will be systematically filed. • For the management of sensitive grievances such as GBC, SEA/SH-related grievances,	Before the construction and continuously	GASKİ (Management and Coordination) Contractor (Implementation)	Workers' grievance records External grievance records	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures- Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
	ILBANK's GM for Management of Sensitive Complaints procedures will be followed.					
Chance Find Cultural Assets	• A chance finding procedure will be applied during land preparation and construction activities. Workers will be trained in this procedure, and before fieldwork begins, it will be ensured that everyone is aware of the necessary steps in the event of discovery. In this context: • If a movable or immovable cultural heritage is found accidentally, construction work will be immediately halted. • The relevant Museum Directorate will be notified and work in the area will not resume until official notification is received.	Chance Find Procedure – before the construction Other mitigation measurements - continuously	GASKİ (Management and Coordination) Contractor (Implementation)	Chance Find Records	Continuously	GASKİ (Management and Coordination) Contractor (Implementation) Supervision Consultant (monitoring)

Table 55. Operational Phases ESMP

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures - Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
Physical Environment						
Air Quality - Odor	• The "Air Quality Management Plan" prepared during the pre-construction phase will be updated to reflect operational conditions prior to the commencement of the facility for the odor. Facility personnel will be trained in the updated plan to ensure its effective implementation. **First-Level Measures:** • Prevention of inflows that exceed the designed hydraulic or organic capacity of the treatment plant • Reduction of solid waste and excess sludge volumes within process units • Increasing the frequency of screenings and grit removal to avoid accumulation • Timely dewatering and removal of sludge to prevent anaerobic conditions, odor formation, and fly/mosquito breeding • Increasing aeration efficiency in biological treatment zones to prevent low oxygen conditions • Lime addition to activated sludge if odor or insect development is observed • Controlling water levels in tanks to prevent turbulence caused by sudden drops **Second-Level Measures (if odor persists):** • Chemical addition (e.g., hydrogen peroxide, sodium hypochlorite) to suppress hydrogen sulfide formation • Use of sodium hydroxide to improve pH and dissolve hydrogen sulfide gas into water • pH control and disinfection to inhibit anaerobic bacterial growth • Chemical oxidation of odor-causing compounds • Strategic tree planting or green buffer zones to reduce odor dispersion beyond site boundaries **Final-Level Measures (if nuisance continues):** • Enclosure of odor-emitting units, particularly the preliminary treatment areas, to physically isolate emissions. **General Measures:** • A grievance mechanism will be maintained to receive and manage odor-related complaints from local residents or stakeholders.	The frequency of implementation will be determined based on site-specific conditions and increased if odor is detected.	GASKİ	Odor	The frequency of implementation will be determined based on site-specific conditions and increased if odor is detected.	GASKİ

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures - Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
	• Odor-prone areas within enclosed spaces (e.g., sludge dewatering rooms) will be equipped with mechanical ventilation systems using biofilters or activated carbon filters. • Excess sludge or sludge cake accumulation during operation will be avoided by ensuring regular off-site transport by licensed companies.					
Soil – Contamination of soil	• Facility personnel will be trained in proper handling and disposal of liquid waste, with particular attention to maintenance and repair activities, in order to prevent soil contamination. • The movement of machinery and personnel during maintenance operations will be restricted to designated areas and access routes, minimizing the potential for soil disturbance and contamination. • In the event of an accident, leak, or equipment failure, maintenance or part replacement will be conducted immediately and in accordance with applicable environmental and operational standards. • In case of accidental oil or fuel leakage, absorbent materials and spill kits will be used to contain and clean up the spill. • All machinery and equipment will be regularly inspected for signs of oil or fuel leakage. Any detected issues will be promptly addressed to prevent contamination. • Routine visual monitoring will include checks for potential leaks or soil contamination in areas adjacent to the project boundary. The GASKİ will be ensure that all relevant operational staff are trained in spill prevention and rapid response procedures.	Continuously	GASKİ	Visual checks Number of spills Equipment and vehicle inspection records	GASKİ	Continuously
Water – Groundwater and Surface water Pollution	• A limited amount of domestic wastewater generated on-site (e.g., from facility staff) will be directed to WWTP itself for treatment, avoiding the risk of uncontrolled discharge. • All units that come into contact with water, wastewater, or chemicals will be constructed using concrete with an appropriate cement ratio and durability to ensure impermeability of underground and base structures. This will effectively prevent leakage into the soil or infiltration into groundwater during long-term operations. • GASKİ will ensure that the WWTP system is operated in a manner that avoids direct bypass of untreated wastewater, even in cases of high inflow or system stress. • The quality of the treated effluent will comply with national discharge standards or internationally recognized benchmarks, in line with Türkiye's Urban Wastewater Treatment Regulation and relevant EU directives. • Level sensors and monitoring equipment will be used to prevent potential overflow events by providing real-time data on tank and chamber levels, thus enabling timely operational response.	Continuously	GASKİ	BOD5, COD, TSS, Total P, Total N, pH – via Continuous Wastewater Monitoring System	GASKİ	Continuously
Noise Pollution	• During the procurement of equipment and machinery, the noise levels specified in the technical specifications or datasheets will be taken into consideration to ensure selection of low-noise alternatives where possible. • During the operation phase, the relevant provisions and limit values of both national and EU environmental noise legislation will be strictly complied with.	Continuously	GASKİ	Grievances, Technical Specifications	Continuously	GASKİ
Resources and Waste – Waste generation	• Waste generated within the scope of the Project will be managed in accordance with the waste management hierarchy. • The Waste Management Plan will be updated by GASKİ prior to the start of the operation phase to reflect operational conditions. The relevant measures defined for the construction phase will also be applicable for the operation phase. The updated plan will provide procedures for the management of wastes other than sludge. Recycling, transportation, and disposal of wastes will be carried out by licensed companies and/or the relevant municipality.	Waste Management Plan – before the operation Other mitigation measures – continuously	GASKİ	Waste Management Plan and its revisions Visual checks, waste records etc.	Continuously	GASKİ

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures - Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
Resources and Waste – Sludge generation	• A Sludge Management Plan will be developed and implemented. • Dewatered sludge will be stored only in specially designated containers intended specifically for sludge storage. • The dewatered sludge will be transported by licensed trucks to a cement factory, where it will be utilized as an alternative fuel through co-processing.	Sludge Management Plan – before the operation Other mitigation measures – continuously	GASKİ	Sludge Management Plan and its revisions Visual checks, sludge records etc.	Continuously	GASKİ
Resources and Waste – Resources used in operation	• Starting from the construction phase, considering that the existing WWTP is operational, GASKİ will seek assistance from İLBANK and/or technical consultants to reduce energy consumption and related costs through the optimization of: ○ Energy saving ○ Process efficiency ○ Aeration devices and oxygen transfer ○ Process flow configuration ○ Biogas quantities ○ Biogas utilization ○ Daily energy consumption	Continuously	GASKİ	Types and quantities of materials used	Continuously	GASKİ
Biological Environment						
Fauna loss in the Sacır Stream	• The WWTP discharge will fully comply with national discharge standards (Urban Wastewater Treatment Regulation) and EU Water Framework Directive principles to prevent any deterioration of aquatic habitats in the Sacır Stream. • The UV disinfection unit will be operated efficiently to ensure that the treated effluent is free from pathogens, minimizing ecological risks to aquatic species. • Continuous monitoring of effluent quality will be conducted to ensure compliance with regulatory standards. • Any maintenance or cleaning operations involving wastewater units will be carefully managed to prevent accidental overflow or untreated discharges into the Sacır Stream.	Continuously	GASKİ	Analysis results Compliance with regulations	Continuously	GASKİ
Fauna loss around the Project area	• Noise and lighting levels from the WWTP operation will be kept to a minimum, particularly at night, to avoid disturbing local terrestrial fauna. • Outdoor lighting will use downward-facing, low-intensity fixtures with motion sensors where possible, to minimize light pollution impacting nocturnal species. • Regular maintenance of facility fences will be conducted to prevent unintended wildlife entry into operational areas, reducing risks to both fauna and plant operations. • Operational staff will receive training on biodiversity awareness and emergency response procedures to ensure that any injured or displaced animals found around the site are handled appropriately.	Continuously	GASKİ	Visual checks Training records	Continuously	GASKİ
Socioeconomic Environment						
Employment and Local Procurement Opportunities	• Throughout the project's lifecycle it will be ensured that all employment and labor practices comply with Turkish legislation and international standards. Whenever possible, to enhance local benefits, efforts will be made to provide employment opportunities from the local environment (including SuTPs). • Recruitment processes will be transparent, public, and non-discriminatory, ensuring equal opportunities regardless of ethnicity, religion, language, or gender. • During the project's lifespan, priority will be given to working with local suppliers and engaging local workers for services in sectors such as fuel supply, vehicle maintenance, food and beverage, and	Continuously	GASKİ	Percentage of local employment Percentage of local suppliers	Continuously	GASKİ Contractor

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures - Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
	spare parts procurement, among others.					
Infrastructure damage	• The operational phase sludge and waste transport will be handled by licensed companies. Any damage to public infrastructure will be promptly repaired or compensated by the contractors, in coordination with the relevant authorities such as the General Directorate of Highways, the Gaziantep Metropolitan Municipality or relevant district municipalities. • To address potential concerns from the community, a grievance mechanism will be implemented during the operation phase to ensure that local residents can voice complaints and receive timely responses.	Continuously	GASKİ	Grievance Records Official Correspondence	Continuously	GASKİ
Labor and Working Conditions	• The grievance resolution mechanism will be revised in accordance with EIB E&S standards. • The revised grievance resolution mechanism will be communicated to all project employees. • Other labor and work principles during the construction phase will continue to be followed.	Continuously	GASKİ	Grievance Records	Continuously	GASKİ
Increased risk of traffic accidents	• The Traffic Management Plan developed by the contractor for the construction phase will be updated by GASKİ to address any specific needs before the commencement of the operational phase.	Before the operation	GASKİ	Traffic Management Plan and its revisions	Continuously	GASKİ
GBV and SEA/SH risk	• GASKİ will ensure that all operational personnel and subcontractors (if any): ○ Continue to comply with the Code of Conduct, ○ Receive periodic training on GBV and SEA/SH prevention, • Are subject to monitoring and reporting protocols regarding misconduct.	Continuously	GASKİ	Code of Conduct signed Training records	Continuously	GASKİ
Community Health & Safety	• Sludge handling will be done in sealed systems and transferred in covered containers to the cement factory. • Licensed sludge transport vehicles will follow pre-defined and approved routes. Drivers will be trained in road safety and spill response. • All treated wastewater discharged into the environment will comply with Turkish and EU effluent standards. • Regular monitoring of effluent and emergency overflow systems will be conducted to avoid environmental or public health risks. • Community feedback will be encouraged through an ongoing grievance mechanism to report nuisance (e.g., odor, noise, traffic) or safety concerns. All complaints will be logged, investigated, and resolved with documentation.	Continuously	GASKİ	Sludge records Grievance records Effluent quality analyses	Continuously	GASKİ
Land Use	• All operational activities will remain within the legally acquired WWTP site. No further expansion or encroachment into surrounding land is planned or allowed without updated permitting. • Access to the facility will be limited to authorized personnel. Boundary fences and surveillance will be maintained to prevent accidental encroachment or unauthorized land use. • GASKİ will monitor regional development and land use changes to ensure that any new sensitive receptors (e.g., housing, schools) are accounted for in future impact assessments and mitigation.	Continuously	GASKİ	Visual checks	Continuously	GASKİ
Occupational Health and Safety	• Basic and technical OHS training, including environmental and social training, will be completed by employees. • A sufficient OHS organizational structure, as defined by local regulations, will be established, and the necessary number of OHS officers will be assigned to the site during working hours. • OHS staff will carry out site inspections, and if additional risks are identified, relevant plans and training will be updated. • Records of work accidents and near-miss incidents will be systematically maintained after each	Continuously	GASKİ	Training activities Preventive and corrective measures taken	Continuously	GASKİ

Anticipated E&S Risks and Impacts	Proposed Risk Mitigation Measures	Impact Mitigation		Monitoring of Impact/Mitigation Measures		
		Measures - Timing/Frequency	Responsibility	Parameter to be monitored	Frequency	Responsibility
	event. • Root cause analysis will be conducted to implement corrective actions to prevent recurrence. • An accident report must be drafted at the accident site in case of a work-related injury. • The relevant official authority must be notified within three (3) days from the date of the accident, as specified by local regulations. • No work will be allowed to continue until the identified faulty condition or behavior determined • through root cause analysis, is corrected. • After a work accident, debriefing training will be conducted. The injured worker must be re-examined by the workplace physician and only return to work after receiving a fitness-for-duty health certificate. • The OHS team will include an OHS specialist with an A-class certification and a workplace physician. • Emergency response training will be provided, and drills will be conducted. • Workers involved in asphalt operations will receive training on potential hazards, emergency measures, and safe working practices. The training programs will also include information on the contents of asphalt mixtures, which may vary based on usage and requirements. Safety precautions related to these materials will also be included.			Internal audit records Work accident records OHS documents		

8 STAKEHOLDER ENGAGEMENT AND PUBLIC CONSULTATION

Stakeholder engagement refers to the process of actively involving individuals, groups, or organizations who may be affected by or have an interest in a project or decision. This process helps identify concerns, expectations, and impacts, ensuring that all relevant parties have a chance to participate in decision-making. In the context of projects funded by the EIB, stakeholder engagement is crucial for promoting transparency, social inclusion, and effective project implementation. EIB-funded projects require a Stakeholder Engagement Plan (SEP) to ensure that environmental, social, and economic considerations are addressed, risks are mitigated, and the project complies with EIB's E&S Standards. This plan facilitates meaningful dialogue with stakeholders, helping to build trust, minimize conflicts, and ensure that the project contributes positively to the affected communities and environment.

For this Project, the Stakeholder Engagement activities will primarily be guided by the existing SEP developed by ILBANK, which covers the broader program under which the Project is implemented. This Framework SEP will be applied to the Project to ensure alignment with EIB's requirements and best practices. However, if necessary, during the Project implementation, and depending on the needs identified at the local level, a Project-Specific SEP may be developed to address particular stakeholder engagement requirements more precisely.

The SEP will include a Grievance Mechanism (GM), which will be made available for stakeholders affected by the Gaziantep Kızılhisar WWTP Project. Contact information will be aligned with existing structures, while grievances specific to this Project will be recorded and reported separately to ensure transparency and accountability.

The stakeholder engagement process throughout the Project lifecycle will follow the strategies outlined below, ensuring the effective management of social and environmental impacts:

- All notifications, whether verbal or written, along with complaints, suggestions, or requests from stakeholders, will be considered under an open consultation approach, free from interference, coercion, or intimidation.
- Project-related information will be presented in formats that align with the socio-cultural communication needs of stakeholders, ensuring clear, accessible, and inclusive communication.
- The Framework SEP defines a stakeholder management approach tailored to the general characteristics and needs of the subprojects and includes a grievance mechanism procedure.
- Tools and actions will be employed to ensure the active participation of all relevant stakeholders and Project-Affected People (PAPs), with special attention to vulnerable groups such as women, persons with disabilities, the elderly, migrant/refugee populations, and workers.
- A proactive communication strategy will be adopted to prevent the exclusion of sensitive groups from project opportunities and consultations.
- Stakeholder analysis will be updated when needed to reflect evolving dynamics, and necessary measures will be taken to ensure the effective involvement of all parties.

Through the application of the ILBANK Framework SEP, and development of a Project-Specific SEP if required, the Project will maintain an inclusive, participatory, and transparent stakeholder engagement process throughout its lifecycle, in line with EIB Standard 2 requirements.

The project stakeholders are categorized into the following groups:

Table 56. Stakeholder Categories of the Project

Stakeholder	Explanations
Directly Affected Parties	Individuals, groups, or organizations directly impacted (either currently or potentially) by the project within the project's AoI, or those particularly sensitive to the changes the project will introduce. These parties will play a key role in decision-making processes regarding the identification of impacts, mitigation measures, and management actions.
Other Interested Parties	Individuals, groups, or organizations that may not be directly impacted by the project but believe or perceive that their interests are affected by the project or its implementation process. These parties may also have the ability to influence or be influenced by the project.
Vulnerable Groups	Individuals who may be disproportionately affected or face greater disadvantages due to their vulnerabilities. These groups may require special participation efforts to ensure they are equally represented in consultations and decision-making processes related to the project

8.1 Grievance Mechanism

8.1.1 ILBANK's Grievance Mechanism

ILBANK has its own GM Procedure for the projects financed by IFIs[20] and there are three separate mechanisms defined under this procedure:

- GM for Public
- GM for Employees
- GM for the Management of Sensitive Complaints

According to this procedure, roles and responsibilities of GASKİ, construction supervision and the contractors are given below.

Table 57. Roles and Responsibilities for GM Procedure

Party	Role	Key Responsibilities
GASKİ	GASKİ Management	• Ensure that project-level GMs are developed and submitted to ILBANK for review and approval and implemented effectively by GASKİ and contractor staff. • Appoint staff (at least one female and one male) who will be responsible from day-to-day implementation of subproject-level GM by GASKİ and contractor staff). • Ensure that social requirements incorporated to the contractor tender documents and contracts adequately cover the requirements on project-level GM

[20] https://www.ilbank.gov.tr/userfiles/files/Grievance_Mechanism.pdf

Party	Role	Key Responsibilities
		implementation. • Allocate resources to ensure monitoring of project E&S performance (including monitoring of subproject-level GM implementation) and reporting to ILBANK at IFI standards in line with the sub-loan agreement conditions.
	Focal Point for GM (Social)	**Grievance Management / Resolution** • Hold responsibility for day-to-day implementation of project-level GM by GASKİ, construction supervision consultant, and contractor staff in line with the principles of ILBANK GM and processes specified in the respective project-level GM. • Review the veracity and eligibility of the grievances received from the public and employees within the context of their relevance to the project related operations based on their knowledge of the regional and local dynamics and classify them per their priority and sensitivity. • Ensure that the eligible grievances are registered, investigated and managed/resolved in line with the GM. • Notify the ILBANK Social Staff about the grievances found ineligible (upon conclusion of ineligibility). • Coordinate with the Environmental Staff for the management of grievances related to environmental subjects. • Ensure implementation of actions by related GASKİ or contractor staff for the successful management/resolution of grievances in line with the project-level GM. • Ensure that grievance logs and database of projects (under the related software) are regularly updated with necessary input from construction supervision consultants and contractors; regularly maintain the software and keep it up to date. • Perform mediation role or designate staff for such role among GASKİ PIU staff for successful resolution of grievances as required of if requested by ILBANK Social Focal Point. **Information and Trainings** • Participate in the training sessions (including GM requirements) to be organized by ILBANK as part of ILBANK ESMS Training Procedure implementation • Train the construction supervision consultants, contractors and/or external E&S consultants for collection, registration and management of grievances in line with the project-level GM • Inform the staff about the function of EC based in in ILBANK GD

Party	Role	Key Responsibilities
		Monitoring and Reporting • Undertake periodic monitoring of project E&S performance (including GM implementation) and reporting to ILBANK at IFI standards in line with the sub-loan agreement conditions. • Provide ILBANK with relevant adequate and transparent information on the grievances received by GASKİ as part of periodic reporting. • Allow ILBANK representatives (including individual consultants) to access grievance records. • Carry out regular media review to identify any grievances or issues raised (including related social media platforms) related to the Project financed by ILBANK through IFIs and include the findings within the periodic reports.
	Environmental & OHS Staff	• Participate to the activities to be coordinated by GASKİ focal point for GM for the management of grievances related to environmental &OHS subjects.
Construction Supervision Consultants	Management and E&S Staff	• Carry out the GM-related tasks delegated by GASKİ. • Ensure sufficient E&S capacity for effective implementation of project-level GM developed by the GASKİ as set out in the supervision consultancy agreements; appoint staff (at least one female and one male) who will be responsible from day-to-day implementation of project-level GM. • Ensure that the grievance and feedback collection channels defined in ILBANK GM and project-level GMs are made available in projects. • Collect any written grievances submitted by the aggrieved parties (applicants) through the available channels (e.g. grievance boxes, forms submitted to contractors, etc.) on a weekly basis on behalf of the GASKİ and deliver these to GASKİ's social staff. • Participate in the training sessions (covering GM requirements) to be organized by GASKİ in line with the requirements of ILBANK ESMS Training Procedure • Promptly notify GASKİ of any significant project-related grievance received from project employees or public
Contractor	Management and E&S Staff	• Ensure sufficient E&S capacity for effective implementation of project-level GM developed by the GASKİ as set out in the construction contracts; appoint staff (at least one female and one male) who will be responsible from day-to-day implementation of project-level GM. • Participate in the training sessions (covering GM requirements) to be organized by GASKİ in line with the requirements of ILBANK ESMS Training Procedure • Update the grievance logs and databases of Project regularly based on verbal and written grievances received

Party	Role	Key Responsibilities
		(separately for public and employee grievances) • Provide ILBANK with relevant adequate and transparent information on the grievances received by the contractors as part of monthly reporting • Allow ILBANK (including individual consultants) and GASKİ representatives (including construction supervision consultants) to access grievance records. • Ensure implementation of actions by related contractor or sub-contractor staff for the successful management/resolution of grievances in line with the project-level GM • Promptly notify GASKİ of any significant project-related grievance received from project employees or public.

During all phases of the Project, ILBANK's GM Procedure will be followed. Grievance and feedback submission channels of ILBANK are given below.

Table 58. Grievance Submission Channels for Public

Receiving Party	Submission Channels	Information
ILBANK General Directorate	Website	https://www.ilbank.gov.tr/form/bilgiedinmeuluslararasi
	E-mail	uidbbilgi@ilbank.gov.tr
	Phone Number	+90 312 508 79 79
	Official Letter / Petition	ILBANK Department of International Relations IFI Credit Risk Unit – Technical and E&S Unit (to the attention of Social Focal Point) Emniyet Mahallesi, Hipodrom Caddesi No:9/21 Yenimahalle, Ankara, Türkiye
ILBANK Regional Directorate	E-mail	ilbank.gantep@ilbank.gov.tr
	Phone Number	+90 342 321 78 50
	Official Letter / Petition	M.F. Çakmak Bulvarı No:108 PK:27090 Şehitkamil / Gaziantep
Through GASKİ	White Table Portal	*Will be disclosed at the website of GASKİ (including channels such as phone number, digital form, etc.)*
	E-mail	
	Fax number	
	Official Letter / Petition	
	Phone Number	*Phone number of the GASKİ's focal point*
	In-person	Individual applications at GASKİ's office
Through Construction Supervision Consultants	E-mail	*Contact information of the staff appointed (at least one female and one male)*
	Phone Number	
	In-person	Individual applications at the consultant offices on-site
	Grievance Boxes and Forms	Grievance and feedback boxes and forms will be placed and maintained by the construction supervision consultants in all affected settlements

Receiving Party	Submission Channels	Information
		and relevant work sites. The boxes and forms will be placed at one or more of the following locations, as appropriate: (i) offices of neighborhood heads; (ii) neighborhood coffeehouse; (iii) locations where local women gather together and/or women would feel comfortable to visit; (iv) site offices Grievance and feedback forms will also be available at the mobile vehicles of construction supervision consultant staff.
Through the Contractors	E-mail	*Contact information of the staff appointed (at least one female and one male)*
	Phone Number	
	In-person	Individual applications at the contractor offices on-site
	Grievance Forms	Grievance and feedback forms will also be available at the mobile vehicles of contractor staff.
The Presidency's Communication Center (CİMER)	Website	www.cimer.gov.tr
	Phone (Call Center)	150
	Phone Number	+90 312 525 55 55
	Fax Number	+90 312 473 64 94
	Official Letter	Mail addressed to Republic of Türkiye, Directorate of Communications
	In-person	Individual applications at the community relations desks at governorates, ministries and district governorates
Foreigners Communication Center (YİMER)	Website	www.yimer.gov.tr
	Phone (Call Center)	157
	Phone Number	+90 312 157 11 22
	Fax Number	+90 312 920 06 09
	Official Letter	Mail addressed to Republic of Türkiye, Directorate of Communications
	In-person	Individual applications at the Republic of Türkiye General Directorate of Migration Management

Table 59. Grievance Submission Channels for Employees

Receiving Party	Submission Channels	Information
ILBANK General Directorate	Website	https://www.ilbank.gov.tr/form/bilgiedinmeuluslararasi
	E-mail	uidbbilgi@ilbank.gov.tr
	Grievance boxes and forms	Mailboxes placed (where confidentiality during submission is secured) in ILBANK Department of International Relations

Receiving Party	Submission Channels	Information
	In-person	Individual applications to the ILBANK GD Senior Executive Management or IFI Credit Risk Unit – Social Focal Point
ILBANK Regional Directorate	Website	https://www.ilbank.gov.tr/form/bilgiedinmeuluslararasi
	E-mail	uidbbilgi@ilbank.gov.tr
	In-person	Individual applications to Gaziantep ILBANK Management or ILBANK GD IFI Credit Risk Unit – Social Focal Point
Through GASKİ	E-mail, phone number, etc. to be determined by GASKİ PIUs in the subproject-level SEPs including GM	*To be determined by GASKİ*
	In-person	Individual applications at GASKİ's offices (to the PIU Management or Social Staff) or ILBANK GD IFI Credit Risk Unit – Social Focal Point
Through Construction Supervision Consultants	E-mail, phone number, etc. to be determined by GASKİ PIUs in the subproject-level SEPs including GM	*To be determined by GASKİ*
	In-person	Individual applications to the management or E&S and OHS staff at the site offices. Individual applications at GASKİ's offices (to the PIU Management or Social Staff) or ILBANK GD IFI Credit Risk Unit – Social Focal Point
	Grievance Boxes and Forms	Grievance and feedback boxes and forms will be placed and maintained by the construction supervision consultants (on behalf of GASKİ) at the site offices, work site and/or accommodation and social facilities. Grievance and feedback forms will also be available at the mobile vehicles of construction supervision consultant staff.
Through the Contractors	E-mail, phone number, etc. to be determined by GASKİ PIUs in the subproject-level SEPs including GM	*To be determined by GASKİ*
	In-person	Individual applications to the management or E&S and OHS staff of the contractor or construction supervision consultants at the site offices.

Receiving Party	Submission Channels	Information
		Individual applications at GASKİ's offices (to the PIU Management or Social Staff) or ILBANK GD IFI Credit Risk Unit – Social Focal Point
	Grievance Forms	Grievance and feedback boxes and forms will be placed and maintained by the construction supervision consultants (on behalf of GASKİ) at the site offices, work site and/or accommodation and social facilities. Grievance and feedback forms will also be available at the mobile vehicles of construction supervision consultant staff.
The Presidency's Communication Center (CİMER)	Website	www.cimer.gov.tr
	Phone (Call Center)	150
	Phone Number	+90 312 525 55 55
	Fax Number	+90 312 473 64 94
	Official Letter	Mail addressed to Republic of Türkiye, Directorate of Communications
	In-person	Individual applications at the community relations desks at governorates, ministries and district governorates
Foreigners Communication Center (YİMER)	Website	www.yimer.gov.tr
	Phone (Call Center)	157
	Phone Number	+90 312 157 11 22
	Fax Number	+90 312 920 06 09
	Official Letter	Mail addressed to Republic of Türkiye, Directorate of Communications
	In-person	Individual applications at the Republic of Türkiye General Directorate of Migration Management

8.1.2 Project-Specific Grievance Mechanism

Stakeholder Grievance Mechanism

In accordance with EIB E&S Standards and project requirements, a project-level Grievance Mechanism (GM) will be established for the Gaziantep Kızılhisar WWTP Capacity Increase Project to ensure stakeholders can submit their concerns, complaints, and feedback regarding the project's environmental and social performance. The GM will provide a transparent, timely, and fair process for resolving issues throughout the project lifecycle.

While ILBANK has established a Framework Stakeholder Engagement Plan (SEP) that includes grievance mechanisms applicable to all sub-projects, for this Project a project-specific grievance mechanism will be developed and implemented to address the project's specific needs and risks more effectively. Project-level grievance handling will align with EIB Standards and ensure accessible, inclusive, and responsive processes.

The Grievance Mechanism will:

- Be accessible to all stakeholders, especially affected communities, and be free from intimidation, coercion, or reprisals.
- Guarantee inclusiveness by addressing barriers faced by women, non-binary or gender non-conforming persons, youth, elderly, illiterate individuals, and other vulnerable or marginalized groups.
- Include dedicated and confidential channels to receive and respond to grievances related to Sexual Exploitation, Abuse, and Sexual Harassment (SEA/SH), ensuring that such complaints are handled with sensitivity, urgency, and survivor-centered approaches.
- Offer options for complainants to remain anonymous and ensure privacy and confidentiality.
- Establish a clear step-by-step procedure with indicative timeframes, transparent outcomes, defined monitoring indicators, and periodic reporting.
- Be publicly disclosed through various channels, including the GASKİ website, and information will be available in appropriate languages.
- Allow stakeholders to appeal decisions and ensure that access to alternative judicial or administrative remedies, including the EIB Group's Complaints Mechanism, remains open.

Additionally, stakeholders will also have access to national-level grievance channels such as:

CİMER (Presidency Communication Center): A centralized complaint and feedback system operating under the Presidency's Directorate of Communications (www.cimer.gov.tr, Call Center: 150).

YİMER (Foreigners Communication Center): A system primarily serving foreign nationals for complaint and feedback submission (www.yimer.gov.tr, Call Center: 157).

These supplementary grievance mechanisms ensure that both Turkish citizens and foreign nationals have multiple channels to express concerns and seek remedies.

Worker Grievance Mechanism

Separate from the stakeholder grievance mechanism, a Worker Grievance Mechanism (WGM) will be established for all employees, subcontractors, and construction workers engaged in the Project, as required by EIB Environmental and Social Standards 8 and 9 concerning labor and occupational health and safety.

The Worker Grievance Mechanism will:

- Provide a secure, confidential, and accessible platform for workers to raise concerns about working conditions, occupational health and safety, discrimination, harassment (including SEA/SH), labor rights, or any other employment-related matter.
- Ensure that grievances are addressed fairly, promptly, and transparently without fear of retaliation.

- Protect workers' anonymity if requested and safeguard their right to unionize and participate in collective bargaining processes without discrimination.
- Be adapted to address the specific needs of vulnerable groups among workers, including women, migrant workers, persons with disabilities, and young workers.
- Include special provisions for reporting GBV and SEA/SH-related grievances, ensuring survivor-centered handling, confidentiality, and referral to appropriate support services when necessary.
- Be free of charge and include clear procedures for lodging complaints, handling timelines, escalation processes, appeal options, and corrective actions.
- Maintain records of all grievances filed, their resolution status, and corrective measures undertaken.
- Information regarding the availability and operation of the WGM will be clearly communicated to all workers during the induction and ongoing trainings at the site.

9 REPORTING AND COMPLIANCE

The main entity responsible for the implementation of this ESIA is GASKİ. In addition, various stakeholders including Contractors, Gaziantep Metropolitan Municipality, the Provincial Directorate of Environment, Urbanization and Climate Change, the Construction Supervision Team, and İLBANK will have specific responsibilities at different stages of the Project within the scope of the ESIA.

All activities under the ESIA framework will be coordinated by GASKİ. The mitigation, management, and monitoring tables provided in this ESMP summarize the relevant responsibilities of the parties involved.

In this context, the following obligations will be incorporated into the tender documents prepared for potential contractors:

- The technical specifications of the ESMP
- Environmental, social, and occupational health and safety obligations
- Other potential environmental and social issues that may arise during Project implementation.

9.1 Roles and Responsibilities

Table 60. Roles and Responsibilities

Responsible Party	Roles and Responsibilities
Project Implementation Unit (PIU)	• Raise awareness about the Project activities • Implement the following tasks as part of overall management of E&S risks and impacts of the Project: o Appraise E&S impacts, risks and opportunities of each potential subproject o Incorporate E&S requirements into tender documents o Contractually require the supervision

Responsible Party	Roles and Responsibilities
	consultant/contractor/PMC to promptly report incident and accidents • Oversee the implementation of Project level E&S documentation • Maintain the implementation of grievance mechanism and address grievances in a timely manner • Visit and inspect the construction worksites and prepare progress monitoring reports to cover E&S issues, share with EIB biannually • Communicate with stakeholders and conduct consultations with beneficiary property owners and communities throughout project implementation • Evaluate the capacity building requirements of supervision consultants and contractors and provide trainings
Project Management Consultants (PMC)	• Review E&S instruments in compliance with the national legislation and EIB E&S Standards and share them with PIU • Participate in the trainings to be organized by PIU • Conduct the relevant trainings • Ensure that supervision consultants incorporated E&S standards and requirements identified in E&S instruments of the subprojects into contractor tender documents and agreements • Review E&S management documentations (C-ESMP and sub-management plans) to be prepared by construction contractors in compliance with the ESMF prepared by ILBANK in coordination with PIU • Ensure implementation of grievance mechanism and workers' grievance mechanism • Coordinate the supervision consultants, contractors—and/or if any, external E&S consultants—for collection of the monitoring data and compilation of or providing input to periodic monitoring reports as necessary and appropriate • Facilitate monitoring visits and audits by PIU and their consultants • Conduct non-routine site visits/audits in case of E&S issues or non-compliances identified in subprojects or if requested by PIU (e.g. untreated wastewater discharge, incidents or accidents resulting in fatalities or serious injuries of subproject personnel or third-parties, significant grievances, etc.) • Pre-review of E&S incident or accident reports whether there are sufficient details on the accident, Root Cause Analysis, precautions, and compensation measures conducted or not
GASKİ	• Ensure that E&S instruments as per the risk category of the project is prepared within the timeframes to be agreed with PIU and send to PIU for no-objection • Carry out operational and administrative tasks to oversee the implementation of the E&S instruments and monitoring progress; mobilize sufficient E&S and OHS staff • In case of any significant E&S accident and incident, notify PIU in 24 hours and share an incident report to cover sufficient details on the accident, Root Cause Analysis, precautions, and

Responsible Party	Roles and Responsibilities
	compensation measures taken, to be prepared by the Contractor, with PIU in 15 days
Supervision Consultant	• Participate in the training sessions to be organized by PIU • Supervise the construction works of contractors on-site, including implementation of project-specific E&S requirements by contractors on a daily basis • Ensure sufficient E&S capacity for implementation of E&S requirements as set out in the supervision consultancy contracts • Support the project management consultant for the supervision and review of E&S management documentation prepared by construction contractors and submit them to project management consultant upon finalization • Review self-monitoring reports prepared by the construction contractors for early identification of E&S issues and/or non-compliances and submit them to project management consultant upon finalization • Support the PMC (as requested) in the preparation of periodic E&S monitoring reports to be submitted to PIU • Ensure implementation of grievance mechanism and workers' grievance mechanism • Monitoring contractor GM activities. • Providing OHS, Code of Conduct, GM, GBV, SEA/SH trainings to Supervision Consultant and Contractor personnel before construction and training records will be kept. • Ensuring initiation of corrective actions where necessary, ensuring implementation of mitigation measures by the contractor, and sufficient capacity in the team (at least one Social Expert, one Environmental Expert and one full-time OHS Expert) to perform environmental and social supervision effectively within the scope of the ESIA • Employment of competent Environmental, and Social (at least one Environmental Expert, one Social Expert, and one full-time OHS Expert) within the scope of the project
Contractor	• Ensure sufficient E&S capacity for implementation of E&S requirements as set out in the construction contracts • Participate in the training sessions to be organized by PIU • Prepare project-specific E&S management plans and procedures prior to start of construction works as required by the construction contracts • Comply with the requirements of national legislation, EIB standards and implement the E&S requirements as set out in the construction contracts • Submit quarterly E&S self-monitoring reports; template for the Environmental and Social Monitoring Report to the PCM through supervision consultants in line with the format provided by the PIU • Fill in monthly OHS forms reviewed by supervision consultants

Responsible Party	Roles and Responsibilities
	• Preparing monthly GM reports reviewed by supervision consultant social expert • Implement corrective actions in case of E&S non-compliances under the supervision of supervision consultant • Promptly notify the local Administration of any significant E&S incident or accident that have taken place in subproject related operations (at most within the 24 hours) (including SEA/SH) and prepare an incident report including sufficient details on the accident, Root Cause Analysis, precautions, and compensation measures taken (in line with the template to be provided by PIU) and submitted to the Administration in 15 days • Implement and maintain grievance mechanism and workers' grievance mechanism • Providing OHS, Code of Conduct, GM, GBV, SEA/SH trainings to Supervision Consultant and Contractor personnel before construction and training records will be kept • Employment of competent Environmental, and Social (at least one full-time Environmental Export, one full-time Social Expert, and one full-time OHS Expert) within the scope of the project • Checking grievances and grievance boxes weekly with the attendance of Supervision consultant Social Expert

9.2 Reporting

The reporting requirements are given below.

Table 61. Reporting Requirements

From	To	Issue	Frequency
Contractor	Supervision Consultant	Daily monitoring of E&S performance and reporting key E&S findings	Quarterly
Supervision Consultant	PMC	Consolidated site inspection findings/suggestions (based on site visits)	Quarterly
PMC	PIU	Revised and improved consolidated E&S Monitoring Report (including PMC observations)	Quarterly
PIU	EIB	Progress Report covering project activities, E&S non-compliance issues (if any), mitigation measures, site observations, grievances (if any), significant E&S incidents, and follow-up actions	Biannually
Contractor	GASKİ	Immediate notification of significant E&S incidents (e.g., fatalities, environmental spills, SEA/SH issues)	Immediately (within 24 hours)
GASKİ	PIU	Notification of significant E&S incidents based on Contractor's initial notification	Within 24 hours
Contractor	GASKİ	Detailed Incident Report including Root Cause Analysis (RCA), preventive actions,	Within 15 days

From	To	Issue	Frequency
		and compensations (based on the PIU-provided template)	

9.3 Compliance

Throughout the entire life cycle of the Project, compliance with both national (local) legislation and the applicable standards of the European Investment Bank (EIB) will be ensured. Any discrepancies identified between national requirements and EIB standards have been analyzed and discussed in Chapter 2.3 of this ESIA Report. This chapter also outlines the additional measures that will be implemented to ensure full alignment with both regulatory frameworks.

Where gaps exist between local legislation and EIB standards, the Project will apply the more stringent requirement in order to meet best international practices. Specific mitigation and management measures will be implemented to bridge these gaps during the construction, operation, and decommissioning phases.

In order to monitor and verify compliance effectively, a set of Key Performance Indicators (KPIs) have been developed for the Project. These KPIs serve as measurable metrics to assess environmental, social, health and safety, and operational performance, and to ensure that the Project remains fully aligned with both local and EIB standards throughout its implementation.

The core KPIs determined for compliance monitoring are summarized below:

- Effluent discharge quality compliance with Urban Wastewater Treatment Regulations and EU Directive 91/271/EEC
- Air quality compliance at construction and operational phases (PM_{10}, NO_x, and dust control measures)
- Waste segregation, recycling, and licensed disposal compliance rates
- OHS performance indicators including accident frequency rates
- Grievance management efficiency and resolution timelines for local stakeholders
- Management and disposal of sludge in line with national regulations and circular economy practices
- Energy efficiency improvements during operation

These KPIs will be regularly reviewed and updated in response to the Project's progress, changes in regulatory frameworks, operational experience, and feedback received from stakeholders and monitoring bodies.

Periodic environmental and social monitoring reports will document the Project's compliance performance against these KPIs. Any non-compliance detected will trigger immediate corrective and preventive actions to ensure continuous improvement and adherence to national and EIB requirements.

Apart from these monitoring reports, GASKİ will ensure that Contractor(s) will prepare management plans. These management plans will be as follows, but not limited to:

- Pollution Prevention Management Plan
- Emergency Preparedness and Response Plan
- Occupational Health and Safety Management Plan
- Waste Management Plan
- Hazardous Materials Management Plan (including Spill Response Procedure)
- Labor Management Plan
- Community Health and Safety Management Plan
- Traffic Management Plan
- Camp Management Plan
- Security Management Plan
- Chance Find Procedure
- Soil Management Plan
- Air Quality Management Plan
- Noise Management Plan
- Biodiversity Management Plan

Before the operation, GASKİ will prepare a Sludge Management Plan. Also, the "Air Quality Management Plan", “Traffic Management Plan” and “Waste Management Plan” prepared during the pre-construction phase will be updated to reflect operational conditions prior to the commencement of the facility for the odor. Facility personnel will be trained in the updated plan to ensure its effective implementation.

GASKİ, as the Project proponent, will remain responsible for ensuring full compliance and for coordinating all related activities among contractors, subcontractors, operators, and other third parties involved in the Project.

10 CONCLUSION AND RECOMMENDATIONS

The Gaziantep Kızılhisar WWTP 2nd Stage Capacity Increase Project will be implemented within the boundaries of the existing WWTP site located in Gaziantep Province, Türkiye. The existing plant, operational since 2008, was designed for a capacity of 150,000 PE. However, due to rapid urbanization, post-earthquake reconstruction needs, and the influx of refugees, the current capacity has become insufficient.

To address this urgent need, the 2nd Stage will be constructed to increase the plant’s capacity to 400,000 PE. The upgraded facility will use the extended aeration activated sludge process with nitrogen and phosphorus removal. In addition, UV disinfection units will be installed to ensure improved effluent quality before discharge. Dewatered sludge will be sent to a cement factory for co-processing.

This ESIA has been prepared to evaluate the potential environmental and social impacts of the Project, covering both construction and operation phases. A comprehensive baseline study was conducted, assessing air quality, surface and groundwater conditions, soil quality, noise levels, and socio-economic conditions.

The ESIA identifies key risks such as dust, noise, soil and water pollution risks, waste management, occupational health and safety concerns, and minor traffic disruptions. To

address these risks, an ESMP has been developed, outlining mitigation measures and monitoring activities.

With the successful implementation of the Project and the ESMP, significant improvements in wastewater treatment efficiency, environmental protection, and public health are expected in the Gaziantep region.

APPENDICIES

Appendix-1: 1st Stage EIA Exemption

Appendix-2: 2nd Stage EIA Exemption

Appendix-3: Site Visit Summary

Appendix-4: Environmental Permit

Appendix-5: GASKİ's Commitment for Oğuzeli Plain Protection Area

Appendix-6: Title Deeds

Appendix-7: Effluent Analyses

Appendix-8: Layout Plan

Appendix-9: Soil Sampling Report

Appendix-10: Air Quality Measurements

Appendix-11: Water Quality Results

Appendix-12: Noise Measurements

Appendix-13: Contract for Sludge

Appendix-14: AERMOD Results

Appendix-15: Declaration Forms for Sites of Natural Conservation (Forms A and B)

T.C.
Çevre ve Orman
Bakanlığı

T.C.
GAZİANTEP VALİLİĞİ
İl Çevre ve Orman Müdürlüğü

SAYI :B.18.4.İÇO.27.00.03/-961 26../03/2007
KONU : ÇED İşlemleri.

GAZİANTEP BÜYÜKŞEHİR BELEDİYESİ
GASKİ GENEL MÜDÜRLÜĞÜ
(Yatırım ve İnşaat Daire Başkanlığı)
GAZİANTEP

İLGİ : 27.02.2007 sayı ve 132-929. sayılı yazınız.

İlgi'de kayıtlı yazınız ile İlimiz Şahinbey İlçesi, Büyükşahinbey (Körkün) Beldesi, Pafta 27 ve 30, Parsel No: 1916,1917,1918,1919,1920,1921,1922,1927,1932 ve 1933'de kayıtlı alanda, Gaziantep Büyükşehir Belediyesi, GASKİ tarafından Karataş, Kızılhisar, Serince ve Büyükşahinbey Bölgelerinin kanalizasyon sularının arıtılması için kurulacak atıksu arıtma tesisinin 1993 tarihinden önce yatırım programına alınmış olmasından dolayı, ÇED Yönetmeliğinin Geçici 3. maddesi kapsamında değerlendirilerek, ÇED yönetmeliğinden muaf olarak değerlendirilmesi talep edilmektedir.

İlgi yazı ekinde sunulan evrak, bilgi, belgelerin incelenmesi neticesinde bahse konu "*Atıksu Arıtma Tesisi*" 23 Aralık 1990 tarih ve 20734 mükerrer sayılı Resmi Gazetede 1991 yılı yatırım programına alındığı anlaşılmaktadır. 16.12.2003 tarih ve 25218 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren ÇED Yönetmeliğinin Geçici 3. maddesi gereğince, 07.02.1993 tarihinden önce yatırım programına alındığından dolayı, faaliyetiniz ÇED Yönetmeliğinden muaf olarak değerlendirilmiştir.

Ancak Çevre Kanunu ve Kanuna bağlı çıkartılan ilgili yönetmeliklere uyulması, diğer ilgili kurum ve kuruluşlarca mer'i mevzuat çerçevesinde öngörülen tüm izin ve tedbirlerin alınması kaydıyla "*Atıksu Arıtma Tesisi*" kurulmasında ve çalıştırılmasında Müdürlüğümüzce sakınca bulunmamaktadır.

Gereğini bilgilerinize rica ederim.

Miktat ALAN
Vali a.
Vali Yardımcısı

Adres : Vilayet Binası Kat : 4 GAZİANTEP
Tlf : 0 – 342 – 220 42 90 Santral : 0 – 342 – 220 34 07 Fax : 0 – 342 – 220 42 91 ALO ÇEVRE : 181
0 – 342 – 231 54 38 ALO GÜRÜLTÜ : 176

GASKİ

T.C.
GAZİANTEP BÜYÜKŞEHİR BELEDİYESİ
GASKİ GENEL MÜDÜRLÜĞÜ
Yatırım ve İnşaat Daire Başkanlığı

Sayı : M.27.0.GBB.5.01.07.00-132-929
Konu : ÇED Yönetmeliği Uygulaması

27/02/2007

GAZİANTEP VALİLİĞİ
(İl Çevre ve Orman Müdürlüğüne)

Genel Müdürlüğümüz ve İller Bankası marifetiyle Arsan-Özalp Ortak Girişim Grubunun yüklenimi altında; 1.Ek Mükavelenin %30'u dahilinde yapımına devam edilen Gaziantep(Merkez) kanalizasyon ve yağmursuyu inşaatında, Karataş, Kızılhisar, Serince ve Büyükşahinbey Bölgeleri Kanalizasyon ve Atıksu Arıtma Tesisi İnşaatına başlanmıştır.

Çevre Kanunu'na bağlı olarak çıkartılan 16/12/2004 tarih ve 25672 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren ÇED Yönetmeliği, Madde 29 ana başlığı altında verilen Geçici 3. maddesinde "07/02/1993 tarihli ve 21489 sayılı Resmi Gazetede yayımlanan çevresel etki değerlendirmesi yönetmeliğinden önce uygulama projeleri onaylanmış, çevre mevzuatı uyarınca ve ilgili diğer mevzuat uyarınca yetkili mercilerden izin, ruhsat veya onay yada kamulaştırma kararı alınmış, yatırım programına alınmış, mevzi imar planları onaylanmış projelere, bu tarihten önce üretim ve/veya işletmeye başladığı belgelenen faaliyetlere 09/08/1983 tarihli ve 2772 sayılı Çevre Kanunu ve ilgili diğer yönetmeliklerde alınması gereken izinler saklı kalmak kaydıyla bu yönetmelik hükümleri uygulanmaz" hükmü yer almaktadır.

Gaziantep Kanalizasyon Şebekesi ve Arıtma Tesisi projelerinin 23 Aralık 1990 tarih ve 20734 sayılı Resmi Gazetenin mükerer sayısında, projenin 1991 yılı İller Bankasının yatırım programına alındığı için atıksu arıtma tesisi projesi ile ilgili ÇED Yönetmeliği gereğince gerekli iznin verilmesi hususunda;

Bilgilerinize sunar, gereğini arz ederim.

Şb. Müd. : M. A: KIRNAP

Dai. Bşk. : M. KARADAĞ

Gen.Müd.Yrd. :A.BÜYÜKKÖROĞLU

Fahreddin USLUSOY
Genel Müdür

Ek: 23 Aralık 1990 Yılı 20734 Sayılı Resmi Gazetenin 13. Sayfası

Not: Cevabınızda Sube.Tarih ve Savının bildirilmesi

T.C.
GAZİANTEP VALİLİĞİ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü

Sayı : E-46818599-220.03-11223665
Konu : ÇED Muafiyet

13.12.2024

GAZİANTEP SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜNE
(Kızılhisar 2. İleri Biyolojik Atıksu Arıtma Tesisi)

İlgi : 04.12.2024 tarihli ve 112423030 sayıda kayıtlı başvuru.

Gaziantep İli, Oğuzeli İlçesi, Sazgın Mah. Kilis Yolu Üzeri Tepecik Mevkiinde da kayıtlı alanda GASKİ - Kızılhisar 2. İleri Biyolojik Atıksu Arıtma Tesisi tarafından işletilen "Atıksu Arıtma Tesisi" (80.000 m^3/gün kapasiteli) projesinin, 29/07/2022 tarih ve 31907 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren ÇED Yönetmeliği kapsamına girip girmediği hususunda Müdürlüğümüz görüşü talep edilmektedir.

Sunulan belgeler ve yerinde yapılan incelemeler neticesinde, söz konusu tesis için 26.03.2007 tarih ve 961 sayılı Müdürlüğümüz yazısı ile (23.12.1990 tarih ve 20734 mükerrer sayılı Resmi Gazete 1991 yılı yatırım programına alındığı tespit edildiğinden, ÇED Yönetmeliği Geçici 2 maddesi gereği; 23/6/1997 tarihinden önce kamu yatırım programına alınmış olduğundan) Muafiyet yazısı verilmiş olup, planlanan durumda proje kapasitenin değişmediği tespit edilmiştir. Bu nedenle söz konusu "Atıksu Arıtma Tesisi" (80.000 m3/gün kapasiteli) projesi 29/07/2022 tarih ve 31907 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren ÇED Yönetmeliğinin, Geçici 2 maddesi gereği muaf olarak değerlendirilmiştir.

Diğer taraftan, planlanan yatırım ile ilgili olarak, 5491 sayılı kanunla değişik 2872 sayılı Çevre Kanunu ile bu Kanuna istinaden çıkarılan Yönetmeliklerin ilgili hükümlerine uyulması ve diğer mer'i mevzuat çerçevesinde öngörülen gerekli izinlerin alınması, ekolojik dengenin bozulmamasına, çevrenin korunmasına ve geliştirilmesine yönelik tedbirlere riayet edilmesi gerekmektedir.

Bilgilerinizi ve gereğini arz ederim.

Hakan ŞİMŞEK
Çevre, Şehircilik ve İklim Değişikliği İl Müdürü

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Doğrulama Kodu: 8A9E9EAA-2590-417C-97A8-E8474A73DBDC
Doğrulama Adresi: https://www.turkiye.gov.tr

Mücahitler Mh. Mareşal Fevzi Çakmak Bul. No:98 Şehitkamil / GAZİANTEP
Tel: 0 342 321 39 03 - Faks: 0 342 321 39 00
e-posta: gaziantep@csb.gov.tr İnternet Adresi: www.csb.gov.tr/iller/gaziantep
KEP Adresi : gaziantepcevreveseh...
Bilgi için:Hayrünnisa ALTUNYURT
Çevre Yüksek Mühendisi

SITE VISIT REPORT

Project Name: Kızılhisar WWTP Capacity Increase

Siti Visit Date: 6 March 2025

Purpose: Site assessment as part of the Environmental and Social Impact Assessment (ESIA) process

OBSERVATIONS

- The project site, as well as the locations designated for temporary storage of topsoil and excavation material, were visited.
- It was observed that the site organization and general housekeeping were very good.
- Initial project documentation was requested from the site representatives.
- The discharge point and the nearby stream were inspected.
- The surrounding area predominantly consists of agricultural lands, mainly used for the cultivation of pistachios, olives, and grapes. Livestock farming activities were also noted in the vicinity.
- There is no odor issue in the site.
- No sensitive receptors were observed near the project area; however, one residential house was identified approximately 75 meters from the project site boundary.
- The designated location for the workers' accommodation area was also visited; it is located within the project site.
- Measurement locations for baseline environmental monitoring (water quality, noise, air quality, and soil) were identified during the visit.

CONCLUSION

The site visit confirmed that the project area is well-organized and that preliminary preparations for construction and environmental management are underway. Necessary baseline data collection points have been established in line with ESIA requirements.

SITE PHOTOS



Figure 1: Trees to be delivered to the municipality



Figure 2: Existing Settling Ponds 1



Figure 3: Existing Settling Ponds 2



Figure 4: Existing Buildings



Figure 5: Existing Sludge Dewatering Unit



Figure 6: Continuous Wastewater Monitoring System (Sürekli Atıksu İzleme Sistemi (SAIS)) Control Cabin 1



Figure 7: Discharge Line



Figure 8: Continuous Wastewater Monitoring System (Sürekli Atıksu İzleme Sistemi (SAIS)) Control Cabin 2



Figure 9: Distribution and Collection Structures



Figure 10: Discharge Point



Figure 11: Sacır Stream Downstream 1



Figure 12: Sacır Stream Downstream 2



Figure 13: Olive Trees to be relocated



Figure 14: Access Road

T.C.
ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
ÇED İzin ve Denetim Genel Müdürlüğü

ÇEVRE İZİN BELGESİ

Belge No	:	223253816.0.1
Başlangıç Tarihi	:	27.05.2022
Bitiş Tarihi	:	27.05.2027
Tesis Adı	:	GASKİ GENEL MÜDÜRLÜĞÜ KIZILHİSAR 2. İLERİ BİYOLOJİK ARITMA TESİSİ
Tesis Adresi	:	TEPECİK MEVKİİ, ŞAHİNBEY / GAZİANTEP
İşletme Vergi No	:	3890019150
Çevre İzin ve Lisans Konusu	:	Atıksu Deşarjı

Yukarıda adı ve açık adresi belirtilen tesise Çevre İzin ve Lisans Yönetmeliği kapsamında ÇEVRE İZİN BELGESİ verilmiş olup 24.05.2022 tarihli ve 58003700-150/E.2098 sayılı yazı ile birlikte geçerlidir. Ayrı kullanılmaz.

e-imzalıdır
Mehrali ECER
Bakan a.
Genel Müdür

5070 sayılı Elektronik İmza Kanunu gereği bu belge elektronik imza ile imzalanmıştır.

Gaziantep Su ve Kanalizasyon İdaresi
Atık Su Arıtma Dairesi Başkanlığı
Sayı: 11717750-804.01-E.2025-1212/4041
Tarih: 10.06.2025
Dosya Numarası: 2025-20168

T.C.
GAZİANTEP BÜYÜKŞEHİR BELEDİYESİ
GASKİ GENEL MÜDÜRLÜĞÜ
Atık Su Arıtma Dairesi Başkanlığı

Sayı : 11717750-804.01-E.2025-1212/4041 10.06.2025
Konu : Kızılhisar İleri Biyolojik Atık Su Arıtma Tesisi Hakkında

İLBANK A.Ş. GENEL MÜDÜRLÜĞÜNE
(Uluslararası İlişkiler Dairesi Başkanlığı)

Emniyet Mah. Hipodrom Cad. No: 9/21 R Blok
Yenimahalle/Ankara

Gaziantep İli Oğuzeli İlçesi Körkün Mahallesinde bulunan ve 01/09/2008 tarihinde yapım imalatları tamamlanarak devreye alınan Kızılhisar İleri Biyolojik Atık Su Arıtma Tesisi aktif halde çalışarak tesisimize gelen atık suları arıtmaktadır. Mevcut halde bölgede oluşan atık suların arıtıldığı tesisimizde pandemi süreci ve özellikle asrın felaketi olarak nitelendirilen 6 Şubat depremlerinden sonra bölgede toplu konut inşaatları, yazlık olarak kullanılan bireysel yerleşim alanlarında hızlı yapılaşmalar oluşmuştur. Bu sebeplerden dolayı bölgedeki nüfus artışı kısa sürede ve hızlı bir şekilde gerçekleşmiştir. Artan nüfusa bağlı olarak tesisin kapasitesinin üzerinde Atık Su tesisimize gelmeye başlamıştır. Tesisin standartlara uygun şekilde deşarj suyunu sağlayabilmesi için 2. Kademe ünite imalatlarının yapılması zaruri bir durum olmuştur.

Ek-1 de görülen ve MAYIS 2008 tarihinde onaylanan proje raporunda mevcut tesisin sınırları içerisinde 2.kademe imalatlarında projelendirildiği raporda görülmektedir. 2. Kademe imalatlarının yapılabilmesi için Avrupa Yatırım Bankası tarafından hibe olarak sağlanan finansman ile tesisin 2. Kademe imalatları yapılacaktır. Aktif çamur prosesine göre yapılacak olan konvensiyonel tesis İleri Biyolojik Atıksu arıtma açısından modernize edilmiş olup ileri teknolojik arıtma kimliğine kavuşacaktır. Bu sayede tesise gelen tüm atık sular Bakanlığımızın belirlediği standartlara uygun olarak arıtılacaktır.

01/09/2008 tarihinde imalatları tamamlanarak devreye alınan ve mevcut tesis sınırları içerisindeki 2. Kademe imalatlarının ihale hazırlık sürecinde mülkiyeti kurumumuza ait olan tapu üzerinde koruma alanında olduğuna dair şerh bulunmaktadır. Ancak Ek-2 de görülen 12/12/2016 tarih ve 2016/9620 sayılı Büyük Ova Koruma Alanları kararnamesi Madde -1 Fıkra-2 de ‘’Ovaların sınırları içerisinde yer alan onaylı planlı alanlar ile bu kararın yayımı tarihi itibariyle ilgili mevzuatı uyarınca tarım dışı kullanma izni verilmiş olanlar birinci fıkra kapsamı dışındadır.’’ denilmektedir. Bu madde kapsamında söz konusu tapudaki şerhin kaldırılması ve gerekli müsaadelerin verilebilmesi için kurumumuz ile Gaziantep İl Tarım ve Orman Müdürlüğü arasında yazışmalar başlatılmış olup sürecin hızlı şekilde tamamlanması adına çalışmalarımız devam etmektedir.

Kurumumuz tarafından başlatılan süreç yakından takip edilmekte olup ivedilikle söz konusu müsaade ve izin süreci tamamlanacaktır. Taahhütümüz ile ihale değerlendirme süreci tamamlanana kadar tapu üzerindeki şerh kaldırılarak taraflarınıza sunulacağı hususunda;

Gereğini yapılmasını arz ederim.

Hüseyin SÖNMEZLER
Genel Müdür

Ek :
1- Proje Açıklama Raporu Kapağı (1 Sayfa)
2- 12122016 tarih ve 20169620 Sayılı Büyük Ova Koruma Alanları Kararnamesi (2 Sayfa)

İncilipınar Mah. Kıbrıs Cad. No:1/A Şehitkamil /Gaziantep
Telefon Merkez: (0342) 211 13 00 İşletme:
Kep Adresi : gaski@hs01.kep.tr
e-posta: m.yuzbasioglu27@gmail.com Web: www.gaski.gov.tr

Bilgi için: MEHMET YÜZBAŞIOĞLU YATIRIM ŞUBE MÜDÜRÜ VEKİLİ

Bu belge, güvenli elektronik imza ile imzalanmıştır.
http://ebelge.gaski.gov.tr adresinden Doğrulama Kodu : 3288CCA5 Belge No: 11717750-804.01-E.2025-1212/4041
ile doğrulayabilirsiniz.

Kaydı Oluşturan: (Gaziantep Su ve Kanalizasyon İdaresi)

Tapu Kaydı (Aktif Malikler için Detaylı - ŞBİ var)

TAPU KAYIT BİLGİSİ

Zemin Tipi:	AnaTasinmaz
Taşınmaz Kimlik No:	125522036
İl/İlçe:	GAZİANTEP/OĞUZELİ
Kurum Adı:	Oğuzeli
Mahalle/Köy Adı:	KÖRKÜN Mah.
Mevkii:	TEPECİK
Cilt/Sayfa No:	115/11351
Kayıt Durum:	Aktif

Ada/Parsel:	1156/20
AT Yüzölçüm(m2):	7406.38
Bağımsız Bölüm Nitelik:	
Bağımsız Bölüm Brüt YüzÖlçümü:	
Bağımsız Bölüm Net YüzÖlçümü:	
Blok/Kat/Giriş/BBNo:	
Arsa Pay/Payda:	
Ana Taşınmaz Nitelik:	BAĞ

TAŞINMAZA AİT ŞERH BEYAN İRTİFAK BİLGİLERİ

Ş/B/İ	Açıklama	Malik/Lehtar	Tesis Kurum Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
Beyan	Diğer (Konusu: Parsel Oğuzeli Ovası Koruma Alanı içerisindedir.Onaylanmış imar planları ile onaylı köy yerleşik alanları içerisinde kalmaması halnide 5403 S.K. kapsamında izin alınmadan tarımsal üretim amacı dışında kullanılmaz.) Tarih: 12.04.2023 Sayı: 8735126(Şablon: Diğer)	(SN:6976467) GAZİANTEP KADASTRO MÜDÜRLÜĞÜ VKN:	Oğuzeli - 25-05-2023 15:26 - 9108	

BİLGİ AMAÇLIDIR

MÜLKİYET BİLGİLERİ

(Hisse) Sistem No	Malik	El Birliği No	Hisse Pay/ Payda	Metrekare	Toplam Metrekare	Edinme Sebebi-Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
710275808	(SN:8018190) GAZİANTEP SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ VKN:3890019150	-	1/1	7406.38	7406.38	3402 S.Y.nın 22/A Md. Gereğince Yenilemenin Tescili 22-11-2022 22189	-

MÜLKİYETE AİT ŞERH BEYAN İRTİFAK BİLGİLERİ

Ş/B/İ	Açıklama	Kısıtlı Malik (Hisse) Ad Soyad	Malik/Lehtar	Tesis Kurum Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
Beyan	2942 Sayılı Kamulaştırma Kanununun 7. maddesine göre belirtme.	GAZİANTEP SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ VKN	(SN:2859367) GAZİANTEP BÜYÜKŞEHİR BELEDİYESİ VKN:3890038716	Şahinbey 2.Bölge(Kapatildi) - 19-03-2007 11:11 - 5995	

Bu belgeyi akıllı telefonunuzdan karekod tarama programları ile aşağıdaki barkodu taratarak;

veya Web Tapu anasayfasından (https://webtapu.tkgm.gov.tr adresinden) hsbBbSlJ3RLIE kodunu Online İşlemler alanına yazarak doğrulayabilirsiniz.

BİLGİ AMAÇLIDIR

BİLGİ AMAÇLIDIR

Kaydı Oluşturan: (Gaziantep Su ve Kanalizasyon İdaresi)

Tapu Kaydı (Aktif Malikler için Detaylı - ŞBİ var)

TAPU KAYIT BİLGİSİ

Zemin Tipi:	AnaTasinmaz
Taşınmaz Kimlik No:	125522029
İl/İlçe:	GAZİANTEP/OĞUZELİ
Kurum Adı:	Oğuzeli
Mahalle/Köy Adı:	KÖRKÜN Mah.
Mevkii:	TEPECİK
Cilt/Sayfa No:	115/11352
Kayıt Durum:	Aktif

Ada/Parsel:	1156/21
AT Yüzölçüm(m2):	5337.29
Bağımsız Bölüm Nitelik:	
Bağımsız Bölüm Brüt YüzÖlçümü:	
Bağımsız Bölüm Net YüzÖlçümü:	
Blok/Kat/Giriş/BBNo:	
Arsa Pay/Payda:	
Ana Taşınmaz Nitelik:	TARLA

TAŞINMAZA AİT ŞERH BEYAN İRTİFAK BİLGİLERİ

Ş/B/İ	Açıklama	Malik/Lehtar	Tesis Kurum Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
Beyan	Diğer (Konusu: Parsel Oğuzeli Ovası Koruma Alanı içerisindedir.Onaylanmış imar planları ile onaylı köy yerleşik alanları içerisinde kalmaması halnide 5403 S.K. kapsamında izin alınmadan tarımsal üretim amacı dışında kullanılmaz.) Tarih: 12.04.2023 Sayı: 8735126(Şablon: Diğer)	(SN:6976467) GAZİANTEP KADASTRO MÜDÜRLÜĞÜ VKN:	Oğuzeli - 25-05-2023 15:26 - 9108	

BİLGİ AMAÇLIDIR

Beyan	3083 Sayılı Yasanın 13. Maddesine gereğince kısıtlıdır.(Şablon: 3083 Sayılı Kanunun 13. Maddesine Göre Belirtme)	(SN:6399614) BAKANLAR KURULU VKN:6360272243	Oğuzeli - 29-11-2013 09:39 - 6719	

MÜLKİYET BİLGİLERİ

(Hisse) Sistem No	Malik	El Birliği No	Hisse Pay/ Payda	Metrekare	Toplam Metrekare	Edinme Sebebi-Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
710275661	(SN:8018190) GAZİANTEP SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ VKN:3890019150	-	1/1	5337.29	5337.29	3402 S.Y.nın 22/A Md. Gereğince Yenilemenin Tescili 22-11-2022 22189	-

Bu belgeyi akıllı telefonunuzdan karekod tarama programları ile aşağıdaki barkodu taratarak;

veya Web Tapu anasayfasından (https://webtapu.tkgm.gov.tr adresinden) HPCFY8uIKNQO kodunu Online İşlemler alanına yazarak doğrulayabilirsiniz.

BİLGİ AMAÇLIDIR

Kaydı Oluşturan: (Gaziantep Su ve Kanalizasyon İdaresi)

Tapu Kaydı (Aktif Malikler için Detaylı - ŞBİ var)

TAPU KAYIT BİLGİSİ

Zemin Tipi:	AnaTasinmaz
Taşınmaz Kimlik No:	125521726
İl/İlçe:	GAZİANTEP/OĞUZELİ
Kurum Adı:	Oğuzeli
Mahalle/Köy Adı:	KÖRKÜN Mah.
Mevkii:	TEPECİK
Cilt/Sayfa No:	115/11353
Kayıt Durum:	Aktif

Ada/Parsel:	1156/22
AT Yüzölçüm(m2):	5181.96
Bağımsız Bölüm Nitelik:	
Bağımsız Bölüm Brüt YüzÖlçümü:	
Bağımsız Bölüm Net YüzÖlçümü:	
Blok/Kat/Giriş/BBNo:	
Arsa Pay/Payda:	
Ana Taşınmaz Nitelik:	TARLA

TAŞINMAZA AİT ŞERH BEYAN İRTİFAK BİLGİLERİ

Ş/B/İ	Açıklama	Malik/Lehtar	Tesis Kurum Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
Beyan	Diğer (Konusu: Parsel Oğuzeli Ovası Koruma Alanı içerisindedir.Onaylanmış imar planları ile onaylı köy yerleşik alanları içerisinde kalmaması halnide 5403 S.K. kapsamında izin alınmadan tarımsal üretim amacı dışında kullanılmaz.) Tarih: 12.04.2023 Sayı: 8735126(Şablon: Diğer)	(SN:6976467) GAZİANTEP KADASTRO MÜDÜRLÜĞÜ VKN:	Oğuzeli - 25-05-2023 15:26 - 9108	

BİLGİ AMAÇLIDIR

Beyan	3083 Sayılı Yasanın 13. Maddesine gereğince kısıtlıdır.(Şablon: 3083 Sayılı Kanunun 13. Maddesine Göre Belirtme)	(SN:6399614) BAKANLAR KURULU VKN:6360272243	Oğuzeli - 29-11-2013 09:39 - 6719	

MÜLKİYET BİLGİLERİ

(Hisse) Sistem No	Malik	El Birliği No	Hisse Pay/ Payda	Metrekare	Toplam Metrekare	Edinme Sebebi-Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
710271100	(SN:8018190) GAZİANTEP SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ VKN:3890019150	-	1/1	5181.96	5181.96	3402 S.Y.nın 22/A Md. Gereğince Yenilemenin Tescili 22-11-2022 22189	-

Bu belgeyi akıllı telefonunuzdan karekod tarama programları ile aşağıdaki barkodu taratarak;

veya Web Tapu anasayfasından (https://webtapu.tkgm.gov.tr adresinden) TV_bcEAaGxZ- kodunu Online İşlemler alanına yazarak doğrulayabilirsiniz.

BİLGİ AMAÇLIDIR

Kaydı Oluşturan: (Gaziantep Su ve Kanalizasyon İdaresi)

Tapu Kaydı (Aktif Malikler için Detaylı - ŞBİ var)

TAPU KAYIT BİLGİSİ

Zemin Tipi:	AnaTasinmaz
Taşınmaz Kimlik No:	125521724
İl/İlçe:	GAZİANTEP/OĞUZELİ
Kurum Adı:	Oğuzeli
Mahalle/Köy Adı:	KÖRKÜN Mah.
Mevkii:	TEPECİK
Cilt/Sayfa No:	115/11354
Kayıt Durum:	Aktif

Ada/Parsel:	1156/23
AT Yüzölçüm(m2):	5288.92
Bağımsız Bölüm Nitelik:	
Bağımsız Bölüm Brüt YüzÖlçümü:	
Bağımsız Bölüm Net YüzÖlçümü:	
Blok/Kat/Giriş/BBNo:	
Arsa Pay/Payda:	
Ana Taşınmaz Nitelik:	TARLA

TAŞINMAZA AİT ŞERH BEYAN İRTİFAK BİLGİLERİ

Ş/B/İ	Açıklama	Malik/Lehtar	Tesis Kurum Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
Beyan	Diğer (Konusu: Parsel Oğuzeli Ovası Koruma Alanı içerisindedir.Onaylanmış imar planları ile onaylı köy yerleşik alanları içerisinde kalmaması halnide 5403 S.K. kapsamında izin alınmadan tarımsal üretim amacı dışında kullanılmaz.) Tarih: 12.04.2023 Sayı: 8735126(Şablon: Diğer)	(SN:6976467) GAZİANTEP KADASTRO MÜDÜRLÜĞÜ VKN:	Oğuzeli - 25-05-2023 15:26 - 9108	

BİLGİ AMAÇLIDIR

Beyan	3083 Sayılı Yasanın 13. Maddesine gereğince kısıtlıdır.(Şablon: 3083 Sayılı Kanunun 13. Maddesine Göre Belirtme)	(SN:6399614) BAKANLAR KURULU VKN:6360272243	Oğuzeli - 29-11-2013 09:39 - 6719	

MÜLKİYET BİLGİLERİ

(Hisse) Sistem No	Malik	El Birliği No	Hisse Pay/ Payda	Metrekare	Toplam Metrekare	Edinme Sebebi-Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
710271082	(SN:8018190) GAZİANTEP SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ VKN:3890019150	-	1/1	5288.92	5288.92	3402 S.Y.nın 22/A Md. Gereğince Yenilemenin Tescili 22-11-2022 22189	-

Bu belgeyi akıllı telefonunuzdan karekod tarama programları ile aşağıdaki barkodu taratarak;

veya Web Tapu anasayfasından (https://webtapu.tkgm.gov.tr adresinden) HKaCUVcRatay kodunu Online İşlemler alanına yazarak doğrulayabilirsiniz.

BİLGİ AMAÇLIDIR

Kaydı Oluşturan: (Gaziantep Su ve Kanalizasyon İdaresi)

Tapu Kaydı (Aktif Malikler için Detaylı - ŞBİ var)

TAPU KAYIT BİLGİSİ

Zemin Tipi:	AnaTasinmaz
Taşınmaz Kimlik No:	125521718
İl/İlçe:	GAZİANTEP/OĞUZELİ
Kurum Adı:	Oğuzeli
Mahalle/Köy Adı:	KÖRKÜN Mah.
Mevkii:	TEPECİK
Cilt/Sayfa No:	115/11355
Kayıt Durum:	Aktif

Ada/Parsel:	1156/24
AT Yüzölçüm(m2):	5748.29
Bağımsız Bölüm Nitelik:	
Bağımsız Bölüm Brüt YüzÖlçümü:	
Bağımsız Bölüm Net YüzÖlçümü:	
Blok/Kat/Giriş/BBNo:	
Arsa Pay/Payda:	
Ana Taşınmaz Nitelik:	TARLA

TAŞINMAZA AİT ŞERH BEYAN İRTİFAK BİLGİLERİ

Ş/B/İ	Açıklama	Malik/Lehtar	Tesis Kurum Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
Beyan	Diğer (Konusu: Parsel Oğuzeli Ovası Koruma Alanı içerisindedir.Onaylanmış imar planları ile onaylı köy yerleşik alanları içerisinde kalmaması halnide 5403 S.K. kapsamında izin alınmadan tarımsal üretim amacı dışında kullanılmaz.) Tarih: 12.04.2023 Sayı: 8735126(Şablon: Diğer)	(SN:6976467) GAZİANTEP KADASTRO MÜDÜRLÜĞÜ VKN:	Oğuzeli - 25-05-2023 15:26 - 9108	

BİLGİ AMAÇLIDIR

Beyan	3083 Sayılı Yasanın 13. Maddesine gereğince kısıtlıdır.(Şablon: 3083 Sayılı Kanunun 13. Maddesine Göre Belirtme)	(SN:6399614) BAKANLAR KURULU VKN:6360272243	Oğuzeli - 29-11-2013 09:39 - 6719	

MÜLKİYET BİLGİLERİ

(Hisse) Sistem No	Malik	El Birliği No	Hisse Pay/ Payda	Metrekare	Toplam Metrekare	Edinme Sebebi-Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
710271046	(SN:8018190) GAZİANTEP SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ VKN:3890019150	-	1/1	5748.29	5748.29	3402 S.Y.nın 22/A Md. Gereğince Yenilemenin Tescili 22-11-2022 22189	-

Bu belgeyi akıllı telefonunuzdan karekod tarama programları ile aşağıdaki barkodu taratarak;

veya Web Tapu anasayfasından (https://webtapu.tkgm.gov.tr adresinden) OjbyUtOGYLBU kodunu Online İşlemler alanına yazarak doğrulayabilirsiniz.

BİLGİ AMAÇLIDIR

Kaydı Oluşturan: (Gaziantep Su ve Kanalizasyon İdaresi)

Tapu Kaydı (Aktif Malikler için Detaylı - ŞBİ var)

TAPU KAYIT BİLGİSİ

Zemin Tipi:	AnaTasinmaz
Taşınmaz Kimlik No:	125521722
İl/İlçe:	GAZİANTEP/OĞUZELİ
Kurum Adı:	Oğuzeli
Mahalle/Köy Adı:	KÖRKÜN Mah.
Mevkii:	TEPECİK
Cilt/Sayfa No:	115/11356
Kayıt Durum:	Aktif

Ada/Parsel:	1156/25
AT Yüzölçüm(m2):	8278.25
Bağımsız Bölüm Nitelik:	
Bağımsız Bölüm Brüt YüzÖlçümü:	
Bağımsız Bölüm Net YüzÖlçümü:	
Blok/Kat/Giriş/BBNo:	
Arsa Pay/Payda:	
Ana Taşınmaz Nitelik:	TARLA

TAŞINMAZA AİT ŞERH BEYAN İRTİFAK BİLGİLERİ

Ş/B/İ	Açıklama	Malik/Lehtar	Tesis Kurum Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
Beyan	Diğer (Konusu: Parsel Oğuzeli Ovası Koruma Alanı içerisindedir.Onaylanmış imar planları ile onaylı köy yerleşik alanları içerisinde kalmaması halnide 5403 S.K. kapsamında izin alınmadan tarımsal üretim amacı dışında kullanılmaz.) Tarih: 12.04.2023 Sayı: 8735126(Şablon: Diğer)	(SN:6976467) GAZİANTEP KADASTRO MÜDÜRLÜĞÜ VKN:	Oğuzeli - 25-05-2023 15:26 - 9108	

BİLGİ AMAÇLIDIR

Beyan	3083 Sayılı Yasanın 13. Maddesine gereğince kısıtlıdır.(Şablon: 3083 Sayılı Kanunun 13. Maddesine Göre Belirtme)	(SN:6399614) BAKANLAR KURULU VKN:6360272243	Oğuzeli - 29-11-2013 09:39 - 6719	

MÜLKİYET BİLGİLERİ

(Hisse) Sistem No	Malik	El Birliği No	Hisse Pay/ Payda	Metrekare	Toplam Metrekare	Edinme Sebebi-Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
710271067	(SN:8018190) GAZİANTEP SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ VKN:3890019150	-	1/1	8278.25	8278.25	3402 S.Y.nın 22/A Md. Gereğince Yenilemenin Tescili 22-11-2022 22189	-

Bu belgeyi akıllı telefonunuzdan karekod tarama programları ile aşağıdaki barkodu taratarak;

veya Web Tapu anasayfasından (https://webtapu.tkgm.gov.tr adresinden) Y3PvRMyXw2EH kodunu Online İşlemler alanına yazarak doğrulayabilirsiniz.

BİLGİ AMAÇLIDIR

Kaydı Oluşturan: (Gaziantep Su ve Kanalizasyon İdaresi)

Tapu Kaydı (Aktif Malikler için Detaylı - ŞBİ var)

TAPU KAYIT BİLGİSİ

Zemin Tipi:	AnaTasinmaz
Taşınmaz Kimlik No:	125521720
İl/İlçe:	GAZİANTEP/OĞUZELİ
Kurum Adı:	Oğuzeli
Mahalle/Köy Adı:	KÖRKÜN Mah.
Mevkii:	TEPECİK
Cilt/Sayfa No:	115/11357
Kayıt Durum:	Aktif

Ada/Parsel:	1156/26
AT Yüzölçüm(m2):	9153.93
Bağımsız Bölüm Nitelik:	
Bağımsız Bölüm Brüt YüzÖlçümü:	
Bağımsız Bölüm Net YüzÖlçümü:	
Blok/Kat/Giriş/BBNo:	
Arsa Pay/Payda:	
Ana Taşınmaz Nitelik:	TARLA

TAŞINMAZA AİT ŞERH BEYAN İRTİFAK BİLGİLERİ

Ş/B/İ	Açıklama	Malik/Lehtar	Tesis Kurum Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
Beyan	Diğer (Konusu: Parsel Oğuzeli Ovası Koruma Alanı içerisindedir.Onaylanmış imar planları ile onaylı köy yerleşik alanları içerisinde kalmaması halnide 5403 S.K. kapsamında izin alınmadan tarımsal üretim amacı dışında kullanılmaz.) Tarih: 12.04.2023 Sayı: 8735126(Şablon: Diğer)	(SN:6976467) GAZİANTEP KADASTRO MÜDÜRLÜĞÜ VKN:	Oğuzeli - 25-05-2023 15:26 - 9108	

BİLGİ AMAÇLIDIR

Beyan	3083 Sayılı Yasanın 13. Maddesine gereğince kısıtlıdır.(Şablon: 3083 Sayılı Kanunun 13. Maddesine Göre Belirtme)	(SN:6399614) BAKANLAR KURULU VKN:6360272243	Oğuzeli - 29-11-2013 09:39 - 6719	

MÜLKİYET BİLGİLERİ

(Hisse) Sistem No	Malik	El Birliği No	Hisse Pay/ Payda	Metrekare	Toplam Metrekare	Edinme Sebebi-Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
710271053	(SN:8018190) GAZİANTEP SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ VKN:3890019150	-	1/1	9153.93	9153.93	3402 S.Y.nın 22/A Md. Gereğince Yenilemenin Tescili 22-11-2022 22189	-

MÜLKİYETE AİT ŞERH BEYAN İRTİFAK BİLGİLERİ

Ş/B/İ	Açıklama	Kısıtlı Malik (Hisse) Ad Soyad	Malik/Lehtar	Tesis Kurum Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
Beyan	2942 Sayılı Kamulaştırma Kanununun 7. maddesine göre belirtme.	GAZİANTEP SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ VKN	(SN:2859367) GAZİANTEP BÜYÜKŞEHİR BELEDİYESİ VKN:3890038716	Şahinbey 2.Bölge(Kapatildi) - 19-03-2007 11:11 - 5995	

BİLGİ AMAÇLIDIR

Bu belgeyi akıllı telefonunuzdan karekod tarama programları ile aşağıdaki barkodu taratarak;

veya Web Tapu anasayfasından (https://webtapu.tkgm.gov.tr adresinden) NEb148neK-0P kodunu Online İşlemler alanına yazarak doğrulayabilirsiniz.

BİLGİ AMAÇLIDIR

Kaydı Oluşturan: (Gaziantep Su ve Kanalizasyon İdaresi)

Tapu Kaydı (Aktif Malikler için Detaylı - ŞBİ var)

TAPU KAYIT BİLGİSİ

Zemin Tipi:	AnaTasinmaz
Taşınmaz Kimlik No:	125522011
İl/İlçe:	GAZİANTEP/OĞUZELİ
Kurum Adı:	Oğuzeli
Mahalle/Köy Adı:	KÖRKÜN Mah.
Mevkii:	-
Cilt/Sayfa No:	115/11358
Kayıt Durum:	Aktif

Ada/Parsel:	1156/27
AT Yüzölçüm(m2):	25219.25
Bağımsız Bölüm Nitelik:	
Bağımsız Bölüm Brüt YüzÖlçümü:	
Bağımsız Bölüm Net YüzÖlçümü:	
Blok/Kat/Giriş/BBNo:	
Arsa Pay/Payda:	
Ana Taşınmaz Nitelik:	TARLA

TAŞINMAZA AİT ŞERH BEYAN İRTİFAK BİLGİLERİ

Ş/B/İ	Açıklama	Malik/Lehtar	Tesis Kurum Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
Beyan	Diğer (Konusu: Parsel Oğuzeli Ovası Koruma Alanı içerisindedir.Onaylanmış imar planları ile onaylı köy yerleşik alanları içerisinde kalmaması halnide 5403 S.K. kapsamında izin alınmadan tarımsal üretim amacı dışında kullanılmaz.) Tarih: 12.04.2023 Sayı: 8735126(Şablon: Diğer)	(SN:6976467) GAZİANTEP KADASTRO MÜDÜRLÜĞÜ VKN:	Oğuzeli - 25-05-2023 15:26 - 9108	

BİLGİ AMAÇLIDIR

Beyan	3083 Sayılı Yasanın 13. Maddesine gereğince kısıtlıdır.(Şablon: 3083 Sayılı Kanunun 13. Maddesine Göre Belirtme)	(SN:6399614) BAKANLAR KURULU VKN:6360272243	Oğuzeli - 29-11-2013 09:39 - 6719	

MÜLKİYET BİLGİLERİ

(Hisse) Sistem No	Malik	El Birliği No	Hisse Pay/ Payda	Metrekare	Toplam Metrekare	Edinme Sebebi-Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
710275339	(SN:8018190) GAZİANTEP SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ VKN:3890019150	-	1/1	25219.25	25219.25	3402 S.Y.nın 22/A Md. Gereğince Yenilemenin Tescili 22-11-2022 22189	-

MÜLKİYETE AİT ŞERH BEYAN İRTİFAK BİLGİLERİ

Ş/B/İ	Açıklama	Kısıtlı Malik (Hisse) Ad Soyad	Malik/Lehtar	Tesis Kurum Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
Beyan	2942 Sayılı Kamulaştırma Kanununun 7. maddesine göre belirtme.	GAZİANTEP SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ VKN	(SN:2859367) GAZİANTEP BÜYÜKŞEHİR BELEDİYESİ VKN:3890038716	Şahinbey 2.Bölge(Kapatildi) - 19-03-2007 11:11 - 5995	

BİLGİ AMAÇLIDIR

Bu belgeyi akıllı telefonunuzdan karekod tarama programları ile aşağıdaki barkodu taratarak;

veya Web Tapu anasayfasından (https://webtapu.tkgm.gov.tr adresinden) pBhOWNHd5nsj kodunu Online İşlemler alanına yazarak doğrulayabilirsiniz.

BİLGİ AMAÇLIDIR

Kaydı Oluşturan: (Gaziantep Su ve Kanalizasyon İdaresi)

Tapu Kaydı (Aktif Malikler için Detaylı - ŞBİ var)

TAPU KAYIT BİLGİSİ

Zemin Tipi:	AnaTasinmaz
Taşınmaz Kimlik No:	125522018
İl/İlçe:	GAZİANTEP/OĞUZELİ
Kurum Adı:	Oğuzeli
Mahalle/Köy Adı:	KÖRKÜN Mah.
Mevkii:	TEPECİK
Cilt/Sayfa No:	115/11359
Kayıt Durum:	Aktif

Ada/Parsel:	1156/28
AT Yüzölçüm(m2):	11315.83
Bağımsız Bölüm Nitelik:	
Bağımsız Bölüm Brüt YüzÖlçümü:	
Bağımsız Bölüm Net YüzÖlçümü:	
Blok/Kat/Giriş/BBNo:	
Arsa Pay/Payda:	
Ana Taşınmaz Nitelik:	BAĞ

TAŞINMAZA AİT ŞERH BEYAN İRTİFAK BİLGİLERİ

Ş/B/İ	Açıklama	Malik/Lehtar	Tesis Kurum Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
Beyan	Diğer (Konusu: Parsel Oğuzeli Ovası Koruma Alanı içerisindedir.Onaylanmış imar planları ile onaylı köy yerleşik alanları içerisinde kalmaması halnide 5403 S.K. kapsamında izin alınmadan tarımsal üretim amacı dışında kullanılmaz.) Tarih: 12.04.2023 Sayı: 8735126(Şablon: Diğer)	(SN:6976467) GAZİANTEP KADASTRO MÜDÜRLÜĞÜ VKN:	Oğuzeli - 25-05-2023 15:26 - 9108	

BİLGİ AMAÇLIDIR

Beyan	3083 Sayılı Yasanın 13. Maddesine gereğince kısıtlıdır.(Şablon: 3083 Sayılı Kanunun 13. Maddesine Göre Belirtme)	(SN:6399614) BAKANLAR KURULU VKN:6360272243	Oğuzeli - 29-11-2013 09:39 - 6719	

MÜLKİYET BİLGİLERİ

(Hisse) Sistem No	Malik	El Birliği No	Hisse Pay/ Payda	Metrekare	Toplam Metrekare	Edinme Sebebi-Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
710275449	(SN:8018190) GAZİANTEP SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ VKN:3890019150	-	1/1	11315.83	11315.83	3402 S.Y.nın 22/A Md. Gereğince Yenilemenin Tescili 22-11-2022 22189	-

Bu belgeyi akıllı telefonunuzdan karekod tarama programları ile aşağıdaki barkodu taratarak;

veya Web Tapu anasayfasından (https://webtapu.tkgm.gov.tr adresinden) Ju5Xu2ryDcPF kodunu Online İşlemler alanına yazarak doğrulayabilirsiniz.

BİLGİ AMAÇLIDIR

Kaydı Oluşturan: (Gaziantep Su ve Kanalizasyon İdaresi)

Tapu Kaydı (Aktif Malikler için Detaylı - ŞBİ var)

TAPU KAYIT BİLGİSİ

Zemin Tipi:	AnaTasinmaz
Taşınmaz Kimlik No:	125522015
İl/İlçe:	GAZİANTEP/OĞUZELİ
Kurum Adı:	Oğuzeli
Mahalle/Köy Adı:	KÖRKÜN Mah.
Mevkii:	TEPECİK
Cilt/Sayfa No:	115/11360
Kayıt Durum:	Aktif

Ada/Parsel:	1156/29
AT Yüzölçüm(m2):	10227.83
Bağımsız Bölüm Nitelik:	
Bağımsız Bölüm Brüt YüzÖlçümü:	
Bağımsız Bölüm Net YüzÖlçümü:	
Blok/Kat/Giriş/BBNo:	
Arsa Pay/Payda:	
Ana Taşınmaz Nitelik:	BAĞ

TAŞINMAZA AİT ŞERH BEYAN İRTİFAK BİLGİLERİ

Ş/B/İ	Açıklama	Malik/Lehtar	Tesis Kurum Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
Beyan	Diğer (Konusu: Parsel Oğuzeli Ovası Koruma Alanı içerisindedir.Onaylanmış imar planları ile onaylı köy yerleşik alanları içerisinde kalmaması halnide 5403 S.K. kapsamında izin alınmadan tarımsal üretim amacı dışında kullanılmaz.) Tarih: 12.04.2023 Sayı: 8735126(Şablon: Diğer)	(SN:6976467) GAZİANTEP KADASTRO MÜDÜRLÜĞÜ VKN:	Oğuzeli - 25-05-2023 15:26 - 9108	

BİLGİ AMAÇLIDIR

Beyan	3083 Sayılı Yasanın 13. Maddesine gereğince kısıtlıdır.(Şablon: 3083 Sayılı Kanunun 13. Maddesine Göre Belirtme)	(SN:6399614) BAKANLAR KURULU VKN:6360272243	Oğuzeli - 29-11-2013 09:39 - 6719	

MÜLKİYET BİLGİLERİ

(Hisse) Sistem No	Malik	El Birliği No	Hisse Pay/ Payda	Metrekare	Toplam Metrekare	Edinme Sebebi-Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
710275418	(SN:8018190) GAZİANTEP SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ VKN:3890019150	-	1/1	10227.83	10227.83	3402 S.Y.nın 22/A Md. Gereğince Yenilemenin Tescili 22-11-2022 22189	-

Bu belgeyi akıllı telefonunuzdan karekod tarama programları ile aşağıdaki barkodu taratarak;

veya Web Tapu anasayfasından (https://webtapu.tkgm.gov.tr adresinden) fb9WFjO07uZp kodunu Online İşlemler alanına yazarak doğrulayabilirsiniz.

BİLGİ AMAÇLIDIR

Y-46/348/2019

241209000376

ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ.

SU/ATIKSU LABORATUVARI ANALİZ RAPORU

Test Report of the Water / Wastewater Laboratory

AB-1467-T

SA-24-376

14.02.2025

Müşterinin Adı/ Adresi *Customer Name/Address*	GASKİ GENEL MÜDÜRLÜĞÜ MERKEZ ATIKSU ARITMA TESİSİ Yeşilkent Mh. 74 Nolu Cadde No:170, Şahinbey/GAZİANTEP
Numunenin Alındığı Yerin Adı ve Adresi *Sampling Location and Adress*	GASKİ GENEL MÜDÜRLÜĞÜ MERKEZ ATIKSU ARITMA TESİSİ Yeşilkent Mh. 74 Nolu Cadde No:170, Şahinbey/GAZİANTEP
Barkod/Rapor No *Number of Report / Barcode*	241209000376/SA-24-376
Rapor Tarihi *Date of The*	14.02.2025
Numuneyi Alan Kurum/Kişi *Collected by Sample*	ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. VE TİC. LTD. ŞTİ
Numunenin Alınış Amacı / Meteorolojik Koşullar *Sample Pick Purpose / Meteorological Conditions*	BTK KARŞILAŞTIRMA / AÇIK
Numune Cinsi *Type of The Sample*	EVSEL ATIKSU
Rev. No/Rev. Tar. *Revision Number/Revision Date*	-
Numunenin Alındığı Nokta / Koordinatlar *Sampling Point / Coordinates*	SAİS KABİNİ / 37.032337 - 37.430407
Numune Alınma Yöntemi *Sampling Method of The Sample*	ANLIK
Numune Alınış Tarihi *Date of the Sampling*	09.12.2024
Numunenin Miktarı ve Kabul Durumu *Amount and Acceptance Status of the Sample*	+4 °C Soğutma,+4 °C Soğutma pH<2 H2SO4-Mühür No:201,201-2000 ml,250 ml
Numunenin Laboratuvar Ulaşma Tarihi *Date of Receipt of the Sample to the Laboratory*	09.12.2024
Analizlerin Yapıldığı Tarih Aralığı *Date of the Analyses*	9.12.2024 - 14.12.2024
Raporun Sayfa Sayısı *Pages of the Report*	2 SAYFA

"Deney laboratuvarı olarak faaliyet gösteren ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ., TÜRKAK'tan AB-1467-T ile TS EN ISO/IEC 17025:2017 standardına göre akredite edilmiştir."
"ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ. accredited by TURKAK under registration number AB-1467-T for TS EN ISO/IEC 17025:2017 as test laboratory"

Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalanmıştır.
Turkish Accreditation Agency (TURKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.

Bu analiz raporu Laboratuvara gelen numuneyi/örneklemeyi temsil eder.Bu rapor ve sonuçları ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN.SAN. TİC. LTD. ŞTİ.'nin yazılı izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz.Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bakılması istenilen gruptaki parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi/örneklemeyi alana aittir.İmzasız ve mühürsüz Analiz Sonuç Raporları geçersizdir.

Şazibey Mahallesi Yeni Hal Cd. No:24/J
Onikişubat/KAHRAMANMARAŞ
Tel:0 850 225 25 00

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Y-46/348/2019

241209000376

ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ.

SU/ATIKSU LABORATUVARI ANALİZ RAPORU

Test Report of the Water / Wastewater Laboratory

AB-1467-T

SA-24-376

14.02.2025

İLGİLİ MEVZUAT: KENTSEL ATIKSU ARITIMI YÖNETMELİĞİ

PARAMETRE	BİRİM	LİMİT DEĞER KAA TABLO 1 24 SAATLİK	SAİS KABİNİ	ANALİZ SONUCU	%20 ARALIK	FARK	ANALİZ METODU
pH	-	6-9	6.94 (**)	6.78 (*y)	± 1.356	-0.16	SM 4500 H+ B
SICAKLIK	°C	35	12.9 (**)	12.8 (*y)	± 2.56	-0,1	SM 2550 B
İLETKENLİK	mS/cm	-	564.6 (**)	504 (*y)	± 100.8	-60,6	SM 2510 B
ÇÖZÜNMÜŞ OKSİJEN	mg/L	-	6.2 (**)	6.7 (*y)	+ 1.34	0,5	SM 4500 O-G
KİMYSAL OKSİJEN İHTİYACI (KOİ)	mg/L	125	54.8 (**)	46.00	± 9.2	-8.8	SM 2540 D
ASKIDA KATI MADDE	mg/L	35	9.76 (**)	11.00	± 2.2	1.24	SM 2540 D
BİYOLOJİK OKSİJEN İHTİYACI (BOİ)	mg/L	25	-	8,00	-	-	SM 5210 B

AÇIKLAMALAR:

-Numuneler,Yetkili numune alma personeli tarafından PR.18-Numune Alma, Saklama ve Muhafazası Prosedürü'ne uygun olarak alınır.Yeraltı suyu numuneleri TS ISO 5667-11 Su kalitesi - Numune alma - Bölüm 11: Yeraltı sularından numune alma kılavuzu standardı çerçevesinde alınır. Su/Atıksu Numuneleri TS ISO 5667-10 Su kalitesi - Numune alma - Bölüm 10: Atık sulardan numune alma kılavuzu.standardı çerçevesinde alınır.

-Numuneler muhafaza kuralları çerçevesinde 30 gün süre ile TS EN ISO 5667-3 Su Kalitesi-Numune Alma-Bölme 3:Su Numunelerinin korunması ve Elleçlenmesi standartı çerçevesinde saklanır. Bu süre içerisinde kimyasal,mikrobiyolojik ve fiziksel açıdan bozulan veya tehlike arz eden numuneler, numune saklama süresinin bitimi beklenmeden imha edilir.

-Müşterilerin talebi halinde veya yasal mevzuatın gerektirdiği durumlarda;analiz sonuçlarına ait ölçüm belirsizliği değerleri hazırlanan analiz raporunu takip eden sayfalarda verilecektir.

- (*)İşaretli parametreler İşbirliği kapsamında KELEBEK KİMYA ÇEVRE LABORATUVAR PETROL GIDA İTH. İHR. İNŞ. NAK. TAAH. SAN. TİC. LTD. ŞTİ. tarafından yapılmıştır.

- (*)İşaretli olmayan parametreler TÜRKAK Akreditasyon Belgesi ve Çevre ve Şehircilik Bakanlığından Yeterlilik Belgesine sahip akredite parametreler olup ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ tarafından yapılmaktadır. (*y) İşaretli parametreler firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür. Beyan edilen genişletilmiş ölçüm belirsizliği,standart belirsizliğin k=2 olarak alınan genişletme katsayısı ile çarpımı sonucunda bulunan değerdir ve % 95 oranında güvenirlilik sağlamaktadır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu raporun ilgili kısımlarında verilmiştir. Ayrıca uygunluk değerlendirmesi ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ tarafından yapılmamaktadır.

MELBES BAŞVURU NO: B153784
EK 1:MELBES BAŞVURU FORMU
EK 2:FATURA
EK 3:DEKONT

Yayınlanma Tarihi/Onaylanma Tarihi	Raporu Hazırlayan	Raporu Onaylayan
Published Date/Approval Date	Prepared by	Approved by
14.02.2025/14.02.2025	14.02.2025	14.02.2025
	F.PINAR ELBİSTAN	ALİ BİLAL
	RAPORLAMA SORUMLUSU	GENEL MÜDÜR

ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ. Aslanbey V.D. 889 05 1228

Bu analiz raporu Laboratuvara gelen numuneyi/örneklemeyi temsil eder.Bu rapor ve sonuçları ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ. nin yazılı izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz.Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin ve bekleme süresinin analiz grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi/örneklemeyi alana aittir.İmzasız ve mührüsüz Analiz Sonuç Raporları geçersizdir.

Şazibey Mahallesi Yeni Hal Cd. No:24/J
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Y-46/348/2019

241105000320

ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ.

SU/ATIKSU LABORATUVARI ANALİZ RAPORU

Test Report of the Water / Wastewater Laboratory

AB-1467-T

SA-24-320

24.12.2024

Müşterinin Adı/ Adresi *Customer Name/Address*	GASKİ GENEL MÜDÜRLÜĞÜ KIZILHİSAR 2. İLERİ BİYOLOJİK ARITMA TEPECİK MEVKİ ŞAHİNBEY/GAZİANTEP
Numunenin Alındığı Yerin Adı ve Adresi *Sampling Location and Adress*	GASKİ GENEL MÜDÜRLÜĞÜ KIZILHİSAR 2. İLERİ BİYOLOJİK ARITMA TEPECİK MEVKİ ŞAHİNBEY/GAZİANTEP
Barkod/Rapor No *Number of Report / Barcode*	241105000320/SA-24-320
Rapor Tarihi *Date of The*	24.12.2024
Numuneyi Alan Kurum/Kişi *Collected by Sample*	ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. VE TİC. LTD. ŞTİ
Numunenin Alınış Amacı / Meteorolojik Koşullar *Sample Pick Purpose / Meteorological Conditions*	BKT KARŞILAŞTIRMA / AÇIK
Numune Cinsi *Type of The Sample*	EVSEL ATIKSU
Rev. No/Rev. Tar. *Revision Number/Revision Date*	-
Numunenin Alındığı Nokta / Koordinatlar *Sampling Point / Coordinates*	SAİS KABİNİ / 36.940837 - 37.441927
Numune Alınma Yöntemi *Sampling Method of The Sample*	ANLIK
Numune Alınış Tarihi *Date of the Sampling*	05.11.2024
Numunenin Miktarı ve Kabul Durumu *Amount and Acceptance Status of the Sample*	+4 °C Soğutma,+4 °C Soğutma pH<2 H2SO4-Mühür No:754,754-2000 ml,250 ml
Numunenin Laboratuvar Ulaşma Tarihi *Date of Receipt of the Sample to the Laboratory*	05.11.2024
Analizlerin Yapıldığı Tarih Aralığı *Date of the Analyses*	5.11.2024 - 11.11.2024
Raporun Sayfa Sayısı *Pages of the Report*	2 SAYFA

"Deney laboratuvarı olarak faaliyet gösteren ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ., TÜRKAK'tan AB-1467-T ile TS EN ISO/IEC 17025:2017 standardına göre akredite edilmiştir."
"ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ. accredited by TURKAK under registration number AB-1467-T for TS EN ISO/IEC 17025:2017 as test laboratory"

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Turkish Accreditation Agency (TURKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.

Bu analiz raporu Laboratuvara gelen numuneyi/örneklemeyi temsil eder. Bu rapor ve sonuçları ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ.'nin yazılı izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin bakılması ile ilgili parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi/örneklemeyi alana aittir. İmzasız ve mühürsüz Analiz Sonuç Raporları geçersizdir.

Şazibey Mahallesi Yeni Hal Cd. No:24/J
Onikişubat/KAHRAMANMARAŞ
Tel:0 850 225 25 00

Uludaz
Çevre Analiz Ölçüm Laboratuvarı

TÜRKAK
AB-1467-T

ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ.

Y-46/348/2019

241105000320

SU/ATIKSU LABORATUVARI ANALİZ RAPORU
Test Report of the Water / Wastewater Laboratory

AB-1467-T

SA-24-320

24.12.2024

İLGİLİ MEVZUAT: KENTSEL ATIKSU ARITIMI YÖNETMELİĞİ

PARAMETRE	BİRİM	LİMİT DEĞER KAA TABLO 1 24 SAATLİK	SAİS KABİNİ	ANALİZ SONUCU	%20 ARALIK	FARK	ANALİZ METODU
pH	-	6-9	7,47 (**)	7,32 (*y)	± 1,464	-0,15	SM 4500 H+ B
SICAKLIK	°C	35	25,9 (**)	23,8 (*y)	± 4,76	-2,1	SM 2550 B
İLETKENLİK	mS/cm	-	1744 (**)	1838 (*y)	± 367,6	94	SM 2510 B
ÇÖZÜNMÜŞ OKSİJEN	mg/L	-	5,59 (**)	5,3 (*y)	± 1,06	-0,29	SM 4500 O-G
KİMYSAL OKSİJEN İHTİYACI (KOİ)	mg/L	125	86,5 (**)	74,4	± 14,88	-12,1	SM 2540 D
ASKIDA KATI MADDE	mg/L	35	12,56 (**)	13,5	± 2,7	0,94	SM 2540 D
BİYOLOJİK OKSİJEN İHTİYACI (BOİ)	mg/L	25	-	19,0	-	-	SM 5210 B

AÇIKLAMALAR:

-Numuneler,Yetkili numune alma personeli tarafından PR.18-Numune Alma, Saklama ve Muhafazası Prosedürü'ne uygun olarak alınır.Yeraltı suyu numuneleri TS ISO 5667-11 Su kalitesi - Numune alma - Bölüm 11: Yeraltı sularından numune alma kılavuzu standardı çerçevesinde alınır. Su/Atıksu Numuneleri TS ISO 5667-10 Su kalitesi - Numune alma - Bölüm 10: Atık sulardan numune alma kılavuzu standardı çerçevesinde alınır.

-Numuneler muhafaza kuralları çerçevesinde 30 gün süre ile TS EN ISO 5667-3 Su Kalitesi-Numune Alma-Bölme 3:Su Numunelerinin korunması ve Elleçlenmesi standartı çerçevesinde saklanır. Bu süre içerisinde kimyasal,mikrobiyolojik ve fiziksel açıdan bozulan veya tehlike arz eden numuneler, numune saklama süresinin bitimi beklenmeden imha edilir.

-Müşterilerin talebi halinde veya yasal mevzuatın gerektirdiği durumlarda;analiz sonuçlarına ait ölçüm belirsizliği değerleri hazırlanan analiz raporunu takip eden sayfalarda verilecektir.

- (*)İşaretli parametreler İşbirliği kapsamında KELEBEK KİMYA ÇEVRE LABORATUVAR PETROL GIDA İTH. İHR. İNŞ. NAK. TAAH. SAN. TİC. LTD. ŞTİ tarafından yapılmıştır.

- (*)İşaretli olmayan parametreler TÜRKAK Akreditasyon Belgesi ve Çevre ve Şehircilik Bakanlığından Yeterlilik Belgesine sahip akredite parametreler olup ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ tarafından yapılmaktadır. (*y) İşaretli parametreler firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür. Beyan edilen genişletilmiş ölçüm belirsizliği,standart belirsizliğin k=2 olarak alınan genişletme katsayısı ile çarpımı sonucunda bulunan değerdir ve %95 oranında güvenirlilik sağlamaktadır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu raporun ilgili kısımlarında verilmiştir. Ayrıca uygunluk değerlendirmesi ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ tarafından yapılmamaktadır.

MELBES BAŞVURU NUMARASI: B153786
EK 1: MELBES BAŞVURU FORMU
EK 2: FATURA
EK 3: DEKONT

Yayınlanma Tarihi/Onaylanma Tarihi Published Date/Approval Date	Raporu Hazırlayan Prepared by	Raporu Onaylayan Approved by
24.12.2024/24.12.2024	24.12.2024 F. PINAR ELBİSTAN RAPORLAMA SORUMLUSU	24.12.2024 ALİ BİLAL GENEL MÜDÜR

ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ. Uludaz Aslanbey V.D. 599 057 1228 Tic.Sic.No: 16542 Şazibey Mah. Yeni Hal Cd. No:24/J Onikişubat/KAHRAMANMARAŞ

Bu analiz raporu Laboratuvara gelen numuneyi/örneklemeyi temsil eder.Bu rapor ve sonuçları ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ.'nin yazılı izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz.Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan prosedürlerin [illegible] numune alma yöntemlerinin belirlenmesinde teknik ve hukuki sorumluluk numuneyi/örneklemeyi alana aittir.İmzasız ve mühürsüz Analiz Sonuç Raporları geçersizdir.

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Y-46/348/2019

240524000153

ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ.

SU/ATIKSU LABORATUVARI ANALİZ RAPORU

Test Report of the Water / Wastewater Laboratory

AB-1467-T

SA-24-153

20.08.2024

Müşterinin Adı/ Adresi *Customer Name/Address*	GASKİ GENEL MÜDÜRLÜĞÜ İncili Pınar, 27090 Şehitkamil/GAZİANTEP
Numunenin Alındığı Yerin Adı ve Adresi *Sampling Location and Adress*	GASKİ KIZILHİSAR ATIKSU ARITMA TESİSİ TEPECİK MEVKİ ŞAHİNBEY/GAZİANTEP
Barkod/Rapor No *Number of Report / Barcode*	240524000153/SA-24-153
Rapor Tarihi *Date of The*	20.08.2024
Numuneyi Alan Kurum/Kişi *Collected by Sample*	ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. VE TİC. LTD. ŞTİ
Numunenin Alınış Amacı / Meteorolojik Koşullar *Sample Pick Purpose / Meteorological Conditions*	DENETİM / BULUTLU
Numune Cinsi *Type of The Sample*	EVSEL ATIKSU
Rev. No/Rev. Tar. *Revision Number/Revision Date*	
Numunenin Alındığı Nokta / Koordinatlar *Sampling Point / Coordinates*	A.A.T ÇIKIŞI / 36.939122 - 37.442090
Numune Alınma Yöntemi *Sampling Method of The Sample*	ANLIK
Numune Alınış Tarihi *Date of the Sampling*	24.05.2024
Numunenin Miktarı ve Kabul Durumu *Amount and Acceptance Status of the Sample*	+4 °C Soğutma,+4 °C Soğutma pH<2 H2SO4-Mühür No:823,823-2000 ml,250 ml
Numunenin Laboratuvar Ulaşma Tarihi *Date of Receipt of the Sample to the Laboratory*	24.05.2024
Analizlerin Yapıldığı Tarih Aralığı *Date of the Analyses*	24.05.2024 - 29.05.2024
Raporun Sayfa Sayısı *Pages of the Report*	2 SAYFA

"Deney laboratuvarı olarak faaliyet gösteren ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ.., TÜRKAK'tan AB-1467-T ile TS EN ISO/IEC 17025:2017 standardına göre akredite edilmiştir."

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Uludaz
Çevre Analiz Ölçüm Laboratuvarı

TÜRKAK
Test
TS EN ISO/IEC 17025
AB-1467-T

ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ.

Y-46/348/2019

240524000153

SU/ATIKSU LABORATUVARI ANALİZ RAPORU
Test Report of the Water / Wastewater Laboratory

AB-1467-T
SA-24-153
20.08.2024

İLGİLİ MEVZUAT: KENTSEL ATIKSU ARITIMI YÖNETMELİĞİ

PARAMETRE	BİRİM	LİMİT DEĞER K.A.A TABLO 1 KOMPOZIT 24 SAATLİK	ÖLÇÜLEN DEĞER	ÖLÇÜM BELİRSİZLİĞİ	ANALİZ METODU
ASKIDA KATI MADDE	mg/L	35	12,0		SM 2540 D
BİYOLOJİK OKSİJEN İHTİYACI(BOİ)	mg/L	25	11,50		SM 5210 B
(*y)pH		6-9	7,31		SM 4500 H+ B
KİMYASAL OKSİJEN İHTİYACI(KOİ)	mg/L	125	34,9		TS 2789

AÇIKLAMALAR:

-Numuneler,Yetkili numune alma personeli tarafından PR.18-Numune Alma, Saklama ve Muhafazası Prosedürü'ne uygun olarak alınır.Yeraltı suyu numuneleri TS ISO 5667-11 Su kalitesi - Numune alma - Bölüm 11: Yeraltı sularından numune alma kılavuzu standardı çerçevesinde alınır. Su/Atıksu Numuneleri TS ISO 5667-10 Su kalitesi - Numune alma - Bölüm 10: Atık sulardan numune alma kılavuzu.standardı çerçevesinde alınır.

-Numuneler muhafaza kuralları çerçevesinde 30 gün süre ile TS EN ISO 5667-3 Su Kalitesi-Numune Alma-Bölme 3:Su Numunelerinin korunması ve Elleçlenmesi standartı çerçevesinde saklanır. Bu süre içerisinde kimyasal,mikrobiyolojik ve fiziksel açıdan bozulan veya tehlike arz eden numuneler, numune saklama süresinin bitimi beklenmeden imha edilir.

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- (*)İşaretli parametreler İşbirliği kapsamında KELEBEK KİMYA ÇEVRE LAB. PETROL GIDA İTH. İHR. İNŞ. NAK. EĞT. DAN. YAAH. SAN. TİC. LTD. ŞTİ. tarafından yapılmıştır.

- (*)İşaretli olmayan parametreler TÜRKAK Akreditasyon Belgesi ve Çevre ve Şehircilik Bakanlığından Yeterlilik Belgesine sahip akredite parametreler olup ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ tarafından yapılmaktadır. (*y) İşaretli parametreler firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür. Beyan edilen genişletilmiş ölçüm belirsizliği,standart belirsizliğin k=2 olarak alınan genişletme katsayısı ile çarpımı sonucunda bulunan değerdir ve % 95 oranında güvenirlilik sağlamaktadır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu raporun ilgili kısımlarında verilmiştir. Ayrıca uygunluk değerlendirmesi ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ tarafından yapılmamaktadır.

Yayınlanma Tarihi/Onaylanma Tarihi	Raporu Hazırlayan	Raporu Onaylayan
Published Date/Approval Date	Prepared by	Approved by
20.08.2024/20.08.2024	20.08.2024	20.08.2024
	F.PINAR ELBİSTAN	E. MURAT DOĞAN
	RAPORLAMA SORUMLUSU	LABORATUVAR MÜDÜRÜ

ULUDAZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ. Uludaz Aslanbey V.D. 899 057 1228 Şaziye Mah. Yeni Hal Cd. No:24/J Onikişubat KAHRAMANMARAŞ ÇEVRE ÖLÇÜM

Bu analiz raporu Laboratuvara gelen numuneyi/örneklemeyi temsil eder.Bu rapor ve sonuçları ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ.'nin yazılı izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz.Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan [illegible] ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi/örneklemeyi alana aittir.İmzasız ve mühürsüz Analiz Sonuç Raporları geçersizdir.

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Onikişubat/KAHRAMANMARAŞ
Tel:0 850 225 25 00

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240524000152

ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ.

SU/ATIKSU LABORATUVARI ANALİZ RAPORU

Test Report of the Water / Wastewater Laboratory

AB-1467-T

SA-24-152

20.08.2024

Müşterinin Adı/ Adresi *Customer Name/Address*	GASKİ GENEL MÜDÜRLÜĞÜ İncili Pınar, 27090 Şehitkamil/GAZİANTEP
Numunenin Alındığı Yerin Adı ve Adresi *Sampling Location and Adress*	GASKİ GENEL MÜDÜRLÜĞÜ MERKEZ ATIKSU ARITMA TESİSİ YEŞİLKENT MH. 74 NOLU CAD. NO:170 ŞAHİNBEY/GAZİANTEP
Barkod/Rapor No *Number of Report / Barcode*	240524000152/SA-24-152
Rapor Tarihi *Date of The*	20.08.2024
Numuneyi Alan Kurum/Kişi *Collected by Sample*	ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. VE TİC. LTD. ŞTİ
Numunenin Alınış Amacı / Meteorolojik Koşullar *Sample Pick Purpose / Meteorological Conditions*	DENETİM / BULUTLU
Numune Cinsi *Type of The Sample*	EVSEL ATIKSU
Rev. No/Rev. Tar. *Revision Number/Revision Date*	
Numunenin Alındığı Nokta / Koordinatlar *Sampling Point / Coordinates*	A.A.T ÇIKIŞI / 37.032337 - 37.430407
Numune Alınma Yöntemi *Sampling Method of The Sample*	ANLIK
Numune Alınış Tarihi *Date of the Sampling*	24.05.2024
Numunenin Miktarı ve Kabul Durumu *Amount and Acceptance Status of the Sample*	+4 °C Soğutma,+4 °C Soğutma pH<2 H2SO4-Mühür No:848,848-2000 ml,250 ml
Numunenin Laboratuvar Ulaşma Tarihi *Date of Receipt of the Sample to the Laboratory*	24.05.2024
Analizlerin Yapıldığı Tarih Aralığı *Date of the Analyses*	24.05.2024 - 29.05.2024
Raporun Sayfa Sayısı *Pages of the Report*	2 SAYFA

"Deney laboratuvarı olarak faaliyet gösteren ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ.., TÜRKAK'tan AB-1467-T ile TS EN ISO/IEC 17025:2017 standardına göre akredite edilmiştir."
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Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır.
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Bu analiz raporu Laboratuvara gelen numuneyi/örneklemeyi temsil eder.Bu rapor ve sonuçları ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ.'nin yazılı izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz.Analiz yapılan numunede, numunenin alınışından laboratuvarımıza teslimine kadar olan proseslerden kaynaklanabilecek hata grup ve parametrelerin belirlenmesinde teknik ve hukuki sorumluluk numuneyi/örneklemeyi alana aittir.İmzasız ve mühürsüz Analiz Sonuç Raporları geçersizdir.

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Uludaz
Çevre Analiz Ölçüm Laboratuvarı

TÜRKAK
Test
TS EN ISO/IEC 17025
AB-1467-T

ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ.

Y-46/348/2019

240524000152

SU/ATIKSU LABORATUVARI ANALİZ RAPORU
Test Report of the Water / Wastewater Laboratory

AB-1467-T

SA-24-152

20.08.2024

İLGİLİ MEVZUAT: KENTSEL ATIKSU ARITIMI YÖNETMELİĞİ

PARAMETRE	BİRİM	LİMİT DEĞER K.A.A TABLO 1 KOMPOZİT 24 SAATLİK	ÖLÇÜLEN DEĞER	ÖLÇÜM BELİRSİZLİĞİ	ANALİZ METODU
ASKIDA KATI MADDE	mg/L	35	13,50		SM 2540 D
BİYOLOJİK OKSİJEN İHTİYACI(BOİ)	mg/L	25	12,0		SM 5210 B
KİMYASAL OKSİJEN İHTİYACI(KOİ)	mg/L	125	37,6		TS 2789
(*y)pH		6-9	6,82		SM 4500 H+ B

AÇIKLAMALAR:

-Numuneler,Yetkili numune alma personeli tarafından PR.18-Numune Alma, Saklama ve Muhafazası Prosedürü'ne uygun olarak alınır.Yeraltı suyu numuneleri TS ISO 5667-11 Su kalitesi - Numune alma - Bölüm 11: Yeraltı sularından numune alma kılavuzu standardı çerçevesinde alınır. Su/Atıksu Numuneleri TS ISO 5667-10 Su kalitesi - Numune alma - Bölüm 10: Atık sulardan numune alma kılavuzu.standardı çerçevesinde alınır.

-Numuneler muhafaza kuralları çerçevesinde 30 gün süre ile TS EN ISO 5667-3 Su Kalitesi-Numune Alma-Bölme 3:Su Numunelerinin korunması ve Elleçlenmesi standartı çerçevesinde saklanır. Bu süre içerisinde kimyasal,mikrobiyolojik ve fiziksel açıdan bozulan veya tehlike arz eden numuneler, numune saklama süresinin bitimi beklenmeden imha edilir.

-Müşterilerin talebi halinde veya yasal mevzuatın gerektirdiği durumlarda;analiz sonuçlarına ait ölçüm belirsizliği değerleri hazırlanan analiz raporunu takip eden sayfalarda verilecektir.

- (*)İşaretli parametreler İşbirliği kapsamında KELEBEK KİMYA ÇEVRE LAB. PETROL GIDA İTH. İHR. İNŞ. NAK. EĞT. DAN. YAAH. SAN. TİC. LTD. ŞTİ. tarafından yapılmıştır.

- (*)İşaretli olmayan parametreler TÜRKAK Akreditasyon Belgesi ve Çevre ve Şehircilik Bakanlığından Yeterlilik Belgesine sahip akredite parametreler olup ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ tarafından yapılmaktadır. (*y) İşaretli parametreler firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür. Beyan edilen genişletilmiş ölçüm belirsizliği,standart belirsizliğin k=2 olarak alınan genişletme katsayısı ile çarpımı sonucunda bulunan değerdir ve % 95 oranında güvenirlilik sağlamaktadır. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu raporun ilgili kısımlarında verilmiştir. Ayrıca uygunluk değerlendirmesi ULUDAZ ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ tarafından yapılmamaktadır.

Yayınlanma Tarihi/Onaylanma Tarihi Published Date/Approval Date	Raporu Hazırlayan Prepared by	Raporu Onaylayan Approved by
20.08.2024/20.08.2024	20.08.2024 F.PINAR ELBİSTAN RAPORLAMA SORUMLUSU	20.08.2024 E. MURAT DOĞAN LABORATUVAR MÜDÜRÜ

ÇEVRE ÖLÇÜM ANALİZ LABORATUVAR MÜŞAVİRLİK MÜH. DAN. SAN. TİC. LTD. ŞTİ. Uludaz Aslanbey Yeni Hal Cd. No:24/J 889 057 4428 Tel:16842 KAHRAMANMARAŞ

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Y01/347/2019

Test
TS EN ISO/IEC 17025
AB-1489-T

AB-1489-T
2024-0493-1370
12-24

ANALİZ RAPORU

Rapor No:	2024-0493-1370	**Rapor Tarihi:**	18.12.2024
Talep / Teklif No:	202411-0493-1	**Rapor Sayfa Sayısı:**	1
Müşteri Adı:	GAZİANTEP SU VE KANALİZASYON İDARESİ (GASKİ)		
Müşteri Adresi:	İncili Pınar, Prof. Muammer Aksoy Blv. No:20, 27090 ŞEHİTKAMİL / GAZİANTEP		
Müşteri İletişim Bilgileri:			
Numunenin Alındığı Yer:	KIZILHİSAR ATIKSU ARITMA TESİSİ ÇIKIŞI	**Numune Alınma Tarihi / Saati:**	29.11.2024 10:30
Numune Cinsi:	Atık Su	**Numune Kabul Tarihi:**	29.11.2024 18:30
Numuneyi Alan:	ATECH PROSES A.Ş.	**Analiz Tarihi:**	29.11.2024 - 11.12.2024
Numune Kayıt No:	2748	**Numune Geliş Şekli:**	Elden
Alındığı Koordinat:	36.940885 / 37.441316	**Numune Mühür No:**	ATECH-00219
Numune Alma Standardı:	TS ISO 5667-10	**Numune Alınma Şekli:**	Anlık Numune
Numune Miktarı / Kabı Uygulanan Koruma İşlemleri:	2 L PE, 500 mL PE H_2SO_4	**Çevre Şartları** *(Gerekli olduğunda raporlanır)*	
Numunenin Alınış Amacı:	Denetim Numunesi		
Açıklamalar:			

Parametre	Birim	Analiz Sonucu	Kentsel Atıksu Arıtımı Yönetmeliği T1 E.N.>10.000	Kentsel Atıksu Arıtımı Yönetmeliği T2 E.N.>10.000 <100.000	Analiz Metodu
Askıda Katı Madde (AKM)**	mg/L	30	35	-	SM 2540 D
Kimyasal Oksijen İhtiyacı (KOİ)**	mg/L	< 30	125	-	DIN 38409-41
Biyolojik Oksijen İhtiyacı (BOİ5)**	mg/L	6	25	-	SM 5210 B
Toplam Fosfor**	mg/L	1,8	-	2	SM 4500 P B&C
Toplam Azot**	mg/L	13,1	-	15	SM 4500 Norg. B SM 4500 NO3.B & E

"**" İşaretli parametreler TURKAK ISO 17025 Akreditasyonu ve T.C. Çevre Şehircilik Bakanlığı - Çevre Analizleri Yeterlilik Belgesi (Belge No: Y-01/347/2019) kapsamındadır.

"*" İşaretli parametreler TURKAK ISO 17025 Akreditasyonu (Dosya No: AB-1489-T) kapsamındadır.

Görüş ve Yorumlar
-

Onay / Tarih	Kaşe
CEREN ALİM Laboratuvar Müdürü 18.12.2024	atech ATECH PROSES A.Ş. Gürselpaşa Mah. 75508 Sk. Ruyaken 2 S.tesi No:8/A Seyhan/ADANA/TÜRKİYE Seyhan V.D. 254 7476 Tel: 322 429 15 05 Faks: 322 429 15 06 Mersis No: 0079254747600012

Bu analiz raporu laboratuvara gelen numuneyi/örneklemeyi temsil eder. 2024-0493-1370 nolu bu rapor ATECH PROSES A.Ş. yazılı izni olmadan tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. İmzasız ve mühürsüz raporlar geçersizdir. Rapor 1 nüsha olarak hazırlanmıştır.

Yeniler Giriloli

YETERLİLİK BELGE NO
Y-01/302/2022

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TÜRKAK
AB-1146-T

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Email: pentatestcevre@pentatest.com.tr

AB-1146-T
N-305/24
12-24

Deney Raporu
Test Report

Müşterinin Adı/Adresi Customer Name/Address	GASKİ KIZILHİSAR ATIKSU ARITMA TESİSİ-KİLİS YOLU ÜZERİ YAĞDÖVER MEVKİ ŞAHİNBEY/GAZİANTEP
Barkod ve Numune Numarası Barcode and Sample Number	T-156/24-305/24, N-305/24
Numune Cinsi,Kabı ve Miktarı Type of Sample, Container and Amount	Atık Su - PE- 3,50 LT
Rapor Tarihi Report Date	26.12.2024
Numunenin Alım-Kabul Tarihi Sampling and Acceptence Date	25.10.2024 - 25.10.2024
Deneyin Yapıldığı Tarih Date of the Test	25.10.2024 - 07.11.2024
Numunenin Teslim Koşulları Delivery Conditions of the Sample	NUMUNE, GAZİANTEP ÇEVRE ŞEHİRCİLİK İL MÜDÜRLÜĞÜ YETKİLİLERİ GÖZETİMİNDE, PENTATEST ÇEVRE ÖLÇÜM ve ANALİZ LABORATUVARI YETKİLİ PERSONELİ TARAFINDAN TS ISO 5667-10 NUMUNE ALMA TEKNİKLERİ, GT 05 NUMUNE ALMA TALİMATINA GÖRE ALINMIŞ OLUP, TS EN ISO 5667-3 SU KALİTESİ NUMUNE ALMA BÖLÜM:3 NUMUNELERİN MUHAFAZA VE TAŞIMA KURALLARI STANDARDI, GT 06 NUMUNELERİN MUHAFAZA VE TAŞINMA TALİMATINA GÖRE MÜHÜRLÜ OLARAK LABORATUVARIMIZA GETİRİLMİŞTİR.
Açıklamalar Remarks	Ph,Toplam Askıda Katı Madde,Kimyasal Oksijen İhtiyacı ,Biyokimyasal Oksijen İhtiyacı,Toplam Fosfor,**Toplam Azot analiz talebi.
Raporun Sayfa Sayısı Number of pages of the Report	*4(2 Sayfa Febas Çevre laboratuvarı analiz sonucu)*

Deney laboratuvarı olarak faaliyet gösteren laboratuvarımız TÜRKAK'tan AB-1146-T akreditasyon numarası ile TS EN ISO/IEC 17025/2017 standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Deney ve /veya ölçüm sonuçları, k=2 ve %95 güven aralığındaki genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu raporda verilmiştir.
Our laboratory accredited by TÜRKAK under AB-1146-T registration number for TS EN ISO/IEC 17025-2017 as test laboratory. Turkish Accreditation Agency (TURKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports. The testing and/or measurement results, k=2 and %95 confidence interval uncertainties (if applicable) and test methods are given on the this report.

Raporu Hazırlayan *Prepared by*	*Onaylayan* *Subscriber*
Dilara KÜTÜK Çevre Yüksek Mühendisi	Zübeyde AKTAŞ Ziraat Mühendisi 26.12.2024

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Deney Raporu
Test Report

AB-1146-T
N-305/24
12-24

Proje Adı ve Rapor No *(Project name and Number)* **:** *GASKİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne Ait Atık Su - A.A.T. ÇIKIŞI - Mühür No:PNT0143 - (Kentsel Atıksu Arıtımı Yönetmeliği Tablo 1+ 2- Anlık) N - 305/ 24*

Parametre *Parameter*	**Birim** *Unit*	**Analiz Sonucu** *Test Result*	***Sınır Değer***	***Analiz Metodu*** *Test Method*
Ph	-	7,68	*6 - 9*	*TS EN ISO 10523*
Kimyasal Oksijen İhtiyacı (KOİ)	mg/l	81,6	*125*	*TS 2789*
Toplam Askıda Katı Madde (AKM)	mg/l	<3	*35*	*TS EN 872*
Biyokimyasal Oksijen İhtiyacı (BOİ)	mg/l	20,2	*25*	*TS 4957-1 EN 1899-1*
**Toplam Azot	mg/l	8,1	*15*	*SM 4500-NO2 - B- SM 4500-Norg B - EPA 352.1*
Toplam Fosfor	mg/l	1,18	*2*	*SM 4500 P B,E*

Not: *: * İşaretli Deneyler Akreditasyon Kapsamı Dahilinde Değildir.** İşaretli Deneyler İşbirliği Laboratuvarımız Febas Çevre Laboratuvarı Tarafından Analiz Edilmiştir.*

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"Gelen numuneler raporu çıktıktan sonra 15 iş günü muhafaza edilecektir." "Incoming samples will be kept for 15 working days after the report is issued."
"Laboratuvar, bilginin müşteri tarafından sağlandığı durumlar hariç, raporda verilen tüm bilgilerden sorumludur."" The laboratory is responsible for all information provided in the report, except where the information is provided by the customer."
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"The technical and legal responsibility for the determination of the procedures and the groups and parameters to be taken from sampling to delivery to the laboratory belongs to the receiving area of the sample."
*"Numune (numune tanımı yapılır) normal/orijinal durumdan (durumun tanımı yapılır) bir sapma gösterdi.Bu nedenle ilgili analiz sonuçlarının geçerliliği (parametreler *** ile işaretlenir) etkilenebilir." "The sample (specimen is defined) showed a deviation from the normal/original state (state is defined). Therefore, the validity of the relevant analysis results (parameters are marked ***) may be affected."*

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Zübeyde AKTAŞ
Ziraat Mühendisi
Mühür/İmza

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Yeterlik Belge No:
Y01/347/2019

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AB-1489-T
2024-0263-660
07-24

ANALİZ RAPORU

Rapor No:	2024-0263-660	**Rapor Tarihi:**	02.07.2024
Talep / Teklif No:	202406-0263-1	**Rapor Sayfa Sayısı:**	1
Müşteri Adı:	GAZİANTEP SU VE KANALİZASYON İDARESİ (GASKİ)		
Müşteri Adresi:	İncili Pınar, Prof. Muammer Aksoy Blv. No:20, 27090 ŞEHİTKAMİL / GAZİANTEP		
Müşteri İletişim Bilgileri:			
Numunenin Alındığı Yer:	KIZILHİSAR ARITMA TESİSİ ÇIKIŞI	**Numune Alınma Tarihi / Saati:**	25.06.2024 14:30
Numune Cinsi:	Atık Su	**Numune Kabul Tarihi:**	25.06.2024 18:00
Numuneyi Alan:	ATECH PROSES A.Ş.	**Analiz Tarihi:**	25.06.2024 - 01.07.2024
Numune Kayıt No:	1485	**Numune Geliş Şekli:**	Elden
Alındığı Koordinat:	36.940885 / 37.441316	**Numune Mühür No:**	ATECH-00216
Numune Alma Standardı:	TS ISO 5667-10	**Numune Alınma Şekli:**	Anlık Numune
Numune Miktarı / Kabı Uygulanan Koruma İşlemleri:	1 L PE, 1 L PE, 500 mL PE H_2SO_4	**Çevre Şartları** ***(Gerekli olduğunda raporlanır)***	
Numunenin Alınış Amacı:	Denetim Numunesi		
Açıklamalar:			

Parametre	Birim	Analiz Sonucu	Kentsel Atıksu Arıtımı Yönetmeliği T1 (08.12.2023) E.N.>10.000 Anlık Numune	Analiz Metodu
Askıda Katı Madde (AKM)**	mg/L	12	35	SM 2540 D
Kimyasal Oksijen İhtiyacı (KOİ)**	mg/L	36	125	DIN 38409-41
Biyolojik Oksijen İhtiyacı (BOİ5)**	mg/L	12	25	SM 5210 B

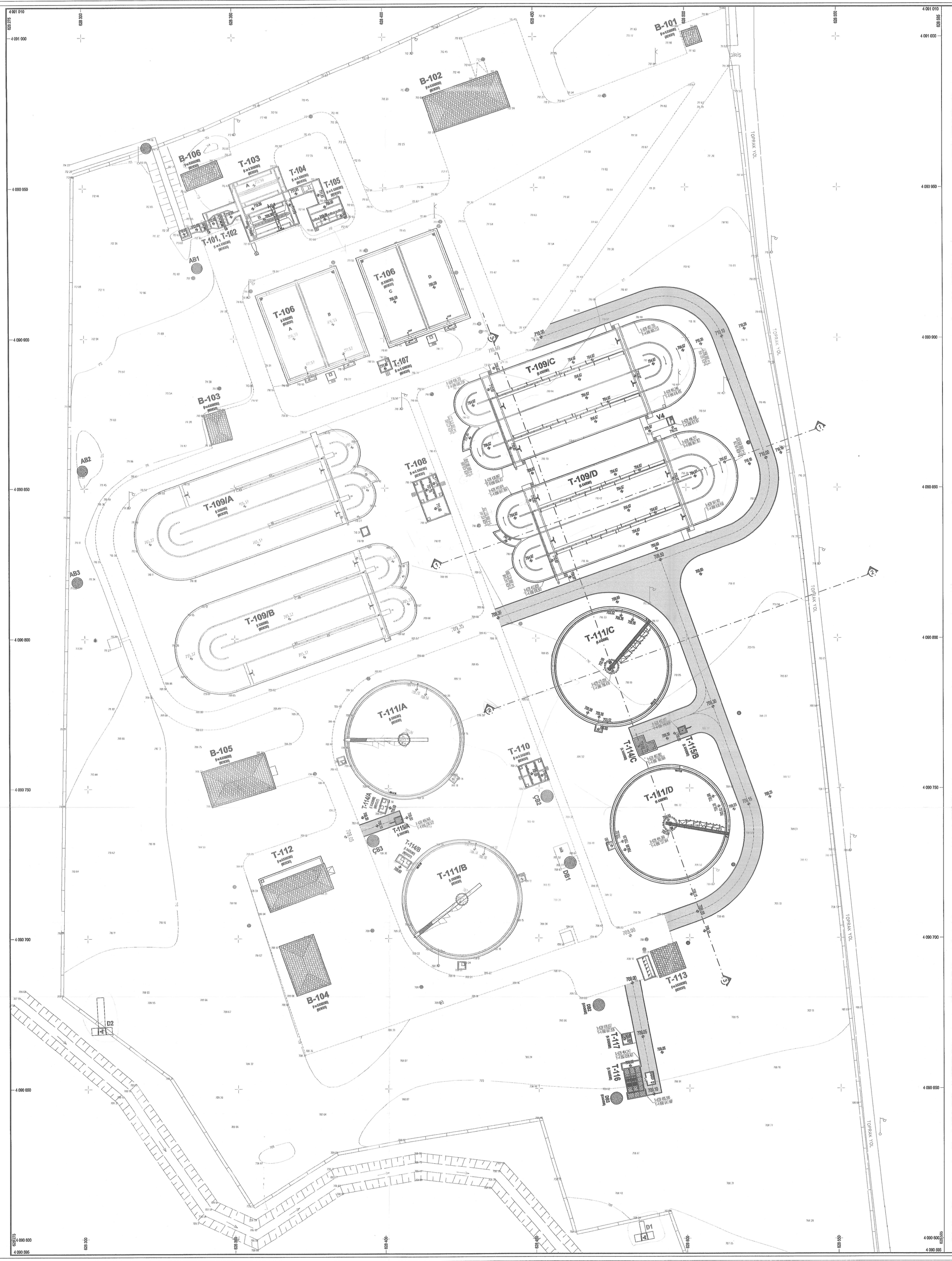
"**" İşaretli parametreler TURKAK ISO 17025 Akreditasyonu ve T.C. Çevre Şehircilik Bakanlığı - Çevre Analizleri Yeterlilik Belgesi (Belge No: Y-01/347/2019) kapsamındadır.

"*" İşaretli parametreler TURKAK ISO 17025 Akreditasyonu (Dosya No: AB-1489-T) kapsamındadır.

Görüş ve Yorumlar
-

Onay / Tarih	Kaşe
CEREN ALİM Laboratuvar Müdürü 02.07.2024	atech ATECH PROSES A.Ş. Gürselpaşa Mah. 75508 Sk. Ravakent 5 Sitesi No:8/A Seyhan/ADANA TÜRKİYE Seyhan V.D. 099 054 7476 Tel: 0.322 429 15 05 Faks: 0.322 429 15 06 Mersis No: 0999054747600012

Bu analiz raporu laboratuvara gelen numuneyi/örneklemeyi temsil eder. 2024-0263-660 nolu bu rapor ATECH PROSES A.Ş. yazılı izni olmadan tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. İmzasız ve mühürsüz raporlar geçersizdir. Rapor 1 nüsha olarak hazırlanmıştır.



ÜNİTE NO	ÜNİTE ADI
T-101	KABA IZGARA (I ve II KADEME İÇİN; MEVCUT)
T-102	İNCE IZGARA (I ve II KADEME İÇİN; MEVCUT)
T-103/A	HAVALANDIRMALI KUM ve YAĞTUTUCU (I KADEME İÇİN; MEVCUT)
T-103/B	HAVALANDIRMALI KUM ve YAĞTUTUCU (II KADEME İÇİN; MEVCUT)
T-104	PARSHALL SAVAĞI (I ve II KADEME İÇİN; MEVCUT)
T-105	ANAEROBİK HAVUZLAR DAĞITIM YAPISI (I ve II KADEME İÇİN; MEVCUT)
T-106/A-B	ANAEROBİK HAVUZLARI (I KADEME İÇİN; MEVCUT)
T-106/C-D	ANAEROBİK HAVUZLARI (II KADEME İÇİN; MEVCUT)
T-107	ANAEROBİK HAVUZLAR TOPLAMA YAPISI (I ve II KADEME İÇİN; MEVCUT)
T-108	HAVALANDIRMA HAVUZLARI DAĞITMA YAPISI (I ve II KADEME İÇİN; MEVCUT)
T-109/A-B	HAVALANDIRMA HAVUZLARI (I KADEME İÇİN; MEVCUT)
T-109/C-D	HAVALANDIRMA HAVUZLARI (II KADEME)
T-110	ÇÖKELTME TANKLARI DAĞITIM YAPISI (I ve II KADEME İÇİN; MEVCUT)
T-111/A-B	SON ÇÖKELTME TANKI (I KADEME İÇİN; MEVCUT)
T-111/C-D	SON ÇÖKELTME TANKI (II KADEME)
T-112	ÇAMUR GERİ DEVİR POMPA İSTASYONU (I ve II KADEME İÇİN; MEVCUT)
T-113	TAHLİYE TERFİ MERKEZİ (I ve II KADEME İÇİN; MEVCUT)
T-114/A-B	TELESKOPİK VANA ODASI (I KADEME)
T-114/C	TELESKOPİK VANA ODASI (II KADEME)
T-115/A	KÖPÜK YAPISI (I KADEME)
T-115/B	KÖPÜK YAPISI (II KADEME)
T-116	UV DEZENFEKSİYON ÜNİTESİ (II KADEME)
T-117	ÇIKIŞ DEBİMETRE (II KADEME)
B-101	GİRİŞ KONTROL BİNASI (I ve II KADEME İÇİN; MEVCUT)
B-102	İDARE BİNASI (I ve II KADEME İÇİN; MEVCUT)
B-103	TRAFO VE JENERATÖR BİNASI (I ve II KADEME İÇİN; MEVCUT)
B-104	MEKANİK ÇAMUR YOĞUNLAŞTIRICI ve DEKANTÖR BİNASI (I ve II KADEME İÇİN; MEVCUT)
B-105	HAVALANDIRMA HAVUZLARI BLOWER BİNASI - 1 (I ve II KADEME İÇİN; MEVCUT)
B-106	KUM ve YAĞ TUTUCU BLOWER BİNASI - 2 (I ve II KADEME İÇİN; MEVCUT)
DB	DEŞARJ HATTI BACASI
ÇB	ÇAMUR HATTI BACASI
AB	BY-PASS HATTI BACASI
B	BACA
V	VANA ODASI
D	DEŞARJ YAPISI

TETKİK VE VİZE EDİLDİ

İLLER BANKASI A.Ş
GENEL MÜDÜRLÜĞÜ
PROJE DAİRESİ BAŞKANLIĞI
ANKARA

İLLER BANKASI A.Ş
GAZİANTEP BÖLGE MÜDÜRLÜĞÜ
GAZİANTEP

GASKİ
GAZİANTEP SU ve KANALİZASYON
ARITMA TESİSLERİ DAİRE BAŞKANLIĞI
GAZİANTEP

YÜKLENİCİ:
FENSA
İnşaat Mühendislik-Müşavirlik-Enerji-Elektrik-Mekanik-Otomasyon Sistemleri San. ve Tic. Ltd. Şti.
Bağlıca Mah. Zeytinyay Cad. No: 61/4 • 06550 • Bağlıca/Çankaya/ANKARA
Tel/Faks: +90 (312) 207 69 69
E-posta: fensa@fensa.com.tr
www.fensa.com.tr
HİTİT VD. 9130170961 Ticaret Sicil No : 322300

DEĞİŞİKLİK	İMZA	TARİH
a)		
b)		

KIZILHİSAR (GAZİANTEP)

ATIKSU ARITMA TESİSİ REVİZE PROJELERİ HİZMET ALIM İŞİ

GENEL YERLEŞİM PLANI

ÖLÇEK : 1/500

NO'LU PLAN İPTAL EDİLDİ

NO'LU PLAN İPTAL EDİLDİ

	Adı, Soyadı, Ünvanı Oda Sicil No	İMZA	TARİH
PROJEYİ			
YAPAN	Niyazi DEVECİ Çevre Müh. ÇMO: 9936		NİSAN 2022
YAPAN			
YAPAN			
PROJE MÜDÜRÜ	Mustafa COŞGUN İnşaat Müh. İNCİ: 69719		

PLAN NO: KZLH-AAT-GYP-01

ARŞİV KAYIT NO:

AB-0183-T
2403250024
4/2025

Gaziantep Su Ve Kanalizasyon İdaresi Genel Müdürlüğü

ANALİZ RAPORU

Rapor No

2403250024

Gaziantep Su ve Kanalizasyon İdaresi Kızılhisar Atıksu Arıtma Tesisi / Yağdöver / Yağdöver Yolu
Şahinbey/Gaziantep/Türkiye

AEM ÇEVRE LABORATUVAR ANALIZ TIC. A.S. tarafından hazırlanan bu rapor, labaratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz veya e-imzasız raporlar geçersizdir. Raporda bulunan sonuçlar analizleri yapılan numuneye aittir.Bu rapor Çevre Mevzuatına ilişkin resmi işlemlerde kullanılamaz.

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ANALİZ RAPORU

TEST REPORT

Müşterinin Ünvanı : *Customer Name*	Gaziantep Su Ve Kanalizasyon İdaresi Genel Müdürlüğü	
Müşterinin Adresi : *Customer address*	Gaziantep Su ve Kanalizasyon İdaresi Kızılhisar Atıksu Arıtma Tesisi / Yağdöver / Yağdöver Yolu	
Talep/Teklif No : *Order ID*	T250324-53/R00	
Numunenin Adı ve Tarifi: *The date of receipt of test item*	Toprak-1kg	
Numune Kabul Tarihi : *The date of receipt of test item*	24/03/2025 16:25:01	
Numunenin Alındığı Yer : *Sampling area*	-	
Numunenin Alındığı Koordinatlar: *Sampling coordinates*	X: -	Y: -
Numunenin Alındığı Tarih: *Date of sampling*		
Numune Alma Yöntemi: *Method of sampling*	-	
Numuneyi Alan/Getiren: *Sampler*	Firma Çalışanı / Numune kargo ile gönderilmistir.	
Numune Kabının Cinsi: *Packaging of test item*	Cam şişe, plastik şişe	
Numuneye Uygulanan İşlemler : *Applied pre-treatment of test item*	Kimyasal koruma, soğuk zincir	
Barkod: *Sample ID*	2403250024	
Deneyin Yapıldığı Tarih/Ölçüm Tarihi: *Date of test/sampling*	24/03/2025 10/04/2025	
Raporun Sayfa Sayısı : *Number of pages*	5	
Rapor Tarihi : *Report Date*	10/04/2025	
Açıklamalar: *Explanations*	*Aşağıda yer alan QR koddan raporunuzu görüntüleyebilirsiniz.* *You can view your report from the QR code below.*	

Ölçüm ekibi tarafından alınan numuneler PR. 19 Numune Yönetim Prosedürüne uygun olarak PR. 19-PL.02 Haftalık Ölçüm / Numune Alma Takip Planı'na göre gerçekleşmiştir.

Deney laboratuvarı olarak faaliyet gösteren AEM Çevre Laboratuvar Analiz Tic. A.Ş., TÜRKAK'tan AB-0183-T ile TS EN ISO/IEC 17025:2017 standardına göre akredite edilmiştir.

Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır.

Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

AEM ÇEVRE LABORATUVAR ANALIZ TIC. A.S. tarafından hazırlanan bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz veya e-imzasız raporlar geçersizdir. Raporda bulunan sonuçlar analizleri yapılan numuneye aittir.Bu rapor Çevre Mevzuatına ilişkin resmi işlemlerde kullanılamaz.

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ANALİZ RAPORU

TEST REPORT

Metot Numarası	Metot
TS ISO 10390	Elektrometrik Metot
ISO 22155	GC-FID Metodu
SM 5520 E; 2023	Gravimetrik Metot
EPA 200.7; 1994	ICP-OES Metodu
İşletme İçi Metot "D-TL.KATI17 R00"(DIN 38414-18)	Mikrokulometrik Metot

AEM ÇEVRE LABORATUVAR ANALIZ TIC. A.S. tarafından hazırlanan bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz veya e-imzasız raporlar geçersizdir. Raporda bulunan sonuçlar analizleri yapılan numuneye aittir.Bu rapor Çevre Mevzuatına ilişkin resmi işlemlerde kullanılamaz.

AEM Laboratuvarı

TÜRKAK Test TS EN ISO/IEC 17025 AB-0183-T

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ANALİZ RAPORU

TEST REPORT

Parametre	Analiz Metodu	Birim	Analiz Sonucu
Antimon	EPA 200.7; 1994	mg/kg	<2,5
Arsenik	EPA 200.7; 1994	mg/kg	<2,5
Bakır	EPA 200.7; 1994	mg/kg	<2,5
Baryum	EPA 200.7; 1994	mg/kg	<2,5
Berilyum	EPA 200.7; 1994	mg/kg	<2,5
Bor	EPA 200.7; 1994	mg/kg	<2,5
Benzen	ISO 22155	mg/kg	<0,1
BTEX	ISO 22155	mg/kg	<0,1
Etilbenzen	ISO 22155	mg/kg	<0,1
m-p Ksilen	ISO 22155	mg/kg	<0,1
o Ksilen	ISO 22155	mg/kg	<0,1
Toluen	ISO 22155	mg/kg	<0,1
Civa	EPA 200.7; 1994	mg/kg	<0,025
Çinko	EPA 200.7; 1994	mg/kg	<2,5
Gümüş	EPA 200.7; 1994	mg/kg	<2,5
Kadmiyum	EPA 200.7; 1994	mg/kg	<0,25
Kalay	EPA 200.7; 1994	mg/kg	<2,5
Kobalt	EPA 200.7; 1994	mg/kg	<2,5
Krom	EPA 200.7; 1994	mg/kg	<2,5
Kurşun	EPA 200.7; 1994	mg/kg	<2,5
Molibden	EPA 200.7; 1994	mg/kg	<2,5
Nikel	EPA 200.7; 1994	mg/kg	<2,5
pH	TS ISO 10390		8,23
Selenyum	EPA 200.7; 1994	mg/kg	<2,5
Talyum	EPA 200.7; 1994	mg/kg	<2,5

AEM ÇEVRE LABORATUVAR ANALIZ TIC. A.S. tarafından hazırlanan bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz veya e-imzasız raporlar geçersizdir. Raporda bulunan sonuçlar analizleri yapılan numuneye aittir.Bu rapor Çevre Mevzuatına ilişkin resmi işlemlerde kullanılamaz.

AB-0183-T
2403250024
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ANALİZ RAPORU

TEST REPORT

Parametre	Analiz Metodu	Birim	Analiz Sonucu
Titanyum	EPA 200.7; 1994	mg/kg	6,88
Toplam Organik Halojenler (TOX)	İşletme İçi Metot "D-TL.KATI17 R00"(DIN 38414-18)	mg/kg	<10
VOC	ISO 22155	mg/kg	<0,2
Vanadyum	EPA 200.7; 1994	mg/kg	<2,5
Yağ ve Gres	SM 5520 E; 2023	mg/kg	<50

Müşteri tarafından beyan edilen Numune Alma Yeri, Numune Alma Tarihi, Numune Miktarı ve Koruma Yöntemlerinden kaynaklı olumsuz durumlardan AEM Çevre Laboratuvar Analiz TİC. A.Ş. feragat eder.

Raporlama Sorumlusu
Umut KÖKDEN
Kimya Mühendisi

Laboratuvar Müdürü
Safiye ÇAMUR EROL
Çevre Yüksek Mühendisi

AEM ÇEVRE LABORATUVAR ANALIZ TIC. A.S. tarafından hazırlanan bu rapor, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. İmzasız ve mühürsüz veya e-imzasız raporlar geçersizdir. Raporda bulunan sonuçlar analizleri yapılan numuneye aittir.Bu rapor Çevre Mevzuatına ilişkin resmi işlemlerde kullanılamaz.

ANKALAB ÇEVRE ANALİZ LABORATUVARI
ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMANLIK SAN. ve TİC. LTD. ŞTİ.
Adres: Ata Mah. 1069 Sk. 3/1 Çankaya/ANKARA
Tel: 0 312 472 66 64 Fax: 0 312 473 62 15
e-mail: info@ankalab.com.tr

AB-0415-T	
KD-2025-006A-00	
04/25	

MÜŞTERİNİN ADI/ADRESİ:	**GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ/YAĞDÖVER, YAĞDÖVER YOLU, 27270 ŞAHİNBEY/GAZİANTEP**
TEKLİF NUMARASI:	**T-2025-227-00**
NUMUNENİN ADI VE TARİFİ:	**PM 10 ÖRNEKLENMESİ VE TAYİNİ**
NUMUNENİN KABUL TARİHİ:	**14.03.2025**
AÇIKLAMALAR:	**HAVA İMİSYON ÖLÇÜM RAPORU**
DENEYİN YAPILDIĞI TARİH:	**11-13.03.2025**
RAPORUN SAYFA SAYISI-NÜSHA ADEDİ	**20 SAYFA**

Ankalab Çevre Analiz Laboratuvarı, TÜRKAK' tan AB-0415-T Dosya numarası ile, TS EN ISO/IEC 17025:2017 Standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile Karşılıklı Tanıma Anlaşması İmzalamıştır.

Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

Yayım tarihi	Deney Sorumlusu	Raporu Yazan Personel	Onaylayan/Tarih
07.04.2025	Gökhan Yamaç Çevre Mühendisi e-imzalıdır.	Mustafa AYTEN Kimyager e-imzalıdır.	Soner GÜLCAN Kimya Mühendisi e-imzalıdır. 07.04.2025

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.

ANKALAB ÇEVRE ANALİZ LABORATUVARI
ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMANLIK SAN. ve TİC. LTD. ŞTİ.
Adres: Ata Mah. 1069 Sk. 3/1 Çankaya/ANKARA
Tel: 0 312 472 66 64 Fax: 0 312 473 62 15
e-mail: info@ankalab.com.tr

İÇİNDEKİLER

1. İŞLETMENİN, İŞLETMEDE BULUNAN VE ÖLÇÜM YAPILAN HER BİR TESİSİN FAALİYETİNİN AÇIK BİR ŞEKİLDE ANLATIMI, 2

2.İŞLETMEDE BULUNAN VE ÖLÇÜM YAPILAN HER BİR TESİSTEN KAYNAKLANAN EMİSYONLARIN BU YÖNETMELİK EK-1, EK-2, EK-3 VE EK-5'E GÖRE DEĞERLENDİRİLMESİ, 2

3. ÖLÇÜM SONUÇLARI VE DEĞERLENDİRİLMESİ, 7

4. ÖRNEK HESAPLAMA 7

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ 'ne ait ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz

1. İŞLETMENIN, IŞLETMEDE BULUNAN VE ÖLÇÜM YAPILAN HER BIR TESISIN FAALIYETININ AÇIK BIR ŞEKILDE ANLATIMI,

Tesis, **GAZİANTEP** ili **YAĞDÖVER YOLU, 27270 ŞAHİNBEY** adresinde kurulu olup; Atıksu arıtma tesisi olarak faaliyet göstermektedir.

2.İŞLETMEDE BULUNAN VE ÖLÇÜM YAPILAN HER BIR TESISTEN KAYNAKLANAN EMISYONLARIN BU YÖNETMELIK EK-1, EK-2, EK-3 VE EK-5'E GÖRE DEĞERLENDIRILMESI,

Tablo-3.1 Emisyon Kaynaklarının Ölçüm Parametresine Göre S.K.H.K.Y. Kapsamında İncelenmesi

No/Kod	Emisyon Kaynağı	Parametre	Koordinat
		PM10	
-	TESİSE EN YAKIN HASSAS YAPI ÖNÜ-1	EK-2 Tablo 2.2	361100.00 d D/4089191.00 m K
-	TESİSE EN YAKIN HASSAS YAPI ÖNÜ-2	EK-2 Tablo 2.2	360681.00 d D/4089523.00 m K

b. SKHKKY Ek-2 Kapsamında Değerlendirilme ;

(1) Mevcut ve yeni kurulacak tesislerin etki alanında Hava Kirlenmesine Katkı Değeri (HKKD)'nin dağılım modellemesi kullanılarak hesaplanması, tesis etki alanında hava kalitesinin ölçülmesi ve ölçüm metotlarının belirlenmesi aşağıdaki esaslara göre yapılır:

(a) İşletmelerden atmosfere verilen emisyonların saatlik kütlesel debileri; mevcut tesisler için bacalardan ölçülerek, baca dışı kaynaklar ile yeni kurulacak tesisler için emisyon faktörleri kullanılarak tespit edilir.

(b)Saatlik kütlesel debi (kg/saat) değerleri Tablo 2.1 de verilen değerleri aşması halinde, tesis etki alanında emisyonların Hava Kirlenmesi Katkı Değeri (HKKD) mümkünse saatlik, aksi takdirde, günlük, aylık ve yıllık olarak hesaplanır.

(c) Mevcut tesis için aylık olarak hesaplanmış Hava Kirlenmesine Katkı Değerlerinin (HKKD) en yüksek olduğu farklı inceleme alanlarında her bir inceleme alanında bir istasyon olmak üzere en az iki istasyon kurularak bir ay süre ile sürekli olarak hava kalitesi ölçümleri yapılır. Kirliliğin aylara bağlı olarak değiştiği ve arttığı bölgelerde yetkili merci ölçüm zamanını belirler.

(d) (1) Kurulması planlanan tesislerde; kütlesel debisi Tablo 2.1 deki eşik değeri aşan parametreler için; tesis etki alanında bu yönetmelik Ek-2 Tablo 2.2 de yer alan hava kalitesi sınır değerlerinin sağlanması gerekmektedir.

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(2) Mevcut tesislerde; kütlesel debisi Tablo 2.1 deki eşik değeri aşan parametreler için; tesis etki alanında Tablo 2.2 de yer alan hava kalitesi sınır değerlerinin sağlanması gerekmektedir. Ancak; tesis etki alanındaki hava kalitesi değerleri Tablo 2.2 de yer alan hava kalitesi sınır değerlerinin aşması durumunda; mevcut tesisler, hava kalitesi katkı değerleri Tablo 2.2 de yer alan hava kalitesi sınır değerlerinin %60'ını aşmamak koşuluyla, tesis etki alanında ölçüm cihazlarıyla hava kalitesini sürekli izleyerek faaliyet gösterebilir.

İşletmeler ve/veya faaliyetlerin, bu Yönetmelik ve/veya Hava Kalitesi Değerlendirme ve Yönetimi Yönetmeliği gereğince hazırlanan illerin temiz hava eylem planlarında belirtilen tedbirleri alması zorunludur.

Tablo 2.1 Kütlesel Debiler

Emisyonlar	Normal işletme şartlarında ve haftalık iş günlerindeki işletme saatleri için kütlesel debiler (kg/saat)	
	Bacadan	Baca Dışındaki Yerlerden
Toz	10	1
Not: Tablodaki emisyonlar İşletmenin tamamından (bacaların toplamı) yayılan saatlik kütlesel debilerdir.		

Ölçümler izleme amacıyla yaptırılmış olup kütlesel debi hesabı yapılmamıştır.

(e) Hava Kirlenmesine Katkı Değerleri, aşağıdaki faktörler ele alınarak hesaplanır.

1) Tesis etki alanındaki Topoğrafik yapının etkileri ve Ek-4 de belirtilen baca yükseklikleri göz önüne alınır.

2) Tesis etki alanındaki binaların etkisi göz önüne alınır. Eğer bacalar, bina veya kulelere bina veya kule yüksekliklerinin 4 katından daha az uzaklıklarda ise: baca yüksekliği binadan 1,7 kat, soğutma kulesinden 1,5 kat fazla olduğu takdirde, binaların etkisi ihmal edilir.

3) Çok zayıf rüzgarların hüküm sürdüğü şartların sık ortaya çıktığı durumlar göz önüne alınır.

4) Hesaplamalar, tesis etki alanı dahilinde ortaya çıkan emisyonların, bir kimyasal veya fiziksel değişmeye uğramadığı kabul edilerek yapılır.

5) Emisyonların yayılması hesaplanırken, her bir durum için yayılma şartlarının sabit olduğu kabul edilir.

(f) Hava Kirlenmesine Katkı Değerinin Hesaplanacağı ve Hava Kalitesinin Ölçüleceği Alanın Belirlenmesi:

1) İşletmenin Hava Kirlenmesine Katkı Değerinin (HKKD) hesaplanmasında veya hava kalitesi ölçümlerinin yapılmasında tesis etki alanı, inceleme alanı ve tepe noktaları dikkate alınır.

2) Tesis Etki Alanı; emisyonların merkezinden itibaren bu yönetmelikte Ek-4 de verilen esaslara göre tespit edilmiş baca yüksekliklerinin 50 (elli) katı yarıçapa sahip alan, tesis etki alanıdır. Zeminden itibaren emisyonların efektif yüksekliği (Δh+h) 30 m'den daha az olan tesislerde, tesis etki alanı, bir kenar uzunluğu 2 km olan kare

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şeklindeki alandır. Baca dışı emisyon kaynaklarının (alan kaynak) yüzey dağılımı 0,04 km2'den büyükse, tesis etki alanı, alan kaynak karenin ortasında olmak üzere bir kenar uzunluğu 2 km olan kare şeklindeki alandır. Emisyon kaynaklarının yüzeydeki dağılımının tespitinde tesis etki alanı esas alınır.

3) İnceleme Alanı; tesis etki alanı içinde kenar uzunlukları 1 km olan kare şeklindeki alanlardır. Kirlenme hakkında kararın verilemediği özel durumlarda inceleme alanının kenar uzunlukları 500 metre olarak alınır.

4) Emisyon kaynağının kuzeyinden itibaren saat yönünde 10 derecelik ardışık açılarla emisyon kaynağına çizilen R yarıçapındaki çemberin kare şeklindeki inceleme alanı içinde kalan yayı kestiği noktalar tepe noktası olarak kabul edilir.

5) Hava Kirlenmesine Katkı Değeri (HKKD), tesis etki alanı içinde her bir inceleme alanındaki tüm tepe noktalarında ve bütün yayılma durumları için hesaplanan değerin aritmetik ortalaması alınarak bulunur. Hava kirlenmesine katkı değeri, Meteoroloji Genel Müdürlüğünden saatlik meteorolojik verilerin alınabilmesi halinde saatlik, yoksa günlük, aylık ve yıllık olarak hesaplanır.

(g) Toplam Kirlenme Değeri (TKD): tesis etki alanı içinde hesaplanmış Hava Kirlenmesine Katkı Değeri (HKKD) ile Ölçüm veya hesapla bulunan Uzun Vadeli Değerin (UVD) toplamından, yeni kurulacak tesisler için teşkil edilir.

TKD= HKKD+UVD

(ğ) Emisyon Kaynakları ve Kütlesel Debi:

1) Modelde yer alacak emisyon kaynakları, hava kirleticilerinin tesisten atmosfere yayıldığı yerlerdir. Emisyonlarını bir baca üzerinden atmosfere veren tesislerin, bacaları nokta kaynak, baca dışından veya çok sayıda birbirine yakın küçük bacaların bulunduğu alanlardan atmosfere verilen kirletici kaynaklar, alan kaynak, hareketli kirletici kaynaklar çizgi kaynak olarak nitelendirilir.

2) Emisyonların kütlesel debisi, İşletme şartlarında emisyon kaynaklarından açık havaya verilen hava kirleticilerinin ortalama saatlik kütlesel (kg/saat) debileridir. Emisyonların kütlesel debilerinde bir saatten daha kısa periyotlarda azalan veya artan salınışlar oluyorsa bu salınışların ortalaması, saatlik kütlesel debi olarak belirlenir. Emisyonlarını baca dışındaki yerlerden veren tesisler ile yeni kurulacak tesislerin kütlesel debileri emisyon faktörleri kullanılarak bulunur.

Ölçümler izleme amacıyla yaptırılmış olup kütlesel debi hesabı ve modelleme çalışması yapılmamıştır.

h) Tesis Etki Alanında Hava Kalitesinin Ölçümü, Hesaplanması ve Ölçüm Süresi:

1) Mevcut tesislerde; tesis etki alanında, uluslararası kabul görmüş ve yaygın olarak kullanılan dağılım modelleri, metotlar ve Ek-2 de yer alan esaslar çerçevesinde, inceleme alanlarının tepe noktaları için

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hesaplanan hava kirlenmesine katkı değerlerinin (HKKD) en yüksek olduğu farklı inceleme alanlarında her bir inceleme alanında bir istasyon olmak üzere en az iki istasyon kurularak bir ay süre ile sürekli olarak hava kalitesi ölçümleri yapılır. Kirliliğin aylara bağlı olarak değiştiği ve arttığı bölgelerde yetkili merci ölçüm zamanını belirler.

2) Yeni kurulacak tesislerde, tesis etki alanında, Ek-2 de yer alan esaslar çerçevesinde esaslar çerçevesinde, hava kirlenmesine katkı değeri bulunur. Ayrıca tesis etki alanında mevcut tüm önemli kirleticiler de dikkate alınarak hesap veya ölçüm yolu ile uzun vadeli değer (UVD) bulunur. Yeni kurulacak tesisler için; tesis etki alanı içinde hesaplanmış hava kirlenmesine katkı değeri (HKKD) ile ölçüm veya hesapla bulunan uzun vadeli değerin (UVD) toplamından, toplam kirlenme değeri (TKD) bulunur. Yetkili merci; kurulacak tesisin etki alanında bulunan kirletici kaynak yoğunluğuna bağlı olarak, gerekirse 1 (bir) ay süre ile bir istasyonda hava kalitesi ölçümleri yaptırabilir.

3) Hava kalitesi ölçümlerinde Pasif Örnekleme Metodu kullanılması halinde; modelleme sonuçlarına göre hesaplanan Hava Kalitesine Katkı Değerinin en yüksek olduğu inceleme alanında 2 (iki) ay süre için en az 4 adet pasif örnekleme noktası seçilir. Hava kirliliğinin yoğun olduğu diğer inceleme alanlarında da, en az iki inceleme alanı olmak kaydıyla her bir inceleme alanında 2 adet pasif örnekleme noktası seçilir. Hava kirliliğinin yoğun olduğu inceleme alanlarında pasif örnekleme yeri ve sayısı, işletmenin kapasitesi ve kirletici emisyon yüküne bağlı olarak (işletmede bulunan bacaların yüksekliği, kütlesel debileri, kirleticilerin dağılım yönleri ile bölgede bulunan yerleşim alanları da göz önüne alınarak) belirlenir. Yetkili merci tarafından örnekleme yeri, sayısı ve/veya süresi arttırılabilir.”

4) Çöken toz ölçümü sırasında; tesis inceleme alanı içinde en az 2 (iki) ölçüm noktasında, hakim rüzgar yönü de dikkate alınarak yapılır. Aynı bölgede toz emisyonuna neden olan başka kaynakların da bulunması durumunda ölçüm noktası sayısı tesis dışındaki diğer kaynakların katkılarının belirlenmesi için attırılabilir. Ölçüm süresi birer aylık 2 (iki) ölçüm olup, toplam 2 (iki) aydır. Aylık olarak bulunacak değerler gün sayısına bölünerek bir günde çöken ortalama toz miktarı hesaplanır.

5) Hava kalitesi ölçümleri kural olarak yer seviyesinden, 1,5 - 4,0 metre arasındaki yüksekliklerde, binadan (veya ekili alandan) en az 1,5 metre yan mesafe tutularak yapılır. Ormanda yapılan ölçümler, ağaç yüksekliğinden daha yukarıda yapılmalıdır.

6) Ölçme Metotlarının kabul edilebilirlikleri, TSE tarafından standartlaştırıldıktan ve Bakanlıkça tebliğ edildikten sonra tescil edilir. İlgili TSE Standardı mevcut değilse, güvenilirliği Bakanlıkça kabul edilen DIN, EPA normlarına uygun metot standartları tatbik edilir. Metotlar tebliği ile ilan edilir.

7) Tesis etki alanında hava kalitesi ve emisyon ölçümleri, akredite edilmiş veya Bakanlıkça uygun bulunan laboratuvarlara sahip olan özel veya kamu kurum/kuruluşları tarafından yapılır.

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Tablo 2.2 Tesis Etki Alanında Hava Kalitesi Sınır Değerleri

Parametre	Süre	Birimi	YIL						
			2014	2015	2016	2017	2018	**2019-2023**	2024 ve sonrası
Çöken toz	KVS	mg/m²gün	390	390	390	390	390	**390**	390
	UVS		210	210	210	210	210	**210**	210

Parametre	Süre	Birimi	YIL						
			2014	**2015**	**2016**	**2017**	**2018**	**2019-2023**	**2024 ve sonrası**
Havada Asılı Partikül Madde (PM 10)	24 saatlik (bir yılda 35 defadan fazla aşılmaz)	**µg/m³**	**100**	**90**	**80**	**70**	**60**	**50**	**50**
	Yıllık		**60**	**56**	**52**	**48**	**44**	**40**	**40**

Ölçümler izleme amacıyla yaptırılmış olup kütlesel debi hesabı ve modelleme çalışması yapılmamıştır.

Pm10 cihazı konularak 72 saat süre ile 3 noktada ölçüm çalışmaları yapılmış olup sonuçlar, tablolar halinde raporun ölçüm sonuçları kısmında sunulmuştur. Raporun 3. Ölçüm Sonuçları ve Değerlendirilmesi bölümünde ölçüm sonuçlarına ve yönetmelik maddelerine göre değerlendirme yapılmıştır. Ölçüm sonuçları yönetmelikte belirlenen sınır değerleri aşmamaktadır.

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ANKALAB ÇEVRE ANALİZ LABORATUVARI
ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMANLIK SAN. ve TİC. LTD. ŞTİ.
Adres: Ata Mah. 1069 Sk. 3/1 Çankaya/ANKARA
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e-mail: info@ankalab.com.tr

3. ÖLÇÜM SONUÇLARI VE DEĞERLENDIRILMESI,

Tarih	Örnekleme hacmi (m^3)	Basınç	Gaz Sıcaklığı ^0C	Kütle (mg.)	PM 10 Konsantrasyonu (µg/m3)	EK-2 TABLO 2.2 Sınır Değer
11.03.2025	55.110	1013.0	17.0	1.41	27.18	50 µg/m3 24 saatlik (bir
12.03.2025	55.115	1015.0	19.1	1.4	27.12	yılda 35 defadan fazla
13.03.2025	55.112	1016.0	18.2	1.36	26.24	aşılmaz), Yıllık 40 µg/m3,
				ORTALAMA	**26.85**	2024 ve sonrası 50 µg/m3,

Tarih	Örnekleme hacmi (m^3)	Basınç	Gaz Sıcaklığı ^0C	Kütle (mg.)	PM 10 Konsantrasyonu (µg/m3)	EK-2 TABLO 2.2 Sınır Değer
11.03.2025	55.112	1013.0	17.0	1.4	26.98	50 µg/m3 24 saatlik (bir
12.03.2025	55.113	1015.0	19.1	1.39	26.93	yılda 35 defadan fazla
13.03.2025	55.120	1016.0	18.2	1.41	27.20	aşılmaz), Yıllık 40 µg/m3,
				ORTALAMA	**27.04**	

*** TS EN 12341 gereğince 24 saat süre ile (2,3m^3/h ± 2) örnekleme yapılarak sonuçlar yukarıdaki tablolarda verilmiştir.**

Pm10 cihazı konularak 72 saat süre ile 2 noktada ölçüm çalışmaları yapılmış olup, Ölçüm sonuçları yönetmelikte belirlenen sınır değerleri aşmamaktadır.

4. ÖRNEK HESAPLAMA

PM 10 ÖRNEK HESAPLAMA						
PM 10 mg=	(Ölçüm sonrası filtre ağırlığı-ölçüm öncesi filtre ağırlığı)*1000					
PM10 mg/m3=	(Ölçüm sonrası filtre ağırlığı-ölçüm öncesi filtre ağırlığı)*Örneklenen Hacim Litre/1000					
Sıcaklık Düzeltmesi=	(273,14+Okunan Sıcaklık Değeri)/273,14					
Basınç Düzeltmesi=	1013/Okunan Basınç Değeri					
PM10 mg/Nm3=	((Ölçüm sonrası filtre ağırlığı-ölçüm öncesi filtre ağırlığı*1000)/(Çekilen Litre/1000))*(Sıcaklık Düzeltmesi*Basınç Düzeltmesi)					
Ölçüm Öncesi Filtre Ağırlığı=	0,09415					
Ölçüm Sonrası Filtre Ağırlığı=	0,09968					
Örnekleme Hacmi Litre=	2295					
Sıcaklık	9,6		Sıcaklık Düzeltmesi=	1,035147		
Basınç	1022		Basınç=	0,991194		
			Örnekleme Hacmi m3=		2,295	
PM10 mg=	5,53					
PM10 mg/Nm3=	2,47					

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Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz

EKLER

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ 'ne ait ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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EK-1

YETERLİLİK BELGELERİ

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ 'ne ait ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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Türk Akreditasyon Kurumu

AKREDİTASYON SERTİFİKASI

Deney Laboratuvarı olarak faaliyet gösteren,

ANKALAB ÇEVRE ANALİZ LABORATUVARI ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMALIK SANAYİ VE TİCARET LİMİTED ŞİRKETİ

Merkez Adres: ATA MAH. 1069 CAD. No:3/1 ÇANKAYA/ANKARA Ankara / Türkiye

TÜRKAK tarafından yapılan denetim sonucunda TS EN ISO/IEC 17025:2017 standardına göre Ek'te yer alan kapsamlarda akredite edilmiştir.

Akreditasyon No : AB-0415-T

Akreditasyon Tarihi : 07.11.2010

Revizyon Tarihi / No : 25.02.2025 / 15

Bu Sertifika, yukarıda açık adı ve adresi yazılı Kuruluşun TS EN ISO/IEC 17025:2017 Standardına, ilgili Yönetmelik ve Tebliğlere uygunluğunu sürdürmesi halinde **04.07.2027** tarihine kadar geçerlidir.

Gülden Banu Müderrisoğlu
Genel Sekreter

Türk Akreditasyon Kurumu (TÜRKAK) ISO/IEC 17025 alanında Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile çok taraflı anlaşma (MLA/MRA) imzalamıştır.

Bu belge 5070 sayılı elektronik imza kanununa göre Gülden Banu Müderrisoğlu tarafından güvenli elektronik imza ile imzalanmıştır. E-imzalı belgeyi doğrulamak için QR kodunu kullanabilirsiniz.

F701-040 +90 312 410 82 00 - www.turkak.org.tr

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ 'ne ait ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz

ANKALAB ÇEVRE ANALİZ LABORATUVARI
ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMANLIK SAN. ve TİC. LTD. ŞTİ.
Adres: Ata Mah. 1069 Sk. 3/1 Çankaya/ANKARA
Tel: 0 312 472 66 64 Fax: 0 312 473 62 15
e-mail: info@ankalab.com.tr

Akreditasyon Sertifikası Eki (Sayfa 14/20)
Akreditasyon Kapsamı

ANKALAB ÇEVRE ANALİZ LABORATUVARI ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMALIK SANAYİ VE TİCARET LİMİTED ŞİRKETİ

Akreditasyon No: AB-0415-T
Revizyon No: 15 Tarih: 25.02.2025

Deney Laboratuvarı

Adres : ATA MAH. 1069 CAD. No:3/1 ÇANKAYA/ANKARA Ankara / Türkiye

Telefon : +90 312 472 6664
Fax : +90 312 473 6215
E-Posta : info@ankalab.com.tr
Web Sitesi : www.ankalab.com.tr

Atık	Toplam Çözünmüş Madde Ön İşlem: Katıdan Özütleme Metodu Ölçüm: Gravimetrik Metot	TS EN 12457-4 SM 2540 C
Toprak	Yüzey Topraktan Numune Alma, Numunelerin Taşınma ve Muhafazası	TS 9923
Toprak	Kuru Madde (%) Muhtevası / Nem (%) Tayini Gravimetrik Metot	TS 9546 EN 12880
Toprak	Yanma Kaybı Tayini (550 ± 25)°C Gravimetrik Metot	TS EN 15935
Arıtma çamuru	Kuru Kütlenin Kızdırma Kaybının Tayini Gravimetrik Metot	TS EN 15935
İmisyon (Çevre Havası)	Askıdaki Taneciklı Maddenin PM10 veya PM 2,5 Kütle Derişimlerinin Tayini Gravimetrik Metot	TS EN 12341
İmisyon (Çevre Havası)	Askıdaki Taneciklı Maddenin PM10 Kesrinin Tayini Gravimetrik Metot	EPA 40 CFR 50 App.J
İmisyon (Çevre Havası)	Çöken Toz Tayini Gravimetrik Metot	TS 2342 TS 2341
Atıksu	Toplam Klor Tayini Spektrofotometrik Metot	SM 4500-Cl G
Atıksu	Bağlı Klor Tayini Spektrofotometrik Metot	SM 4500-Cl G
Baca Gazı	Sabit Kaynak Emisyonları-Karbonmonoksit (CO) ve Karbondioksit (CO_2) Kütle Derişimlerinin Tayini Ölçüm: Elektrokimyasal Hücre Metodu Ölçüm: Kızılötesi Absorpsiyon Metodu Ölçüm: Hesaplama Metodu	TS ISO 12039 *

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EK-2

KALİBRASYON BELGELERİ

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ 'ne ait ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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AVL Kalibrasyon Laboratuarı

AVL AKUSTİK VİBRASYON KALİBRASYON LAB. LTD. ŞTİ.

A: İvedik O.S.B Dericiler Sit. 1385. Sok No: 10 Ostim / Ankara
T: +90 (312) 394 15 50 F: +90 (312) 394 15 53 E: bilgi@avl.com.tr W: www.avl.com.tr

TÜRKAK Kalibrasyon TS EN ISO/IEC 17025 AB-0089-K

AB-0089-K
243090
08-24

KALİBRASYON SERTİFİKASI
Calibration Certificate

Cihazın Sahibi *Customer Name*	:	ANKALAB ÇEVRE ANALİZ LABORATUVARI LTD. ŞTİ. Ata Mah. 1069. Sok. No: 3/1 ÇANKAYA / ANKARA
İstek Numarası *Order No.*	:	T-0824-082
Makine / Cihaz *Instrument / Device*	:	PM10 Toz Örnekleme Cihazı - Akış Ölçer *PM10 Sampling Device - Flow Meter*
İmalatçı *Manufacturer*	:	MCZ
Tip *Type*	:	µPNS-LVS1
Seri Numarası *Serial number*	:	2012-094
Kalibrasyon Tarihi *Date of calibration*	:	22.08.2024
Sertifika Sayfa Sayısı *Number of pages*	:	4

Bu kalibrasyon sertifikası, Uluslararası Birimler Sisteminde (SI) tanımlanmış birimleri realize eden ulusal ölçüm standartlarına izlenebilirliği belgeler.

This calibration certificate documents the traceabilty to national standards, which realize the unit of measurement according to the International System of Units (SI).

Kalibrasyon laboratuvarı olarak faaliyet gösteren AVL Kalibrasyon Laboratuvarı, TÜRKAK'tan AB-0089-K dosya numarası ile TS EN ISO/IEC 17025-2017 standardına göre akredite edilmiştir.

AVL Kalibrasyon Laboratuvarı is accredited by TÜRKAK under registration number AB-0089-K for TS EN ISO/IEC 17025-2017 as test laboratory.

Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanınma antlaşmasını imzalamıştır.

The Turkish Accreditation Acency (TURKAK) is signatory to the multilateral agreements of the European co-operation for the Accreditation(EA) and of the International Laboratory Accreditation (ILAC) for the Mutual recognation of test reports.

Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

The measurements, the uncertainties with confidence probability and calibration methods are given on the following pages which are part of this certificate.

Mühür / Kaşe *Seal*	Yayım Tarihi *Publication Date*	Kalibrasyonu Yapan *Calibrated By*	Onaylayan / Tarih *Approval / Date*
AVL Kalibrasyon	22.08.2024	Mehmet GÜVENDİ Kalibrasyon Personeli *Calibration Responsible* e-imzalıdır	Younes NEVAYESHİRAZİ / 22.08.2024 Laboratuvar Müdürü *Laboratory Manager* e-imzalıdır

Bu sertifika 5070 sayılı kanununa göre güvenli elektronik imza ile imzalanmıştır. Belge teyidi için sayfalarda yer alan karekodu okutabilirsiniz.
This certificate is signed using secure digital signature according to article of law, number 5070. For confirmation, read the QR Code using QR Code reader.

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Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz

1. Cihaza Ait Bilgiler
Device to be Calibrated

Cihazın Adı *Name of the Instrument*	:	PM10 Toz Örnekleme Cihazı - Akış Ölçer *PM10 Sampling Device - Flow Meter*
İmalatçısı *Manufacturer*	:	MCZ
Seri Numarası *Serial Number*	:	2012-094
Bölüntüsü *Scale Division*	:	0,01
Tipi *Type*	:	µPNS-LVS1

2. Cihazın Laboratuvara Kabul Tarihi : 19.08.2024
Date of Recipt of Device

3. Kalibrasyon Metodu
Calibration Method

Test cihazının kalibrasyonu PR.LBBR.201 prosedürüne uygun olarak karşılaştırma metodu ile gerçekleştirilmiştir.

4. Çevresel Şartlar
Environmental Conditions

Ortam Sıcaklığı *Ambient Temperature*	:	(20,5 ± 3)	°C
Bağıl Nem *Relative Humidity*	:	(30,5 ± 25)	%
Ortam Basıncı *Ambient Pressure*	:	(915 ± 1)	mbar

5. Kalibrasyonda Kullanılan Referans Cihazlar
Reference Equipments Used During Calibration

Cihaz *Device*	İmalatçı *Manufacturer*	Seri No *Serial No*	Sertifika No *Certificate No*	İzlenebilirlik *Traceability*
Akış - Akış Kalibratörü	Sierra	132548	G2AG-0147	UME
Akış - Göstergeli Basınç Sensörü	Verth / Trafag	14044035 / 409201-003	2044839	UMS
Akış - Göstergeli Basınç Sensörü	Verth / Trafag	14044036 / 409201-004	2044838	UMS
Akış - Göstergeli Sıcaklık Ölçer	Sper Scientific	100904222 / T1	235279	AVL
Akış - Göstergeli Sıcaklık Ölçer	Sper Scientific	100904222 / T2	235280	AVL
Sıcaklık ve Nem Ölçer	Extech	12081741	235255	AVL

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Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz FR 17 REV 04 10.10.2024

6. Kalibrasyon Sonuçları
Calibration Results

6.1. Ortam Şartlarında Sonuçlar
Results in Enviromental Conditions

Ortam Şartlarında Ölçülen Debi *Measured Flow In Enviromental Conditions*		Akış Sapması *Flow Deviation*		Ölçüm Belirsizliği *Calibration Uncertainty*	
Referans Cihaz *Reference Instrument*	Test Edilen Cihaz *Instrument Under Test*	Hata *Deviation*	Bağıl *Relative*	Belirsizlik *Uncertainty*	Bağıl *Relative*
dm^3/min	dm^3/min	dm^3/min	%	dm^3/min	%
20,1400	20,0000	-0,1400	-0,6951	0,0665	0,33
25,1776	25,0000	-0,1776	-0,7054	0,0831	0,33
30,1570	30,0000	-0,1570	-0,5206	0,0995	0,33
35,2826	35,0000	-0,2826	-0,8010	0,1164	0,33
38,3453	38,5000	0,1547	0,4034	0,1265	0,33

6.2. Standart Şartlarda Sonuçlar
Results in Standard Conditions

Standart Şartlarda Ölçülen Debi *Measured Flow In Standart Conditions*		Akış Sapması *Flow Deviation*		Ölçüm Belirsizliği *Calibration Uncertainty*	
Referans Cihaz *Reference Instrument*	Test Edilen Cihaz *Instrument Under Test*	Hata *Deviation*	Bağıl *Relative*	Belirsizlik *Uncertainty*	Bağıl *Relative*
dm^3/min	dm^3/min	dm^3/min	%	dm^3/min	%
18,1748	18,0484	-0,1264	-0,6955	0,0600	0,33
22,7207	22,5605	-0,1602	-0,7051	0,0750	0,33
27,2143	27,0726	-0,1417	-0,5207	0,0898	0,33
31,8397	31,5847	-0,2550	-0,8009	0,1051	0,33
34,6036	34,7431	0,1395	0,4031	0,1142	0,33

6.3. Sıcaklık ve Basınç Ölçüm Sonuçları
Temperature and Pressure Measurement Results

Referans Cihaz Ortalama Değer *Referance Instrument Average Value*		Test Cihazı Ortalama Değer *Test Instrument Avarage Value*		Sapma *Deviation*		Belirsizlik *Uncertainty*	
Sıcaklık *Temperature*	Basınç *Pressure*	Sıcaklık *Temperature*	Basınç *Pressure*	Sıcaklık *Temperature*	Basınç *Pressure*	Sıcaklık *Temperature*	Basınç *Pressure*
°C	mbar	°C	mbar	°C	mbar	°C	mbar
20,5	915	20,4	915	-0,10	0,00	0,3	1

Kalibrasyonla İlgili Notlar
Notes About Calibration

Standart şartlar 20 °C ve 1013,25 mbar 'dır.
Standard conditions are 20 °C and 1013,25 mbar.

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ 'ne ait ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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7. Uygunluk Beyanı
Statement of Compliance

Ölçüm sonuçları ve ölçüm belirsizliği yukarıda verilmiştir. Kullanıcı bunları dikkate alarak uygunluğuna karar vermelidir. Beyan edilen genişletilmiş belirsizlik değeri standart belirsizliğin normal dağılımı için; yaklaşık % 95 güvenirlik seviyesini sağlayan k=2 kapsam faktörü ile çarpımının sonucudur. Standart ölçüm belirsizliği GUM ve EA-4/02 dokümanlarına uygun olarak belirlenmiştir. Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı bir bölümüdür.

The measurement results and measurement uncertinity were given above. The user have to consider the results and decide compliance of the device. The reported expended uncertainity of measurement is stated as the standart uncertainity of multitude by coverage factor k=2, which for a normal distribution corresponds to coverage of approximately 95%. The standard measurement uncertainty is defined according to the GUM and EA-4/02documents. Measurement results, the expanded measurement uncertainty of measurement and calibration methods, is an integral part of the this certificate.

8. Açıklamalar
Remarks

Bu sertifikada bulunan sonuçlar cihazın kalibrasyon tarihindeki durumu kapsar ve uzun dönem kararlığı hakkında bir öngörü içermez.

The result reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ 'ne ait ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz

AVL Kalibrasyon Laboratuarı

AVL AKUSTİK VİBRASYON KALİBRASYON LAB. LTD. ŞTİ.

A: İvedik O.S.B Dericiler Sit. 1385. Sok No: 10 Ostim / Ankara
T: +90 (312) 394 15 50 F: +90 (312) 394 15 53 E: bilgi@avl.com.tr W: www.avl.com.tr

TÜRKAK Kalibrasyon TS EN ISO/IEC 17025 AB-0089-K

AB-0089-K
243091
08-24

KALİBRASYON SERTİFİKASI
Calibration Certificate

Cihazın Sahibi *Customer Name*	:	ANKALAB ÇEVRE ANALİZ LABORATUVARI LTD. ŞTİ. Ata Mah. 1069. Sok. No: 3/1 ÇANKAYA / ANKARA
İstek Numarası *Order No.*	:	T-0824-082
Makine / Cihaz *Instrument / Device*	:	PM10 Toz Örnekleme Cihazı - Akış Ölçer *PM10 Sampling Device - Flow Meter*
İmalatçı *Manufacturer*	:	MCZ
Tip *Type*	:	µPNS-LVS1
Seri Numarası *Serial number*	:	2102-095
Kalibrasyon Tarihi *Date of calibration*	:	22.08.2024
Sertifika Sayfa Sayısı *Number of pages*	:	4

Bu kalibrasyon sertifikası, Uluslararası Birimler Sisteminde (SI) tanımlanmış birimleri realize eden ulusal ölçüm standartlarına izlenebilirliği belgeler.

This calibration certificate documents the traceabilty to national standards, which realize the unit of measurement according to the International System of Units (SI).

Kalibrasyon laboratuvarı olarak faaliyet gösteren AVL Kalibrasyon Laboratuvarı, TÜRKAK'tan AB-0089-K dosya numarası ile TS EN ISO/IEC 17025-2017 standardına göre akredite edilmiştir.

AVL Kalibrasyon Laboratuvarı is accredited by TÜRKAK under registration number AB-0089-K for TS EN ISO/IEC 17025-2017 as test laboratory.

Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanınma antlaşmasını imzalamıştır.

The Turkish Accreditation Acency (TURKAK) is signatory to the multilateral agreements of the European co-operation for the Accreditation(EA) and of the International Laboratory Accreditation (ILAC) for the Mutual recognation of test reports.

Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

The measurements, the uncertainties with confidence probability and calibration methods are given on the following pages which are part of this certificate.

Mühür / Kaşe *Seal*	Yayım Tarihi *Publication Date*	Kalibrasyonu Yapan *Calibrated By*	Onaylayan / Tarih *Approval / Date*
AVL Kalibrasyon	22.08.2024	Mehmet GÜVENDİ Kalibrasyon Personeli *Calibration Responsible* e-imzalıdır	Younes NEVAYESHİRAZİ / 22.08.2024 Laboratuvar Müdürü *Laboratory Manager* e-imzalıdır

Bu sertifika 5070 sayılı kanununa göre güvenli elektronik imza ile imzalanmıştır. Belge teyidi için sayfalarda yer alan karekodu okutabilirsiniz.
This certificate is signed using secure digital signature according to article of law, number 5070. For confirmation, read the QR Code using QR Code reader.

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ 'ne ait ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz

1. Cihaza Ait Bilgiler
Device to be Calibrated

Cihazın Adı *Name of the Instrument*	:	PM10 Toz Örnekleme Cihazı - Akış Ölçer *PM10 Sampling Device - Flow Meter*
İmalatçısı *Manufacturer*	:	MCZ
Seri Numarası *Serial Number*	:	2102-095
Bölüntüsü *Scale Division*	:	0,01
Tipi *Type*	:	µPNS-LVS1

2. Cihazın Laboratuvara Kabul Tarihi : 19.08.2024
Date of Recipt of Device

3. Kalibrasyon Metodu
Calibration Method

Test cihazının kalibrasyonu PR.LBBR.201 prosedürüne uygun olarak karşılaştırma metodu ile gerçekleştirilmiştir.

4. Çevresel Şartlar
Environmental Conditions

Ortam Sıcaklığı *Ambient Temperature*	:	(20,5 ± 3)	°C
Bağıl Nem *Relative Humidity*	:	(30,5 ± 25)	%
Ortam Basıncı *Ambient Pressure*	:	(915 ± 1)	mbar

5. Kalibrasyonda Kullanılan Referans Cihazlar
Reference Equipments Used During Calibration

Cihaz *Device*	İmalatçı *Manufacturer*	Seri No *Serial No*	Sertifika No *Certificate No*	İzlenebilirlik *Traceability*
Akış - Akış Kalibratörü	Sierra	132548	G2AG-0147	UME
Akış - Göstergeli Basınç Sensörü	Verth / Trafag	14044035 / 409201-003	2044839	UMS
Akış - Göstergeli Basınç Sensörü	Verth / Trafag	14044036 / 409201-004	2044838	UMS
Akış - Göstergeli Sıcaklık Ölçer	Sper Scientific	100904222 / T1	235279	AVL
Akış - Göstergeli Sıcaklık Ölçer	Sper Scientific	100904222 / T2	235280	AVL
Sıcaklık ve Nem Ölçer	Extech	12081741	235255	AVL

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Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz FR 17 REV 04 10.10.2024

6. Kalibrasyon Sonuçları
Calibration Results

6.1. Ortam Şartlarında Sonuçlar
Results in Enviromental Conditions

Ortam Şartlarında Ölçülen Debi *Measured Flow In Enviromental Conditions*		Akış Sapması *Flow Deviation*		Ölçüm Belirsizliği *Calibration Uncertainty*	
Referans Cihaz *Reference Instrument*	Test Edilen Cihaz *Instrument Under Test*	Hata *Deviation*	Bağıl *Relative*	Belirsizlik *Uncertainty*	Bağıl *Relative*
dm^3/min	dm^3/min	dm^3/min	%	dm^3/min	%
20,1480	20,0000	-0,1480	-0,7346	0,0665	0,33
25,1535	25,0000	-0,1535	-0,6103	0,0830	0,33
30,2571	30,0000	-0,2571	-0,8497	0,0998	0,33
35,2966	35,0000	-0,2966	-0,8403	0,1165	0,33
38,8615	38,5000	-0,3615	-0,9302	0,1282	0,33

6.2. Standart Şartlarda Sonuçlar
Results in Standard Conditions

Standart Şartlarda Ölçülen Debi *Measured Flow In Standart Conditions*		Akış Sapması *Flow Deviation*		Ölçüm Belirsizliği *Calibration Uncertainty*	
Referans Cihaz *Reference Instrument*	Test Edilen Cihaz *Instrument Under Test*	Hata *Deviation*	Bağıl *Relative*	Belirsizlik *Uncertainty*	Bağıl *Relative*
dm^3/min	dm^3/min	dm^3/min	%	dm^3/min	%
18,1634	18,0299	-0,1335	-0,7350	0,0599	0,33
22,6759	22,5374	-0,1385	-0,6108	0,0748	0,33
27,2767	27,0449	-0,2318	-0,8498	0,0900	0,33
31,8198	31,5524	-0,2674	-0,8404	0,1050	0,33
35,0336	34,7076	-0,3260	-0,9305	0,1156	0,33

6.3. Sıcaklık ve Basınç Ölçüm Sonuçları
Temperature and Pressure Measurement Results

Referans Cihaz Ortalama Değer *Referance Instrument Average Value*		Test Cihazı Ortalama Değer *Test Instrument Avarage Value*		Sapma *Deviation*		Belirsizlik *Uncertainty*	
Sıcaklık *Temperature*	Basınç *Pressure*	Sıcaklık *Temperature*	Basınç *Pressure*	Sıcaklık *Temperature*	Basınç *Pressure*	Sıcaklık *Temperature*	Basınç *Pressure*
°C	mbar	°C	mbar	°C	mbar	°C	mbar
20,5	915	20,6	915	0,10	0,00	0,3	1

Kalibrasyonla İlgili Notlar
Notes About Calibration

Standart şartlar 20 °C ve 1013,25 mbar 'dır.
Standard conditions are 20 °C and 1013,25 mbar.

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ 'ne ait ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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7. Uygunluk Beyanı
Statement of Compliance

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8. Açıklamalar
Remarks

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The result reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument

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ANKALAB ÇEVRE ANALİZ LABORATUVARI
ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMANLIK SAN. Ve TİC. LTD. ŞTİ.
Adres: Ata Mah. 1069 Cad. No:3/1 Çankaya/ANKARA
Tel: 0 312 472 66 64 Fax: 0 312 473 62 15
e-mail: info@ankalab.com.tr

TÜRKAK Test TS EN ISO/IEC 17025 AB-0415-T

AB-0415-T
KD-2025-006C-00
04/25

Müşterinin Adı/Adresi:	**GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ/YAĞDÖVER, YAĞDÖVER YOLU, 27270 ŞAHİNBEY/GAZİANTEP**
İstek Numarası:	**T-2025-227-00**
Numuneyi Alan Kurum/Kuruluş:	**ANKALAB ÇEVRE ANALİZ LABORATUVARI**
Numunenin Adı ve Tarifi:	**2 SAATLİK KOMPOZİT NUMUNE/ANLIK NUMUNE**
Numunenin Örneklenme Tarihi ve Kullanılan Standart:	**12.03.2025 08:30-10:30**
Numunenin Kabul Tarihi:	**13.03.2025 / 09:00**
Numunenin Teslim Koşulları:	**Mühür, Etiket, Tutanak, Soğuk ortam (TS EN ISO 5567-3)**
Açıklamalar:	**-**
Deneyin yapıldığı tarih:	**13-17.03.2025**
Raporun Sayfa Sayısı:	**2**
Numune Kodu:	**250314080239130 (KUYU SUYU)** **250314080238942 (MEMBA)** **250314080238740 (MANSAP)**

Ankalab Çevre Analiz Laboratuvarı, TÜRKAK' tan AB-0415-T Dosya numarası ile TS EN ISO/IEC 17025:2017 Standardına göre akredite edilmiştir.

Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile Karşılıklı Tanıma Anlaşması İmzalamıştır.

Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

Yayım tarihi	Deney Sorumlusu	Raporu Yazan Personel	Onaylayan/Tarih
08.04.2025	**Esra DEMİRBAŞ** **Kimyager** **e-imzalıdır.**	**Mustafa AYTEN** **Kimyager** **e-imzalıdır.**	**Soner GÜLCAN** **Kimya Mühendisi** **e-imzalıdır.** **08.04.2025**

Bu ölçüm raporu **GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'**ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz.**
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AB-0415-T
KD-2025-006C-00
04/25

MEMBA		
PARAMETRE	**BİRİM**	**SONUÇ**
Ph	-	7.2
İletkenlik	ms	1430
Çözünmüş Oksijen	mg/L	2.3
KİMYASAL OKSİJEN İHTİYACI	mg/L	221.7
BİYOLOJİK OKSİJEN İHTİYACI	mg/L	51.21
YAĞ GRES	mg/L	13.3
RENK	mg/L	161.13
AMONYUM AZOTU(NH4-N)	mg/L	0.49
TOPLAM KJELDAHL AZOTU	mg/L	1.73
NİTRİT AZOTU (NO2-)	mg/L	0.011
NİTRİT AZOTU (NO3-)	mg/L	0.128
TOPLAM AZOT	mg/L	1.869
ORTO FOSFAT FOSFORU (PO4-P)	mg/L	1.007
TOPLAM FOSFOR	mg/L	1.327
FLORÜR (F-)	mg/L	<0.1
KLORÜR (Cl-)	mg/L	16.1
BROMÜR (Br-)	mg/L	0.414
SÜLFAT ($SO4^{-}2$)	mg/L	18.18
SODYUM (Na)	mg/L	174.683
MAGNEZYUM (Mg)	mg/L	24.19
POTASYUM (K)	mg/L	7.053
KALSİYUM (Ca)	mg/L	78.167
MANGAN	mg/L	0.08913
SELENYUM	mg/L	0.00863
SÜLFÜR	mg/L	<0,002
E.COLİ	EMS/100ml	>1600
FEKAL KOLİFORM	EMS/100ml	>1600
T.KOLİFORM	EMS/100ml	>1600
FEKAL STREPTEKOK	EMS/100ml	70

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KUYU SUYU		
PARAMETRE	**BİRİM**	**SONUÇ**
Ph	-	8.24
İletkenlik	ms	0.384
Çözünmüş Oksijen	mg/L	6.2
KİMYASAL OKSİJEN İHTİYACI	mg/L	152.6
BİYOLOJİK OKSİJEN İHTİYACI	mg/L	34.18
YAĞ GRES	mg/L	11.7
RENK	mg/L	49.22
AMONYUM AZOTU(NH4-N)	mg/L	0.22
TOPLAM KJELDAHL AZOTU	mg/L	0.98
NİTRİT AZOTU (NO2-)	mg/L	0.003
NİTRİT AZOTU (NO3-)	mg/L	0.015
TOPLAM AZOT	mg/L	0.998
ORTO FOSFAT FOSFORU (PO4-P)	mg/L	0.939
TOPLAM FOSFOR	mg/L	1.106
FLORÜR (F-)	mg/L	<0.1
KLORÜR (Cl-)	mg/L	162.5
BROMÜR (Br-)	mg/L	<0.1
SÜLFAT ($SO4^{-}2$)	mg/L	65.72
SODYUM (Na)	mg/L	8.445
MAGNEZYUM (Mg)	mg/L	14.307
POTASYUM (K)	mg/L	0.183
KALSİYUM (Ca)	mg/L	61.182
MANGAN	mg/L	0.0007
SELENYUM	mg/L	0.0002
SÜLFÜR	mg/L	<0,002
E.COLİ	EMS/100ml	7.8
FEKAL KOLİFORM	EMS/100ml	13
T.KOLİFORM	EMS/100ml	13
FEKAL STREPTEKOK	EMS/100ml	<1.8

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MANSAP		
PARAMETRE	**BİRİM**	**SONUÇ**
Ph	-	7.21
İletkenlik	ms	1.302
Çözünmüş Oksijen	mg/L	6.03
KİMYASAL OKSİJEN İHTİYACI	mg/L	352.8
BİYOLOJİK OKSİJEN İHTİYACI	mg/L	79.73
YAĞ GRES	mg/L	23.4
RENK	mg/L	86.8
AMONYUM AZOTU(NH4-N)	mg/L	1.38
TOPLAM KJELDAHL AZOTU	mg/L	7.12
NİTRİT AZOTU (NO2-)	mg/L	1.56
NİTRİT AZOTU (NO3-)	mg/L	4.78
TOPLAM AZOT	mg/L	13.46
ORTO FOSFAT FOSFORU (PO4-P)	mg/L	1.582
TOPLAM FOSFOR	mg/L	2.819
FLORÜR (F-)	mg/L	<0.1
KLORÜR (Cl-)	mg/L	14.9
BROMÜR (Br-)	mg/L	<0.1
SÜLFAT ($SO4^{-}2$)	mg/L	4.79
SODYUM (Na)	mg/L	152.098
MAGNEZYUM (Mg)	mg/L	20.405
POTASYUM (K)	mg/L	4.997
KALSİYUM (Ca)	mg/L	79.48
MANGAN	mg/L	0.0287
SELENYUM	mg/L	0.0004
SÜLFÜR	mg/L	<0,002
E.COLİ	EMS/100ml	23
FEKAL KOLİFORM	EMS/100ml	23
T.KOLİFORM	EMS/100ml	23
FEKAL STREPTEKOK	EMS/100ml	<1.8

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TÜRKAK Test TS EN ISO/IEC 17025 AB-0415-T

AB-0415-T
KD-2025-006B-00
03-25

MÜŞTERİNİN ADI/ADRESİ:	**GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ/YAĞDÖVER, YAĞDÖVER YOLU, 27270 ŞAHİNBEY/GAZİANTEP**
TEKLİF NUMARASI:	**T-2025-227-00**
NUMUNENİN ADI VE TARİFİ:	**-**
NUMUNENİN KABUL TARİHİ:	**-**
AÇIKLAMALAR:	**ÇEVRESEL GÜRÜLTÜ ÖLÇÜMÜ RAPORU**
DENEYİN YAPILDIĞI TARİH:	**11-13.03.2025**
RAPORUN SAYFA SAYISI:	**43 SAYFA**

Ankalab Çevre Analiz Laboratuvarı, TÜRKAK' tan AB-0415-T Dosya numarası ile, TS EN ISO/IEC 17025:2017 Standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile Karşılıklı Tanıma Anlaşması İmzalamıştır.

Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

Yayım tarihi	Deney Sorumlusu	Raporu Yazan Personel	Onaylayan/Tarih
27.03.2025	**Çağrı Dalkurt** **Çevre Mühendisi** **e-imzalıdır.**	**Mustafa AYTEN** **Kimyager** **e-imzalıdır.**	**Soner GÜLCAN** **Kimya Mühendisi** **e-imzalıdır.** **27.03.2025**

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İÇİNDEKİLER

1. GİRİŞ; 2

TESİS, GAZİANTEP İLİ YAĞDÖVER YOLU, 27270 ŞAHİNBEY ADRESİNDE KURULU OLUP; ATIKSU ARITMA TESİSİ OLARAK FAALİYET GÖSTERMEKTEDİR. 2

2. ÖLÇÜM NOKTASI VE EN YAKIN YERLEŞİM YERİ HAKKINDA BİLGİLER (MESAFE, YÖN VB.) 2

3.ÖLÇÜMLER YAPILIRKEN ESAS ALINAN STANDART VEYA ÖLÇÜM YÖNTEMİNİN AŞAMALARI İLE AÇIKLANMASI (KULLANILAN STANDART, AĞIRLIKLAMA, OKTAV BANT SEÇİMİ VB), 3

4.KALİBRASYON METODU VE KALİBRASYON SEVİYELERİ 3

5. ÖLÇÜMLERİN YAPILDIĞI ZAMAN DİLİMİNDEKİ METEOROLOJİK FAKTÖRLERİN MÜMKÜN OLDUĞU SÜRECE ÖLÇÜLEREK TANIMLANMASI VE ÖLÇÜM SONUÇLARI ÜZERİNDEKİ ETKİLERİNİN DEĞERLENDİRİLMESİ (RÜZGÂR HIZI/YÖNÜ, YAĞIŞ DURUMU, SICAKLIK V.B.), 3

6.ÖLÇÜM SONUÇLARI VE DEĞERLENDİRİLMESİ 4

EKLER

EK-1

YETERLİLİK BELGELERİMİZ

EK-2

CİHAZ KALİBRASYON BELGELERİ

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1. GİRİŞ;

Tesis, GAZİANTEP ili YAĞDÖVER YOLU, 27270 ŞAHİNBEY adresinde kurulu olup; Atıksu arıtma tesisi olarak faaliyet göstermektedir.

2. ÖLÇÜM NOKTASI VE EN YAKIN YERLEŞİM YERİ HAKKINDA BİLGİLER (MESAFE, YÖN VB.)

Ölçümlerin gerçekleştirildiği noktalar ve mevcut tesise olan uzaklıkları aşağıdaki gibidir;

Şekil-1.1 Ölçüm Yapılan Noktalar Uydu Görüntüsü



Tablo-1 Ölçüm Noktalarının Mevcut Tesise olan uzaklıkları

Nokta	Mesafe (m)*	Koordinat
1	75	361100.00 d D/4089191.00 m K
2	450	360681.00 d D/4089523.00 m K

***Mesafeler yaklaşık alınmıştır.**

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Ölçümlerde TS 9315 ISO 1996-1 Akustik – Çevre gürültüsünün tarifi, ölçülmesi ve değerlendirilmesi - Bölüm 1: Temel büyüklükler ve değerlendirme işlemleri ve TS ISO 1996-2 Akustik - Çevre gürültüsünün tarifi, ölçülmesi ve değerlendirilmesi - Bölüm 2: Çevre gürültü seviyelerinin tayini standartları kullanılmıştır. Ölçüm cihazı olarak Svantek Marka Svan957 Svantek958 marka cihaz kullanılmıştır. 1/3 Oktav Bandta, A, C ve Z ağırlıklandırılmalarda ölçümler yapılmıştır.

4.KALİBRASYON METODU VE KALİBRASYON SEVİYELERİ

Çevre Analiz Laboratuvarlarının kalibrasyon yetkisi bulunmayıp kalibrasyonlar Türk akreditasyon kurumu tarafından akredite edilmiş kalibrasyon laboratuvarlarına yaptırılmış olup kalibrasyon belgeleri Ek-2'de sunulmuştur.

5. ÖLÇÜMLERİN YAPILDIĞI ZAMAN DİLİMİNDEKİ METEOROLOJİK FAKTÖRLERİN MÜMKÜN OLDUĞU SÜRECE ÖLÇÜLEREK TANIMLANMASI VE ÖLÇÜM SONUÇLARI ÜZERİNDEKİ ETKİLERİNİN DEĞERLENDİRİLMESİ (RÜZGÂR HIZI/YÖNÜ, YAĞIŞ DURUMU, SICAKLIK V.B.),

Tesiste ölçüm yapılan tarihlerde ortalama sıcaklık 9 ^{0}C olup rüzgar hızı ortalama 0,4 m/s dir. Ölçüm zaman diliminde ölçümü etkileyecek yağış vb. meteorolojik olay olmamıştır.

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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6.ÖLÇÜM SONUÇLARI VE DEĞERLENDIRILMESI

Tablo 2 - G1 Noktasına Ait Ölçüm Sonuçları Tablosu

Tarih	Saat	Leq(dbA)	Lcmax(dbC)
11.03.2025	07:00:06	43.4	69.2
11.03.2025	19:00:06	43.6	69.9
11.03.2025	23:00:06	44.9	55.9
12.03.2025	07:00:06	43.4	77.9
12.03.2025	19:00:06	43.7	65.9
12.03.2025	23:00:06	43.4	64.8

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Day	Hour	Profile	Filter	Detector	Elapsed ti	OvlT	Underran	Units	Lpeak	Lmax	Lmin	SPL	Leq	SEL	Lden	Ltm3	LTeq	LEPd
d.MM.yyyy	HH:mm:ss				hh:mm:ss	%												
11.03.2025	07:00:06	P1	A	Fast	12:00:00	0	0	dB	89.4	67.4	29	39.1	43.4	70.21	43.4	51.3	53.4	42.82
11.03.2025	07:00:06	P2	C	Fast	12:00:00	0	0	dB	91.4	69.2	42.1	53	54.9	81.71	54.9	58.6	59.4	54.32
11.03.2025	07:00:06	P3	A	Impulse	12:00:00	0	0	dB	89.4	72.2	31.9	41	43.4	70.21	43.4	56.4	57.9	42.82

Day	Hour	Profile	Filter	Detector	Elapsed ti	OvlT	Underran	Units	Lpeak	Lmax	Lmin	SPL	Leq	SEL	Lden	Ltm3	LTeq	LEPd
d.MM.yyyy	HH:mm:ss				hh:mm:ss	%												
11.03.2025	19:00:06	P1	A	Fast	04:00:00	0	0	dB	78.9	64.3	31.1	38.9	43.6	70.41	48.6	51.8	53.6	43.02
11.03.2025	19:00:06	P2	C	Fast	04:00:00	0	0	dB	81.6	69.9	40.9	58.4	54.4	81.21	59.4	59.7	60.6	53.82
11.03.2025	19:00:06	P3	A	Impulse	04:00:00	0	0	dB	78.9	67.1	35.6	46.5	43.6	70.41	48.6	55.4	56.7	43.02

Day	Hour	Profile	Filter	Detector	Elapsed ti	OvlT	Underran	Units	Lpeak	Lmax	Lmin	SPL	Leq	SEL	Lden	Ltm3	LTeq	LEPd
d.MM.yyyy	HH:mm:ss				hh:mm:ss	%												
11.03.2025	23:00:06	P1	A	Fast	08:00:00	0	0	dB	67.8	46.7	43.8	46.7	44.9	44.9	49.9	46.7	46.7	44.32
11.03.2025	23:00:06	P2	C	Fast	08:00:00	0	0	dB	67.8	55.9	54.2	55.9	54.8	54.8	59.8	55.9	55.9	54.22
11.03.2025	23:00:06	P3	A	Impulse	08:00:00	0	0	dB	67.8	49.1	46.3	49.1	44.9	44.9	49.9	49.1	49.1	44.32

Day	Hour	Profile	Filter	Detector	Elapsed ti	OvlT	Underran	Units	Lpeak	Lmax	Lmin	SPL	Leq	SEL	Lden	Ltm3	LTeq	LEPd
d.MM.yyyy	HH:mm:ss				hh:mm:ss	%												
12.03.2025	07:00:06	P1	A	Fast	12:00:00	0	0	dB	82.8	67.6	19.5	27	43.4	68.17	48.4	52	52	42.82
12.03.2025	07:00:06	P2	C	Fast	12:00:00	0	0	dB	87.4	77.9	37.9	57	53	77.77	58	62	62.1	52.42
12.03.2025	07:00:06	P3	A	Impulse	12:00:00	0	0	dB	82.8	70.5	19.8	28.2	43.4	68.17	48.4	55.8	56.4	42.82

Day	Hour	Profile	Filter	Detector	Elapsed ti	OvlT	Underran	Units	Lpeak	Lmax	Lmin	SPL	Leq	SEL	Lden	Ltm3	LTeq	LEPd
d.MM.yyyy	HH:mm:ss				hh:mm:ss	%												
12.03.2025	19:00:06	P1	A	Fast	04:00:00	0	0	dB	80.7	58	33.2	44.3	43.7	68.47	48.7	46.8	47.9	43.12
12.03.2025	19:00:06	P2	C	Fast	04:00:00	0	0	dB	81.2	65.9	42.9	54.5	52.6	77.37	57.6	55.6	56.3	52.02
12.03.2025	19:00:06	P3	A	Impulse	04:00:00	0	0	dB	80.7	62.8	34.2	45.5	43.7	68.47	48.7	49.8	51.2	43.12

Day	Hour	Profile	Filter	Detector	Elapsed ti	OvlT	Underran	Units	Lpeak	Lmax	Lmin	SPL	Leq	SEL	Lden	Ltm3	LTeq	LEPd
d.MM.yyyy	HH:mm:ss				hh:mm:ss	%												
12.03.2025	23:00:06	P1	A	Fast	08:00:00	0	0	dB	78.1	55.4	29.2	36.2	43.4	64.33	48.4	48	48.6	42.82
12.03.2025	23:00:06	P2	C	Fast	08:00:00	0	0	dB	75.8	64.8	44.1	51.2	54.5	75.43	59.5	57.5	58.1	53.92
12.03.2025	23:00:06	P3	A	Impulse	08:00:00	0	0	dB	78.1	58.8	31.2	40.1	43.4	64.33	48.4	51.7	52.4	42.82

Tablo 3- G2 Noktasına Ait Ölçüm Sonuçları Tablosu

Tarih	Saat	Leq(dbA)	Lcmax(dbC)
11.03.2025	07:00:11	47.8	70.2
11.03.2025	19:00:11	48.6	73.1
11.03.2025	23:00:11	48.6	84.1
12.03.2025	07:00:11	47.1	79.8
12.03.2025	19:00:11	47.5	82.2
12.03.2025	23:00:11	48.0	76.3

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AB-0415-T
KD-2025-006B-00
03-25

Day	Hour	Profile	Filter	Detector	Elapsed ti	OvlT	Underran	Units	Lpeak	Lmax	Lmin	SPL	Leq	SEL	Lden	Ltm3	LTeq	LEPd
d.MM.yyyy	HH:mm:ss				hh:mm:ss	%												
11.03.2025	07:00:11	P1	A	Fast	12:00:00	0	0	dB	86.6	66.4	35.5	53.9	47.8	74.61	47.8	53.8	55	47.22
11.03.2025	07:00:11	P2	C	Fast	12:00:00	0	0	dB	83.8	70.2	49.4	63.1	59	85.81	59	61.8	62.4	58.42
11.03.2025	07:00:11	P3	A	Impulse	12:00:00	0	0	dB	86.6	69.3	37.8	56.1	47.8	74.61	47.8	56.8	58.2	47.22

Day	Hour	Profile	Filter	Detector	Elapsed ti	OvlT	Underran	Units	Lpeak	Lmax	Lmin	SPL	Leq	SEL	Lden	Ltm3	LTeq	LEPd
d.MM.yyyy	HH:mm:ss				hh:mm:ss	%												
11.03.2025	19:00:11	P1	A	Fast	04:00:00	0	0	dB	93.8	74.2	30.8	48.7	48.6	75.41	58.6	56.1	58	48.02
11.03.2025	19:00:11	P2	C	Fast	04:00:00	0	0	dB	92.5	73.1	41.6	61.3	57.9	84.71	67.9	63.3	63.8	57.32
11.03.2025	19:00:11	P3	A	Impulse	04:00:00	0	0	dB	93.8	77.5	34.2	50.8	48.6	75.41	58.6	59.5	61.3	48.02

Day	Hour	Profile	Filter	Detector	Elapsed ti	OvlT	Underran	Units	Lpeak	Lmax	Lmin	SPL	Leq	SEL	Lden	Ltm3	LTeq	LEPd
d.MM.yyyy	HH:mm:ss				hh:mm:ss	%												
11.03.2025	23:00:11	P1	A	Fast	08:00:00	0	0	dB	77.6	63.9	32.9	52.4	48.6	75.41	58.6	52.4	53.6	48.02
11.03.2025	23:00:11	P2	C	Fast	08:00:00	0	0	dB	96.2	84.1	41.7	58	57	83.81	67	64.5	66.2	56.42
11.03.2025	23:00:11	P3	A	Impulse	08:00:00	0	0	dB	77.6	65.9	37.8	52.9	48.6	75.41	58.6	54.5	55.3	48.02

Day	Hour	Profile	Filter	Detector	Elapsed ti	OvlT	Underran	Units	Lpeak	Lmax	Lmin	SPL	Leq	SEL	Lden	Ltm3	LTeq	LEPd
d.MM.yyyy	HH:mm:ss				hh:mm:ss	%												
12.03.2025	07:00:11	P1	A	Fast	12:00:00	0	0	dB	90	76.6	33.3	47.2	47.1	73.91	57.1	55.5	57.5	46.52
12.03.2025	07:00:11	P2	C	Fast	12:00:00	0	0	dB	89.9	79.8	42.5	53.5	56	82.81	66	61.2	62.6	55.42
12.03.2025	07:00:11	P3	A	Impulse	12:00:00	0	0	dB	90	79.5	36.2	50.8	47.1	73.91	57.1	59.1	61.1	46.52

Day	Hour	Profile	Filter	Detector	Elapsed ti	OvlT	Underran	Units	Lpeak	Lmax	Lmin	SPL	Leq	SEL	Lden	Ltm3	LTeq	LEPd
d.MM.yyyy	HH:mm:ss				hh:mm:ss	%												
12.03.2025	19:00:11	P1	A	Fast	04:00:00	0	0	dB	78.6	61.1	28.5	34.6	47.5	74.31	57.5	50.2	51.1	46.92
12.03.2025	19:00:11	P2	C	Fast	04:00:00	0	0	dB	94	82.2	40.3	44.3	59.8	86.61	69.8	65.1	66.4	59.22
12.03.2025	19:00:11	P3	A	Impulse	04:00:00	0	0	dB	78.6	63.7	30	40	47.5	74.31	57.5	52.1	53.1	46.92

Day	Hour	Profile	Filter	Detector	Elapsed ti	OvlT	Underran	Units	Lpeak	Lmax	Lmin	SPL	Leq	SEL	Lden	Ltm3	LTeq	LEPd
d.MM.yyyy	HH:mm:ss				hh:mm:ss	%												
12.03.2025	23:00:11	P1	A	Fast	08:00:00	0	0	dB	88.6	71.7	36	53.6	48	74.81	53	54.8	56.4	47.42
12.03.2025	23:00:11	P2	C	Fast	08:00:00	0	0	dB	88.8	76.3	46.4	56.3	56.4	83.21	61.4	61.1	62.3	55.82
12.03.2025	23:00:11	P3	A	Impulse	08:00:00	0	0	dB	88.6	74.6	36.4	58	48	74.81	53	58.2	59.4	47.42

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.

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EK-1

YETERLİLİK BELGELERİMİZ

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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Türk Akreditasyon Kurumu

AKREDİTASYON SERTİFİKASI

Deney Laboratuvarı olarak faaliyet gösteren,

ANKALAB ÇEVRE ANALİZ LABORATUVARI ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMALIK SANAYİ VE TİCARET LİMİTED ŞİRKETİ

Merkez Adres: ATA MAH. 1069 CAD. No:3/1 ÇANKAYA/ANKARA Ankara / Türkiye

TÜRKAK tarafından yapılan denetim sonucunda TS EN ISO/IEC 17025:2017 standardına göre Ek'te yer alan kapsamlarda akredite edilmiştir.

Akreditasyon No : AB-0415-T

Akreditasyon Tarihi : 07.11.2010

Revizyon Tarihi / No : 25.02.2025 / 15

Bu Sertifika, yukarıda açık adı ve adresi yazılı Kuruluşun TS EN ISO/IEC 17025:2017 Standardına, ilgili Yönetmelik ve Tebliğlere uygunluğunu sürdürmesi halinde **04.07.2027** tarihine kadar geçerlidir.

Gülden Banu Müderrisoğlu
Genel Sekreter

Türk Akreditasyon Kurumu (TÜRKAK) ISO/IEC 17025 alanında Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile çok taraflı anlaşma (MLA/MRA) imzalamıştır.

Bu belge 5070 sayılı elektronik imza kanununa göre Gülden Banu Müderrisoğlu tarafından güvenli elektronik imza ile imzalanmıştır. Evrakı belgeyi doğrulamak için QR kodunu kullanabilirsiniz.

F701-040 +90 312 410 82 00 - www.turkak.org.tr

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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FR 17 REV 04 10.2024

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Akreditasyon Sertifikası Eki (Sayfa 5/20)

Akreditasyon Kapsamı

ANKALAB ÇEVRE ANALİZ LABORATUVARI ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMALIK SANAYİ VE TİCARET LİMİTED ŞİRKETİ

Akreditasyon No: AB-0415-T
Revizyon No: 15 Tarih: 25.02.2025

Deney Laboratuvarı

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Deniz Suyu	Yüzey Aktif Madde (MBAS) Tayini Ön İşlem: Sublation Aparatı ile Ayırma Ölçüm: Spektrofotometrik Metot	SM 5540 B SM 5540 C
Atık	Katı Atıklardan Numune Alma	TS 12090
Arıtma Çamuru	Kanalizasyon ve Su Arıtma Tesislerinden Çamur Numunesi Alma	TS EN ISO 5667-13
Arıtma Çamuru	Elektriksel İletkenlik Tayini Elektrometrik Metot	TS ISO 11265
Toprak	Yüzey Topraktan Numune Alma, Numunelerin Taşınma ve Muhafazası	TS 9923
Toprak	Elektriksel İletkenlik Tayini Elektrometrik Metot	TS ISO 11265
Toprak	pH Tayini Elektrometrik Metot	TS ISO 10390
Baca Gazı	Sabit Kaynak Emisyonları-Tozun Düşük Aralıktaki Kütle Derişiminin Tayini (5-50 mg/m³) Gravimetrik Metot	TS EN 13284-1
Baca Gazı	Sabit Kaynak Emisyonları-Baca Dışı Örnekleme ile Toz Emisyon Miktarının Tayini Gravimetrik Metot	EPA Metot 5
Baca Gazı	Sabit Kaynak Emisyonları-Baca Gazlarında Düşük Derişimlerde Bulunan Gaz Halindeki Toplam Organik Karbonun Kütle Derişiminin Tayini FID Analizörü	TS EN 12619 *
Akustik-Gürültü	Akustik-Çevresel Gürültünün Tanımı, Ölçümü ve Değerlendirilmesi - Bölüm 2: Ses Basıncı Seviyelerinin Belirlenmesi	TS ISO 1996-2
Atıksu	Serbest Klor Tayini Spektrofotometrik Metot	SM 4500-Cl G
Atıksu	Metilen Mavisi ile Reaksiyon Veren Yüzey Aktif Maddeler (MBAS) Tayini Spektrofotometrik Metot	SM 5540 C SM 5540 B
Su	Metilen Mavisi ile Reaksiyon Veren Yüzey Aktif Maddeler (MBAS) Tayini Spektrofotometrik Metot	SM 5540 C SM 5540 B
Deniz Suyu	Işık Geçirgenliği/Seki Diski Derinliği Tayini Disk Metodu	TS EN ISO 7027-2
Baca Gazı	Sabit Kaynak Emisyonları-Nem Probu ile Nem Tayini (≤180 °C baca sıcaklığı için)	İşletme İçi Metot "TL31 Rev.01"

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FR 17 REV 04 10.2024

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Akreditasyon Sertifikası Eki (Sayfa 7/20)

Akreditasyon Kapsamı

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Akreditasyon No: AB-0415-T
Revizyon No: 15 Tarih: 25.02.2025

Deney Laboratuvarı

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Web Sitesi : www.ankalab.com.tr

Akustik-Gürültü	Çoklu Gürültü Kaynağına Sahip Sanayi Tesislerinde Yapılan Ses Basıncı Düzeyi Ölçümlerinden Ses Gücü Düzeyinin (ΔL_{ip}, ΔL_{if}, ΔL_{iM}, ΔL_{ic}, L_{pA}, L_w) Tespiti	TS ISO 8297
Titreşim	Binalarda Titreşimin Ölçülmesi ve Yapı Hasarının Tespiti (v, a, V)	TS ISO 4866
Titreşim	Madencilik Faaliyetleri Sorucunda Oluşan Hava Şoku ve Yer Titreşiminin Ölçülmesi (a, v)	TS 10354
Su	Yeraltı Sularından Numune Alma	TS ISO 5667-11
Su	Göl ve Göletlerden Numune Alma	TS ISO 5667-4
Su	Çözünmüş Oksijen Tayini Membran Elektrot Metodu	SM 4500-O G
Atıksu	Bulanıklık Tayini Nefelometrik Metot	SM 2130 B
Atıksu	Fenol Tayini Ön İşlem: Distilasyon Metodu Ölçüm: Spektrofotometrik Metot	SM 5530 B SM 5530 C
Su	Nitrat/Nitrat Azotu Tayini Spektrofotometrik Metot	SM 4500-NO_3^- E
Atıksu	Nitrat/ Nitrat Azotu Tayini Spektrofotometrik Metot	SM 4500-NO_3^- E
Arıtma Çamuru	pH Tayini Elektrometrik Metot	TS ISO 10390
Su	Işık Geçirgenliği/Seki Diski Derinliği Tayini Disk Metodu	TS EN ISO 7027-2
Titreşim	Hidrolik Güç Kaynakları ve Pompa Tesisatlarındaki Makine Setlerinin Dönmeyen Parçalarında Titreşimin Ölçülmesi ve Değerlendirilmesi (V_{rms})	ISO 20816-5

Bu belge 5070 sayılı elektronik imza kanununa göre Gülden Banu Müderrisoğlu tarafından güvenli elektronik imza ile imzalanmıştır. E-imzalı belgeyi doğrulamak için QR kodunu kullanabilirsiniz.

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Akreditasyon Sertifikası Eki (Sayfa 6/20)

Akreditasyon Kapsamı

ANKALAB ÇEVRE ANALİZ LABORATUVARI ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMALIK SANAYİ VE TİCARET LİMİTED ŞİRKETİ

Akreditasyon No: AB-0415-T
Revizyon No: 15 Tarih: 25.02.2025

Deney Laboratuvarı

Adres :	Telefon : +90 312 472 6664 Fax : +90 312 473 6215 E-Posta : info@ankalab.com.tr Web Sitesi : www.ankalab.com.tr
ATA MAH. 1069 CAD. No:3/1 ÇANKAYA/ANKARA Ankara / Türkiye	

Akustik-Gürültü	Akustik-Çevre Gürültüsünün Tarifi, Ölçülmesi ve Değerlendirilmesi - Bölüm 1: Temel Büyüklükler ve Değerlendirme İşlemleri	TS ISO 1996-1
Akustik-Gürültü	Sesin Dışarıda Yayılırken Azalması - Bölüm 2: Genel Hesaplama Yöntemi	TS ISO 9613-2
Akustik-Gürültü	Gürültü Kaynaklarının Ses Gücü Seviyelerinin ve Ses Enerji Seviyelerinin Ses Basıncı Kullanılarak Belirlenmesi - Yansıtıcı Bir Düzlem Üzerindeki Temel Olarak Serbest Bir Alanda Uygulanan Mühendislik Yöntemleri	TS EN ISO 3744
Akustik-Gürültü	Gürültü Kaynaklarının Ses Gücü Seviyelerinin ve Ses Enerji Seviyelerinin Ses Basıncı Kullanılarak Belirlenmesi - Yansıtıcı Bir Düzlem Üzerinde Çevreleyici Bir Ölçüm Yüzeyinin Kullanıldığı Gözlem Yöntemi	TS EN ISO 3746

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ANKALAB ÇEVRE ANALİZ LABORATUVARI
ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMANLIK SAN. ve TİC. LTD. ŞTİ.
Adres: Ata Mahallesi 1069. Sokak No:3/1 Çankaya/ANKARA
Tel: 0 312 472 66 64 Fax: 0 312 473 62 15
e-mail: info@ankalab.com.tr

EK-2

CİHAZ KALİBRASYON BELGELERİ

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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PROTOS
KALİBRASYON ÖLÇÜM EĞİTİM VE
DANIŞMANLIK HİZMETLERİ TİCARET LTD. ŞTİ.
KALİBRASYON LABORATUVARI
Mehmet Akif Mh. Tavukçuyolu Cd. No: 150/1 Ümraniye İSTANBUL

TÜRKAK Kalibrasyon TS EN ISO/IEC 17025 AB-0078-K

Kalibrasyon Sertifikası
Calibration Certificate

AB-0078-K
08AK0323
03-23

Cihazın Sahibi/ adresi *Customer / address*	: ANKALAB ÇEVRE ANALİZ LABORATUVARI SAN. TİC. LTD. ŞTİ Gökkuşağı Mahallesi 1200. Sk. 12/13 Dikmen / Çankaya ANKARA
İstek Numarası *Order No.*	: 422/2023
Makine/Cihaz *Instrument/Device*	: Ses Seviyesi Ölçer
İmalatçı *Manufacturer*	: SVANTEK
Tip *Type*	: SVAN957
Seri Numarası *Serial Number*	: 12366
Kalibrasyon Tarihi *Date of Calibration*	: 03.03.2023
Sertifikanın Sayfa Sayısı *Number of pages of the Certificate*	: 5

Bu kalibrasyon sertifikası, Uluslararası Birimler Sisteminde(SI) tanımlanmış birimleri realize eden ulusal ölçüm standardlarına izlenebilirliği belgeler.
This calibration certificate documents the traceability to national standards, which realize the unit of measurement according to the International System of Units (SI).

Kalibrasyon laboratuvarı olarak faaliyet gösteren PROTOS, TÜRKAK'tan AB-0078-K ile TS ISO IEC 17025: 2017 standardına göre akredite edilmiştir.

PROTOS accredited by TÜRKAK under registration number AB-0078-K for TS ISO IEC 17025: 2017 as Calibration Laboratory"

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Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

The measurements, the uncertainties with confidence probability and calibration methods are given on the following pages which are part of this certificate.

Mühür/Kaşe *Seal*	Yayınlandığı Tarih *Date*	Kalibrasyonu Yapan *Calibrated by*	Onaylayan *Approval* *Tarih/ Date*
PROTOS KALİBRASYON	03.03.2023	Haydar ÖZBEK	Kadir Balcan FIRAT

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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KALİBRASYON LABORATUVARI

AB-0078-K
08AK0323
03-23

1. Test Edilen Cihaz

Adı	Üretici	Model / Tip	Seri No	Ölçme aralığı veya Tanımlama
Ses Seviyesi Ölçer	SVANTEK	SVAN957	12366	SINIF:1 Frekans Ağırlığı: A,C,Lin
Ön Yükselteç	SVANTEK	SV12L	24173	Zaman Ağırlığı : Fast, Slow
Mikrofon	ACO	7052E	71251	

2. Kalibrasyonun Yapıldığı Yer : Protos Kalibrasyon Laboratuvarı

3. Cihazın Laboratuvara Kabul Tarihi : 02.03.2023

4. Kalibrasyonda Kullanılan Referans Cihazlar :

Adı	Üretici	Model / Tip	Seri No	İzlenebilirlik
Çok Fonksiyonlu Akustik Kalibratör	B&K	4226	2692346	TUBİTAK-UME-G2AK 0114/19.07.2022

5. Kalibrasyon Prosedürü : PR702.08

Ses düzeyi ölçerin (SLM) A-Ağırlıklı, C-Ağırlıklı ve LIN-Ağırlıklı filtrelerinin 31,5 Hz-16 kHz frekans aralığında tepkileri, doğrusallığı, F:Fast ve S:Slow zaman ağırlıklarının tepkileri ve yarım saatlik çalışmada kararlılığı kontrol edildi.Kalibrasyon sırasında referans cihaz tarafından üretilen ses basınç düzeyi değerleri ortam şartlarına göre düzeltilerek dikkate

6. Çevre Şartları

Sıcaklık: (24,3)°C Bağıl Nem:(42,7)%rh
Basınç: (100,0)kPa

7. Kalibrasyon Sonuçları

Ayar Öncesi Değer : 93,5 **dB**
Ayar Sonrası Değer : 94,1 **dB**

Bu sertifika, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz. 2/5
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1. Kalibrasyon Sonuçları

Tablo 1. SLM A-ağırlıklı filtrenin frekans tepkileri sonuçları

Frekans (Hz)	Nominal SPL (dB)	A-ağırlıklı filtrenin karakteristiği (dB)	Hesaplanan SPL (dB)	Ölçülen SPL (dB)	Tepki Farkı (dB)	Tolerans (dB)
31	93,9	-39,4	54,5	54,6	0,1	± 1,5
63	94,0	-26,2	67,8	68,1	0,3	± 1,0
125	94,0	-16,1	77,9	78,1	0,2	± 1,0
250	94,0	-8,6	85,4	85,5	0,1	± 1,0
500	94,0	-3,2	90,8	90,9	0,1	± 1,0
1000	94,0	0,0	94,0	94,1	0,1	± 0,7
2000	94,0	1,2	95,2	95,4	0,2	± 1,0
4000	94,0	1,0	95,0	95,1	0,1	± 1,0
8000	93,9	-1,1	92,8	92,0	-0,8	+1,5;-2,5
12500	93,8	-4,3	89,5	87,6	-1,9	+2,0;-5,0
16000	93,6	-6,6	87,0	85,3	-1,7	+2,5;-16,0

Tablodaki değerler SLM A-ağırlıklı filtre ve Fast modunda iken elde edilmiştir.

Tablo 2. SLM C-ağırlıklı filtrenin frekans tepkileri sonuçları

Frekans (Hz)	Nominal SPL (dB)	C-ağırlıklı filtrenin karakteristiği (dB)	Hesaplanan SPL (dB)	Ölçülen SPL (dB)	Tepki Farkı (dB)	Tolerans (dB)
31	93,9	-3,0	90,9	91,1	0,2	± 1,5
63	94	-0,8	93,2	93,5	0,3	± 1,0
125	94	-0,2	93,8	94,0	0,2	± 1,0
250	94	0,0	94,0	94,1	0,1	± 1,0
500	94	0,0	94,0	94,1	0,1	± 1,0
1000	94	0,0	94,0	94,1	0,1	± 0,7
2000	94	-0,2	93,8	93,9	0,1	± 1,0
4000	94	-0,8	93,2	93,3	0,1	± 1,0
8000	93,9	-3,0	90,9	90,1	-0,8	+1,5;-2,5
12500	93,8	-6,2	87,6	86,9	-0,7	+2,0;-5,0
16000	93,6	-8,5	85,1	85,0	-0,1	+2,5;-16,0

Tablodaki değerler SLM C-ağırlıklı filtre ve Fast modunda iken elde edilmiştir.

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Tablo 3. SLM Lin-ağırlıklı filtrenin frekans tepkileri sonuçları

Frekans (Hz)	Nominal SPL (dB)	Ölçülen SPL (dB)	Tepki Farkı (dB)	Tolerans (dB)
31	93,9	94,1	0,2	± 1,5
63	94	94,1	0,1	± 1,0
125	94	94,1	0,1	± 1,0
250	94	94,1	0,1	± 1,0
500	94	94,1	0,1	± 1,0
1000	94	94,1	0,1	± 0,7
2000	94	94,1	0,1	± 1,0
4000	94	94,0	0,0	± 1,0
8000	93,9	93,8	-0,1	+1,5;-2,5
12500	93,8	93,5	-0,3	+2,0;-5,0
16000	93,6	93,0	-0,6	+2,5;-16,0

Tablodaki değerler SLM Lin-ağırlıklı filtre ve Fast modunda iken elde edilmiştir.

Tablo 4. SLM 1 kHz'deki doğrusallık kontrolü sonuçları

Frekans (Hz)	Uygulanan		Ölçülen		Tepki Farkı (dB)	Tolerans
	SPL (dB)	Seviye	SPL (dB)	Seviye		
1000	94,0	0,0	94,1	0,0	0,0	±0,3
	104,0	10,0	104,1	10,0	0,0	
	114,0	20,0	114,1	20,0	0,0	

Tablodaki değerler SLM A-ağırlıklı filtre ve Fast modunda iken elde edilmiştir.

Tablo 5. SLM Zaman Ağırlıklı filtrelerinin Hızlı(Fast) ve Yavaş(Slow) Kontrolü Sonuçları

Frekans (Hz)	Hızlı			
	Nominal SPL (dB)	Ölçülen SPL (dB)	Tepki Farkı (dB)	Tolerans (dB)
1000	105,0	105,0	0,0	±0,5
2000	105,0	105,1	0,1	
4000	105,0	105,1	0,1	
Frekans (Hz)	Yavaş			
	Nominal SPL (dB)	Ölçülen SPL (dB)	Tepki Farkı (dB)	Tolerans (dB)
1000	101,9	102,0	0,1	±0,5
2000	101,9	102,1	0,2	
4000	101,9	102,1	0,2	

Tablodaki değerler SLM A-ağırlıklı filtre modunda iken elde edilmiştir.

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Tablo 6. SLM Yarım saatlik çalışmasında okunan değerdeki en büyük sapma sonuçları

İlk Değer SPL (dB)	Son Değer SPL (dB)	En büyük sapma * (dB)	Tolerans (dB)
94,1	94,1	0,0	± 0,3

*En büyük sapma, ölçülen değerdeki yarım saatlik okuma süresi boyunca olan değişimdir.
Tablodaki değerler SLM A-ağırlıklı filtre ve Fast modunda iken elde edilmiştir.

8. Ölçüm Belirsizliği
Ses düzeyi ölçerin kalibrasyonundaki belirsizlik 0,2 dB'dir.
Beyan edilen genişletilmiş ölçüm belirsizliği, standart belirsizliğin k=2 olarak alınan genişletme katsayısı ile çarpımı sonucunda bulunan değerdir ve %95 oranında güvenilirlik sağlamaktadır.

9. Görüşler, Açıklamalar
Kalibrasyon sonuçları sadece kalibrasyonu yapılan ses düzeyi ölçer cihazına aittir. Cihazın performansı için gerekli çevre şartlarında kullanımından ve uygun aralıklarla kalibrasyonunun sağlanmasından kullanıcı sorumludur.

10. Ölçüm Sonuçlarının Şartnamelere veya Standartlara Uygunluk Beyanı
Ölçüm sonuçları IEC 61672-1 standartında 1.Sınıf Ses Düzeyi Ölçerler için verilen toleranslarla karşılaştırılmıştır. Herhangi bir uygunluk beyanı talebi bulunmamaktadır.

11. Karar Kuralı
Karar kuralı yoktur.

Bu sertifika, laboratuvarın yazılı izni olmadan kısmen kopyalanıp çoğaltılamaz.
İmzasız ve mührüsüz sertifikalar geçersizdir.
This certificate shall not be reproduced other than in full except with the permission of the laboratory
Calibration certificates without signature and seal are not valid.

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Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
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AVL Kalibrasyon Laboratuarı

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TÜRKAK Kalibrasyon TS EN ISO/IEC 17025 AB-0089-K

AB-0089-K
234187
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KALİBRASYON SERTİFİKASI
Calibration Certificate

Cihazın Sahibi *Customer Name*	:	ANKALAB ÇEVRE ANALİZ LABORATUVARI LTD. ŞTİ. Ata Mah. 1069. Sok. No: 3/1 ÇANKAYA / ANKARA
İstek Numarası *Order No.*	:	T-1123-001
Makine / Cihaz *Instrument / Device*	:	Ses Seviyesi Ölçüm Cihazı / Ön Yükseltici / Mikrofon *Sound Level Meter*
İmalatçı *Manufacturer*	:	SVANTEK / SVANTEK / ACO
Tip *Type*	:	SVAN 958 / SV 12L / 7052E
Seri Numarası *Serial number*	:	23305 / 24173 / 71251
Kalibrasyon Tarihi *Date of calibration*	:	10.11.2023
Sertifika Sayfa Sayısı *Number of pages*	:	5

Bu kalibrasyon sertifikası, Uluslararası Birimler Sisteminde (SI) tanımlanmış birimleri realize eden ulusal ölçüm standartlarına izlenebilirliği belgeler.

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Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanınma antlaşmasını imzalamıştır.

The Turkish Accreditation Acency (TURKAK) is signatory to the multilateral agreements of the European co-operation for the Accreditation(EA) and of the international Laboratory Accreditation (ILAC) for the Mutual recognation of test reports.

Ölçüm sonuçları, genisletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

The measurements, the uncertainties with confidence probability and calibration methods are given on the following pages which are part of this certificate.

Mühür / Kaşe *Seal*	Yayım Tarihi *Publication Date*	Kalibrasyonu Yapan *Calibrated By*	Onaylayan / Tarih *Approval / Date*
AVL Kalibrasyon	10.11.2023	Fatma SOLGUNTEKİN Kalibrasyon Personeli *Calibration Responsible* e-imzalıdır	Younes NEVAYESHİRAZİ / 10.11.2023 Laboratuvar Müdürü *Laboratory Manager* e-imzalıdır

Bu sertifika 5070 sayılı kanununa göre güvenli elektronik imza ile imzalanmıştır. Belge teyidi için sayfalarda yer alan karekodu okutabilirsiniz.
This certificate is signed using secure digital signature according to article of law, number 5070. For confirmation, read the QR Code using QR Code reader.

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AB-0089-K
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1. Cihaza Ait Bilgiler
Device to be Calibrated

Cihazın Adı *Name of the Instrument*	:	Ses Seviyesi Ölçüm Cihazı / Ön Yükseltici / Mikrofon *Sound Level Meter*
İmalatçısı *Manufacturer*	:	SVANTEK / SVANTEK / ACO
Seri Numarası *Serial Number*	:	23305 / 24173 / 71251
Ölçüm Aralığı *Measuring Range*	:	25 dB - 140 dB
Bölüntüsü *Scale Division*	:	0,1
Tipi *Type*	:	SVAN 958 / SV 12L / 7052E

2. Cihazın Laboratuvara Kabul Tarihi : 09.11.2023
Date of Recipt of Device

3. Kalibrasyon Metodu
Calibration Method

Ölçüm tablolarında belirtilen tolerans değerler IEC 61672-1 standardından alınmıştır. Ölçümler IEC 61672-3 standardında tarif edilen testlere göre yapılmıştır. Bu testler PR.LBBR.501 Elektroakustik Ses Seviye Ölçerleri Periyodik Kalibrasyon Prosedürüne göre yapılmıştır. Ölçümlerden önce ses seviyesi ölçüm cihazı 94 dB 1000 Hz' de kalibre edilmiştir.

The tolerance values indicated in test results are taken from IEC 61672-1 standard. Sound level meter is calibrated according to tests which are described in IEC 61672-3. PR.LBBR.501 Procedure was used in calibration of the sound level meters. Sound level meter was calibrated before measurenment at 94 dB 1000 Hz.

4. Çevresel Şartlar
Environmental Conditions

Ortam Sıcaklığı *Ambient Temperature*	: (22 ± 3)	°C
Bağıl Nem *Relative Humidity*	: (47 ± 25)	%
Ortam Basıncı *Ambient Pressure*	: (912 ± 1)	mbar

5. Kalibrasyonda Kullanılan Referans Cihazlar
Reference Equipments Used During Calibration

Cihaz *Device*	İmalatçı *Manufacturer*	Seri No *Serial No*	Sertifika No *Certificate No*	İzlenebilirlik *Traceability*
Akustik - Mikrofon	G.R.A.S	162716 - 210532	02703	SPEKTRA
Akustik - Akustik Kalibratör	Brüel & Kjaer	2705957	02700	SPEKTRA
Sıcaklık ve Nem Ölçer	Extech	12081741	221776	AVL

Kalibrasyonlarımızda Spektra CS18 kalibrasyon sistemi ve yazılımları kullanılmaktadır.

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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6. Ölçüm Belirsizliği
Measurement Uncertainty

1000 Hz 114 dB Kalibrasyon *Calibration at frequency point 1000 Hz 114 dB*	: ± 0,16 dB	
Frekans Ağırlıklı Akustik Test *Acoustical Tests of Frequency Weighting*	: 31,5 Hz ile 2 kHz : ± 0,30 dB	2 kHz ile 8 kHz : ± 0,50 dB

7. Kalibrasyon Sonuçları
Calibration Results

7.1. 1000 Hz 114 dB Kalibrasyon
Calibration at frequency point 1000 Hz 114 dB
Ses Seviyesi Ölçüm Cihazları / Ses Basınç Seviyesi

Kalibrasyondan Önceki Değer *Value Before Calibration*	: 113,3 dB
Kalibrasyondan Sonraki Değer *Value After Calibration*	: 114 dB
Sapma *Deviation*	: -0,70 dB

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7.2. C - Frekans Ağırlıklı Akustik Test

Acoustical Signal Tests of a C - Frequency Weighting

Ses Seviyesi Ölçüm Cihazları / Ses Basınç Seviyesi

Frekans *Frequency* Hz	Uygulanan *Applied SPL* dB	Okunan Ses *Measured Sound Level* dB	Standart *Standard Deviation* %	Tepki *Response Difference* dB	C-Ağırlıklı Filtre *C-Weighted Filter Characterization* dB	Tepki Farkı *Response Deviation* dB	Tolerans *Tolerance* dB
31,50	85,08	83,50	0,09	-1,58	-3,00	1,42	±1,5
40,00	84,88	83,80	0,05	-1,08	-2,00	0,92	±1,0
50,00	84,96	84,50	0,01	-0,46	-1,30	0,84	±1,0
63,00	84,98	84,90	0,62	-0,08	-0,80	0,72	±1,0
80,00	84,98	85,10	0,02	0,12	-0,50	0,62	±1,0
100,00	85,01	85,30	0,03	0,29	-0,30	0,59	±1,0
125,00	84,99	85,30	0,05	0,31	-0,20	0,51	±1,0
160,00	84,99	85,30	0,11	0,31	-0,10	0,41	±1,0
200,00	85,01	85,40	0,06	0,39	0,00	0,39	±1,0
250,00	84,98	85,30	0,02	0,32	0,00	0,32	±1,0
315,00	84,98	85,30	0,03	0,32	0,00	0,32	±1,0
400,00	85,01	85,30	0,02	0,29	0,00	0,29	±1,0
500,00	84,99	85,30	0,04	0,31	0,00	0,31	±1,0
630,00	85,01	85,20	0,05	0,19	0,00	0,19	±1,0
800,00	85,04	85,20	0,03	0,16	0,00	0,16	±1,0
1000,00	85,01	85,10	0,01	0,09	0,00	0,09	±0,7
1250,00	85,01	85,00	0,02	-0,01	0,00	-0,01	±1,0
1600,00	85,01	84,80	0,01	-0,21	-0,10	-0,11	±1,0
2000,00	85,02	84,60	0,00	-0,42	-0,20	-0,22	±1,0
2500,00	85,01	84,30	0,01	-0,71	-0,30	-0,41	±1,0
3150,00	85,01	83,90	0,00	-1,11	-0,50	-0,61	±1,0
4000,00	85,01	83,20	0,00	-1,81	-0,80	-1,01	±1,0
5000,00	85,00	82,20	0,00	-2,80	-1,30	-1,50	±1,5
8000,00	74,05	68,60	0,00	-5,45	-3,00	-2,45	+1,5; -2,5

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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7.3. A - Frekans Ağırlıklı Akustik Seviye Doğrusallığı Testi

A - Frequency Weighted Acoustic Level Linearity Test

Ses Seviyesi Ölçüm Cihazları / Seviye Doğrusallığı Testi

Frekans *Frequency* Hz	Uygulanan *Applied SPL* dB	Okunan Ses *Measured Sound Level* dB	Standart *Standard Deviation* %	Tepki *Response Difference* dB	A-Ağırlıklı Filtre *A-Weighted Filter Characterization* dB	Tepki Farkı *Response Deviation* dB	Tolerans *Tolerance* dB
1000,00	74,04	74,10	0,27	0,06	0,00	0,06	±0,7
1000,00	84,01	84,10	0,01	0,09	0,00	0,09	±0,7
1000,00	94,02	94,10	0,01	0,08	0,00	0,08	±0,7
1000,00	104,03	104,10	0,01	0,07	0,00	0,07	±0,7
1000,00	114,02	114,00	0,00	-0,02	0,00	-0,02	±0,7
1000,00	123,63	123,70	0,00	0,07	0,00	0,07	±0,7

8. Uygunluk Beyanı

Statement of Compliance

Ölçüm sonuçları ve ölçüm belirsizliği yukarıda verilmiştir. Kullanıcı bunları dikkate alarak uygunluğuna karar vermelidir. Beyan edilen genişletilmiş belirsizlik değeri standart belirsizliğin normal dağılımı için; yaklaşık % 95 güvenirlik seviyesini sağlayan k=2 kapsam faktörü ile çarpımının sonucudur. Standart ölçüm belirsizliği GUM ve EA-4/02 dokümanlarına uygun olarak belirlenmiştir. Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı bir bölümüdür.

The measurement results and measurement uncertinity were given above. The user have to consider the results and decide compliance of the device. The reported expended uncertainity of measurement is stated as the standart uncertainity of multitude by coverage factor k=2, which for a normal distribution corresponds to covarage of approximately 95%. The standard measurement uncertainty is defined according to the GUM and EA-4/02documents. Measurement results, the expanded measurement uncertainty of measurement and calibration methods, is an integral part of the this certificate.

9. Açıklamalar

Remarks

Bu sertifikada bulunan sonuçlar cihazın kalibrasyon tarihindeki durumu kapsar ve uzun dönem kararlığı hakkında bir öngörü içermez.

The result reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument

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Kalibrasyon TS EN ISO/IEC 17025 AB-0089-K

AB-0089-K
243433
09-24

KALİBRASYON SERTİFİKASI
Calibration Certificate

Cihazın Sahibi *Customer Name*	:	ANKALAB ÇEVRE ANALİZ LABORATUVARI LTD. ŞTİ. Ata Mah. 1069. Sok. No: 3/1 ÇANKAYA / ANKARA
İstek Numarası *Order No.*	:	T-0924-058
Makine / Cihaz *Instrument / Device*	:	Akustik Kalibratör *Acoustic Calibrator*
İmalatçı *Manufacturer*	:	SVANTEK
Tip *Type*	:	SV30A
Seri Numarası *Serial number*	:	24866
Kalibrasyon Tarihi *Date of calibration*	:	13.09.2024
Sertifika Sayfa Sayısı *Number of pages*	:	4

Bu kalibrasyon sertifikası, Uluslararası Birimler Sisteminde (SI) tanımlanmış birimleri realize eden ulusal ölçüm standartlarına izlenebilirliği belgeler.

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Kalibrasyon laboratuvarı olarak faaliyet gösteren AVL Kalibrasyon Laboratuvarı, TÜRKAK'tan AB-0089-K dosya numarası ile TS EN ISO/IEC 17025-2017 standardına göre akredite edilmiştir.

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Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanınma antlaşmasını imzalamıştır.

The Turkish Accreditation Acency (TURKAK) is signatory to the multilateral agreements of the European co-operation for the Accreditation(EA) and of the International Laboratory Accreditation (ILAC) for the Mutual recognation of test reports.

Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

The measurements, the uncertainties with confidence probability and calibration methods are given on the following pages which are part of this certificate.

Mühür / Kaşe *Seal*	Yayım Tarihi *Publication Date*	Kalibrasyonu Yapan *Calibrated By*	Onaylayan / Tarih *Approval / Date*
AVL Kalibrasyon	13.09.2024	Fatma SOLGUNTEKİN Kalibrasyon Personeli *Calibration Responsible* e-imzalıdır	Younes NEVAYESHİRAZİ / 13.09.2024 Laboratuvar Müdürü *Laboratory Manager* e-imzalıdır

Bu sertifika 5070 sayılı kanununa göre güvenli elektronik imza ile imzalanmıştır. Belge teyidi için sayfalarda yer alan karekodu okutabilirsiniz.
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Bu ölçüm raporu GAZİ[illegible] Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.

AVL AKUSTİK VİBRASYON KALİBRASYON LABORATUARI

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1. Cihaza Ait Bilgiler
Device to be Calibrated

Cihazın Adı *Name of the Instrument*	:	Akustik Kalibratör *Acoustic Calibrator*
İmalatçısı *Manufacturer*	:	SVANTEK
Seri Numarası *Serial Number*	:	24866
Ölçüm Aralığı *Measuring Range*	:	1000 Hz 94 dB & 114 dB
Tipi *Type*	:	SV30A

2. Cihazın Laboratuvara Kabul Tarihi : 12.09.2024
Date of Recipt of Device

3. Kalibrasyon Metodu
Calibration Method

Ses Basınç Seviyesi ve Ses Frekansı testleri IEC 60942 standardına uygun olarak gerçekleştirilmiştir. Toplam Harmonik Bozulma testi karşılaştırma metodu ile gerçekleştirilmiştir. Kalibrasyon PR.LBBR.505 prosedürü kullanılarak gerçekleştirilmiştir.

Calibration was performed according to IEC 60942 standard for Sound Pressure Level and Sound Frequency tests. Total Harmonic Distortion test was performed according to comparison method. PR.LBBR.505 procedure is used for the calibration.

4. Çevresel Şartlar
Environmental Conditions

Ortam Sıcaklığı *Ambient Temperature*	:	(23,5 ± 3)	°C
Bağıl Nem *Relative Humidity*	:	(39 ± 25)	%
Ortam Basıncı *Ambient Pressure*	:	(914 ± 1)	mbar

5. Kalibrasyonda Kullanılan Referans Cihazlar
Reference Equipments Used During Calibration

Cihaz *Device*	İmalatçı *Manufacturer*	Seri No *Serial No*	Sertifika No *Certificate No*	İzlenebilirlik *Traceability*
Akustik - Mikrofon	G.R.A.S	162716 - 210532	02703	SPEKTRA
Sıcaklık ve Nem Ölçer	Kimo	7122852	206883	AVL
Akustik - Akustik Kalibratör	Brüel & Kjaer	2705957	02700	SPEKTRA

Kalibrasyonlarımızda Spektra CS18 kalibrasyon sistemi ve yazılımları kullanılmaktadır.

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
FR 17 REV 04 10.2024

6. Ölçüm Belirsizliği
Measurement Uncertainty

6.1. 94 db 1000 Hz

Ses Basınç Seviyesi *Sound Pressure Level*	: 0,14	dB
Ses Frekansı *Sound Frequency*	: 0,11	Hz
Bozulma Faktörü *Distortion Factor*	: 0,21	%

6.2. 114 db 1000 Hz

Ses Basınç Seviyesi *Sound Pressure Level*	: 0,14	dB
Ses Frekansı *Sound Frequency*	: 0,11	Hz
Toplam Harmonik Bozulma *Total Harmonic Distortion*	: 0,21	%

7. Kalibrasyon Sonuçları
Calibration Results

7.1. 94 db 1000 Hz

Ses Basınç Seviyesi *Sound Pressure Level*		
Nominal Değer *Nominal Value*	: 94	dB
Ölçülen Değer *Measured Value*	: 93,69	dB
Sapma *Deviation*	: -0,31	dB
Ses Frekansı *Sound Frequency*		
Nominal Değer *Nominal Value*	: 1000	Hz
Ölçülen Değer *Measured Value*	: 1000,06	Hz
Sapma *Deviation*	: 0,06	Hz
Bozulma Faktörü *Distortion Factor*		
Ölçülen Değer *Measured Value*	: 0,04	%

7.2. 114 db 1000 Hz

Ses Basınç Seviyesi *Sound Pressure Level*		
Nominal Değer *Nominal Value*	: 114	dB
Ölçülen Değer *Measured Value*	: 113,68	dB
Sapma *Deviation*	: -0,32	dB
Ses Frekansı *Sound Frequency*		
Nominal Değer *Nominal Value*	: 1000	Hz
Ölçülen Değer *Measured Value*	: 1000,04	Hz
Sapma *Deviation*	: 0,04	Hz
Bozulma Faktörü *Distortion Factor*		
Ölçülen Değer *Measured Value*	: 0,04	%

Referans Ses Basıncı *Reference Sound Pressure* : 20 µPa

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
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8. Uygunluk Beyanı
Statement of Compliance

Ölçüm sonuçları ve ölçüm belirsizliği yukarıda verilmiştir. Kullanıcı bunları dikkate alarak uygunluğuna karar vermelidir. Beyan edilen genişletilmiş belirsizlik değeri standart belirsizliğin normal dağılımı için; yaklaşık % 95 güvenirlik seviyesini sağlayan k=2 kapsam faktörü ile çarpımının sonucudur. Standart ölçüm belirsizliği GUM ve EA-4/02 dokümanlarına uygun olarak belirlenmiştir. Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı bir bölümüdür.

The measurement results and measurement uncertinity were given above. The user have to consider the results and decide compliance of the device. The reported expended uncertainity of measurement is stated as the standart uncertainity of multitude by coverage factor k=2, which for a normal distribution corresponds to covarage of approximately 95%. The standard measurement uncertainty is defined according to the GUM and EA-4/02documents. Measurement results, the expanded measurement uncertainty of measurement and calibration methods, is an integral part of the this certificate.

9. Açıklamalar
Remarks

Bu sertifikada bulunan sonuçlar cihazın kalibrasyon tarihindeki durumu kapsar ve uzun dönem kararlığı hakkında bir öngörü içermez.

The result reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
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AVL AKUSTİK VİBRASYON KALİBRASYON LAB. LTD. ŞTİ.

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AB-0089-K
244119
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KALİBRASYON SERTİFİKASI
Calibration Certificate

Cihazın Sahibi *Customer Name*	:	ANKALAB ÇEVRE ANALİZ LABORATUVARI LTD. ŞTİ. Ata Mah. 1069. Sok. No: 3/1 ÇANKAYA / ANKARA
İstek Numarası *Order No.*	:	T-1024-099
Makine / Cihaz *Instrument / Device*	:	Ses Seviyesi Ölçüm Cihazı / Ön Yüksetici / Mikrofon *Sound Level Meter / Preamplifier / Microphone*
İmalatçı *Manufacturer*	:	SVANTEK / SVANTEK / ACO
Tip *Type*	:	958 / SV12L / 7052E
Seri Numarası *Serial number*	:	23361 / 24173 / 71251
Kalibrasyon Tarihi *Date of calibration*	:	23.10.2024
Sertifika Sayfa Sayısı *Number of pages*	:	9

Bu kalibrasyon sertifikası, Uluslararası Birimler Sisteminde (SI) tanımlanmış birimleri realize eden ulusal ölçüm standartlarına izlenebilirliği belgeler.

This calibration certificate documents the traceabilty to national standards, which realize the unit of measurement according to the International System of Units (SI).

Kalibrasyon laboratuvarı olarak faaliyet gösteren AVL Kalibrasyon Laboratuvarı, TÜRKAK'tan AB-0089-K dosya numarası ile TS EN ISO/IEC 17025-2017 standardına göre akredite edilmiştir.

AVL Kalibrasyon Laboratuvarı is accredited by TÜRKAK under registration number AB-0089-K for TS EN ISO/IEC 17025-2017 as test laboratory.

Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanınma antlaşmasını imzalamıştır.

The Turkish Accreditation Acency (TURKAK) is signatory to the multilateral agreements of the European co-operation for the Accreditation(EA) and of the International Laboratory Accreditation (ILAC) for the Mutual recognation of test reports.

Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

The measurements, the uncertainties with confidence probability and calibration methods are given on the following pages which are part of this certificate.

Mühür / Kaşe *Seal*	Yayım Tarihi *Publication Date*	Kalibrasyonu Yapan *Calibrated By*	Onaylayan / Tarih *Approval / Date*
AVL Kalibrasyon	23.10.2024	Fatma SOLGUNTEKİN Kalibrasyon Personeli *Calibration Responsible* e-imzalıdır	Younes NEVAYESHİRAZİ / 23.10.2024 Laboratuvar Müdürü *Laboratory Manager* e-imzalıdır

Bu sertifika 5070 sayılı kanununa göre güvenli elektronik imza ile imzalanmıştır. Belge teyidi için sayfalarda yer alan karekodu okutabilirsiniz.

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Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.

AVL AKUSTİK VİBRASYON KALİBRASYON LABORATUARI

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1. Cihaza Ait Bilgiler
Device to be Calibrated

Cihazın Adı *Name of the Instrument*	:	Ses Seviyesi Ölçüm Cihazı / Ön Yüksetici / Mikrofon *Sound Level Meter / Preamplifier / Microphone*
İmalatçısı *Manufacturer*	:	SVANTEK / SVANTEK / ACO
Seri Numarası *Serial Number*	:	23361 / 24173 / 71251
Ölçüm Aralığı *Measuring Range*	:	25 dB - 140 dB
Bölüntüsü *Scale Division*	:	0,1
Tipi *Type*	:	958 / SV12L / 7052E

2. Cihazın Laboratuvara Kabul Tarihi : 23.10.2024
Date of Recipt of Device

3. Kalibrasyon Metodu
Calibration Method

Ölçüm tablolarında belirtilen tolerans değerler IEC 61672-1 standardından alınmıştır. Ölçümler IEC 61672-3 standardında tarif edilen testlere göre yapılmıştır. Bu testler PR.LBBR.501 Elektroakustik Ses Seviye Ölçerleri Periyodik Kalibrasyon Prosedürüne göre yapılmıştır. Ölçümlerden önce ses seviyesi ölçüm cihazı 94 dB 1000 Hz' de kalibre edilmiştir.

The tolerance values indicated in test results are taken from IEC 61672-1 standard. Sound level meter is calibrated according to tests which are described in IEC 61672-3. PR.LBBR.501 Procedure was used in calibration of the sound level meters. Sound level meter was calibrated before measurement at 94 dB 1000 Hz.

4. Çevresel Şartlar
Environmental Conditions

Ortam Sıcaklığı *Ambient Temperature*	:	(22,8 ± 3)	°C
Bağıl Nem *Relative Humidity*	:	(35,4 ± 25)	%
Ortam Basıncı *Ambient Pressure*	:	(926 ± 1)	mbar

5. Kalibrasyonda Kullanılan Referans Cihazlar
Reference Equipments Used During Calibration

Cihaz *Device*	İmalatçı *Manufacturer*	Seri No *Serial No*	Sertifika No *Certificate No*	İzlenebilirlik *Traceability*
Akustik - Mikrofon	G.R.A.S	162716 - 210532	02703	SPEKTRA
Akustik - Akustik Kalibratör	Brüel & Kjaer	2705957	02700	Spektra
Sıcaklık ve Nem Ölçer	Extech	12081741	243781	AVL

Kalibrasyonlarımızda Spektra CS18 kalibrasyon sistemi ve yazılımları kullanılmaktadır.

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
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6. Ölçüm Belirsizliği
Measurement Uncertainty

1000 Hz 94 dB Kalibrasyon ***Calibration at frequency point 1000 Hz 94 dB***	:	± 0,16 dB
A Frekans Ağırlıklı Elektriksel Test ***Electrical Tests of Frequency Weighting***	:	± 0,10 dB
C Frekans Ağırlıklı Elektriksel Test ***Electrical Tests of Frequency Weighting***	:	± 0,10 dB
Z Frekans Ağırlıklı Elektriksel Test ***Electrical Tests of Frequency Weighting***	:	± 0,10 dB
Seviye Doğrusallığı Testi ***Level Linearity Test***	:	± 0,10 dB
Peak C Testi ***Peak C Test***	:	± 0,10 dB
Aşırı Yük Testi ***Overload Indication Test***	:	± 0,10 dB
Doğal Gürültü Testi ***Self Generated Noise Test***	:	± 0,10 dB
1 kHz Frekans Tepkisi Testi ***1 kHz Frequency Response Test***	:	± 0,05 dB
Frekans Ağırlıklı Akustik Test ***Acoustical Tests of Frequency Weighting***	:	31,5 Hz ile 2 kHz : ± 0,30 dB 2 kHz ile 8 kHz : ± 0,50 dB

7. Kalibrasyon Sonuçları
Calibration Results

7.1. 1000 Hz 94 dB Kalibrasyon
Calibration at frequency point 1000 Hz 94 dB
Ses Seviyesi Ölçüm Cihazları / Ses Basınç Seviyesi

Kalibrasyondan Önceki Değer ***Value Before Calibration***	:	93,4 dB
Kalibrasyondan Sonraki Değer ***Value After Calibration***	:	94 dB
Sapma ***Deviation***	:	-0,60 dB

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
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7.2. C - Frekans Ağırlıklı Akustik Test

Acoustical Signal Tests of a C - Frequency Weighting

Ses Seviyesi Ölçüm Cihazları / Ses Basınç Seviyesi

Frekans *Frequency* Hz	Uygulanan *Applied SPL* dB	Okunan Ses *Measured Sound Level* dB	Standart *Standard Deviation* %	Tepki *Response Difference* dB	C-Ağırlıklı Filtre *C-Weighted Filter Characterization* dB	Tepki Farkı *Response Deviation* dB	Tolerans *Tolerance* dB
31,50	85,02	82,60	0,03	-2,42	-3,00	0,58	±1,5
40,00	84,96	83,60	0,01	-1,36	-2,00	0,64	±1,0
50,00	85,01	84,10	0,04	-0,91	-1,30	0,39	±1,0
63,00	85,00	84,40	0,02	-0,60	-0,80	0,20	±1,0
80,00	84,96	84,70	0,04	-0,26	-0,50	0,24	±1,0
100,00	85,00	84,80	0,01	-0,20	-0,30	0,10	±1,0
125,00	85,02	85,10	0,01	0,08	-0,20	0,28	±1,0
160,00	84,93	85,00	0,12	0,07	-0,10	0,17	±1,0
200,00	85,02	85,10	0,07	0,08	0,00	0,08	±1,0
250,00	85,01	85,10	0,01	0,09	0,00	0,09	±1,0
315,00	85,00	85,10	0,10	0,10	0,00	0,10	±1,0
400,00	85,01	85,10	0,00	0,09	0,00	0,09	±1,0
500,00	85,01	85,00	0,03	-0,01	0,00	-0,01	±1,0
630,00	85,00	85,00	0,02	0,00	0,00	0,00	±1,0
800,00	85,02	85,00	0,11	-0,02	0,00	-0,02	±1,0
1000,00	85,00	85,00	0,18	0,00	0,00	0,00	±0,7
1250,00	85,02	84,90	0,01	-0,12	0,00	-0,12	±1,0
1600,00	85,01	84,80	0,01	-0,21	-0,10	-0,11	±1,0
2000,00	85,01	84,70	0,02	-0,31	-0,20	-0,11	±1,0
2500,00	85,01	84,50	0,00	-0,51	-0,30	-0,21	±1,0
3150,00	85,00	84,20	0,02	-0,80	-0,50	-0,30	±1,0
4000,00	85,00	83,80	0,01	-1,20	-0,80	-0,40	±1,0
5000,00	85,00	83,30	0,00	-1,70	-1,30	-0,40	±1,5
6300,00	74,00	72,00	0,08	-2,00	-2,00	0,00	+1,5; -2,0
8000,00	74,05	69,00	0,01	-5,05	-3,00	-2,05	+1,5; -2,5

7.3. 1 kHz de Frekans & Zaman Ağırlıklı Test

Frequency & Time Weighted Test at 1 kHz

1 kHz Frekans Tepkisi

Frekans *Frequency* Hz	Frekans / Zaman Ağırlığı *Frequency / Time Weighting*	Voltaj *Voltage* V	Okunan Değer *Measured Value* dB	Sapma *Deviation* dB
1000	A-Fast	0,033995	94	Referans Değer
1000	C-Fast	0,033976	94	0
1000	Z-Fast	0,033963	94	0
1000	A-Slow	0,03396	94	0
1000	LAeq	0,033941	94	0

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
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İşlem *Procedure*	İşlem Sonucu *Procedure Result* *dB*	Tolerans *Tolerance* *dB*
$L_{AF} - L_{AS}$	0,00	±0,1
$L_{AF} - L_{CF}$	0,00	±0,2
$L_{AF} - L_{ZF}$	0,00	±0,2
$L_{AF} - L_{Aeq}$	0,00	±0,1

7.4. A - Frekans Ağırlıklı - Elektriksel Test
A - Frequency Weighted Electrical Test
Ses Seviyesi Ölçüm Cihazları / Frekans Ağırlıklı Test

Frekans *Frequency* *Hz*	Uygulanan *Applied Voltage* *V*	Okunan Ses *Measured Sound Level* *dB*	Tepki Farkı *Response Difference* *dB*	A-Ağırlıklı Filtre *A-Weighted Filter Characterization* *dB*	Tepki Farkı *Response Deviation* *dB*	Tolerans *Tolerance* *dB*
1000,00	0,033992	94,0	Ref. Değer	---	---	---
63,00	0,033994	67,8	-26,2	-26,20	0,0	±1,0
125,00	0,033988	77,8	-16,2	-16,10	-0,1	±1,0
250,00	0,034125	85,3	-8,7	-8,60	-0,1	±1,0
500,00	0,033933	90,7	-3,3	-3,20	-0,1	±1,0
1000,00	0,033998	94,0	0,0	0,00	0,0	±0,7
2000,00	0,033995	95,2	1,2	1,20	0,0	±1,0
4000,00	0,033962	95,0	1,0	1,00	0,0	±1,0
8000,00	0,033922	91,1	-2,9	-1,10	-1,8	+1,5; -2,5
16000,00	0,033635	87,1	-6,8	-6,60	-0,2	+2,5; -16,0

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Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
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7.5. C - Frekans Ağırlıklı - Elektriksel Test

C - Frequency Weighted Electrical Test

Ses Seviyesi Ölçüm Cihazları / Frekans Ağırlıklı Test

Frekans *Frequency* Hz	Uygulanan *Applied Voltage* V	Okunan Ses *Measured Sound Level* dB	Tepki Farkı *Response Difference* dB	C-Ağırlıklı Filtre *C-Weighted Filter Characterization* dB	Tepki Farkı *Response Deviation* dB	Tolerans *Tolerance* dB
1000,00	0,033994	94,0	Ref. Değer	---	---	---
63,00	0,033948	93,1	-0,9	-0,80	-0,1	±1,0
125,00	0,034252	93,8	-0,3	-0,20	-0,1	±1,0
250,00	0,034086	93,9	-0,1	0,00	-0,1	±1,0
500,00	0,034056	94,0	0,0	0,00	0,0	±1,0
1000,00	0,033995	94,0	0,0	0,00	0,0	±0,7
2000,00	0,034003	93,8	-0,2	-0,20	0,0	±1,0
4000,00	0,033971	92,1	-1,9	-0,80	-1,1	±1,0
8000,00	0,033897	90,4	-3,6	-3,00	-0,6	+1,5; -2,5
16000,00	0,033747	85,1	-8,8	-8,50	-0,3	+2,5; -16,0

7.6. Z - Frekans Ağırlıklı - Elektriksel Test

Z - Frequency Weighted Electrical Test

Ses Seviyesi Ölçüm Cihazları / Frekans Ağırlıklı Test

Frekans *Frequency* Hz	Uygulanan *Applied Voltage* V	Okunan Ses *Measured Sound Level* dB	Tepki Farkı *Response Difference* dB	Z-Ağırlıklı Filtre *Z-Weighted Filter Characterization* dB	Tepki Farkı *Response Deviation* dB	Tolerans *Tolerance* dB
1000,00	0,034053	94,0	Ref. Değer	---	---	---
63,00	0,033942	94,0	0,0	0,00	0,0	±1,0
125,00	0,034214	94,0	0,0	0,00	0,0	±1,0
250,00	0,033956	94,0	0,0	0,00	0,0	±1,0
500,00	0,034007	94,0	0,0	0,00	0,0	±1,0
1000,00	0,033987	94,0	0,0	0,00	0,0	±0,7
2000,00	0,033984	94,0	0,0	0,00	0,0	±1,0
4000,00	0,033968	94,0	0,0	0,00	0,0	±1,0
8000,00	0,033964	94,0	0,0	0,00	0,0	+1,5; -2,5
16000,00	0,033765	94,0	0,1	0,00	0,1	+2,5; -16,0

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
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7.7. A - Frekans Ağırlıklı - Elektriksel Seviye Doğrusallığı Testi
A - Frequency Weighted Electrical Level Linearity Test
Ses Seviyesi Ölçüm Cihazları / Seviye Doğrusallığı Testi

Frekans *Frequency* Hz	Uygulanan Voltaj *Applied Voltage* V	Referans Ses *Reference Sound Level* dB	Okunan Ses Seviyesi *Measured Sound Levels* dB	Sapma *Deviation* dB	Tolerans *Tolerance* dB
8000,00	0,029119	94,00	94,0	0,0	±0,8
8000,00	0,051774	99,00	99,0	0,0	±0,8
8000,00	0,092088	104,00	104,0	0,0	±0,8
8000,00	0,163780	109,00	109,0	0,0	±0,8
8000,00	0,291100	114,00	114,0	0,0	±0,8
8000,00	0,517450	119,00	119,0	0,0	±0,8
8000,00	0,920310	124,00	124,0	0,0	±0,8
8000,00	1,836300	130,00	130,0	0,0	±0,8
8000,00	2,060300	131,00	131,0	0,0	±0,8
8000,00	2,311600	132,00	132,0	0,0	±0,8
8000,00	2,593600	133,00	133,0	0,0	±0,8
8000,00	2,910000	134,00	134,0	0,0	±0,8
8000,00	3,265000	135,00	135,0	0,0	±0,8
8000,00	3,663300	136,00	136,0	0,0	±0,8
8000,00	4,110300	137,00	137,0	0,0	±0,8
8000,00	4,611800	138,00	138,0	0,0	±0,8
8000,00	5,174400	139,00	139,0	0,0	±0,8
8000,00	5,805400	140,00	140,0	0,0	±0,8
8000,00	0,029122	94,00	94,0	0,0	±0,8
8000,00	0,016377	89,00	89,0	0,0	±0,8
8000,00	0,009213	84,00	84,0	0,0	±0,8
8000,00	0,005175	79,00	79,0	0,0	±0,8
8000,00	0,002918	74,00	74,0	0,0	±0,8
8000,00	0,001626	69,00	69,0	0,0	±0,8
8000,00	0,000918	64,00	64,0	0,0	±0,8
8000,00	0,000516	59,00	59,0	0,0	±0,8
8000,00	0,000290	54,00	54,0	0,0	±0,8
8000,00	0,000184	49,00	49,0	0,0	±0,8
8000,00	0,000090	44,00	44,1	0,1	±0,8
8000,00	0,000062	39,00	39,2	0,2	±0,8
8000,00	0,000063	38,00	38,2	0,2	±0,8
8000,00	0,000035	37,00	37,2	0,2	±0,8
8000,00	0,000029	36,00	36,2	0,2	±0,8
8000,00	0,000027	35,00	35,2	0,2	±0,8
8000,00	0,000037	34,00	34,3	0,3	±0,8
8000,00	0,000048	33,00	33,3	0,3	±0,8
8000,00	0,000022	32,00	32,3	0,3	±0,8
8000,00	0,000017	31,00	31,4	0,4	±0,8

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
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7.7. A - Frekans Ağırlıklı - Elektriksel Seviye Doğrusallığı Testi

A - Frequency Weighted Electrical Level Linearity Test

Ses Seviyesi Ölçüm Cihazları / Seviye Doğrusallığı Testi

8000,00	0,000011	30,00	30,5	0,5	±0,8
8000,00	0,000044	29,00	29,6	0,6	±0,8

7.8. A - Frekans Ağırlıklı Akustik Seviye Doğrusallığı Testi

A - Frequency Weighted Acoustic Level Linearity Test

Ses Seviyesi Ölçüm Cihazları / Seviye Doğrusallığı Testi

Frekans *Frequency* *Hz*	Uygulanan *Applied SPL* *dB*	Okunan Ses *Measured Sound Level* *dB*	Standart *Standard Deviation* *%*	Tepki *Response Difference* *dB*	A-Ağırlıklı Filtre *A-Weighted Filter Characterization* *dB*	Tepki Farkı *Response Deviation* *dB*	Tolerans *Tolerance* *dB*
1000,00	74,01	74,00	0,06	-0,01	0,00	-0,01	±0,7
1000,00	84,03	84,00	0,01	-0,03	0,00	-0,03	±0,7
1000,00	94,03	94,00	0,01	-0,03	0,00	-0,03	±0,7
1000,00	104,04	104,00	0,00	-0,04	0,00	-0,04	±0,7
1000,00	114,03	114,10	0,00	0,07	0,00	0,07	±0,7
1000,00	124,03	124,00	0,02	-0,03	0,00	-0,03	±0,7

7.9. Aşırı Yük Testi

Overload Indication Test

Ses Seviyesi Ölçüm Cihazları / Aşırı Yük Testi

Sinyal Tipi *Signal Type*	Frekans *Frequency* *Hz*	Voltaj *Voltage* *V*	Okunan Ses Seviyesi *Measured Sound Level* *dB*	Sapma *Deviation* *dB*	Tolerans *Tolerance* *dB*
Sürekli	4000,00	6,66	141,70	Ref. Değer	--
Pozitif Yarım	4000,00	6,89	143,20	1,50	1,50
Negatif Yarım	4000,00	6,89	143,10	1,40	1,50

7.10. Peak C Testi

Peak C Test

Ses Seviyesi Ölçüm Cihazları / C - Ağırlıklı Peak Seviyesi

Sinyal Tipi *Signal Type*	Frekans *Frequency* *Hz*	Voltaj *Voltage* *V*	Okunan Ses *Measured Sound Level* *dB*	Okunan *Measured* *dB*	Standard *Standard* *dB*	Sapma *Deviation* *dB*	Tolerans *Tolerance* *dB*
Sürekli	8000,00	2,90	132,00	Ref. Değer	Ref. Değer	--	--
Tam	8000,00	2,90	135,00	3,00	3,40	-0,40	±2,0
Sürekli	500,00	2,70	132,00	Ref. Değer	Ref. Değer	--	--
Pozitif Yarım	500,00	2,70	134,30	2,30	2,40	-0,10	±1,0
Negatif Yarım	500,00	2,70	134,30	2,30	2,40	-0,10	±1,0

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7.11. Doğal Gürültü Testi
Self Generated Noise Test

Ses Seviyesi Ölçüm Cihazları / Doğal Gürültü

Mikrofon takılı değilken ses seviyesi 16,70 dB ölçülmüştür.

The measured sound level while the microphone is not installed is 16,70 dB.

8. Uygunluk Beyanı
Statement of Compliance

Ölçüm sonuçları ve ölçüm belirsizliği yukarıda verilmiştir. Kullanıcı bunları dikkate alarak uygunluğuna karar vermelidir. Beyan edilen genişletilmiş belirsizlik değeri standart belirsizliğin normal dağılımı için; yaklaşık % 95 güvenirlik seviyesini sağlayan k=2 kapsam faktörü ile çarpımının sonucudur. Standart ölçüm belirsizliği GUM ve EA-4/02 dokümanlarına uygun olarak belirlenmiştir. Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı bir bölümüdür.

The measurement results and measurement uncertinity were given above. The user have to consider the results and decide compliance of the device. The reported expended uncertainity of measurement is stated as the standart uncertainity of multitude by coverage factor k=2, which for a normal distribution corresponds to covarage of approximately 95%. The standard measurement uncertainty is defined according to the GUM and EA-4/02documents. Measurement results, the expanded measurement uncertainty of measurement and calibration methods, is an integral part of the this certificate.

9. Açıklamalar
Remarks

Bu sertifikada bulunan sonuçlar cihazın kalibrasyon tarihindeki durumu kapsar ve uzun dönem kararlığı hakkında bir öngörü içermez.

The result reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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ANKALAB ÇEVRE ANALİZ LABORATUVARI
ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMANLIK SAN. ve TİC. LTD. ŞTİ.
Adres: Ata Mahallesi 1069. Sokak No:3/1 Çankaya/ANKARA
Tel: 0 312 472 66 64 Fax: 0 312 473 62 15
e-mail: info@ankalab.com.tr

AVL Kalibrasyon Laboratuarı

AVL AKUSTİK VİBRASYON KALİBRASYON LAB. LTD. ŞTİ.
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TÜRKAK Kalibrasyon TS EN ISO/IEC 17025 AB-0089-K

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KALİBRASYON SERTİFİKASI
Calibration Certificate

Cihazın Sahibi *Customer Name*	:	ANKALAB ÇEVRE ANALİZ LABORATUVARI LTD. ŞTİ. Ata Mah. 1069. Sok. No: 3/1 ÇANKAYA / ANKARA
İstek Numarası *Order No.*	:	T-1024-099
Makine / Cihaz *Instrument / Device*	:	Titreşim Ölçer / Sensör - X Yönü *Vibration Meter / Sensor - X Axis*
İmalatçı *Manufacturer*	:	SVANTEK / DYTRAN
Tip *Type*	:	958 / 3233A
Seri Numarası *Serial number*	:	23361 / 624
Kalibrasyon Tarihi *Date of calibration*	:	23.10.2024
Sertifika Sayfa Sayısı *Number of pages*	:	4

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Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

The measurements, the uncertainties with confidence probability and calibration methods are given on the following pages which are part of this certificate.

Mühür / Kaşe *Seal*	Yayım Tarihi *Publication Date*	Kalibrasyonu Yapan *Calibrated By*	Onaylayan / Tarih *Approval / Date*
AVL Kalibrasyon	23.10.2024	Fatma SOLGUNTEKİN Kalibrasyon Personeli *Calibration Responsible* e-imzalıdır	Younes NEVAYESHİRAZİ / 23.10.2024 Laboratuvar Müdürü *Laboratory Manager* e-imzalıdır

Bu sertifika 5070 sayılı kanununa göre güvenli elektronik imza ile imzalanmıştır. Belge teyidi için sayfalarda yer alan karekodu okutabilirsiniz.
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Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.

AVL AKUSTİK VİBRASYON KALİBRASYON LABORATUARI

AB-0089-K
244120
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1. Cihaza Ait Bilgiler
Device to be Calibrated

Cihazın Adı *Name of the Instrument*	:	Titreşim Ölçer / Sensör - X Yönü *Vibration Meter / Sensor - X Axis*
İmalatçısı *Manufacturer*	:	SVANTEK / DYTRAN
Seri Numarası *Serial Number*	:	23361 / 624
Hassasiyet Katsayısı *Precision Coefficient*	:	102 mV / (m / s^2)
Bölüntüsü *Scale Division*	:	0,1
Tipi *Type*	:	958 / 3233A

2. Cihazın Laboratuvara Kabul Tarihi : 23.10.2024
Date of Recipt of Device

3. Kalibrasyon Metodu
Calibration Method

Kalibrasyon PR.LBBR.403 prosedürüne uygun olarak gerçekleştirilmiştir. Cihaz ve referans transdüserin vibrasyon sensörü titreşim uyarıcı üzerinde sırt-sırta monte edilimiştir. Cihazın değerleri cihazın ekranından okunarak referans ivme ölçerden okunan değer ile karşılaştırılmıştır.

Calibration was performed according to PR.LBBR.403 procedure. The vibration sensor of the device and the referanse transducer are mounted back to back on the vibration stimulus. The values of the device were taken from the displays of the devise and compared with the reading of the referanse transducers.

4. Çevresel Şartlar
Environmental Conditions

Ortam Sıcaklığı *Ambient Temperature*	:	(22,8 ± 3)	°C
Bağıl Nem *Relative Humidity*	:	(35,4 ± 25)	%
Ortam Basıncı *Ambient Pressure*	:	(926 ± 1)	mbar

5. Test Şartları
Test Conditions

Titreşim Uyarıcının Konumu *Position of Exciting Axis*	:	Dikey *Vertical*
İvme Ölçerin Uyarıcıya Bağlantı Şekli *Attachment of the Object to Vibration Exciter*	:	Bağlantı Balmumu / Yapıştırıcı ile yapılmıştır. *Connection is made by wax.*

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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6. Kalibrasyonda Kullanılan Referans Cihazlar
Reference Equipments Used During Calibration

Cihaz *Device*	İmalatçı *Manufacturer*	Seri No *Serial No*	Sertifika No *Certificate No*	İzlenebilirlik *Traceability*
İvme Ölçer - Piezoelektrik İvme Ölçer	PCB	2116	01805	SPEKTRA
Sıcaklık ve Nem Ölçer	Extech	12081741	243781	AVL

Kalibrasyonlarımızda Spektra CS18 kalibrasyon sistemi ve yazılımları kullanılmaktadır.

Kalibrasyonlarımızda B&K ve APS titreşim uyarıcıları kullanılmaktadır.

7. Ölçüm Belirsizliği
Measurement Uncertainty

Frekans *Frequency* Hz	Büyüklük *Magnitude* %
10 ≤ f < 20	1,5
20 ≤ f ≤ 1000	1,0

8. Kalibrasyon Sonuçları
Calibration Results

8.1. Frekans Tepkisi
Frequency Response

Frekans *Frequency* Hz	Uygulanan *Applied*			Okunan *Measured*			İvme Sapma *Deviation in Acceleration* m / s2 RMS
	İvme *Acceleration* m / s2 RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	İvme *Acceleration* m / s2 RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	
10,00	9,725100	0,154800	6,968000	9,2	0,147059	6,623681	-0,485100
12,50	9,952800	0,126700	4,564000	10,0	0,127069	4,578655	0,027200
16,00	9,982700	0,099300	2,794000	10,2	0,101461	2,856194	0,217300
20,00	10,024000	0,079770	1,795000	10,3	0,081965	1,845885	0,276000
25,00	10,071000	0,064110	1,154000	10,4	0,066209	1,192836	0,329000
31,50	10,017000	0,050610	0,723300	10,3	0,052041	0,744121	0,283000
40,00	9,986700	0,039740	0,447200	10,2	0,040585	0,456991	0,213300
50,00	10,028000	0,031920	0,287400	10,3	0,032786	0,295342	0,272000
63,00	10,015000	0,025300	0,180800	10,2	0,025768	0,184224	0,185000
80,00	9,985900	0,019870	0,111800	10,2	0,020292	0,114248	0,214100
100,00	10,028000	0,015960	0,071840	10,2	0,016234	0,073119	0,172000
125,00	10,012000	0,012750	0,045910	10,2	0,012987	0,046796	0,188000
160,00	9,986400	0,009934	0,027950	10,0	0,009947	0,028002	0,013600
200,00	10,028000	0,007980	0,017960	10,1	0,008037	0,018100	0,072000
250,00	10,012000	0,006374	0,011480	10,0	0,006366	0,011470	-0,012000
315,00	10,007000	0,005056	0,007226	10,0	0,005053	0,007224	-0,007000
400,00	10,027000	0,003990	0,004490	9,9	0,003947	0,004444	-0,107000

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8.1. Frekans Tepkisi
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Frekans *Frequency* Hz	Uygulanan *Applied*			Okunan *Measured*			İvme Sapma *Deviation in Acceleration* m / s² RMS
	İvme *Acceleration* m / s² RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	İvme *Acceleration* m / s² RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	
500,00	10,011000	0,003187	0,002869	10,0	0,003177	0,002862	-0,031000
630,00	10,021000	0,002532	0,001809	9,9	0,002501	0,001788	-0,121000
800,00	10,051000	0,002000	0,001125	9,7	0,001922	0,001082	-0,391000
1000,00	10,042000	0,001598	0,000719	9,0	0,001428	0,000643	-1,072000

8.2. Referans Frekansda Seviye Doğrusalığı
Level Linearity at Reference Frequency

Frekans *Frequency* Hz	Uygulanan *Applied*			Okunan *Measured*			İvme Sapma *Deviation in Acceleration* m / s² RMS
	İvme *Acceleration* m / s² RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	İvme *Acceleration* m / s² RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	
160,00	0,998100	0,000993	0,002793	1,0	0,000993	0,002795	-0,000100
160,00	1,996500	0,001986	0,005587	2,0	0,001989	0,005600	0,003500
160,00	4,993200	0,004967	0,013970	5,0	0,004964	0,013973	-0,003200
160,00	9,986000	0,009933	0,027950	10,0	0,009947	0,028002	0,014000
160,00	19,971000	0,019870	0,055890	19,9	0,019795	0,055724	-0,071000

9. Uygunluk Beyanı
Statement of Compliance

Ölçüm sonuçları ve ölçüm belirsizliği yukarıda verilmiştir. Kullanıcı bunları dikkate alarak uygunluğuna karar vermelidir. Beyan edilen genişletilmiş belirsizlik değeri standart belirsizliğin normal dağılımı için; yaklaşık % 95 güvenirlik seviyesini sağlayan k=2 kapsam faktörü ile çarpımının sonucudur. Standart ölçüm belirsizliği GUM ve EA-4/02 dokümanlarına uygun olarak belirlenmiştir. Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı bir bölümüdür.

The measurement results and measurement uncertinity were given above. The user have to consider the results and decide compliance of the device. The reported expended uncertainity of measurement is stated as the standart uncertainity of multitude by coverage factor k=2, which for a normal distribution corresponds to covarage of approximately 95%. The standard measurement uncertainty is defined according to the GUM and EA-4/02documents. Measurement results, the expanded measurement uncertainty of measurement and calibration methods, is an integral part of the this certificate.

10. Açıklamalar
Remarks

Bu sertifikada bulunan sonuçlar cihazın kalibrasyon tarihindeki durumu kapsar ve uzun dönem kararlığı hakkında bir öngörü içermez.

The result reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

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FR 17 REV 04 10.2024

AVL AKUSTİK VİBRASYON KALİBRASYON LAB. LTD. ŞTİ.

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10-24

KALİBRASYON SERTİFİKASI
Calibration Certificate

Cihazın Sahibi *Customer Name*	:	ANKALAB ÇEVRE ANALİZ LABORATUVARI LTD. ŞTİ. Ata Mah. 1069. Sok. No: 3/1 ÇANKAYA / ANKARA
İstek Numarası *Order No.*	:	T-1024-099
Makine / Cihaz *Instrument / Device*	:	Titreşim Ölçer / Sensör - Y Yönü *Vibration Meter / Sensor - Y Axis*
İmalatçı *Manufacturer*	:	SVANTEK / DYTRAN
Tip *Type*	:	958 / 3233A
Seri Numarası *Serial number*	:	23361 / 624
Kalibrasyon Tarihi *Date of calibration*	:	23.10.2024
Sertifika Sayfa Sayısı *Number of pages*	:	4

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AVL Kalibrasyon	23.10.2024	Fatma SOLGUNTEKİN Kalibrasyon Personeli *Calibration Responsible* e-imzalıdır	Younes NEVAYESHİRAZİ / 23.10.2024 Laboratuvar Müdürü *Laboratory Manager* e-imzalıdır

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ANKALAB ÇEVRE ANALİZ LABORATUVARI
ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMANLIK SAN. ve TİC. LTD. ŞTİ.
Adres: Ata Mahallesi 1069. Sokak No:3/1 Çankaya/ANKARA
Tel: 0 312 472 66 64 Fax: 0 312 473 62 15
e-mail: info@ankalab.com.tr

AVL AKUSTİK VİBRASYON KALİBRASYON LABORATUARI

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Device to be Calibrated

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Seri Numarası *Serial Number*	:	23361 / 624
Hassasiyet Katsayısı *Precision Coefficient*	:	97,7 mV / (m / s^2)
Bölüntüsü *Scale Division*	:	0,01
Tipi *Type*	:	958 / 3233A

2. Cihazın Laboratuvara Kabul Tarihi : 23.10.2024
Date of Recipt of Device

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4. Çevresel Şartlar
Environmental Conditions

Ortam Sıcaklığı *Ambient Temperature*	:	(22,8 ± 3)	°C
Bağıl Nem *Relative Humidity*	:	(35,4 ± 25)	%
Ortam Basıncı *Ambient Pressure*	:	(926 ± 1)	mbar

5. Test Şartları
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KALİBRASYON LABORATUARI

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6. Kalibrasyonda Kullanılan Referans Cihazlar
Reference Equipments Used During Calibration

Cihaz *Device*	İmalatçı *Manufacturer*	Seri No *Serial No*	Sertifika No *Certificate No*	İzlenebilirlik *Traceability*
İvme Ölçer - Piezoelektrik İvme Ölçer	PCB	2116	01805	SPEKTRA
Sıcaklık ve Nem Ölçer	Extech	12081741	243781	AVL

Kalibrasyonlarımızda Spektra CS18 kalibrasyon sistemi ve yazılımları kullanılmaktadır.

Kalibrasyonlarımızda B&K ve APS titreşim uyarıcıları kullanılmaktadır.

7. Ölçüm Belirsizliği
Measurement Uncertainty

Frekans *Frequency* Hz	Büyüklük *Magnitude* %
10 ≤ f < 20	1,5
20 ≤ f ≤ 1000	1,0

8. Kalibrasyon Sonuçları
Calibration Results

8.1. Frekans Tepkisi
Frequency Response

Frekans *Frequency* Hz	Uygulanan *Applied*			Okunan *Measured*			İvme Sapma *Deviation in Acceleration* m / s² RMS
	İvme *Acceleration* m / s² RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	İvme *Acceleration* m / s² RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	
10,00	10,040000	0,159800	7,193000	9,42	0,149924	6,752714	-0,620000
12,50	9,945700	0,126600	4,560000	9,83	0,125160	4,509838	-0,115700
16,00	9,966100	0,099130	2,769000	10,10	0,100467	2,828192	0,133900
20,00	10,019000	0,079730	1,795000	10,20	0,081169	1,827964	0,181000
25,00	10,069000	0,064100	1,154000	10,30	0,065572	1,181366	0,231000
31,50	10,015000	0,050600	0,723100	10,20	0,051536	0,736897	0,185000
40,00	9,987000	0,039740	0,447200	10,20	0,040585	0,456991	0,213000
50,00	10,028000	0,031920	0,287400	10,20	0,032468	0,292474	0,172000
63,00	10,015000	0,025300	0,180800	10,20	0,025768	0,184224	0,185000
80,00	9,986700	0,019870	0,111800	10,10	0,020093	0,113128	0,113300
100,00	10,028000	0,015960	0,071840	10,10	0,016075	0,072402	0,072000
125,00	10,012000	0,012750	0,045910	10,20	0,012987	0,046796	0,188000
160,00	9,986000	0,009933	0,027950	10,00	0,009947	0,028002	0,014000
200,00	10,028000	0,007980	0,017960	10,10	0,008037	0,018100	0,072000
250,00	10,011000	0,006373	0,011480	10,00	0,006366	0,011470	-0,011000
315,00	10,007000	0,005056	0,007225	9,97	0,005037	0,007203	-0,037000
400,00	10,027000	0,003990	0,004490	9,97	0,003967	0,004467	-0,057000

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
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8.1. Frekans Tepkisi
Frequency Response

Frekans *Frequency* Hz	Uygulanan *Applied*			Okunan *Measured*			İvme Sapma *Deviation in Acceleration* m / s² RMS
	İvme *Acceleration* m / s² RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	İvme *Acceleration* m / s² RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	
500,00	10,012000	0,003187	0,002869	9,92	0,003158	0,002844	-0,092000
630,00	10,019000	0,002531	0,001809	9,86	0,002491	0,001781	-0,159000
800,00	10,051000	0,001999	0,001125	9,84	0,001958	0,001102	-0,211000
1000,00	10,040000	0,001598	0,000719	9,87	0,001571	0,000708	-0,170000

8.2. Referans Frekansda Seviye Doğrusalığı
Level Linearity at Reference Frequency

Frekans *Frequency* Hz	Uygulanan *Applied*			Okunan *Measured*			İvme Sapma *Deviation in Acceleration* m / s² RMS
	İvme *Acceleration* m / s² RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	İvme *Acceleration* m / s² RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	
160,00	0,998200	0,000993	0,002794	1,01	0,001005	0,002828	0,011800
160,00	1,996300	0,001986	0,005587	2,01	0,001999	0,005628	0,013700
160,00	4,993200	0,004967	0,013970	5,02	0,004993	0,014057	0,026800
160,00	9,986500	0,009934	0,027950	10,00	0,009947	0,028002	0,013500
160,00	19,971000	0,019870	0,055890	19,70	0,019596	0,055164	-0,271000

9. Uygunluk Beyanı
Statement of Compliance

Ölçüm sonuçları ve ölçüm belirsizliği yukarıda verilmiştir. Kullanıcı bunları dikkate alarak uygunluğuna karar vermelidir. Beyan edilen genişletilmiş belirsizlik değeri standart belirsizliğin normal dağılımı için; yaklaşık % 95 güvenirlik seviyesini sağlayan k=2 kapsam faktörü ile çarpımının sonucudur. Standart ölçüm belirsizliği GUM ve EA-4/02 dokümanlarına uygun olarak belirlenmiştir. Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı bir bölümüdür.

The measurement results and measurement uncertinity were given above. The user have to consider the results and decide compliance of the device. The reported expended uncertainity of measurement is stated as the standart uncertainity of multitude by coverage factor k=2, which for a normal distribution corresponds to covarage of approximately 95%. The standard measurement uncertainty is defined according to the GUM and EA-4/02documents. Measurement results, the expanded measurement uncertainty of measurement and calibration methods, is an integral part of the this certificate.

10. Açıklamalar
Remarks

Bu sertifikada bulunan sonuçlar cihazın kalibrasyon tarihindeki durumu kapsar ve uzun dönem kararlığı hakkında bir öngörü içermez.

The result reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
FR 17 REV 04 10.2024

ANKALAB ÇEVRE ANALİZ LABORATUVARI
ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMANLIK SAN. ve TİC. LTD. ŞTİ.
Adres: Ata Mahallesi 1069. Sokak No:3/1 Çankaya/ANKARA
Tel: 0 312 472 66 64 Fax: 0 312 473 62 15
e-mail: info@ankalab.com.tr

AVL Kalibrasyon Laboratuarı

AVL AKUSTİK VİBRASYON KALİBRASYON LAB. LTD. ŞTİ.

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T: +90 (312) 394 15 50 F: +90 (312) 394 15 53 E: bilgi@avl.com.tr W: www.avl.com.tr

TÜRKAK Kalibrasyon TS EN ISO/IEC 17025 AB-0089-K

AB-0089-K
244122
10-24

KALİBRASYON SERTİFİKASI
Calibration Certificate

Cihazın Sahibi *Customer Name*	:	ANKALAB ÇEVRE ANALİZ LABORATUVARI LTD. ŞTİ. Ata Mah. 1069. Sok. No: 3/1 ÇANKAYA / ANKARA
İstek Numarası *Order No.*	:	T-1024-099
Makine / Cihaz *Instrument / Device*	:	Titreşim Ölçer / Sensör - Z Yönü *Vibration Meter / Sensor - Z Axis*
İmalatçı *Manufacturer*	:	SVANTEK / DYTRAN
Tip *Type*	:	958 / 3233A
Seri Numarası *Serial number*	:	23361 / 624
Kalibrasyon Tarihi *Date of calibration*	:	23.10.2024
Sertifika Sayfa Sayısı *Number of pages*	:	4

Bu kalibrasyon sertifikası, Uluslararası Birimler Sisteminde (SI) tanımlanmış birimleri realize eden ulusal ölçüm standartlarına izlenebilirliği belgeler.

This calibration certificate documents the traceabilty to national standards, which realize the unit of measurement according to the International System of Units (SI).

Kalibrasyon laboratuvarı olarak faaliyet gösteren AVL Kalibrasyon Laboratuvarı, TÜRKAK'tan AB-0089-K dosya numarası ile TS EN ISO/IEC 17025-2017 standardına göre akredite edilmiştir.

AVL Kalibrasyon Laboratuvarı is accredited by TÜRKAK under registration number AB-0089-K for TS EN ISO/IEC 17025-2017 as test laboratory.

Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanınma antlaşmasını imzalamıştır.

The Turkish Accreditation Acency (TURKAK) is signatory to the multilateral agreements of the European co-operation for the Accreditation(EA) and of the International Laboratory Accreditation (ILAC) for the Mutual recognation of test reports.

Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

The measurements, the uncertainties with confidence probability and calibration methods are given on the following pages which are part of this certificate.

Mühür / Kaşe *Seal*	Yayım Tarihi *Publication Date*	Kalibrasyonu Yapan *Calibrated By*	Onaylayan / Tarih *Approval / Date*
AVL Kalibrasyon	23.10.2024	Fatma SOLGUNTEKİN Kalibrasyon Personeli *Calibration Responsible* e-imzalıdır	Younes NEVAYESHİRAZİ / 23.10.2024 Laboratuvar Müdürü *Laboratory Manager* e-imzalıdır

Bu sertifika 5070 sayılı kanununa göre güvenli elektronik imza ile imzalanmıştır. Belge teyidi için sayfalarda yer alan karekodu okutabilirsiniz.

This certificate is signed using secure digital signature according to article of law, number 5070. For confirmation, read the QR Code using QR Code reader.

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.

AVL AKUSTİK VİBRASYON KALİBRASYON LABORATUARI

AB-0089-K
244122
10-24

1. Cihaza Ait Bilgiler
Device to be Calibrated

Cihazın Adı *Name of the Instrument*	:	Titreşim Ölçer / Sensör - Z Yönü *Vibration Meter / Sensor - Z Axis*
İmalatçısı *Manufacturer*	:	SVANTEK / DYTRAN
Seri Numarası *Serial Number*	:	23361 / 624
Hassasiyet Katsayısı *Precision Coefficient*	:	98,9 mV / (m / s^2)
Bölüntüsü *Scale Division*	:	0,01
Tipi *Type*	:	958 / 3233A

2. Cihazın Laboratuvara Kabul Tarihi : 23.10.2024
Date of Recipt of Device

3. Kalibrasyon Metodu
Calibration Method

Kalibrasyon PR.LBBR.403 prosedürüne uygun olarak gerçekleştirilmiştir. Cihaz ve referans transdüserin vibrasyon sensörü titreşim uyarıcı üzerinde sırt-sırta monte edilimiştir. Cihazın değerleri cihazın ekranından okunarak referans ivme ölçerden okunan değer ile karşılaştırılmıştır.

Calibration was performed according to PR.LBBR.403 procedure. The vibration sensor of the device and the referanse transducer are mounted back to back on the vibration stimulus. The values of the device were taken from the displays of the devise and compared with the reading of the referanse transducers.

4. Çevresel Şartlar
Environmental Conditions

Ortam Sıcaklığı *Ambient Temperature*	:	(22,8 ± 3)	°C
Bağıl Nem *Relative Humidity*	:	(35,4 ± 25)	%
Ortam Basıncı *Ambient Pressure*	:	(926 ± 1)	mbar

5. Test Şartları
Test Conditions

Titreşim Uyarıcının Konumu *Position of Exciting Axis*	:	Dikey *Vertical*
İvme Ölçerin Uyarıcıya Bağlantı Şekli *Attachment of the Object to Vibration Exciter*	:	Bağlantı Balmumu / Yapıştırıcı ile yapılmıştır. *Connection is made by wax.*

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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6. Kalibrasyonda Kullanılan Referans Cihazlar
Reference Equipments Used During Calibration

Cihaz *Device*	İmalatçı *Manufacturer*	Seri No *Serial No*	Sertifika No *Certificate No*	İzlenebilirlik *Traceability*
İvme Ölçer - Piezoelektrik İvme Ölçer	PCB	2116	01805	SPEKTRA
Sıcaklık ve Nem Ölçer	Extech	12081741	243781	AVL

Kalibrasyonlarımızda Spektra CS18 kalibrasyon sistemi ve yazılımları kullanılmaktadır.

Kalibrasyonlarımızda B&K ve APS titreşim uyarıcıları kullanılmaktadır.

7. Ölçüm Belirsizliği
Measurement Uncertainty

Frekans *Frequency* Hz	Büyüklük *Magnitude* %
10 ≤ f < 20	1,5
20 ≤ f ≤ 1000	1,0

8. Kalibrasyon Sonuçları
Calibration Results

8.1. Frekans Tepkisi
Frequency Response

Frekans *Frequency* Hz	Uygulanan *Applied*			Okunan *Measured*			İvme Sapma *Deviation in Acceleration* m / s2 RMS
	İvme *Acceleration* m / s2 RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	İvme *Acceleration* m / s2 RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	
10,00	9,999100	0,159100	7,164000	9,46	0,150561	6,781388	-0,539100
12,50	9,960000	0,126800	4,567000	9,93	0,126433	4,555716	-0,030000
16,00	9,970600	0,099180	2,790000	10,20	0,101461	2,856194	0,229400
20,00	10,024000	0,079770	1,795000	10,30	0,081965	1,845885	0,276000
25,00	10,065000	0,064080	1,154000	10,30	0,065572	1,181366	0,235000
31,50	10,016000	0,050600	0,723200	10,30	0,052041	0,744121	0,284000
40,00	9,986100	0,039730	0,447200	10,20	0,040585	0,456991	0,213900
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63,00	10,015000	0,025300	0,180800	10,20	0,025768	0,184224	0,185000
80,00	9,985500	0,019870	0,111800	10,20	0,020292	0,114248	0,214500
100,00	10,027000	0,015960	0,071840	10,20	0,016234	0,073119	0,173000
125,00	10,012000	0,012750	0,045910	10,20	0,012987	0,046796	0,188000
160,00	9,985500	0,009933	0,027950	10,00	0,009947	0,028002	0,014500
200,00	10,028000	0,007980	0,017960	10,10	0,008037	0,018100	0,072000
250,00	10,012000	0,006374	0,011480	10,10	0,006430	0,011584	0,088000
315,00	10,007000	0,005056	0,007226	10,00	0,005053	0,007224	-0,007000
400,00	10,028000	0,003990	0,004490	10,00	0,003979	0,004480	-0,028000

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FR 17 REV 04 10.2024

8.1. Frekans Tepkisi
Frequency Response

Frekans *Frequency* Hz	Uygulanan *Applied*			Okunan *Measured*			İvme Sapma *Deviation in Acceleration* m / s² RMS
	İvme *Acceleration* m / s² RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	İvme *Acceleration* m / s² RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	
500,00	10,011000	0,003187	0,002869	10,00	0,003183	0,002867	-0,011000
630,00	10,020000	0,002531	0,001809	10,00	0,002526	0,001806	-0,020000
800,00	10,050000	0,001999	0,001125	10,00	0,001989	0,001120	-0,050000
1000,00	10,040000	0,001598	0,000719	9,95	0,001584	0,000713	-0,090000

8.2. Referans Frekansda Seviye Doğrusalığı
Level Linearity at Reference Frequency

Frekans *Frequency* Hz	Uygulanan *Applied*			Okunan *Measured*			İvme Sapma *Deviation in Acceleration* m / s² RMS
	İvme *Acceleration* m / s² RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	İvme *Acceleration* m / s² RMS	Hız *Velocity* m/s RMS	Yer Değişimi *Displacement* mm Peak-Peak	
160,00	0,997900	0,000993	0,002793	1,01	0,001005	0,002828	0,012100
160,00	1,996400	0,001986	0,005587	2,01	0,001999	0,005628	0,013600
160,00	4,992900	0,004967	0,013970	5,02	0,004993	0,014057	0,027100
160,00	9,986000	0,009933	0,027950	10,00	0,009947	0,028002	0,014000
160,00	19,972000	0,019870	0,055890	19,80	0,019695	0,055444	-0,172000

9. Uygunluk Beyanı
Statement of Compliance

Ölçüm sonuçları ve ölçüm belirsizliği yukarıda verilmiştir. Kullanıcı bunları dikkate alarak uygunluğuna karar vermelidir. Beyan edilen genişletilmiş belirsizlik değeri standart belirsizliğin normal dağılımı için; yaklaşık % 95 güvenirlik seviyesini sağlayan k=2 kapsam faktörü ile çarpımının sonucudur. Standart ölçüm belirsizliği GUM ve EA-4/02 dokümanlarına uygun olarak belirlenmiştir. Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı bir bölümüdür.

The measurement results and measurement uncertinity were given above. The user have to consider the results and decide compliance of the device. The reported expended uncertainity of measurement is stated as the standart uncertainity of multitude by coverage factor k=2, which for a normal distribution corresponds to covarage of approximately 95%. The standard measurement uncertainty is defined according to the GUM and EA-4/02documents. Measurement results, the expanded measurement uncertainty of measurement and calibration methods, is an integral part of the this certificate.

10. Açıklamalar
Remarks

Bu sertifikada bulunan sonuçlar cihazın kalibrasyon tarihindeki durumu kapsar ve uzun dönem kararlığı hakkında bir öngörü içermez.

The result reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. İmzasız raporlar geçersizdir. **Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
FR 17 REV 04 10.2024

ARITMA ATIKSU ÇAMURUNUN YAKMA YOLUYLA BERTARAF EDİLMESİ HİZMET ALIM İŞİ'ne AİT SÖZLEŞME

İKN (İhale Kayıt Numarası): **2024/1440817**

Madde 1 - Sözleşmenin tarafları

Bu Sözleşme, bir tarafta **Gaziantep Su ve Kanalizasyon İdaresi (GASKİ) Genel Müdürlüğü** (bundan sonra İdare olarak anılacaktır) ile diğer tarafta **Çimko Çimento ve Beton Sanayi Ticaret Anonim Şirketi** (bundan sonra Yüklenici olarak anılacaktır) arasında aşağıda yazılı şartlar dahilinde akdedilmiştir.

Madde 2 - Taraflara ilişkin bilgiler

2.1. İdarenin

a) Adı:**Gaziantep Su ve Kanalizasyon İdaresi (GASKİ) Genel Müdürlüğü**

b) Adresi:**Değirmiçem Mah. Kıbrıs Cad. No:1/A 27000 - ŞEHİTKAMİL / GAZİANTEP**

c) Telefon numarası:**3422111300**

ç) Faks numarası:**3422318833**

d) Elektronik posta adresi(varsa):**ihaleler@gaski.gov.tr**

e) Elektronik tebligat adresi :**Değirmiçem Mah. Kıbrıs Caddesi 27000 - ŞEHİTKAMİL / GAZİANTEP**

2.2. Yüklenicinin

a) Adı ve soyadı/Ticaret unvanı: **Çimko Çimento ve Beton Sanayi Ticaret Anonim Şirketi**

b) T.C. Kimlik No: .....

c) Vergi Kimlik No: **2570368374**

ç) Yüklenicinin tebligata esas adresi: **İbrahimli Mah. Sanko Sok. Sanko Holding Yönetim Binası A.Blok No:12/A Şehitkamil / Gaziantep**

d) Telefon numarası: **03442287700 / 05339644478**

e) Bildirime esas faks numarası: .....

f) Bildirime esas elektronik posta adresi (varsa): .....

g) Elektronik tebligat adresi : .....

2.3. Her iki taraf, 2.1. ve 2.2. maddelerinde belirtilen adreslerini tebligat adresi olarak kabul etmişlerdir. Adres değişiklikleri usulüne uygun şekilde karşı tarafa tebliğ edilmedikçe, en son bildirilen adrese yapılacak tebliğ, ilgili tarafa yapılmış sayılır.

2.4. Taraflar, yazılı tebligatı daha sonra süresi içinde yapmak kaydıyla, kurye, faks veya elektronik posta gibi diğer yollarla da bildirim yapabilirler.

Madde 3 - Sözleşmenin dili

3.1. Sözleşme Türkçe olarak hazırlanmıştır.

Madde 4 - Tanımlar

4.1. Bu Sözleşmenin uygulanmasında, 4734 sayılı Kamu İhale Kanunu ve 4735 sayılı Kamu İhale Sözleşmeleri Kanunu ile Hizmet İşleri Genel Şartnamesinde (bundan sonra Genel Şartname olarak anılacaktır.) ve ihale dokümanını oluşturan diğer belgelerde yer alan tanımlar geçerlidir.

Madde 5- İş tanımı

5.1. Sözleşme konusu iş; İşin teknik özellikleri ve diğer ayrıntıları sözleşme ekinde yer alan ve ihale dokümanını oluşturan belgelerde düzenlenmiştir.

Madde 6 - Sözleşmenin türü ve bedeli

6.1. Bu sözleşme birim fiyat sözleşme olup, İdarece hazırlanmış cetvelde yer alan her bir iş kaleminin miktarı ile bu iş kalemleri için Yüklenici tarafından teklif edilen birim fiyatların

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çarpımı sonucu bulunan tutarların toplamı olan **15.750.000,00 TL (OnBeşMilyonYediYüz ElliBinTürkLirası)** bedel üzerinden akdedilmiştir. Yapılan işlerin bedellerinin ödenmesinde, birim fiyat teklif cetvelinde Yüklenicinin teklif ettiği ve sözleşme bedelinin tespitinde kullanılan birim fiyatlar ile varsa, sonradan Genel Şartnamenin 37 nci maddesine göre tespit edilen yeni birim fiyatlar esas alınır.

Sıra No	İş Kaleminin Adı ve Kısa Açıklaması	Birimi	Miktarı	Teklif Edilen Birim Fiyat	Tutarı
1	Arıtma Atıksu Çamurunun Yakma Yoluyla Bertaraf Edilmesi	ton	7.000,000	2.250,00TRY	15.750.000,00TRY
				TOPLAM TUTAR (K.D.V Hariç)	15.750.000,00TRY

Madde 7 - Sözleşme bedeline dahil olan giderler

7.1. Taahhüdün (ilave işler nedeniyle meydana gelebilecek artışlar dahil) yerine getirilmesine ilişkin

Ulaşım, sigorta, vergi, resim ve harç vb sözleşme bedeline dahildir. İlgili mevzuatı uyarınca hesaplanacak Katma Değer Vergisi, sözleşme bedeline dahil olmayıp İdare tarafından Yükleniciye ödenecektir.

Madde 8 - Sözleşmenin ekleri

8.1. İhale dokümanı, bu sözleşmenin eki ve ayrılmaz parçası olup, İdareyi ve Yükleniciyi bağlar. Ancak, sözleşme hükümleri ile ihale dokümanını oluşturan belgelerdeki hükümler arasında çelişki veya farklılık olması halinde, ihale dokümanında yer alan hükümler esas alınır.

8.2. İhale dokümanını oluşturan belgeler arasındaki öncelik sıralaması aşağıdaki gibidir:

1) Hizmet İşleri Genel Şartnamesi,
2) İdari Şartname,
3) Sözleşme Tasarısı,
4) Birim fiyat tarifleri (varsa),
5) Özel Teknik Şartname (varsa),
6) Teknik Şartname,
7) Açıklamalar (varsa),

8.3. Zeyilnameler ait oldukları dokümanın öncelik sırasına sahiptir.

Madde 9 - İşin süresi

9.1. İşin süresi, işe başlama tarihinden itibaren **210 (İkiYüzOn) gündür**

9.2. Bu sözleşmenin uygulanmasında sürelerin hesabı takvim günü esasına göre yapılmıştır.

Madde 10 - İşin yapılma yeri, işyeri teslim ve işe başlama tarihi

10.1. İşin yapılacağı yer/yerler: **GASKİ Genel Müdürlüğüne Bağlı Arıtma Tesisleri**

10.2. İşyerinin teslimine ilişkin esaslar ve işe başlama tarihi: İşyeri teslimi yapılmayacak ve sözleşmenin imzalandığı tarihten itibaren **10 (On)** gün içinde işe başlanacaktır.

Madde 11 - Teminata ilişkin hükümler

11.1. Kesin teminat

11.1.1. Yüklenici bu işe ilişkin olarak **945.000,00 TL (DokuzYüzKırkBeşBinTürkLirası)** kesin teminat vermiştir.

11.1.2. Kesin teminat mektubunun süresi **26/08/2025** tarihine kadardır. Kanunda veya sözleşmede belirtilen haller ile cezalı çalışma nedeniyle kabulün gecikeceğinin anlaşılması durumunda teminat mektubunun süresi de işteki gecikmeyi karşılayacak şekilde uzatılır.

11.2. Ek kesin teminat

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11.2.1. Fiyat farkı ödenmesi öngörülen işlerde, fiyat farkı olarak ödenecek bedelin ve /veya iş artışı olması halinde bu artış tutarının % 6'sı oranında teminat olarak kabul edilen değerler üzerinden ek kesin teminat alınır. Fiyat farkı olarak ödenecek bedel üzerinden hesaplanan ek kesin teminat miktarı hakedişlerden kesinti yapılmak suretiyle de karşılanabilir.
11.2.2. Ek kesin teminatın teminat mektubu olması halinde, ek kesin teminat mektubunun süresi, kesin teminat mektubunun süresinden daha az olamaz.
11.3. Yüklenici tarafından verilen kesin ve ek kesin teminat, 4734 sayılı Kanunun 34 üncü maddesinde belirtilen değerlerle değiştirilebilir.
11.4. Kesin teminat ve ek kesin teminatın geri verilmesi:
11.4.1. Taahhüdün, sözleşme ve ihale dokümanı hükümlerine uygun olarak yerine getirildiği ve Yüklenicinin bu işten dolayı idareye herhangi bir borcunun olmadığı tespit edildikten sonra, Sosyal Güvenlik Kurumundan alınan ilişiksiz belgesinin İdareye verilmesinin ardından kesin teminat ve varsa ek kesin teminatların tamamı, Yükleniciye iade edilecektir.
11.4.2. Yüklenicinin bu iş nedeniyle İdareye ve Sosyal Güvenlik Kurumuna olan borçları ile ücret ve ücret sayılan ödemelerden yapılan kanuni vergi kesintilerinin hizmetin kabul tarihine kadar ödenmemesi durumunda protesto çekmeye ve hüküm almaya gerek kalmaksızın kesin ve ek kesin teminat paraya çevrilerek borçlarına karşılık mahsup edilir, varsa kalanı Yükleniciye iade edilir.
11.4.3. Yukarıdaki hükümlere göre mahsup işlemi yapılmasına gerek bulunmayan hallerde; kesin hesap ve kabul tutanağının onaylanmasından itibaren iki yıl içinde idarenin yazılı uyarısına rağmen talep edilmemesi nedeniyle iade edilemeyen kesin teminat mektupları hükümsüz kalır ve düzenleyen bankaya veya sigorta şirketine iade edilir. Teminat mektubu dışındaki teminatlar sürenin bitiminde Hazineye gelir kaydedilir.
11.5. Her ne suretle olursa olsun, İdarece alınan teminatlar haczedilemez ve üzerine ihtiyati tedbir konulamaz.

Madde 12 - Ödeme yeri ve şartları
12.1. Sözleşme bedeli (ilave işler nedeniyle meydana gelebilecek artışlara ilişkin bedel dahil) **GASKİ Genel Müdürlüğü Strateji Geliştirme Dairesi Başkanlığı/Gider Şube Müdürlüğü** ve Genel Şartnamenin hatalı, kusurlu ve eksik işlere ilişkin hükümleri saklı kalmak kaydıyla aşağıda öngörülen plan ve şartlar çerçevesinde ödenecektir:
12.1.1. Hakediş raporu, yüklenici veya vekili tarafından imzalandığı tarihten başlamak üzere 60 gün içinde tahakkuka bağlanır. Bu tarihten başlamak üzere otuz gün içinde de ödeme yapılır.
12.2. Yüklenici iş programına göre daha fazla iş yaparsa, İdare bu fazla işin bedelini imkan bulduğu takdirde öder.
12.3. Yüklenici yapılan işe ilişkin hakediş ve alacaklarını idarenin yazılı izni olmaksızın başkalarına devir veya temlik edemez. Temliknamelerin noterlikçe düzenlenmesi ve idare tarafından istenilen kayıt ve şartları taşıması zorunludur.

Madde 13 - Avans verilmesi şartları ve miktarı
13.1. Bu iş için avans verilmeyecektir.

Madde 14 - Fiyat farkı ödenmesi ve hesaplanması şartları
14.1. Yüklenici, gerek sözleşme süresi, gerekse uzatılan süre içinde, sözleşmenin tamamen ifasına kadar, vergi, resim, harç ve benzeri mali yükümlülüklerde artışa gidilmesi veya yeni mali yükümlülüklerin ihdası gibi nedenlerle fiyat farkı verilmesi talebinde bulunamaz.
14.2. Bu sözleşme kapsamında yapılacak işler için fiyat farkı hesaplanmayacaktır. Ancak, mücbir sebepler veya idareden kaynaklanan nedenlerle işin bitim tarihinin süre uzatımı verilmek suretiyle uzatılması halinde, yürürlükte bulunan fiyat farkına ilişkin esaslar dikkate alınarak fiyat farkı hesaplanacaktır.
14.3. Sözleşmede yer alan fiyat farkına ilişkin esas ve usullerde sözleşme imzalandıktan sonra değişiklik yapılamaz.

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Madde 15 - Alt yüklenicilere ilişkin bilgiler ve sorumluluklar

15.1. Bu işte alt yüklenici çalıştırılmayacak ve işlerin tamamı yüklenicinin kendisi tarafından yapılacaktır.

Madde 16 - Sözleşmeye aykırılık halleri, cezalar ve sözleşmenin feshi

16.1. İhale konusu işin niteliği ve özelliğine göre işin sözleşmesine uygun olmayan haller ve idare tarafından uygulanacak cezalar aşağıda belirtilmiştir. Cezalar, aykırılık halleri ve sözleşmenin feshine ilişkin hususlar bu Sözleşmenin 16, 24, 25, 26, 27, 28 ve 29 uncu maddelerinde düzenlenmiştir. Bu hususlara ilişkin olarak söz konusu maddeler dışındaki ve ihale dokümanındaki diğer düzenlemeler sadece 16.1.1 inci madde kapsamında değerlendirilir.

16.1.1. Bu sözleşmenin 16.1.2 nci maddesinde yer alan özel aykırılık ve 16.1.3 üncü maddesinde yer alan ağır aykırılık halleri dışında, sözleşme hükümlerine uyulmaması halinde uygulanacak ceza oranı, ilk sözleşme bedelinin **On Binde 5**'dir. Aynı fiilin tekrarı halinde bu oran % 50 artırımlı uygulanır.

16.1.2. Bu madde boş bırakılmıştır.

16.1.3. Bu madde boş bırakılmıştır.

16.1.3.1. Bu madde boş bırakılmıştır.

16.1.4. Bu sözleşme kapsamında kesilecek cezaların toplam tutarı hiçbir durumda ilk sözleşme bedelinin % 30 unu geçemez. Toplam ceza tutarının ilk sözleşme bedelinin % 30 unu geçtiğinin anlaşılması durumunda bu orana kadar ceza uygulanır ve 4735 sayılı Kanunun 20 nci maddesinin (b) bendine göre protesto çekmeye gerek kalmaksızın sözleşme feshedilir.

16.1.5. Bu sözleşmenin 16.1.2 nci ve 16.1.3 üncü maddelerinde yer verilen aykırılıklar kapsamında somut fiillere yer verilmemesi halinde, söz konusu maddelerde yer alan cezalar ve/veya fesih yaptırımları uygulanamaz. Ayrıca, aynı aykırılığın 16.1.2 nci ve 16.1.3 üncü maddelerde birlikte sayıldığı hallerde, sözleşme uygulamasında 16.1.3 üncü madde dikkate alınır.

16.2. Yukarıda belirtilen cezalar ayrıca protesto çekmeye gerek kalmaksızın yükleniciye yapılacak ödemelerden kesilir. Cezanın ödemelerden karşılanamaması halinde ceza tutarı yükleniciden ayrıca tahsil edilir.

16.3. Yüklenici sözleşmeye uygun olarak işi süresinde bitirmediği takdirde 4735 sayılı Kanunun 20 nci maddesi gereğince en az on gün süreli yazılı ihtar yapılarak gecikilen her takvim günü için ilk sözleşme bedeli üzerinden 16.1.1 inci maddede belirtilen ceza oranında (kısmi kabul öngörülmüşse süresinde tamamlanmayan kısmın ilk sözleşme bedeli üzerinden) gecikme cezası uygulanır. Yapılacak ihtarda belirtilen sürenin bitmesine rağmen aynı durumun devam etmesi halinde, ayrıca protesto çekmeye gerek kalmaksızın kesin teminat ve varsa ek kesin teminat gelir kaydedilir ve sözleşme feshedilerek hesabı genel hükümlere göre tasfiye edilir. Gecikmenin yol açtığı aykırılığın işin niteliği gereği giderilmesinin mümkün olmadığı hallerde, 4735 sayılı Kanunun 20 nci maddesinin (b) bendine göre protesto çekmeye gerek kalmaksızın sözleşme idarece feshedilebilecektir.

16.3.1. İşin tamamının ya da varsa kısmi kabule konu kısmının süresinde bitirilmemesi haline ilişkin olarak 16.1.2 nci veya 16.1.3 üncü maddelerde yapılan düzenlemeler uygulanmaz.

16.4. Sözleşmenin uygulanması sırasında yüklenicinin 4735 sayılı Kanunun 25 inci maddesinde sayılan yasak fiil veya davranışlarda bulunduğunun tespit edilmesi, halinde ise ayrıca protesto çekmeye gerek kalmaksızın kesin teminat ve varsa ek kesin teminatlar gelir kaydedilir ve sözleşme feshedilerek hesabı genel hükümlere göre tasfiye edilir.

Madde 17 - Süre uzatımı verilebilecek haller ve şartları

17.1. Mücbir sebepler nedeniyle süre uzatımı verilebilecek haller aşağıda sayılmıştır.

17.1.1. Mücbir sebepler:

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Satın Alma Genel Müdürü

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Şube Mersis No: 2516-7357-4781-3214
Ticaret Sicil No: [illegible] Web Adresi: www.cimko.com.tr

a) Doğal afetler.
b) Kanuni grev.
c) Genel salgın hastalık.
ç) Kısmi veya genel seferberlik ilanı.
d) Gerektiğinde Kamu İhale Kurumu tarafından belirlenecek benzeri diğer haller.

17.1.2. Yukarıda belirtilen hallerin mücbir sebep olarak kabul edilmesi ve yükleniciye süre uzatımı verilebilmesi için, mücbir sebep olarak kabul edilecek durumun;
a) Yüklenicinin kusurundan kaynaklanmamış olması,
b) Taahhüdün yerine getirilmesine engel nitelikte olması,
c) Yüklenicinin bu engeli ortadan kaldırmaya gücünün yetmemesi,
ç) Mücbir sebebin meydana geldiği tarihi izleyen yirmi gün içinde yüklenicinin İdareye yazılı olarak bildirimde bulunması,
d) Yetkili merciler tarafından belgelendirilmesi,
zorunludur.

17.1.3. Yüklenici tarafından zamanında yapılmayan başvurular dikkate alınmaz ve Yüklenici başvuru süresini geçirdikten sonra süre uzatımı isteğinde bulunamaz.

17.2. İdareden kaynaklanan nedenlerle süre uzatımı verilecek haller:

17.2.1. İdarenin sözleşmenin ifasına ilişkin yükümlülüklerini yüklenicinin kusuru olmaksızın, öngörülen süreler içinde yerine getirmemesi ve bu sebeple sorumluluğu yükleniciye ait olmayan gecikmelerin meydana gelmesi, bu durumun taahhüdün yerine getirilmesine engel nitelikte olması ve yüklenicinin bu engeli ortadan kaldırmaya gücünün yetmemiş olması halinde; işi engelleyici sebeplere ve yapılacak işin niteliğine göre, işin bir kısmına veya tamamına ait süre en az gecikilen süre kadar uzatılır.

17.2.2. İlave işler nedeniyle iş artışının ortaya çıkması halinde işin süresi, bu artışla orantılı olarak işin ilgili kısmı veya tamamı için uzatılır.

17.3. Süre uzatımına ilişkin diğer hususlarda Genel Şartnamenin ilgili hükümleri uygulanır.

Madde 18 - Kontrol Teşkilatı, görev ve yetkileri

18.1. İşin, sözleşme ve eklerine uygun olarak yürütülüp yürütülmediği İdare tarafından görevlendirilen Kontrol Teşkilatı aracılığıyla denetlenir. Kontrol Teşkilatı, Genel Şartnamenin Dördüncü Bölümünde belirtilen yetkileri kullanır ve görevleri yerine getirir.

Madde 19 - İşin yürütülmesine ilişkin kayıt ve tutanaklar

19.1. **İşin yürütülmesine ilişkin kayıt ve tutanaklar Atıksu Arıtma Tesisleri Dairesi Başkanlığı tarafından düzenlenecektir.**

Madde 20 - Teslim, muayene ve kabul işlemlerine ilişkin şartlar

20.1. Bu işte kısmi kabul yapılmayacaktır.

20.2. Sözleşme konusu iş tamamlandığında Yüklenici, (işin/ilgili kısmın) teslim alınarak kabul işlemlerinin yapılması için bu talebini içeren bir dilekçe ile İdareye başvuracaktır. Bunun üzerine (yapılan iş/ilgili kısım), her türlü masrafı Yükleniciye ait olmak üzere **Atık Su Arıtma Tesisleri Dairesi Başkanlığı** adresinde ve başvuru yazısının İdareye ulaştığı tarihten itibaren **15 (OnBeş)** iş günü içinde teslim alınır. Yüklenici, işin teslimi için sözleşme ve ekleri uyarınca üzerine düşen yükümlülükleri yerine getirmemesi nedeniyle oluşan zarardan sorumludur. Süreklilik arz eden işlerde, Kontrol Teşkilatı ile Yüklenicinin, işin yapılmasına ilişkin olarak hizmetin ifa edildiği dönemler itibariyle birlikte tutacakları kayıtlar, işin o dönem içerisinde yapılan kısmının teslimi anlamına gelir. Ancak Yüklenici kayıt tutmaktan ve/veya tutulan kayıtları imzalamaktan imtina ederse Kontrol Teşkilatının kayıtları esas alınır ve bu kayıtların doğruluğu Yüklenici tarafından kabul edilmiş sayılır."

20.3. Teslim alınan işin muayene ve kabul işlemleri, "Hizmet Alımları Muayene ve Kabul Yönetmeliği" ile Hizmet İşleri Genel Şartnamesinde yer alan hükümlere göre işin kabule

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elverişli şekilde teslim edildiği tarihten itibaren 45 iş günü içinde yapılarak kesin hesap raporu çıkarılır.

Madde 21 - İş ve işyerinin korunması ve sigortalanması

21.1. İş ve işyerlerinin korunmasına ilişkin sorumluluk Genel Şartnamenin 19 uncu maddesinde düzenlenen esaslar dahilinde yükleniciye aittir.

21.2. Sigorta türleri ile teminat kapsamı ve limitleri:

21.2.1. Bu madde boş bırakılmıştır.

Madde 22 - Yüklenicinin sözleşme konusu iş ile ilgili çalıştıracağı personele ilişkin sorumlulukları

22.1. Yüklenicinin sözleşme konusu iş ile ilgili çalıştıracağı personele ilişkin sorumlulukları, ilgili mevzuatın bu konuyu düzenleyen emredici hükümleri ve Genel Şartnamenin Altıncı Bölümünde belirlenmiş olup, Yüklenici bunları aynen uygulamakla yükümlüdür.

22.2. Yüklenici, tüm giderleri kendisine ait olmak üzere çalışanların işle ilgili sağlık ve güvenliğini sağlamakla yükümlüdür. Bu çerçevede; çalışanların iş güvenliği uzmanı, iş yeri hekimi ve zorunlu olması halinde diğer sağlık personeli tarafından sunulan hizmetlerden yararlanması, çalışanların sağlık gözetiminin yapılması, mesleki risklerin önlenmesi, eğitim ve bilgi verilmesi dâhil her türlü tedbirin alınması, organizasyonun yapılması, gerekli araç ve gereçlerin sağlanması, sağlık ve güvenlik tedbirlerinin değişen şartlara uygun hâle getirilmesi ve mevcut durumun iyileştirilmesi, işyerinde alınan iş sağlığı ve güvenliği tedbirlerine uyulup uyulmadığının izlenmesi, denetlenmesi ve uygunsuzlukların giderilmesi gibi iş sağlığı ve güvenliği mevzuatı kapsamında iş sağlığı ve güvenliğine ilişkin alınması zorunlu tedbirler yüklenicinin sorumluluğundadır.

Madde 23 - Sözleşmede değişiklik yapılması

23.1. Sözleşme bedelinin aşılmaması ve İdare ile Yüklenicinin karşılıklı olarak anlaşması kaydıyla,

a) İşin yapılma veya teslim yeri,

b) İşin süresinden önce yapılması veya teslim edilmesi kaydıyla işin süresi ve bu süreye uygun olarak ödeme şartlarına ait hususlarda sözleşme hükümlerinde değişiklik yapılabilir.

23.2. Bu hallerin dışında sözleşme hükümlerinde değişiklik yapılamaz ve ek sözleşme düzenlenemez.

Madde 24 - Yüklenicinin Ölümü, İflası, Ağır Hastalığı, Tutukluluğu veya Mahkumiyeti

24.1. Yüklenicinin ölümü, iflası, ağır hastalığı, tutukluluğu veya özgürlüğü kısıtlayıcı bir cezaya mahkumiyeti hallerinde 4735 sayılı Kanunun ilgili hükümlerine göre işlem tesis edilir.

24.2. Ortak girişim tarafından gerçekleştirilen işlerde, ortaklardan birinin ölümü, iflası, ağır hastalığı, tutukluğu veya özgürlüğü kısıtlayıcı bir cezaya mahkumiyeti hallerinde de 4735 sayılı Kanunun ilgili hükümlerine göre işlem tesis edilir.

Madde 25 - Yüklenicinin sözleşmeyi feshetmesi

25.1. Yüklenicinin, sözleşme yapıldıktan sonra mücbir sebep halleri dışında, mali acz içinde bulunması nedeniyle taahhüdünü yerine getiremeyeceğini gerekçeleri ile birlikte İdareye yazılı olarak bildirmesi halinde, ayrıca protesto çekmeye gerek kalmaksızın kesin teminat ve varsa ek kesin teminatlar gelir kaydedilir ve sözleşme feshedilerek hesabı genel hükümlere göre tasfiye edilir.

Madde 26 - İdarenin sözleşmeyi feshetmesi

26.1. Aşağıda belirtilen hallerde İdare sözleşmeyi fesheder:

a) Yüklenicinin taahhüdünü ihale dokümanı ve sözleşme hükümlerine uygun olarak yerine getirmemesi veya işi süresinde bitirmemesi üzerine, sözleşmede belirlenen oranda gecikme

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cezası uygulanmak üzere, idarenin en az on gün süreli ve nedenleri açıkça belirtilen ihtarına rağmen aynı durumun devam etmesi,
b) Sözleşmenin uygulanması sırasında Yüklenicinin 4735 sayılı Kanunun 25 inci maddesinde belirtilen yasak fiil ve davranışlarda bulunduğunun tespit edilmesi,
hallerinde ayrıca protesto çekmeye gerek kalmaksızın kesin teminat ve varsa ek kesin teminatlar gelir kaydedilir ve sözleşme feshedilerek hesabı genel hükümlere göre tasfiye edilir.

Madde 27 - Sözleşmeden önceki yasak fiil veya davranışlar nedeniyle fesih

27.1. Yüklenicinin, ihale sürecinde 4734 sayılı Kanuna göre yasak fiil veya davranışlarda bulunduğunun sözleşme yapıldıktan sonra tespit edilmesi halinde, kesin teminat ve varsa ek kesin teminatlar gelir kaydedilir ve sözleşme feshedilerek hesabı genel hükümlere göre tasfiye edilir.

27.2. Taahhüdün en az % 80'inin tamamlanmış olması ve taahhüdün tamamlattırılmasında kamu yararı bulunması kaydıyla;

a) İvediliği nedeniyle taahhüdün kalan kısmının yeniden ihale edilmesi için yeterli sürenin bulunmaması,

b) Taahhüdün başka bir yükleniciye yaptırılmasının mümkün olmaması,

c) Yüklenicinin yasak fiil veya davranışının taahhüdünü tamamlamasını engelleyecek nitelikte olmaması hallerinde, İdare sözleşmeyi feshetmeksizin

Yükleniciden taahhüdünü tamamlamasını isteyebilir ve bu takdirde Yüklenici taahhüdünü tamamlamak zorundadır.

27.3. Ancak bu durumda, Yüklenici hakkında 4735 sayılı Kanunun 26 ncı maddesi hükmüne göre işlem yapılır ve Yükleniciden kesin teminat ve varsa ek kesin teminatların tutarı kadar ceza tahsil edilir. Bu ceza hakedişlerden kesinti yapılmak suretiyle de tahsil edilebilir.

Madde 28 - Mücbir sebeplerden dolayı sözleşmenin feshi

28.1. Mücbir sebeplerden dolayı sözleşmenin feshedilmesi halinde, sözleşme konusu işlere ilişkin hesap genel hükümlere göre tasfiye edilerek, kesin teminat ve varsa ek kesin teminatlar iade edilir.

Madde 29 - Sözleşme kapsamında yaptırılabilecek ilave işler, iş eksilişi ve işin tasfiyesi

29.1. Öngörülemeyen durumlar nedeniyle iş artışının zorunlu olması halinde, işin;

a) Sözleşmeye konu hizmet içinde kalması,

b) İdareyi külfete sokmaksızın asıl işten ayrılmasının teknik veya ekonomik olarak mümkün olmaması,

şartlarıyla, sözleşme bedelinin % 20'sine kadar oran dahilinde, süre hariç sözleşme ve ihale dokümanındaki hükümler çerçevesinde ilave iş aynı yükleniciye yaptırılabilir.
İşin bu şartlar dahilinde tamamlanamayacağının anlaşılması durumunda ise artış yapılmaksızın hesabı genel hükümlere göre tasfiye edilir. Bu durumda, yüklenicinin sözleşme bedeli tamamlanıncaya kadar işi ihale dokümanı ve sözleşme hükümlerine uygun olarak yerine getirmesi zorunludur.
Bu ihalede 4735 sayılı Kamu İhale Sözleşmeleri Kanununun 24 üncü maddesi çevresinde iş eksilişi yapılabilir. İhale konusu işin sözleşme bedelinin % 80'inden daha düşük bedelle tamamlanacağının anlaşılması halinde ise, yükleniciye, yapmış olduğu gerçek giderler ve yüklenici kârına karşılık olarak, sözleşme bedelinin % 80'i ile sözleşme fiyatlarıyla yaptığı işin tutarı arasındaki bedel farkının % 5'i ödenir.

Madde 30 - Yüklenicinin Ceza Sorumluluğu

30.1. İş tamamlandıktan ve kabul işlemi yapıldıktan sonra tespit edilmiş olsa dahi 4735 sayılı Kanunun 25 inci maddesinde belirtilen ve Türk Ceza Kanununa göre suç teşkil eden fiil veya davranışlarda bulunan Yüklenici ile o işteki ortak veya vekilleri hakkında Türk Ceza Kanunu hükümlerine göre ceza kovuşturması yapılmak üzere yetkili Cumhuriyet Savcılığına suç

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duyurusunda bulunulur. Bu kişiler hakkında bir cezaya hükmedilmesi halinde, 4735 sayılı Kanunun 27 nci maddesi hükmü uygulanır.

30.2. Yüklenicinin tüzel kişi olması ve ihalede sunulan iş deneyimini gösteren belgenin yüklenicinin yarısından fazla hissesine sahip ve 4734 sayılı Kanuna göre yapılacak ihalelere ilişkin sözleşmelerin yürütülmesi konusunda temsile ve yönetime yetkili ortağına ait olması halinde yüklenici, aşağıda yer alan ifadeyi içeren beyanı her hakedişle birlikte idareye sunar.

.....[Teklif kapsamında sunulan belgenin düzenleme tarihi yazılacaktır.] tarihli Ortaklık Tespit Belgesinde yer alan bilgilerde bugüne kadar değişiklik olmadığını ve ortağımıza ait iş deneyimini gösteren belgelerin tamamının, başka bir tüzel kişiye kullandırılmadığını taahhüt ederiz.

Madde 31 - Yüklenicinin Tazmin Sorumluluğu

31.1. Yüklenici, taahhüdü çerçevesinde kusurlu veya standartlara uygun olmayan malzeme seçilmesi, verilmesi veya kullanılması, tasarım hatası, uygulama yanlışlığı, denetim eksikliği, taahhüdün sözleşme ve şartname hükümlerine uygun olarak yerine getirilmemesi ve benzeri nedenlerle ortaya çıkan zarar ve ziyandan doğrudan sorumludur. Bu zarar ve ziyan genel hükümlere göre Yükleniciye ikmal ve tazmin ettirileceği gibi, haklarında 4735 sayılı Kanunun 27 nci maddesi hükümleri de uygulanır.

Madde 32 - Fikri ve sınai mülkiyete konu olan hususlar

32.1. Bu madde boş bırakılmıştır.

Madde 33 - Montaj, işletmeye alma, eğitim, bakım, yedek parça gibi destek hizmetlerine ait şartlar

33.1. Bu madde boş bırakılmıştır.

Madde 34 - Garanti ile ilgili şartlar

34.1. Bu madde boş bırakılmıştır.

Madde 35 - Hüküm bulunmayan haller

35.1. Bu sözleşme ve eklerinde hüküm bulunmayan hallerde, ilgisine göre 4734 ve 4735 sayılı Kanun hükümlerine, bu Kanunlarda hüküm bulunmaması halinde ise genel hükümlere göre hareket edilir.

Madde 36 - Diğer hususlar

36.1. **İhale kapsamında teslim alınacak malzemelerden idaremize ait yatırım ve teşvik belgesi kapsamında yer alan iş kalemleri için kurumumuz tarafından KDV ödenmeyecektir**

Madde 37 - Anlaşmazlıkların çözümü

37.1. Bu sözleşme ve eklerinin uygulanmasından doğabilecek her türlü uyuşmazlığın çözümünde **Gaziantep** mahkemeleri ve icra daireleri yetkilidir.

Madde 38 - Yürürlük

38.1. Bu sözleşme taraflarca imzalandığı tarihte yürürlüğe girer.

Madde 39 - Sözleşmenin imzalanması

39.1. Bu sözleşme 39 maddeden ibaret olup, İdare ve Yüklenici tarafından tam olarak okunup anlaşıldıktan sonra **26/12/2024** tarihinde bir nüsha olarak imza altına alınmıştır. Ayrıca İdare, Yüklenicinin talebi halinde sözleşmenin "aslına uygun idarece onaylı suretini" düzenleyip Yükleniciye verecektir.

İdare

T.C. HÜSEYİN SÖNMEZLER

Yüklenici

Onder KIRCA

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T.C.
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ÇED İzin ve Denetim Genel Müdürlüğü

ÇEVRE İZİN VE LİSANS BELGESİ

Belge No	: 222704704.0.1
Başlangıç Tarihi	: 27.03.2023
Bitiş Tarihi	: 27.03.2028
Tesis Adı	: ÇİMKO ÇİMENTO VE BETON SAN. TİC. A.Ş. NARLI ŞUBESİ
Tesis Adresi	: AKCAKOYUNLU Mahallesi, AKCAKOYUNLU SOKAK, No: 53-1, PAZARCIK / KAHRAMANMARAŞ
İşletme Vergi No	: 2570368374
Çevre İzin ve Lisans Konusu	: Hava Emisyon,Gürültü Kontrolü Atık Yakma ve Beraber Yakma,Atıktan Türetilmiş Yakıt (ATY) Hazırlama Tesisi

Yukarıda adı ve açık adresi belirtilen tesise Çevre İzin ve Lisans Yönetmeliği kapsamında ÇEVRE İZİN VE LİSANS BELGESİ verilmiş olup 27.03.2023 tarihli ve 72419212-150/E.8812 sayılı yazı ile birlikte geçerlidir. Ayrı kullanılmaz.

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GAZİANTEP WATER AND SEWERAGE ADMINISTRATION

KIZILHİSAR WASTEWATER TREATMENT PLANT - SECOND STAGE PROJECT

AIR QUALITY MODELING

MARCH – 2025

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1. INTRODUCTION

The Kızılhisar Wastewater Treatment Plant (WWTP) 2nd Stage Project is a key infrastructure initiative under Türkiye's earthquake "State Grant" Program[1], where the European Investment Bank (EIB) is the International Financing Institution (IFI). The project aims to enhance wastewater treatment capacity in the south and southwest regions of Gaziantep Centrum, addressing both post-earthquake reconstruction needs, and the challenges posed by rapid population growth, particularly due to the influx of Syrian refugees.

The existing Kızılhisar WWTP (1st stage), commissioned in 2008, was originally designed with a 150,000 P.E. capacity (26,000 m³/day) to serve the south and southwest regions of Gaziantep Centrum. However, due to rapid urban expansion, including new residential projects like the Güneyşehir mass housing project, the plant's capacity is being increasingly strained. To maintain adequate wastewater treatment standards, prevent environmental pollution, and comply with Türkiye's Urban Wastewater Regulation, the 2nd stage expansion has been identified as an urgent short-term priority investment by Gaziantep Water and Sewerage Administration (GASKİ) and İLBANK.

The Kızılhisar WWTP 2nd Stage Project will increase treatment capacity to 400,000 P.E., implementing an advanced biological treatment process (extended aeration) with Nitrogen (N), Phosphorous (P), and Carbon (C) removal similar to 1st stage process.

The design phase was completed by FENSA Engineering Ltd. in 2021 and approved by İLBANK on May 24, 2023. The project will be implemented under the coordination of GASKİ and İLBANK, ensuring alignment with national environmental regulations and international financing requirements. Once completed, the expanded WWTP will play a crucial role in improving wastewater management, enhancing environmental sustainability, and supporting Gaziantep's long-term resilience against both natural disasters and demographic shifts.

This report provides an assessment of emissions originating from the project on ambient air quality by using the results of an air quality dispersion modelling software (AERMOD) and the results of an ambient air quality sampling study.

1.1 OBJECTIVES

The specific objectives of this air quality impact assessment are to:

- Identify the main sources of potential impact to air quality arising from the construction of the project.
- Determine, quantitatively and qualitatively, whether air emissions will impact sensitive receptors in the vicinity of the project area.
- Assess the air quality dispersion modelling results against the project standards, which have been defined based on Turkish law.

1.2 OVERVIEW OF EMISSION SOURCES

- Dust emissions together with their impact on human health and their potential to cause nuisance to those exposed.
- Emissions of potentially polluting gases: sulfur dioxide (SO_2), and oxides of nitrogen (NO_X) and their potential impact on human health.

[1] The term "State Grant" refers to those funds made available to the water authorities of earthquake affected cities by Turkish Government in the form of grant. The source of these funds could be various IFIs where the Turkish Government is the debtor. For the proposed Project, IFI will be **European Investment Bank (EIB)**.

2. SUMMARY OF POLICY CONTEXT

The applicable Turkish air quality legislation for the project's air quality assessment includes:

- Regulation on Assessment and Management of Air Quality (dated: 06 June 2008, Official Gazette No: 26898)
- Regulation on Control of Industrial Air Pollution (dated: 03 July 2009, Official Gazette No: 27277)

The applicable European legislation for the project's air quality assessment includes:

- Directive (EU) 2024/2881 of the European Parliament and of the Council of 23 October 2024 on Ambient Air Quality and Cleaner Air for Europe

The project maximum allowable limits in relation to ambient air quality are presented in Table 1, which includes applicable European Union and National legislation.

Table 1. Project Ambient Air Quality Standards

Parameter	Period	Unit	Maximum Allowable Limit		
			TR (after 01.01.2024)	EU (until 11 December 2026)	Project Limit
SO_2	Hourly	µg/m^3	350 (not to be exceeded more than 24 times per calendar year)	350 (not to be exceeded more than 24 times per calendar year)	350 (not to be exceeded more than 24 times per calendar year)
	Daily		125	125 (not to be exceeded more than 3 times per calendar year)	125
	Annual		60	-	60/20
			20 (Winter season Oct 1st – March 31st)		
NO_2	Daily	µg/m^3	200 (not to be exceeded more than 18 times per calendar year)	200 (not to be exceeded more than 18 times per calendar year)	200 (not to be exceeded more than 18 times per calendar year)
	Annual		40	40	40
PM 10	Daily	µg/m^3	50 (not to be exceeded more than 35 times per calendar year)	50 (not to be exceeded more than 35 times per calendar year)	50 (not to be exceeded more than 35 times per calendar year)
	Annual		40	40	40
PM 2.5	Annual	µg/m^3	-	25	-
Settled Dust	Daily	mg/m^2-day	390	-	390
	Annual		210		210

3. SCOPE AND ASSESSMENT METHODOLOGY

3.1 SPATIAL SCOPE

A 20,25 km^2 study area (Figure 1) covers the project area and encompasses the potentially-affected settlements within the social study area: Yiğitbey Dairy and Livestock Farm, Kadıoğlu Dairy and Livestock Farm, Agriculture and Gastronomy School, Yağdöver Village, Güzelce Village, Gedik Village, Oğuzeli Organized Industrial Zone and Körkün District. These settlements were identified as having the potential to be affected by air quality impacts from project construction activities within the EIA Permitted Area and the access road.

Table 2. Coordinates of the modelling area

Projection	UTM	
Coordinate System	WGS 84 – ZONE 37N	
Coordinates of the modelling area		
1	359020	4087090
2	359020	4091590
3	363520	4087090
4	363520	4091590

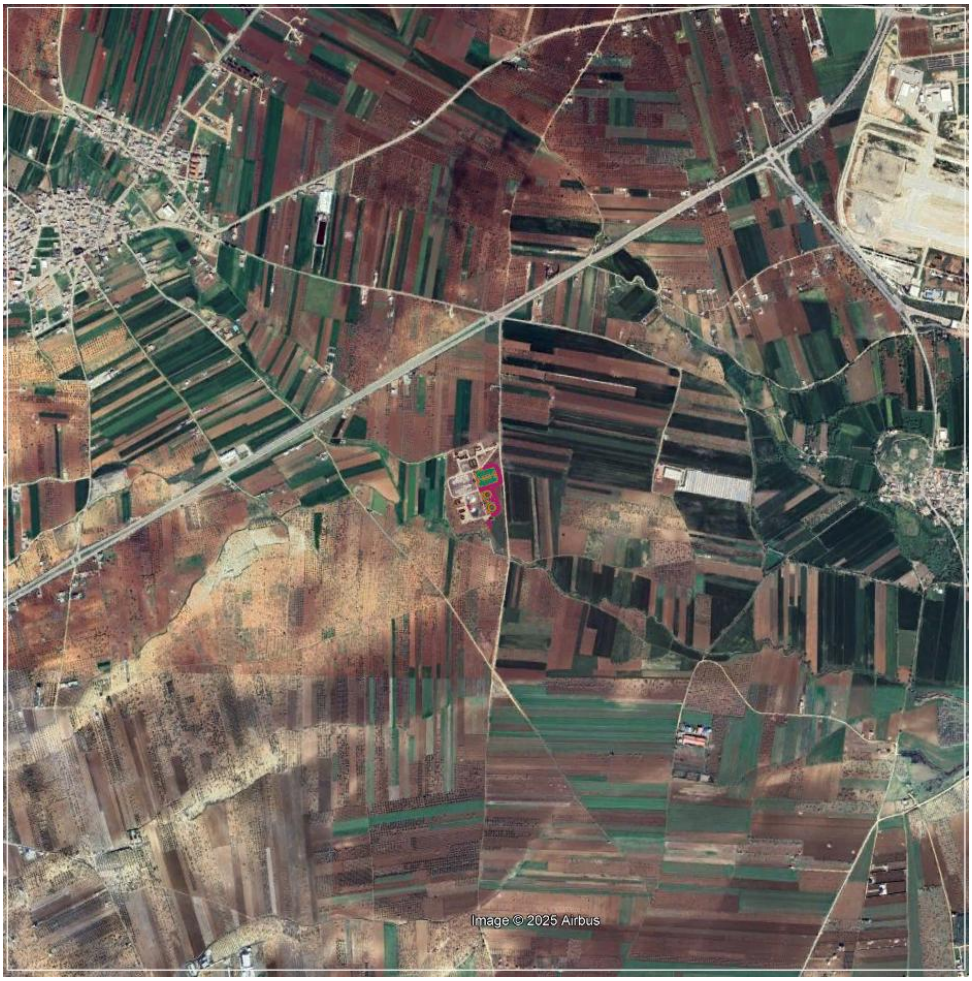


Figure 1. Study Area

3.2 TEMPORAL SCOPE

The temporal scope of this assessment covers the construction phase of the project.

3.3 METHODOLOGY

Emissions and dispersion of atmospheric pollutants released by project activities were simulated by inputting emission sources into the AERMOD (American Meteorological Society/Environmental Protection Agency Regulatory Model) model.

Meteorological data, surface characteristics and topography, receptors, emission sources and hourly emissions were used as an input to run the AERMOD (Figure 2).

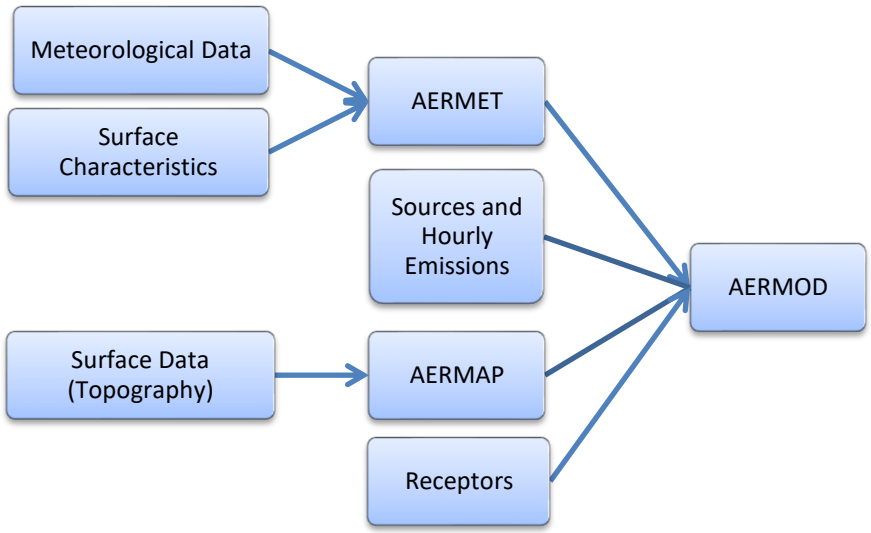


Figure 2. AERMOD Simulation Data Requirements and Pre-Processors

3.3.1 METEOROLOGICAL DATA

A long-term wind rose based on the last 78 years of data and the wind rose based on the last 10 years from the Gaziantep Meteorological Station are provided in Figure 3. It was concluded that the long-term dominant wind directions and wind distribution of the Gaziantep Meteorological Station changed in the last decades. A wind rose for the year 2017 again based on data from the Gaziantep Meteorological Station is plotted on the long-term wind roses and it was observed that the 2017 wind rose is similar with respect to dominant wind directions and wind distribution of the last 10 years. On this basis, the 2017 meteorological data was determined to be representative for the wind characteristics of the area and was used in AERMOD.

Meteorological pre-processor software AERMET, which is supported by USEPA was used in the preparation of the meteorological data for the AERMOD. To determine the meteorological data input, quality control of the raw hourly surface data and upper atmosphere data of the relevant year and station was undertaken. Subsequently, data were combined under a single file and the hourly values were calculated by defining the parameters specific to the site (i.e. surface roughness, albedo rate and Bowen rate). Finally, a profile file was prepared according to the compiled surface file, consisting of the standard deviation of wind speed, direction, temperature, and wind components at numerous different heights.



Figure 3. Gaziantep Meteorological Station Wind Roses

The following values were inputted in the AERMET meteorology pre-processor software:

- Hourly surface observations: the values of hourly temperature, wind speed, wind direction, cloud base height and station pressure are the values recorded at Gaziantep Meteorological Station.
- Upper atmosphere observations: the values of atmospheric pressure, elevation from ground level, dry thermometer temperature, wind direction (degree of deviation from N) and wind speed (m/s) are the values recorded at the Adana Meteorological Station.

3.3.2 SURFACE DATA (TOPOGRAPHY)

Topographic values are crucial for the distribution of emission values. The topography information of the study area was imported with the AERMAP module, which is the preprocessor of the model used using NASA's SRTM V2 (Shuttle Radar Topography Mission) data.

The study area was divided into grids of 500 m x 500 m cells and 100 grid receptors were placed at 500-meter intervals (Figure 4). In addition to the altitude information at the determined grid points, the peaks near the points were also determined. In this way, the heights that could constitute an obstacle in the distribution of emissions were also taken into account.

In addition, 12 discrete receptor points were placed in settlements near the project area.

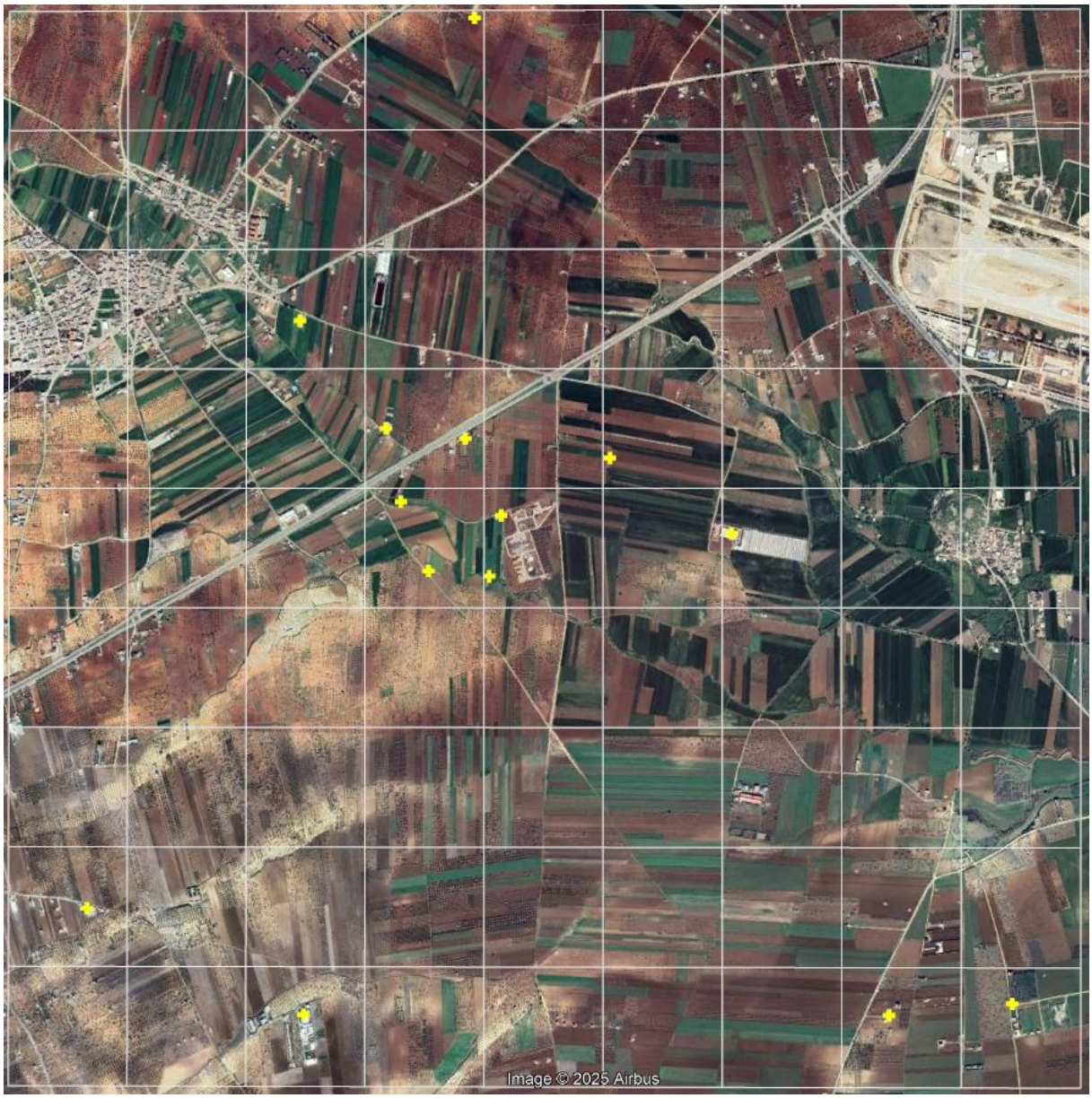


Figure 4. Grid Receptors and Additional Receptors in the Study Area

3.3.3 SOURCES AND HOURLY EMISSONS

DUST EMISSIONS

The hourly emission of dust that will be released during construction was calculated using the following formulas:

$$Dust\ Emission\ \left(\frac{kg}{hr}\right) = Emission\ Factor\ \left(\frac{kg}{ton}\right) x\ Excavation\ Amount\ \left(\frac{ton}{hr}\right)$$

$$Dust\ Emission\ \left(\frac{kg}{hr}\right) = Emission\ Factor\ \left(\frac{kg}{km-trip}\right) x\ Transporting\ Distance\ \left(\frac{km-trip}{hr}\right)$$

$$Dust\ Emission\ \left(\frac{kg}{hr}\right) = Emission\ Factor\ \left(\frac{kg}{ha-day}\right) x\ Storage\ Area\ \left(ha * \frac{day}{24\ hr}\right)$$

The emission factors used during calculations are given in Table 3.

Table 3. Dust Emission Factors

Source	Emission Factors	
	Uncontrolled	Controlled
Blasting	0,08 kg/ton	
Excavation	0,025 kg/ton	0,0125 kg/ton
Loading	0,010 kg/ton	0,005 kg/ton
Transporting	0,7 kg/km-trip	0,35 kg/km-trip
Unloading	0,010 kg/ton	0,005 kg/ton
Storage	5,8 kg/ha-day	2,9 kg/ha-day
Primary Crusher	0,243 kg/ton	0,0243 kg/ton
Secondary Crusher	0,585 kg/ton	0,0585 kg/ton
Tertiary Crusher	0,585 kg/ton	0,0585 kg/ton

Source: Regulation on Control of Industrial Air Pollution, Annex 12, Table 12.6

The excavation phase of the construction will take approximately 60 days over 8 hours per day. The amount of soil that will be excavated per hour is calculated in Table 4.

Table 4. Annual, Daily and Hourly Excavation Amounts During Construction

Period	Excavation Amount (m^3)	Excavation Amount* (ton)
Annual	50,000	70,000
Daily	833.33	1,166.67
Hourly	104.17	145.83

* The density of soil is approximately 1.4 ton/ m^3

Emissions from Excavation of Soil
Uncontrolled = 145.83 ton/hr x 0.025 kg/ton = 3.65 kg/hr
Controlled = 145.83 ton/hr x 0.0125 kg/ton = 1.82 kg/hr

Emissions from Loading of Soil
Uncontrolled = 145.83 ton/hr x 0.01 kg/ton = 1.46 kg/hr
Controlled = 145.83 ton/hr x 0.005 kg/ton = 0.73 kg/hr

Approximately 20% of the excavated soil (10,000 m^3 / 14,000 ton) will be stored in a temporary storage area to be used in site reclamation. The remaining soil (40,000 m^3 / 56,000 ton) will be transported to a construction waste disposal facility.

Emissions from Transporting Soil to Construction Waste Disposal Facility
Transporting amount = 40,000 m^3 / 60 days = 666.67 m^3/day
Truck capacity = 15 m^3/trip
Number of trips = 666.67 m^3/day / 15 m^3/trip = 45 trips/day

Uncontrolled = 0.7 kg/km-trip x 0.8 km x 2 x 45 trips/day / 8 hr/day = 6.3 kg/hr
Controlled = 0.35 kg/km-trip x 0.8 km x 2 x 45 trips/day / 8 hr/day = 3.15 kg/hr

Emissions from Transporting Soil to Temporary Storage Area
Transporting amount = 10,000 m^3 / 60 days = 166.67 m^3/day
Truck capacity = 15 m^3/trip
Number of trips = 166.67 m^3/day / 15 m^3/trip = 11 trips/day

Uncontrolled = 0.7 kg/km-trip x 0.1 km x 2 x 11 trips/day / 8 hr/day = 0.19 kg/hr
Controlled = 0.35 kg/km-trip x 0.1 km x 2 x 11 trips/day / 8 hr/day = 0.10 kg/hr

Emissions from Unloading Soil to Temporary Storage Area
Uncontrolled = 29.17 ton/hr x 0.01 kg/ton = 0.29 kg/hr
Controlled = 29.17 ton/hr x 0.005 kg/ton = 0.15 kg/hr

Emissions from Storing Soil at Temporary Storage Area
Uncontrolled = 0.3 ha x 5.8 kg/ha-day / 24 hr/day = 0.07 kg/hr
Controlled = 0.3 ha x 2.9 kg/ha-day / 24 hr/day = 0.04 kg/hr

Emissions from Loading Soil from Temporary Storage Area
Uncontrolled = 29.17 ton/hr x 0.01 kg/ton = 0.29 kg/hr
Controlled = 29.17 ton/hr x 0.005 kg/ton = 0.15 kg/hr

Emissions from Transporting Soil to Rehabilitation Area
Transporting amount = 10,000 m^3 / 60 days = 166.67 m^3/day
Truck capacity = 15 m^3/trip
Number of trips = 166.67 m^3/day / 15 m^3/trip = 11 trips/day

Emissions from Unloading Soil
Uncontrolled = 29.17 ton/hr x 0.01 kg/ton = 0.29 kg/hr
Controlled = 29.17 ton/hr x 0.005 kg/ton = 0.15 kg/hr

Source	Uncontrolled (kg/hr)	Controlled (kg/hr)
Emissions from Excavation of Soil	3.65	1.82
Emissions from Loading of Soil	1.46	0.73
Emissions from Transporting Soil to Construction Waste Disposal Facility	6.30	3.15
Emissions from Transporting Soil to Temporary Storage Area	0.19	0.10
Emissions from Unloading Soil to Temporary Storage Area	0.29	0.15
Emissions from Storing Soil at Temporary Storage Area	0.07	0.04
Emissions from Loading Soil from Temporary Storage Area	0.29	0.15
Emissions from Transporting Soil to Rehabilitation Area	0.19	0.10
Emissions from Unloading Soil	0.29	0.15
Total	**12.74**	**6.37**

GASEOUS EMISSIONS

Exhaust emission factors for SO2 and NO2 for construction vehicles and machinery were calculated using USEPA coefficients[2], which are presented in Table 5.

Table 5. Exhaust Emission Factors

Machinery / Equipment	Engine Power (HP)	Emission Factors (g/hp-hr)	
		SO_2	NO_2
Truck	360	0.8	4.5
Excavator	260	0.8	4.5
Loader	200	0.8	4.5
Grader	200	0.4	4.5
Roller	50	0.8	5.0
Compactor	260	0.8	4.5
Road Paver	225	0.8	4.5

Table 6. Exhaust Emission Factors

Machinery / Equipment	Engine Power (HP)	Number of Machinery	Emission (kg/hr)	
			SO_2	NO_2
Truck	360	5	1.44	0.72
Excavator	260	2	0.42	0.21
Loader	200	1	0.16	0.08
		Total	**2.02**	**1.01**

Since total SO_2 and NO_2 emissions are lower than the thresholds (6 kg/hr and 4 kg/hr, respectively) defined in the Regulation on Control of Industrial Air Pollution-Annex 2-Table 2.1, these pollutants were excluded from the modelling study.

[2] Emission values from vehicles have been sourced from the Exhaust Emission Factors for Non-Road Engine Modelling (Report No.NR-009A) from the United States Environmental Protection Agency (EPA).

3.3.4 BACKGROUND CONCENTRATIONS

Data for the assessment of the ambient air quality baseline conditions in the study area was collected via field sampling for PM_{10} at the closest settlements to the project. Modelled results at the baseline measurement locations and ambient air quality measurement results were assessed cumulatively using long term values.

Total Pollution Value (TPV) has been calculated by adding the Air Pollution Contribution Value (Background Concentration) and the Long-Term Value (Annual Value) of air quality modeling.

TPV = Background Concentration + Annual Value

4. AERMOD INPUTS

Table 7. Emission Sources and Calculated Hourly Emissions

Source	No	Explanation	Uncontrolled (kg/hr)	Controlled (kg/hr)
Excavation	1	Loading/Unloading	5,979	2,990
	2	Transport	6,685	3,343
Storage	3	Storage	0,073	0,036
		Total	**12,737**	**6,368**

Table 8. Emission Sources and Emission Amounts Used in AERMOD

Source	Explanation	No	Mass Flow (kg/hr)	Mass Flow (g/sec)	Area (m^2)	Mass Flow Rate Entered AERMOD (g/sec.m^2)
EXCAV	Loading/Unloading	1	2,9896	0,8304	14130,4	5,877E-05
TRANSPORT	Transport	2	3,3425	0,9285	10350,9	8,970E-05
STORAGE	Storage	3	0,0363	0,0101	300	3,367E-05

5. RESULTS

5.1 PM_{10} AND SETTLED DUST AMBIENT AIR QUALITY MAPS

Daily Maximum Dust Emission Values

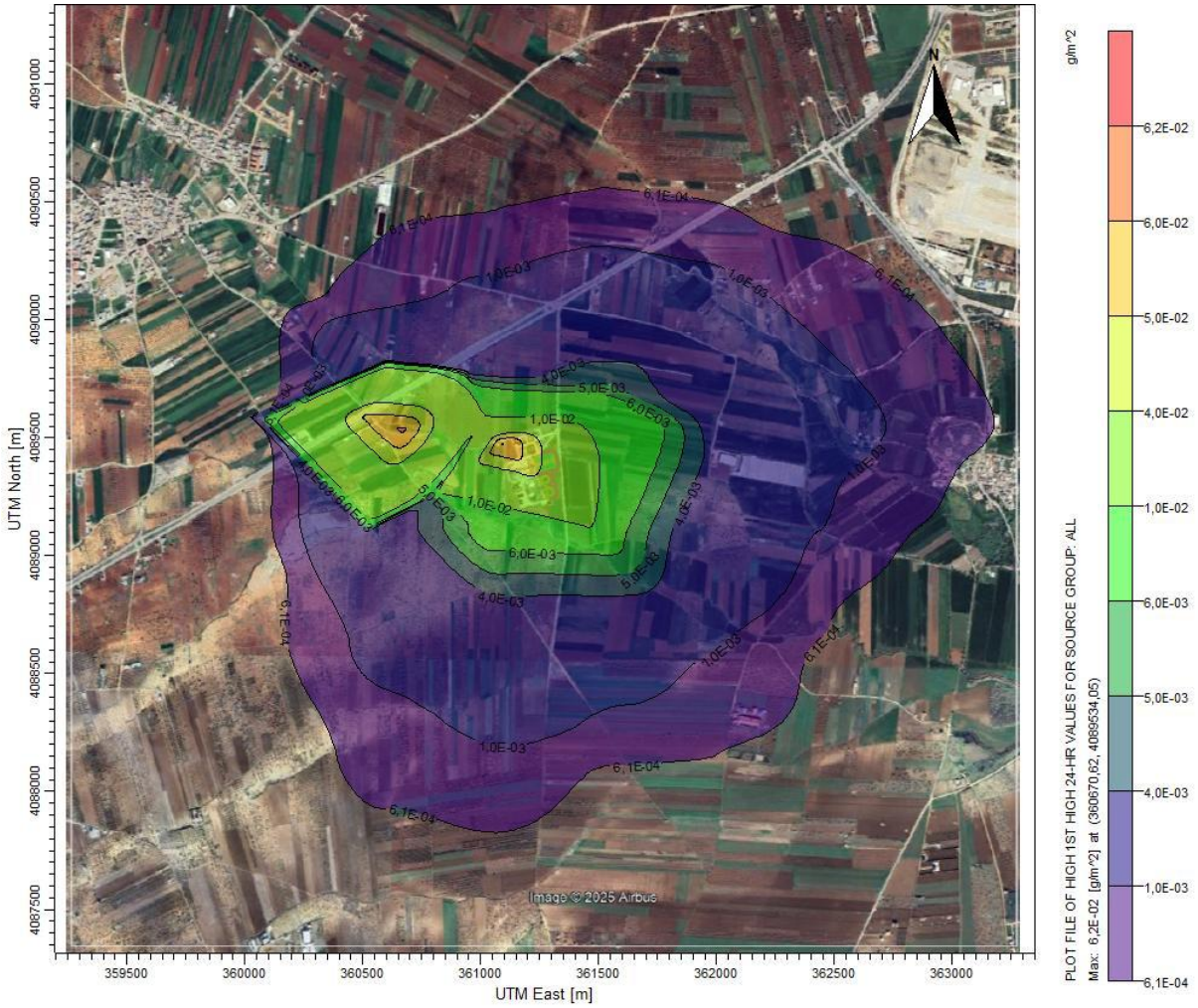


Figure 5.Daily Maximum Dust Emission Values (µg/m^3)

Daily 35th Highest Dust Emission Values

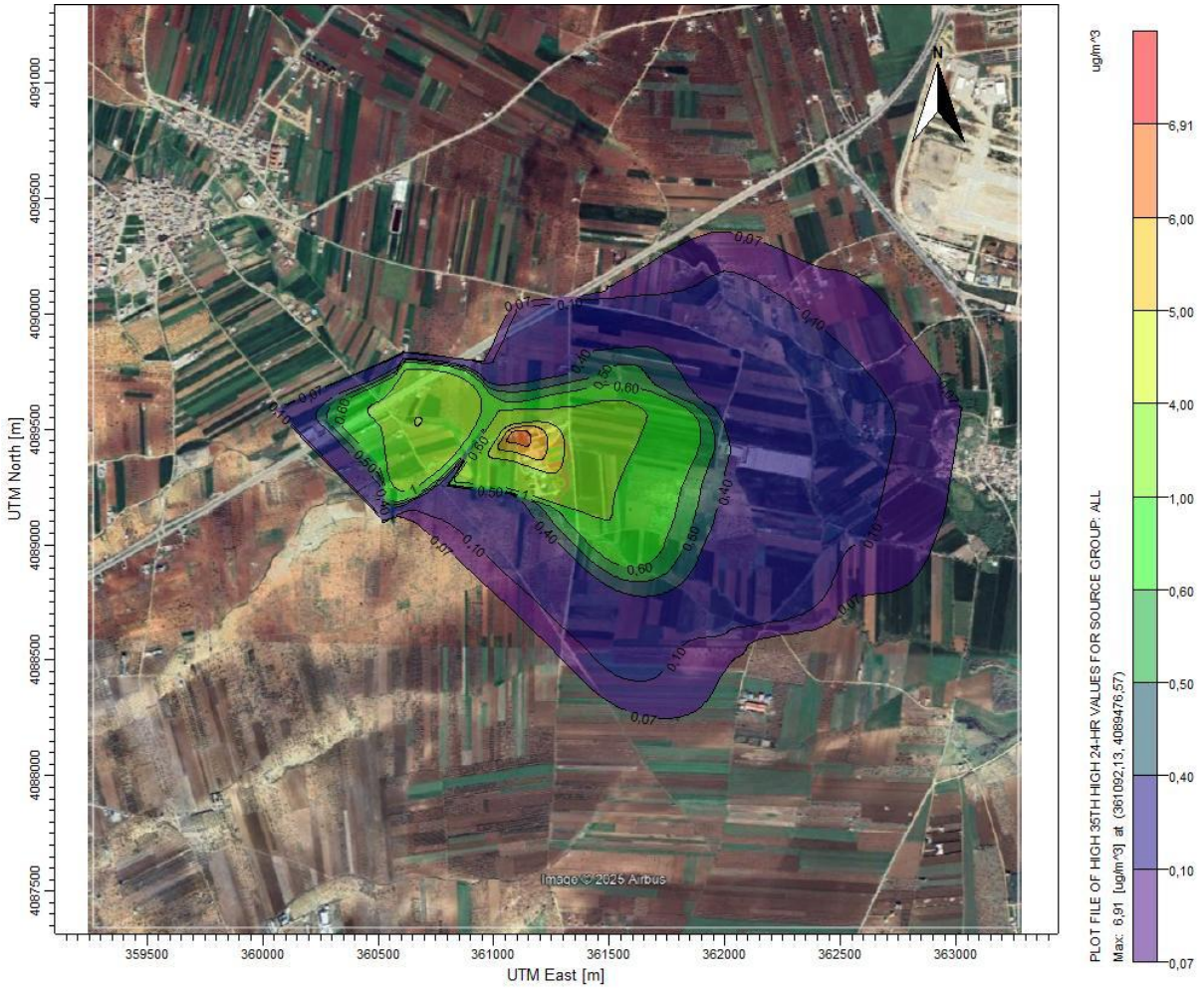


Figure 6. Daily 35th Highest Dust Emission Values (µg/m³)

Annual Highest Dust Emission Values

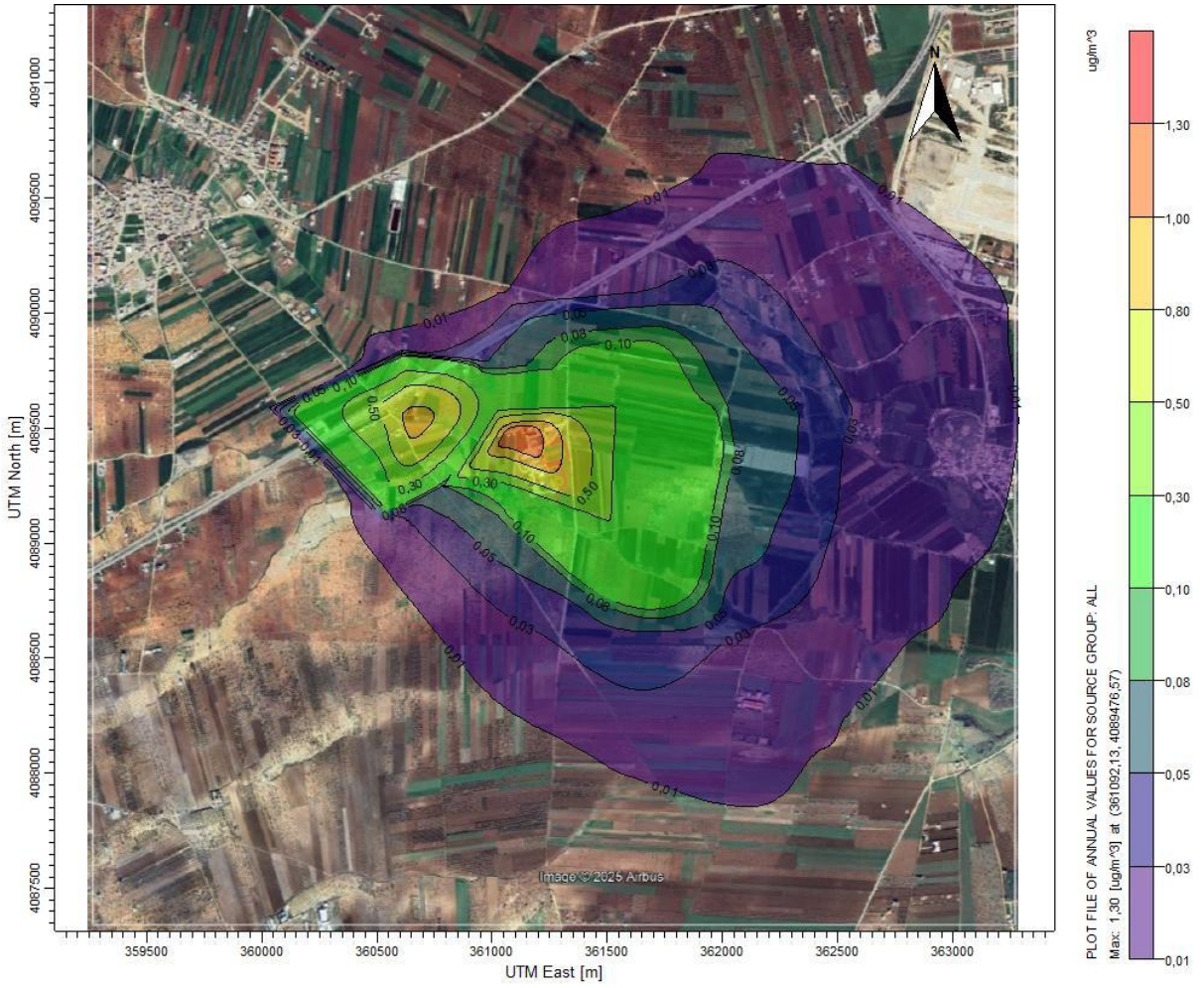


Figure 7.Annual Highest Dust Emission Values (µg/m^3)

Monthly Maximum Settling Dust Emission Values

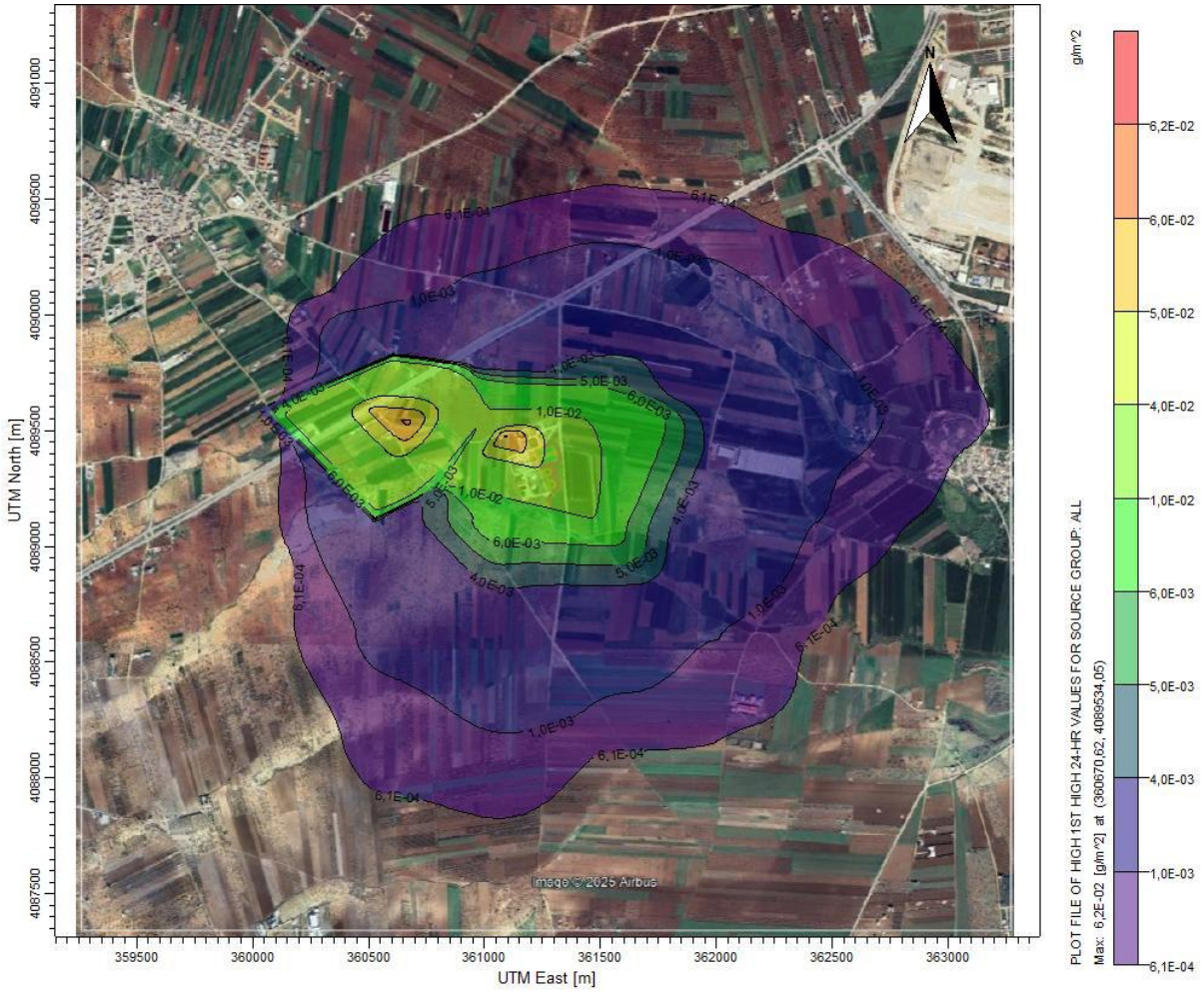


Figure 8.Monthly Maximum Settling Dust Emission Values (gr/m^2)

Annual Maximum Settling Dust Emission Values

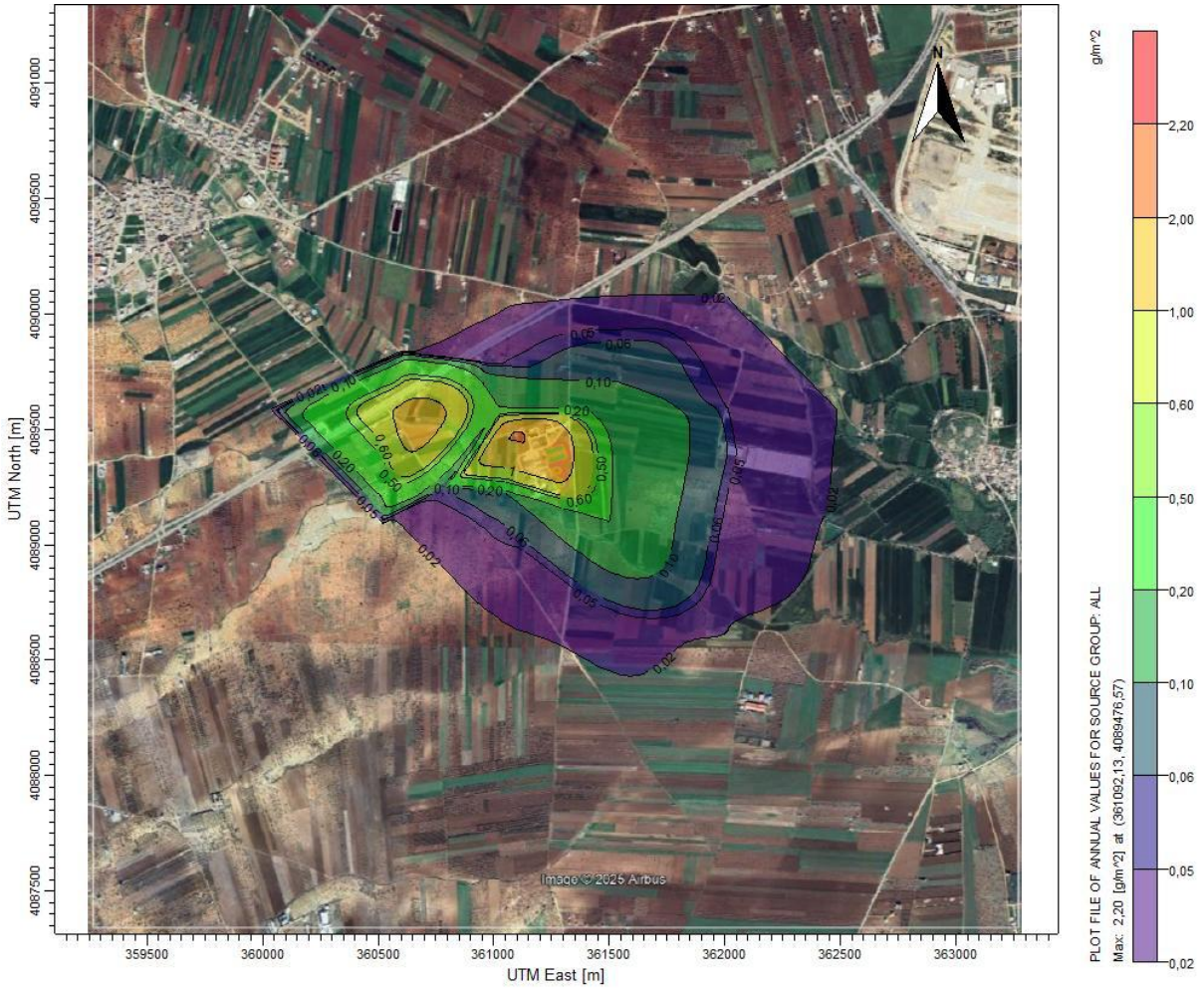


Figure 9.Annual Maximum Settling Dust Emission Values (gr/m^2)

5.2 MODEL RESULTS

The highest emission values calculated according to the modeling study are given in Table 9.

Table 9. Ambient Air Quality Standards and Modeling Results Comparison Table

Parameter	Period	Limit Value	Model Result
PM 10 ($\mu g/m^3$)	Daily (not to be exceeded more than 35 times per calendar year)	50	11,60 (No exceedance) 35^{th} Value 6,91 (Figure 5) (Figure 6)
	Annual	40	1,30 (Figure 7)
Settled Dust (mg/m^2-da)	Daily*	390	61,89 (Figure 8)
	Annual**	210	6,03 (Figure 9)

* The unit of modeling outputs is g/m^2 and daily results were multiplied by 1000 to convert to, mg/m^2-day

** The unit of modeling outputs is g/m^2, to convert to mg/m^2-day, annual results were divided by 365, the number of days in a year, and multiplied by 1000 to convert to milligrams.

According to the daily PM_{10} modeling results, it is seen that the limit values of the Regulation on Control of Industrial Air Pollution are met at all daily PM_{10} receptors in each grid points (100 + 14 discrete receptor points) within a calendar year.

5.4 MODELING RESULTS AT CLOSEST RECEPTOR POINTS

The comparison of modeling results at settlements near the project area and the Regulation on Control of Industrial Air Pollution limit values is given in Table 10. It is seen that the Regulation on Control of Industrial Air Pollution limit values are met at all settlements near the project area.

Table 10. The Comparison of Modeling Results at Settlements Near the Project Area and the Regulation on Control of Industrial Air Pollution Limit Values

	Coordinates		**PM 10 – 35th Value (µg/m^3)**		**Settled Dust (mg/m^2-day)**	
	East	**North**	**Daily**	**Annual**	**Daily***	**Annual ****
Yiğitbey Dairy and Livestock Farm	360246	4090292	-	-	0,38	-
Kadıoğlu Dairy and Livestock Farm	360263	4087391	-	-	0,34	-
Agriculture and Gastronomy School	362059	4089401	0,35	0,08	2,81	0,13
Yağdöver Village	359352	4087833	-	-	0,12	-
Güzelce Village	362718	4087391	0,02	0,01	0,26	0,01
Gedik Village	363233	4087441	0,02	0,01	0,22	0,01
Körkün District	360608	4089840	-	0,02	1,91	0,05
Oğuzeli Organized Industrial Zone	360980	4091558	-	0,00	0,14	-
HOUSE1	361092	4089477	6,91	1,30	60,69	6,04
HOUSE2	360787	4089244	0,18	0,07	4,48	0,17
HOUSE3	361550	4089716	0,58	0,15	5,08	0,25
HOUSE4	360942	4089798	0,05	0,04	2,78	0,12
HOUSE5	361042	4089222	0,31	0,12	10,09	0,27
HOUSE6	360671	4089534	4,23	1,00	61,89	4,15
Limit Value			**50**	**40**	**390**	**210**

* The unit of modeling outputs is g/m^2 and daily results were multiplied by 1000 to convert to, mg/m^2-day

** The unit of modeling outputs is g/m^2, to convert to mg/m^2-day, annual results were divided by 365, the number of days in a year, and multiplied by 1000 to convert to milligrams.

5.5 CUMULATIVE VALUES AND THE TOTAL POLLUTON VALUE

Modelled results at the background measurement locations (Closest houses near the project area) and the ambient air quality measurement results were assessed cumulatively.

Total Pollution Value (TPV) has been calculated by adding the background concentration and the annual value of air quality modeling.

TPV = Background Concentration + Annual Value

The cumulative results for PM_{10} are given in Table 11. According to these results, PM_{10} concentrations remain below the limit values.

Table 11. PM_{10} Total Pollution Value

Sampling Point	Measurement Date	Sampling Result	Model Result	Total Pollution Value	Limit Value
		($\mu g/m^3$)			
1	11.03.2025 12.03.2025 13.03.2025	27	1.30	28.30	40
2	11.03.2025 12.03.2025 13.03.2025	27		28.30	

7. EVALUATION

According to these results:

- PM_{10} concentrations are below the short-term limit value (Daily) at all receptors (100+14 discrete receptors)
- The highest ground level PM_{10} Total Pollution Value was calculated as 29.30 µg/m^3. (Limit Value: 40 µg/m^3)
- The highest ground level settled dust concentration was calculated as 6.03 mg/m^2-day. (Limit Value: 210 mg/m^2-day)
- PM_{10} and settled dust concentrations are below the limit values in the closest settlements.
- The settled dust concentrations remain below the limit value at all receptors.

According to the reasons mentioned above and the results of the controlled case modeling, the environmental impacts of the “Kızılhisar Wastewater Treatment Plant – Second Stage Project” planned to be carried out by Gaziantep Water and Sewerage Administration are below the limit values in accordance with the Regulation on Control of Industrial Air Pollution.

ANNEXES

ANNEX-1 AERMOD MODEL OUTPUTS

ANNEX-2 AMBIENT AIR QUALITY PM_{10} SAMPLING REPORT

ANNEX-1
AERMOD MODEL OUTPUTS

ANNEX-2
AMBIENT AIR QUALITY PM_{10} SAMPLING REPORT

Control Pathway

Dispersion Options

Titles

GAZIANTEP KIZILHISAR WASTEWATER TREATMENT PLANT - SECOND STAGE
AIR QUALITY MODELING

Dispersion Options

☑ Regulatory Default ☐ Non-Default Options

Dispersion Coefficient

Rural

Output Type

☑ Concentration
☑ Total Deposition (Dry & Wet)
☐ Dry Deposition
☐ Wet Deposition

Plume Depletion

☐ Dry Removal
☐ Wet Removal

Output Warnings

☐ No Output Warnings
☐ Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

PM10

Exponential Decay

Option not available

Averaging Time Options

Hours ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 6 ☐ 8 ☐ 12 ☑ 24

☐ Month ☐ Period ☑ Annual

Terrain Height Options

☐ Flat ☑ Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

☐ Yes ☑ No

Default Height = 0.00 m

Control Pathway

Optional Files

Re-Start File	Init File	Multi-Year Analyses	Event Input File	Error Listing File
☐	☐	☐	☐	■

Detailed Error Listing File

Filename: PM10.err

Model Debug File	Met Profile Debug File
☐	☐

Source Pathway - Source Inputs

Point Sources

No Point Sources Specified

Volume Sources

No Volume Sources Specified

Area Sources

Source Type	Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Length of X Side [m]	Length of Y Side [m]	Orientation Angle from North [deg]	Initial Vertical Dim. [m]
AREA	STORAGE	361318.37	4089278.25	711,37	3,00	0,00003	15,00	20,00	-18,43	

Open Pit Sources

No Open Pit Sources Specified

Circular Area Sources

No Circular Area Sources Specified

Polygon Area Sources

Source Type: AREA POLY

Source: EXCAV

Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Initial Vertical Dim. [m]	Number of Vertices (or sides)	X Coordinate for Vertices [m]	Y Coordinate for Vertices [m]
714,32	10,00	0,00006		7	361220.03	4089411.87
		0,00006			361305.43	4089437.32
		0,00006			361333.14	4089365.50
		0,00006			361296.38	4089348.53
		0,00006			361328.05	4089252.39
		0,00006			361293.55	4089224.12
		0,00006			361261.88	4089251.83

Source Pathway - Source Inputs

Flare Sources

No Flare Sources Specified

Line Sources

No Line Sources Specified

Line Volume Sources

No Line Volume Sources Specified

Line Area Sources

Source Type: LINE AREA

Source: TRANSPORT

Length of Side [m]	Emission Rate [g/ s]	Initial Vertical Dimension [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
9,00	0,00009	2.37	361310.33	4089235.63	711.06	10.00
			361210.92	4089515.88	715.92	10.00
			360955.72	4089445.42	715.75	10.00
			360817.95	4089520.57	717.09	10.00
			360614.42	4089508.05	719.04	10.00
			360546.31	4089569.11	720.00	10.00
			360416.37	4089529.97	719.16	10.00

Source Pathway - Source Inputs

Area Sources Generated from Line Sources

Line Source ID	Area Source ID	X Coordinate [m]	Y Coordinate [m]	Release Height [m]	Length of Side [m]	Angle [deg]	Base Elevation [m]	Initial Sigma Z [m]
TRANSPORT	A0000001	361314.57	4089237.14	10.00	297.36	250.47	711.08	2.37
	A0000002	361209.72	4089520.21	10.00	264.74	164.57	715.83	2.37
	A0000003	360957.88	4089449.37	10.00	156.94	208.61	715.77	2.37
	A0000004	360817.67	4089525.06	10.00	203.91	176.48	717.05	2.37
	A0000005	360617.42	4089511.40	10.00	91.47	221.88	718.88	2.37
	A0000006	360545.02	4089573.42	10.00	135.71	163.24	720.00	2.37

Receptor Pathway

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Uniform Cartesian Grid

Receptor Network ID	Grid Origin X Coordinate [m]	Grid Origin Y Coordinate [m]	No. of X-Axis Receptors	No. of Y-Axis Receptors	Spacing for X-Axis [m]	Spacing for Y-Axis [m]
UCART1	359020.00	4087090.00	10	10	500.00	500.00

Non-Uniform Cartesian Grid

Option not in use

Uniform Polar Grid

Option not in use

Non-Uniform Polar Grid

Option not in use

Discrete Receptors

Discrete Cartesian Receptors

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	360246.22	4090291.92		732.00	
2	360263.02	4087390.64		737.19	
3	362059.28	4089400.61		706.18	
4	359351.57	4087832.78		746.49	
5	362718.40	4087391.37		710.73	
6	363233.47	4087441.34		706.96	
7	360607.72	4089840.30		724.27	
8	360979.78	4091558.35		738.66	
9	361092.13	4089476.57		715.34	
10	360786.88	4089244.34		717.42	
11	361549.79	4089716.33		712.79	
12	360941.54	4089797.68		723.58	
13	361042.08	4089222.48		713.78	
14	360670.62	4089534.05		717.32	

Discrete Polar Receptors

Option not in use

Receptor Pathway

Plant Boundary Receptors

Cartesian Plant Boundary

Primary

Option not in use

Intermediate

Option not in use

Discrete Cartesian Receptors (ARC) for EVALFILE Output

Option not in use

Receptor Groups

No Receptor Groups Specified

Meteorology Pathway

Met Input Data

Surface Met Data

Filename: ..\MODEL_SONUC\AERMOD_FILES\Gaziantep_17261_2017.SFC

Format Type: Default AERMET format

Profile Met Data

Filename: ..\MODEL_SONUC\AERMOD_FILES\Gaziantep_17261_2017.PFL

Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 854,00 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2017			
Upper Air		2017			

Data Period

Data Period to Process

Start Date: 1.01.2017 Start Hour: 1 End Date: 31.12.2017 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Output Pathway

Tabular Printed Outputs

Short Term Averaging Period	RECTABLE Highest Values Table										MAXTABLE Maximum Values Table	DAYTABLE Daily Values Table
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th		
ALL	■	☐	☐	☐	☐	☐	☐	☐	☐	☐		No
24	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		No

Threshold Violation Files (MAXIFILE)

Path for MAXIFILES: PM10.AD

Averaging Period	Source Group ID	Treshhold Value	File Unit (Optional)	File Name
24	ALL	50,00		EXCEEDANCE.MAX

Output Pathway

Contour Plot Files (PLOTFILE)

Path for PLOTFILES: PM10.AD

Averaging Period	Source Group ID	High Value	File Name
24	ALL	1st	24H1GALL.PLT
24	ALL	N/A	24H35GALL.PLT
Annual	ALL	N/A	AN00GALL.PLT

Results Summary

GAZIANTEP KIZILHISAR WASTEWATER TREATMENT PLANT - SECOND STAGE
AIR QUALITY MODELING

PM10 - Concentration - Source Group: ALL

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
24-HR	1ST	11.60432	ug/m^3	360670.62	4089534.05	717.32	0.00	717.32	5.06.2017, 24
24-HR	35TH	6.91470	ug/m^3	361092.13	4089476.57	715.34	0.00	715.34	13.06.2017, 24
ANNUAL		1.30193	ug/m^3	361092.13	4089476.57	715.34	0.00	715.34	

PM10 - Deposition - Source Group: ALL

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
24-HR	1ST	0.06189	g/m^2	360670.62	4089534.05	717.32	0.00	717.32	5.06.2017, 24
24-HR	35TH	0.04045	g/m^2	361092.13	4089476.57	715.34	0.00	715.34	13.06.2017, 24
ANNUAL		2.20278	g/m^2	361092.13	4089476.57	715.34	0.00	715.34	

ANKALAB ÇEVRE ANALİZ LABORATUVARI
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e-mail: info@ankalab.com.tr

AB-0415-T	
KD-2025-006A-00	
04/25	

MÜŞTERİNİN ADI/ADRESİ:	**GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ/YAĞDÖVER, YAĞDÖVER YOLU, 27270 ŞAHİNBEY/GAZİANTEP**
TEKLİF NUMARASI:	**T-2025-227-00**
NUMUNENİN ADI VE TARİFİ:	**PM 10 ÖRNEKLENMESİ VE TAYİNİ**
NUMUNENİN KABUL TARİHİ:	**14.03.2025**
AÇIKLAMALAR:	**HAVA İMİSYON ÖLÇÜM RAPORU**
DENEYİN YAPILDIĞI TARİH:	**11-13.03.2025**
RAPORUN SAYFA SAYISI-NÜSHA ADEDİ	**20 SAYFA**

Ankalab Çevre Analiz Laboratuvarı, TÜRKAK' tan AB-0415-T Dosya numarası ile, TS EN ISO/IEC 17025:2017 Standardına göre akredite edilmiştir. Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile Karşılıklı Tanıma Anlaşması İmzalamıştır.

Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

Yayım tarihi	Deney Sorumlusu	Raporu Yazan Personel	Onaylayan/Tarih
07.04.2025	Gökhan Yamaç Çevre Mühendisi e-imzalıdır.	Mustafa AYTEN Kimyager e-imzalıdır.	Soner GÜLCAN Kimya Mühendisi e-imzalıdır. 07.04.2025

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ'ne ait olup ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.

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İÇİNDEKİLER

1. İŞLETMENİN, İŞLETMEDE BULUNAN VE ÖLÇÜM YAPILAN HER BİR TESİSİN FAALİYETİNİN AÇIK BİR ŞEKİLDE ANLATIMI, 2

2.İŞLETMEDE BULUNAN VE ÖLÇÜM YAPILAN HER BİR TESİSTEN KAYNAKLANAN EMİSYONLARIN BU YÖNETMELİK EK-1, EK-2, EK-3 VE EK-5'E GÖRE DEĞERLENDİRİLMESİ, 2

3. ÖLÇÜM SONUÇLARI VE DEĞERLENDİRİLMESİ, 7

4. ÖRNEK HESAPLAMA 7

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ 'ne ait ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz

1. İŞLETMENIN, IŞLETMEDE BULUNAN VE ÖLÇÜM YAPILAN HER BIR TESISIN FAALIYETININ AÇIK BIR ŞEKILDE ANLATIMI,

Tesis, **GAZİANTEP** ili **YAĞDÖVER YOLU, 27270 ŞAHİNBEY** adresinde kurulu olup; Atıksu arıtma tesisi olarak faaliyet göstermektedir.

2.İŞLETMEDE BULUNAN VE ÖLÇÜM YAPILAN HER BIR TESISTEN KAYNAKLANAN EMISYONLARIN BU YÖNETMELIK EK-1, EK-2, EK-3 VE EK-5'E GÖRE DEĞERLENDIRILMESI,

Tablo-3.1 Emisyon Kaynaklarının Ölçüm Parametresine Göre S.K.H.K.Y. Kapsamında İncelenmesi

No/Kod	Emisyon Kaynağı	Parametre	Koordinat
		PM10	
-	TESİSE EN YAKIN HASSAS YAPI ÖNÜ-1	EK-2 Tablo 2.2	361100.00 d D/4089191.00 m K
-	TESİSE EN YAKIN HASSAS YAPI ÖNÜ-2	EK-2 Tablo 2.2	360681.00 d D/4089523.00 m K

b. SKHKKY Ek-2 Kapsamında Değerlendirilme ;

(1) Mevcut ve yeni kurulacak tesislerin etki alanında Hava Kirlenmesine Katkı Değeri (HKKD)'nin dağılım modellemesi kullanılarak hesaplanması, tesis etki alanında hava kalitesinin ölçülmesi ve ölçüm metotlarının belirlenmesi aşağıdaki esaslara göre yapılır:

(a) İşletmelerden atmosfere verilen emisyonların saatlik kütlesel debileri; mevcut tesisler için bacalardan ölçülerek, baca dışı kaynaklar ile yeni kurulacak tesisler için emisyon faktörleri kullanılarak tespit edilir.

(b)Saatlik kütlesel debi (kg/saat) değerleri Tablo 2.1 de verilen değerleri aşması halinde, tesis etki alanında emisyonların Hava Kirlenmesi Katkı Değeri (HKKD) mümkünse saatlik, aksi takdirde, günlük, aylık ve yıllık olarak hesaplanır.

(c) Mevcut tesis için aylık olarak hesaplanmış Hava Kirlenmesine Katkı Değerlerinin (HKKD) en yüksek olduğu farklı inceleme alanlarında her bir inceleme alanında bir istasyon olmak üzere en az iki istasyon kurularak bir ay süre ile sürekli olarak hava kalitesi ölçümleri yapılır. Kirliliğin aylara bağlı olarak değiştiği ve arttığı bölgelerde yetkili merci ölçüm zamanını belirler.

(d) (1) Kurulması planlanan tesislerde; kütlesel debisi Tablo 2.1 deki eşik değeri aşan parametreler için; tesis etki alanında bu yönetmelik Ek-2 Tablo 2.2 de yer alan hava kalitesi sınır değerlerinin sağlanması gerekmektedir.

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Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz

(2) Mevcut tesislerde; kütlesel debisi Tablo 2.1 deki eşik değeri aşan parametreler için; tesis etki alanında Tablo 2.2 de yer alan hava kalitesi sınır değerlerinin sağlanması gerekmektedir. Ancak; tesis etki alanındaki hava kalitesi değerleri Tablo 2.2 de yer alan hava kalitesi sınır değerlerinin aşması durumunda; mevcut tesisler, hava kalitesi katkı değerleri Tablo 2.2 de yer alan hava kalitesi sınır değerlerinin %60'ını aşmamak koşuluyla, tesis etki alanında ölçüm cihazlarıyla hava kalitesini sürekli izleyerek faaliyet gösterebilir.

İşletmeler ve/veya faaliyetlerin, bu Yönetmelik ve/veya Hava Kalitesi Değerlendirme ve Yönetimi Yönetmeliği gereğince hazırlanan illerin temiz hava eylem planlarında belirtilen tedbirleri alması zorunludur.

Tablo 2.1 Kütlesel Debiler

Emisyonlar	Normal işletme şartlarında ve haftalık iş günlerindeki işletme saatleri için kütlesel debiler (kg/saat)	
	Bacadan	Baca Dışındaki Yerlerden
Toz	10	1
Not: Tablodaki emisyonlar İşletmenin tamamından (bacaların toplamı) yayılan saatlik kütlesel debilerdir.		

Ölçümler izleme amacıyla yaptırılmış olup kütlesel debi hesabı yapılmamıştır.

(e) Hava Kirlenmesine Katkı Değerleri, aşağıdaki faktörler ele alınarak hesaplanır.

1) Tesis etki alanındaki Topoğrafik yapının etkileri ve Ek-4 de belirtilen baca yükseklikleri göz önüne alınır.

2) Tesis etki alanındaki binaların etkisi göz önüne alınır. Eğer bacalar, bina veya kulelere bina veya kule yüksekliklerinin 4 katından daha az uzaklıklarda ise: baca yüksekliği binadan 1,7 kat, soğutma kulesinden 1,5 kat fazla olduğu takdirde, binaların etkisi ihmal edilir.

3) Çok zayıf rüzgarların hüküm sürdüğü şartların sık ortaya çıktığı durumlar göz önüne alınır.

4) Hesaplamalar, tesis etki alanı dahilinde ortaya çıkan emisyonların, bir kimyasal veya fiziksel değişmeye uğramadığı kabul edilerek yapılır.

5) Emisyonların yayılması hesaplanırken, her bir durum için yayılma şartlarının sabit olduğu kabul edilir.

(f) Hava Kirlenmesine Katkı Değerinin Hesaplanacağı ve Hava Kalitesinin Ölçüleceği Alanın Belirlenmesi:

1) İşletmenin Hava Kirlenmesine Katkı Değerinin (HKKD) hesaplanmasında veya hava kalitesi ölçümlerinin yapılmasında tesis etki alanı, inceleme alanı ve tepe noktaları dikkate alınır.

2) Tesis Etki Alanı; emisyonların merkezinden itibaren bu yönetmelikte Ek-4 de verilen esaslara göre tespit edilmiş baca yüksekliklerinin 50 (elli) katı yarıçapa sahip alan, tesis etki alanıdır. Zeminden itibaren emisyonların efektif yüksekliği (Δh+h) 30 m'den daha az olan tesislerde, tesis etki alanı, bir kenar uzunluğu 2 km olan kare

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Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz

şeklindeki alandır. Baca dışı emisyon kaynaklarının (alan kaynak) yüzey dağılımı 0,04 km2'den büyükse, tesis etki alanı, alan kaynak karenin ortasında olmak üzere bir kenar uzunluğu 2 km olan kare şeklindeki alandır. Emisyon kaynaklarının yüzeydeki dağılımının tespitinde tesis etki alanı esas alınır.

3) İnceleme Alanı; tesis etki alanı içinde kenar uzunlukları 1 km olan kare şeklindeki alanlardır. Kirlenme hakkında kararın verilemediği özel durumlarda inceleme alanının kenar uzunlukları 500 metre olarak alınır.

4) Emisyon kaynağının kuzeyinden itibaren saat yönünde 10 derecelik ardışık açılarla emisyon kaynağına çizilen R yarıçapındaki çemberin kare şeklindeki inceleme alanı içinde kalan yayı kestiği noktalar tepe noktası olarak kabul edilir.

5) Hava Kirlenmesine Katkı Değeri (HKKD), tesis etki alanı içinde her bir inceleme alanındaki tüm tepe noktalarında ve bütün yayılma durumları için hesaplanan değerin aritmetik ortalaması alınarak bulunur. Hava kirlenmesine katkı değeri, Meteoroloji Genel Müdürlüğünden saatlik meteorolojik verilerin alınabilmesi halinde saatlik, yoksa günlük, aylık ve yıllık olarak hesaplanır.

(g) Toplam Kirlenme Değeri (TKD): tesis etki alanı içinde hesaplanmış Hava Kirlenmesine Katkı Değeri (HKKD) ile Ölçüm veya hesapla bulunan Uzun Vadeli Değerin (UVD) toplamından, yeni kurulacak tesisler için teşkil edilir.

TKD= HKKD+UVD

(ğ) Emisyon Kaynakları ve Kütlesel Debi:

1) Modelde yer alacak emisyon kaynakları, hava kirleticilerinin tesisten atmosfere yayıldığı yerlerdir. Emisyonlarını bir baca üzerinden atmosfere veren tesislerin, bacaları nokta kaynak, baca dışından veya çok sayıda birbirine yakın küçük bacaların bulunduğu alanlardan atmosfere verilen kirletici kaynaklar, alan kaynak, hareketli kirletici kaynaklar çizgi kaynak olarak nitelendirilir.

2) Emisyonların kütlesel debisi, İşletme şartlarında emisyon kaynaklarından açık havaya verilen hava kirleticilerinin ortalama saatlik kütlesel (kg/saat) debileridir. Emisyonların kütlesel debilerinde bir saatten daha kısa periyotlarda azalan veya artan salınışlar oluyorsa bu salınışların ortalaması, saatlik kütlesel debi olarak belirlenir. Emisyonlarını baca dışındaki yerlerden veren tesisler ile yeni kurulacak tesislerin kütlesel debileri emisyon faktörleri kullanılarak bulunur.

Ölçümler izleme amacıyla yaptırılmış olup kütlesel debi hesabı ve modelleme çalışması yapılmamıştır.

h) Tesis Etki Alanında Hava Kalitesinin Ölçümü, Hesaplanması ve Ölçüm Süresi:

1) Mevcut tesislerde; tesis etki alanında, uluslararası kabul görmüş ve yaygın olarak kullanılan dağılım modelleri, metotlar ve Ek-2 de yer alan esaslar çerçevesinde, inceleme alanlarının tepe noktaları için

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hesaplanan hava kirlenmesine katkı değerlerinin (HKKD) en yüksek olduğu farklı inceleme alanlarında her bir inceleme alanında bir istasyon olmak üzere en az iki istasyon kurularak bir ay süre ile sürekli olarak hava kalitesi ölçümleri yapılır. Kirliliğin aylara bağlı olarak değiştiği ve arttığı bölgelerde yetkili merci ölçüm zamanını belirler.

2) Yeni kurulacak tesislerde, tesis etki alanında, Ek-2 de yer alan esaslar çerçevesinde esaslar çerçevesinde, hava kirlenmesine katkı değeri bulunur. Ayrıca tesis etki alanında mevcut tüm önemli kirleticiler de dikkate alınarak hesap veya ölçüm yolu ile uzun vadeli değer (UVD) bulunur. Yeni kurulacak tesisler için; tesis etki alanı içinde hesaplanmış hava kirlenmesine katkı değeri (HKKD) ile ölçüm veya hesapla bulunan uzun vadeli değerin (UVD) toplamından, toplam kirlenme değeri (TKD) bulunur. Yetkili merci; kurulacak tesisin etki alanında bulunan kirletici kaynak yoğunluğuna bağlı olarak, gerekirse 1 (bir) ay süre ile bir istasyonda hava kalitesi ölçümleri yaptırabilir.

3) Hava kalitesi ölçümlerinde Pasif Örnekleme Metodu kullanılması halinde; modelleme sonuçlarına göre hesaplanan Hava Kalitesine Katkı Değerinin en yüksek olduğu inceleme alanında 2 (iki) ay süre için en az 4 adet pasif örnekleme noktası seçilir. Hava kirliliğinin yoğun olduğu diğer inceleme alanlarında da, en az iki inceleme alanı olmak kaydıyla her bir inceleme alanında 2 adet pasif örnekleme noktası seçilir. Hava kirliliğinin yoğun olduğu inceleme alanlarında pasif örnekleme yeri ve sayısı, işletmenin kapasitesi ve kirletici emisyon yüküne bağlı olarak (işletmede bulunan bacaların yüksekliği, kütlesel debileri, kirleticilerin dağılım yönleri ile bölgede bulunan yerleşim alanları da göz önüne alınarak) belirlenir. Yetkili merci tarafından örnekleme yeri, sayısı ve/veya süresi arttırılabilir.”

4) Çöken toz ölçümü sırasında; tesis inceleme alanı içinde en az 2 (iki) ölçüm noktasında, hakim rüzgar yönü de dikkate alınarak yapılır. Aynı bölgede toz emisyonuna neden olan başka kaynakların da bulunması durumunda ölçüm noktası sayısı tesis dışındaki diğer kaynakların katkılarının belirlenmesi için attırılabilir. Ölçüm süresi birer aylık 2 (iki) ölçüm olup, toplam 2 (iki) aydır. Aylık olarak bulunacak değerler gün sayısına bölünerek bir günde çöken ortalama toz miktarı hesaplanır.

5) Hava kalitesi ölçümleri kural olarak yer seviyesinden, 1,5 - 4,0 metre arasındaki yüksekliklerde, binadan (veya ekili alandan) en az 1,5 metre yan mesafe tutularak yapılır. Ormanda yapılan ölçümler, ağaç yüksekliğinden daha yukarıda yapılmalıdır.

6) Ölçme Metotlarının kabul edilebilirlikleri, TSE tarafından standartlaştırıldıktan ve Bakanlıkça tebliğ edildikten sonra tescil edilir. İlgili TSE Standardı mevcut değilse, güvenilirliği Bakanlıkça kabul edilen DIN, EPA normlarına uygun metot standartları tatbik edilir. Metotlar tebliği ile ilan edilir.

7) Tesis etki alanında hava kalitesi ve emisyon ölçümleri, akredite edilmiş veya Bakanlıkça uygun bulunan laboratuvarlara sahip olan özel veya kamu kurum/kuruluşları tarafından yapılır.

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Tablo 2.2 Tesis Etki Alanında Hava Kalitesi Sınır Değerleri

Parametre	Süre	Birimi	YIL						
			2014	2015	2016	2017	2018	**2019-2023**	2024 ve sonrası
Çöken toz	KVS	mg/m²gün	390	390	390	390	390	**390**	390
	UVS		210	210	210	210	210	**210**	210

Parametre	Süre	Birimi	YIL						
			2014	**2015**	**2016**	**2017**	**2018**	**2019-2023**	**2024 ve sonrası**
Havada Asılı Partikül Madde (PM 10)	24 saatlik (bir yılda 35 defadan fazla aşılmaz)	**µg/m³**	**100**	**90**	**80**	**70**	**60**	**50**	**50**
	Yıllık		**60**	**56**	**52**	**48**	**44**	**40**	**40**

Ölçümler izleme amacıyla yaptırılmış olup kütlesel debi hesabı ve modelleme çalışması yapılmamıştır.

Pm10 cihazı konularak 72 saat süre ile 3 noktada ölçüm çalışmaları yapılmış olup sonuçlar, tablolar halinde raporun ölçüm sonuçları kısmında sunulmuştur. Raporun 3. Ölçüm Sonuçları ve Değerlendirilmesi bölümünde ölçüm sonuçlarına ve yönetmelik maddelerine göre değerlendirme yapılmıştır. Ölçüm sonuçları yönetmelikte belirlenen sınır değerleri aşmamaktadır.

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3. ÖLÇÜM SONUÇLARI VE DEĞERLENDIRILMESI,

Tarih	Örnekleme hacmi (m^3)	Basınç	Gaz Sıcaklığı ^0C	Kütle (mg.)	PM 10 Konsantrasyonu (µg/m3)	EK-2 TABLO 2.2 Sınır Değer
11.03.2025	55.110	1013.0	17.0	1.41	27.18	50 µg/m3 24 saatlik (bir
12.03.2025	55.115	1015.0	19.1	1.4	27.12	yılda 35 defadan fazla
13.03.2025	55.112	1016.0	18.2	1.36	26.24	aşılmaz), Yıllık 40 µg/m3,
				ORTALAMA	**26.85**	2024 ve sonrası 50 µg/m3,

Tarih	Örnekleme hacmi (m^3)	Basınç	Gaz Sıcaklığı ^0C	Kütle (mg.)	PM 10 Konsantrasyonu (µg/m3)	EK-2 TABLO 2.2 Sınır Değer
11.03.2025	55.112	1013.0	17.0	1.4	26.98	50 µg/m3 24 saatlik (bir
12.03.2025	55.113	1015.0	19.1	1.39	26.93	yılda 35 defadan fazla
13.03.2025	55.120	1016.0	18.2	1.41	27.20	aşılmaz), Yıllık 40 µg/m3,
				ORTALAMA	**27.04**	

*** TS EN 12341 gereğince 24 saat süre ile (2,3m^3/h ± 2) örnekleme yapılarak sonuçlar yukarıdaki tablolarda verilmiştir.**

Pm10 cihazı konularak 72 saat süre ile 2 noktada ölçüm çalışmaları yapılmış olup, Ölçüm sonuçları yönetmelikte belirlenen sınır değerleri aşmamaktadır.

4. ÖRNEK HESAPLAMA

PM 10 ÖRNEK HESAPLAMA						
PM 10 mg=	(Ölçüm sonrası filtre ağırlığı-ölçüm öncesi filtre ağırlığı)*1000					
PM10 mg/m3=	(Ölçüm sonrası filtre ağırlığı-ölçüm öncesi filtre ağırlığı)*Örneklenen Hacim Litre/1000					
Sıcaklık Düzeltmesi=	(273,14+Okunan Sıcaklık Değeri)/273,14					
Basınç Düzeltmesi=	1013/Okunan Basınç Değeri					
PM10 mg/Nm3=	((Ölçüm sonrası filtre ağırlığı-ölçüm öncesi filtre ağırlığı*1000)/(Çekilen Litre/1000))*(Sıcaklık Düzeltmesi*Basınç Düzeltmesi)					
Ölçüm Öncesi Filtre Ağırlığı=	0,09415					
Ölçüm Sonrası Filtre Ağırlığı=	0,09968					
Örnekleme Hacmi Litre=	2295					
Sıcaklık	9,6		Sıcaklık Düzeltmesi=	1,035147		
Basınç	1022		Basınç=	0,991194		
			Örnekleme Hacmi m3=		2,295	
PM10 mg=	5,53					
PM10 mg/Nm3=	2,47					

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EKLER

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EK-1

YETERLİLİK BELGELERİ

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Türk Akreditasyon Kurumu

AKREDİTASYON SERTİFİKASI

Deney Laboratuvarı olarak faaliyet gösteren,

ANKALAB ÇEVRE ANALİZ LABORATUVARI ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMALIK SANAYİ VE TİCARET LİMİTED ŞİRKETİ

Merkez Adres: ATA MAH. 1069 CAD. No:3/1 ÇANKAYA/ANKARA Ankara / Türkiye

TÜRKAK tarafından yapılan denetim sonucunda TS EN ISO/IEC 17025:2017 standardına göre Ek'te yer alan kapsamlarda akredite edilmiştir.

Akreditasyon No : AB-0415-T

Akreditasyon Tarihi : 07.11.2010

Revizyon Tarihi / No : 25.02.2025 / 15

Bu Sertifika, yukarıda açık adı ve adresi yazılı Kuruluşun TS EN ISO/IEC 17025:2017 Standardına, ilgili Yönetmelik ve Tebliğlere uygunluğunu sürdürmesi halinde **04.07.2027** tarihine kadar geçerlidir.

Gülden Banu Müderrisoğlu
Genel Sekreter

Türk Akreditasyon Kurumu (TÜRKAK) ISO/IEC 17025 alanında Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile çok taraflı anlaşma (MLA/MRA) imzalamıştır.

Bu belge 5070 sayılı elektronik imza kanununa göre Gülden Banu Müderrisoğlu tarafından güvenli elektronik imza ile imzalanmıştır. E-imzalı belgeyi doğrulamak için QR kodunu kullanabilirsiniz.

F701-040 +90 312 410 82 00 - www.turkak.org.tr

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Akreditasyon Sertifikası Eki (Sayfa 14/20)
Akreditasyon Kapsamı

ANKALAB ÇEVRE ANALİZ LABORATUVARI ÖLÇÜM HİZMETLERİ MÜHENDİSLİK DANIŞMALIK SANAYİ VE TİCARET LİMİTED ŞİRKETİ

Akreditasyon No: AB-0415-T
Revizyon No: 15 Tarih: 25.02.2025

Deney Laboratuvarı

Adres : ATA MAH. 1069 CAD. No:3/1 ÇANKAYA/ANKARA Ankara / Türkiye

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Web Sitesi : www.ankalab.com.tr

Atık	Toplam Çözünmüş Madde Ön İşlem: Katıdan Özütleme Metodu Ölçüm: Gravimetrik Metot	TS EN 12457-4 SM 2540 C
Toprak	Yüzey Topraktan Numune Alma, Numunelerin Taşınma ve Muhafazası	TS 9923
Toprak	Kuru Madde (%) Muhtevası / Nem (%) Tayini Gravimetrik Metot	TS 9546 EN 12880
Toprak	Yanma Kaybı Tayini (550 ± 25)°C Gravimetrik Metot	TS EN 15935
Arıtma çamuru	Kuru Kütlenin Kızdırma Kaybının Tayini Gravimetrik Metot	TS EN 15935
İmisyon (Çevre Havası)	Askıdaki Taneciklı Maddenin PM10 veya PM 2,5 Kütle Derişimlerinin Tayini Gravimetrik Metot	TS EN 12341
İmisyon (Çevre Havası)	Askıdaki Taneciklı Maddenin PM10 Kesrinin Tayini Gravimetrik Metot	EPA 40 CFR 50 App.J
İmisyon (Çevre Havası)	Çöken Toz Tayini Gravimetrik Metot	TS 2342 TS 2341
Atıksu	Toplam Klor Tayini Spektrofotometrik Metot	SM 4500-Cl G
Atıksu	Bağlı Klor Tayini Spektrofotometrik Metot	SM 4500-Cl G
Baca Gazı	Sabit Kaynak Emisyonları-Karbonmonoksit (CO) ve Karbondioksit (CO_2) Kütle Derişimlerinin Tayini Ölçüm: Elektrokimyasal Hücre Metodu Ölçüm: Kızılötesi Absorpsiyon Metodu Ölçüm: Hesaplama Metodu	TS ISO 12039 *

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Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz

EK-2

KALİBRASYON BELGELERİ

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ 'ne ait ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz

AVL Kalibrasyon Laboratuarı

AVL AKUSTİK VİBRASYON KALİBRASYON LAB. LTD. ŞTİ.

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TÜRKAK Kalibrasyon TS EN ISO/IEC 17025 AB-0089-K

AB-0089-K
243090
08-24

KALİBRASYON SERTİFİKASI
Calibration Certificate

Cihazın Sahibi *Customer Name*	:	ANKALAB ÇEVRE ANALİZ LABORATUVARI LTD. ŞTİ. Ata Mah. 1069. Sok. No: 3/1 ÇANKAYA / ANKARA
İstek Numarası *Order No.*	:	T-0824-082
Makine / Cihaz *Instrument / Device*	:	PM10 Toz Örnekleme Cihazı - Akış Ölçer *PM10 Sampling Device - Flow Meter*
İmalatçı *Manufacturer*	:	MCZ
Tip *Type*	:	µPNS-LVS1
Seri Numarası *Serial number*	:	2012-094
Kalibrasyon Tarihi *Date of calibration*	:	22.08.2024
Sertifika Sayfa Sayısı *Number of pages*	:	4

Bu kalibrasyon sertifikası, Uluslararası Birimler Sisteminde (SI) tanımlanmış birimleri realize eden ulusal ölçüm standartlarına izlenebilirliği belgeler.

This calibration certificate documents the traceabilty to national standards, which realize the unit of measurement according to the International System of Units (SI).

Kalibrasyon laboratuvarı olarak faaliyet gösteren AVL Kalibrasyon Laboratuvarı, TÜRKAK'tan AB-0089-K dosya numarası ile TS EN ISO/IEC 17025-2017 standardına göre akredite edilmiştir.

AVL Kalibrasyon Laboratuvarı is accredited by TÜRKAK under registration number AB-0089-K for TS EN ISO/IEC 17025-2017 as test laboratory.

Türk Akreditasyon Kurumu(TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanınma antlaşmasını imzalamıştır.

The Turkish Accreditation Acency (TURKAK) is signatory to the multilateral agreements of the European co-operation for the Accreditation(EA) and of the International Laboratory Accreditation (ILAC) for the Mutual recognation of test reports.

Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

The measurements, the uncertainties with confidence probability and calibration methods are given on the following pages which are part of this certificate.

Mühür / Kaşe *Seal*	Yayım Tarihi *Publication Date*	Kalibrasyonu Yapan *Calibrated By*	Onaylayan / Tarih *Approval / Date*
AVL Kalibrasyon	22.08.2024	Mehmet GÜVENDİ Kalibrasyon Personeli *Calibration Responsible* e-imzalıdır	Younes NEVAYESHİRAZİ / 22.08.2024 Laboratuvar Müdürü *Laboratory Manager* e-imzalıdır

Bu sertifika 5070 sayılı kanununa göre güvenli elektronik imza ile imzalanmıştır. Belge teyidi için sayfalarda yer alan karekodu okutabilirsiniz.
This certificate is signed using secure digital signature according to article of law, number 5070. For confirmation, read the QR Code using QR Code reader.

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ 'ne ait ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz

1. Cihaza Ait Bilgiler
Device to be Calibrated

Cihazın Adı *Name of the Instrument*	:	PM10 Toz Örnekleme Cihazı - Akış Ölçer *PM10 Sampling Device - Flow Meter*
İmalatçısı *Manufacturer*	:	MCZ
Seri Numarası *Serial Number*	:	2012-094
Bölüntüsü *Scale Division*	:	0,01
Tipi *Type*	:	µPNS-LVS1

2. Cihazın Laboratuvara Kabul Tarihi : 19.08.2024
Date of Recipt of Device

3. Kalibrasyon Metodu
Calibration Method

Test cihazının kalibrasyonu PR.LBBR.201 prosedürüne uygun olarak karşılaştırma metodu ile gerçekleştirilmiştir.

4. Çevresel Şartlar
Environmental Conditions

Ortam Sıcaklığı *Ambient Temperature*	:	(20,5 ± 3)	°C
Bağıl Nem *Relative Humidity*	:	(30,5 ± 25)	%
Ortam Basıncı *Ambient Pressure*	:	(915 ± 1)	mbar

5. Kalibrasyonda Kullanılan Referans Cihazlar
Reference Equipments Used During Calibration

Cihaz *Device*	İmalatçı *Manufacturer*	Seri No *Serial No*	Sertifika No *Certificate No*	İzlenebilirlik *Traceability*
Akış - Akış Kalibratörü	Sierra	132548	G2AG-0147	UME
Akış - Göstergeli Basınç Sensörü	Verth / Trafag	14044035 / 409201-003	2044839	UMS
Akış - Göstergeli Basınç Sensörü	Verth / Trafag	14044036 / 409201-004	2044838	UMS
Akış - Göstergeli Sıcaklık Ölçer	Sper Scientific	100904222 / T1	235279	AVL
Akış - Göstergeli Sıcaklık Ölçer	Sper Scientific	100904222 / T2	235280	AVL
Sıcaklık ve Nem Ölçer	Extech	12081741	235255	AVL

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Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz FR 17 REV 04 10.10.2024

6. Kalibrasyon Sonuçları
Calibration Results

6.1. Ortam Şartlarında Sonuçlar
Results in Enviromental Conditions

Ortam Şartlarında Ölçülen Debi *Measured Flow In Enviromental Conditions*		Akış Sapması *Flow Deviation*		Ölçüm Belirsizliği *Calibration Uncertainty*	
Referans Cihaz *Reference Instrument*	Test Edilen Cihaz *Instrument Under Test*	Hata *Deviation*	Bağıl *Relative*	Belirsizlik *Uncertainty*	Bağıl *Relative*
dm^3/min	dm^3/min	dm^3/min	%	dm^3/min	%
20,1400	20,0000	-0,1400	-0,6951	0,0665	0,33
25,1776	25,0000	-0,1776	-0,7054	0,0831	0,33
30,1570	30,0000	-0,1570	-0,5206	0,0995	0,33
35,2826	35,0000	-0,2826	-0,8010	0,1164	0,33
38,3453	38,5000	0,1547	0,4034	0,1265	0,33

6.2. Standart Şartlarda Sonuçlar
Results in Standard Conditions

Standart Şartlarda Ölçülen Debi *Measured Flow In Standart Conditions*		Akış Sapması *Flow Deviation*		Ölçüm Belirsizliği *Calibration Uncertainty*	
Referans Cihaz *Reference Instrument*	Test Edilen Cihaz *Instrument Under Test*	Hata *Deviation*	Bağıl *Relative*	Belirsizlik *Uncertainty*	Bağıl *Relative*
dm^3/min	dm^3/min	dm^3/min	%	dm^3/min	%
18,1748	18,0484	-0,1264	-0,6955	0,0600	0,33
22,7207	22,5605	-0,1602	-0,7051	0,0750	0,33
27,2143	27,0726	-0,1417	-0,5207	0,0898	0,33
31,8397	31,5847	-0,2550	-0,8009	0,1051	0,33
34,6036	34,7431	0,1395	0,4031	0,1142	0,33

6.3. Sıcaklık ve Basınç Ölçüm Sonuçları
Temperature and Pressure Measurement Results

Referans Cihaz Ortalama Değer *Referance Instrument Average Value*		Test Cihazı Ortalama Değer *Test Instrument Avarage Value*		Sapma *Deviation*		Belirsizlik *Uncertainty*	
Sıcaklık *Temperature*	Basınç *Pressure*	Sıcaklık *Temperature*	Basınç *Pressure*	Sıcaklık *Temperature*	Basınç *Pressure*	Sıcaklık *Temperature*	Basınç *Pressure*
°C	mbar	°C	mbar	°C	mbar	°C	mbar
20,5	915	20,4	915	-0,10	0,00	0,3	1

Kalibrasyonla İlgili Notlar
Notes About Calibration

Standart şartlar 20 °C ve 1013,25 mbar 'dır.
Standard conditions are 20 °C and 1013,25 mbar.

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7. Uygunluk Beyanı
Statement of Compliance

Ölçüm sonuçları ve ölçüm belirsizliği yukarıda verilmiştir. Kullanıcı bunları dikkate alarak uygunluğuna karar vermelidir. Beyan edilen genişletilmiş belirsizlik değeri standart belirsizliğin normal dağılımı için; yaklaşık % 95 güvenirlik seviyesini sağlayan k=2 kapsam faktörü ile çarpımının sonucudur. Standart ölçüm belirsizliği GUM ve EA-4/02 dokümanlarına uygun olarak belirlenmiştir. Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı bir bölümüdür.

The measurement results and measurement uncertinity were given above. The user have to consider the results and decide compliance of the device. The reported expended uncertainity of measurement is stated as the standart uncertainity of multitude by coverage factor k=2, which for a normal distribution corresponds to coverage of approximately 95%. The standard measurement uncertainty is defined according to the GUM and EA-4/02documents. Measurement results, the expanded measurement uncertainty of measurement and calibration methods, is an integral part of the this certificate.

8. Açıklamalar
Remarks

Bu sertifikada bulunan sonuçlar cihazın kalibrasyon tarihindeki durumu kapsar ve uzun dönem kararlığı hakkında bir öngörü içermez.

The result reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument

Bu ölçüm raporu GAZİANTEP SU VE KANALİZASYON İDARESİ KIZILHİSAR ATIKSU ARITMA TESİSİ 'ne ait ANKALAB Çevre Analiz Laboratuvarı Ölçüm Hizmetleri'nin yazılı izni olmadan kısmen veya tamamen çoğaltılıp kopyalanamaz. **İmzasız raporlar geçersizdir. Deney sonuçları sadece deneyi yapılan numuneye aittir. Deney sonuçları ile ilgili uygunluk beyanı (uygundur veya uygun değildir) verildiğinde, ölçüm belirsizliği değeri 'Paylaşılan Risk Kuralına' göre değerlendirilir ve sonuçlar ölçüm belirsizliği değerlendirilmeden olduğu gibi raporlanır.**
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TÜRKAK Kalibrasyon TS EN ISO/IEC 17025 AB-0089-K

AB-0089-K
243091
08-24

KALİBRASYON SERTİFİKASI
Calibration Certificate

Cihazın Sahibi *Customer Name*	:	ANKALAB ÇEVRE ANALİZ LABORATUVARI LTD. ŞTİ. Ata Mah. 1069. Sok. No: 3/1 ÇANKAYA / ANKARA
İstek Numarası *Order No.*	:	T-0824-082
Makine / Cihaz *Instrument / Device*	:	PM10 Toz Örnekleme Cihazı - Akış Ölçer *PM10 Sampling Device - Flow Meter*
İmalatçı *Manufacturer*	:	MCZ
Tip *Type*	:	µPNS-LVS1
Seri Numarası *Serial number*	:	2102-095
Kalibrasyon Tarihi *Date of calibration*	:	22.08.2024
Sertifika Sayfa Sayısı *Number of pages*	:	4

Bu kalibrasyon sertifikası, Uluslararası Birimler Sisteminde (SI) tanımlanmış birimleri realize eden ulusal ölçüm standartlarına izlenebilirliği belgeler.

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Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

The measurements, the uncertainties with confidence probability and calibration methods are given on the following pages which are part of this certificate.

Mühür / Kaşe *Seal*	Yayım Tarihi *Publication Date*	Kalibrasyonu Yapan *Calibrated By*	Onaylayan / Tarih *Approval / Date*
AVL Kalibrasyon	22.08.2024	Mehmet GÜVENDİ Kalibrasyon Personeli *Calibration Responsible* e-imzalıdır	Younes NEVAYESHİRAZİ / 22.08.2024 Laboratuvar Müdürü *Laboratory Manager* e-imzalıdır

Bu sertifika 5070 sayılı kanununa göre güvenli elektronik imza ile imzalanmıştır. Belge teyidi için sayfalarda yer alan karekodu okutabilirsiniz.
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Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz

1. Cihaza Ait Bilgiler
Device to be Calibrated

Cihazın Adı *Name of the Instrument*	:	PM10 Toz Örnekleme Cihazı - Akış Ölçer *PM10 Sampling Device - Flow Meter*
İmalatçısı *Manufacturer*	:	MCZ
Seri Numarası *Serial Number*	:	2102-095
Bölüntüsü *Scale Division*	:	0,01
Tipi *Type*	:	µPNS-LVS1

2. Cihazın Laboratuvara Kabul Tarihi : 19.08.2024
Date of Recipt of Device

3. Kalibrasyon Metodu
Calibration Method

Test cihazının kalibrasyonu PR.LBBR.201 prosedürüne uygun olarak karşılaştırma metodu ile gerçekleştirilmiştir.

4. Çevresel Şartlar
Environmental Conditions

Ortam Sıcaklığı *Ambient Temperature*	:	(20,5 ± 3)	°C
Bağıl Nem *Relative Humidity*	:	(30,5 ± 25)	%
Ortam Basıncı *Ambient Pressure*	:	(915 ± 1)	mbar

5. Kalibrasyonda Kullanılan Referans Cihazlar
Reference Equipments Used During Calibration

Cihaz *Device*	İmalatçı *Manufacturer*	Seri No *Serial No*	Sertifika No *Certificate No*	İzlenebilirlik *Traceability*
Akış - Akış Kalibratörü	Sierra	132548	G2AG-0147	UME
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Akış - Göstergeli Basınç Sensörü	Verth / Trafag	14044036 / 409201-004	2044838	UMS
Akış - Göstergeli Sıcaklık Ölçer	Sper Scientific	100904222 / T1	235279	AVL
Akış - Göstergeli Sıcaklık Ölçer	Sper Scientific	100904222 / T2	235280	AVL
Sıcaklık ve Nem Ölçer	Extech	12081741	235255	AVL

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Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz FR 17 REV 04 10.10.2024

6. Kalibrasyon Sonuçları
Calibration Results

6.1. Ortam Şartlarında Sonuçlar
Results in Enviromental Conditions

Ortam Şartlarında Ölçülen Debi *Measured Flow In Enviromental Conditions*		Akış Sapması *Flow Deviation*		Ölçüm Belirsizliği *Calibration Uncertainty*	
Referans Cihaz *Reference Instrument*	Test Edilen Cihaz *Instrument Under Test*	Hata *Deviation*	Bağıl *Relative*	Belirsizlik *Uncertainty*	Bağıl *Relative*
dm^3/min	dm^3/min	dm^3/min	%	dm^3/min	%
20,1480	20,0000	-0,1480	-0,7346	0,0665	0,33
25,1535	25,0000	-0,1535	-0,6103	0,0830	0,33
30,2571	30,0000	-0,2571	-0,8497	0,0998	0,33
35,2966	35,0000	-0,2966	-0,8403	0,1165	0,33
38,8615	38,5000	-0,3615	-0,9302	0,1282	0,33

6.2. Standart Şartlarda Sonuçlar
Results in Standard Conditions

Standart Şartlarda Ölçülen Debi *Measured Flow In Standart Conditions*		Akış Sapması *Flow Deviation*		Ölçüm Belirsizliği *Calibration Uncertainty*	
Referans Cihaz *Reference Instrument*	Test Edilen Cihaz *Instrument Under Test*	Hata *Deviation*	Bağıl *Relative*	Belirsizlik *Uncertainty*	Bağıl *Relative*
dm^3/min	dm^3/min	dm^3/min	%	dm^3/min	%
18,1634	18,0299	-0,1335	-0,7350	0,0599	0,33
22,6759	22,5374	-0,1385	-0,6108	0,0748	0,33
27,2767	27,0449	-0,2318	-0,8498	0,0900	0,33
31,8198	31,5524	-0,2674	-0,8404	0,1050	0,33
35,0336	34,7076	-0,3260	-0,9305	0,1156	0,33

6.3. Sıcaklık ve Basınç Ölçüm Sonuçları
Temperature and Pressure Measurement Results

Referans Cihaz Ortalama Değer *Referance Instrument Average Value*		Test Cihazı Ortalama Değer *Test Instrument Avarage Value*		Sapma *Deviation*		Belirsizlik *Uncertainty*	
Sıcaklık *Temperature*	Basınç *Pressure*	Sıcaklık *Temperature*	Basınç *Pressure*	Sıcaklık *Temperature*	Basınç *Pressure*	Sıcaklık *Temperature*	Basınç *Pressure*
°C	mbar	°C	mbar	°C	mbar	°C	mbar
20,5	915	20,6	915	0,10	0,00	0,3	1

Kalibrasyonla İlgili Notlar
Notes About Calibration

Standart şartlar 20 °C ve 1013,25 mbar 'dır.
Standard conditions are 20 °C and 1013,25 mbar.

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Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz FR 17 REV 04 10.10.2024

7. Uygunluk Beyanı
Statement of Compliance

Ölçüm sonuçları ve ölçüm belirsizliği yukarıda verilmiştir. Kullanıcı bunları dikkate alarak uygunluğuna karar vermelidir. Beyan edilen genişletilmiş belirsizlik değeri standart belirsizliğin normal dağılımı için; yaklaşık % 95 güvenirlik seviyesini sağlayan k=2 kapsam faktörü ile çarpımının sonucudur. Standart ölçüm belirsizliği GUM ve EA-4/02 dokümanlarına uygun olarak belirlenmiştir. Ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri ve kalibrasyon metotları bu sertifikanın tamamlayıcı bir bölümüdür.

The measurement results and measurement uncertinity were given above. The user have to consider the results and decide compliance of the device. The reported expended uncertainity of measurement is stated as the standart uncertainity of multitude by coverage factor k=2, which for a normal distribution corresponds to covarage of approximately 95%. The standard measurement uncertainty is defined according to the GUM and EA-4/02documents. Measurement results, the expanded measurement uncertainty of measurement and calibration methods, is an integral part of the this certificate.

8. Açıklamalar
Remarks

Bu sertifikada bulunan sonuçlar cihazın kalibrasyon tarihindeki durumu kapsar ve uzun dönem kararlığı hakkında bir öngörü içermez.

The result reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument

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Bu rapor, 5070 sayılı Elektronik İmza Kanunu gereği elektronik imza ile imzalanmıştır. Müşteriye elektronik ortamda gönderilmiştir. E-imzalı orijinal raporun, elektronik ortamda arşivlenmesi ve istenildiği takdirde yetkili mercilere sunulması müşteri sorumluluğundadır.
Bu rapor çevre mevzuatına ilişkin işlemlerde kullanılamaz

Declaration Forms for Sites of Natural Conservation (Forms A and B)

If a project will potentially have significant negative impacts on sites included or intended to be included in the Natura 2000 Network then the promoter is required to attach a copy of Form B or equivalent, duly signed by the Competent Authority responsible for monitoring Natura 2000 sites, including information on projects significantly affecting Natura 2000 sites as notified to the Commission (DG ENV) under Directive 92/43/EEC.

If the project will not potentially have significant negative effects on sites included or intended to be included in the Natura 2000 Network, then the promoter is required to attach a copy of Form A part I of an appropriate assessment required by Article 6(3) was not deemed necessary or Form A part II or equivalent, if an appropriate assessment under Article 6(3) was carried out and duly signed by the Competent Authority responsible for monitoring Natura 2000 sites.

PART I

Form A – No Appropriate Assessment in accordance with Article 6(3) was required

DECLARATION BY THE AUTHORITY RESPONSIBLE FOR MONITORING SITES OF NATURE CONSERVATION IMPORTANCE[1]

Responsible Authority:…….

Having examined the project application[2] ……

Which is located at:……

Declares that the project is not likely to have significant effect on a NATURA 2000 site on the following grounds:

Therefore an appropriate assessment required by Article 6(3) was not deemed necessary.

A map at scale of 1:100.000 (or nearest possible scale) is attached, indicating the location of the project as well as the NATURA 2000 sites concerned, if any.

Date (dd/mm/yyyy):……

Signed:……

Name:……

Position:……

Organisation:……
(Authority responsible for monitoring NATURA 2000 sites)

Official Seal:

[1] This includes sites protected as part of the Natura 2000 network (including Special Areas of Conservation and Special Protection Areas), potential Natura 2000 sites, Ramsar sites, International Bird Areas, sites of the Emerald Network, or others as relevant.

[2] Taking into account the requirements of Art. 6(3) of Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.

PART II

Form A – Assessment of Effects on NATURA 2000 - No risk of significant effect

DECLARATION BY THE AUTHORITY RESPONSIBLE FOR MONITORING SITES OF NATURE CONSERVATION IMPORTANCE[3]

Responsible Authority.....….

Having examined[4] the project application .....……..

which is to be located at .....……

we declare that following an appropriate assessment required by Article 6(3) of Directive 92/43/EEC, the project will not have significant effects on a site of nature conservation importance[1].

Please provide a summary of the conclusions of the appropriate assessment carried out according to Article 6(3) of Directive 94/43/EEC:

Please provide a summary of the mitigation measures required for the project:

A map at scale of 1.100.000 (or the nearest possible scale) is attached, indicating the location of the project as well as the site of nature conservations importance.

Signed:

Name and Position:

Organisation (Authority responsible for monitoring NATURA 2000 sites)

Official Seal:

[3] This includes sites protected as part of the Natura 2000 network (including Special Areas of Conservation and Special Protection Areas), potential Natura 2000 sites, Ramsar sites, International Bird Areas, sites of the Emerald Network, or others as relevant.

[4] Taking into account the requirements of Art. 6(3) of Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.

Form B - Risk of significant effect

INFORMATION FROM THE AUTHORITY RESPONSIBLE FOR MONITORING SITES OF NATURE CONSERVATION IMPORTANCE[5]

Responsible Authority.....

Having examined[6] the project application .....

(title).....

which is to be located at .....

provides the following information to be sent to the European Commission for (tick the appropriate box):

information (Art. 6(4).1) ☐ opinion (Art. 6(4).2) ☐

Country*:*

Competent national Authority*:*

Address*:*

Contact person*:*

Tel., fax, e-mail*:*

Date*:*

[5] This includes sites protected as part of the Natura 2000 network (including Special Areas of Conservation and Special Protection Areas), potential Natura 2000 sites, Ramsar sites, International Bird Areas, sites of the Emerald Network, or others as relevant.

[6] Taking into account the requirements of Art. 6(4) of Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora.