ERBAA EXISTING WASTEWATER TREATMENT PLANT CAPACITY EXPANSION PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

(ESMP)

May 2025

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LIST OF ABBREVIATIONS

AoI	Area of Influence
C-ESMP	Contractor's Environmental and Social Management Plan
CIMER	Presidency's Communication Centre
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoC	Code of Conduct
E&S	Environmental and Social
EHS	Environment, Health, and Safety
EIA	Environmental Impact Assessment
EM	Erbaa Municipality
EPRP	Emergency Preparedness and Response Plan
ESHS	Environmental, Social, Health and Safety
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMR	Environmental and Social Monitoring Report
ESMS	Environmental and Social Management System
ESS	Environmental and Social Standard
GBV	Gender Based Violence
GM	Grievance Mechanism
HAVS	Hand Arm Vibration Syndrome
HSE	Health, Safety, and Environment
IFC	International Finance Corporation
ILBANK	Iller Bankası A.Ş.
ILO	International Labour Organization
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
LC	Least Concern
LMP	Labour Management Procedures
MoEUCC	Ministry of Environment, Urbanization and Climate Change
NCR	Non-Compliance Report
OHS	Occupational Health and Safety
OG	Official Gazette
OIZ	Organized Industrial Zone
PAP	Project Affected Person
PPE	Personal Protective Equipment

PID	Project Identification Document
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal Protective Equipment
RCA	Root Cause Analysis
SDS	Safety Data Sheet
SEA/SH	Sexual Exploitation and Abuse/Sexual Harassment
SEP	Stakeholder Engagement Plan
TAP	Portable Battery Manufacturers and Importers Association
TEFWER	Türkiye Earthquake, Floods and Wildfires Emergency Reconstruction
TUBITAK	The Scientific and Technological Research Council of Türkiye
TURKAK	Turkish Accreditation Agency
TurkStat	Turkish Statistical Institute
VG	Vulnerable Group
WB	World Bank
WBG	World Bank Group
WHO	World Health Organization
WWTP	Wastewater Treatment Plant
YIMER	Foreigners Communication Centre

EXECUTIVE SUMMARY

Türkiye Earthquake, Floods and Wildfires Emergency Reconstruction (TEFWER) Project (hereinafter the “Project”) has been developed by the participation of Iller Bankası A.Ş. (ILBANK) and World Bank (WB) to support municipalities to undertake urgent repairs, structural strengthening, and if needed demolition/reconstruction, rehabilitation, or new construction of damaged municipal owned infrastructure and to put in place measures aimed at increasing disaster preparedness and climate adaptation.

In this regard, "Erbaa Existing Wastewater Treatment Plant Capacity Expansion Project" (hereinafter “the sub-project”) will be financed and implemented under TEFWER Component 1 - Green and Resilient Rehabilitation, Reconstruction and Construction of Municipal Infrastructure and Actions to Strengthen Municipal Resilience and following concerned subcomponent.

- Subcomponent 1.c - Restored and improved resilience of water and wastewater services.

The general objective of the sub-project is to increase the capacity of the existing Erbaa Wastewater Treatment Plant (WWTP) to fulfil the requirements of wastewater management. The specific objective of this sub-project is to increase the capacity of the existing Erbaa WWTP to serve the increasing population.

Erbaa district is a district of Tokat province in the Central Black Sea region and the distance to Tokat city centre is approximately 79 kilometres. The existing Erbaa WWTP, which is in the sub-project area, is located in Erek Neighbourhood, Çorak Location within the Erbaa Organized Industrial Zone (OIZ) (see Figure 2-1~~Figure 2-1~~).

Biçimlend

The Erbaa Municipality (hereinafter “EM”) is the owner of the Capacity Expansion for Wastewater Treatment Plant Project (the sub-project).

The EM completed the existing wastewater treatment plant investment in 2007 and commissioned it in 2008. The EM has the right to use the land where the WWTP is located, that is adjacent to its north-east, and this area is registered as WWTP expansion area. Therefore, no land acquisition is required within the scope of the sub-project. Title deed of the sub-project area and Zoning Plan of Erbaa OIZ are presented in Appendix-A. Indefinite handover decision of the land from Erbaa OIZ to EM dated 29.05.2006 is given in Appendix-G.

Therewith, the site walkover to the sub-project area was made by ENVESU Environment Energy Construction and Consultancy Inc. and 2U1K Engineering and Consultancy Inc. on May 29, 2024.

Subsequently, Environmental and Social (E&S) risks of the sub-project have been identified according to the WB Environmental and Social Standards (ESS) and İLBANK Environmental

and Social Management System (ESMS) and hence, Environmental Social Management Plan (ESMP) and Stakeholder Engagement Plan (SEP) has been prepared.

The sub-project's construction works are expected to commence in October 2025, last 22 months and be completed by the end of July 2027. The defects liability period of the sub-project is the first 12 months after construction. The target year of the sub-project operation is 2054. EM plans to employ a maximum of 40 workers for sub-project construction activities. The existing plant employs 8 people. During the operation phase of the sub-project, additional 6 people are planned to be employed so that a total of 14 people will be involved in the operation phase. Currently there is not any site work ongoing on the sub-project area.

The sub-project's construction will be carried out on existing WWTP area within the Erbaa OIZ. However, before starting construction activities, an opinion letter will be received from the Museum Directorate. When the official opinion letters obtained from the Museum Directorate, the opinion letter will be submitted to ILBANK. To manage activities in terms of cultural heritage, a Chance Find Procedure has been prepared (see Appendix-H). Also, most common OHS risk areas and corresponding general mitigation measures throughout the life of the sub-project are provided in Appendix-I

Existing Erbaa WWTP is a system designed with suspended activated sludge principle, operating with conventional (aeration + sedimentation) system, phosphorus removal with bio phosphorus tank and nitrogen treatment with denitrification process as nitrification. According to the sub-project's Project Identification Document (PID), the most feasible way has been designated to increase the capacity in the existing volumes for the sub-project process is to increase the existing capacity with the same capacity and the same process. Hence, as a sub-project, it is planned to construct a new 12,000 m^3/day capacity with same process with the existing Erbaa WWTP as Phase-1 on the same parcel with the existing 12,000 m^3/day capacity plant. Hence, the plant will reach a capacity of 24,000 m^3/day.

The decision that national Environmental Impact Assessment (EIA) is not required for the existing plant was secured on 19 July 2005 after the application of the EM (see Appendix-C for the relevant official letter). Due to the capacity increase of the plant, the EIA process of the sub-project has been also initiated on 6 November 2024 in line with the Regulation on EIA published in the Official Gazette (OG) dated 29.07.2022 and numbered (No) 31907. In conclusion, Tokat Provincial Directorate of Environment, Urbanization and Climate Change has decided that the sub-project is out of scope for EIA (see Appendix-B).

There are no associated facilities such as roads, energy transmission lines, etc. of this sub-project, and no major impact is expected besides dust, noise, and traffic load increment during the construction phase. In addition to this, the odour impact during the operation phase will be reduced by good operating techniques. Also, there will be maintenance, and repair works in the plant throughout of the operation phase. The sub-project will not require any additional private land. Therefore, no land acquisition will be required.

As a part of the mitigation measures, management plans and procedures on different subjects should be developed by the contractor prior to the construction works. These management plans are based on the risks and mitigation measures specified in the ESMP. These plans will be prepared for construction and operation phases of the sub-project, at least one (1) month before the start of the relevant phase and will be submitted to ILBANK for approval. Employees will be trained on the relevant plans to be developed. A list of management plans and procedures for construction and operation phases of the sub-project are presented below.

- Contractors Environmental and Social Management Plan
- Effluent Management Plan,
- Odour Management Plan,
- Waste Management Plan,
- Sludge Management Plan,
- Spill Response Plan,
- Occupational Health and Safety (OHS) Management Plan,
- Emergency Preparedness and Response Plan (EPRP),
- Construction Site Traffic and Transport Management Plan,
- Labour Management Plan (based on the TEFWER's Labour Management Procedures (LMP)),
- Community Health and Safety Management Plan,
- Chance Finds Procedure.

1 INTRODUCTION

Türkiye Earthquake, Floods and Wildfires Emergency Reconstruction (TEFWER) Project (hereinafter the “Project”) has been developed by the participation of Iller Bankası A.Ş. (ILBANK) and World Bank (WB) to support municipalities to undertake urgent repairs, structural strengthening, and if needed demolition/reconstruction, rehabilitation, or new construction of damaged municipal owned infrastructure and to put in place measures aimed at increasing disaster preparedness and climate adaptation.

In this context, "Erbaa Existing Wastewater Treatment Plant Capacity Expansion Project" (hereinafter “the sub-project”)" (hereinafter “the sub-project”) will be financed by the Project and will be implemented under TEFWER Component 1 - Green and Resilient Rehabilitation, Reconstruction and Construction of Municipal Infrastructure and Actions to Strengthen Municipal Resilience and following concerned subcomponents.

- Subcomponent 1.c - Restored and improved resilience of water and wastewater services.

The Erbaa Municipality (hereinafter “EM”) is the owner of the sub-project. Existing Erbaa WWTP adjacent to the sub-project area, is located within the borders of the Erbaa Organized Industrial Zone (OIZ) in Erek Neighbourhood, Çorak Mevkii, lot 1 of block 1367. Title deed of the sub-project area and Zoning Plan of Erbaa OIZ are presented in Appendix-A. Indefinite handover decision of the land from Erbaa OIZ to EM dated 29.05.2006 is given in Appendix-G.

Erbaa WWTP, which is one of the grant projects within the scope of the ‘Development Programme for the Level 2 Regions’ financed by the EU and the Republic of Türkiye, was commissioned in 2008. At present, the existing wastewater treatment plant capacity of Erbaa, which is developing rapidly, has reached its limit with 96%. The specific objective of sub-project is to increase the capacity of the existing Erbaa WWTP to serve the increasing population.

The WWTP is currently operated by the Erbaa Municipality to meet the discharge criteria of the Urban Wastewater Treatment Regulation. The WWTP is designed as a long aeration activated sludge system. Carbon removal is provided in the plant, but nitrogen and phosphorus are discharged at a quality close to the related limit values.

Within the framework of this objective, the prioritised infrastructure and management targets are categorised as follows

- To realise WWTP investments to meet the plant's capacity requirement until 2054,
- Strengthening and resilience of wastewater (WW) services,
- Strengthen the administrative organisation for a sustainable and manageable wastewater management.

The decision that national Environmental Impact Assessment (EIA) is not required for the existing plant with capacity of 12,000 m^3/day was secured on 19 July 2005 (see Appendix-C for the relevant official letter). Due to the capacity increase of the plant, the EIA process of the sub-project, which has total capacity of 24,000 m^3/day, has been also initiated on 6 November 2024 in line with the Regulation on EIA published in the Official Gazette (OG) dated 29.07.2022 and numbered (No) 31907. In conclusion, Tokat Provincial Directorate of Environment, Urbanization and Climate Change has decided that the sub-project is out of scope for EIA (see Appendix-B).

The sub-project's construction works are expected to commence in October 2025, last 22 months and be completed at the end of July 2027. The defects liability period of the sub-project is the first 12 months after construction.

In this regard, the site walkover to the sub-project area was made by ENVESU Environment Energy Construction and Consultancy Inc. and 2U1K Engineering and Consultancy Inc. on May 29, 2024.

Subsequently, Environmental and Social (E&S) risks of the sub-project have been identified according to the WB Environmental and Social Standard (ESS)s and İLBANK ESMS through the E&S Screening and Risk Categorization tool. Based on the assessments conducted during the risk screening, the E&S risk classification of the sub-project has been determined as "moderate" and hence, this Environmental Social Management Plan (ESMP) has been prepared.

2 SITE/LOCATION DESCRIPTION

Erbaa is a district of Tokat province in the Central Black Sea region of Türkiye. Erbaa administratively consists of the district municipality, three (3) town municipalities (Evyaba, Alacabal and Karşıyaka), 74 villages and 97 hamlets. Erbaa OIZ, where the existing plant and the sub-project area are located, started to operate within the borders of the district in 1997 as the 2nd OIZ within the borders of the province.

The sub-project area adjacent to Erbaa WWTP's north-east, is in Erek Neighbourhood, Çorak Mevkii, lot 1 of block 1367. The location of the plant and sub-project area are given in Figure 2-1~~Figure 2-1~~.

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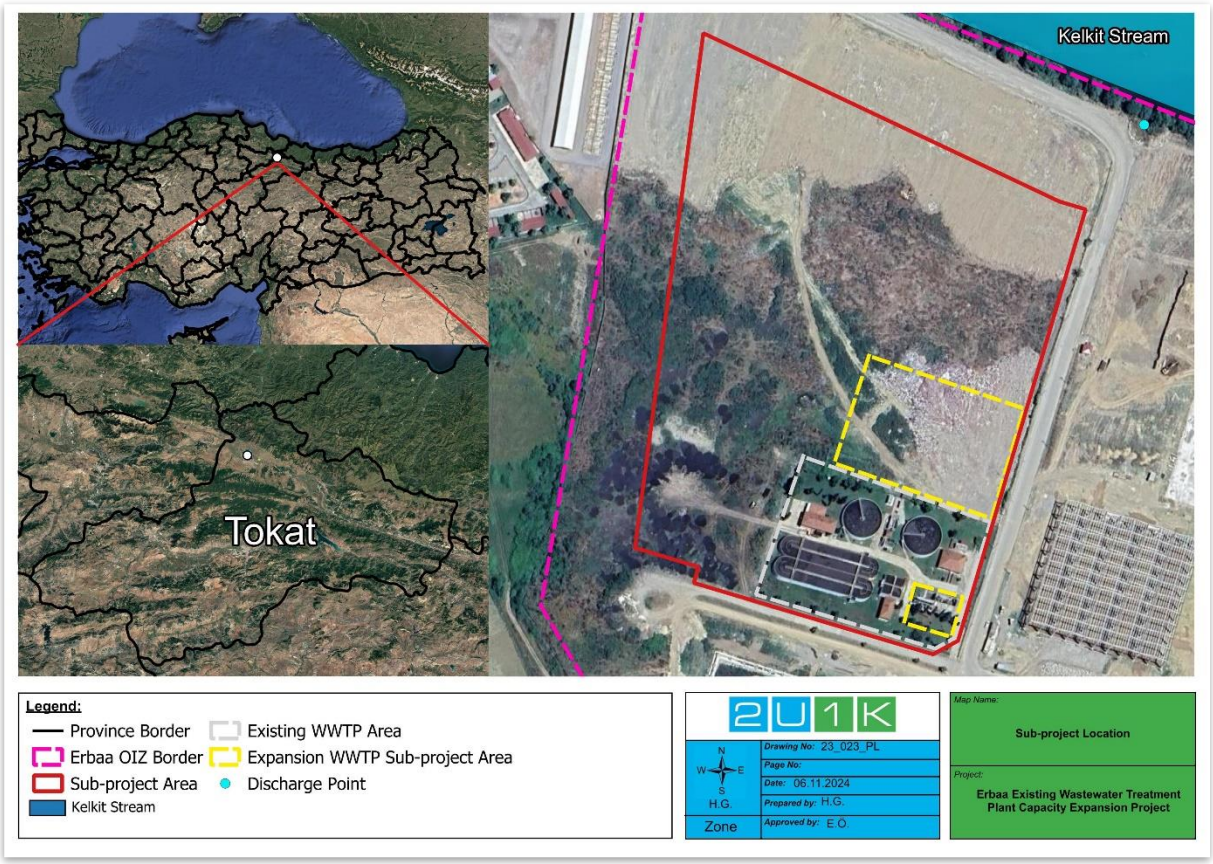

Figure 2-1. Location Map of the Sub-project Area

3 SUB-PROJECT DESCRIPTION AND ACTIVITIES

The existing WWTP with a capacity of 12,000 m^3/day serves for population of 70,165, in Erbaa district of Tokat province. According to the sub-project specific Project Identification Document (PID) dated September 2024, the Erbaa WWTP is designed based on the population of 119,375 people (21,615/m^3/day) projected for the year 2054. EM plans that it will be operated in the same conventional treatment plant characteristics including solar sludge drying unit (see **Hata! Başvuru kaynağı bulunamadı.**~~Figure 3-1~~ and Figure 3-2~~Figure 3-2~~) as the existing WWTP with an additional capacity increase of 12,000m^3/day with the commissioning of the sub-project. Hence, the total capacity of the WWTP will be 24,000m^3/day. Also, the discharge point of the plant is the Kelkit stream within the Yesilırmak basin in the north-east of the sub-project area (see Figure 3-6~~Figure 3-6~~**Hata! Başvuru kaynağı bulunamadı.**).

Biçimlend

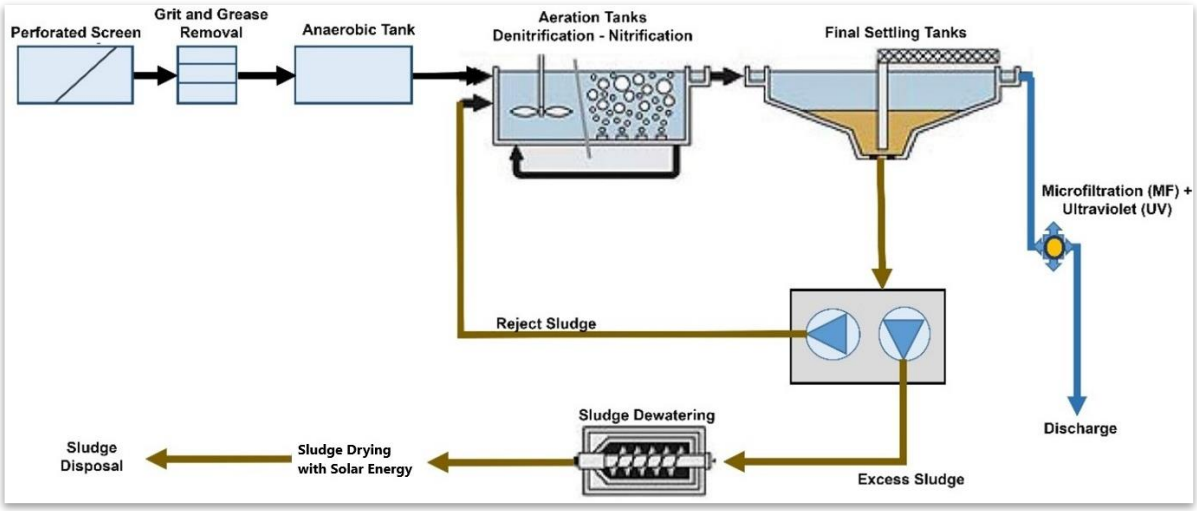

Figure 3-1. Conventional System Workflow Diagram

In this context, a new screen and aerated grit removal to be rebuilt next to the inlet structures of the existing WWTP and a new aeration will be constructed within the expansion area to the north of the existing treatment works, settling tanks, blower building and solar sludge drying unit. In this context, existing WWTP units and sub-project components are listed below.

Existing WWTP Units

- Mechanical Cleaning Coarse Screen
- Automatic Fine Screen
- Supply Tank
- Grit and Grease Removal Package Unit
- Anaerobic Tanks
- Aeration Tanks
- Settling Tank Distribution Tank
- Settling Tanks
- Sludge Return Tank
- Decanter
- Operation Building
- Blower Building
- Sludge Dewatering and Atelier Building
- Caretaker Building

Sub-project Components (Expansion WWTP Units)

- Inlet Chamber - Bypass channel
- Sampling and Discharge and Overflow Flow Meter
- Coarse and Fine Screens
- Inlet Pumping Station
- Grit and Grease Removal Tanks
- Grit and Grease Removal Tanks Blowers
- Anaerobic Bio phosphorus Tanks
- Distribution Chamber of Aeration Tanks
- Aeration Tanks
- Blower Unit
- Distribution Chamber of Final Settling Tanks
- Final Settling Tanks
- Excess and Return Sludge Pumping Stations
- Sludge Dewatering Unit
- Sludge Drying Unit
- Piping System

Sub-project's layout plan including existing Erbaa WWTP project components are given in Figure 3-2~~Figure 3-2~~.

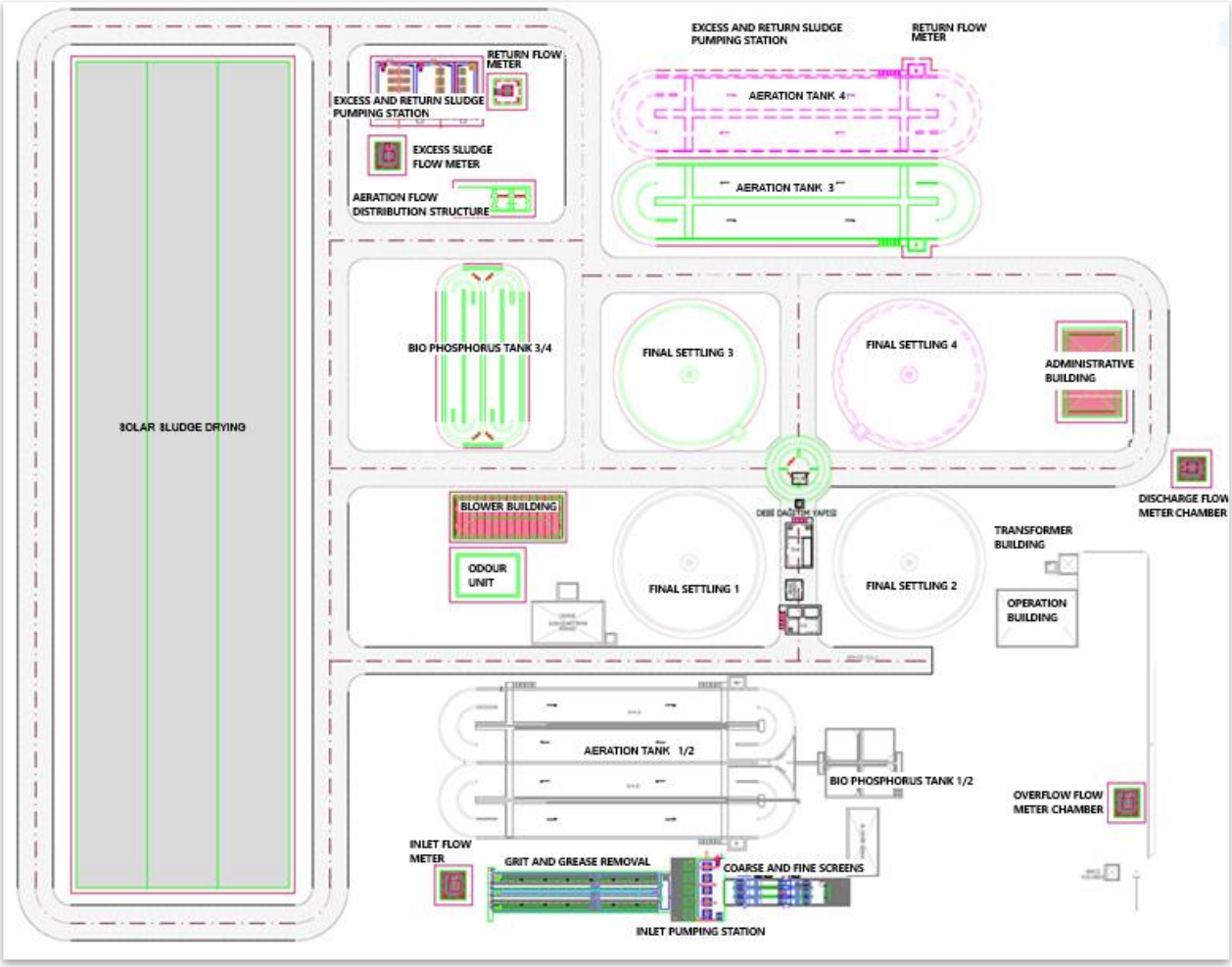

Figure 3-2. Sub-project's Layout Plan Including Existing Erbaa WWTP Project Components

In addition, more detailed design information for the sub-project can be found in the sub-project specific Project Identification Document (PID).

3.1 BASELINE DATA

E&S baseline data for the sub-project area is assessed under this section, while E&S risks/impact assessment of the sub-project is provided in Section 3.

Based on the environmental, social, and public/occupational health and safety risks/impacts that will potentially occur during the construction and operation phases of the sub-project, the Area of Influence (AoI) has been determined with radius of 2.5 km by taking the sub-project area at the centre, including the Erbaa OIZ area. There is a livestock market 200 m west of the sub-project area as a sensitive receptor. Erek and Tosunlar neighbourhoods are in the AoI of the sub-project. The location of the sub-project area and its AoI are presented in Figure 3-3~~Figure 3-3~~.

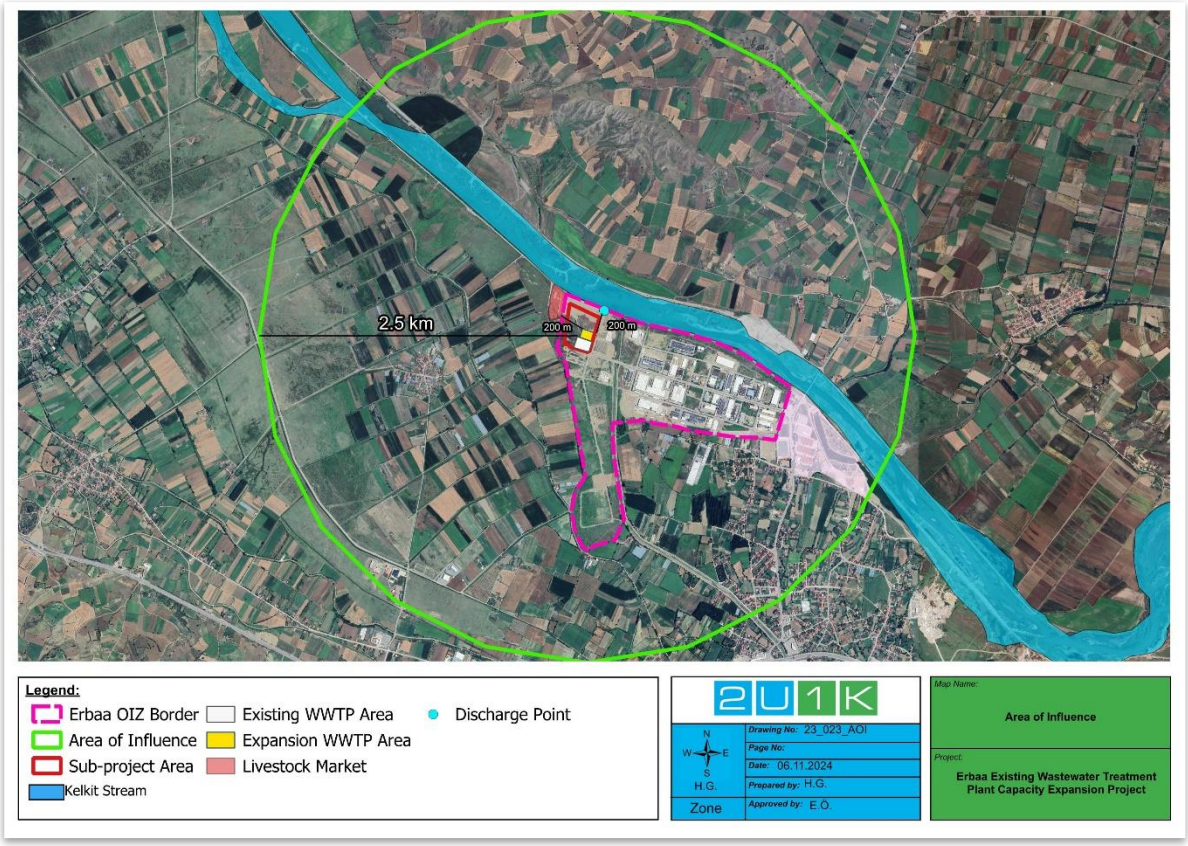

Figure 3-3. The Location of the Sub-project Area and Its AoI

3.1.1 Physical Environment

3.1.1.1 Topography

Erbaa district is a district of Tokat Province in the Central Black Sea region, where the Kelkit and Tozanlı streams merge and take the name of Yeşilırmak (Iris). The territory of the district has a surface area of 1,111 square kilometres, which includes a plain along the Kelkit stream, especially the Tozanlı stream, and the surrounding mountainous areas.

It is surrounded by Çarşamba district of Samsun and Akkuş district of Ordu province from the north, Taşova district of Amasya from the west, Niksar district of Tokat from the east, Tokat centre from the south and Turhal district from the southwest. In the north of the plain on which the district is located; Karınca mountain, which is considered within Canik Mountain, Sakarat and Boğalı mountains in the south, and the extensions of these mountains in the east and west.[1]

The sub-project area is located in Yeşilırmak basin, crossed by the Kelkit stream to the north and the Imbat creek to the east. The topographic map of the sub-project area is in Figure 3-6~~Figure 3-6~~**Hata! Başvuru kaynağı bulunamadı.**.

[1] Source web site: www.erbaa.gov.tr

3.1.1.2 Geology

Gravel, sand, silt and clayey units and terraces (Qal) formed from these materials, Kelkit valley along the riverbeds. In addition, sand and gravel sediment thicknesses in riverbeds increases and merges with the alluvial material (Qk) at the edge of the Kelkit stream. Quaternary units can be distinguished as old and new alluvial deposits[2]. In this direction, it is observed that the sub-project area is completely Quaternary (Q)/Alluvium (Qal) in composition. The geological map of the Tokat including sub-project area is presented in Figure 3-4~~Figure 3-4~~.

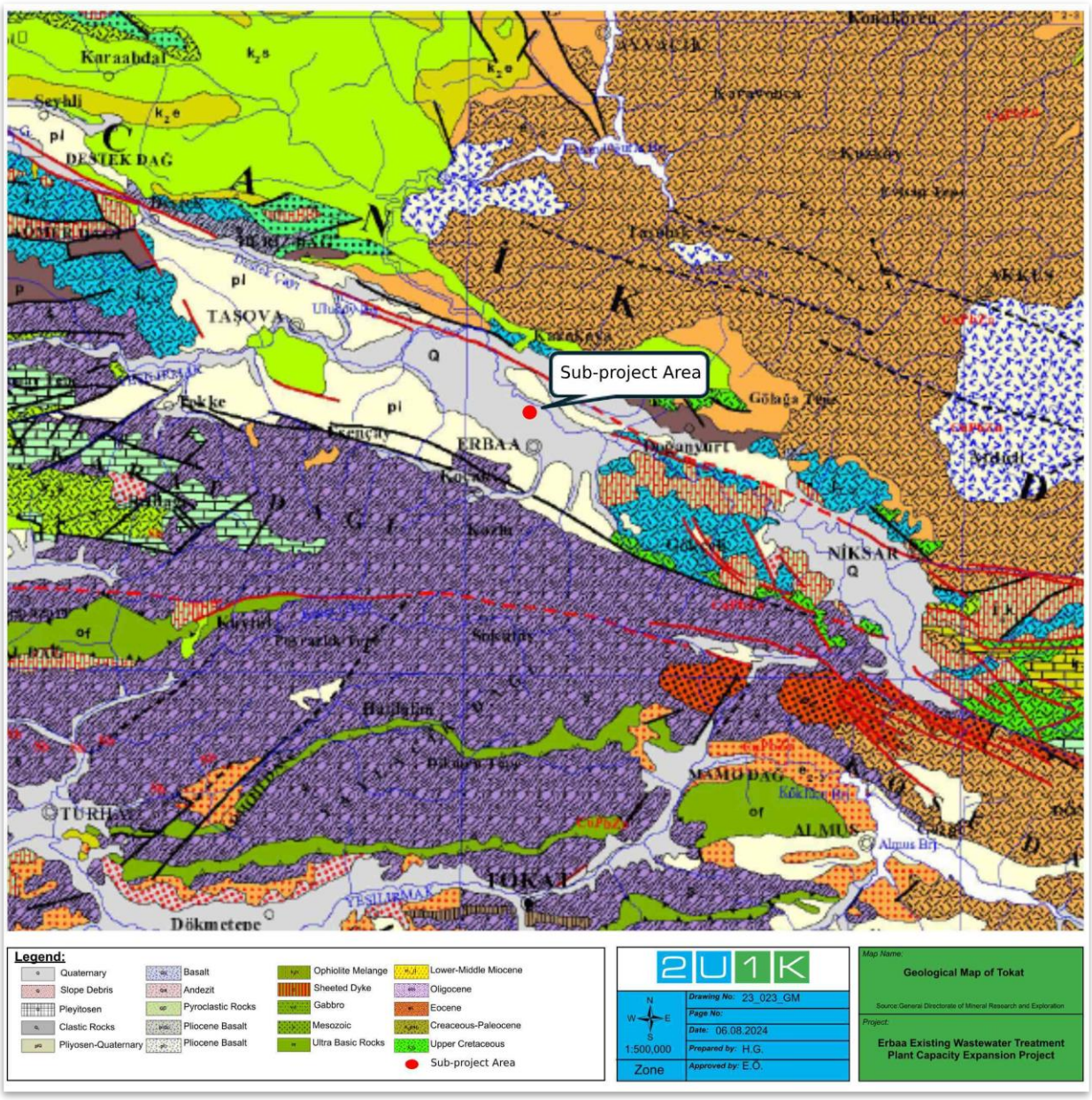

Figure 3-4. The Geological Map of Tokat[3]

[2] Canik and Kayabali, 2000

[3] Source web site: www.mta.gov.tr

3.1.1.3 Tectonic and Seismicity

Tokat is located in the 1st degree earthquake zone. North Anatolian Fault Line passes through Reşadiye, Niksar and Erbaa districts of the province. Kelkit Stream Valley has formed along the North Anatolian fault line.

According to the Disaster and Emergency Management Presidency (AFAD) General Directorate's Türkiye Earthquake Hazard Map, active fault fractures near the North Anatolian fault line pass 800 m northeast of the sub-project area, and the sub-project area remains within the soil acceleration limits of 0.748 (see Figure 3-5~~Figure 3-5~~). Hence, the sub-project area has high earthquake risk level in terms of AFAD PGA 475 scale.

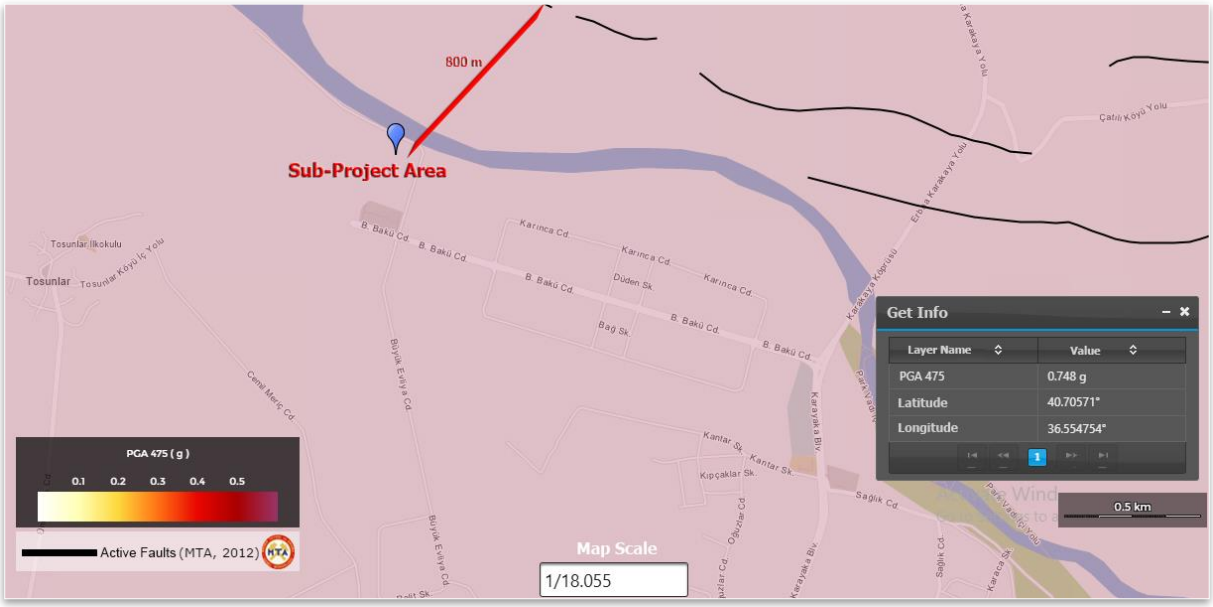

Figure 3-5. The Earthquake Hazard Map of the Sub-project Area[4]

3.1.1.4 Soil and Land Composition

No traces of debris or contamination were observed in the sub-project area and no potential soil contamination sourced from hazardous substances was encountered during the site visit. It was observed that the waste sludge was temporarily stored on the concrete ground.

3.1.1.5 Meteorology and Climatic Characteristics

Erbaa district is a settlement area located in the transition zone between the Black Sea Climate and the Central Anatolian Continental Climate. The climate characteristics of the area are influenced by the Continental Tropical air masses originating from Basra advancing from the southeast of Anatolia in summer and the Maritim Polar-Continental air masses entering our country through the Black Sea and the Balkans in winter. In addition to these, the fact that the district is located on a depression area has also been effective on the climate of the region.

[4] Source web site: tdth.afad.gov.tr/TDTH (AFAD General Directorate's Türkiye Earthquake Hazard Map)

According to 31 years (1964-1995) observations, the average annual temperature of the research area is 14 °C, the highest temperature is measured in July-August and the lowest in January. The summers in the region are relatively hot and winters are milder than the immediate surroundings of the city. The average summer temperature of the city is 22.7 °C and the average winter temperature is 4.9 °C. The average annual rainfall in the region is 440.4 mm. Summers are relatively dry (68.2 mm.), winter is rainier in the region (125.1 mm). The most precipitation falls in spring season (32.6%) and the least precipitation falls in summer (15.5%).[5]

3.1.1.6 Air Quality and Odour

The air quality monitoring station under the supervision of the Ministry of Environment, Urbanization and Climate Change (MoEUCC) near the sub-project area is the Tokat - Erbaa in Erbaa district centre with coordinates Latitude 36,5616 and Longitude 40,6717.

Table 3-1~~Table 3-1~~ represents the mean monthly pollutant concentrations based on the national air quality monitoring system for the last 12 months at the monitoring station within the sub-project's AoI.

Table 3-1. Monthly Average Air Quality Concentrations in Erbaa, Tokat and Corresponding National and International Threshold Values[6]

Month	SO_2		PM_{10}		NO_2	
	Measured Concentration (µg/m³)	National and International limit value (µg/m³)	Measured Concentration (µg/m³)	National and International limit value (µg/m³)	Measured Concentration (µg/m³)	International limit value (µg/m³)
October 2023	6.95	20	***67.12***	50	***27.94***	25
November 2023	8.35		***53.12***		***36.08***	
December 2023	8.74		***86.79***		***67.97***	
January 2024	11.16		***57.35***		***31.08***	
February 2024	11.98		***63.06***		***37.09***	
March 2024	9.25		49.54		***36.68***	
April 2024	7.13		49.63		***25.20***	
May 2024	9.35		23.28		14.44	
June 2024	9.38		28.75		16.46	
July 2024	7.92		22.24		15.02	
August 2024	6.05		21.86		16.99	
September 2024	5.74		30.48		***25.06***	

In this context, on the website of the MoEUCC, the current air quality index of Tokat Erbaa region is described as "medium" in terms of PM_{10} parameter value (52 µg/m³) due to slightly above national and international limit value as 50 µg/m³.

[5] Source web site: search.trdizin.gov.tr/en/yayin/detay/287378/erbaa-sehrinin-iklim-ozellikleri

[6] Source web site: Website of the MoEUCC: www.havaizleme.gov.tr

Currently, the air quality of the sub-project area cannot be characterized as good, due to the PM_{10} and NO_2 exceedances, which are considered to be the result of the contribution of domestic heating emissions in the region, especially in the fall and winter months.

As for the baseline on odour, no odour problem caused by the existing WWTP operational activities was observed during the site visit.

3.1.1.7 Noise

The sub-project area can be characterised as an area with low background noise levels due to its location at the western end of the Erbaa OIZ. During the site visit, no significant noise source other than the operation activities of the plant was encountered.

3.1.1.8 Wastewater

The Existing Erbaa WWTP monitors wastewater parameters with the Continuous Wastewater Monitoring Station (see Appendix-F for the photos of the station) in line with the environmental permit, which is valid until 28.08.2028, in accordance with local regulations. The relevant permit documents are in Appendix-C.

Existing WWTP effluent discharge limits are operated in line with the discharge limits of the Regulation on Urban Wastewater Treatment. The results of the analyses of the last four (4) samples taken and the relevant national regulation limit values for the corresponding parameter are given in Table 3-2~~Table 3-2~~. The related analysis reports of the laboratory accredited by the Turkish Accreditation Agency (TURKAK) are presented in Appendix-E.

Table 3-2. Last Four Analyses Results of Effluent for the Existing Erbaa WWTP

Parameter	Sample taken on				Discharge Limits of the national legislation (mg/l)
	13.06.2023	8.12.2023	30.12.2022	14.02.2022	
Chemical Oxygen Demand (COD)	32.48	18.89	<15	65	125
Biological Oxygen Demand $(BOD)_5$	6.88	6.33	3.2	22.75	25
Total Suspended Solids (TSS)	13.45	4.1	<4	7.5	35
Total Nitrogen (TN)	-	-	4.37	9.02	15 (10000-100000 population equivalent)
Total Phosphorus (TP)	-	-	0.25	0.35	2 (10000-100000 population equivalent)
pH	7.98	7.66	-	-	6-9

There are no results for total nitrogen and phosphorus parameters in last two samples taken. Apart from that, all parameters of the samples taken are in compliance with the relevant national regulation limit values.

3.1.1.9 Waste

According to the results of the samples taken from the waste sludge formed as a result of wastewater treatment, the waste sludge is temporarily stored on the concrete ground and sent to the licensed company named Adocim Cement Concrete Industry and Trade Inc. (see Appendix-D for waste sludge acceptance protocol), 80 km by road from the sub-project area (see Appendix-F for the photos of the temporary storage area of the waste sludge and waste temporary storage areas of the plant). The area where hazardous and non-hazardous wastes are temporarily stored is impermeable. It was observed that there is absorbent material in case of leakage and spillage.

The relevant analysis reports prepared by the Scientific and Technological Research Council of Türkiye (TUBITAK) and the laboratory accredited by TURKAK, in 2016 and 2018 respectively, are also presented in Appendix-E. In addition, according to the industrial waste management plan of the facility prepared in accordance with local legislation, it is planned to send 3,900 tonnes of waste sludge for 2025.

On the other hand, according to the waste declaration made by the EM for 2023 on 23.01.2024, the plant responsible was declared hazardous waste as a 13 kg of hazardous parts removed from discarded equipment and 78 kg of laboratory chemicals consisting of or containing hazardous substances, including mixtures of laboratory chemicals (see Appendix-F for the photo of the laboratory of the plant).

3.1.1.10 Water Resources

Kelkit stream is 65 m north of the sub-project area as the discharge point of the sub-project. Imbat creek is 200 m east of the sub-project area. The nearest other major water resource, Yeşilırmak River, is 7.5 km northwest of the sub-project area. The two closest reservoirs to the sub-project area are Tepekışla dam to the southeast and Uluköy dam to the northwest. Their distances to the sub-project area are 13.3 km and 15.8 km respectively. The water resources near the sub-project area are given in Figure 3-6~~Figure 3-6~~.

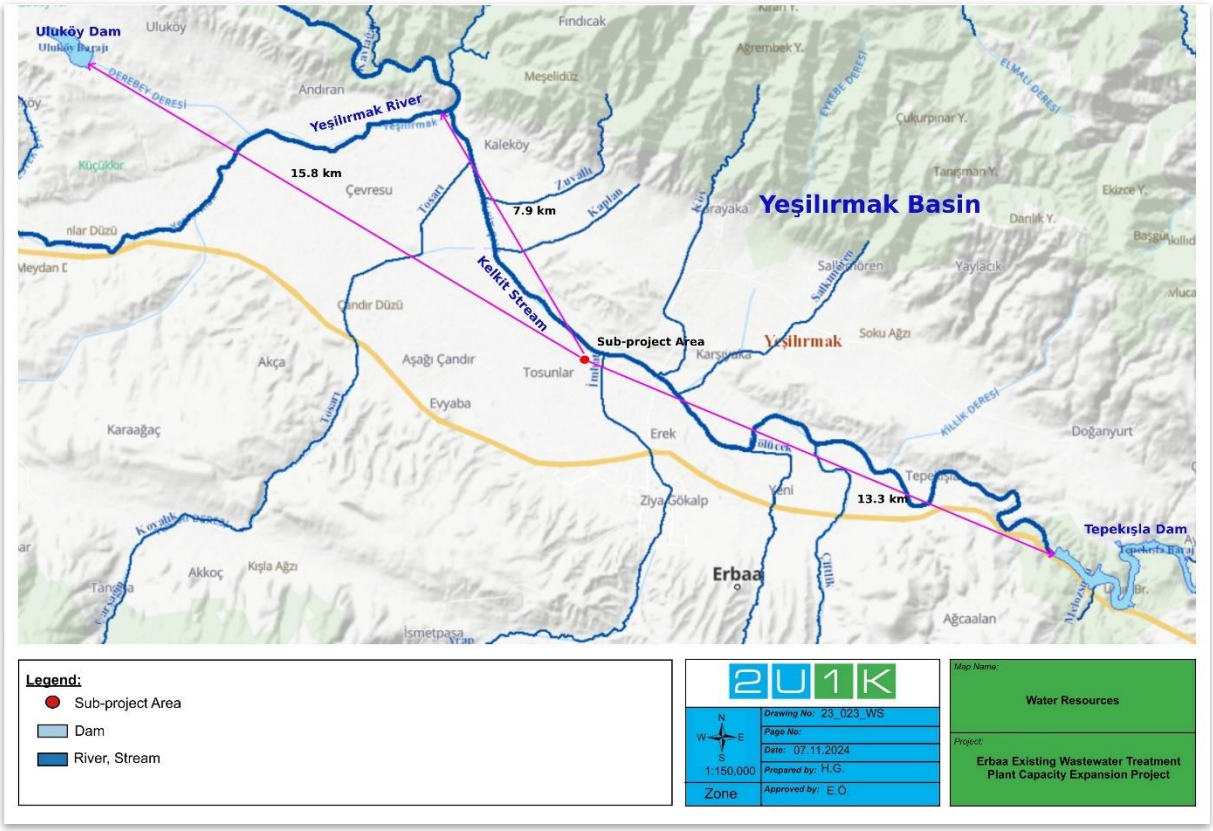

Figure 3-6. Water Resources Near to the Sub-project Area[7]

When the region where the sub-project area is located is evaluated in terms of sensitive water bodies according to national legislation, the sub-project AoI in Yeşilırmak basin is located 4.5 km away from the Nitrate Sensitive Area[8] and Urban Sensitive Area[9] border in the northwest direction (see Figure 3-7~~Figure 3-7~~ and Figure 3-8~~Figure 3-8~~).

[7] Source web site: usbs.tarimorman.gov.tr (National Water Information System of the Ministry of Agriculture and Forestry)

[8] Nitrate Sensitive Area: Drainage areas including agricultural and non-agricultural lands where nitrate is formed affecting natural freshwater lakes, other freshwater resources, estuaries and coastal waters that are determined to be eutrophic or may become eutrophic in the near future if necessary measures are not taken.

[9] Urban Sensitive Area: Refers to the drainage area of a sensitive water body and the urban wastewater drainage areas located upstream of the sensitive water body that put pressure on the sensitive water body and cause water quality objectives not to be met.

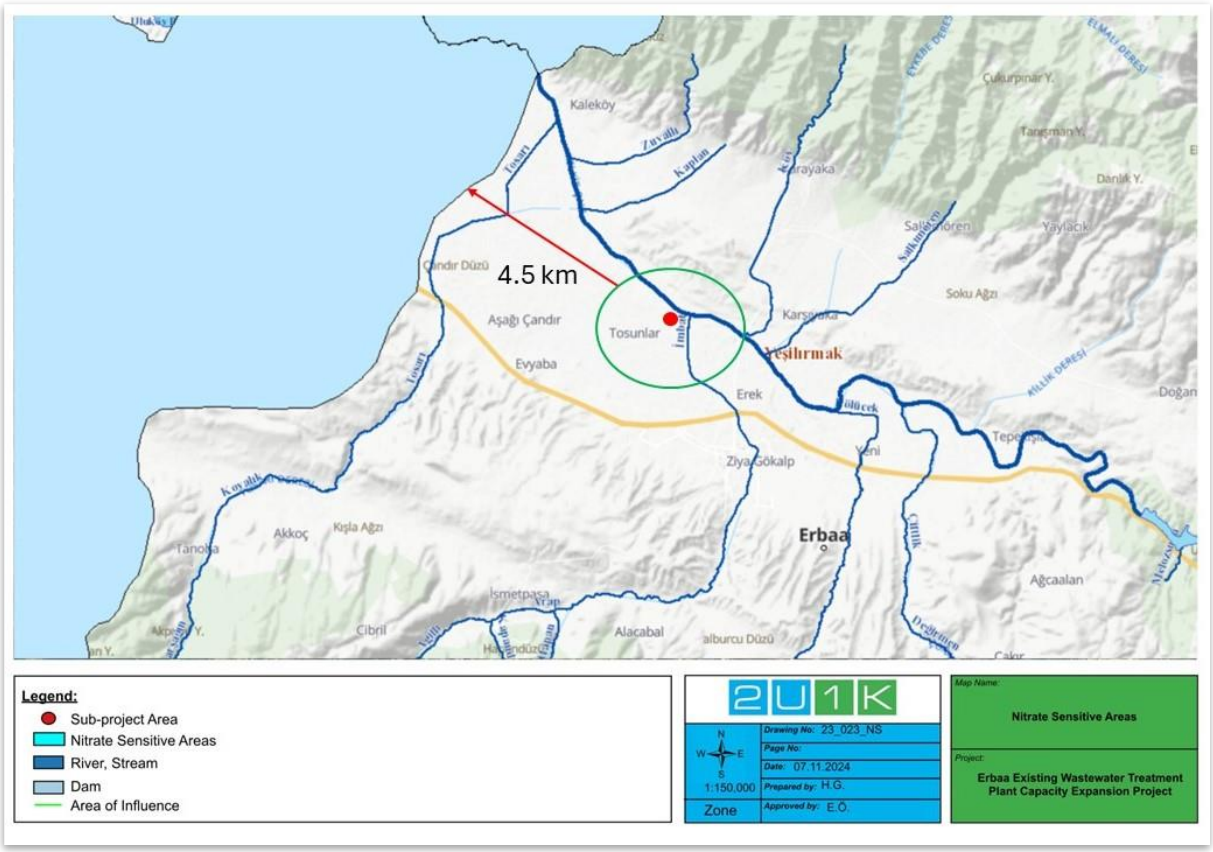

Figure 3-7. Distance of the Sub-project's AoI to Nitrate Sensitive Area[10]

[10] Source web site: usbs.tarimorman.gov.tr (National Water Information System of the Ministry of Agriculture and Forestry)

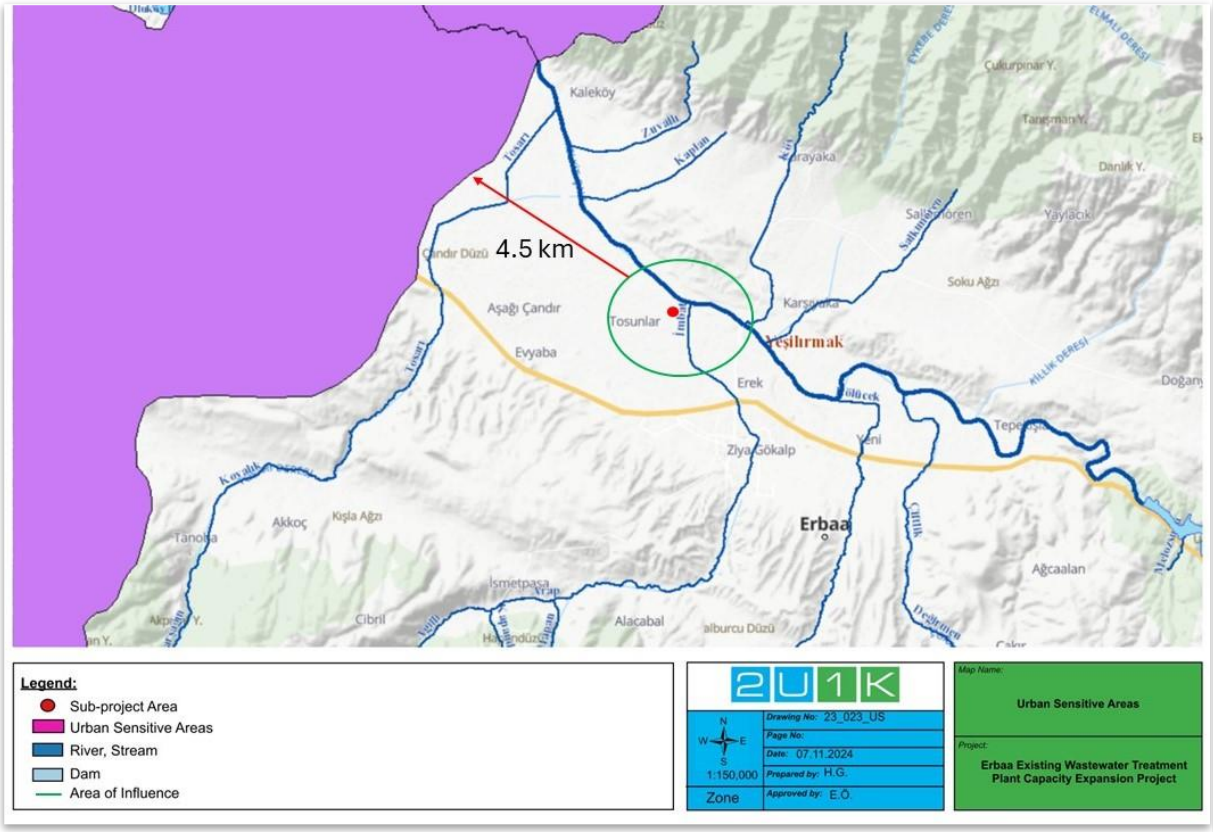

Figure 3-8. Distance of the Sub-project AoI to Urban Sensitive Area[11]

3.1.1.11 Biodiversity

The sub-project area is under the influence of transitional climate between the Black Sea Climate and the Central Anatolian Continental Climate. Summers tend to be relatively dry, with higher temperatures and lower humidity levels, while winters are comparatively wetter, receiving more precipitation in the form of rain and occasionally snow.

According to the Corine 2018 Land Cover data, the sub-project area is classified under industrial or commercial units, with its previous habitat status being pastureland. The only natural habitat in the vicinity of the project area is the Kelkit stream, which is located adjacent to the sub-project area. The surroundings of the sub-project area are consisting of intensively modified habitats such as arable lands and sport and leisure facilities. The habitats within the sub-project area have experienced a significant degradation of their natural structure. The habitats in the sub-project area and its immediate surroundings are given in Figure 3-9~~Figure 3-9~~.

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[11] Source web site: usbs.tarimorman.gov.tr (National Water Information System of the Ministry of Agriculture and Forestry)

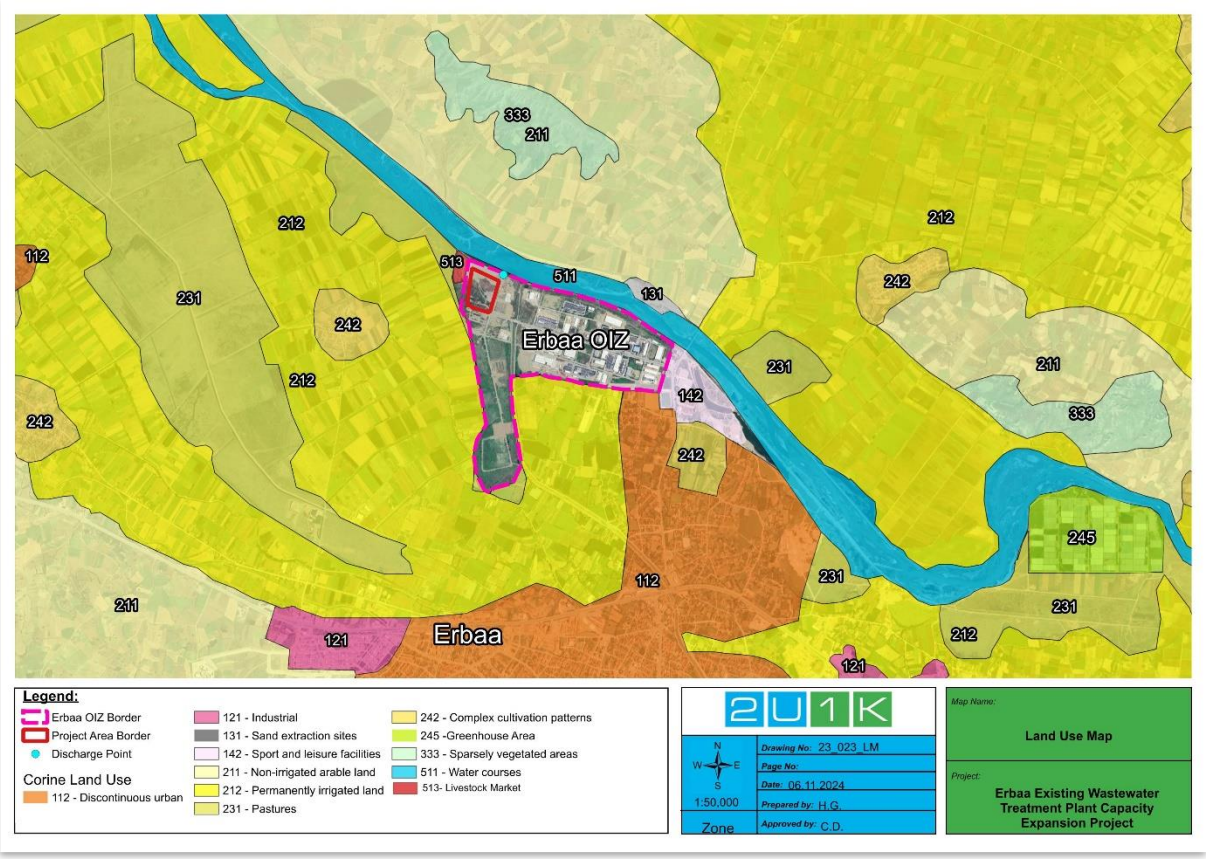

Figure 3-9. Corine Land Cover Data and the Sub-project Area

Due to the intense anthropogenic impact observed in the sub-project area, the distribution of flora and fauna is highly suppressed. The flora and fauna species that can be observed in the area comprise cosmopolitan species.

In evaluating the threat/protection status of species, Bern Convention (Convention on the Conservation of European Wildlife and Natural Habitats); and IUCN (International Union for Conservation of Nature) Red List Database were used.

Flora

The sub-project area is under intense anthropogenic influence. Natural habitat for natural plant species in the construction area is very limited.

There are a total of 64 plant species belonging to 25 families in the study area. According to the IUCN Red List, none of these species have been classified under a threat category.

Within the scope of the Bern Convention, none of the species are listed in App-I. Furthermore, there are no endemic species in the study area, and none of the plant species are listed in the CITES appendices.

The flora species found and likely to be found in and around the sub-project area are given in Table 3-3~~Table 3-3~~.

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Table 3-3. Flora Species in the Sub-project Area

Species Name	Common Name	Endemism	Bern	IUCN	CITES
Equisetaceae					
Equisetum palustre	Horsetail	-	-	-	-
Ranunculaceae					
Nigella orientalis	Black Cumin	-	-	-	-
Nigella arvensis	Wild Black Cumin	-	-	-	-
Consolida regalis	Forking Larkspur	-	-	-	-
Ranunculus neopolitanus	Buttercup	-	-	-	-
Ranunculus arvensis	Corn Buttercup	-	-	-	-
Adonis aestivalis		-	-	-	-
Adonis eriocalycina	Pheasant's Eye	-	-	-	-
Papaveraceae					
Papaver postii	Poppy	-	-	-	-
Cruciferae (Brassicaceae)					
Sinapis arvense	Wild Mustard	-	-	-	-
Calepina irregularis	-	-	-	-	-
Lepidium. ruderale	Narrow-leaf Pepperwort	-	-	-	-
Thlaspi arvense	Field Pennycress	-	-	-	-
Capsella bursa-pastoris	Shepherd's Purse	-	-	-	-
Resedaceae					
Reseda. lutea.	Wild Mignonette	-	-	-	-
Caryophyllaceae					
Cerastium glomeratum	Mouse-ear Chickweed	-	-	-	-
Dianthus pallens	-	-	-	-	-
Silene supina	Prostrate Catchfly	-	-	-	-
Chenopodiaceae.					
Chenopodium vulvaria	Stinking Goosefoot	-	-	-	-
Amaranthaceae					
Amaranthus albus	White Amaranth	-	-	-	-
Tamaricaceae					
Tamarix parviflora	Small-flowered Tamarisk	-	-	-	-
Guttiferae (Hypericaceae)					
Hypericum triquetrifolium	St. John's Wort	-	-	-	-
Malvaceae					
Hibiscus trionum	Flower-of-an-Hour	-	-	-	-
Althaea hirsuta	Rough Marshmallow	-	-	-	-
Geraniaceae					
Geranium purpureum	Purple Crane's-bill	-	-	-	-
Erodium malacoides	Mallow-leaved Stork's-bill	-	-	-	-
Leguminosae (Fabaceae)					
Psoralea bituminosa	Bitumen Clover	-	-	-	-
Lathyrus aphaca	Yellow Vetchling	-	-	-	-
Trifolium angustifolium	Narrow-leaf Clover	-	-	-	-
Rosaceae					
Sanguisorba minor	Salad Burnet	-	-	-	-

Species Name	Common Name	Endemism	Bern	IUCN	CITES
Umbelliferae (Apiaceae)					
Falcaria vulgaris	Sicklesprigs	-	-	-	-
Tordylium syriacum	Syrian Hartwort	-	-	-	-
Valerianaceae					
Valeriana officinalis	Valerian	-	-	-	-
Asteraceae					
Conyza canadiensis	Canadian Fleabane	-	-	-	-
Conyza bonariensis	Şifa otu	-	-	-	-
Bellis perennis	Daisy	-	-	-	-
Tussilago farfara	Coltsfoot	-	-	-	-
Tanacetum parthenium	Feverfew	-	-	-	-
Artemisia tournefortiana	Tournefort's Wormwood	-	-	-	-
Cirsium canum	Grey Thistle	-	-	-	-
Picnomon acarna	Acarna Thistle	-	-	-	-
Centaurea iberica	Iberian Knapweed	-	-	-	-
Scorzonera parviflora	Small-flowered Viper's-grass	-	-	-	-
Picris hieracioides	Hawkweed Oxtongue	-	-	-	-
Taraxacum macrolepium	Dandelion	-	-	-	-
Convolvulaceae					
Convolvulus arvensis	Field Bindweed	-	-	-	-
Convolvulus scammonia	Scammony Bindweed	-	-	-	-
Labiatae (Lamiaceae)					
Teucrium chamaedrys	Wall Germander	-	-	-	-
Scutellaria orientalis	Yellow Skullcap	-	-	-	-
Salvia aethiopis	Ethiopian Sage	-	-	-	-
Euphorbiaceae					
Euphorbia rigida	Gopher Spurge	-	-	-	-
Salicaceae					
Salix alba	White Willow	-	-	-	-
Salix elaeagnos	Olive Willow	-	-	-	-
Populus tremula	Aspen	-	-	-	-
Iridaceae					
Gladiolus italicus	Italian Gladiolus	-	-	-	-
Cyperaceae					
Carex flacca	Glaucous Sedge	-	-	-	-
Gramineae (Poaceae)					
Brachypodium pinnatum	Heath False Brome	-	-	-	-
Bromus intermedius	Intermediate Brome	-	-	-	-
Poa compressa	Flat-stem Bluegrass	-	-	-	-
Poa nemoralis	Wood Bluegrass	-	-	-	-
Melica ciliata	Hairy Melic	-	-	-	-
Tragus racemosus	Small Matgrass	-	-	-	-
Setaria viridis	Green Foxtail	-	-	-	-
Bothriochloa ischaemum	Yellow Bluestem	-	-	-	-

Fauna

Fauna species in the sub-project area have been heavily suppressed due to the agricultural areas, industrial structure, human presence, and the presence of domestic fauna species. Additionally, there is no habitat area for natural species. The species found and likely to be found in the sub-project area are species adapted to these conditions.

Amphibians

There are a total of 6 amphibian species belonging to four (4) families in the sub-project area, and all of them are in the LC category according to the IUCN Red List.

Within the scope of the Bern Convention, four (4) species are listed in the App-2 and one (1) species are listed in the App-3.

There are no endemic species in the sub-project area and none of the species are listed in CITES appendices.

The amphibian species found and likely to be found in and around the sub-project area are given in the Table 3-4~~Table 3-4~~.

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Table 3-4. Amphibian Species in the Sub-project Area

Species Name	Common name	Endemism	BERN	IUCN	CITES
Salamandridae					
Triturus karelinii	Southern Crested Newt	-	App-II	LC	-
Bufonidae		-			-
Bufo bufo	Common Toad	-	App-III	LC	-
Bufotes viridis	Green Toad	-	App-II	LC	-
Hylidae					
Hyla arborea	European Tree Frog	-	App-II	LC	-
Ranidae					
Pelophylax ridibundus	Marsh Frog	-	App-III	LC	-
Rana dalmatina	Agile Frog	-	App-II	LC	-

Reptiles

There are a total of 11 reptile species belonging to seven (7) families in the sub-project area. According to the IUCN Red List, *Testudo graeca* is classified as Vulnerable (VU), while all other species are listed as Least Concern (LC).

Within the scope of the Bern Convention, six (6) species are listed in the App-2 and five (5) species are listed in the App-3.

Testudo graeca is the only species in the sub-project area listed under CITES App-II.

None of the reptile species found in the sub-project area are endemic. The reptile species found and likely to be found in and around the sub-project area are given in the Table 3-5~~Table 3-5~~.

Table 3-5. Reptile Species in the Sub-project Area

Species Name	Common name	Endemism	BERN	IUCN	CITES
Testudinidae					
Testudo graeca	Common Tortoise	-	App-II	VU	App-II
Gekkonidae					
Mediodactylus kotschyi	Kotschy's Gecko	-	App-III	LC	-
Hemidactylus turcicus	Turkish Gecko	-	App-III	LC	-
Anguinidae					
Anguis fragilis	Slow Worm	-	App-III	LC	-
Lacertidae					
Lacerta viridis	Green Lizard	-	App-II	LC	-
Scincidae					
Ablepharus kitaibeli	Juniper Skink	-	App-II	LC	-
Typhlopidae					
Xerotyphlops vermicularis	Eurasian Blind Snake	-	App-III	LC	-
Colubridae					
Zamenis situla	European ratsnake	-	App-II	LC	-
Natrix natrix	Grass Snake	-	App-II	LC	-
Natrix tessellata	Dice Snake	-	App-II	LC	-
Eirenis modestus	Ring-Headed Dwarf Snake	-	App-III	LC	-

Birds

There are a total of 33 bird species from 17 families identified in the sub-project area. All of these species are classified as Least Concern (LC) according to the IUCN Red List.

Within the scope of the Bern Convention, 20 species are listed in the App-2 and eight (8) species are listed in the App-3. The remaining seven (7) species are not listed under the Bern Convention.

Buteo buteo, *Pernis apivorus*, *Ciconia ciconia*, *Falco tinnunculus*, and *Otus scops* are listed in CITES App-II, while *Carduelis carduelis*, *Linaria cannabina*, and *Sylvia atricapilla* are listed in CITES App-III. None of the bird species found in the sub-project area are endemic.

The bird species found and likely to be found in and around the sub-project area are given in the Table 3-6~~Table 3-6~~.

Table 3-6. Bird Species in the Sub-project Area

Species Name	Common name	Endemism	BERN	IUCN	CITES
Accipitridae					
Buteo buteo	Eurasian Buzzard	-	App-II	LC	App-II
Pernis apivorus	European Honey-buzzard	-	App-II	LC	App-II

Species Name	Common name	Endemism	BERN	IUCN	CITES
Alaudidae					
Galerida cristata	Crested Lark	-	App-III	LC	-
Apodidae					
Apus apus	Common Swift	-	App-III	LC	-
Ardeidae					
Ardea alba	Great White Egret	-	App-II	LC	-
Egretta garzetta	Little Egret	-	App-II	LC	-
Charadriidae					
Charadrius leschenaultii	Greater Sandplover	-	App-II	LC	-
Ciconiidae					
Ciconia ciconia	White Stork	-	App-II	LC	App-II
Cinclidae					
Cinclus cinclus	White-throated Dipper	-	App-II	LC	-
Columbidae					
Columba livia	Rock Dove	-	App-III	LC	-
Columba palumbus	Common Woodpigeon	-	App-III	LC	-
Corvidae					
Corvus corax	Common Raven	-	App-III	LC	-
Corvus corone	Carrion Crow	-	-	LC	-
Corvus frugilegus	Rook	-	-	LC	-
Pica pica	Magpie	-	-	LC	-
Falconidae					
Falco tinnunculus	Common Kestrel	-	App-II	LC	App-II
Fringillidae					
Carduelis carduelis	Goldfinch	-	App-II	LC	App-III
Linaria cannabina	Common Linnet	-	-	LC	App-III
Hirundinidae					
Delichon urbicum	Northern House Martin	-	App-II	LC	-
Meropidae					
Merops apiaster	European Bee-eater	-	App-II	LC	-
Motacillidae					
Motacilla alba	White Wagtail	-	App-II	LC	-
Passeridae					
Passer domesticus	Sparrow	-	-	LC	-
Scolopacidae					
Actitis hypoleucos	Common Sandpiper	-	App-II	LC	-
Tringa totanus	Common Redshank	-	App-III	LC	-
Strigidae					
Otus scops	Eurasian Scops-owl	-	App-II	LC	App-II
Sturnidae					
Sturnus vulgaris	Common Starling	-	-	LC	-
Sylviidae					
Sylvia atricapilla	Eurasian Blackcap	-	App-II	LC	App-III
Curruca communis	Common Whitethroat	-	App-II	LC	-
Turdidae					
Luscinia megarhynchos	Nightingale	-	App-II	LC	-

Species Name	Common name	Endemism	BERN	IUCN	CITES
Oenanthe oenanthe	Northern Wheatear	-	App-II	LC	-
Saxicola rubetra	Whinchat	-	App-II	LC	-
Turdus merula	Blackbird	-	App-III	LC	-
Upupidae					
Upupa epops	Hoopoe	-	App-II	LC	-

Mammals

There are 13 mammal species belonging to ten (10) families in the sub-project area. All of these species are classified as Least Concern (LC) according to the IUCN Red List.

Within the scope of the Bern Convention, five (5) species are listed in the App-2 and two (2) species are listed in the App-3. The remaining six (6) species are not listed under the Bern Convention.

There are no endemic species in the sub-project area and none of the species are listed in CITES appendices.

The mammal species found and likely to be found in and around the sub-project area are given in Table 3-7~~Table 3-7~~.

Table 3-7. Mammal Species in the Sub-project Area

Species Name	Common name	Endemism	BERN	IUCN	CITES
Soricidae					
Crocidura suaveolens	Lesser White-toothed Shrew	-	App-III	LC	-
Gliridae					
Nannospalax leucodon	Lesser Blind Mole Rat	-	-	LC	-
Rhinolophidae					
Rhinolophus ferrumequinum	Greater Horseshoe Bat	-	App-II	LC	-
Rhinolophus hipposideros	Lesser Horseshoe Bat	-	App-II	LC	-
Vespertilionidae					
Myotis blythii	Lesser Mouse-eared Myotis	-	App-II	LC	-
Molossidae					
Tadarida teniotis	European Free-tailed Bat	-	App-II	LC	-
Sciuridae					
Sciurus anomalus	Caucasian Squirrel	-	App-II	LC	-
Muridae					
Apodemus flavicollis	Yellow-necked Field Mouse	-	-	LC	-
Rattus norvegicus	Brown Rat	-	-	LC	-
Rattus rattus	House Rat	-	-	LC	-
Erinaceidae					
Erinaceus concolor	Southern, White-breasted Hedgehog	-	-	LC	-

Species Name	Common name	Endemism	BERN	IUCN	CITES
Canidae					
Vulpes vulpes	Red Fox	-	-	LC	-
Suidae					
Sus scrofa	Wild Boar	-	App-III	LC	-

Nationally Protected and Internationally Recognized Areas

There are no protected areas in the sub-project area and its immediate vicinity. In addition, the Project area does not include Internationally Recognized Areas of high biodiversity value, such as World Heritage Natural Sites, Biosphere Reserves, Ramsar Wetlands of International Importance and Alliance for Zero Extinction Sites. Neither of these areas is located in the vicinity of the project site.

However, the project area is located within the Kelkit Valley Key Biodiversity Area (KBA) within the scope of internationally recognized areas (Figure 3-10~~Figure 3-10~~).

The Kelkit Valley, covering 176,768 hectares, is an ecologically significant area formed by the Kelkit stream. It includes a variety of habitats such as oak, pine, and beech forests, agricultural lands, and Mediterranean maquis. The region contains two cedar communities, marking the northernmost distribution of cedar trees in the world. The valley is home to a mix of European-Siberian and Mediterranean biomes. It is an important breeding site for various bird species, and the Southern Crested Newt (*Triturus karelinii*) is a notable amphibian in the area. Despite its ecological characteristics, the area lacks formal protection status.

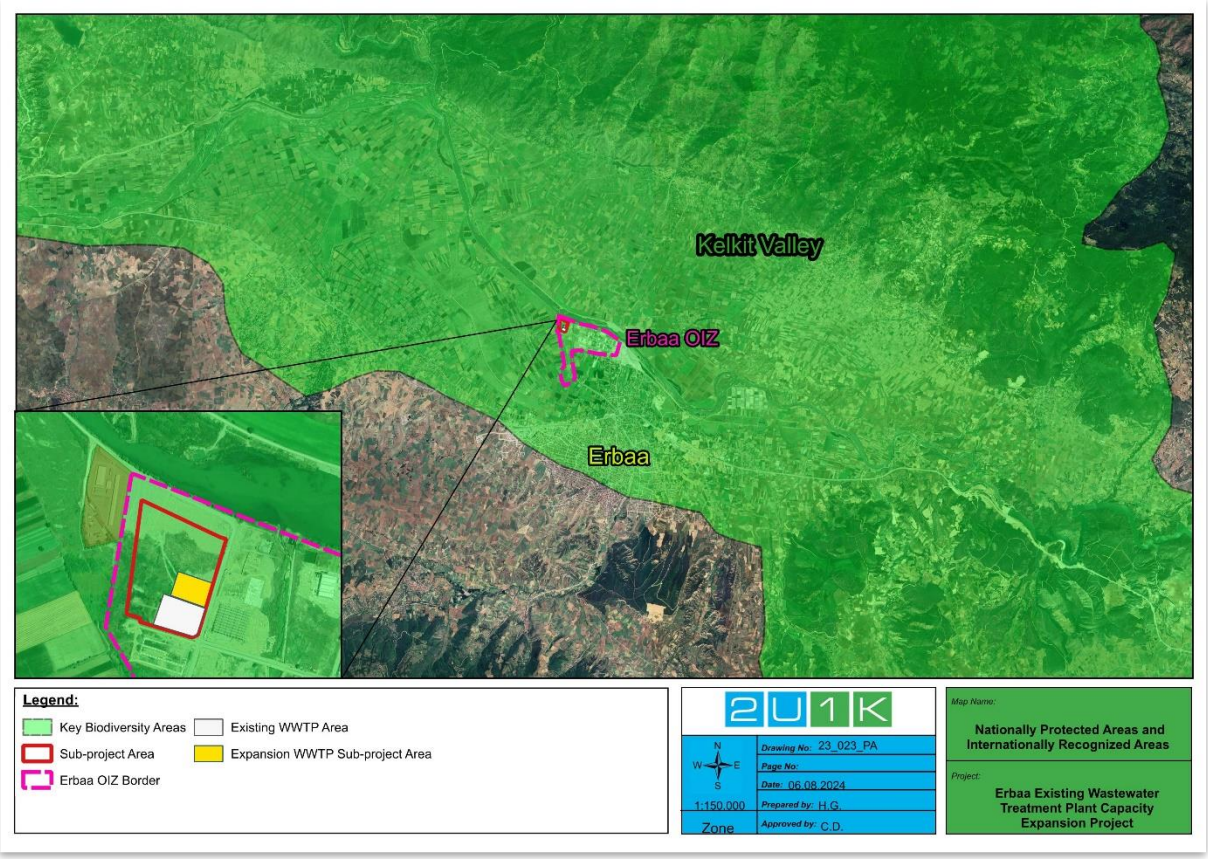

Figure 3-10. Nationally Protected and Internationally Recognized Areas

3.1.1.12 Other Natural Hazards

Landslides and Rockfall

Although rock fall is not frequent in Tokat, it increases in spring and winter seasons when the precipitation is the highest in the region.

Flooding

According to Disaster and Emergency Management Presidency (AFAD) Provincial Disaster Risk Reduction Plan for 2022, flooding disasters occurred in Erbaa on 17.07.1962, 24.09.1968 and 20.12.1993.

3.1.2 Socio-economic Environment

3.1.2.1 Demography and Population

Tokat is the centre of Tokat province. Located in the Black Sea Region, Tokat is surrounded by Samsun to the north, Ordu to the northeast, Sivas to the south and southeast, Yozgat to the southwest and Amasya to the west.

According to 2023 TurkStat data, the total population of Tokat is 606,934, 305,700 of whom are female and 301,234 of whom are male. In Tokat, which has an area of 10,073 km^2, there are 60 people per square kilometer. The population density of Tokat is 60/km^2. According to the data of the same year, the population growth rate of Tokat is 1.76%.

In addition, Tokat has 12 districts, and the most populous district is the central district. The project for capacity increase of Existing Erbaa Wastewater Treatment Plant is located in Erbaa District of Tokat Province. The project for capacity increase of Existing Erbaa Wastewater Treatment Plant is located in Erbaa District of Tokat Province. According to 2023 TurkStat data, the population of Erbaa district is 100,323, of which 50,617 are female and 49,706 are male. It is the second most populous district of Tokat Province.

In Erbaa District Erek and Tosunlar neighbourhoods are located within the AoI of the sub-project. The population of Erek neighbourhood is 2,698, of which 1,347 are women and 1,351 are men. The population of Tosunlar neighbourhood is 228, of which 114 are female and 114 are male.

Gender-based 2023 population data of two (2) neighbourhoods in the sub-project area are presented in Table 3-8~~Table 3-8~~.

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Table 3-8. Data on the Population in the Sub-project Area

District	Settlement	Female	Male	Total Population
Erbaa	Erek Neighbourhood	1,347	1,351	2,698
	Tosunlar Neighbourhood	114	114	228

Source: TurkStat, 2023

3.1.2.2 Land Acquisition

The area where the sub-project will be realized is located on 1367 block 1 parcel. EM is the owner of the sub-project. The land was given from Erbaa OIZ to EM indefinitely with the handover decision dated 29.05.2006 (see Appendix-G). Therefore, no land acquisition will take place.

3.1.2.3 Vulnerable and Disadvantaged Groups

Vulnerable groups are people who might be directly and differentially or disproportionately affected by a project because of their disadvantaged or vulnerable status. This disadvantaged

or vulnerable status may stem from an individual's or group's race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth, or other status.

As a result of interviews with the mukhtars of Erek and Tosunlar neighbourhoods, the following vulnerable/disadvantaged groups that are likely to be affected by the sub-project have been identified:

- Households living on state assistance:

  These are households that rely primarily on government-provided financial aid, food support, or other social welfare programs to meet their basic needs due to low income, unemployment, or other economic vulnerabilities.

- Homeless People:

  Individuals who lack stable, permanent, and adequate housing, often living on the streets, in shelters, or in temporary accommodations, and who are particularly vulnerable to environmental, social, and economic challenges.

- Mentally or Physically Handicapped:

  Individuals who have mental or physical disabilities that significantly limit their ability to perform daily activities, interact with their environment, or access services without additional support or accommodations.

- People who over the age of 70 and living alone:

  Elderly individuals aged 70 or older who live independently without the regular presence or assistance of family members, caregivers, or other forms of support, making them potentially more vulnerable to health, mobility, or social isolation challenges.

- Female Household Head:

  Women who are the primary or sole income earners and decision-makers in their households, often responsible for supporting dependents without a cohabiting partner or spouse, which may increase their economic and social vulnerability.

  Table 3-9~~Table 3-9~~ shows the vulnerable/disadvantaged groups identified as a result of interviews with neighbourhood headmen and their numbers.

Table 3-9. Vulnerable Groups

Settlement	Households living on state assistance	Homeless People	Mentally and / or Physically Handicapped	People who over the age of 70 and living alone	Female Household Head
Erek Neighborhood	60	2	10	5	0
Tosunlar Neighborhood	0	0	4	1	2

3.1.2.4 Education

According to 2023/2024 *academic year data, there are 647 schools/educational institutions in Tokat Province. There are 102.068 students in total in educational institutions in Tokat.*

In Erbaa District, there are 100 schools, 755 classrooms and 18,844 students. Erek Neighborhood has a primary school and a kindergarten, but no high school. High school students go to Erbaa District with transportation. There is no school in Tosunlar Neighborhood. Students go to Erbaa District with transportation.

3.1.2.5 Health

There are a total of nine (9) hospitals in Tokat Province. The number of doctors per 1,000 people is 1.8 (Ministry of Health, 2022).There is one in Erbaa district. There is no health centre in Erek Neighbourhood. Residents of the neighbourhood go to the health centre in Fatih Sultan Mehmet Neighbourhood, which is 2 km away. There is also no health centre in Tosunlar Neighbourhood and residents go to the health centres in Erbaa District centre.

3.1.2.6 Means of Livelihood and Employment

Tokat is a province located on the Central Anatolian border of the Black Sea Region. This location allows it to carry the economic and social characteristics of both the Black Sea and Central Anatolia. The main livelihoods of Tokat can be summarized as follows:

- Agriculture: Tobacco, grapes, viniculture, vegetables, fruits and pulses are cultivated in the fertile agricultural lands of Tokat.
- Livestock: Cattle, sheep and goat breeding, beekeeping and poultry breeding are practiced.
- Industry: There are food processing industry, tobacco processing plants and furniture and textile workshops in Tokat.
- Tourism: Tokat has tourism potential with its historical and natural riches. Ballıca Cave, which is on the Tentative List of World Heritage by UNESCO, historical buildings dating back to the Ottoman Empire and thermal tourism attract tourists.

The economic structure of Erbaa District is mainly based on agriculture.

- Agriculture: Tobacco, vegetables, fruits and cereals are widely produced in Erbaa district.
- Livestock: Erbaa's rural areas are suitable for animal husbandry. In addition to ovine and bovine breeding, beekeeping is also practiced.
- Industry: Industrial activities in Erbaa are mostly small scale and based on agriculture. Industry in Erbaa is based on food processing facilities, furniture production and construction sector.

The main source of income for the residents of Erek neighbourhood is factory labour. In Tosunlar Neighbourhood, residents make a living from agriculture and animal husbandry.

3.1.2.7 Transportation and Traffic

Tokat have variety of transportation options and generally experiences moderate traffic conditions.

Air Travel: Tokat Airport, originally opened in 1995, underwent significant renovations and was reopened on March 25, 2022. Turkish Airlines operates regular flights between Tokat and Istanbul, facilitating air travel to and from the region.

Bus Services: The city is well-connected by intercity bus services. Companies like Tokat Yıldızı and Tokat Seyahat offer routes to major cities such as Ankara, Istanbul, Izmir, and Antalya. These services provide comfortable travel options with amenities like 2+1 seating arrangements and onboard entertainment.

Local Transportation: Within Tokat, public buses and minibuses (dolmuş) are commonly used for urban and suburban travel, providing residents and visitors with accessible transportation options.

Tokat's transportation infrastructure supports efficient travel within the city and to other regions, with manageable traffic levels contributing to a smooth commuting experience. During the construction phase of the subproject, some roads may be closed for a short period of time. In this case, alternative road options will be provided to the local community. Measures related to traffic impact that may be observed during the construction period will be specified in the traffic management plan prepared by the contractor.

3.1.2.8 Cultural Heritage

Tokat bears the traces of many civilizations such as Roman, Byzantine, Seljuk and Ottoman throughout its history. Tokat Castle, located within the provincial borders, is the symbol of the city with its history dating back to the Roman period. Gök Madrasa, one of the most beautiful examples of Seljuk architecture, was built in 1270 and attracts attention with its stone workmanship. In addition, Ballıca Cave is on the UNESCO World Heritage Tentative List with its natural structure and unique stalactites. In addition, Yağıbasan Madrasah, which dates back to the Danışment period, sheds light on the history of science and education as one of the first madrasas in Anatolia.

Erbaa, one of the important districts of Tokat, stands out with its rich history and natural beauties. Horoztepe Archaeological Site in the district is the most important representative of Erbaa's historical heritage. Remains and burial mounds from the Early Bronze Age shed light on the thousands of years of history of the region. The Erbaa Grand Mosque from the Ottoman period is also an important part of Erbaa's religious and architectural history.

Among the traditional handicrafts of Erbaa, carpet weaving and woodworking stand out. Especially the carpets woven with geometric and floral motifs reflect the aesthetic

understanding of the region. Woodworking manifests itself in both furniture and decorative products.

As a result of the interviews with neighbourhoods' mukhtars, it was stated that there is one old bathhouse in Erek Neighbourhood, which is protected by the municipality. The distance between Erbaa WWTP and the historical bath is 2.5 km. Apart from this, there are no buildings of historical or cultural importance in Tosunlar Neighbourhood.

3.2 ENVIRONMENTAL AND SOCIAL ASSESSMENT

The sub-project's construction works are expected to commence in October 2025, last 22 months and be completed at the end of July 2027. The defects liability period of the sub-project is the first 12 months after construction. The target year of the sub-project operation is 2054. A maximum of 40 workers will be employed for sub-project construction activities. The existing plant employs 8 people. During the operation phase of the sub-project, additional 6 people are planned to be employed so that a total of 14 people will be involved in the operation phase. Currently there is not any site work ongoing on the sub-project area.

Principally, the sub-project will have a main vital positive impact for the Erbaa district as it will solve the region's wastewater capacity problems and, reduce the wastewater load. The sub-project will have impact on its surroundings during construction phase physically due to noise generation, increased dust emission, management of excavated soil, and emissions from the construction machinery. In the operation phase, there may be odour impact during the operation phase of the sub-project. Based on the environmental, social, and public/occupational health and safety risks/impacts that will potentially occur during the construction and operation phases of the sub-project, the Area of Influence (AoI) has been determined with a perimeter of 2.5 km around the sub-project area, including the Erbaa OIZ area. There is a livestock market 200 m west of the sub-project area as a sensitive receptor. The location of the sub-project area and its AoI are presented in Figure 3-3~~Figure 3-3~~.

The following sections include the environmental, social, and public/occupational health and safety potential risks/impacts of the sub-project. E&S mitigation measures to be taken for sub-project due to these impacts are given in Table 4-1~~Table 4-1~~ and Table 4-2~~Table 4-2~~.

In this context, the Environment, Health, and Safety (EHS) and social impacts of the sub-project construction and operation phases are detailed below.

3.2.1 Air Quality and Odour

Construction phase

Sub-project's environmental impacts at AoI are limited to the footprint and these impacts are effective for limited time during construction phase. In case of complaints regarding air quality, air quality measurements will be made for impact area.

There will be temporary greenhouse gas emissions from truck and excavator that will be used for construction activities.

Operation phase

During the operation phase, maintenance and repair activities may create dust and odour pollutants from operational activities of the plant that can impact air quality.

The methods to reduce and effectively manage the negative environmental impacts for both phases of the sub-project that may occur are provided in Table 4-1~~Table 4-1~~ and Table 4-2~~Table 4-2~~.

3.2.2 Water Use

Construction phase

The contractor has not been contracted within the scope of construction works yet. The contractors to be involved in the construction phase will be selected by tender. During the construction phase, daily potable water demand of personnel will be met by carboys purchased from licensed companies according to the list of licensed companies announced by the Ministry of Health in compliance with the requirements of the Regulation on Water Intended for Human Consumption and Public Health Law.

The maximum number of the personnel planned to be employed during the construction phase of the sub-project is 40 people. The average daily water consumption per person is regarded as 100 L/day[12], and the estimated daily amount of water that will be required during the construction phase of the sub-project is calculated as 4 m^3/day.

Operation phase

During the operation phase of the sub-project, the number of the 14 personnel will be working. So, the estimated daily amount of water that will be required during the operation phase of the sub-project is calculated as about 1.4 m^3/day.

3.2.3 Wastewater

Construction phase

The wastewater to be generated during the construction phase will be domestic wastewater from the personnel. 40 personnel will be employed during the construction phase of the sub-project.

Daily discharged wastewater per person is regarded as 85 L/(person.day)[13], and the estimated daily amount of wastewater to be discharged during the construction phase of the sub-project is calculated as 3.4 m^3/day.

The existing sewerage system will be used to discharge the wastewater generated by the personnel.

Operation phase

[12] Technical Specification for Preparation of ILBANK Drinking Water Facilities Studies, Feasibility and Projects - Table 4.4
[13] Technical Specification for Preparation of ILBANK Drinking Water Facilities Studies, Feasibility and Projects

Daily discharged wastewater per person is regarded as 85 L/(person.day)[14], and the estimated daily amount of wastewater to be discharged during the construction phase of the sub-project is calculated as about 1.2 m^3/day.

The sewerage system of the sub-project will be used to discharge the wastewater generated by the personnel.

WWTP effluent discharge limits will be operated in compliance with the discharge limits of the Regulation on Urban Wastewater Treatment. The related national regulation limit values for the corresponding parameter are given in Table 3-10~~Table 3-10~~.

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Table 3-10. National Wastewater Limit Values of the Sub- Project

Parameter	Discharge Limits of the national legislation (mg/l)
Chemical Oxygen Demand (COD)	125
Biological Oxygen Demand $(BOD)_5$	25
Total Suspended Solids (TSS)	35
Total Nitrogen (TN)[15]	10
Total Phosphorus (TP)[16]	1
pH	6-9

Discharge to Kelkit stream is planned from the same place with the existing discharge point (see Appendix-F for the photo of the discharge point). Except for the doubling of the effluent flow rate in the maximum case, the effective operation of the new plant will continue to ensure compliance with the national and international legislation in the water quality to be given to the receiving environment.

The methods in line with the WBG's General EHS Guidelines, WBG's EHS Guidelines for Water and Sanitation and local legislation to mitigate and effectively manage the adverse environmental and social impacts on wastewater that may occur during operation and maintenance of the sub-project are listed in the corresponding sections of Table 4-2~~Table 4-2~~.

3.2.4 Waste Management

Pollution prevention

Throughout the life of the sub-project, workers will be recruited from the region as much as possible.

[14] Technical Specification for Preparation of ILBANK Drinking Water Facilities Studies, Feasibility and Projects

[15] >100000 population equivalent

Throughout the life of the sub-project, priority will be given to working with local suppliers and procuring services from the local employees in the service industry, as much as possible (fuel supply, vehicle maintenance/food, beverage, and spare parts supply, etc.).

Resource efficiency and management actions will be taken; use of renewable energy and energy efficiency measures, reducing the carbon footprint, responsible supply chain management and green procurement.

Construction phase

Domestic Solid Waste

Domestic solid waste will be generated from the personnel who will work during the construction phase of the sub-project. The domestic solid waste generated will mostly consist of organic waste.

The amount of domestic solid waste from the personnel is calculated according to the data established by TurkStat (2022)[16] that an average of daily 0.94 kg of domestic solid waste will be generated per capita in Tokat.

The domestic solid waste generated (calculated as 37.6 kg/day) will be stored in available trash containers and collected by the district municipality via garbage trucks. The waste collected will be delivered to licensed solid waste landfills.

Packaging Waste

The ratio of recyclable packaging waste is in metropolitan cities in Türkiye as follows. 48 kg/P-year paper and board, 14 kg/P-year plastic, 6 kg/P-year nylon, 8 kg/P-year metal, 8 kg/P-year glass, in total 84 kg/P-year[17].

Packaging wastes made of plastic, metal, glass, paper and board, composite and similar materials (calculated as about 9.2 kg/day) should be collected separately from other wastes and given to Packaging Waste Collection, Segregation and Recovery Facilities licensed by the MoEUCC.

Excavation and Construction Waste

In accordance with the Regulation on the Control of Excavation Soil, Construction and Demolition Wastes, excavated soil and construction waste producers are responsible for the transportation of the excavated soil and construction waste generated to the storage areas that have necessary permissions, using transportation vehicles with the necessary transportation permits.

[16] TurkStat, Daily Amount of Municipal Waste Per Capita (Kg/Person-Day) Data (Tokat), 2022

[17] Solid Waste Management and Recovery, Environmental Protection and Packaging Waste Recovery and Recycling Foundation (ÇEVKO) Publications

The excavation soil and construction wastes generated during the construction phase of the sub-project will be transferred to the permitted landfill belonging to the EM.

Hazardous Waste

During the construction phase of the sub-project, petroleum-based products, such as lubricants, hydraulic fluids, or fuels, may result in the potential for release into the environment during storage, transportation or use in equipment. Additionally, contaminated / oily fabrics, cloths and filters, contaminated packaging materials, toner cartridges, paint residues, fluorescent tubes, cleaning cloths and filters, hazardous insulating materials and pressurized tubes are other hazardous wastes that are likely to be generated.

Hazardous wastes that are likely to be generated during the construction phase will be collected separately in specific vessels / containers at the construction site and stored in a specific area that is established on the concrete floor and connected to the drainage channel to prevent it from reaching the ground or other bodies of water. A roof or overhead cover will be provided for the hazardous waste storage area to protect waste containers from rainwater exposure, thus preventing spills, leaks, and environmental pollution while safeguarding workers' safety. Additionally, prevailing wind directions will be considered when designing the storage area to prevent the dispersal of particulate matter, dust, or contaminants, thereby reducing health risks to workers and the environment. The waste generated should be temporarily stored at their source in line with the criteria set based on their types. The temporarily stored waste will be labelled with the phrase 'hazardous or non-hazardous waste' as well as the waste code, the amount of waste stored and the date of storage.

Waste will be delivered to licensed disposal / recycling facilities with separate waste codes. Hazardous waste will be transported by licensed vehicles within the scope of the "Communiqué on the Waste Transportation by Road".

Waste Batteries and Accumulators

Waste batteries will be collected separately in waste battery bins. The collected waste batteries will be delivered to the Portable Battery Manufacturers and Importers Association (TAP) (authorized waste battery collector) for disposal at the licensed facility.

These wastes will be handled in accordance with the procedures and principles of the Regulation on the Control of Waste Batteries and Accumulators. If not handled properly, these wastes can have an adverse impact on human health and the environment.

Medical Waste

During the construction phase, medical waste will be generated from first aid responses. According to the Regulation on Control of Medical Waste, medical wastes stored in specific containers and areas will be collected by licensed vehicles and delivered to licensed disposal companies.

It is expected that the medical waste produced during the construction phase will be generated in very small amounts due to first aid actions. While medical waste is expected to be generated in trace amounts, they can lead to significant effects such as contracting infectious diseases if not handled properly.

Operation phase

Wastes other than waste sludge will continue to be stored in the existing waste temporary storage area of the existing plant.

Primarily, the amount of waste sludge is expected to increase to 7,800 tonnes/year with the doubling of the wastewater treatment capacity of the plant, which is projected to be 3,900 tonnes for 2025. After stabilization, dewatering and solar drying, the excess dried waste sludge will be disposed of in compliance with the Annex-2 of the Regulation on Landfilling of Wastes and Regulation on Waste Management according to the analysis result. If the sludge is classified as hazardous, it will be sent to licensed disposal companies.

The amount of waste sludge sent approximately 10 tonnes per day is expected to increase to 20 tonnes at maximum capacity with the commissioning of the sub-project. Waste sludge management will be ensured through regular waste sludge deliveries. New photograph (dated 13.12.2024) of waste sludge storage area with the impermeable ground is given in the Appendix-F.

Maintenance and repair activities may generate waste materials that require proper disposal. Waste generated during maintenance and repair activities will be segregated into different categories based on their type and potential for reuse or recycling. Also, laboratory sources will continue to generate hazardous wastes. This can include categories such as hazardous waste, recyclables, and non-recyclables. Each category of waste should be disposed of in the appropriate manner, according to national regulations.

3.2.5 Noise

Construction phase

Noise will be generated from vehicles, machinery and equipment that will operate during the construction activities of the sub-project.

The list of vehicles, machinery and equipment planned to be used in the sub-project construction works is below.

- 1 truck
- 1 excavator
- 1 water truck

The equipment and machines used during the construction will be monitored and maintained at regular intervals. In case of complaints regarding noise, noise measurements will be made for impact area.

Operation phase

In addition to local and short-term repair and maintenance activities, the plant activities that can be considered as noise sources are expected during the operation phase of the sub-project.

3.2.6 Land Use and Soil Quality

Construction phase

Since the sub-project area is located within the boundaries of the area reserved for the existing treatment plant under the responsibility of Erbaa OIZ and will be restored after the construction phase, no change in land use is expected. Since there will be no fuel or similar hazardous chemical storage within the sub-project area, it is not anticipated to experience spill-like accidents. Measures to be taken to prevent soil contamination are given in Table 4-1~~Table 4-1~~.

Operation phase

No change is foreseen for the sub-project land use in the operational phase allocated for the OIZ treatment plant.

No change in soil quality is expected during the operation phase of the sub-project since there will be no storage or soil related activity.

3.2.7 Landscape

Construction phase

Due to the construction work in the sub-project area within the OIZ area, there will be a temporary change in landscaping. A temporary disturbance due to construction is expected, but it will be of short duration.

Operation phase

As the sub-project will be installed adjacent to the existing plant, no adverse landscape impacts are expected during the operation phase of the sub-project.

3.2.8 Biodiversity and Protected Areas

Construction phase

Considering the location of the sub-project, the limited natural habitats in the sub-project area and its surroundings, along with the intense anthropogenic impact already present, the negative effects on the biological environment during the construction phase are expected to be minimal.

Operation phase

Since the sub-project is a wastewater treatment capacity expansion project, it is expected to yield positive results for the Kelkit stream, the only natural habitat in the region, during the operation phase.

3.2.9 Population / Demography

Construction and Operation phase

Since it is a wastewater treatment plant capacity increase project, it will not cause population increase in Erbaa District during the construction period. However, since local employment will be prioritized during the construction period of the sub-project, it is predicted that Erek and Tosunlar Neighbourhoods in the sub-project impact area will not experience any population increase or demographic change.

3.2.10 Land Acquisition

The land on which the sub-project will be realized was given from Erbaa OIZ to EM indefinitely with the handover decision (see Appendix-G). For this reason, no land acquisition is required within the scope of the subproject.

3.2.11 Vulnerable/Disadvantaged Groups/Individuals

Construction and Operation phase

The construction works to be carried out for the sub-project works will have a short-term and temporary effect.

The negative impacts that vulnerable/disadvantaged groups/individuals may be temporarily exposed to during the construction period of the sub-project and measures to mitigate these impacts are given below.

- Households living on state assistance:

  Households reliant on state assistance may face difficulties in adapting to disruptions caused by the sub-project, as their limited resources could restrict their ability to cope with environmental or social changes in the area.

- Homeless People:

  Homeless individuals may face heightened vulnerability to noise, dust, and disturbances caused by construction activities, as they lack stable shelter to mitigate these impacts.

- Mentally or Physically Handicapped:

  People with mental or physical disabilities may encounter difficulties navigating construction zones or accessing essential services if sub-project activities disrupt mobility or infrastructure in the area.

- People who over the age of 70 and living alone:

  Elderly individuals living alone may experience increased stress and challenges in coping with changes to their environment or disruptions to their routines caused by the sub-project.

- Female Household Head:

  Female household heads may face additional burdens due to potential disruptions in accessing resources or services, particularly if they are primary caregivers or lack support networks to adapt to project-related changes.

3.2.12 Economy / Employment

Construction phase

It is anticipated that the sub-project will result in temporary employment. Priority will be given to contributing to the local economy through the use of local materials and local recruitment of labour during the construction and to paying attention to the procurement of various goods and services from local resources. It is estimated that 40 workers will be employed during different stages of the construction.

Negative impacts that local and regional businesses may face during the construction period (last 22 months) of the sub-project and the measures to be taken are given below:.

Mitigation Measures:

- Coordinate with local authorities to minimize disruptions and schedule construction activities during off-peak hours whenever possible.
- Maintain clear signage and alternative routes to ensure uninterrupted access to businesses throughout the construction period.
- Schedule noisy activities during non-business hours or weekends to mitigate disturbances to business operations.

Operation phase

During the operation period of the project, 8 employees will be recruited. These people will be recruited in addition to those already working at Erbaa WWTP.

3.2.13 Labour Conditions

The EM will be responsible for human resources for construction and operation phases. Türkiye is currently in the middle of a harmonization process with the European Union, and labour laws are being reviewed to ensure harmonization. The sub-project will comply with national labour, social security and occupational health and safety laws as well as the principles and standards of the International Labour Organization convention by meeting WB expectations according to WB Standards. Based on the national principles in the International Labour Organization convention, the EM will take the following measures:

- Not employing children under the age of 18 nor any forced labour,
- Eliminating forced labour and ensuring a Human Resources Policy compatible with the European Convention on Human Rights and the Turkish Constitution,
- Eliminating discrimination based on language, race, gender, political thought, philosophical belief and religion in business relations,
- Ensuring workers' access to the right of collective bargaining (Law No. 6356 on Trade Unions and Collective Bargaining Agreements, and Labour Law No. 4857),
- All employees will be issued written employment contract defining work, work hours, wages, rights and duties, etc. and,
- Ensuring access to the sub-project grievance mechanism that is functional effectively.

The Labour Law (4857) applies to all workplaces and employers, employees, employer representatives and worker representatives, regardless of the business activity.

3.2.13.1 Training

According to OHS Site Training Plan, the occupational health and safety training will be provided to the employees of contractor as part of each contract executed within the scope of the sub-project, which will at least include the subjects provided in the Regulation on the Procedures and Principles of Occupational Health and Safety Training of Employees, and the Contractor's Environmental and Social Management Plan (C-ESMP) to be developed by the contractor, based on this ESMP, will contain the plans regarding the training to be provided to personnel.

Additionally, the contractor will provide training to its personnel, who will work during the performance of the work, on the environmental and social impacts that will be considered during the on-site work and are included in this ESMP document. The contractor will train its personnel in the fulfilment of all measures to prevent and/or minimize environmental and social impacts during the on-site construction, subject to inspection by the EM.

The contractor will ensure that the on-site personnel are primarily trained in the issues that include the risks, and protection measures specific to the worker's job and post before starting work.

In addition, training on risks that may arise from the circumstances, such as changes in post or job, replacement of work equipment or application of new technology and work instructions training, will be provided.

Training programs will be repeated periodically considering the changing and emerging risks provided in the Regulation on the Procedures and Principles of Occupational Health and Safety Training of Employees. Information and training will be provided not only for personnel, but also for the measures to be taken for public health and safety.

The contractor is required to separately and measurably demonstrate the knowledge, skills, behaviours, and attitudes that the on-site personnel will have regarding occupational health and safety, environmental and social issues.

The Contractors are obliged to give code of conduct training, including Gender Based Violence (GBV) and Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH), to each worker so that the presence of workers who will work during the construction do not result in any disturbance/conflict within the local communities and their interaction with community members do not result in inappropriate behaviours/misconducts. The EM will ensure that the Contractors develop a Code of Conduct and that all workers are informed and receive training about it before starting to work. A Code of Conduct will be part of the employment contract to be signed by all workers at the job start-up phase. The training given in the Code of Conduct will be checked and reported by Environmental and Social Experts. Scaling and evaluation will be carried out at the end of the training provided. According to the results of the evaluation, training material will be updated by adding the learnings from near misses or incidents when happen.

3.2.14 Occupational Health and Safety

If the necessary measures are not taken during construction works, this may result in accidents that threaten the health and safety of workers. During the construction phase, workers may be exposed to various hazards, such as exposure to noise, dust, heat, hazardous chemicals, working at height, working in confined spaces, and working with electrical equipment, small cranes, and other machinery. Occupational accidents and injuries may occur

during these activities if potential risks at various stages of the sub-project are not managed properly. Potential accidents during the operation phases of the sub-project may also lead to health concerns associated with non-routine risks, such as exposure to hazardous materials or emergencies resulting from equipment failure or unforeseen events.

Risks include physical hazards like slips, trips, and falls; ergonomic hazards due to repetitive or strenuous activities; chemical hazards from exposure to toxic substances; and environmental hazards such as fires, electric shocks, and extreme weather conditions. Inadequate awareness of job responsibilities and risks, lack of training, and insufficient use of personal protective equipment (PPE) could exacerbate these risks.

Lastly, emergencies such as accidents, sabotage, fire, infectious diseases, earthquakes, flooding, storms, or chemical spills present significant risks to both workers and the surrounding environment during the construction and operation phases.

3.2.15 Community Health and Safety

Community health and safety issues are associated with risk factors that may arise from construction and operation phases of the sub-project. It is anticipated that the local people will be affected by the resulting dust and noise, especially during the construction phase.

To minimize the impact of the traffic activities that are expected to intensify during the construction phase, the working hours will be adjusted according to the peak hours of transportation.

Accidents and failures can be expected in the site of construction. The EM is responsible to prevent the adverse impacts of the construction phase over the community. Yet, pits and dangerous materials, which will be present at the construction site will be managed by safety standards. Necessary warning signs and with physical barriers with no gaps in between will be provided by the EM to protect the community health and provide safety.

3.2.16 Traffic and Transportation

Since there is no activity such as transportation of heavy items or construction crew that will create heavy traffic in the sub-project area where the sub-project will be carried out both during the construction and operation periods, no additional impact requiring special mitigation measures (such as new access road arrangements or arrangements at critical locations) are anticipated.

The times when the traffic density is low will be preferred for excavation trucks, and the necessary warning signs will be placed for the special link road. The personnel operating vehicles and heavy equipment will be dedicatedly assigned, and they will be provided with traffic and road safety training. The maintenance of the construction machinery and equipment will be carried out regularly and regulatory speed limitations will be followed for construction vehicles, and this should be included in the construction site traffic and transport management plan to be prepared by the contractor.

Prior to construction activities, the Contractor will install all signs, barriers and control devices needed to ensure the safe use of the road by traffic and pedestrians, as required by the traffic and transport management plan to be prepared.

3.2.17 Cultural Heritage

Construction phase

Since the project is a wastewater treatment plant capacity increase project and will be realized on the land currently belonging to the Erbaa OIZ, it is foreseen that no cultural heritage elements will be encountered in the region.

However, in the project area directional excavation will be carried out. Particularly for the area where underground horizontal drilling will take place, prior to commencing construction activities, an opinion letter will be obtained from the Museum Directorate. When the official opinion letters obtained from the Museum Directorate, the opinion letter will be forwarded to ILBANK. To manage activities in terms of cultural heritage, a chance find procedure has been prepared (see Appendix-H). The contract with the contractor participating in the construction work will include clauses related to the application of the chance find procedure. As an appendix to the contract, the chance find procedure will be shared with the contractor, and it will be ensured that the relevant personnel are knowledgeable and trained in this regard. In the event of any archaeological remains or artifacts being discovered during construction, all activities will be halted, recorded as specified in the chance find procedure, and reported to the Museum Directorate in accordance with Article 4 of Law No. 2863.

Operation phase

During the operational phase of this sub-project, it is essential to acknowledge that maintenance and repair activities will be limited to routine tasks, ensuring the continued functionality of the existing infrastructure without posing any adverse effects on cultural heritage.

Nevertheless, it is imperative to remain vigilant and consider the potential for unexpected circumstances or emergency situations that might necessitate excavation activities beyond the current routes or deeper excavation. In such instances, there exists a possibility of encountering cultural heritage finds. The sub-project's operational team will be well-prepared to address these contingencies, adhering to protocols for the chance discovery of cultural heritage artifacts, ensuring their preservation, documentation, and the required reporting to the relevant authorities.

All personnel involved will receive training on the chance find procedure underscoring the sub-project's commitment to minimizing any potential negative impact on cultural heritage during the operational phase. The respect and safeguarding of cultural heritage sites are paramount for the sub-project's sustainability and will remain a fundamental consideration across all sub-project stages.

3.3 STAKEHOLDER ENGAGEMENT

A stakeholder is defined as any person, organisation or group that may be affected by the sub-project or has an interest in the sub-project and its impacts. Stakeholder participation is considered a critical element in the sub-project. It can significantly influence the sub-project's success and sustainability. Engaging stakeholders allows for a more effective sub-project design and implementation by considering the needs and concerns of local communities. Moreover, stakeholder participation helps ensure the sub-project is more readily accepted by the community, enhancing its long-term success. It is essential to exert special effort in identifying disadvantaged and vulnerable stakeholders who may be disproportionately or differently affected by the sub-project or may face difficulties in participating in development processes.

The identification of stakeholders is an ongoing process that requires regular review and updates. Different issues are likely to concern different stakeholders. Therefore, stakeholders are grouped according to their connection to the sub-project. Understanding a stakeholder group's connections to the sub-project helps identify key objectives of engagement. A Stakeholder Engagement Plan (SEP) has been prepared for this sub-project in order to identify project stakeholders and create participation methods for the future of the sub-project. Stakeholders (including vulnerable individuals/groups) are defined in the table below to identify which stakeholders will be directly or indirectly - positively or negatively - affected ("affected parties") or have an interest in the sub-project ("other interested parties"). Detailed information on stakeholder identification is provided in the SEP prepared for this sub-project.

The grievance mechanism to be established for the sub-project will guide the EM in managing the stakeholder participation process. Grievances may be an indication of increased concern from stakeholders. Stakeholder engagement activities will be recorded through the consultation form included in the SEP, and consultations will be initiated before the sub-project’s construction period.

Specific personnel will be assigned by the EM, the sub-project owner, to implement and manage the Stakeholder Engagement Plan (SEP) and Grievance Mechanism (GM). The expert to be assigned may be personnel who meets the appropriate qualifications within the existing organizational structure of EM or may require new employment. The final responsibility for the implementation of the SEP belongs to EM.

3.3.1 Grievance Mechanism

The purpose of the Grievance Mechanism (GM) is foremost to give access to a problem-solving procedure to Project affected people including affected communities and sub-project workers. Grievances can be an indication of growing stakeholder concerns and can escalate if not identified and resolved. Identifying and responding to grievances supports the development of positive relationships between sub-project worker’s, local communities, and other stakeholders.

In the sub-project level Grievance Mechanism, Public Grievance Mechanism and Worker Grievance Mechanism, grievances will be submitted in Turkish through Turkish forms. In addition, if refugee/immigrants who do not speak Turkish have grievances about the sub-project or the impacts of the sub-project, translation support will be provided.

The structured GM will ensure that grievances associated with the sub-project are addressed through a transparent and impartial process. From the early stages of the sub-project lifecycle, the grievance procedure will be disclosed to the public through individual or group meetings, printed materials, notice boards.

The grievances will be acknowledged by the GM official assigned by the EM and timeframe for the provision of response or for further consideration will mainly depend on the complexity of the issue raised, however, ideally, it is expected to not exceed 14 days after receiving the grievance.

The GM official who will manage the Grievance Mechanism will be knowledgeable about the guidelines prepared by the World Bank to prevent sexual exploitation, abuse and harassment cases for the sub-projects financed under construction works. Grievances of gender-based violence, exploitation and harassment can result in a culture of silence due to negative reactions from the community. For the avoidance of this, it is highly important that the stakeholders raise the grievances involving these issues about the sub-project anonymously. In addition, the authorities handling the grievances should address such issues within confidence and by an unbiased approach[18]. These grievances will be handled centrally at EM, not only at the Contractor level and EM will report to ILBANK. EM will manage such grievances in line with SEP report ILBANK GM. In case a sensitive complaint is received by the Contractor or EM, they will be responsible for conveying the issue directly to the ILBANK GM focal point[19]. However, Contractor and EM should still be trained and informed about the principles applicable to Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) and Gender Based Violence (GBV) cases. Details of the Grievance Mechanism can also be found in SEP.

3.3.1.1 Public Grievance Mechanism

As the sub-project is within the municipality, it is anticipated that the existing grievance mechanism system (Hilal Table) can be maintained as the primary grievance mechanism for this sub-project. Specifically, all complaints related to the sub-project will be directed to the sub-project GM official for receiving and monitoring complaints.

Hilal Masa Contact Information

[18]https://thedocs.worldbank.org/en/doc/741681582580194727029002020/original/ESFGoodPracticeNoteonGBVinMajorCivilWorksv2.pdf

[19]https://www.ilbank.gov.tr/storage/uploads/pagefiles/ilbank_uluslararasi_projeler_sikayet_mekanizmasi_proseduru_1646748134.pdf

- Adress: Cumhuriyet Mah. İstiklal Cad. No: 85 Erbaa / Tokat
- Email: erbaa@erbaa.bel.tr
- Telephone: 0850 633 00 60
- Contact form on the website of Erbaa Municipality: https://erbaa.bel.tr/Site/iletisim

In addition, a communication channel will be established to allow direct access to the sub-project GM official, and this communication channel will be announced to stakeholders through the website, announcements, brochures, etc. Complaints received by the contractor, CİMER, YİMER, ILBANK, WB etc. will also be redirected to the communication channel. All stakeholders involved in the sub-project will be common beneficiaries of the GM.

During construction and operational activities, the grievance mechanism described above will continue to be driven by views of stakeholders, making this procedure accessible to all affected stakeholders. The personnel to be appointed by the EM will record the grievances and requests coming from different channels in a single established system and will provide solutions.

The GM official will record all grievances that are:

- Communicated to the sub-project officials personally,
- Communicated by phone/e-mail,
- Conveyed by stakeholders who want to communicate based on the sub-project documentation,
- From the personnel during the construction phase,
- From the operating personnel, and
- Communicated to contractors.

For this method to be successful, the GM official to be assigned will constantly be in contact with other municipality experts, contractors, and personnel who will be involved in the operational phase. Additionally, the GM officer to be appointed will be introduced to the stakeholders through the website, brochures, and announcements.

If stakeholders fail to reach a satisfactory solution through the channels provided above or have requests for a higher-level explanation, they will be able to reach ILBANK's communication channels, the Presidency's Communication Centre (CIMER), the Foreigners Communication Centre (YIMER) and the relevant legal institutions.

The officer assigned by EM for the Public Grievance Mechanism will receive suggestions and complaints with the Sample Grievance Form. Following the actions taken and the solution provided regarding the reported grievance will be recorded together with the Grievance Closure Form. The Contractor should review the sub-project specific SEP (and its relevant annexes for grievance forms) prepared for this sub-project to access more detailed information on the Public Grievance Mechanism and their role regarding the GM. Thus, all activities carried

out under the grievance mechanism will be recorded and care will be taken to establish a transparent relationship between the public and the sub-project owner.

3.3.1.2 Worker Grievance Mechanism

Worker Grievance Mechanism is defined as complaints from sub-project employees (including both direct and indirect employees). This mechanism is structured with an intention of it being an effective approach for early identification, assessment, and resolution of grievances throughout the sub-project's lifespan. The Grievance Mechanism should guarantee that any employee raising a complaint will not be subject to any reprisal.

The scope of the Worker Grievance Mechanism can be summarized as but not limited to; any worker with a concern of pertaining to onsite work such as occupational health and safety, terms of employment, wages, issues with the local community or among co-workers, hygiene issues in the common areas, insufficient amount of food and / or concerns regarding the security of the workers.

The GM will be informed to all sub-project workers through written and verbal communications. Each worker should be informed about the GM at the time they are hired, and details about how it operates should be easily available, in employee handbooks for example.

Confidentiality is very important to some employees; therefore, workers can submit their complaints anonymously, there are no restrictions in this regard. If an anonymous complaint is received, the corrective action taken against the complaint or the response to the complaint will be announced by posting it in appropriate areas in the containers that workers will use.

The Contractor will assign a responsible person to record the grievances received at the construction site verbally or through grievance forms that will be placed in the containers. The responsible staff of Contractor will record all grievances that received at the construction site and convey to the sub-project GM officer for further action and resolution.

It is important to note that sub-project employees will retain their right to access the public grievance mechanism for non-employment-related matters.

Complaints should be investigated as soon as possible to prioritize resolution. Regardless of the general response and resolution timeframes, some complaints may require immediate intervention, for example in cases involving workers' livelihoods.

The officer appointed by EM for the Worker Grievance Mechanism will receive suggestions and complaints with the Sample Grievance Form. Following the actions taken and the solution provided regarding the reported grievance will be recorded together with the Grievance Closure Form. The SEP prepared for the sub-project contains more detailed information on the Worker Grievance Mechanism and its appendices include Sample Grievance Form and Grievance Closure Form. Thus, all activities carried out under the grievance mechanism will

be recorded and care will be taken to establish a transparent relationship between the worker and the sub-project owner.

4 ESMP MATRIX: RISK AND IMPACTS, MITIGATION, MONITORING

4.1 RISK AND IMPACTS, MITIGATION

Table 4-1. ESMP Construction Phase Matrix Table of the Sub-project

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
1	**Labour and Working Conditions**				
1.1	Inadequate workers health and safety conditions	Workers at the Sub-project Area	▪The Project implementation unit (PIU) to be formed by the EM and the contractor's project team will include staff(s) (at least one environmental and social expert and ''A'' Class OHS expert) who will take part in full-time and effectively control the implementation of the sub-project. Also, The EM will make sure that the measures provided below are taken by the contractor and enforce necessary actions/sanctions in case lack of these measures on site. In this regard, most common OHS risk areas and corresponding general mitigation measures throughout the life of the sub-project are provided in Appendix-I. ▪Including sub-project engineers, management team and workers shall be informed about job descriptions, responsibilities, and risks according to be prepared ''Project OHS Management Plan''. The workers will be provided working conditions in accordance with the Labour Law and the LMP of TEFWER Project (such as wages, working hours, payment for overtime hours, period of rest, social security benefits). The workers will be provided with the necessary personal protective equipment and information on works and occupational safety through regular trainings. Before the construction works starts, a Risk Assessment Report shall be prepared for all works to be carried out and necessary measures shall be taken to avoid related risks. Emergency Preparedness and Response Plans (EPRP)s shall be prepared for possible accidents and emergency situations (i.e., fires, earthquakes, floods, etc.) events and emergency teams shall be established and drills and training shall be carried out in line with the emergency scenarios. ▪OHS Management Plan will be prepared to outline all the actions and procedures for ensuring OHS for all workers by the contractor during the construction period and by the EM during the operation period. ▪To control the cases (fire, earthquake, etc.), which may occur during the construction activities under the sub-project, and which require urgent action, an EPRP and an OHS Management Plan will be prepared by the contractor and shared with all employees. The contractor will prepare a training program regarding the plans. ▪The EM will ensure a safe working environment for the workers and will require all employees and contractors to adhere to local and international health and safety legislation and guidelines. Workers will be provided with all necessary Personal Protective Equipment (PPE) (hard hats, safety harnesses, protective coveralls, glasses, gloves, armour-clad shoes, etc.).	▪EM ▪Contractor ▪Supervision Consultant	▪OHS Management Plan ▪Site OHS Risk Assessment Plan ▪Emergency Preparedness and Response Plans (EPRP)s ▪Labour Management Plan (based on the TEFWER's Labour Management Procedures (LMP))

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
			▪Smoking areas will be allocated on the construction site. ▪Appropriate hand, face washing and shower facilities will be provided. ▪Technical and OHS training, including the code of conduct indicating the possible risks regarding the work site and the work to be carried will be given to workers by the contractor with a training plan including toolbox talks. These will include regular training to workers on COVID-19 and other epidemics symptoms and other pandemics, how to be protected and what to do when symptoms appear. Training will also be given in risks that may arise due to changes in the workplace or job, change of work equipment, application of new technology. Information and training activities will be carried out not only for the employees, but also about the measures to be taken for public health and safety. ▪All employees will receive written contracts with job description, wages, working hours, rights and duties, Code of Conduct (CoC) etc. ▪Workers will be required to comply with all national OHS regulations and WB Environmental and Social Standards will be made. ▪Contractor will prepare their site-specific Labour Management Plan on the basis of the LMP of TEFWER prior to commencement of any civil works in the sub-project area. All activities will be implemented in line with both the Law on Occupational Health and Safety and its relevant regulations, and the WBG EHS Guidelines. ▪The contractor will assign full-time personnel with relevant certification and experience in charge of OHS and she/he shall monitor the site implementations. ▪Emergency teams will be formed, and drills and training programs will be carried out in line with emergency scenarios. ▪Employees will have a good command of EPRP, and the grievance will be reported to the authorized teams and resolved, if they require urgent action. ▪Appropriate signposting of the sites will be provided and then workers will be informed of key rules and regulations to follow. ▪First aid kit will be kept available at the construction site, taking into account that first aid response may be required before the casualty is referred to the nearest healthcare provider. ▪First aiders will be provided according to the national regulation. ▪Both trainings, incidents (fatalities, lost time incidents, any significant events including spills, fire, outbreak of pandemic or communicable diseases, social unrest, etc.) and near misses will be recorded. ▪The EM will report details of any significant environmental or social incidents (e.g. fatalities, lost time incidents, environmental spills etc.) within 24 hours and submit an incident report, including Root Cause Analysis (RCA), precautions and compensation measures taken within 15~~30 business~~ days. ILBANK will forward the incident report to the WB immediately upon receipt from the EM. ▪The areas to be excavated will not be accessible except by authorized personnel. Loading and unloading activities will be carried out together with the persons who will supervise the personnel who will carry out the activity.		

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
			▪Unauthorized access to the construction site will be restricted. The construction areas will be surrounded, and necessary security measures will be taken, no one will be allowed to enter except for the staff. If a trench needed to be left open for night, the sufficient illumination of the area shall be ensured by the Contractor and necessary signs shall be placed, and the area shall be enclosed with physical barriers without any gaps between. ▪Installation of concrete moulds, concreting, installation of water tank etc. may require working at height, working in confined space etc. Therefore, workplace relevant procedures such as Confined Space Entry Procedure, Working at Height Procedure, etc. will be prepared in accordance with applicable national requirements and internationally accepted standards. ▪Adequate and appropriate training in confined space hazard control, atmospheric testing, use of required PPE as well as the serviceability and integrity of PPE shall be verified before workers are required to enter a permitting confined space. In addition, adequate and appropriate rescue and/or rescue plans and equipment shall be in place before the worker enters the confined space. In the event of an accident, coordination will be established with the emergency response teams to ensure that the most accurate first aid is given. The EPRP will be revised in accordance with the operation period and necessary training will be given to workplace physician approved employees can enter to confined space. ▪Only physician approved employees can work at height holding the height work permit will work at height, and safeguarding measures (guardrails, fall arrest) will be in place. ▪The WBG General EHS Guidelines and WBG's EHS Guidelines for Water and Sanitation will apply. ▪All equipment used during the construction phase will be kept in good working condition. Equipment that meets international standards in terms of performance and safety will be used. ▪The contractor will assign a full-time staff responsible for OHS with relevant certification and experience and monitor field practices. ▪Jet grouting involves some risks and hazards that can compromise the safety of the workers and the public. To prevent or mitigate safety issues associated with jet grouting are high-pressure injection that can cause injuries or damage to equipment; electric shock from the power supply or lightning; fire or explosion from the grout or gas; and collapse or instability of the improved soil elements or adjacent structures, it is important to follow the relevant standards and national regulations, use PPE, conduct regular inspections and maintenance, and have EPRPs and relevant procedures.		
1.2	Inadequate workers health and safety conditions related to COVID-19 and other pandemics	Workers at the Sub-project Area	▪Guidance, directives and recommendations of Ministry of Health, Ministry Labour, and Social Services, World Health Organization (WHO) and the WB shall be followed, and all relevant necessary measures shall be taken, both for occupational health and safety of employees and for workplaces, in case of an outbreak of any other pandemic/communicable disease including COVID-19. ▪The contractor will ensure a safe working environment for the workers in line with international best practice and Turkish Legislation including the health and safety measures related to COVID-19 provided by the Ministry of Health and Ministry of Labour, and Social Services.	▪EM ▪Contractor ▪Supervision Consultant	▪OHS Management Plan ▪Site OHS Risk Assessment Plan ▪Emergency Preparedness and Response Plan

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
			▪Before the construction works start, a Risk Assessment study will be implemented for all works to be carried out. EPRP will be prepared and put into practice. Both the Risk assessment and EPRP will take into consideration the COVID-19 risks and other communicable disease risks, as relevant. ▪Sub-project and site-specific OHS Management Plan based on construction site OHS risk assessment and that will also cover measures to address COVID-19 and/or any other pandemic/communicable disease risk, which will be in line with the WBG EHS Guidelines (both general and sector specific) will be developed before the commencement of works and implemented on site. ▪OHS trainings and toolbox talks will be provided to the employees including the CoC indicating the possible risks regarding the work site and works to be carried out. These will include regular training to workers on COVID-19 symptoms, how to be protected and what to do when symptoms appear.		
1.3	Child labour, forced labour and unregistered employment contribution to economy	Local Parties, Workers, and Settlements within the AoI	▪Priority will be given to the local labour where possible and practical. ▪Efforts will be exercised to allocate employment opportunities to the local parties and the settlements within the AoI. ▪The work permits of the employees will be controlled within the scope of the sub-project, prohibiting child labour, forced labour, and child labour under the age of 18. ▪A Contractor's Labour Management Plan, based on the TEFWER Labour Management Procedures (LMP), will be prepared by contractor prior to commencement of any civil works in the sub-project area. This plan will manage the contractor's work process and ensure that written contracts are issued to all workers. Discrimination in the workplace will be eliminated. ▪Necessary measures will be taken by contractor to make sure that workers coming from outside the city will be given a training program on dialogue and communication with local communities, and that there are no social or cultural issues between host communities and external workers. It is the EM's responsibility to ensure that the contractor complies with the determined criteria.	▪EM ▪Contractor ▪Supervision Consultant	▪Labour Management Plan (based on the TEFWER's LMP) SEP
1.4	Improper working conditions, Child labour forced labour and unregistered employment. (GBV/SEA/SH)	Workers at the Sub-project Area	▪Workers will be provided access to the Grievance Mechanism and will be informed about this mechanism. ▪In the Worker Grievance Mechanism, grievances will be submitted in Turkish through Turkish forms. In addition, translation support will be provided in case non-Turkish speaking Refugee/Migrant workers have grievances about the sub-project or its impacts. ▪Information on GBV/SEA/SH service providers should be shared during public consultations. The sub-project GM should be designed to receive GBV/SEA/SH grievances anonymously and ensure they are addressed in a confidential and sensitive manner. Relevant sub-project staff should be trained in order to refer GBV survivors to existing identified service providers and ensure that they are provided services promptly. The CoC for workers will include the prohibition of GBV/SEA/SH. ▪All workers will be given training on avoidance of discrimination and CoC. The trainings given to the employees will be explanatory about the concepts of SEA/SH and GBV. At the same time, through the trainings, it will be ensured that workers learn the Grievance Mechanism of the sub-project (explained in detail in the sub-project's SEP document) and the steps to be followed in exercising their legal rights. Access to the Grievance Mechanism will be easy and effective. The	▪EM ▪Contractor ▪Supervision Consultant	▪Labour Management Plan (based on the TEFWER's LMP) SEP

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
			grievance mechanism officer designated for the sub-project will be announced to all employees during the trainings to be given before starting work. There will be brochures and posters containing the grievance mechanism and the contact information of the authorized person in places such as the cafeteria, canteen and service areas used by the employees. ▪Minimum legal labour standards will be met (child/forced labour, anti-discrimination, working hours, minimum wages) in accordance with International Labour Organization (ILO) regulations. ▪Compliance with the Labour Management Procedures (LMP) of the sub-project and the Contractor's Labour Management Plan, prepared by contractor, and which is subject to approval, will be ensured by the EM and Supervision Consultant. ▪Workers will be provided hygienic and adequate facilities. ▪Workers will be allowed to have access to primary healthcare on site, enabling the provision of prescriptions. ▪Discrimination based on language, race, gender, political thought, philosophical belief, and religion will be avoided in business relations. ▪Workers will be issued a written contract stipulating working hours, wages, rights, and duties etc., and the CoC.		
2	Resource Efficiency and Pollution Prevention				
2.1	Failure to set sustainable and resource efficiency goals[20]	Local Parties and Settlements within the AoI	▪Resource efficiency and management actions will be taken; use of renewable energy and energy efficiency measures, reducing the carbon footprint, responsible supply chain management and green procurement.	▪EM ▪Contractor ▪Supervision Consultant	▪C-ESMP ▪Environmental and Social Monitoring Report (ESMR)
2.2	Air pollution from construction works (Dust emissions, Exhaust gases from equipment and vehicles)	Air quality, residents, flora and fauna species and habitats within the Sub-project's AoI and Workers at the Sub-project Area	▪Dust from outdoor sources will be minimized by employing control measures such as covering the piles and increasing the moisture content. ▪Dust suppression techniques such as the application of water or non-toxic chemicals will be used to minimize dust from vehicle movements. ▪Close or cover trucks for the transport of materials. Spraying water on the ground where dust is generated, disposing of excess material, and cleaning the location upon the finalization of works. Protective covers or curtains for zone where the largest amounts of dust are generated. ▪Truck loading and unloading operations will be carried out with due care, and materials will be prevented from scattering around.	▪EM ▪Contractor ▪Supervision Consultant	▪Construction Site Traffic and Transport Management Plan ▪SEP

[20] As mentioned in the United Nations Development Cooperation Strategy Türkiye 2016-2020 Government of The Republic of Türkiye and The United Nations System in Türkiye, Sustainable, Inclusive Growth and Development Goals.

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
			▪Modern equipment and vehicles that can meet the applicable emission standards will be selected for construction works. ▪All vehicles will have exhaust emission permits, and all vehicles will be regularly maintained. ▪Exhaust systems and emission levels of machinery and vehicles will be checked by the contractor. ▪Sub-project Grievance Mechanism will be implemented. ▪In case of any complaints, air quality measurement will be carried out at the nearest sensitive receptors by an authorized environmental laboratory, and the results will be recorded. ▪Speed limits will be set for construction equipment, and actions will be taken to ensure that such limits are complied with. ▪During transportation, excavated materials will be covered with nylon canvas or materials with grain size larger than 10 mm. ▪Any damage caused by inadequate dust suppression measures (i.e. pollution of the surrounding area, transport to a residential area by wind, dust deposits by the wind, etc.) will be compensated by the contractor. ▪Compliance with the air emission limit values stipulated in national legislation and WBG General EHS Guidelines will be ensured. ▪Restricting works during daytime if necessary (e.g. 7AM to 5 PM).		
2.3	Noise from construction works (Increase in noise and vibration levels)	Residents, flora and fauna species and habitats within the Sub-project's AoI and Workers at the Sub-project Area	▪Residents living near the sub-project area will be informed during the construction phase. ▪Construction works will be planned in consultation with local communities, and operations with the highest noise generation potential will be scheduled during the time of the day that will cause minimum disturbance. ▪Noise control devices, such as temporary noise barriers and deflectors, will be used for operations causing impact as well as exhaust silencers for combustion engines. ▪Use of roads close to the settlements in transportation activities for the sub-project will be avoided or minimized. ▪Equipment and vehicles used externally will be regularly maintained. ▪"Low noise" equipment will be used as much as possible during the construction phase. Where construction equipment is provided with impermeable acoustic covers or enclosures, covers will be kept closed while equipment is in operation. ▪When equipment is not working, they will be turned off or reduced to the minimum level. ▪Vibration levels will be monitored in case of complaints, and measures will be taken to reduce vibration if standards are exceeded. ▪Noise measurement will be carried out at the nearest noise sensitive receptors by an authorized environmental laboratory, in case of any complaints. ▪Compliance with the noise limit values stipulated in national legislation and WBG General EHS Guidelines will be ensured. ▪Restricting works during daytime if necessary (e.g. 7AM to 5 PM). Establish schedules and/or other forms of specific limitations for works.	▪EM ▪Contractor ▪Supervision Consultant	▪Construction Site Traffic and Transport Management Plan ▪SEP

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
2.4	Waste management failure, pollution from hazardous waste	Soil quality, Kelkit Stream as water resource, flora and fauna species and habitats within the Sub-project's AoI	▪All non-waste and excavated material generated in the course of construction will be deposited in the landfill and in a manner that is not harmful to the environment. Stone, soil, and other materials that may be reused shall be utilized during the realization of the sub-project. Materials that cannot be used and hazardous waste will be removed in compliance with entity level regulations. ▪Waste Management Plan will be developed and implemented by the Contractor. ▪If asbestos containing material are identified, the relevant authorities will be notified, and approval obtained before starting any work. The approval will specify the type of work that can be carried out and the requirements for safe removal and disposal. ▪During asbestos removal, measures will be taken to prevent the release of asbestos fibres into the air. This can include wetting down the materials with water to prevent dust, using negative air pressure systems, and using airtight containers to transport the waste. ▪Workers involved in asbestos removal will be provided with appropriate PPE, including respirators, gloves, and protective clothing. ▪Asbestos-containing waste will be disposed of at designated facilities that are authorized to handle hazardous waste. The waste will be securely packaged, labelled, and transported to the facility in accordance with the regulations. ▪The work area will be monitored for asbestos fibres during and after removal to ensure that the work is being carried out safely. Records of the work will be kept, including the type and quantity of asbestos containing materials removed, the methods used, and the disposal sites.	▪EM ▪Contractor ▪Supervision Consultant	▪Waste Management Plan
2.5	Waste management failure, pollution from domestic waste	Kelkit Stream as water resource, flora and fauna species and habitats within the Sub-project's AoI	▪Any domestic waste generated will be sorted at source (plastic, glass, paper, etc.), and reusable waste will be recycled. ▪Unrecyclable waste will be collected in closed sanitary trash bins and will be disposed of by the solid waste collection system of Erbaa Municipality.	▪EM ▪Contractor ▪Supervision Consultant	▪Waste Management Plan
2.6	Waste management failure, pollution from waste oils	Soil quality, Kelkit Stream as water resource, flora and fauna species and habitats within the Sub-project's AoI	▪If different categories of oils are generated from the works at the construction site, these oils will be stored separately. ▪Containers where waste oils are stored will be kept closed and protected from rainwater. ▪Waste oils will only be transported by licensed transportation companies and will only be delivered to licensed recycling or disposal facilities.	▪EM ▪Contractor ▪Supervision Consultant	▪Waste Management Plan ▪Spill Response Plan
2.7	Waste management failure, pollution from	Soil quality, Kelkit Stream	▪Waste batteries will be collected separately from other wastes, delivered to authorized organizations and recycled.	▪EM ▪Contractor	▪Waste Management Plan

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
	waste batteries and accumulators	as water resource, flora and fauna species and habitats within the Sub-project's AoI	▪Waste batteries and accumulators will be delivered to waste battery and accumulator disposal facilities within the Municipal borders through authorized transportation companies.	▪Supervision Consultant	
2.8	Waste management failure, pollution from demolition waste, loss of topsoil	Soil quality, Kelkit Stream as water resource, flora and fauna species and habitats within the Sub-project's AoI	▪Consideration will be given to recycling of excavation soil and construction wastes and especially to their reuse as infrastructure material. ▪For a robust recycling and disposal system, waste will be sorted at source. ▪Removal of the excavated material, which will not be used for backfilling, from the site will be performed at regular intervals without waiting. These materials will be transferred to permitted excavation waste storage area by licensed transportation companies.	▪EM ▪Contractor ▪Supervision Consultant	▪Waste Management Plan ▪Construction Site Traffic and Transport Management Plan
2.9	Wastes of construction works (Transportation management of waste (both hazardous and non-hazardous) to the appropriate landfills/disposal sites)	Residents, soil quality, Kelkit Stream as water resource, flora and fauna species and habitats within the Sub-project's AoI	▪Waste management plan will be prepared, and the employees will be trained on the plan. ▪During the construction period, any waste will be collected separately at source and stored in the temporary waste storage area. ▪All types of waste shall be transferred to a licensed disposal facility via licensed waste transportation companies following the relevant legislation. ▪Wastes generated should only be temporarily stored on site in the temporary storage area that is maintained/equipped with appropriate precautions according to the type of wastes, when needed, and wastes should be transported to licensed disposal facilities with licensed transport vehicles appropriate to the type of waste. Information related to the operations in this context should be recorded and records should be kept. ▪Impermeability will be provided on the floors of the temporary storage area and a suitable drainage system which is closed and does not reach surface water will be installed. Spill kits will be available at the temporary storage area and necessary precautions will be taken against possible fires such as provision of appropriate firefighting equipment. ▪Topsoil will be separated from general trash and organic, liquid, and chemical wastes on site, and stored in appropriate containers. ▪Construction waste will be regularly collected by licensed collectors at the permitted excavation waste storage site of the Municipality. ▪Waste disposal records will be kept regularly. To keep these records, a waste registry information form will be prepared, which will contain information on the waste code, amount, and transfer and disposal method as presented in the Annex 4 of the Regulation on Waste Management. ▪Where appropriate, waste can be reused or recycled.	▪EM ▪Contractor ▪Supervision Consultant	▪Waste Management Plan ▪Construction Site Traffic and Transport Management Plan

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
			▪Temporary storage of medical waste will be performed in accordance with Article 14 of the Regulation on Control of Medical Waste. In addition, medical waste will be transported to processing facilities in accordance with Article 15 of the concerned regulation.		
2.10	Soil contamination from construction works (Spill outs of fuel, lubricant, antifreeze etc. may result in contamination)	Soil quality, Kelkit Stream as water resource, flora and fauna species and habitats within the Sub-project's AoI	▪Safe delivery/storage/handling procedures in accordance with Safety Data Sheets (SDSs) will be established. Spilled material will be immediately contain and clean-up. ▪Provisions of the Regulation on the Control of Soil Pollution and Sites Contaminated by Point Sources will be complied with within the scope of the sub-project. ▪Periodic inception of vehicles, machinery and equipment used during the construction works. Storage of fuel and lubricant as specified in their SDSs, and isolation and cleaning of the site in case of spillage or leakage. ▪Wastes and wastewater to be generated during the construction phase of the sub-project will be stored and disposed of in a controlled manner in accordance with the relevant regulations and in line with the management practices described in this report. ▪Measures such as regular equipment maintenance, providing workers with appropriate training, and ensuring that all equipment and materials are properly stored and handled will be implemented. ▪A spill response plan will be developed before construction begins to ensure that a timely and effective response can be carried out in the event of a spill or accident. The plan should include procedures for containing and cleaning up spills, as well as identifying the responsible parties and the reporting requirements. Employees will be trained on the plan prior to the construction phase. ▪Removing contaminated soil, using remediation techniques to break down pollutants, and replacing affected soil with clean soil. ▪After a spill or accident, monitoring of the soil quality will be conducted to ensure that remediation efforts are effective. Additionally, all spills and accidents will be reported to the regulatory agencies.	▪EM ▪Contractor ▪Supervision Consultant	▪Spill Response Plan ▪Waste Management Plan
2.11	Topsoil loss, Deposit of excavated soil, erosion, landslides, or sedimentation may occur	Soil quality, Kelkit Stream as water resource, flora and fauna species and habitats within the Sub-project's AoI	▪The provisions of the Regulation on the Control of Excavation Soil, Construction and Demolition Wastes will be complied during the land preparation and construction phase of the sub-project.	▪EM ▪Contractor ▪Supervision Consultant	▪Waste Management Plan
2.12	Pollution from hazardous materials	Soil quality, Kelkit Stream as water resource, lora and fauna species and habitats	▪Safe delivery/storage/handling procedures in accordance with SDSs will be established. Any spilled material will be immediately contain and clean-up. ▪If hazardous wastes are stored in the sub-project area, those wastes will be stored in containers that are strong, leak-proof, safe and in accordance with internationally recognized standards. The containers will bear "hazardous waste" label, with the amount, content, properties, storage conditions and storage date of the stored material indicated on the containers.	▪EM ▪Contractor ▪Supervision Consultant	▪Spill Response Plan ▪C-ESMP ▪

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
		within the Sub-project's AoI	▪Containers containing hazardous materials will be placed in sealed vessels to prevent spills and leaks. ▪Hazardous wastes will be transported by licensed waste transportation companies and will be disposed of at licensed facilities. ▪Toxic paints, solvents or lead-based paints will not be used. ▪Hazardous waste management will be fulfilled in consultation with Tokat/Erbaa Municipalities in accordance with the Regulation on Waste Management. ▪Hazardous chemicals and wastes likely to be generated at the construction site will be stored not to pose a threat to community health. ▪Construction activities may pose the potential for accidental release/leakages of petroleum-based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment. All chemical storage containers, including diesel fuel, and hazardous liquid waste drums/containers will be placed in secondary containment so as to minimize the risk of soil, surface water and groundwater contamination during construction. ▪The disposal of hazardous chemicals and wastes that may be generated at the construction site will be carried out at licensed facilities under the supervision of authorized companies and experts.		
2.13	Wastewater management failure, pollution from wastewater (Water Quality and Domestic wastewater generation)	Kelkit Stream as a discharge point, flora and fauna species and habitats within the Sub-project's AoI	▪Effluent Management Plan will be developed and monitored by the EM for the existing Erbaa WWTP. ▪Bypass of the treatment system of the existing Erbaa WWTP will be avoided, if not possible, will be minimized. ▪The number of employees at peak time during the construction phase of the sub-project is expected to be 40. Thus, the limited amount of domestic wastewater generated at site will be integrated into the existing sewerage system of the Erbaa WWTP, which is adjacent to the sub-project area. ▪Surface runoff or wastewater generation due to dust suppression activities will be prevented. ▪The units of the sub-project that are in touch with water, wastewater and chemicals will be constructed with using concrete with appropriate cement ratio and durability in order to provide basement impermeability. Thus, no leakages to soil and groundwater will occur during the construction phase of the sub-project. ▪Construction activities may pose the potential for accidental release/leakages of petroleum-based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment. All chemical storage containers, including diesel fuel, and hazardous liquid waste drums/containers should be placed in secondary containment so as to minimize the risk of soil, surface water and groundwater contamination during construction phase. ▪The water to be used for dust suppression will be followed in m³.	▪EM ▪Contractor ▪Supervision Consultant	▪Effluent Management Plan
3	Community Health, Safety, and Security				

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
3.1	Community health and safety risks	Local communities	▪ The construction area should be barriered to prevent trespassing. Necessary signage and lighting equipment shall be established. Traffic safety shall be established through appropriate management measures. Community should be informed about transfer of large machinery and equipment. If necessary, emergency drills should be implemented with the participation of the emergency authorities in the area. ▪ Design and the construction work of the sub-project should be in line with the WBG guidelines including the life and fire safety provisions. ▪ The sub-project area will be fenced to avoid physical hazards to the communities associated with the sub-project and construction activities will be announced to the affected local people, businesses, and governmental bodies at least two (2) days in advance. ▪ Contractors will take necessary health and safety measures, such as using appropriate warning signs and signboards, arranging time schedule of noisy works (mostly after 9:00 AM before 6 PM), making the regular maintenance of the machinery, replacement or repair of part which cause noise and performing watering in dry seasons, under the management of the EM during site preparation and construction activities so that the public is informed of the construction plan and locations in a timely manner and the construction sites are determined. ▪ Care will be taken to ensure that warning signs are visible at night and in bad weather conditions. ▪ The adequate number of appropriate firefighting equipment will be always kept available at construction sites. ▪ Detailed information on the use of the Grievance Mechanism and contact information on the grievance mechanism officer will be made available to the public. (Via the sub-project website, information brochures left at the Mukhtars offices, posters, and hand brochures in places such as schools, health centres, hospitals, mosques, which are the common areas used by the community intensively). ▪ In the sub-project level Grievance Mechanism and Public Grievance Mechanism, grievances will be submitted in Turkish through Turkish forms. In addition, translation support will be provided in case non-Turkish speaking Refugee/Migrant workers have grievances about the sub-project or its impacts. ▪ Community Health and Safety Management Plan will be prepared by the contractor during the construction period and by the EM during the operation period. It will be shared with the relevant audience.	▪ EM ▪ Contractor ▪ Supervision Consultant	▪ Community Health and Safety Management Plan ▪ Construction Site Traffic and Transport Management Plan ▪ SEP ▪ EPRP
3.2	Interruptions in Transport and Transport Safety (Direct and indirect threats posed by construction activities against traffic and pedestrians)	Local communities	▪ Construction Site Traffic and Transport Management Plan to be prepared by the Contractor will be implemented and the workers will be trained about the Plan. ▪ Actions will be taken to ensure that any vehicles operating during the construction period obey the set speed limit (30 km/hr). ▪ Traffic and warning signs will be placed around and near the sub-project area. Positioning clear warning and information signs around the construction zone. Imposing time constraints (e.g. 7AM to 5PM) for works. Considering disabled, women, children and people with special needs while locating and marking alternative roads (roundabouts).	▪ EM ▪ Contractor ▪ Supervision Consultant	▪ Construction Site Traffic and Transport Management Plan ▪ Community Health and Safety Management Plan ▪ EPRP ▪ SEP

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
			▪Local people will be informed about potential hazards and risks through brochures and posters left in common areas frequently used by local people such as headman's offices, hospital, health centre, mosque, coffee house and marketplace. ▪The activities affecting the local traffic will be planned considering the rush hours of the traffic as much as possible. ▪All drivers involved in the sub-project will be informed about road safety, speed limits, and traffic rules to be followed during the construction sub-project, and requirements to be observed. ▪The weight of all vehicles will not exceed the legal limits according to Highway Traffic Regulation. ▪In case of hazardous chemical or waste storage on site, the transfer of these wastes will be performed out by licensed carriers not to pose a threat to community health. ▪The routes developed in agreement with the competent authorities will be used for special cargos. The designated routes will be programmed to prevent traffic congestion on the roads and will be published in advance to prevent possible disturbance. ▪The arrangements in traffic will be discussed with the Municipality and planned jointly.		
4	Biodiversity Conservation and Sustainable Management of Living Natural Resources				
4.1	Biodiversity conservation	Fauna species encountered and habitats within the Sub-project Area	▪Species encountered during the construction phase should not be killed or collected, and eggs and nests should not be deliberately damaged. Workers working in construction should be made aware.	▪EM ▪Contractor ▪Supervision Consultant	▪C-ESMP
4.2	Damage to vegetation may onset in the course of construction	Flora species and habitats within the Sub-project Area	▪Minimizing the areas requiring the removal of vegetation, and upon finalization of works, replace/restore removed vegetation. Special measures if needed to avoid damage to species.	▪EM ▪Contractor ▪Supervision Consultant	▪C-ESMP
5	Cultural Heritage				
5.1	Loss of cultural heritage	Any artifacts	▪Any artifacts found during the construction works will be indicated and recorded as “chance finds”. A “Chance Find Procedure” has been prepared for the steps to be followed and will be implemented in case of the chance find (see Appendix-H). ▪Workers/employees will be trained in cultural heritage issues. ▪In case of a chance find, all activities will be stopped, the site will be secured, and the Cultural Assets Conservation Board or Museum Directorate will be informed about the chance finds and site will be secured by the Contractor. The approval of the relevant Conservation Board, who is	▪EM ▪Contractor ▪Supervision Consultant	▪Chance Find Procedure

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
			responsible for the area where the construction site is located, will be required to continue any activity on site. No demolition/construction work will be carried out when awaiting the said approval. ▪Any correspondence on this subject will be updated in accordance with all decisions taken, and all documents will be submitted to ILBANK .		
6	Stakeholder Engagement and Information Disclosure				
6.1	Potential community complaints	Sub-project's Stakeholders	▪The Contractor will provide training to the site personnel on environmental and social issues. It is the EM's responsibility to ensure that the contractor complies with the determined criteria. ▪The operations to be carried out during construction works will be performed not to restrict / hinder the social and economic life of local people. ▪To avoid any impact on the safety and daily life of communities, safety and information signs will be placed on site before the work. ▪	▪EM ▪Contractor ▪Supervision Consultant	▪SEP
6.2	Stakeholders' negative opinions about the sub-project due to insufficient information	Sub-project's Stakeholders	▪Before the start of construction works, the local people and all relevant stakeholders will be informed of the works to be performed and the measures to be taken. ▪The information on the start and finish dates of construction and working periods and the permits obtained from the provincial/district municipality will be shown by the operations owner in a signboard that is easily visible to all personnel at the construction site.	▪EM ▪Contractor ▪Supervision Consultant	▪SEP ▪C-ESMP
6.5	Communication problems as a result of lack of open communication with stakeholders	Sub-project's Stakeholders	▪An adequate timing will be planned for interaction / communication with communities and for engagement. ▪Consultation on risks and adverse impacts of the sub-project and create opportunities to receive affected communities view on sub-project. ▪Establishment of grievance mechanism to collect and provide timely resolution of affected communities concerns and grievances regarding of the sub-project's environmental and social performance. ▪Transparent public disclosure to inform each phase of the sub-project through website, notice boards, telecommunication tools and public meetings. ▪Establishing well designed and structured public questionnaire to receive feedback from affected communities. ▪Regular consultations will be carried out with the authorities and communities regarding the sub-project management. ▪Comprehensive information on the stakeholder engagement is provided in SEP of the sub-project and the SEP will be updated and implemented throughout the sub-project.	▪EM ▪Contractor ▪Supervision Consultant	▪SEP
6.6	Grievance issues	Sub-project's Stakeholders	▪An efficient Grievance Mechanism will be initiated to allow potentially affected individuals to voice their concerns on the sub-project. ▪In the sub-project level Grievance Mechanism, Public Grievance Mechanism and Labor Grievance Mechanism, grievances will be submitted in Turkish through Turkish forms. In addition, translation	▪EM ▪Contractor	▪SEP

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
			support will be provided in case non-Turkish speaking Refugees/Migrants have grievances about the sub-project or its impacts.	▪ Supervision Consultant	
6.7	Missing documentation	Sub-project's Stakeholders	▪ All activities, information meetings, opinions/suggestions, grievances, etc. provided during the construction period will be documented continuously. ▪ The contractor will develop (C-ESMP), prepare monthly and quarterly ESMRs and submit them to the EM through the Supervision Consultant. The Supervision Consultant will review the quarterly ESMRs and C-ESMP of the contractor and will include its own assessments and observations on ESHS aspects and prepare quarterly ESMRs and submit them to the EM. The EM's PIU will examine the monthly and quarterly ESMR of the contractor/s and the Supervision Consultants and will be responsible for the timely delivery of the Monthly (if requested by ILBANK) and Quarterly ESMRs to ILBANK. The ILBANK's PMU will review the monthly/quarterly reports delivered by the EM during the construction phase. ILBANK will inform the WB by providing regular semi-annual monitoring reports on the ESHS performance of the sub-project. The WB will review regular semi-annual monitoring reports on the ESHS performance of the sub-project and instruct ILBANK if any non-conformity or non-compliance identified.	▪ EM ▪ Contractor ▪ Supervision Consultant	▪ C-ESMP ▪ SEP

Table 4-2. ESMP Operation Phase Matrix Table of the Sub-project

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
1	**Labour and Working Conditions**				
1.1	Inadequate workers health and safety conditions	Workers at the Sub-project Area	▪OHS Management Plan and Emergency Preparedness and Response Plan (EPRP) will be developed and implemented by the EM. ▪The workers shall be informed about job descriptions, responsibilities, and risks and mitigation measures about OHS.The workers will be provided working conditions in accordance with the Labour Law (No: 4857 Date: 10.06.2003) (such as wages, working hours, payment for overtime hours, period of rest, social security benefits). The workers will be provided with the necessary personal protective equipment and information on works and occupational safety through regular trainings. Before the operation, a Risk Assessment Report shall be prepared for all works to be carried out and necessary measures shall be taken to avoid related risks EPRPs shall be prepared for a possible accident and emergency, and emergency teams shall be established, and drills and training shall be carried out in line with the emergency scenarios. The workers shall be made aware of accessible GM. ▪The operating procedures prepared for the components of the system are applied as specified in the Annex-3 of the Regulation on Wastewater Collection and Disposal Systems. ▪Emergency plans specified in the Annex-3 of the Regulation on Wastewater Collection and Disposal Systems are prepared for emergency situations that may occur in any part of the system. ▪Before starting work, employees will be knowledgeable about job descriptions, responsibilities, relationships with the local people, and risks that may threaten occupational health and safety. ▪Workers will be provided with appropriate induction, health and safety training and information. ▪All equipment used during the operation phase will be kept in good working condition. ▪EPRP will be prepared for a potential accident and emergency. Emergency teams will be formed, and drills and training programs will be carried out in line with emergency scenarios. ▪Employees will have a good command of EPRP, and the grievance will be reported to the authorized teams and resolved, if they require urgent action. ▪In case of any potential accident involving injury during the operation phase, the equipment for the first aid will be kept available at the rehabilitation centre, taking into account that first aid response may be required before the casualty is referred to the nearest healthcare provider. ▪The EM formally agrees that all work will be carried out in a safe and disciplined manner and is designed to minimize risks on neighbouring residents and environment. ▪All activities will be implemented in line with both the Law on Occupational Health and Safety (No:6331 Date:30.06.2012) and its relevant regulations, and the WBG's EHS Guidelines.	▪EM	▪OHS Management Plan ▪Emergency Preparedness and Response Plans ▪Risk Assessment Plan

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
			▪The EM will ensure a safe working environment for the workers and supply appropriate personal protective equipment (PPE). ▪Guidance, directives, and recommendations of Ministry of Health, Ministry of Labour and Social Security, WHO and the WB shall be followed, and all relevant necessary measures shall be taken, both for occupational health and safety of employees and for workplaces, in case of an outbreak of any other pandemic/communicable disease including COVID-19 and other pandemics. ▪All regulations regarding OHS will be effective for the personnel. ▪OHS trainings and toolbox talks will be provided to the employees including the code of conduct. These will include regular trainings to workers on COVID-19 and other pandemics symptoms, how to be protected and what to do when symptoms appear. ▪Both trainings and incidents (fatalities, lost time incidents, near misses, outbreak of pandemic or communicable diseases, social unrest, etc.) will be recorded. ▪The EM will report details of any significant environmental or social incidents (e.g. fatalities, lost time incidents, environmental spills etc.) within 24 hours and submit an incident report, including RCA, precautions and compensation measures taken within ~~30 business~~15 days. ILBANK will forward the incident report to the WB immediately upon receipt from the EM. ▪Regular site tours will be realized, safe situations and behaviours will be observed and reported, unsafe behaviours and situations will be corrected by ensuring site discipline.		
1.2	Improper working conditions Child Labour, forced labour and unregistered employment	Workers at the Sub-project Area	▪Workers will be familiar with the Grievance Mechanism officer and will be enabled to have access to and be aware of the Grievance Mechanism. ▪Minimum legal labour standards will be met (child/forced labour, anti-discrimination, working hours, minimum wages) as per ILO regulations. ▪At the same time, WB and the national legislation will be complied with in terms of the working conditions. ▪Workers will be issued a written contract stipulating working hours, wages, rights, and duties etc., and the CoC.	▪EM	▪Labour Management Plan (based on the TEFWER's LMP) ▪SEP
2	Resource Efficiency and Pollution Prevention				
2.1	Waste and chemical risks	Soil quality, Kelkit Stream as water resource, flora and fauna species and habitats within the Sub-project's AoI and	▪Wastes generated should only be temporarily stored on site in the temporary storage area that is maintained/equipped with appropriate precautions according to the type of wastes, when needed, and wastes should be transported to licensed disposal facilities with licensed transport vehicles appropriate to the type of waste. Information related to the operations in this context should be recorded and records should be kept. ▪Waste will be characterized based on their composition, source, types, generation rates or local legal requirements in case of maintenance of the sub-project. ▪In addition to the adoption of waste prevention strategies, putting recycling plans into practice will considerably reduce the total amount of waste.	▪EM	▪Waste Management Plan ▪Spill Response Plan

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
		Workers at the Sub-project Area	▪ If waste materials are still generated after appropriate waste prevention, reduction, reuse, and recycling measures are put into action, all necessary measures will be taken to avoid potential effects of waste material treatment and disposal on human health and the environment. ▪ Establish safe delivery/storage/handling procedures in accordance with SDSs. Immediately contain and clean-up any spilled material.		
2.2	Wastewater management failure during the operation and maintenance	Kelkit Stream as a discharge point, flora and fauna species and habitats within the Sub-project's AoI	▪ The number of employees within the sub-project's operation phase is expected to be 14. Treated wastewater/effluent of the sub-project and Erbaa district will be discharged into the Kelkit stream as receiving environment in line with the Regulation on Urban Wastewater Treatment, WBG's General EHS Guidelines and WBG's EHS Guidelines for Water and Sanitation. ▪ Recommended measures to prevent, minimize, and control industrial discharges to the sewerage system of the Erbaa OIZ include: o EM will continuously improve its source control program within the OIZ area. o Treatment or pre-treatment to neutralize or remove toxic chemicals should ideally take place at the industrial facility itself within the OIZ, prior to discharge of the effluent to the sewerage of the OIZ with help of the implementation of an EM's source control program for industrial and commercial users to ensure that any wastewater discharged to the sewer system can be effectively treated. Examples of problematic discharges include flammable, reactive, explosive, corrosive, or radioactive substances; noxious or malodorous materials; medical or infectious wastes; solid or viscous materials that could cause obstruction to the flow or operation of the treatment plants; toxic substances; non-biodegradable oils; and pollutants that could result in the emission of hazardous gases. o EM will continue to monitor with the regular inspection of industrial user facilities and collect samples of wastewater discharges to the sewerage system to ensure compliance with the source control program. o EM will continue to conduct surveillance monitoring at sewer maintenance and of the influent to the wastewater treatment facilities. o EM will continue to investigate upstream sources of pollutants causing treatment plant upsets or interference. ▪ Recommended measures to prevent, minimize, and control leaks and overflows include: o Equip pumping stations with a backup power supply, such as a diesel generator, to ensure uninterrupted operation during power outages, and conduct regular maintenance to minimize service interruptions. Consider redundant pump capacity in critical areas. o Conduct repairs prioritized based on the nature and severity of the problem. Immediate clearing of blockage or repair is warranted where an overflow is currently occurring or	▪ EM	▪ Effluent Management Plan ▪ SEP ▪ EPRP

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
			for urgent problems that may cause an imminent overflow (e.g. pump station failures, sewer line ruptures, or sewer line blockages); o Review previous sewer maintenance records to help identify "hot spots" or areas with frequent maintenance problems and locations of potential system failure, and conduct preventative maintenance, rehabilitation, or replacement of lines as needed. o When a spill, leak, and/or overflow occurs, keep sewage from entering the storm drain system by covering or blocking storm drain inlets or by containing and diverting the sewage away from open channels and other storm drain facilities (using sandbags, inflatable dams, etc.). Remove the sewage using vacuum equipment or use other measures to divert it back to the sanitary sewer system. o Establish routine maintenance program, including: ▪ Development of an inventory of system components, with information including age, construction materials, drainage areas served, elevations, etc. ▪ Regular cleaning of grit chambers and sewer lines to remove grease, grit, and other debris that may lead to sewer backups. Cleaning should be conducted more frequently for problem areas. Cleaning activities may require removal of tree roots and other identified obstructions. ▪ Inspection of the condition of sanitary sewer structures and identifying areas that need repair or maintenance. Items to note may include cracked/deteriorating pipes; leaking joints or seals at manhole; frequent line blockages; lines that generally flow at or near capacity; and suspected infiltration or exfiltration. ▪ Monitoring of sewer flow to identify potential inflows and outflows. ▪Effluent Management Plan will be developed, and implemented, by the EM that includes measures and procedures for operational activities. o Broken pipes and other repairs to be undertaken without delay, o Pumps and pumping stations to be adequately maintained, o All storage tanks and drums will be placed on concrete areas with proper secondary containments. When necessary; spill kits, absorbent pads or materials and adsorbent sands will be provided near the chemical storage areas at all times. o System overflows will be prevented as much as possible by using level meters, o Bypass of the treatment system will be avoided, if not possible, will be minimized, o Effluent water quality of the sub-project will comply with the limit values stipulated in National Legislation and WBG's General EHS Guidelines and WBG's EHS Guidelines for Water and Sanitation, the more comprehensive and strict ones will be considered. ▪Wastes generated during maintenance works are disposed of without causing any additional pollution as determined by the relevant local legislation.		

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
2.3	Soil/Water resources contamination/degradation due to failure to manage waste sludge	Soil quality, Kelkit Stream as water resource, flora and fauna species and habitats within the Sub-project's AoI	▪ After stabilization, dewatering and solar drying, the excess dried waste sludge will be disposed of in compliance with the Annex-2 of the Regulation on Landfilling of Wastes and the Regulation on Waste Management according to the analysis result. If the sludge is classified as hazardous, it will be sent to licensed disposal companies. ▪Sludge Management Plan will be developed, and implemented, by the EM to ensure waste sludge disposal in line with the national legislation.	▪EM	▪ESMR ▪Sludge Management Plan ▪SEP ▪EPRP
2.4	Odour nuisance	Residents, flora and fauna species and habitats within the Sub-project's AoI and Workers at the Sub-project Area	▪An Odour Management Plan will be prepared and implemented by the EM that offers strategies to ensure the following especially at the WWTP area: The first level measures: o Prevention of wastewater influents which exceed treatment plant capacity. o Reduction of solid waste and activated sludge amounts. o Increasing disposal frequency of screenings. o Proper and timely disposal of sludge to prevent flies and odour. o Increasing aeration rate in biological treatment process. o Addition of chlorinated water to sludge thickeners if activated sludge is in open area. o Addition of lime to activated sludge. o Keeping water level under control in order to prevent turbulence as a result of instant decrease of water. ▪If odour nuisance prevails after the proper implementation of first level measures, the second level measures shall be taken. These are: o Addition of oxidizing material (such as hydrogen peroxide, sodium hypochlorite) (oxidizing materials, prevent generation of especially hydrogen sulphide). Addition of sodium hydroxide can also be considered. Sodium hydroxide will dissolve hydrogen sulphur gas in water. o Preventing anaerobic bacteria with control of pH levels or disinfection. o Oxidizing odorous compound by the help of chemicals. o Planting trees in the WWTP area and the buffer zone around the treatment plant for the prevention of odour distribution. o If nuisance still prevails after implementation of first and second measures, the final measure shall be determined as: o Enclosing of preliminary treatment units, aeration tanks and bio-P tanks ▪Apart from that, following mitigation measures will be implemented throughout the Project. o Establishment of an operating grievance redress mechanism to manage odour related grievances.	▪EM	▪Odour Management Plan ▪SEP ▪EPRP

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
			○ Maintaining pipelines and ensuring effective management and operation of the sewerage system including effective maintenance of all elements of the sewerage system and rapid response to emergencies. ○ Regular maintenance and cleaning works shall be conducted on the machinery and equipment in order to prevent occurrence of odour. ○ Regular and sufficient ventilation at the pumping stations will be provided. ▪ Trees will be planted around the pumping station areas		
3	Community Health, Safety, and Security				
3.1	Community health and safety risks	Local communities	▪ The operations should be engaged without posing risk to the community safety. The facility should be fenced to prevent trespassing. If necessary, emergency drills should be implemented with the participation of the emergency authorities in the area. ▪ The grievance mechanism officer will be introduced to the local people and updated information about the grievance mechanism will continue to be provided. In case of an update in the documents, the updated information will be announced to the local people through the relevant headman's office.	▪ EM	▪ Community Health and Safety Management Plan ▪ Traffic and Transport Management Plan ▪ SEP ▪ EPRP
4	Biodiversity Conservation and Sustainable Management of Living Natural Resources				
4.1	Biodiversity conservation	Flora and fauna species within the Sub-project Area	▪ No impact expected for the operation phase.	-	-
5	Stakeholder Engagement and Information Disclosure				
5.1	Stakeholders' negative opinions about the sub-project due to insufficient information	Sub-project's Stakeholders	▪ In case of any technical emergencies, the local people and all relevant stakeholders will be informed of the works to be performed and the measures to be taken.	▪ EM	▪ SEP
5.2	Grievance issues	Sub-project's Stakeholders	▪ An efficient Grievance Mechanism will be initiated to allow potentially affected community members and the employees to voice their concerns on the sub-project and have their grievances adequately addressed in a timely manner.	▪ EM	▪ SEP

Ref.	Impact Description	Sensitive Receptor(s)	Management/ Mitigation Measure	Responsibility for Implementation of Mitigation Measure	Relevant Management Plan or Procedure
			▪In the sub-project level Grievance Mechanism, Public Grievance Mechanism and Labor Grievance Mechanism, grievances will be submitted in Turkish through Turkish forms.		
5.3	Community complaints	Sub-project's Stakeholders	▪Interaction / communication will be established with communities, and adequate timing will be planned for engagement activities. Additionally, regular consultations will be carried out with the authorities and communities regarding the sub-project management. ▪Consultation on risks and adverse impacts of the sub-project and create opportunities to receive affected communities view on sub-project. ▪Establishment of grievance mechanism to collect and provide timely resolution of affected communities concerns and grievances regarding of the sub-project's environmental and social performance. ▪In the sub-project level Grievance Mechanism and Public Grievance Mechanism, grievances will be submitted in Turkish through Turkish forms. ▪Transparent public disclosure to inform each phase of the sub-project through website, notice boards, telecommunication tools and public meetings. ▪Establishing well designed and structured public questionnaire to receive feedback from affected communities.	▪EM	▪SEP

4.2 MONITORING

Key Performance Indicators (KPIs) of this procedure will be monitored, verified, and evaluated within the scope of the sub-project monitoring stage. The KPIs for both construction and operation phases of the sub-project are presented in Table 4-3~~Table 4-3~~.

The monitoring, review and audit program detailed in Table 4-4~~Table 4-4~~ will be implemented during construction and operation to monitor the implementation of the environmental and social commitments of the sub-project's ESMP requirements. The EM will be responsible for ensuring that the contractor comply with applicable national/international regulations and WB's requirements during the construction phase of the sub-project.

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Table 4-3. Key Performance Indicators for Both Construction and Operation Phases of the Sub-project

Monitoring Focus	KPI
Documentation	
Following ESMP Project specific plans will be developed and be in place.	Full compliance with Sub-project's ESMP
Air Quality	
Air Quality incidents	Minimization and continued improvement in the number of the reported air quality related incidents.
Non-Compliance with air quality standards	Zero grievances per year
Community grievances	Minimization and continued improvement in the number of air quality related community grievances
Violation on speed limit	Minimization and continued improvement in the number of reported violations on speed limit
Noise	
Noise and Vibration incidents	Minimize and continued improvement in number of reported noise and vibration related incidents
Non-Compliance with Project standards	Zero Non-Compliance Reports (NCRs) per year
Number of noise-related community grievances	Zero grievances per year
Community grievances	Minimization and continued improvement in the number of noise related community grievances
Water / Wastewater	
Spill incident	Minimization and continued improvement in the number of the reported water quality related incidents.
Non-Compliance with Sub-project standards	Zero NCRs per year
Wastewater discharge quality analyses	Zero NCRs per year Meeting set national and international wastewater discharge quality standards
Water quality analyses	Meeting set national and international water quality standards for surface and groundwater impacted and/or near the sub-project
Flood incidents	No infrastructure damage and damage to loads/humans
Waste	
Waste Generation	Minimization of total waste generated Decrease in the ratio of hazardous waste generated to total waste (by contamination + by generation)
Waste Disposal	Increase in the ratio of recovered/reused/recycled waste to total waste generated
Soil Quality	
Spill incident	Minimization and continued improvement in the number of the reported soil quality related incidents
Non-Compliance with Sub-project standards	Zero NCRs per year
Soil quality accidents	Zero accident per year
Number of soil-related community grievances	Zero grievances per year
Traffic	
Number of non-compliances against the mitigation controls identified in Traffic and Transport Management Plan	Decreasing number/ continuous improvement in number of reported non-compliances

Monitoring Focus	KPI
Number of drivers found to be exceeding speed limits or driving unsafely	Zero exceedance per year
Number of road traffic accidents involving: Accidental injuries and deaths, Spillages (such as cargo or fuel), Wildlife-vehicle collisions.	Zero accidents per year
Number of traffic-related grievances	Zero grievances per year
Health, Safety and Environment	
% of scheduled Health, Safety, and Environment (HSE) Inspection	>90
% of attendance at HSE meetings	>90
% of closing of NCRs	100
Reporting safe observations	100%
Reporting unsafe observations	100%
Reporting near misses	100%
Reporting number of incidents	100%
Reporting number of accidents	100%
Reporting day-loss	100%
% of Toolbox attending	>90
% of Risk Assessment compliance	>90
% of Legal Requirements compliance	100%
Results of scheduled audits	>85
HSE training carried out to training matrix > 90% of all training to matrix	>90
% of attendance at scheduled trainings	>90
Engagement in HSE program by individual managers and supervisors	>90
Engagement in HSE program by contractor's	>90
Labour and Working Conditions	
Number of worker grievances closed out within the target timeframe	100% compliance with labour laws and regulations Zero unresolved health and safety incidents within the target timeframe 100% availability of required PPE 90% or higher worker satisfaction rate
Community Health and Safety	
Number of communicable and non-communicable diseases and injuries.	Negative Trend/No significant increase in communicable and non-communicable disease and injury rates per 1,000 residents per annum
Number of community health safety & security grievances from local communities as recorded in the grievance management system.	Decreasing number/ continuous improvement in number of grievances
Number of reported community health & safety incidents	Zero incidents per year
Number of reported air quality or noise incidents	Zero incidents per year
Direct and indirect threats posed by construction activities against traffic and pedestrians	Zero number of drivers found to be exceeding speed limits or driving unsafely, Zero accidental injuries and deaths, Zero traffic-related grievances.
Access to the Construction Site - Security Fence/ Protection Tape	Zero Number of unauthorized accesses to the sub-project area
Trainings	
Training records	Trainings on ESMP and SEP documents. Providing all trainings (including GM, GBV, SEA/SH) to all employees. 100% of scheduled training sessions conducted 80% or higher participant satisfaction rate Zero participants without completion certificates if applicable
Disclosure	
Grievance Records, Disclosure meeting participant records, ESMP, SEP, and GM will be disclosed at Project web site in two languages (English and Turkish).	All grievances closed-out within the target timeframe ESMP, Project specific SEP and GM will be prepared and disclosed at the sub-project web site
Vulnerable Groups	
Incidents, Grievances, Toolbox talks and trainings, Information/ disclosure	All grievances closed-out within the target timeframe Sufficient information provided to the VGs.
Grievance Mechanism	
Grievance Records, GM disclosure	All grievances closed-out within the target timeframe GM disclosure to the PAPs, stakeholders GM disclosure at Sub-project web site
Cultural Heritage	
Existence of a Chance Find	Zero Grievance Records

Table 4-4. Environmental and Social Monitoring Table of the Sub-project

Ref.	pPhase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference	KPI	Responsibility for Monitoring	Cost (If not included in the Sub-project Budget)
1.1	Construction	Grievance Mechanism	▪Grievance records ▪Number/Percentage of closed grievances within the targeted timeframe	▪AoI	▪On-site inspections ▪Minutes of meetings ▪Grievance mechanism records	Monthly	▪Relevant national legislation ▪WBG General EHS Guidelines Project's E&S instruments	▪Number of grievances ▪Number/Percentage of closed grievances within the targeted timeframe	▪EM ▪Contractor ▪Supervision Consultant	▪ Included in Sub-project Budget
1.2	Construction	Labour Conditions	▪Grievance records ▪Percentage of closed grievances within the target timeframe ▪Site conditions	▪Sub-project area	▪Internal and external audits ▪Grievance records ▪Accident records ▪Training records ▪Sample contracts ▪Human Resource Policy ▪Number of the local employees ▪Legal work permit	Monthly	▪Labour Law (No. 4857) ▪Law on Trade Unions and Collective Bargaining Agreements ▪ILO International Regulations	▪100% compliance with labour laws and regulations ▪Zero unresolved health and safety incidents within the target timeframe ▪100% availability of required PPE ▪90% or higher worker satisfaction rate	▪EM ▪Contractor ▪Supervision Consultant	▪ Included in Sub-project Budget
1.3	Construction	Occupational Health and Safety	▪Safe conditions on the construction site ▪Risk analysis and procedures ▪Disease ▪Incident and accident reports	▪Sub-project area ▪Settlements near the sub-project area	▪On-site inspections ▪Interviews with employees ▪Grievance records	Monthly	▪Occupational Health and Safety Law ▪Regulation on Health and Safety Measures in	▪Health and Safety KPIs detailed in Table 4-3~~Table 4-3~~.	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget

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Ref.	pPhase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference	KPI	Responsibility for Monitoring	Cost (If not included in the Sub-project Budget)
			▪Grievance records ▪Percentage of closed grievances within the target timeframe ▪Toolbox talks and trainings ▪HSE Inspection ▪Legal Requirements ▪EPRP ▪Drill reports ▪OHS practices in the field (Use of PPE, etc.)		▪Training and toolbox records ▪Contract examples ▪Internal and external audits ▪Incident/Accident and near miss records ▪Drill records ▪Availability of an adequate OHS organizational structure		Working with Asbestos ▪Regulation on Health and Safety Requirements for the Use of Work Equipment			
1.4	Construction	Community Health & Safety	▪Safety conditions at the site ▪Fencing of construction site ▪Warning signs and flashlights ▪Grievance records ▪Percentage of closed grievances within the target timeframe ▪Incident and accident reports ▪Construction Site Traffic and Transport Management Plan	▪Sub-project area ▪Residential areas around sub-project area	▪Records of comments/ suggestions/ grievances ▪Site Audits ▪Training records ▪Review of Construction Site Traffic and Transport management plan	Monthly	▪Public Health Law ▪Regulation on Health and Safety Signs	▪Negative Trend/No significant increase in communicable and non-communicable disease and injury rates per 1,000 residents per annum ▪Decreasing number/ continuous improvement in number of grievances ▪Zero incidents per year ▪Zero number of drivers found to be exceeding speed limits or driving unsafely ▪Zero accidental injuries and deaths	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget

Ref.	pPhase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference	KPI	Responsibility for Monitoring	Cost (If not included in the Sub-project Budget)
								▪Zero traffic-related grievances ▪Zero Number of unauthorized accesses to the sub-project area		
1.5	Construction	Documentation	▪Availability of ESMP Project specific plans and reports	▪Sub-project area	▪On-site inspection ▪Record control	During the construction period, the contractor will develop C-ESMP (based on this ESMP), monthly and quarterly report the ESMRs and to the EM, the EM to ILBANK quarterly together with the Grievance Register. Moreover, ILBANK will compile these ESMRs and report them to WB biannually together with the sub-project Progress Report.	▪WB ESS1	▪Full compliance with Sub-project's ESMP	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget
1.7	Construction	Sustainable Development and Resource Efficiency during the construction period	▪Wastewater loss records in the plant	▪Settlements near the sub-project area	▪View/suggestion/grievance records ▪Wastewater loss records ▪On-site inspection	Monthly	▪Regulation on Control of Water Pollution ▪WB ESS3	▪Sustainable/minimum wastewater loss records	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget
1.8	Construction	Air Quality	▪Number of air quality-related grievance records	▪Sub-project area	▪On-site inspections	In case of grievance Monthly	▪Regulation on Air Quality	▪Minimization and continued improvement in the	▪EM ▪Contractor	▪Included in Sub-project Budget

Ref.	pPhase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference	KPI	Responsibility for Monitoring	Cost (If not included in the Sub-project Budget)
			▪Percentage of closed grievances within the target timeframe ▪Air Quality incidents ▪Records of non-compliance with air quality standards ▪Visually, on the basis of irritation of the respiratory system	▪Settlements, schools, hospitals, and place of worship near the sub-project area	▪$PM_{2.5}$ and PM_{10} Measurements to be performed by an authorized environmental laboratory in case of grievance		Assessment and Management ▪ WB ESS3	number of the reported air quality related incidents ▪Zero NCRs per yea ▪Zero grievances per year ▪Minimization and continued improvement in the number of air quality related community grievances	▪Supervision Consultant	
1.9	Construction	Noise	▪Number of noise-related grievance records ▪Percentage of closed grievances within the target timeframe ▪Noise and vibration incidents ▪Records of non-compliance with noise standards	▪Sub-project area ▪Settlements, schools, hospitals, and place of worship near the sub-project area	▪Monitoring conducted at the nearest sensitive receptors using noise measuring devices ▪On-site inspections ▪Measurements to be performed by an authorized environmental laboratory in case of grievance	In case of grievance Monthly	▪Regulation on the Control of Environmental Noise	▪Minimize and continued improvement in number of reported noise and vibration related incidents ▪Zero NCRs per year ▪Zero grievances per year ▪Minimization and continued improvement in the number of noise related community grievances	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget
1.10	Construction	Soil Quality	▪Soil quality/Spill incident and accidents ▪Records of non-compliance with soil quality standards ▪Incident and accident Reports	▪Sub-project area	▪On-site inspection	Daily	▪Regulation on Control of Soil Pollution and Point Source Contaminated Lands ▪Regulation on Waste Management	▪Minimization and continued improvement in the number of the reported soil quality related incidents ▪Zero NCRs per year ▪Zero accident per year	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget

Ref.	pPhase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference	KPI	Responsibility for Monitoring	Cost (If not included in the Sub-project Budget)
								▪Zero grievances per year		
1.11	Construction	Waste Management	▪Temporary waste storage area conditions ▪Total amount of waste generated ▪Recovery / reuse / recycle ratio	▪Sub-project area	▪Waste records ▪On-site inspection regarding proper collection and temporary storage of wastes	Daily	▪Regulation on Waste Management ▪Regulation on Health and Safety Measures in Working with Asbestos	▪Minimization of total waste generated	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget
1.12	Construction	Domestic Waste	▪Total amount of domestic waste generated ▪Ratio of recovered/reused/ recycled domestic waste to total waste generated ▪Domestic waste storage conditions ▪On-site inspection	▪Sub-project area	▪Waste records ▪On-site inspection	Daily	▪Regulation on Control of Packaging Waste ▪Regulation on Waste Management	▪Minimization of total waste generated ▪Increase in the ratio of recovered/ reused/ recycled to landfilled	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget
1.13	Construction	Waste Oils	▪Total amount of waste oil generated ▪Ratio of recovered/reused/ recycled waste oil to total waste generated ▪Waste oil storage conditions ▪On-site inspection	▪Sub-project area	▪Visual observations ▪Waste records	Weekly	▪Regulation on the Management of Waste Oils	▪Minimization of total waste generated ▪Increase in the ratio of recovered/ reused/ recycled waste to total waste generated	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget
1.14	Construction	Waste Batteries and Accumulators	▪Total amount of waste batteries/accumulators generated ▪Recovery /reuse/ recycle ratio	▪Sub-project area	▪Waste records	Monthly	▪Regulation on the Control of Waste Batteries and Accumulators	▪Minimization of total waste generated ▪Increase in the ratio of recovered/ reused/ recycled waste to total waste generated	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget

Ref.	pPhase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference	KPI	Responsibility for Monitoring	Cost (If not included in the Sub-project Budget)
1.15	Construction	Excavation Soil, Construction and Debris/ Demolition Wastes	▪Total amount of excavation and demolition waste generated ▪Excavation and demolition waste transfer records ▪Soil stripping, excavation, and backfilling activities ▪Waste storage conditions ▪Transfer records ▪Soil stripping, excavation and backfilling activities	▪Sub-project area	▪On-site inspection	Daily	▪Regulation on the Control of Excavation Soil, Construction and Demolition Wastes	▪Minimization of total waste generated ▪Increase in the ratio of recovered/ reused/ recycled waste to total waste generated	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget
1.16	Construction	Hazardous Waste Management	▪Total amount of hazardous waste generated ▪Hazardous waste storage conditions ▪On-site inspection	▪Sub-project area	▪Waste records ▪On-site inspection	Daily	▪Regulation on Waste Management	▪Decrease in the ratio of hazardous waste generated to total hazardous waste (by contamination + by generation)	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget
1.17	Construction	Cultural Heritage	▪Existence of a Chance Find	▪Sub-project area ▪Settlements near the sub-project area	▪On-site inspection ▪Existence of a Chance Find Procedure	Monthly	▪Law on the Conservation of Cultural and Natural Properties ▪ WB ESS8	▪Zero Grievance Records	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget
1.18	Construction	Vulnerable Groups	▪Communication and information dissemination	▪Sub-project area	▪Surveys and interviews with affected populations ▪Review of healthcare and social service access records	Monthly	▪TEFWER ESMF	▪All grievances closed-out within the target timeframe ▪Sufficient information provided to the VGs	▪EM ▪Contractor ▪Supervision Consultant ▪Local Health and Social Services Departments	▪Included in Sub-project Budget

Ref.	pPhase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference	KPI	Responsibility for Monitoring	Cost (If not included in the Sub-project Budget)
					▪On-site inspections ▪Coordination with local service providers ▪Tracking of communicatio n efforts and outreach effectiveness					
1.19	Construction	Trainings	▪Training Records ▪Number of participants attending the training sessions ▪Percentage of participants successfully completing the training ▪Feedback from participants	▪Sub-project area ▪Training venues ▪	▪Review of training attendance sheets ▪Evaluation forms completed by participants ▪On-site observation of training sessions ▪Interviews with trainers and participants	Monthly	TEFWER ESMF	▪Trainings on ESMP and SEP documents. ▪Providing all trainings (including GM, GBV, SEA/SH) to all employees. ▪100% of scheduled training sessions conducted ▪80% or higher participant satisfaction rate ▪Zero participants without completion certificates if applicable	▪EM ▪Contractor ▪Supervision Consultant ▪Training Providers	▪Included in Sub-project Budget
1.20	Construction	Direct and indirect threats posed by construction activities against traffic and pedestrians	▪Grievance records ▪Information gathered through Public Consultation ▪Information on available pedestrian ways ▪Number of non-compliances against the mitigation controls identified in	▪Sub-project area	▪On-site inspection	Daily	▪Occupational Health and Safety Law	▪Zero number of drivers found to be exceeding speed limits or driving unsafely ▪Zero accidental injuries and deaths, ▪Zero traffic-related grievances	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget

Ref.	pPhase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference	KPI	Responsibility for Monitoring	Cost (If not included in the Sub-project Budget)
			Traffic and Transport Management Plan ▪Existence of EPRP ▪Driver training records ▪Number of road traffic accidents involving ▪Existence and number of warning signs properly installed at designated location ▪Training records for drivers ▪Installation of warning signs							
1.21	Construction	Access to the Construction Site - Security Fence/ Protection Tape	▪Grievance records	▪Settlements near the sub-project area	▪On-site inspection	Daily	▪Occupational Health and Safety Law	▪Zero Number of unauthorized accesses to the sub-project area	▪EM ▪Contractor ▪Supervision Consultant	▪Included in Sub-project Budget
2.1	Operation	Disclosure	▪Grievance records ▪Percentage of closed grievances within the target timeframe	▪Settlements near the sub-project area	▪On-site inspections ▪Minutes of meetings ▪Grievance mechanism records	Daily	▪Regulation on the Control of Environmental Noise ▪Regulation on Air Quality Assessment and Management ▪ WBG General EHS Guidelines	▪All grievances closed-out within the target timeframe	▪EM	▪Included in Sub-project Budget
2.2	Operation	Labour Conditions	▪Grievance records ▪Percentage of closed grievances within the target timeframe	▪Sub-project route and maintenance areas	▪Internal and external audits ▪Grievance records	Monthly	▪Labour Law (No. 4857) ▪Law on Trade Unions and Collective	▪All grievances closed-out within the target timeframe	▪EM	▪Included in Sub-project Budget

Ref.	pPhase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference	KPI	Responsibility for Monitoring	Cost (If not included in the Sub-project Budget)
					▪Accident records ▪Training records ▪Sample contracts ▪Human Resource Policy ▪Number of the local employees ▪Legal work permit		Bargaining Agreements ▪ILO International Regulations			
2.3	Operation	Occupational Health and Safety	▪Disease ▪Incident and accident reports ▪Grievance records ▪Percentage of closed grievances within the target timeframe ▪Trainings ▪HSE Inspection ▪Legal Requirements ▪Compliance with EPRP of drills/year ▪OHS practices in the field (Use of PPE, etc.) ▪Daily Site OHS Reports	▪Sub-project area ▪Settlements near the sub-project area	▪On-site inspections ▪Interviews with employees ▪Complaint records ▪Training records ▪Contract examples ▪Internal and external audits ▪EPRPs ▪Incident/ Accident records ▪Availability of an adequate OHS organizational structure	Monthly	▪Occupational Health and Safety Law ▪Regulation on Health and Safety Requirements for the Use of Work Equipment	▪Health and Safety KPIs detailed in Table 4-3~~Table 4-3~~.	▪EM	▪Included in Sub-project Budget

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Ref.	pPhase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference	KPI	Responsibility for Monitoring	Cost (If not included in the Sub-project Budget)
2.4	Operation	Community Health & Safety	▪Grievances records ▪Percentage of closed grievances within the target timeframe ▪Incident and accident reports	▪Sub-project area ▪Residential areas around sub-project area	▪Records of comments/ suggestions/ grievances ▪Site Audits ▪Training records	Monthly	▪Public Health Law ▪Regulation on Health and Safety Signs	▪No significant increase in communicable and non-communicable disease and injury rates per 1,000 residents per annum. ▪Decreasing number/ continuous improvement in number of complaints ▪Zero incidents per year	▪EM	▪Included in Sub-project Budget
2.5	Operation	Grievance Mechanism	▪Grievance Records ▪Percentage of closed grievances within the target timeframe ▪GM of the sub-project	▪Sub-project area ▪Settlements near the sub-project area	▪View/ suggestion/ grievance records ▪Grievance database ▪On-site inspection ▪Existence / accessibility of grievance boxes	Monthly	▪TEFWER ESMF ▪TEFWER Sub-project, SEP Sub-project, GM	▪All grievances closed out within the target timeframe	▪EM	▪Included in Sub-project Budget
2.6	Operation	Waste Management	▪Total amount of waste generated ▪Recovery / reuse / recycle ratio	▪Sub-project area	▪Waste records ▪On-site inspection regarding proper collection and temporary storage of wastes	In case of grievance Daily	▪Regulation on Waste Management ▪Regulation on Control of Packaging Waste ▪Regulation on the Management of Waste Oils ▪Regulation on the Control of Waste Batteries and Accumulators	▪Minimization of total waste generated ▪Decrease in the ratio of hazardous waste generated to total waste (by contamination + by generation)	▪EM	▪Included in Sub-project Budget

Ref.	pPhase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference	KPI	Responsibility for Monitoring	Cost (If not included in the Sub-project Budget)
							▪Regulation on Control of Medical Waste			
2.7	Operation	Wastewater Management	▪Effluent discharge quality analysis parameters and corresponding national regulation limit values (mg/l) ○ COD : <125 ○ BOD_5 : <25 ○ TSS : <35 ○ TN : <10 ○ TP : <1 ○ pH : 6-9	▪Discharge point and Kelkit stream	▪Sampling Analysis results	Continuous Wastewater Monitoring Station Sampling Analysis results 24 samples/year in line with the local legislation	▪Regulation on Urban Wastewater Treatment ▪WBG's General EHS Guidelines ▪ WBG's EHS Guidelines for Water and Sanitation	▪Minimization and continued improvement in the number of the reported water quality related incidents. ▪Compliance with the national regulation limit values for corresponding parameters ▪Zero NCRs per year ▪Zero grievances per year ▪No infrastructure damage and damage to loads/humans	▪EM	▪Included in Sub-project Budget
2.8	Operation	Odour	▪Odour concentration (Odour Unit/m^3)	▪Sub-project area ▪Discharged point Kelkit stream	▪Sampling Analysis results	During the lifetime of the sub-project. In case of grievance	▪WBG's General EHS Guidelines ▪ WBG's EHS Guidelines for Water and Sanitation	▪Minimization and continued improvement in the number of the reported odour related incidents ▪Zero NCRs per year ▪Zero grievances per year ▪Odour Management Plan	▪EM	▪Included in Sub-project Budget
2.9	Operation	Dried Sludge Waste	▪Waste amount ▪Disposal parameters with analysis	▪Sub-project area	▪Waste records ▪On-site inspection ▪Sampling Analysis results	During the lifetime of the sub-project. In case of grievance Before disposal	▪Regulation on Landfilling of Wastes	▪Minimization of total waste generated. ▪Sludge Management Plan	▪EM	▪Included in Sub-project Budget

Ref.	pPhase	Subject	Parameter to be Monitored	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference	KPI	Responsibility for Monitoring	Cost (If not included in the Sub-project Budget)
2.10	Operation	Sustainable Development and Resource Efficiency during the operation period	▪ Wastewater loss records in plant	▪Sub-project area	▪On-site inspection	Daily	▪Regulation on Control of Water Pollution ▪WB ESS3 ▪WB ESS4	▪Sustainable/minimum wastewater loss records	▪EM	▪Included in Sub-project Budget

5 CAPACITY DEVELOPMENT AND TRAINING

5.1 INSTITUTIONAL ARRANGEMENTS

The main actors in the implementation of this ESMP for the sub-project are the WB, ILBANK's Project Management Unit (PMU) and the EM. The roles and responsibilities of these institutions are presented in Table 5-1~~Table 5-1~~. Also, the graphic organigram for the ESMP implementation of the sub-project is in Figure 5-1~~Figure 5-1~~.

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Table 5-1. Roles and Responsibilities

Financial Roles	EM	ILBANK	Contractor	Supervisor Consultant
	Sub-Borrower	Financial Intermediary		
Number of Staff	▪ Assign one of each expert/focal point listed; Social Expert, Environmental Expert, and OHS expert.	▪ One environmental specialist, one social specialist and one OHS specialist will be assigned from the present staff of PMU. Individual freelance consultants can also be employed to strength the PMU.	▪ The construction works under the contract packages included in the scope of the ESMP will be carried out by contractors.	The sub-project owner will appoint a Supervisory Consultant having a range of specialties to inspect the contractor's activities on a daily basis. Apart from the guidance to the given to the sub-project Owner about WB ESSs and also the stakeholder consultation and announcement requirements and the sub-project documents in compliance with WB requirements, the Supervisory Consultant will appoint the personnel given below:
Sub-project Roles	▪ Preparation and implementation of ESMP and SEP including management of sub-project level Grievance Mechanisms, ▪ Monitor environmental and social performance of the contractors' works on site, in line with the site-specific environmental and social requirements, ▪ Review E&S performance reports of contractor's (monthly) and supervision consultant's (quarterly), summarize on E&S compliance issues and report to ILBANK on quarterly basis on E&S compliance and monitoring.	▪ Responsible for reviewing and approving site-specific E&S documents for the sub-project; and for monitoring the implementation of ESMF, ESMP and Grievance process. ▪ Reporting to WB on biannual basis on E&S compliance and monitoring.		
Sub-project Roles	▪ The EM's PIU will examine the C-ESMP of the contractor/s, monthly and quarterly ESMRs and will be	▪ The ILBANK's PMU will review the monthly/quarterly reports delivered by the EM during the construction phase. ILBANK	▪ The construction contractor will develop C-ESMP, which are based	▪ The Supervision Consultant will review the monthly/quarterly ESMRs and C-ESMP of the

Financial Roles	EM	ILBANK	Contractor	Supervisor Consultant
	Sub-Borrower	Financial Intermediary		
	responsible for the timely delivery of the Monthly (if requested by ILBANK) and Quarterly ESMRs to ILBANK. ▪ Tendering all the sub-project works and consulting services. ▪ EM will report details of any significant environmental or social incidents (e.g. fatalities, lost time incidents, environmental spills etc.) within 24 hours and submit an incident report, including RCA, precautions and compensation measures taken within ~~30 business~~15 days.	will inform the WB by providing regular semi-annual monitoring reports on the Environmental, Social, Health and Safety (ESHS) performance of the sub-project. ▪ Supervise and monitor the whole process to ensure the proper application of the WB's ESSs and safeguard policies, TEFWER's ESMF, SEP and Labour Management Plan along with this ESMP. ▪ ILBANK will forward the environmental or social incident reports to the WB immediately upon receipt from the EM.	on this ESMP, report monthly and quarterly ESMRs and submit to the EM through the Supervision Consultant. The contractor will also prepare Labour Management Plan on the basis of TEFWER LMP, which is part of the C-ESMP. ▪ Contractors must adhere to ESMP guidelines, considering them during bid preparation. The ESMP outlines potential negative project impacts and mitigation measures, along with responsible stakeholders. ▪ Contractors will train project personnel on ESMP measures during construction, focusing on environmental, occupational, and community health and safety, and social issues awareness. ▪ Environmental, Social, and Occupational Health and Safety (OHS) Experts, included in the sub-project Organizational Chart, will coordinate ESMP	contractor/s and will include its own assessments and observations on ESHS aspects and prepare quarterly ESMRs and submit them to the EM. ▪ The Supervisory Contract Manager will ensure contractor compliance with ESMP requirements through continuous monitoring, audits, and inspections. They'll identify and address any non-compliance issues. ▪ The Environmental Expert will oversee ESMP implementation, reporting regularly to the sub-project owner. They should have relevant education (ideally a master's degree) and proficiency in English and Turkish. ▪ The OHS Expert will supervise health and safety measures, holding international safety certifications. Relevant education is preferred. ▪ The Social/Human Resources Expert will oversee community health, safety measures, and Social Engagement Plan implementation, reporting regularly. They should have relevant education and language proficiency.

Financial Roles	EM	ILBANK	Contractor	Supervisor Consultant
	Sub-Borrower	Financial Intermediary		
			measures during construction. They'll ensure actions align with ESMP and implement monitoring plans.	

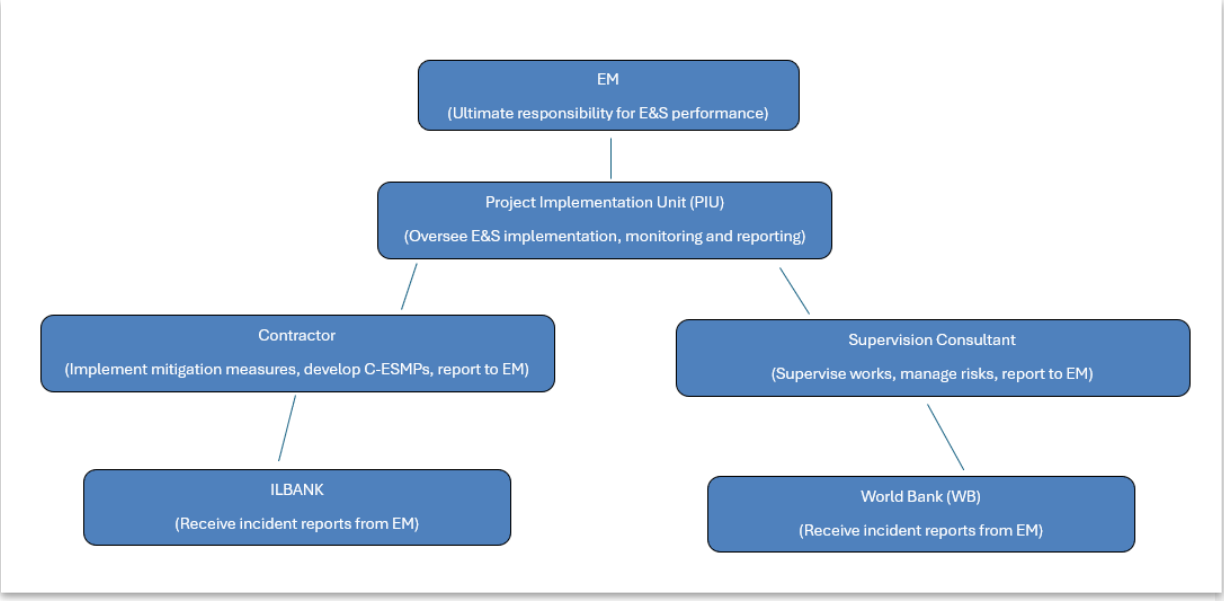

Figure 5-1. ESMP Implementation

EM

The EM will hold ultimate responsibility for the environmental and social performance of the sub-project, including the performance of its contractors. A Project Implementation Unit (PIU) will be established to carry out operational and administrative tasks to oversee the implementation of the E&S instruments and monitoring progress. The EM will be responsible for the preparation and implementation of ESMP and SEP including management of sub-project level Grievance Mechanisms; for the monitoring environmental and social performance of the contractors' works on site, in line with the site-specific environmental and social requirements; for the reporting to ILBANK on quarterly basis on E&S compliance and monitoring as stated in Table 5-1~~Table 5-1~~.

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The EM will be responsible for the incident and accident reporting and informing the necessary institutions (WB, ILBANK etc.), as per the provisions explained below:

- The WB and ILBANK will be promptly notified of any incident or accident related to the sub-project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers including but not limited to; incidents and accidents encountered during construction works, environmental spills, etc.
- Sufficient detail will be provided regarding the incident or accident, findings of the RCA, indicating immediate measures or corrective actions taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervision consultant, as appropriate. It will be ensured that the incident report is in line with the WB's Environment and Social Incidence Response Toolkit. Subsequently, as per

the Bank's request, a report on the incident or accident and propose any measures to prevent its recurrence will be prepared.

- The EM will report details of any significant environmental or social incidents (e.g. fatalities, lost time incidents, environmental spills etc.) within 24 hours and submit an incident report, including RCA, precautions and compensation measures taken within ~~30 business~~15 days. ILBANK will forward the incident report to the WB immediately upon receipt from the EM.

Contractor

The contractor will carry out the construction activities of the sub-project in line with the approved design documents and will be the responsible body to implement and apply the mitigation measures given in ESMP during construction phase. The construction contractor will develop Contractor's Environmental and Social Management Plan (C-ESMP), which is based on this ESMP, and report monthly and quarterly ESMRs, detailed in Table 5-2~~Table 5-2~~. The contractor should adhere to assigned duties and responsibilities as specified in the ESMP to ensure compliance with related national regulations, TEFWER ESMF and WB's ESSs. The contractor will employ a full time OHS ''A'' Class specialist and a full time environmental and social expert who will instruct and consult the workers on GM and implementation of ESMP (including grievance mechanism and the applicable stakeholder engagement activities detailed in sub-project SEP). Furthermore, a competent environmental and social expert of contractor will monitor implementation of measures given in the mitigation plan and report to the EM on a monthly basis. The prompt notification of accident and incidents within the scope of construction works in line with the above-described provisions is the responsibility of the contractor. The contractor will keep an incident register at construction site throughout the construction and defects liability period.

During the construction phase, the contractor firm will train its workers on environmental and social aspects (including OHS) as per WB's ESSs and national regulations in order to raise environmental and social awareness. During the defects liability period, the contractor will be responsible for any repairs of the newly constructed facilities, in accordance with legal regulations as of provisional acceptance. Within the liability period, the contractor will implement measures given in the Environmental and Social Mitigation Plan for operation.

Supervision Consultant

Supervision consultant contracted by the EM will include at least one Environmental Expert, one Social Expert and one A Class Occupational Health and Safety Expert. The number of experts will be increased if necessary. Supervision Consultant will provide supervision of construction and/or rehabilitation works and installation of equipment. The experts will identify and manage environmental, social and OHS related risks and initiate corrective actions where necessary. The experts will also monitor and evaluate the performance of services provided by the contractor. In addition, a regular quarterly report regarding to environmental, social and OHS issues of the sub-project during construction phase will be provided by Supervision Consultant to the EM.

5.2 REPORTING

Reporting processes that should be put into action during the implementation phase of the sub-project and the requirements of such processes are presented in Table 5-2~~Table 5-2~~.

Table 5-2. Reporting Requirements of Relevant Entities

Responsible Party	Reporting Process Requirements
Construction Contractor	▪ The construction contractor will develop C-ESMPs, which are based on this ESMP, and report monthly and quarterly ESMRs and submit to the EM through the Supervision Consultant.
EM's PIU	▪ The PIU will examine the monthly and quarterly ESMRs and C-ESMPs of the contractor/s and the Supervision Consultants and will be responsible for the timely delivery of the Monthly (if requested by ILBANK) and Quarterly ESMRs to ILBANK.
Supervision Consultant	▪ The Supervision Consultant will review the monthly and quarterly ESMRs and C-ESMPs of the contractor/s and will include its own assessments and observations on ESHS aspects and prepare quarterly ESMRs and submit to the EM. The Supervision Consultant has the responsibility to prepare non-conformity forms in the event of any non-conformity observed during the site inspections and within the reports.
ILBANK's PMU	▪ The PMU will review the monthly/quarterly reports delivered by the EM during the construction phase. ILBANK will inform the WB by providing regular semi-annual monitoring reports on the ESHS performance of the sub-project.
WB	▪ The WB will review regular semi-annual monitoring reports on the ESHS performance of the sub-project and instruct ILBANK if any non-conformity or non-compliance identified.

For reporting on OHS, E&S incidents, the EM will report details of any significant incidents (e.g. fatalities, lost time incidents, environmental spills etc.) within 24 hours and submit an incident report, including RCA, precautions and compensation measures taken within ~~30 business~~15 days. ILBANK will forward the incident report to the WB immediately upon receipt from the EM.

5.3 TRAINING PROGRAMME

The capacity strengthening of the participating sub-project will be carried out by ILBANK PMU in close collaboration with the WB. In this regard, ILBANK will organize training workshops to familiarize municipalities and their potential consultants with the World Bank's ESSs and E&S policies. The concerned training programme is presented in Table 5-3~~Table 5-3~~.

Table 5-3. Training Programme Including the Sub-project

Item No	Heading of the Training	Target Group	Timing and Duration
1	**Environmental and Social Framework:** ▪ Implementation of ESMP, Labour Management Plan, SEP, and GM	PIUs of the municipalities	▪ Initial training no later than 60 days after formation of the PMU/PIU and before start of sub-project activities. ▪ Refresher trainings at least once a year or as needed, during sub-project implementation.
2	**Environment and Occupational Health Safety:** ▪ Workplace risk management Prevention of accidents at work sites ▪ Mandatory legal training, Work instructions Trainings (i.e. Working at Height, Confined	PIUs of the municipalities	▪ Initial training no later than 60 days after formation of the PMU/PIU and before start of sub-project activities. ▪ Refresher trainings at least once a year or as needed, during sub-project implementation.

Item No	Heading of the Training	Target Group	Timing and Duration
	Space Entry, Material Handling) for the target groups ▪ Use of Personal Protection Equipment's (PPEs) ▪ Health and safety standards ▪ Hazardous waste and leakage/spillage management ▪ Solid and liquid waste management ▪ Preparedness and response to emergency situation ▪ Awareness on communicable diseases (i.e. COVID-19, HIV/AIDS etc.)		
3	**Labour and Working Conditions:** ▪ Implementation of the Labour Management Plan ▪ Terms and conditions of employment according to national working laws and regulations ▪ Contractor and sub-contractor codes of conduct ▪ Worker's organizations ▪ Child labour and forced labour issues ▪ Workers' Grievance Mechanism	PIUs of the municipalities	▪ Initial training no later than 60 days after formation of the PMU/PIU and before start of sub-project activities. ▪ Refresher trainings at least once a year or as needed, during sub-project implementation.
4	**Grievance Mechanism:** ▪ Implementation of GM ▪ Registration and processing procedure ▪ Grievance procedure ▪ Documenting and processing grievances	PIUs of the municipalities	▪ Initial training no later than 60 days after formation of the PMU/PIU and before start of sub-project activities. ▪ Refresher trainings at least once a year or as needed, during sub-project implementation.

6 IMPLEMENTATION SCHEDULE AND COST ESTIMATES

The sub-project's construction works are expected to last 22 months and be completed at the end of July 2027. The target year of the sub-project operation is 2054.

In this context, the cost estimates for the implementation of the ESMP including the trainings and meeting of the sub-project is provided below.

Table 6-1. The Cost Estimates for the Implementation of the Sub-project's ESMP

Item No	Heading of the Training / Meeting / Implementation	Target Group	Timing and Duration	Cost**
1	**Employment of E&S & OHS Experts Under PIU**	EM	▪ After signature of sub-loan agreement	144,000 Euro*
	Employment of E&S, OHS Experts Under Contractor(s), and Supervisor Consultant	PIU of the EM	▪ Prior to construction	108,000 Euro*
2	**Preparation and Implementation of E&S Sub-Management Plans**	Contractor	▪ Prior to construction	8,000 Euro*
		PIU of the EM	▪ Prior to operation	80,000 Euro*
3	**Waste Management, Spill Response and Pollution Prevention Activities**	Contractor	▪ Throughout the construction	8,000 Euro*
		PIU of the EM	▪ Throughout the operation	80,000 Euro*
4	**Environmental and Social Framework Training:** ▪ Implementation of ESMP, Labour Management Plan, SEP, and GM	PIU of the EM	▪ Initial training no later than 60 days after formation of the PMU/PIU and before start of sub-project activities. ▪ Refresher trainings at least once a year or as needed, during sub-project implementation.	3,500 Euro*
5	**Environmental and Occupational Health Safety Training:** ▪ Workplace risk management Prevention of accidents at work sites ▪ Mandatory legal training, Work instructions Trainings (i.e. Working at Height, Confined Space Entry, Material Handling) for the target groups ▪ Use of Personal Protection Equipment's (PPEs) ▪ Health and safety standards ▪ Hazardous waste management ▪ Solid and liquid waste management ▪ Preparedness and response to emergency situation ▪ Awareness on communicable diseases (i.e. COVID-19, HIV/AIDS etc.)	PIU of the EM	▪ Initial training no later than 60 days after formation of the PMU/PIU and before start of sub-project activities. ▪ Refresher trainings at least once a year or as needed, during sub-project implementation.	1,800 Euro*

Item No	Heading of the Training / Meeting / Implementation	Target Group	Timing and Duration	Cost**
6	**Labour and Working Conditions Training:** ▪ Implementation of the Labour Management Plan ▪ Terms and conditions of employment according to national working laws and regulations ▪ Contractor and sub-contractor codes of conduct ▪ Worker's organizations ▪ Child labour and forced labour issues. ▪ Workers' Grievance Mechanism	PIU of the EM	▪ Initial training no later than 60 days after formation of the PMU/PIU and before start of sub-project activities. ▪ Refresher trainings at least once a year or as needed, during sub-project implementation.	800 Euro*
7	**Grievance Mechanism Training:** ▪ Implementation of GM ▪ Registration and processing procedure ▪ Grievance procedure ▪ Documenting and processing grievances	PIU of the EM	▪ Initial training no later than 60 days after formation of the PMU/PIU and before start of sub-project activities. ▪ Refresher trainings at least once a year or as needed, during sub-project implementation.	600 Euro*
8	**Stakeholder Consultation Meeting:** ▪ Presentation by the counsellors about the sub-project, ▪ Stakeholders' questions about the sub-project and sub-project impacts are answered. ▪ Stakeholders' opinions on the sub-project and its impacts are recorded. ▪ Stakeholders are informed about the addresses to which they can send their inquiries, suggestions and complaints about the sub-project**.**	Affected groups and other relevant/affected stakeholders	After the draft ESMP report is completed. (Stakeholder meetings or any information sharing activities to be notified ten (10) days in advance by EM through brochures, website announcements and newspaper advertisements (at least one national and one local newspaper))	2,000 Euro*
		Total:		**436,700 Euro**

**Including transportation and accommodation costs.*

***Costs are indicative and for orientation purposes only - at time of preparation of this ESMP.*

APPENDICES

Appendix A - The Title Deed of the Sub-project Area and Zonin Plan of Erbaa OIZ
Appendix B - EIA Out of Scope Decision for the Sub-project
Appendix C - Official Letters, Permit and Licences for the Existing Erbaa WWTP
Appendix D - Waste Sludge Acceptance Protocol
Appendix E - Analysis Reports
Appendix F - Photos of the Sub-project Area
Appendix G - The Handover Decision of the Sub-project Area
Appendix H - Chance Find Procedure of the Sub-project
Appendix I - Common OHS Risks Areas and General Mitigation Measures

APPENDIX-A
The Title Deed of the Sub-project Area and Zoning Plan of Erbaa OIZ

BU BELGE TOPLAM 4 SAYFADAN OLUŞMAKTADIR BİLGİ AMAÇLIDIR.

Tarih: 6-12-2022-10:07

webtapu
tapunun kisayolu

Tapu Kaydı (Hepsi)

TAPU KAYIT BİLGİSİ

Zemin Tipi:	AnaTasinmaz
Taşınmaz Kimlik No:	125158091
İl/İlçe:	TOKAT/ERBAA
Kurum Adı:	Erbaa
Mahalle/Köy Adı:	EREK Mah.
Mevkii:	ÇORAK
Cilt/Sayfa No:	54/5316
Kayıt Durum:	Aktif

Ada/Parsel:	1367/1
AT Yüzölçüm(m2):	65754.47
Bağımsız Bölüm Nitelik:	
Bağımsız Bölüm Brüt YüzÖlçümü:	
Bağımsız Bölüm Net YüzÖlçümü:	
Blok/Kat/Giriş/BBNo:	
Arsa Pay/Payda:	
Ana Taşınmaz Nitelik:	ARSA

TAŞINMAZA AİT ŞERH BEYAN İRTİFAK BİLGİLERİ

Ş/B/İ	Açıklama	Malik/Lehtar	Tesis Kurum Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
Beyan	ARITMA TESİSİ ALANI(Şablon: Diğer)		Erbaa - 14-10-2021 08:57 - 15339	-
Beyan	Diğer (Konusu: TAŞINMAZIN İCRA YOLUYLA SATIŞI DAHİL ÜÇÜNCÜ KİŞİLERE DEVRİNDE OSB DEN UYGUNLUK GÖRÜŞÜ ALINMASI ZORUNLUDUR) Tarih: 08/11/2017 Sayı: 154(Şablon: Diğer)	(SN:7232506) ERBAA ORGANİZE SANAYİ BÖL GESİ VKN:3370100982	Erbaa - 09-11-2017 09:53 - 9135	-

1 / 4

MÜLKİYET BİLGİLERİ

(Hisse) Sistem No	Malik	El Birliği No	Hisse Pay/ Payda	Metrekare	Toplam Metrekare	Edinme Sebebi-Tarih-Yevmiye	Terkin Sebebi-Tarih-Yevmiye
706391695	(SN:7232506) ERBAA ORGANİZE SANAYİ BÖL GESİ VKN:3370100982	-	1708123/6 575447	17081.23	65754.47	İmar (TSM) 09-11-2022 20627	-
706391696	(SN:7232506) ERBAA ORGANİZE SANAYİ BÖL GESİ VKN:3370100982	-	4867324/6 575447	48673.24	65754.47	İmar (TSM) 09-11-2022 20627	-

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
Irtifak	M: İŞ BU TAŞINMAZIN 17000 M2 LİK KISMI ÜZERİNDE ARITMA TESİSİKURULMAK ÜZERE BEDELSİZ VE SÜRESİZ ERBAA BELEDİYESİ LEHİNE İNTİFA HAKKI VARDIR	ERBAA ORGANİZE SANAYİ BÖL GESİ VKN	(SN:2860967) ERBAA BELEDİYESİ VKN:3370045673	Erbaa - 30-05-2006 00:00 - 2033	
Irtifak	M İŞ BU TAŞINMAZIN 48000 METREKERE KISMI ÜZERİNDE ARITMA KURULMAK ÜZERE BEDELSİZ VE SÜRESİZ ERBAA BELEDİYESİ LEHİNE İNTİFA HAKKI KURULMUŞTUR	ERBAA ORGANİZE SANAYİ BÖL GESİ VKN	(SN:2860967) ERBAA BELEDİYESİ VKN:3370045673	Erbaa - 30-05-2006 00:00 - 2096	

MÜLKİYETE AİT REHİN BİLGİLERİ

Ipotek

Alacaklı	Müşterek Mi?	Borç	Faiz	Derece Sıra	Süre	Tesis Tarih - Yev
(SN:31) TÜRKİYE HALK BANKASI A.Ş. VKN:4560004685	Hayır	196773.00 ETL	%25	1/0	FBK	Erbaa - 28-10-1998 00:00 - 1775

İpoteğin Konulduğu Hisse Bilgisi

Taşınmaz	Hisse Pay/ Payda	Borçlu Malik	Malik Borç	Tescil Tarih - Yev	Terkin Sebebi Tarih Yev
Erbaa - EREK Mah. - (Aktif) - 1367 Ada - 1 Parsel	1708123/6 575447	(SN:7232506) ERBAA ORGANİZE SANAYİ BÖL GESİ VKN:3370100982	196773.00 ETL	Erbaa - 28-10-1998 00:00 - 1775	-

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Ipotek

Alacaklı	Müşterek Mi?	Borç	Faiz	Derece Sıra	Süre	Tesis Tarih - Yev
(SN:31) TÜRKİYE HALK BANKASI A.Ş. VKN:4560004685	Hayır	5217515.00 ETL	%36	1/0	FBK	Erbaa - 02-07-2009 00:00 - 4814

İpoteğin Konulduğu Hisse Bilgisi

Taşınmaz	Hisse Pay/ Payda	Borçlu Malik	Malik Borç	Tescil Tarih - Yev	Terkin Sebebi Tarih Yev
Erbaa - EREK Mah. - (Aktif) - 1367 Ada - 1 Parsel	4867324/6 575447	(SN:7232506) ERBAA ORGANİZE SANAYİ BÖL GESİ VKN:3370100982	5217515.00 ETL	Erbaa - 02-07-2009 00:00 - 4814	-

Bu belgeyi akıllı telefonunuzdan karekod tarama programları ile aşağıdaki barkodu taratarak;

veya Web Tapu anasayfasından (**https://webtapu.tkgm.gov.tr** adresinden) **x3UggTbX0S4** kodunu Online İşlemler alanına yazarak doğrulayabilirsiniz.

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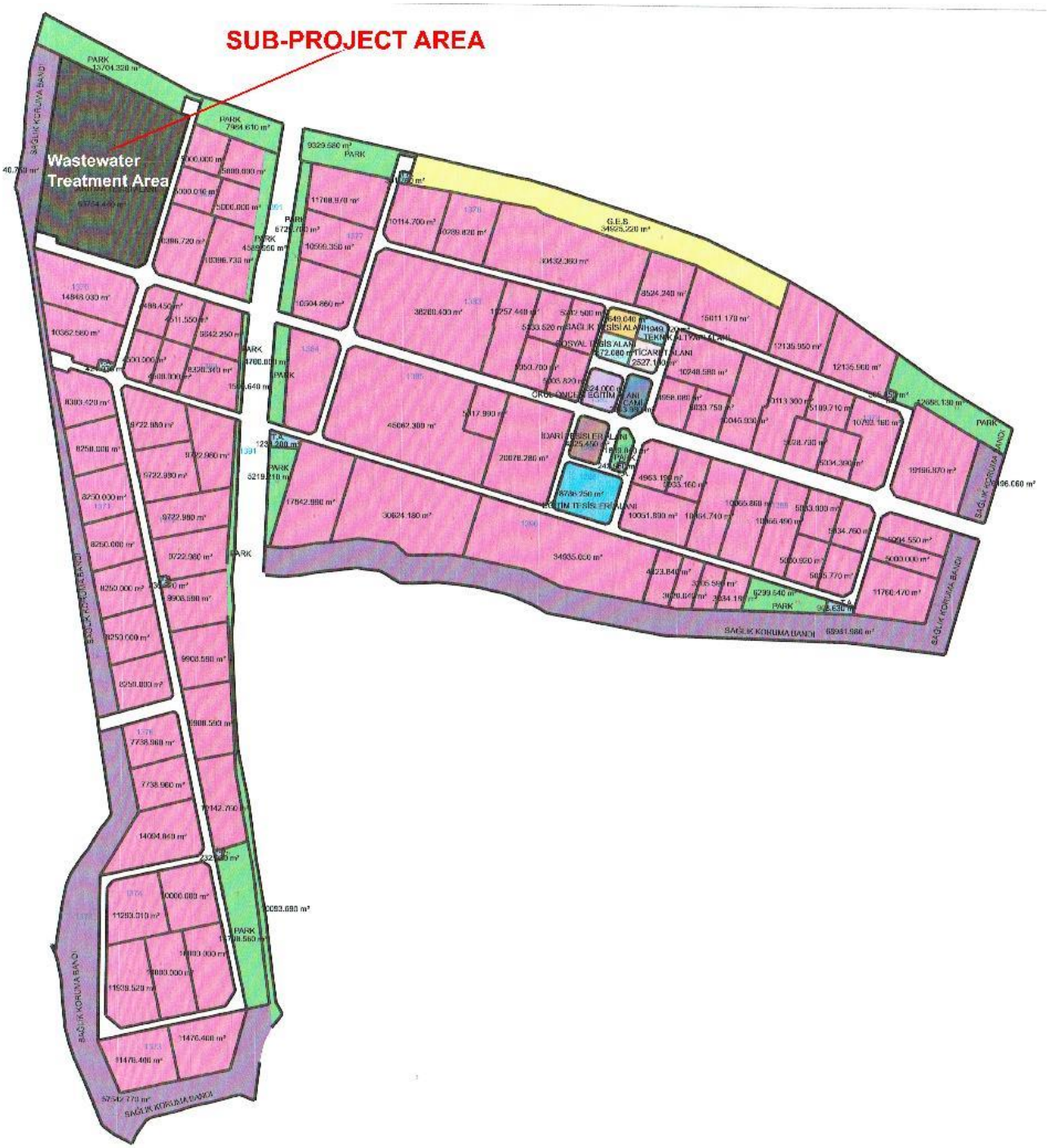
Zoning Plan of Erbaa OIZ



APPENDIX-B
EIA Out of Scope Decision for the Sub-project

T.C.
TOKAT VALİLİĞİ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü

Sayı : E-50227149-220.99-11658048
Konu : Erbaa İkinci Etap AAT ÇED Görüşü Hk.

ERBAA BELEDİYE BAŞKANLIĞINA
(Su ve Kanalizasyon Müdürlüğü)

İlgi : a) 06.11.2024 tarihli ve 44871 sayılı yazınız.
b) 06.12.2024 tarihli ve E-50227149-220.99-11167472 sayılı yazımız.
c) 20.12.2024 tarihli ve 46310 sayılı yazınız.
ç) 03.01.2025 tarihli ve E-50227149-220.03-11405501 sayılı yazımız.

İlgi (a) ve (c) yazılarınız ile; Tokat ili, Erbaa ilçesi, Kelkit OSB Mahallesi, Beylik Bükü Caddesi No:52A (1367 ada/1 parsel) adresinde, mevcut atıksu arıtma tesisinin bulunduğu 65.681,83 m^2 alanın 10.000 m^2 lik yüzölçümlü alanında, mevcut 11.640 m^3/gün kapasiteli tesisle aynı parselde yeni 12.000 m^3 /gün kapasiteli *Konvansiyonel Sistem Evsel Biyolojik Atıksu Arıtma Tesisi* faaliyetinin gerçekleştirileceği belirtilerek bahse konu faaliyetin, 29/07/2022 tarihli ve 31907 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren ÇED Yönetmeliği kapsamında değerlendirilmesi hususu talep edilmektedir.

İlgi (b) yazımız ile Belediye Başkanlığınıza ait mevcut Atıksu Arıtma Tesisinin Mülga Çevre ve Orman Bakanlığı tarafından 19.07.2005 tarihinde verilmiş Çevresel Etki Değerlendirmesi Gerekli Değildir kararının geçerliliğinin devam ettiği, söz konusu yeni proje ile ilgili olarak açıklayıcı bilgi ve belgeler ile İl Müdürlüğümüze başvuru yapılması, ilgi (ç) yazımız ile de ÇED Yönetmeliği kapsamında değerlendirme yapılabilmesi için 209088 Geçici Referans Numarası ve R4PUNTNC Erişim Kodu ile, ilgili bilgi ve belgelerin Çevrimiçi ÇED Süreci Yönetimi Sistemine (e-ÇED) girilmesine müteakip değerlendirme yapılacağı hususu tarafınıza bildirilmiştir.

İlgi (a) ve (c) yazılarınız ile e-ÇED sistemi 209088 Referans numaralı başvurunuz incelendiğinde; ilk etap kapasitesi 11.640 m^3/gün lük askıda aktif çamur prensibi ile tasarlanmış Belediye Başkanlığınıza ait mevcut Atıksu Arıtma Tesisinin 19.07.2005 tarihli Çevresel Etki Değerlendirmesi Gerekli Değildir kararının bulunduğu, proje onayının 16.05.2016 tarihinde Bakanlığımız tarafından yapıldığı, mevcut tesisin kurulu olduğu alanda ikinci etap için proses ve/veya sistem değişikliğine gidilmeden 12.000 m^3 /gün kapasiteli, ilave iki adet havalandırma ve iki adet çöktürme tankı yapılmasının planlandığı, kapasite artışı ile toplam kapasitenin 23.640 m^3/gün olacağı hususları anlaşılmaktadır.

Bilindiği üzere Atıksu Arıtma Tesisleri, 29/07/2022 tarihli ve 31907 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren ÇED Yönetmeliği Ek-1 Listesi *"15- Kapasitesi 50.000 m3/gün ve üzeri olan atık su arıtma tesisler*i " ile *Ek-2 Listesi "51- Kapasitesi 30.000 m3/gün ve üzeri olan atık su arıtma tesisleri,"* hükümlerine göre değerlendirilmektedir.

Aynı Yönetmeliğin *"Kapasite artışları"* başlığı altındaki madde 20- (1) *"ÇED Olumlu" veya "ÇED Gerekli Değildir" kararı bulunan ve eşik değeri olan projelerde yapılacak kapasite artışı ve/veya alan*

Altıyüzevler Mahallesi Fidanlık Caddesi No:34 Merkez / TOKAT
Tel: 0356 214 31 39 Faks: 0356 214 11 05 e-posta: tokat@csb.gov.tr
KEP Adresi : tokatcevrevesehircilik@hs01.kep.tr
Bilgi için:Hilal DURAN
Çevre Mühendisi

genişletilmesinin planlanması durumunda, her bir kapasite artışı miktarının mevcut proje kapasitesi ile toplanması ve bu toplamın; .. b) Ek-2'deki listede yer alan eşik değer ve üzerinde kalması durumunda, 16 ncı madde kapsamında başvuru yapılması gerekmektedir." hükmü yer almaktadır.

İl Müdürlüğümüzce yapılan değerlendirme neticesinde, söz konusu **"Konvansiyonel Sistem Evsel Biyolojik Atıksu Arıtma Tesisi kapasitesinin 11.640 m^3/gün'den toplam 23.640 m^3/gün'e artışı"** projesinin, ÇED Yönetmeliği Ek-2 listesinde 51. maddede yer alan eşik değerin (30.000 m^3/gün) altında kalması nedeniyle, aynı Yönetmeliğin 20. maddesinin 1. bendinin (b) fıkrası doğrultusunda, 29/07/2022 tarihli ve 31907 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren ÇED Yönetmeliği kapsamı dışında kaldığı mütalaa edilmektedir.

Ayrıca, mevcut tesisinizin 28.08.2028 tarihine kadar geçerli 226722348.0.1 numaralı İl Müdürlüğümüzce verilmiş Atıksu Deşarı Konulu Çevre İzin Belgesi bulunmakta olup, Konvansiyonel Sistem Evsel Biyolojik Atıksu Arıtma Tesisi Kapasitesi Artışı Projesinin işletmeye alınmadan önce, güncel halinin 10.09.2014 tarih ve 29115 sayılı Resmi Gazetede yayımlanarak 01.11.2014 tarihinde yürürlüğe giren Çevre İzin ve Lisans Yönetmeliği "Madde 11- Çevre izin veya çevre izin ve lisans belgesinin geçerliliği ve yenilenmesi " başlığında değerlendirilmesi için İl Müdürlümüze müracaat edilmesi ve İl Müdürlüğümüzün yazılı görüşü alınmadan faaliyete geçilmemesi gerekmektedir. Aksi bir durumda 2872 sayılı Çevre Kanununun ilgili maddeleri uyarınca işletmenize idari yaptırım uygulanabileceği, planlanan yatırım ile ilgili olarak, 2872 sayılı Çevre Kanununa ve bu Kanuna istinaden çıkarılan Yönetmeliklerin ilgili hükümlerine uyulması, diğer mer'i mevzuat çerçevesinde öngörülen gerekli izinlerin alınması, faaliyetinizle ilgili olarak bir değişiklik yapılmasının planlanması halinde İl Müdürlüğümüze başvuru yapılması, ekolojik dengenin bozulmamasına, çevrenin korunmasına ve geliştirilmesine yönelik tedbirlere riayet edilmesi gerekmektedir.

Gereğini ve bilgilerinize arz ederim.

Selim BOYRAZ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürü

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Doğrulama Kodu: 456E86AE-F5ED-4CE0-BA1D-C31DA2E1A951 Doğrulama Adresi: https://www.turkiye.gov.tr

Altıyüzevler Mahallesi Fidanlık Caddesi No:34 Merkez / TOKAT
Tel: 0356 214 31 39 Faks: 0356 214 11 05 e-posta: tokat@csb.gov.tr
KEP Adresi : tokatcevrevesehircilik@hs01.kep.tr
Bilgi için:Hilal DURAN
Çevre Mühendisi

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APPENDIX-C
Official Letters, Permit and Licences for the Existing Erbaa WWTP

"EIA Not Required" Official Letter and Document for the Existing Erbaa WWTP

T.C.
Çevre ve Orman Bakanlığı

T.C.
ÇEVRE ve ORMAN BAKANLIĞI
Çevresel Etki Değerlendirmesi ve Planlama Genel Müdürlüğü

SAYI : B.18.0.ÇED.0.13.00.02/ 4170
KONU : Atıksu Arıtma Tesisi

19 TEMMUZ 2005

ERBAA BELEDİYE BAŞKANLIĞINA
Erbaa / TOKAT

Tokat İli, Erbaa İlçesi, Erek Mahallesi, 440 ada, 1 ve 69 nolu parseller üzerinde Erbaa Belediye Başkanlığı tarafından yapılması planlanan Atıksu Arıtma Tesisi projesine ait Bakanlığımıza sunulan Proje Tanıtım Dosyası incelenmiş ve değerlendirilmiştir.

16.12.2003 tarih ve 25318 sayılı Resmi Gazetede yayımlanarak yürürlüğe giren ÇED Yönetmeliği'nin 17. maddesi gereğince; "Atıksu Arıtma Tesisi" projesine Bakanlığımızca **"Çevresel Etki Değerlendirmesi Gerekli Değildir Kararı"** verilmiştir.

Söz konusu faaliyete ilişkin Proje Tanıtım Dosyası ve eklerinde belirtilen hususlar ile 2872 sayılı Çevre Kanunu ve bu Kanuna istinaden yürürlüğe giren ilgili yönetmeliklere uyulması, mer'i mevzuat uyarınca ilgili kurum/kuruluşlardan gerekli izinlerin alınması ve ÇED Yönetmeliğinin 18. maddesi gereğince alınan izin ve ruhsatlar ile yatırımın başlangıç, işletme ve işletme sonrası dönemlerine ilişkin raporların ilgili Valiliğe iletilmesi gerekmektedir.

Bilgilerinizi ve gereğini rica ederim.

Osman TÜZÜN
Bakan a.
Genel Müdür

EKLER:
EK I : Proje Tanıtım Dosyası
EK II : CD
EK III: ÇED Gerekli Değildir Belgesi.

DAĞITIM LİSTESİ:
- Tokat Valiliği
  (İl Çevre ve Orman Müdürlüğü) (Ek I)
- ÇED ve Plan İzleme Kontrol Dairesi Başkanlığı (EK II)
- Erbaa Belediye Başkanlığı (Ek III)
-Vadi Müh. İnş. San. ve Tic. Ltd. Şti.(Ek konulmadı)

Yazışma Adresi:Eskişehir Yolu 8. km. Bilkent Kavşağı-ANKARA Tel:(0 312) 287 99 63 Fax: (0312) 285 29 10

T.C.
Çevre ve Orman Bakanlığı

T.C.
ÇEVRE ve ORMAN BAKANLIĞI
ÇEVRESEL ETKİ DEĞERLENDİRMESİ VE PLANLAMA
GENEL MÜDÜRLÜĞÜ

Karar Tarihi: ..../..../2005
Karar No :

ÇED GEREKLİ DEĞİLDİR BELGESİ

16.12.2003 tarih ve 25318 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren Çevresel Etki Değerlendirmesi Yönetmeliği'nin 17. maddesi gereğince; *"Atıksu Arıtma Tesisi"* projesi hakkında *"Çevresel Etki Değerlendirmesi Gerekli Değildir"* kararı verilmiştir.

Osman TÜZÜN
Bakan a.
Genel Müdür

Proje Sahibi : Erbaa Belediye Başkanlığı
Projenin Yeri : Tokat İli, Erbaa İlçesi, Erek Mahallesi.

Environmental Permit and Official Cover Letter for the Existing Erbaa WWTP

T.C.
TOKAT VALİLİĞİ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü

Sayı : 42292087-150/E.1044 28.08.2023
Konu : Çevre İzin Belgesi

ERBAA BELEDİYEBAŞKANLIĞI
Kelkit Mahallesi, Beylik Bükü Caddesi, Erbaa OSB Bölgesi Erbaa / TOKAT

İlgi : a) 23.03.2023 tarihli ve 595289 no'lu başvurunuz.
b) 26.04.2023 tarihli ve 42292087-150/E.1044 no'lu yazımız.
c)15.08.2023 tarihli ve 610542 no'lu başvurunuz.

10/09/2014 tarihli ve 29115 sayılı Resmi Gazete'de yayımlanan Çevre İzin ve Lisans Yönetmeliği kapsamında gerçekleştirilen ilgi (a)' da kayıtlı Geçici Faaliyet Belgesi başvurusu uygun bulunmuş ve bu Yönetmeliğin 8 nci maddesi gereğince ilgi (b) yazımız ile Geçici Faaliyet Belgesi verilmiştir.

Bu Yönetmeliğin 9 ncu maddesi gereğince ilgi (c)' de kayıtlı Çevre İzin Belgesi başvurusu yapılmıştır. Söz konusu başvuru Yönetmeliğin 9 ncu maddesi ve ilgili diğer yönetmelikler kapsamında incelenmiş ve Kelkit Mahallesi, Beylik Bükü Caddesi, Erbaa OSB Bölgesi Erbaa / TOKAT adresinde bulunan işletmeniz için 28.08.2028 tarihine kadar geçerli olmak üzere ÇEVRE İZİN ve LİSANS BELGESİ verilmesi uygun bulunmuştur.

ÇEVRE İZİN ve LİSANS BELGESİ süresi içinde ekte yer alan çalışma şartlarına uygun faaliyet gösterilmesi, aksi durumda ise söz konusu belgenin iptal edileceği ve 2872 sayılı Çevre Kanunu'nun ilgili maddeleri uyarınca idari yaptırım uygulanacağı hususunda;

Bilgilerinizi ve gereğini rica ederim.

e-imzalıdır
Ali YILMAZ
İl Müdürü

EKLER:
1) Atık ve DR Kodları
2)Çevre İzin Koşulları

5070 sayılı Elektronik İmza Kanunu gereği bu belge elektronik imza ile imzalanmıştır.

T.C.
TOKAT VALİLİĞİ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü

TESİSE KABUL EDİLECEK ATIKLAR VE KODLARI

5070 sayılı Elektronik İmza Kanunu gereği bu belge elektronik imza ile imzalanmıştır.

T.C.
TOKAT VALİLİĞİ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü

TESİS İZİN KOŞULLARI

Atıksu Deşarjı

- 31/12/2004 tarih ve 25687 sayılı Resmi Gazete'de yayımlanan Su Kirliliği Kontrolü Yönetmeliği (SKKY) "İzleme" başlıklı 54 üncü maddesi gereğince işletmeciler tarafından yapılan ölçüm ve analizlerin sonuçları raporların asılları ile birlikte dijital ortamda da en az beş yıl süreyle saklanmak zorundadır.
- SKKY'nin "Haber Verme Yükümlülüğü" başlıklı 52 nci maddesi gereğince arıtma tesisi olmayanlar, arızalananlar, çalıştığı halde standartları sağlayamayanlar, faaliyetinde kapasite artırımına gidenler, faaliyetlerini geçici veya sürekli olarak durduranlar ilgili idareye derhal haber vermekle yükümlüdürler.
- Deşarj standartlarının sağlanması amacıyla, atıksuların yağmur suları, soğutma suları, az kirli yıkama suları ve buna benzer az kirli sularla seyreltilmesi yasaktır.
- İşletmeye ait Atıksu Arıtma Tesinde arıtma çamuru oluşması durumunda ilgili yönetmelikler kapsamında yapılacak olan analiz sonucuna göre belirlenecek uygun bertaraf yöntemiyle bertaraf edilmesi gerekmektedir.
- Kapasitesi 5.000 (m3/gün) den büyük olan tesislerde SAİS Tebliği uygulanır.
- **-Eğer ilk yıl boyunca üç ardışık numune analiz sonuçlarının deşarj standartlarına uyulduğu gösterilebilirse , izleyen yıllarda ilgili sektör tablosunda yer alan pH, KOI, BOI, Yağ-Gres, AKM parametreleri dışındaki diğer parametrelere Çevre ve Şehircilik İl Müdürlüğünü yazıyla bilgilendirmek kaydıyla yılda bir kez bakılması yeterlidir. Eğer parametrelerden biri deşarj standarlarına uymazsa takip eden yıl içerisinde tabloya göre numune alınmalıdır.
- SKKY"deki hüküm ve esaslara uyulması gerekmektedir.
- Kentsel Atıksu Arıtımı Yönetmeliği'ndeki hüküm ve esaslara uyulması gerekmektedir.
- Atık su debisi 500 m3/gün üzerinde olan işletmelerin atıksu arıtma tesisi çıkış noktasında veya kanalizasyon sistemine atıksu bağlantısının yapıldığı yerde numune alma bacası, otomatik numune alma ve debi ölçme cihazı bulundurması zorunludur.
- Kurulu kapasitesi 5.000 m3/gün ve üzerinde olan ve endüstriyel atıksu bağlı olan kentsel atıksu arıtma tesisleri tarafından SKKY 38. Madde 6. Fıkrası kapsamında gerekli değerlendirilmenin yapılması gerekmektedir.

5070 sayılı Elektronik İmza Kanunu gereği bu belge elektronik imza ile imzalanmıştır.

T.C.
TOKAT VALİLİĞİ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü

ÇEVRE İZİN BELGESİ

Belge No	:	226722348.0.1
Başlangıç Tarihi	:	28.08.2023
Bitiş Tarihi	:	28.08.2028
Tesis Adı	:	ERBAA BELEDİYEBAŞKANLIĞI
Tesis Adresi	:	Kelkit Mahallesi, Beylik Bükü Caddesi, Erbaa OSB Bölgesi Erbaa / TOKAT
İşletme Vergi No	:	3370045673
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 28.08.2023 tarihli ve 42292087-150/E.1044 sayılı yazı ile birlikte geçerlidir. Ayrı kullanılmaz.

e-imzalıdır
Ali YILMAZ
İl Müdürü

5070 sayılı Elektronik İmza Kanunu gereği bu belge elektronik imza ile imzalanmıştır.

APPENDIX-D
Waste Sludge Acceptance Protocol

ADOÇİM

PROTOKOL

Kurum	Erbaa Belediyesi Su ve Kanalizasyon Müdürlüğü
Adres	Erbaa/TOKAT
Tel	0 356 715 10 19
Konu	Atık Bertarafı Hk.
Tarih	25.07.2024
İlgili	Sn. Mustafa BOLAT – Çevre Mühendisi
Protokol No	AT- 22/0068-2024

Sn. İlgili;
İşletmenizden kaynaklanan yaklaşık 10 ton/gün civarında olan 190805 atık kodlu Atıksu Artımından kaynaklanan çamur içerikli atıklarınızı; 223338494.0.1 No`lu Atık Yakma ve Birlikte Yakma Lisansımız ile fabrikamızda Alternatif Yakıt olarak (R01 kodu ile) bertaraf edilebiliriz;

Bertaraf Bedeli; 1.000 TL/TON+KDV`dir. (Not: Atık miktarı 1 tonun altında olması durumunda sevkiyatı yapılan her parti için yine 1.000 TL+KDV fiyat uygulanacaktır.)

Not 1: Atıkların nakliyesi tarafınıza ait olacaktır. Atık bertaraf Bedeli olarak verilecek fiyat ADOÇİM fabrikası teslim fiyatıdır.
Not 2: Atığın içeriğinde teneke, demir parçaları, cam içerikli atıklar boya kimyasalları, radyasyon içerikli ve tıbbi atık vb atıklar, istenmemektedir. Atık ağırlığının %5`inden fazla istenmeyen içerikte atık çıkması durumunda atıklar komple geri iade edilecektir.
Not 3: Arıtma çamurlarının rutubet değeri min %80`e kadar düşürülecektir. Rutubet değeri %80`nin üzerinde olan arıtma çamurları R01 kodu ile tesise kabul edilmeyecektir.
Not 4: İş bu protokol 25.07.2024 tarihi ile 30.06.2025 tarihleri arasında geçerlidir.

YÜKÜMLÜKLERİNİZ ve YÜKÜMLÜLÜKLERİMİZ

Atıklar aşağıdaki "Atık Kabul Talimatı"`na uygun olarak tesisimize kabul edilir.

ATIK KABUL TALİMATI

a) İlk başvuruda telefonla gelen talepler kabul edilmez, firmalardan yazılı başvuru yapılması istenir.
b) Yazılı başvuru ekinde mutlaka atığın kodu, atığın Tehlikeli Atıkların Kontrolü Yönetmeliğine göre; atık yağın ise Atık Yağların Kontrolü Yönetmeliğine göre yapılmış analizi olmalıdır.
c) Atık üreticisi atığını yollamadan önce, fabrikadan randevu alır.
d) Atık analizleri Atık Kabül Birimi tarafından muhafaza edilir.
e) Analizlere uygun atığın gönderilmesinden atık üreticisi sorumludur.
f) Başvuru yazıları makam onayından geçerek Çevre Birimi ve Üretim Müdürlüğüne iletilir.
g) Atık alımları atık depo ünitesinin kapasitesini geçmeyecek şekilde yapılır.
h) Atıklar 08:00-16:00 saatleri arasında kabul edilir.
i) Cumartesi ve Pazar günleri atık kabul edilmez.
j) Atık Alım Şartları aşağıdaki gibidir.
- Gelen Atığın Miktarı Adoçim Çimento Beton San ve Tic. A.Ş. kantar raporlarına göre belirlenir.
- Atıklar depolama alanına gönderilmeden önce radyasyon ölçümü yapılır ve herhangi bir radyoaktif maddeye rastlandığında atık koşulsuz araçtan indirilmeden geri iade edilir.
- Tehlikeli/tehlikesiz atıklar ile ilgili **EÇBS -MOTAT** sistemine giriş yapılmayan atıklar tesise kabul edilmez.

ÖDEME

Adoçim kantar fişi esas alınarak atık geldiğinde atık bertaraf bedeli faturalandırılacak ve fatura tarihi itibariyle ilgili ay kapanmadan ödemesi yapılacaktır.

NAKLİYE

Nakliye tarafınıza ait olup, Çevre Mevzuatlarına uygun olarak taşıması sağlanmalıdır. Atığın taşınması ve nakliyesinden atık üreticisi sorumludur. Atığın teslimi fabrika içi yerde teslim olarak yapılacaktır.

ATIK ÜRETİCİSİ
Ertuğrul KARAGÖL
Erbaa Belediye Başkanı

ATIK BERTARAF FİRMASI
ADOÇİM ÇİMENTO BETON SAN. VE TİC. A.Ş.
Alparslan Mah. Keşliközü Mevkii 60670
Tel:0356 611 25 00 Artova/TOKAT
Fax:0356 611 22 32
Boğaziçi Kurumlar V.D. No:008 066 4308
http://www.adocim.com

Adoçim Çimento Beton Sanayi ve Ticaret A.Ş
Adoçim Çimento Beton Sanayi ve Ticaret A.Ş. Artova Şubesi
Alparslan Mah. Keşliközü Mevki 60670 Artova / TOKAT
e-mail: info@adocim.com
Tel: 0 356 611 25 00 pbx
Fax:0 356 611 27 27

APPENDIX-E
Analysis Reports

Wastewater Analysis Reports

Yeterlik Belge No
Y-55/250/2019

ARTEK MÜHENDİSLİK
Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.
ÇEVRE LABORATUVARI

İstasyon Mh. Yunus Emre Sk. No: 10 D: 1 55060 İlkadım/Samsun - İlkadım/Türkiye
Tel: +90 362 230 31 26 (Pbx) Faks: +90 362 230 31 28
www.artekcevre.com.tr

TÜRKAK Test TS EN ISO/IEC 17025 AB-0012-T

AB-0012-T
SAM.AS.23.0613003
08-23

ANALİZ RAPORU

Rapor No / Tarihi	SAM.AS.23.0613003 / 07/08/2023	**Rapor Onay Tarihi**	2023.08.07 11:54:03+03'00'
Müşterinin Adı	T.C. ERBAA BELEDİYE BAŞKANLIĞI SU VE KANALİZASYON MÜDÜRLÜĞÜ		
Müşterinin Adresi	Erbaa/Tokat/Türkiye		
Numune No	SAM.AS.23.0613003	**Numunenin Alındığı Yer**	SAİS KABİNİ ÇIKIŞI
Müşteri Numune No		**Numunenin Alınma Tarihi - Saati**	13/06/2023 11:07:00 13/06/2023 11:07:00
Numune Türü	ATIK SU		
Numuneyi Alan	ARTEK SAMSUN	**Numuneye Uygulanan İşlemler**	Soğuk Zincir - Kimyasal Koruma
Numunenin Alınma Şekli	Anlık	**Numunenin Kabul Tarihi-Saati**	13/06/2023 - 16:04:32
Numunenin Getirilişi	Yerinden Alınma	**Analiz Başlangıç / Bitiş Tarihi**	14/06/2023 14/06/2023
Numune Miktarı / Ambalajı	1000 ml Plastik Kap	**Sayfa Sayısı**	2

Metot Numarası	Metot Adı - Tarih
SM 5220 B	Standard Methods - Chemical Oxygen Demand (COD) - Open Reflux Method-(2011)
SM 2510 B	Standard Methods - Conductivity - Laboratory Method-(2011)
SM 4500-O G	Standard Methods - Oxygen (Dissolved) - Membrane Electrode Method-(2016)
SM 4500-H+ B	Standard Methods - pH Value - Electrometric Method-(2011)
SM 2540 D	Standard Methods - Solids - Total Suspended Solids Dried at 103-105 °C-(2015)
SM 2550 B	Standard Methods - Temperature - Laboratory and Field Methods-(2010)
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atik Sulardan Numune Alma Kilavuzu-(2021)

FORM NO:FR.510.01-01
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023

Yeterlik Belge No
Y-55/250/2019

ARTEK MÜHENDİSLİK
Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.
ÇEVRE LABORATUVARI

AB-0012-T
SAM.AS.23.0613003
08-23

ANALİZ RAPORU

Firma Adı	T.C. ERBAA BELEDİYE BAŞKANLIĞI SU VE KANALİZASYON MÜDÜRLÜĞÜ
Rapor No / Tarihi	SAM.AS.23.0613003 / 07/08/2023

Analiz Parametreleri	Analiz Metodu	Birim	Analiz Sonucu	Firma Analizör Değeri	Kentsel Atıksu Arıtımı Yönetmeliği/Tablo 1 Konsantrasyon (mg/L)
Askıda Katı Madde-AKM (Toplam) (*)	SM 2540 D	mg/L	13,45	12,59	35 mg/L N (10000 E.N.'den fazla) / 60 mg/L N (2000-10000E.N.)
Çözünmüş Oksijen - Oksijen Doygunluğu Tayini (*y)	SM 4500-O G	mg/L	6,88	6,76	-
	SM 4500-O G	%	84,5	-	-
pH (*y)	SM 4500-H+ B	-	7,98	7,36	-
İletkenlik (*y)	SM 2510 B	µS/cm	1149	1211,9	-
Sıcaklık (*y)	SM 2550 B	°C	23,2	22,34	-
Kimyasal Oksijen İhtiyacı (KOİ) (*)	SM 5220 B	mg/L	32,48	31,47	≤125

(*) İşaretli parametreler Bakanlık ve Türkak kapsamında raporlanmıştır.
(*y) İşaretli parametre firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür.

Açıklamalar : Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.

Sorumlu İmzalar :

Sezin GÖKSEL
Şube Laboratuvar Müdür Yardımcısı
Elektronik olarak imzalanmıştır.

Murat ÖZTÜRK
Şube Laboratuvar Müdürü
Elektronik olarak imzalanmıştır.

FORM NO:FR.510.01-01
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023

Yeterlik Belge No
Y-55/250/2019

ARTEK MÜHENDİSLİK
Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.
ÇEVRE LABORATUVARI

İstasyon Mh. Yunus Emre Sk. No: 10 D: 1 55060 İlkadım/Samsun - İlkadım/Türkiye
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TÜRKAK Test TS EN ISO/IEC 17025 AB-0012-T

AB-0012-T
SAM.AS.23.1208005
01-24

ANALİZ RAPORU

Rapor No / Tarihi	SAM.AS.23.1208005 / 17/01/2024	**Rapor Onay Tarihi**	2024.01.17 19:32:19 +03'00'
Müşterinin Adı	T.C. ERBAA BELEDİYE BAŞKANLIĞI SU VE KANALİZASYON MÜDÜRLÜĞÜ		
Müşterinin Adresi	Erbaa/Tokat/Türkiye		
Numune No	SAM.AS.23.1208005	**Numunenin Alındığı Yer**	SAİS KABİN ÇIKIŞI
Müşteri Numune No		**Numunenin Alınma Tarihi - Saati**	08/12/2023 11:53:00 08/12/2023 13:53:00
Numune Türü	ATIK SU		
Numuneyi Alan	ARTEK SAMSUN	**Numuneye Uygulanan İşlemler**	Kimyasal Koruma- Soğuk Zincir
Numunenin Alınma Şekli	2 Saatlik	**Numunenin Kabul Tarihi-Saati**	08/12/2023 - 17:43:00
Numunenin Getirilişi	Yerinden Alınma	**Analiz Başlangıç / Bitiş Tarihi**	11/12/2023 11/12/2023
Numune Miktarı / Ambalajı	2000 ml Plastik Kap/Şişe	**Sayfa Sayısı**	2

Metot Numarası	Metot Adı - Tarih
SM 5220 B	Standard Methods - Chemical Oxygen Demand (COD) - Open Reflux Method-(2011)
SM 2510 B	Standard Methods - Conductivity - Laboratory Method-(2011)
SM 4500-O G	Standard Methods - Oxygen (Dissolved) - Membrane Electrode Method-(2016)
SM 4500-H+ B	Standard Methods - pH Value - Electrometric Method-(2011)
SM 2540 D	Standard Methods - Solids - Total Suspended Solids Dried at 103-105 °C-(2015)
SM 2550 B	Standard Methods - Temperature - Laboratory and Field Methods-(2010)
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atik Sulardan Numune Alma Kilavuzu-(2021)

FORM NO:FR.510.01-01
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.:
26.05.2023

Yeterlik Belge No
Y-55/250/2019

ARTEK MÜHENDİSLİK
Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.
ÇEVRE LABORATUVARI

AB-0012-T
SAM.AS.23.1208005
01-24

ANALİZ RAPORU

Firma Adı	T.C. ERBAA BELEDİYE BAŞKANLIĞI SU VE KANALİZASYON MÜDÜRLÜĞÜ
Rapor No / Tarihi	SAM.AS.23.1208005 / 17/01/2024

Analiz Parametreleri	Analiz Metodu	Birim	Analiz Sonucu	Firma Analizör Değeri
Askıda Katı Madde-AKM (Toplam) (*)	SM 2540 D	mg/L	4,1	3,54
Çözünmüş Oksijen - Oksijen Doygunluğu Tayini (*y)	SM 4500-O G	mg/L	6,33	6,63
	SM 4500-O G	%	69,2	-
pH (*y)	SM 4500-H+ B	-	7,66	7,51
İletkenlik (*y)	SM 2510 B	µS/cm	1402	1389
Sıcaklık (*y)	SM 2550 B	°C	18,4	19,5
Kimyasal Oksijen İhtiyacı (KOİ) (*)	SM 5220 B	mg/L	18,89	19,26

(*) İşaretli parametreler Bakanlık ve Türkak kapsamında raporlanmıştır.
(*y) İşaretli parametre firmamız yetkili numune alma personeli tarafından yerinde ölçülmüştür.

Açıklamalar : Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.

Sorumlu İmzalar :

Sezin GÖKSEL
Şube Laboratuvar Müdür Yardımcısı

Murat ÖZTÜRK
Şube Laboratuvar Müdürü

FORM NO:FR.510.01-01
YAYIN TARİHİ:14.02.2013

REV.NO: 6 REV.TAR.: 26.05.2023

Yeterlik Belge No
Y-55/250/2019

ARTEK MÜHENDİSLİK
Çevre Ölçüm ve Danışmanlık Hiz. Tic. A.Ş.
ÇEVRE LABORATUVARI

İstasyon Mh. Yunus Emre Sk. No: 10 D: 1 55060 İlkadım/Samsun - İlkadım/Türkiye
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Test
TS EN ISO/IEC 17025
AB-0012-T

AB-0012-T
SAM.AS.22.0131001
04-22

ANALİZ RAPORU

Rapor No / Tarihi	SAM.AS.22.0131001 / 16/04/2022		
Müşterinin Adı	T.C. ERBAA BELEDİYE BAŞKANLIĞI SU VE KANALİZASYON MÜDÜRLÜĞÜ		
Müşterinin Adresi	Erbaa/Tokat/Türkiye		
Numune No	SAM.AS.22.0131001	**Numunenin Alındığı Yer**	ARITMA ÇIKIŞI
Müşteri Numune No		**Numunenin Alınma Tarihi - Saati**	30/12/2022 09:40:00 31/12/2022 09:40:00
Numune Türü	ATIK SU		
Numuneyi Alan	ARTEK SAMSUN	**Numuneye Uygulanan İşlemler**	Soğuk Zincir - Kimyasal Koruma
Numunenin Alınma Şekli	24 Saatlik	**Numunenin Kabul Tarihi-Saati**	31/01/2022 - 16:37:04
Numunenin Getirilişi	Yerinden Alınma	**Analiz Başlangıç / Bitiş Tarihi**	31/01/2022 06/02/2022
Numune Miktarı / Ambalajı	3000 ml Plastik Kap	**Sayfa Sayısı**	2

Metot Numarası	**Metot Adı - Tarih**
İşbirliği/Taşeron Laboratuvar Metodu	İşbirliği/Taşeron Laboratuvar Metodu
SM 5210 B	Standard Methods - Biochemical Oxygen Demand (BOD) - 5 day-(2016)
SM 5220 B	Standard Methods - Chemical Oxygen Demand (COD) - Open Reflux Method-(2011)
SM 2540 D	Standard Methods - Solids - Total Suspended Solids Dried at 103-105 °C-(2015)
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atik Sulardan Numune Alma Kilavuzu-(2021)

FORM NO:FR.510.01-01
YAYIN TARİHİ:14.02.2013

REV.NO: 4
REV.TAR.: 14.12.2020

Yeterlik Belge No
Y-55/250/2019

ARTEK MÜHENDİSLİK
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AB-0012-T
SAM.AS.22.0131001
04-22

ANALİZ RAPORU

Firma Adı	T.C. ERBAA BELEDİYE BAŞKANLIĞI SU VE KANALİZASYON MÜDÜRLÜĞÜ
Rapor No / Tarihi	SAM.AS.22.0131001 / 16/04/2022

Analiz Parametreleri	Analiz Metodu	Birim	Analiz Sonucu	Kentsel Atıksu Arıtımı Yönetmeliği/Tablo 1 Konsantrasyon (mg/L)	Kentsel Atıksu Arıtımı Yönetmeliği/Tablo 2 Konsantrasyon (mg/L)
Askıda Katı Madde-AKM (Toplam) (*)	SM 2540 D	mg/L	<4	35 mg/L N (10000 E.N.'den fazla) / 60 mg/L N (2000-10000E.N.)	-
Biyokimyasal Oksijen İhtiyacı (BOİ) Tayini (*)	SM 5210 B	mg/L	3,2	≤25	-
Kimyasal Oksijen İhtiyacı (KOİ) (*)	SM 5220 B	mg/L	<15	≤125	-
Toplam Azot Tayini (a)	İşbirliği/Taşeron Laboratuvar Metodu	mg/L	4,37	-	15 mg/l N (10000-100000 E.N.) 10 mg/l N (100 000 E.N.'den fazla)
Toplam Fosfor Tayini (a)	İşbirliği/Taşeron Laboratuvar Metodu	mg/L	0,25	-	2 mg/l P (10000-100000 E.N.) 1 mg/l P (100 000 E.N.'den fazla)

(*) İşaretli parametreler Bakanlık ve Türkak kapsamında raporlanmıştır.
(a) İşaretli parametreler işbirliği laboratuvarı tarafından analiz edilmiştir.

Açıklamalar : Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.

Sorumlu İmzalar :

İrem Demir
Laboratuvar Birim Yöneticisi
Elektronik olarak imzalanmıştır.

Murat ÖZTÜRK
Şube Laboratuvar Müdürü
Elektronik olarak imzalanmıştır.

FORM NO:FR.510.01-01
YAYIN TARİHİ:14.02.2013

REV.NO: 4
REV.TAR.: 14.12.2020

Yeterlik Belge No
Y-55/250/2019

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04-22

ANALİZ RAPORU

Rapor No / Tarihi	SAM.AS.22.0215002 / 16/04/2022		
Müşterinin Adı	T.C. ERBAA BELEDİYE BAŞKANLIĞI SU VE KANALİZASYON MÜDÜRLÜĞÜ		
Müşterinin Adresi	Erbaa/Tokat/Türkiye		
Numune No	SAM.AS.22.0215002	**Numunenin Alındığı Yer**	ARITMA ÇIKIŞI
Müşteri Numune No		**Numunenin Alınma Tarihi - Saati**	14/02/2022 11:35:00 15/02/2022 11:35:00
Numune Türü	ATIK SU		
Numuneyi Alan	ARTEK SAMSUN	**Numuneye Uygulanan İşlemler**	Soğuk Zincir - Kimyasal Koruma
Numunenin Alınma Şekli	24 Saatlik	**Numunenin Kabul Tarihi-Saati**	15/02/2022 - 17:05:00
Numunenin Getirilişi	Yerinden Alınma	**Analiz Başlangıç / Bitiş Tarihi**	16/02/2022 21/02/2022
Numune Miktarı / Ambalajı	3000 ml Plastik Kap	**Sayfa Sayısı**	2

Metot Numarası	**Metot Adı - Tarih**
İşbirliği/Taşeron Laboratuvar Metodu	İşbirliği/Taşeron Laboratuvar Metodu
SM 5210 B	Standard Methods - Biochemical Oxygen Demand (BOD) - 5 day-(2016)
SM 5220 B	Standard Methods - Chemical Oxygen Demand (COD) - Open Reflux Method-(2011)
SM 2540 D	Standard Methods - Solids - Total Suspended Solids Dried at 103-105 °C-(2015)
TS ISO 5667-10	Su Kalitesi- Numune Alma- Bölüm 10 Atik Sulardan Numune Alma Kilavuzu-(2021)

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ANALİZ RAPORU

Firma Adı	T.C. ERBAA BELEDİYE BAŞKANLIĞI SU VE KANALİZASYON MÜDÜRLÜĞÜ
Rapor No / Tarihi	SAM.AS.22.0215002 / 16/04/2022

Analiz Parametreleri	Analiz Metodu	Birim	Analiz Sonucu	Kentsel Atıksu Arıtımı Yönetmeliği/Tablo 1 Konsantrasyon (mg/L)	Kentsel Atıksu Arıtımı Yönetmeliği/Tablo 2 Konsantrasyon (mg/L)
Askıda Katı Madde-AKM (Toplam) (*)	SM 2540 D	mg/L	7,5	35 mg/L N (10000 E.N.'den fazla) / 60 mg/L N (2000-10000E.N.)	-
Biyokimyasal Oksijen İhtiyacı (BOİ) Tayini (*)	SM 5210 B	mg/L	22,75	≤25	-
Kimyasal Oksijen İhtiyacı (KOİ) (*)	SM 5220 B	mg/L	65	≤125	-
Toplam Azot Tayini (a)	İşbirliği/Taşeron Laboratuvar Metodu	mg/L	9,02	-	15 mg/l N (10000-100000 E.N.) 10 mg/l N (100 000 E.N.'den fazla)
Toplam Fosfor Tayini (a)	İşbirliği/Taşeron Laboratuvar Metodu	mg/L	0,35	-	2 mg/l P (10000-100000 E.N.) 1 mg/l P (100 000 E.N.'den fazla)

(*) İşaretli parametreler Bakanlık ve Türkak kapsamında raporlanmıştır.
(a) İşaretli parametreler işbirliği laboratuvarı tarafından analiz edilmiştir.

Açıklamalar : Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.

Sorumlu İmzalar :

İrem Demir
Laboratuvar Birim Yöneticisi
Elektronik olarak imzalanmıştır.

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Elektronik olarak imzalanmıştır.

FORM NO:FR.510.01-01
YAYIN TARİHİ:14.02.2013

REV.NO: 4
REV.TAR.: 14.12.2020

Waste Sludge Analysis Reports

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Yeterlik Belge No
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ANALİZ RAPORU

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Rapor No / Tarihi	IST.AT.18.0228003 / 05/05/2018		
Müşterinin Adı	REMONDIS SU VE ATIKSU TEKNOLOJİLERİ SAN. VE TİC. A.Ş.		
Müşterinin Adresi	Kelkit Mah. Karayaka Belediyesi Yolu Üzeri Erbaa - TOKAT Erbaa/Tokat/Türkiye		
Numune No	IST.AT.18.0228003	**Numunenin Alındığı Yer**	Arıtma Çamur
Numune/Durum	ATIK/Çamur	**Numunenin Alınma Tarihi - Saati**	27/02/2018 14:00:00 27/02/2018 14:00:00
Numuneyi Alan	ARTEK		
Numunenin Alınma Şekli	Anlık	**Numuneye Uygulanan İşlemler**	Soğuk Zincir
Numunenin Getirilişi	Kargo	**Numunenin Kabul Tarihi-Saati**	28/02/2018 - 08:00:00
Numune Miktarı / Ambalajı	3000 gr Plastik Kap	**Analiz Başlangıç/Bitiş Tarihi**	28/02/2018 14/03/2018

Metot Numarası	Metot Adı - Tarih
SM 4500-SO4-2 E	Standard Methods - Sulfate - Turbidimetric Method-(2011)
SM 5310 B	Standard Methods - Total Organic Carbon (TOC) - High Temperature Combustion Method-(2014)
TS 6227 ISO 6439	Su Kalitesi- Fenol Indeksi Tayini-Damitma sonrasi 4-aminoantipirin kullanilarak uygulanan spektrometrik metotlar-(2005)
EPA 200.7	Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma Atomic Emission Spectrometry-(1994)
SM 2540 C	Standard Methods - Solids - Total Dissolved Solids Dried at 180 °C-(2015)
TS 9546 EN 12880	Çamurlarin karakterizasyonu - Kuru kalinti ve su muhtevasi tayini-(2002)
TS 12089 EN 13137	Atiklarin özellikleri-Atik, çamur ve sedimentlerde toplam organik karbon (TOK) tayini-(2003)
TS 12090	Kati atiklardan numune alma kurallari-(1996)
TS EN 12457-4	Atiklarin nitelendirilmesi - Katidan özütleme analizi-Granül kati atiklarin ve çamurlarin kati özütlemesi için uygunluk deneyi - Bölüm 4: Sivi kati orani 10 l/kg olan ve parçacik boyutu 10 mm'den küçük (ölçüsü azaltilmis veya azaltilmamis) malzemeler için tek asamali parti deneyi-(2004)
TS EN 12879	Çamurlarin özellikleri-Kuru kütlenin kizdirma kaybinin tayini-(2003)
TS EN 14039	Atiklarin nitelendirilmesi-C10-C40 araligindaki hidrokarbon muhtevasinin gaz kromatografisi ile tayini-(2004)
TS ISO 10390	Toprak Kalitesi-pH Tayini- (2013)
EPA 8082A	PCBs by GC-(2007)
SM 3112 B	Standard Methods - Metals by Cold-Vapor Atomic Absorption Spectrometry-(2011)

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FORM NO:FR.510.01-01
YAYIN TARİHİ:14.02.2013

REV.NO: 3
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ANALİZ RAPORU

Firma Adı	REMONDIS SU VE ATIKSU TEKNOLOJİLERİ SAN. VE TİC. A.Ş.
Rapor No / Tarihi	IST.AT.18.0228003 / 05/05/2018

Metot Numarası	**Metot Adı - Tarih**
SM 4110 B	Standard Methods - Determination of Anions by Ion Chromatography - with Chemical Suppression of Eluent Conductivity-(2011)
SM 4500-Cl- B	Standard Methods - Chloride - Argentometric Method-(2011)
EPA 5021A, EPA 8015	Volatile Organic Compounds In Various Sample Matrices- (2014), (BTEX) Nonhalogenated Organics Using GC-FID-(2003)

ARTEK MÜHENDİSLİK
ÇEVRE ÖLÇÜM VE DAN.HİZ.TİC.A.Ş

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REV.NO: 3
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ANALİZ RAPORU

Firma Adı	REMONDIS SU VE ATIKSU TEKNOLOJİLERİ SAN. VE TİC. A.Ş.
Rapor No / Tarihi	IST.AT.18.0228003 / 05/05/2018

Analiz Parametreleri	Analiz Metodu	Birim	Analiz Sonucu	Atıkların Düzenli Depolanmasına Dair Yönetmelik-I. sınıf (Tehlikeli)	Atıkların Düzenli Depolanmasına Dair Yönetmelik-II. sınıf (Tehlikesiz)	Atıkların Düzenli Depolanmasına Dair Yönetmelik-III. sınıf (İnert)
Çözünmüş Organik Karbon (DOC) Tayini (*)	SM 5310 B	mg/L	2166,5	80<-≤100	50<-≤80	≤50
Fenol indeksi (*)	TS 6227 ISO 6439	mg/L	<0,029	-	-	≤0,1
Florür Tayini (*)	SM 4110 B	mg/L	5,46	15<-≤50	1<-≤15	≤1
Klorür Tayini (*)	SM 4500-Cl- B	mg/L	80,6	1500<-≤2500	80<-≤1500	≤80
Nem Tayini (*)	TS 9546 EN 12880	%	39,6	-	-	-
pH Tayini (*)	TS ISO 10390		7,09	-	≥6	-
Sülfat Tayini (*)	SM 4500-SO4-2 E	mg/L	3,4	2000≤-<5000	600≤-<2000	100≤-<600
Toplam Çözünen Katı Tayini (*)	SM 2540 C	mg/L	3900	6000<-≤10000	400<-≤6000	≤400
Toplam Organik Karbon (TOC) Tayini (*)	TS 12089 EN 13137	%	8,33	5<-≤6	3<-≤5	≤3
LOI Tayini (*)	TS EN 12879	%	77,2	≤10	-	-
BTEX Tayini (*)	EPA 5021A, EPA 8015	mg/Kg	<0,06	-	-	≤6
Mineral Yağ Tayini (*)	TS EN 14039	mg/Kg	875,46	-	-	≤500
PCB Tayini (*)	EPA 8082A	mg/Kg	0,011	-	-	≤1
Antimon Tayini (*)	EPA 200.7	mg/L	<0,005	0,07<-≤0,5	0,006<-≤0,07	≤0,006
Arsenik Tayini (*)	EPA 200.7	mg/L	<0,02	0,2<-≤2,5	0,05<-≤0,2	≤0,05
Bakır Tayini (*)	EPA 200.7	mg/L	0,02	5<-≤10	0,2<-≤5	≤0,2
Baryum Tayini (*)	EPA 200.7	mg/L	0,15	10<-≤30	2<-≤10	≤2
Civa Tayini (*)	SM 3112 B	mg/L	<0,0001	0,02<-≤0,2	0,001<-≤0,02	≤0,001
Çinko Tayini (*)	EPA 200.7	mg/L	1,3	5<-≤20	0,4<-≤5	≤0,4
Kadmiyum Tayini (*)	EPA 200.7	mg/L	<0,001	0,1<-≤0,5	0,004<-≤0,1	≤0,004
Kurşun Tayini (*)	EPA 200.7	mg/L	<0,01	1<-≤5	0,05<-≤1	≤0,05
Molibden Tayini (*)	EPA 200.7	mg/L	<0,0075	1<-≤3	0,05<-≤1	≤0,05
Nikel Tayini (*)	EPA 200.7	mg/L	0,15	1<-≤4	0,04<-≤1	≤0,04
Selenyum Tayini (*)	EPA 200.7	mg/L	0,04	0,05<-≤0,7	0,01<-≤0,05	≤0,01
T. Krom Tayini (*)	EPA 200.7	mg/L	0,03	1<-≤7	0,05<-≤1	≤0,05

* İşaretli parametreler Bakanlık ve Türkak kapsamında raporlanmıştır.

ARTEK MÜHENDİSLİK
ÇEVRE ÖLÇÜM VE DAN.HİZ.TİC.A.Ş

FORM NO:FR.510.01-01
YAYIN TARİHİ:14.02.2013

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ÇEVRE VE ŞEHİRCİLİK
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ARTEK MÜHENDİSLİK
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ÇEVRE LABORATUVARI

ANALİZ RAPORU

Firma Adı	REMONDIS SU VE ATIKSU TEKNOLOJİLERİ SAN. VE TİC. A.Ş.
Rapor No / Tarihi	IST.AT.18.0228003 / 05/05/2018

Açıklamalar : Bu rapor 1(bir) nüsha halinde hazırlanıp, müşteriye gönderilmiştir. Bu rapor laboratuvarımız tarafından elektronik ortamda arşivlenmektedir.

Sorumlu İmzalar:

Özlem GÜLER
Laboratuvar Birim Yöneticisi

Melahat AYDIN
Laboratuvar Müdürü

ARTEK MÜHENDİSLİK
ÇEVRE ÖLÇÜM VE DAN.HİZ.TİC.A.Ş

FORM NO:FR.510.01-01
YAYIN TARİHİ:14.02.2013

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TÜBİTAK MAM

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ANALİZ RAPORU

(Endüstriyel Teknik Destek Hizmeti)

Rapor no : : **45924173 -125.05-** 1127/ 4083

Rapor tarihi : 29-06-2016

Talep eden : Erbaa Belediyesi

Adres : OSB Erbaa Atıksu Arıtma Tesisi Erbaa / TOKAT

Konusu : Erbaa OSB AAT Dekantör Çıkışı Çamuru Örneğinin "Atıkların Düzenli Depolanmasına Ait Yönetmelik" Ek–2 Atıkların Düzenli Depolanabilmesi için Kabul Kriterleri ve İlave Parametreleri Doğrultusunda Analizi

Bu raporda yer alan sonuçlar, sadece incelenen numunelere aittir.

Onaylayan

Doç. Dr. Özgen ERCAN
Çevre ve Temiz Üretim Enstitüsü
Endüstriyel Hizmet Sorumlusu

Bu rapor 4 sayfa olup, 2 asıl (1 asıl müşteriye, 1 asıl Enstitü arşivine) olarak hazırlanmıştır. | Sayfa 1/4

T.C. ÇEVRE VE ŞEHİRCİLİK BAKANLIĞI
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TÜBİTAK MAM

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Rapor no	: 45924173 -125.05- 1127 / 4083		
Talep eden	: Erbaa Belediyesi		
Talep edenin adresi	: OSB Erbaa Atıksu Arıtma Tesisi Erbaa / TOKAT		
Örnek	: Erbaa OSB AAT Dekantör Çıkışı Çamuru	**Son kullanım tarihi**	:
Örnek sayısı	: 1	**Enstitü örnek kayıt no**	: 168/555/1
Örneğin getiriliş şekli	: Kargo ile.	**Kabul tarihi ve saati**	: 24/05/2016
Kabul anındaki durumu	: Cam kap	**Analiz tarihi**	: 24/05/2016 – 20/06/2016

Şahit numune bilgileri : ( ) Müşteriye iade (x) Şahit numune mevcut () Şahit numune alınmamıştır

Erbaa Belediyesi OSB AAT Dekantör Çıkışı Çamuru örneği analizi konulu talep yazısı TÜBİTAK Marmara Araştırma Merkezine gelmiş ve 3225 evrak numarası ile kayıt altına alınmıştır.

Analiz talep yazısı ekinde, Artek Mühendislik teknik elemanı tarafından, 18/05/2016 tarihinde, saat 17:00' de, OSB AAT dekantör çıkışından alındığı, mühürlendiği (Mühür no: 6276) belirtilen, örnek alma tutanağı ile birlikte bir (1) adet arıtma çamuru örneği mühürlü olarak TÜBİTAK MAM Çevre ve Temiz Üretim Enstitüsü' ne gelmiştir.

Talep yazısında OSB AAT Dekantör Çıkışı Çamuru örneğinin "Atıkların Düzenli Depolanmasına Dair Yönetmelik" Ek–2 Atıkların Düzenli Depolanabilmesi için Kabul Kriterleri kirlilik ve ilave parametreler doğrultusunda analiz edilmesi ve depolanma sınıfının belirlenmesi talep edilmiştir.

OSB AAT Dekantör Çıkışı Çamuru örneği eluatı TS EN 12457 – 4 standardına uygun olarak analize hazırlanmıştır.

Hazırlanan, OSB AAT Dekantör Çıkışı Çamuru örneği eluatı ve orijinal OSB AAT Dekantör Çıkışı Çamuru örneğinin analizi neticesinde elde edilen değerler, ADDDY / Ek - 2' de verilen limit değerleri mukayese edilmiş Tablo 1' de, analiz yöntemleri ise Tablo 2' de verilmiştir.

Açıklamalar:

Sorumlu İmzalar: 51381 53688

Bu rapor ve sonuçları talepte bulunan kuruluş ve müşterilerince ticaret ve reklam amaçları ile kullanılamaz. Rapor tamamen veya kısmen çoğaltılamaz/yayınlanamaz.
Raporda (*) işaretli analizler akredite edilmiştir.
İmzasız analiz raporları geçersizdir.

Bu rapor 4 sayfa olup, 2 asıl (1 asıl müşteriye, 1 asıl Enstitü arşivine) olarak hazırlanmıştır. Sayfa 2/4

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Rapor no: 45924173 -125.05- 1127/ 4083

Tablo 1: Erbaa Belediyesi OSB AAT Dekantör Çıkışı Çamuru Örneği Analiz Sonuçları ve ADDDY/ Ek–2 Limit Değeri

Parametre / Örnek	Erbaa OSB AAT Dekantör Çıkış Çamuru	ADDDY/ Ek–2		
		A) İnert atıkların Depolanabilme Kriterleri III. Sınıf Depolama Tesisleri İçin Sınır Değerler	B) Tehlikesiz atıkların Depolanabilme Kriterleri II. Sınıf Depolama Tesisleri İçin Sınır Değerler	C) Tehlikeli atıkların Depolanabilme Kriterleri I.Sınıf Depolama Tesisleri İçin Sınır Değerler
Eluate Analiz Parametreleri				
(*)Arsenik (As mg/l)	0,0008	0,05	0,2	2,5
(*)Baryum (Ba mg/l)	0,033	2	10	30
(*)Kadmiyum (Cd mg/l)	0,0001	0,004	0,1	0,5
(*)Krom (Cr mg/l)	0,008	0,05	1	7
(*)Bakır (Cu mg/l)	0,037	0,2	5	10
(*)Cıva (Hg mg/l)	< 0,00013	0,001	0,02	0,2
(*)Molibden (Mo mg/l)	< 0,005	0,05	1	3
(*)Nikel (Ni mg/l)	0,023	0,04	1	4
(*)Kurşun (Pb mg/l)	0,004	0,05	1	5
(*)Antimon (Sb mg/l)	0,0008	0,006	0,07	0,5
(*)Selenyum (Se mg/l)	0,0013	0,01	0,05	0,7
(*)Çinko (Zn mg/l)	0,138	0,4	5	20
(*)Klorür (Cl^- mg/l)	34,5	80	1500	2500
(*)Florür (F^- mg/l)	< 0,2	1	15	50
(*)Sülfat ($SO_4^=$ mg/l)	2,03	100	2000	5000
(*)Çözünmüş Organik Karbon (ÇOK mg/l)	330	50	80	100
(*)Toplam Çözünen Katı Madde (TÇKM mg/l)	2484	400	6000	10000
(*)Fenoller (C_6H_5OH mg/l	0,59	0,1		
Orijinal Atık Analiz Parametreleri				
(*)Toplam Organik Karbon (TOK mg/kg)	65,63	250000	% 25	
(*)BTEX (mg/kg)	< 0,5	6		
(*)PCBs (mg/kg)	< 0,1	1		
(*)Mineral Yağ (mg/kg)	977	500		
(*)Yanma Kaybı (%)	67,38			100000 (%10)
(*) Kuru madde Miktarı (%)	22,63	30	---	---
(*) Nem (%)	77,37	70		

Açıklamalar:

Sorumlu İmzalar: 51381 53688

Bu rapor ve sonuçları talepte bulunan kuruluş ve müşterilerince ticaret ve reklam amaçları ile kullanılamaz. Rapor tamamen veya kısmen çoğaltılamaz/yayınlanamaz.
Raporda (*) işaretli analizler akredite edilmiştir.
İmzasız analiz raporları geçersizdir.

Bu rapor 4 sayfa olup, 2 asıl (1 asıl müşteriye, 1 asıl Enstitü arşivine) olarak hazırlanmıştır. Sayfa 3/4

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TÜBİTAK MAM

AB-0390-T
06 - 16

Rapor no: 45924173 -125.05- 1127/ 4083

Tablo 2: ADDDY/ Ek–2 Analiz Parametreleri ve Analiz Yöntemleri

Parametre	Analiz Yöntemleri
Eluate Analiz Parametreleri	
(*)Arsenik (As mg/l), (*)Baryum (Ba mg/l), (*)Kadmiyum (Cd mg/l), (*)Krom (Cr mg/l), (*)Bakır (Cu mg/l), (*)Molibden (Mo mg/l), (*)Nikel (Ni mg/l), (*)Kurşun (Pb mg/l), (*)Antimon (Sb mg/l), (*)Selenyum (Se mg/l),(*)Çinko (Zn mg/l)	EPA 6020 A (ICP – MS)
(*)Cıva (Hg mg/l)	TS EN ISO 12846
(*)Klorür (Cl^- mg/l), (*)Sülfat ($SO_4^=$ mg/l)	SM- 4110 B İyon Kromatografi
(*)Florür (F^- mg/l)	4500 – F- C İyon Seçici Elektrot
(*)Çözünmüş Organik Karbon (ÇOK mg/l)	SM- 5310 B Yük. Sıc. yakma
(*)Toplam Çözünen Katılar (TÇM mg/l)	SM- 2540 C Gravimetrik
(*)Fenoller (C_6H_5OH mg/l	SM- 5530 D Fotometrik
Orijinal Atık Analiz Parametreleri	
(*)Toplam Organik Karbon (TOK mg/ kg)	TS 12089 EN 13137
(*)BTEX (benzen, toluen,etilbenzen ve xylenes) (mg/kg)	EPA 8015 C
(*)PCBs (mg/kg)	ISO 10382
(*)Mineral Yağ	EN 14039:2004 GC
(*)Yanma Kaybı (%)	DS/EN 12879
(*) Kuru Madde Miktarı (%)	TS 9546 EN 12280

SM: Standard Methods For the Examination of Water and Wastewater, 22 th Edition (2012)

Analiz Sonuçlarının Değerlendirilmesi

Erbaa Belediyesi OSB AAT Dekantör Çıkışı Çamuru örneğinin analizi neticesinde, eluatta fenol, orijinal örnekte Mineral Yağ, Nem ve Yanma Kaybı parametreleri değerlerinin ADDDY/ Ek–2; A, B, C' de verilen Depolama Tesisleri sınır değerlerine uygun olmadığı belirlenmiştir.

Yönetmelik Geçici Madde 4: (1) Atık Yönetimi Genel Genel Esaslarına İlişkin Yönetmeliğin ek-IV' ünde tehlikesiz atık olarak sınıflandırılan arıtma çamurlarının, ek-2' de verilen diğer tüm parametreleri sağlaması, ağırlıkça en az %30 kuru madde ihtiva etmesi ve kötü kokunun giderilmesi kaydıyla II. Sınıf düzenli depolama alanında ayrı bir lota depolanmasında 1/1/2020 tarihine kadar Çözünmüş Organik Karbon (ÇOK) limit değerine uygunluk aranmaz.

Açıklamalar:

Sorumlu İmzalar: 51381 53688

Bu rapor ve sonuçları talepte bulunan kuruluş ve müşterilerince ticaret ve reklam amaçları ile kullanılamaz. Rapor tamamen veya kısmen çoğaltılamaz/yayınlanamaz.
Raporda (*) işaretli analizler akredite edilmiştir.
İmzasız analiz raporları geçersizdir.

Bu rapor 4 sayfa olup, 2 asıl (1 asıl müşteriye, 1 asıl Enstitü arşivine) olarak hazırlanmıştır. Sayfa 4/4

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APPENDIX-F
Photos of the Sub-project Area

Erbaa OIZ Entrance Gate

Waste Bins in Erbaa WWTP Administrative Building

Laboratory in Erbaa WWTP Administrative Building

Continuous Wastewater Monitoring Station in Erbaa WWTP Area

Inside the Continuous Wastewater Monitoring Station in Erbaa WWTP Area

Hazardous Waste Temporary Storage Area in Erbaa WWTP Area

Waste Sludge Temporary Storage Area in the Sub-project Area

Erbaa WWTP of Anaerobic and Aeration Tanks

Discharge line of the Erbaa WWTP

Discharge Point of the Existing Plant to Kelkit Stream (Also to be for the Sub-project)

Sub-project Area and Kelkit Stream Remote View

Waste Sludge Temporary Storage Area in the Sub-project Area on 13.12.2024

APPENDIX-G
The Handover Decision of the Sub-project Area

KARAR 97

Karar Sıra No. 79	Karara esas olan evrakın			Mevzuun mahiyeti ve hülasası
	Tarih	No.	Nereden gönderildiği	Erbaa OSB.deki Arıtma Tesisi Yerinin Bedelsiz Devri

Toplantı tarihi 29/05/2006 günü

Başkanın adı ve soyadı : Sayın Valim Erdoğan GÜRBÜZ

Azaların adı ve soyadı : Sabri BAŞKÖY, Ahmet YENİHAN, Halil BAŞAK
O.Uğur AKIN, Erkan YAZICI, Turgay KAYA, Bekir DUMAN, Adnan DOĞAN
Mustafa KÖKLÜ, Mehmet ŞAHİN, Kemal BAYRAKTAR

KARARIN METNİ

Müteşebbis Heyetimiz Sayın Valim, Erdoğan GÜRBÜZ'ün başkanlığında aşağıdaki hususları görüşmek üzere toplanmıştır

1- Erbaa Belediyesi ile Erbaa Organize Sanayi Bölgesi Yönetim Kurulu Başkan Vekili arasında 27.06.2005 tarihinde yapılan protokolün yapım ve işletme başlığı altındaki 1. maddesince ilçemiz eski Erek yeni Kelkit Mahallesi'nde Erbaa Organize Sanayi Bölgesi Yönetim Kurulu uhdesinde bulunan Organize Sanayi Bölgesinde 31 L 11a - 32 L 111c imar paftasında 440 ada 1-69 parseldeki 65.000 m² 'lik alanda Erbaa Belediye Başkanlığı Atıksu Arıtma Tesisi kurmayı ve işletmeyi taahhüt eder.

Buna karşılık Organize Sanayi Bölgesi Yönetim Kurulu Başkanlığı OSB. İmar Planlarında arıtma tesisi olarak gösterilen yerin kullanım hakkını bedelsiz olarak Erbaa Belediyesine devreder. Bununla birlikte Erbaa Organize Sanayi Bölgesinde bulunan Sanayi Kuruluşları bu tesisten istifade eder.

Endüstriyel atık üreten sanayi kuruluşları ise kendi ön arıtmalarını yaptıktan sonra bu tesisten yararlanabilir şeklinde düzenlenen protokol proje dosyasına eklenerek AB Merkezi Finans İhale Birimine gönderilmiş ve hibe almaya hak kazanmıştır. Ancak MFİB Arıtma Tesisi kurulacak alanın tapusunun devrini son sözleşme tarihi olan 31 Mayıs 2006 tarihine kadar

SULUN

DEFTERİ

98

Karar Sıra No.	Karara esas olan evrakın Tarih	No.	Nereden gönderildiği	Mevzuun mahiyeti ve hülasası

Toplantı tarihi ...../...../19 ..... günü

Başkanın adı ve soyadı :

Azaların adı ve soyadı :

KARARIN METNİ

talep etmektedir.

Süre dolduğundan dolayı 440 ada 1 nolu parselden 48.000/586169 m²lik hissenin 440 ada 69 nolu parselden 17.000/59183 m²lik toplamda 65.000 m²lik alanın hisseli satışı yapılarak Erbaa Belediye Başkanlığı adına bedelsiz devir yapılması;

Sözleşme imzalandıktan sonra 440 ada 1 nolu parsel ile 440 ada 69 nolu parsellerin tevhid ve parselasyon işlemleri yapılarak arıtma tesisi kurulacak 65.000 m²lik alanın müstakil tapu haline dönüştürülerek Erbaa Belediyesine bedelsiz devredilmesine;

Mütteşebbis Heyetimizce karar verilmiştir.

Üye	Üye	Üye	Üye
Erdoğan GÜLEDİZ	Sabri BAŞKÖY	Ahmet YENİHAN	O. Uğur AKIN
Tokat Valisi	Erbaa Kaymakamı	Belediye Başkanı (Şehir dışında Katılamadı)	İl Özel İdare Müdürü (Yıllık izinli Katılamadı)
Başkan V.	Üye	Üye	Üye
Halil BAŞAK	Erkan YAZICI, Kaymakamlık Yazı İşl. Müdürü	Turgay KAYA İlçe Özel İd. Müd.	Bekir KUMAN İl Genel Mec. Üyesi
Üye	Üye	Üye	Üye
Mehmet ŞAHİN	Mustafa KÖKLÜ	Adnan DOĞAN	Kemal BAYRAKÇAR
İl Gen. Meclis Üyesi	İl Gen. Mec. Üyesi (Turda dışında Katılamadı)	İl Gen. Mec. Üyesi	Belediye Yazıcısı

APPENDIX-H
Chance Find Procedure of the Sub-project

ERBAA EXISTING WASTEWATER TREATMENT PLANT CAPACITY EXPANSION PROJECT

CHANCE FIND PROCEDURE

November 2024

INTRODUCTION

This document presents the Chance Find Procedure for “Erbaa Existing Wastewater Treatment Plant Capacity Expansion Project" (hereinafter referred to as 'sub-project') and is prepared by 2U1K Engineering and Consultancy Inc. for " Erbaa Municipality (EM) " (hereinafter referred to as 'Borrower / sub-project owner').

This document is intended to avoid potential impacts of the sub-project on any cultural heritage during land preparation works, including excavation. This Procedure is a part of the general package as an annex to the Environmental and Social Management Plan (ESMP) developed for the sub-project.

SCOPE

Types of Cultural Heritage Covered by This Procedure

Tangible Cultural Heritage

Tangible (physical) cultural heritage refers to movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance.

ROLES AND RESPONSIBILITIES

Roles	Responsibilities
Contractors	• Compliance with the Chance Find Procedure provided in contractor agreements, • Provide appropriate training and information to the worksite personnel who work in the sub-projects and who may disturb the cultural heritage so that they understand their responsibilities for cultural heritage.
Project Owner	• Ensure compliance of the sub-project with the Project Standards and other requirements given in this procedure, • General responsibility for the scope and implementation of the procedure, • Development, monitoring and revision of this procedure, • Fulfilment of cultural heritage evaluation processes, • Ensure that the operations do not disturb cultural properties and sites without the approval of the relevant authority, • Investigation, reporting and monitoring of unauthorized damages to the worksite as well as of procedure violations, • Management of amendments to laws or policies, • Coordination with the organizations involved in the implementation and other stakeholders.
All Workers	• Learn about the Chance Find Procedure through induction training and any other training provided.

PROJECT STANDARDS

- Law on the Conservation of Cultural and Natural Properties (LCCNP) (No: 2863),

- Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention).

CHANCE FIND PROCEDURE

Initial Approach Adopted by the Contractor

- Action 1: Immediately stop all construction works in the vicinity of the chance find, in case of discovery of archaeological finds,
- Action 2: Immediately notify the project manager and/or environmental department,
- Action 3: Take photographs or make technical drawings,
- Action 4: Record the location of the location by keeping all remains in their position (without moving them);
- Action 5: Prevent damage to or loss of movable objects by encircling the area,
- Action 6: Contact an archaeologist from a local university for guidance,
- Action 7: Prepare the Chance Find Form (Annex 1).

Approach Adopted by the Archaeologist

Based on the description of the find, the archaeologist will make recommendations on actions to be taken by phone/e-mail or visit. The sub-project team will take into account the following possible strategies, if the archaeologist(s) confirm(s) the presence of archaeological finds/remains/sites:

Strategy 1: Avoidance by partial or full sub-project redesign or relocation

In case of any archaeological find or discovery, the sub-project owner will provide the relevant information to authorities. This responsibility will apply even if the sub-project is redesigned or relocated. In any case, the relevant governmental body will be informed of the archaeological find or discovery.

Strategy 2: Implementation of worksite protection measures

This option includes the implementation of site protection measures such as fencing or blockage. As per LCCNP No. 2863, any archaeological find is the property of the Republic of Türkiye, and governmental bodies will decide on the geographical scope and implementation of site protection measures.

Strategy 3: Rescue or emergency excavation

If the sub-project owner fails to relocate or redesign the sub-project, this may require rescue or emergency excavation works. If notification is stipulated by LCCNP, an application will be lodged to governmental bodies. If an official application is lodged, the relevant Regional Board will be allowed to make a decision.

After the permit is obtained, archaeological excavations will be performed with the attendance of scientific consultants from the archaeological departments of universities. Following the

completion of archaeological excavations, the results will be submitted to relevant governmental bodies for the final decision to be taken for the progress of the sub-project.

Procedure for the Discovery of Potential Human Remains

Identification of human remains is very clear in terms of graves or burial sites. If a grave or burial site is found, the procedures to be followed are not different from the procedure applicable to archaeological finds as per Article 6 of LCCNP. Modern burials or forensic human remains will not be addressed within the scope of LCCNP.

KEY PERFORMANCE INDICATORS

The key performance indicators to be used during the implementation of this Procedure are set out below.

Table 1.1. Key Performance Indicators (KPIs)

No	KPIs	Target	Monitoring Measure
1	Non-conformities reported during the year with respect to key management controls identified in this procedure	Minimization of reported non-conformities, aiming at zero	Database Reporting Inspection Reports
2	Number of complaints lodged by local communities during the year regarding cultural heritages	Investigation of complaints about cultural heritage (disrespect, destruction, removal, sale of artefacts) and fulfilment of relevant actions. Provision of prompt response to complaints from local communities regarding the misbehaviour of personnel regarding cultural properties.	Database Grievance Mechanism Records Reporting

REPORTING

Contractor will comply with reporting requirements including chance finds defined in site-specific ESMP (contractor will develop monthly and quarterly monitoring reports and submit to EM through supervision consultant; EM will examine submit the reports to ILBANK quarterly (and monthly if requested by ILBANK); ILBANK will inform the World Bank by providing regular semi-annual monitoring reports.

ANNEX – 1 Sample Chance Find Form

Place:	**Chance Find No:**	**Date:**
Location Data: **Coordination:** **Elevation:** **Brief Area Description:**		
Chance Type:	[⬚]Archaeological Items [⬚]Metal Finds [⬚]Terracotta Finds [⬚]Pottery Shards [⬚]Glass Finds	[⬚]Sculpture etc. [⬚]Human / Animal Bone [⬚]Unidentified
Temporary Measures		
Photograph		
Discoverer's Name-Last Name:		
Signature:		

APPENDIX-I
Common OHS Risks Areas and General Mitigation Measures

Risk Area	General Mitigation Measure
WORKING AT HEIGHTS Working from heights is the most common cause of fatal injuries to workers.	▪ All employees who have received a certificate from the workplace physician that they can work at height need suitable training in working on different pieces of equipment, and such work must be planned appropriately. Safety approaches and precautions should be adopted, such as: Where practical, avoid the need to work at height. ▪ Put collective measures and implement a ''Working at Height Permit System where working at height can't be avoided to prevent falls. Such as the use of equipment to provide an extra level of safety to reduce the risk of a fall – according to ''Occupational Health and Safety Regulation in Construction Works', a scaffold with a double guard-rail and kick plate edge protection is needed. Minimize the consequences of a fall by providing a safety net. ▪ Wear the necessary Personal Protective Equipment (PPE) such as a safety harness.
MOVING OBJECTS A construction site is an ever-changing environment, with many objects moving around, often on uneven terrain. Delivery vehicles, heavy plant machinery and overhead lifting equipment pose a hazard to site workers and operators.	▪ Sites should always be planned to manage plant and pedestrian interface where physical barriers and suitable segregation is in place. ▪ To reduce risks, workers should: ▪ Never stand behind large operating plant machinery (sweeping area) and blind point, never stand under suspended loads. ▪ If they do not have lights or sound warnings, they should not be allowed to work in the sub-project area. Periodic checks of the construction machines should be up to date. ▪ Always ensure you have a banksman to guide plant vehicles when reversing or manoeuvring on a public road. ▪ Always wear PPE such as a hard hat and high visibility jacket to ensure he/she is seen.
SLIPS, TRIPS, AND FALLS Slips, trips, and falls can happen in almost any environment, and, in construction, there are more common incidents of these kinds of injuries than in other industries. The HSE reports that around a quarter of injuries reported are due to Slips, Trips and Falls. As construction sites often have uneven terrain and the typography is forever changing, it is unsurprising that slips, trips, and falls are a common hazard. HSE reports that several thousand construction workers are injured every year following a slip or trip. Most of these could be avoided by effectively managing working areas and access routes, such as excavations and footpaths.	Managers and Site supervisor on construction sites must effectively manage the site so that workers can move around it safely. Risks should always be reported and sorted to reduce the chances of injury. To reduce harm due to Slips, Trips and Falls; ▪ Keep work and storage areas tidy and designate specific areas for waste collection. ▪ Where surfaces are slippery with mud, they should be treated with gravel. ▪ Where surfaces are slippery with ice, they should be treated with grit. ▪ All slippery areas should be signposted and slip resistant footwear should be worn
NOISE Working around loud, excessive, and repetitive noise can cause long term hearing problems, such as deafness. Noise can also be a dangerous	A comprehensive noise risk assessment should be carried out where the risk assessment has highlighted a noise hazard with the works to be undertaken.

Risk Area	General Mitigation Measure
distraction and may distract the worker from the task at hand, which can cause accidents.	
HAND ARM VIBRATION SYNDROME HAVS (Hand Arm Vibration Syndrome) is a debilitating and painful disease of the blood vessels, nerves, and joints. It is typically caused by the continued use of hand-held power tools, including vibratory power tools and ground working equipment. Some of the workers at risk of developing HAVS, resulting in the inability to do fine work, and cold temperatures can trigger painful attacks on the fingers. Once the damage is done, it is permanent.	HAVS is preventable if construction works are correctly planned to minimize exposure to vibration during work and workers are monitored are given appropriate protection when using vibrating tools and equipment. Workers exposed to vibration should be planned to work by changing at certain intervals.
MATERIAL HANDLING – MANUAL AND BY EQUIPMENT Materials and equipment are constantly being lifted and moved around construction sites, whether manually or by equipment. Either way, handling carries a degree of risk.	▪ For manual handling, training must be provided to ensure employees can lift and carry materials safely. ▪ For lifting equipment handling, there are lots of risks, especially when operating lifting equipment on uneven ground. If an employee is required to use lifting equipment, they must be trained to operate the equipment safely, and a regular test should be taken to check their ability to use the equipment. Always check your plant is fit for use and that it's certificated and inspected before use.
EXCAVATIONS Incidents commonly occur within excavations on construction sites, such as an unsupported excavation collapsing with workers inside.	Common safety measures that need to be put in place according to ''Occupational Health and Safety Regulation in Construction Works'' to prevent excavations from collapse and to reduce the risk of operatives falling into excavations: ▪ Never work in an unsupported excavation. ▪ Shoring or terracing application will also be used. ▪ Ensure an excavation is supported and fully secure. ▪ Regularly inspect the excavation both before and during the work shift. ▪ Always check that the edge protection of an excavation is 100% intact before you enter it. ▪ Always maintain a safe distance from the edge of all deep excavations.
ELECTRICITY Most of the accidents arise from contact with overhead or underground power cables and electrical equipment/machinery.	In civil engineering, strikes to services are common. The strikes happen when excavation is undertaken without adequately checking the ground for existing services. Consequently, incidents can easily be avoided by using technology such as CAT and Genny scanning equipment to scan an area and foresee potential services and prevent service strikes.
AIRBORNE FIBRES AND MATERIALS Construction dust is often an invisible, fine, and toxic mixture of hazardous materials and fibres. This can damage the lungs and lead to chronic obstructive pulmonary disease, asthma, silicosis, and other such diseases.	All employers have to ensure suitably chosen protective equipment is used.
SITE SECURITY	Always make sure that boundary safety fencing is 100% secure and there are no openings for the public to access.

Risk Area	General Mitigation Measure
Having inadequate security around a construction site may danger the public and lead to an unnecessary incident	
FIRE PROTECTION RISK Despite the presence of firefighting equipment, safe storage of chemicals, personnel training, controlled ignition, regular cleaning, and inspection measures, the risk of fire can increase if proper protection is not ensured.	▪ According to related regulation fire-fighting equipment will be available on site (including but not limited to, rubber beaters when working in grass/bush areas, at least one fire extinguisher of the appropriate type when welding or other 'hot' activities are undertaken); ▪ Surplus chemicals/flammable materials needed in the sub-project area will not be stacked and these chemicals will be stored in safe warehouses. Uncontrolled storage of chemicals increases the danger of fire and sabotage. ▪ All employees will be trained about the fire risks and how to deal with any fires in case occurs. Fires won't be lit for any reason. ▪ Debris will be cleaned regularly. ▪ Work areas and buildings will be inspected regularly to detect and eliminate potential fire sources. ▪ Smoking will be allowed only in designated smoking areas. Cigarette butts will not be thrown to the ground.