



September 2017

LAPSEKİ GOLD AND SILVER MINE AND PROCESSING PROJECT

SUPPLEMENTARY INFORMATION PACKAGE - LAPSEKİ GOLD and SILVER MINE PROJECT

Submitted to:

TÜMAD Madencilik San. Tic. A.Ş.

Buğday Street No:9

Çankaya / Ankara / TURKEY

REPORT



Report Number 1670300





Study Limitations

This report has been prepared based on the existing EIA Report and on the information provided to Golder by the Investor. Golder cannot confirm the accuracy of the information provided by third parties during this due diligence process.

IMPORTANT: This section should be read before reliance is placed on any of the opinions, advice, recommendations or conclusions herein set out.

- a) The purpose of this report was to undertake a Supplementary Investment Package (SIP) pursuant to the appointment of Golder to act as Consultant.
- b) Except for TMAD Madencilik Sanayi ve Ticaret A.. ("Investor") and Lenders (existing and future), any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third parties. Should additional parties require reliance on this report, written authorization from Golder will be required, Golder disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. No duty is undertaken nor warranty nor representation made to any party in respect of the opinions, advices, recommendations or conclusions herein set out.
- c) The report is based on data and information collected during the SIP of the Lapseki mine development Project, conducted by Golder. It is based solely on a review of information and data obtained by the Investor as described in this report, and discussion with representatives of the Investor, as reported herein. Except as otherwise may be requested, Golder disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to Golder after the time during which Golder conducted the SIP.
- d) No soil, water, liquid, gas, product, exposure, OHS or chemical sampling or analytical testing or social survey or social questionnaire at or in the vicinity of the Project was conducted as part of this SIP.
- e) In evaluating the Project, Golder has relied in good faith on information provided by other individuals noted in this report. Golder has assumed that the information provided is factual and accurate. In addition, the findings in this report are based, to a large degree, upon information provided by the Investor. Golder accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.
- f) Golder makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation. These interpretations may change over time, thus the client should review these issues with appropriate legal counsel.
- g) In the Conclusions section of this report and in the Executive Summary, Golder has set out its key findings and provided a summary and overview of its advice, opinions, and recommendations. However, other parts of this report will often indicate limitations of the information obtained by Golder and therefore any advice, opinions or recommendations set out in the Conclusions section and in the Executive Summary should not to be relied upon until considered in the context of the entire report.
- h) The baseline conditions of the physical environment for the Lapseki Project has been presented through desktop studies and completed field measurements. In relation to the definition of the baseline conditions of physical environment along the supply and logistics corridor mainly literature and desktop data have been used to represent the conditions before the start of the project associated activities considering the fact that;



LAPSEKI PROJECT - SIP

- 1) Power line construction has been started and the baseline conditions before the start of the project associated activities can not anymore be established
- 2) New road construction will not be performed (except some renovation and repairs on the existing public roads) therefore the baseline conditions will not be changed before the start of the project associated activities

Water supply line between Lapseki and the Project site has already constructed. Another water supply line will not be constructed for the project



Table of Contents

1	INTRODUCTION.....	3
1.1	Project Description.....	5
1.2	Project History	5
1.3	Project Site	6
1.3.1	General Characteristics.....	6
1.3.2	Mining License Area.....	8
1.3.3	EIA Permitted Area	8
1.4	Project Components	9
1.4.1	Process Description	10
1.4.2	Pits.....	12
1.4.3	Dry Stack Tailings Storage Area	13
1.4.4	On Site Infrastructure Facilities	15
1.5	Permitting and Land Take.....	16
1.6	Supply and Logistics Corridor	20
1.6.1	Electricity Transmission Line.....	20
1.6.2	Access Roads	22
1.6.3	Water Supply	23
1.7	Equipment and Materials	24
2	HAZARDOUS MATERIALS	25
3	WATER MANAGEMENT	26
3.1	Contact Water Management.....	29
3.2	Open Pits.....	35
3.3	Waste Rock Dump.....	35
3.4	Dry Tailings Storage Facility	37
3.5	Sanitary Wastewater.....	37
4	WASTE MANAGEMENT	37
5	CLOSURE.....	46
6	IMPACT ASSESSMENT METHODOLOGY	46
7	ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT SCOPE.....	51
7.1	Temporal Scope	51



7.2	Spatial Scope.....	52
7.3	Study Areas	52
7.3.1	Environmental study area	52
7.3.2	Social Study Area.....	56
8	SUMMARY OF PROJECT IMPACT ASSESSMENT FINDINGS	56
8.1	Physical Impact Assessment Findings.....	56
8.1.1	Baseline	56
8.1.1.1	Soils, Geology and Topography	57
8.1.1.2	Climate and Meteorology	57
8.1.1.3	Air Quality and Noise	58
8.1.1.4	Hydrology	60
8.1.1.4.1	Hydrologic Characteristics of the Region	60
8.1.1.4.2	Streams	63
8.1.1.4.3	Flow Measurements	64
8.1.1.4.4	Surface Water Quality	65
8.1.1.5	Hydrogeology	67
8.1.1.5.1	Observation Wells	67
8.1.1.5.2	Groundwater Quality	69
8.1.1.6	Geochemistry – Acid Rock Drainage	70
8.1.1.7	Traffic.....	76
8.1.1.8	Conclusion	79
8.1.2	Impact assessment	80
8.1.2.1	Impact Factors	80
8.1.2.2	Soil and Topography.....	81
8.1.2.3	Air Quality	81
8.1.2.4	Noise and Vibration	83
8.1.2.5	Traffic.....	83
8.1.2.6	Water Resources	84
8.1.2.6.1	Power Line Route.....	84
8.1.2.6.2	Mine Site Study Area	84
8.1.2.6.3	Impact assessment	86
8.1.2.6.3.1	Reduction of surface water quality and quantity.....	87
8.1.2.6.3.2	Reduction of Groundwater Quality and Quantity.....	89



8.1.2.6.4	Impact assessment	1
8.1.2.7	Mine Closure Management.....	1
8.1.2.8	Cumulative Impact Assessment	5
8.1.2.9	Conclusions	6
8.1.3	Mitigation Measures	6
8.1.4	Monitoring actions	9
8.1.5	ESAP items.....	9
8.2	Biological Impact Assessment Findings	9
8.2.1	Impact assessment	11
8.2.1.1	Construction Phase	12
8.2.1.2	Operation Phase.....	12
8.2.1.3	Decommissioning and Closure	13
8.2.1.4	No net Loss	14
8.2.2	Mitigation measures	14
8.2.2.1	Construction Phase	14
8.2.2.2	Operation Phase.....	16
8.2.3	Monitoring actions	17
8.2.3.1	Construction Phase	17
8.2.3.2	Operation Phase.....	18
8.2.4	ESAP items.....	19
8.3	Social Impact Assessment Findings	19
8.3.1	Baseline Studies	19
8.3.2	Impact Assessment Findings	21
8.3.3	Mitigation Measures	30
8.3.4	Monitoring Actions.....	30
8.3.5	ESAP items.....	30

TABLES

Table 1: Project Schedule-Summary.....	6
Table 2: Details of License Areas numbered 58380 and 58467	8
Table 3: Distribution of Lapseki Project's Units by Polygons.....	9
Table 4: Key Outcomes-Gold Production	12
Table 5: Key Outcomes – Silver Production.....	12
Table 6: Characteristics of HDPE Geomembrane	14



Table 7: Technical Characteristics of Geotextile	15
Table 8: Technical Characteristics of Geo-synthetic Clay Cover.....	15
Table 9 Facilities Area Sizes	16
Table 10 Land Use According to the EIA Report.....	17
Table 11 Issued Permits.....	20
Table 12: List of Vehicles and Equipment to be used during Land Preparation and Construction Phases	24
Table 13: List of Vehicles and Equipment to be used during Operation Phase:.....	25
Table 14 Contact and non-contact water volumes and percentages of each micro-basin during the operation period	27
Table 15 Standards for Discharge of Waste Water to Receiving Environment	29
Table 16: Comparison of Water Chemistry Values expected to occur according to the Geochemical Model Results in the Project Pits, Leach, and Mine Waste Areas and the Project Standards	30
Table 17 Kovanlık Stream baseline parameters, expected contact water quality at the main settling pond and the trigger limits for the Kovanlık Stream.....	32
Table 18: Annual Contact Water Volumes expected at each Pit during the Operation Period.	33
Table 19: Kestanelik S-Damar Quarry Excavation Ratios	36
Table 20: Standards for Discharge Standards for Domestic Wastewater	37
Table 21: Hazardous Waste Originated from the Facility Codes, Waste Code, and Areas of Activity.....	39
Table 22: Hazardous Waste Codes and Estimated Amounts of Wastes.....	41
The control tools for Mineral and Process Wastes are described in the following table.	41
Table 23: Control Tools for Mineral and Process Wastes	41
Table 24: Control Tools for Non-mineral waste	43
Table 25: Predicting significance of effects	49
The scale of social impacts is therefore assessed in this study according to the following criteria;	49
Table 26: Social Impact Assessment Criteria	49
Table 27: Physical Environmental Components Study Area	54
Table 28: Biodiversity Study Area	55
Table 29: Social Study Area.....	56
Table 30: Site Data collection.....	58
Table 31. Background Noise Measurement Results	59
Table 32 Maximum Flow Measurements of Micro Basins in the Project Site	64
Table 33 ABA results and evaluation of static test samples (EIA report)	72
Table 34 Updated contact water quality estimates of the Project facilities including the pits, WRD and the contact water collection pond.....	74
Table 35. Traffic Load Results from Two Measurement Points Nearest to the Activity Area.....	77
Table 36: 24 Hour Traffic Count performed on 18.01.2017	77
Table 37 2016 Statistics on Traffic Accidents the Province of Çanakkale.....	79
Table 38 Summary of Physical Component Sensitivities	79



Table 39: Dust Concentrations in the Sensitive Receptors without control measures.....	81
Table 40 Expected Vibration Levels at the Nearest Sensitive Receiving Points to the Mines	83
Table 41: Information of Traffic Load Increase	84
Table 42: Key sensitive water receptors	86
Table 44: Mine Closure Objectives and Key Approaches	1
Table 45: Commitments within the Turkish EIA.....	2
Table 46: Estimation of Significance of the Impact.....	6
Table 47: EUNIS habitat types present in the EIA area and in the LSA	11
Table 48: Overall residual impacts on PBF and CH during construction	12
Table 49: Overall residual impacts on PBF and CH during operation	13
Main features of the socioeconomic conditions are:.....	19
Table 50: Summary of Socioeconomic baseline findings focusing on directly impacted settlements	19

FIGURES

Figure 1: Overview of Project Site	7
Figure 2: Settlement Areas located around the Project Site.....	7
Figure 3: Map of License Areas	8
Figure 4: Map of the EIA Area.....	9
Figure 5: Map of the Project Facilities Layout in EIA Permit Area	10
Figure 6: Process Flow Diagram	12
Figure 7: Ownership Status of the EIA Area and the Areas located near it.....	16
Figure 8 Land Use and Ownership in the Designated EIA Area.....	17
Figure 9: ETL Project Route	22
Figure 10: Project Access Road	23
Figure 11: Route of Water Pipeline to be used within the Project	24
Figure 12: Surface Water Diversion Plan	28
Figure 13: Non-contact water management flowsheet	28
Figure 14: Contact water management flowsheet	35
Figure 17: Study Areas.....	53
Figure 18: Study Areas with the Basin and Sub basins.....	54
Figure 19: Air and noise measurement locations	60
Figure 20: Bayramdere dam water protection area	62
Figure 21: Bayramdere dam water protection area	63
Figure 22: Micro-basins of the Project area.....	64
Figure 23: Surface water flow monitoring locations	65



Figure 24: Groundwater, surface water and drinking water monitoring sampling locations.....	67
Figure 25: Location map of groundwater monitoring wells	68
Figure 26: Groundwater elevation of groundwater monitoring wells (Spring 2015 – Winter 2016).....	68
Figure 27: Groundwater quality (pH, WAD Cyanide and Arsenic).....	69
Figure 28: Groundwater Model Boundary	70
Figure 29: Kestanelik (Kestanelik+SBX) and Karakovan (Karakovan I+Karakovan II) Static Test Samples, Distribution According to Mine Oxidation Classification (Red :Oxide zone, Yellow: Transition Zone, Green: Sulphur Zone, Blue: Static Test Sample Points.....	73
Figure 30: Indication of the Activity Area on the Site Location Map (Unscaled)	76
Figure 31: Traffic Load Map	77

APPENDICES

APPENDIX A

Environmental and Social Monitoring

APPENDIX B

COMMITMENT REGISTER



Abbreviations

The Project:	Lapseki Gold-Silver Mine and Processing Project
TÜMAD:	TÜMAD Madencilik San. ve Tic. A.Ş.
ABA:	Acid Base Analysis
CH:	Critical habitat
CR:	Critically Endangered Species
DPSIR:	Drivers-Pressures-State-Impact-Response
DSI:	State Hydraulic Works
DST:	Dry Stack Tailings
DSTW:	Dry Stack Tailings Waste
DTSF:	Dry Tailings Storage Facility
EBRD:	European Bank for Reconstruction and Development
EIA:	Environmental Impact Assessment
EN:	Endangered Species
ESAP:	Environmental and Social Action Plan
ESDD:	Environmental and Social Due Diligence
ESMMP:	Environmental and Social Management and Monitoring Plan
EUNIS:	European Nature Information System
FS:	Feasibility Study
GSC:	Geo-synthetic Clay Layer
HDPE:	High-density Polyethylene
HV:	High Voltage
ICMC:	International Cyanide Management Code
ICMI:	International Cyanide Management Institute
IFC:	International Finance Corporation
IPA:	Important Plant Area
İÖİ:	Special Provincial Administration
KBA:	Key Biodiversity Area
KHGB:	Union for Providing Services for Villages
LC:	Least Concern Species
LoM:	Life of Mine
LSA:	Local Study Area
MoEU:	Ministry of Environment and Urbanization



NAG:	Non-acid Generating
NAGpH:	Net Acid Generation Test
OHS:	Occupational Health and Safety
OTL:	Overhead Transmission Lines
PAG:	Potentially Acid Generating
PAP:	Project Affected Person
PBF:	Priority Biodiversity Features
PR:	Performance Requirements
PTT:	Turkish Post
SIA:	Social Impact Assessment
SWS:	Solid Waste Storage
TEİAŞ:	Turkish Electricity Transmission Company
TSF:	Total Surface Flow
UNEP:	United Nations Environment Programme
VU:	Vulnerable
WRA:	Whole Rock Analysis
WRD:	Waste Rock Dump



1 INTRODUCTION

This document is the Supplementary Information Package for the Lapseki Gold-Silver Mine and Processing Plant Project (the Project) that is planned to be established within the administrative boundaries of Şahin and Kocabaşlar Villages of Lapseki District in Çanakkale Province by TÛMAD Madencilik San. ve Tic. A.Ş. (TÛMAD).

The project is categorized as Category A in accordance with European Bank for Reconstruction and Development (EBRD) Requirements.

The project is seeking finance and this document is produced as a part of studies conducted to assess the Environmental and Social Impacts of the Project as per the EBRD Performance Requirements.

The EIA (Environmental Impact Assessment Report) has been approved by the Ministry of Environment and Urbanization (MoEU) on 14.August.2015 and activities at the Project Site have started with mobilization and the construction of some office buildings.

Project layout and designs were revised-optimized with the NI-43-101 compliant Feasibility study (FS) completed in September 2016. Since the FS was completed after the approval of the EIA report, there are various differences between the two documents/designs. The consent of (MoEU) was acquired on the design revisions. MoEU has provided the consent of the validity of the EIA positive decision with these changes and did not require additional impact assessment studies with the letter dated 26.May.2017.

The Environmental and Social Impact Assessment studies performed as part of the SIP disclosure package and presented in several reports include the feasibility changes after the EIA approval considering that;

1. Production capacity has not been changed thus the impact of feasibility changes on the outputs of air and noise modelling studies presented in EIA will be trivial and no new modelling study has been performed as part of the SIP and related studies. The Project has already defined an air and noise monitoring plan and grievance mechanism as part of the ESMS which will enable the Project to verify the modelling outputs through routine ambient air and noise measurements, take actions in case of non-compliance with Project Standards and respond to complaints of affected people.

2. Since the amount of land defined in the EIA to be acquired and the land use classifications is not changing with the feasibility changes, the social impact assessment used the land use descriptions and the amount of land to be acquired as it is stated in the EIA. The amount of land acquired for the diversion channels is 0.02 % of the total land acquisition area stated in the EIA. The forest permits have already been taken for this area.

3. The biological and critical habitat assessment scoped the freshwater habitat (of Kestanelik Creek) in the EIA area to be critical in the light of the presented information in the EIA and the further studies performed by local experts and thus did not include the diversion of the creek in the impact assessment. Field visits will be performed before the diversion Works starts to verify this conclusion.

4. The hydrogeological impact assessment performed as part of SIP has considered the feasibility design during the assessment process.

An Environmental and Social Due Diligence (ESDD) Study on the Project against EBRD Performance Requirements (PR) was completed in February 2017 and identified the following actions to be completed for the Project to have undergone a comprehensive Environmental and Social Impact Assessment (ESIA).;

- 1) Definition of the Study Area and the Associated Facilities according to EBRD PR1.
- 2) A Critical Habitat Assessment according to EBRD PR6 including the Study Area and Associated Facilities.
- 3) Social Impact Assessment according to EBRD PRs over the Project Study Area and Associated Facilities.



- 4) Assessment of impacts on water resources, identified as one of the major potential impacts of the Project on physical environment, according to EBRD PR 1 and 3 over the Project Study Area and Associated Facilities.
- 5) Summary of significant Project impacts on physical environmental components, other than water, over the Project Study Area and Associated Facilities., with reference to EIA findings where relevant and the additional studies conducted after completion of the EIA, in accordance with EBRD PR1.
- 6) Summary of significant Project impacts on biological components of the environment over the Project Study Area and Associated Facilities., with reference to EIA findings where relevant and the additional studies conducted after completion of the EIA, in accordance with PR1.
- 7) Environmental and Social Management and Monitoring Plan
- 8) Commitment Register including the commitments given in EIA and the commitments defined after the completion of the EIA study.
- 9) Non-Technical Summary
- 10) Preparation of the documentation on Management of Environmental and Social Impacts;
 - Air Quality Management Plan
 - Noise and Vibration Management Plan
 - Framework Biodiversity Action Plan
 - Environmental and Social Management System Framework
 - Community Health and Safety Security Management Plan
 - Contractor Management Plan
 - Cyanide Management Plan (Cyanide Code Compliant)
 - Emergency Action Plan
 - Explosive and Hazardous Materials Management Plan
 - Local Procurement Management Plan
 - Waste Management Plan
 - Traffic Management Plan
 - Labour Management Plan
 - Health and Safety Management Plan
 - Stakeholder Engagement Plan
 - Livelihood Restoration Framework
 - Community Development Framework
 - Water Resources Management Plan
 - Conceptual Mine Closure Framework
 - Cultural Heritage Management Plan

Among these actions, the following items are intended to be presented in this supplementary information package, which together with the EIA undertaken to national standards forms comprehensive ESIA ;

- 1) Definition of the Project Study Area and Associated Facilities.
- 2) A Critical Habitat Assessment according to EBRD PR6 requirement over the Project Study Area and Associated Facilities.



- 3) Social Impact Assessment over the Project Study Area and Associated Facilities.
- 4) Assessment of impacts on water resources, identified as one of the major potential impacts of the Project on physical environment, according to EBRD PR 1 and 3 over the Project Study Area and Associated Facilities.
- 5) Summary of significant Project impacts on physical environmental components, other than water, over the Project Study Area and Associated Facilities., with reference to EIA findings where relevant and the additional studies conducted after completion of the EIA, in accordance with EBRD PR1.
- 6) Summary of significant Project impacts on biological components of the environment over the Project Study Area and Associated Facilities., with reference to EIA findings where relevant and the additional studies conducted after completion of the EIA, in accordance with PR1.
- 7) Environmental and Social Management and Monitoring Plan.
- 8) Commitment Register including the commitments given in EIA and the commitments defined after the completion of the EIA study.
- 9) Non-Technical Summary.
- 10) Stakeholder Engagement Plan
- 11) Environmental and Social Action Plan

For the preparation of the package the existing project documentation namely:

- Project Environmental Impact Assessment;
- Project Description File on Power Transmission Line;
- NI-43-101 compliant Feasibility study (FS); and
- Record of Public Participation Meeting conducted during the EIA process,

have been used and supplemented by additional baseline surveys and literature reviews.

1.1 Project Description

TÜMAD Madencilik San. ve Tic. A.Ş. (TÜMAD) plans to establish the Lapseki Gold-Silver Mine and Processing Plant Project (the Lapseki Project, or the Project) within the administrative boundaries of the Şahin and Kocabaşlar Villages of the Lapseki District in the Province of Çanakkale.

Within the scope of the Project, gold and silver minerals will be obtained from 4 pits (namely the Karakovan, Karatepe, K-Zone and SBX Pits) which will be extracted via explosive pit mining methods. The produced ore will be subjected to enrichment by tank leaching and ore will be obtained as a final product.

An Environmental Impact Assessment (EIA) Report was prepared for the Lapseki Project, pursuant to the “Environmental Impact Assessment Regulation” under the environmental legislation of Turkey which was approved by the Ministry of Environment and Urban Planning as indicated in the “EIA Positive Decision” approval letter dated August 14, 2015.

This chapter has been prepared to present:

- A current project description with the latest project developments;
- Current project components and associated facilities.

1.2 Project History

The Turkish Mining Exploration and Research Directorate started mineral exploration activities in the region in the early 90s. In 1998 TÜPRAG also commenced separate exploration activities. Later, Chesser Resources engaged in the area. Chesser Resources was renamed as Batı Anadolu Madencilik (Western Anatolia Mining Co) in 2012 and in the year 2015 TÜMAD purchased Batı Anadolu Madencilik (Western Anatolia Mining Co).



It is planned to open 4 pits within the scope of the Project. The proportions of gold and silver per tonne are 1.85 g and 1.86 g, respectively. It is planned to carry out production with a recovery rate of %94.91 for gold and %72.35 for silver. It is foreseen that over the entire operation period of the Lapseki Project that 7.15 Mt of ore, 60 Mt of waste rock and 8.2 Mt of filtered tailings, will be produced in total.

The important activities of the project are listed below with the scheduled start and finish dates;

Table 1: Project Schedule-Summary

TASK	START DATE	FINISH DATE
Basic Design	01.12.2016	30.01.2017
Detailed Engineering	01.12.2016	31.05.2017
Construction	01.12.2016	31.07.2017
Operation	15.10.2017	2027

TÜMAD completed the EIA (Environmental Impact Assessment Report) in August 2015 and activities at the Project Site have started with mobilization and the construction of some office buildings.

In September 2016, Dama Engineering provided a JORC-compliant Mineral Resource Estimate of an Indicated and Measured Resource 8.96 Mt at 1.95 g/t Au, or 562,000 ounces of gold and an Inferred Resource of 10.68 Mt at 1.07 g/t Au or 368,000 ounces of gold. The combined Indicated and Inferred Resources were reported at 19.64 Mt at an average grade of 1.47 g/t Au or 930,000 ounces of gold based on a cut-off grade of 0.5 g/t Au.

Feasibility Study report of the Project was prepared by BBA and Promer in October 2016. The Feasibility Study is based on the development of an open pit, feeding a conventional process plant (3-stages crushing, grinding, leach, CIP) to recover gold and silver mineralization.

Project layout and designs were revised-optimized with the NI-43-101 compliant Feasibility study (FS). Since the FS was completed after the approval of the EIA report, there are various differences between the two documents/designs. TÜMAD applied to Ministry of Environment and Urbanization (MoEU) for clarification on whether the existing EIA report is required to be revised or not. MoEU provided consent that the approved and existing EIA report is not required to be changed. This SIP and related studies consider the current design of the Project.

1.3 Project Site

1.3.1 General Characteristics

The Province of Çanakkale, where the Lapseki Project is planned, is located in the north-west region of Turkey. The Province is mostly located within the Marmara Region, but it also includes some areas located in the Aegean Region. The Province has lands in both the continents of Asia (Anatolia) and Europe (Thrace) and is divided into two by the Dardanelles. The climate of the coastal districts and islands of the Province are almost identical. The Province of Çanakkale is a transitional climate featuring characteristics that range between the Mediterranean Climate and the Black Sea Climate, with the Mediterranean Climate playing the dominant role. As the altitude increases towards the inner districts, the average temperatures highly differ from those of the coastal areas.

The Lapseki Project Site is located 35 kilometres (km) away from the city centre of Çanakkale and 7 km from the Lapseki town centre (See Figure 1).



LAPSEKI PROJECT - SIP

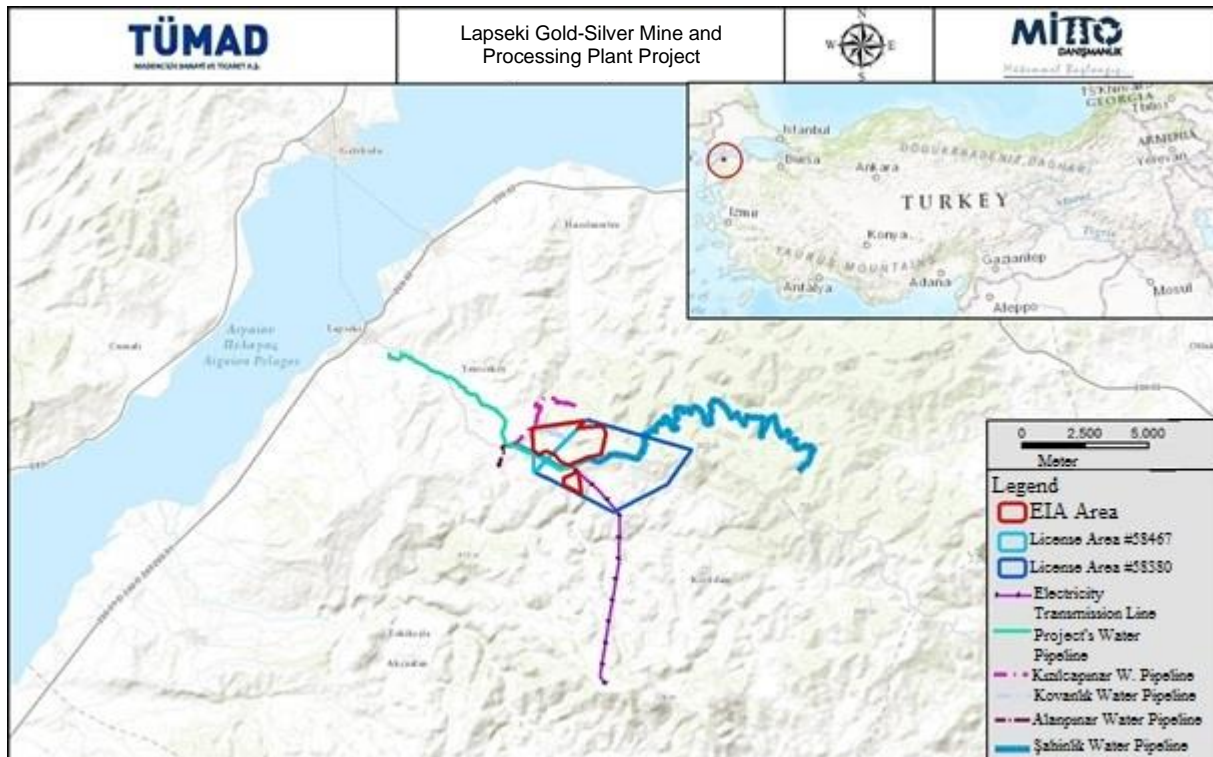


Figure 1: Overview of Project Site

The settlements surrounding the Project Site are the Villages of Şahinli, Kocabaşlar, Yenice, Subaşı and Çamyurt. The settlements located closest to the Project's impact area are the Villages of Şahinli and Kocabaşlar. The Project Site is located approximately 0.63 km from the Village of Şahinli village and 1.3 km from the Village of Kocabaşlar (see Figure 2).

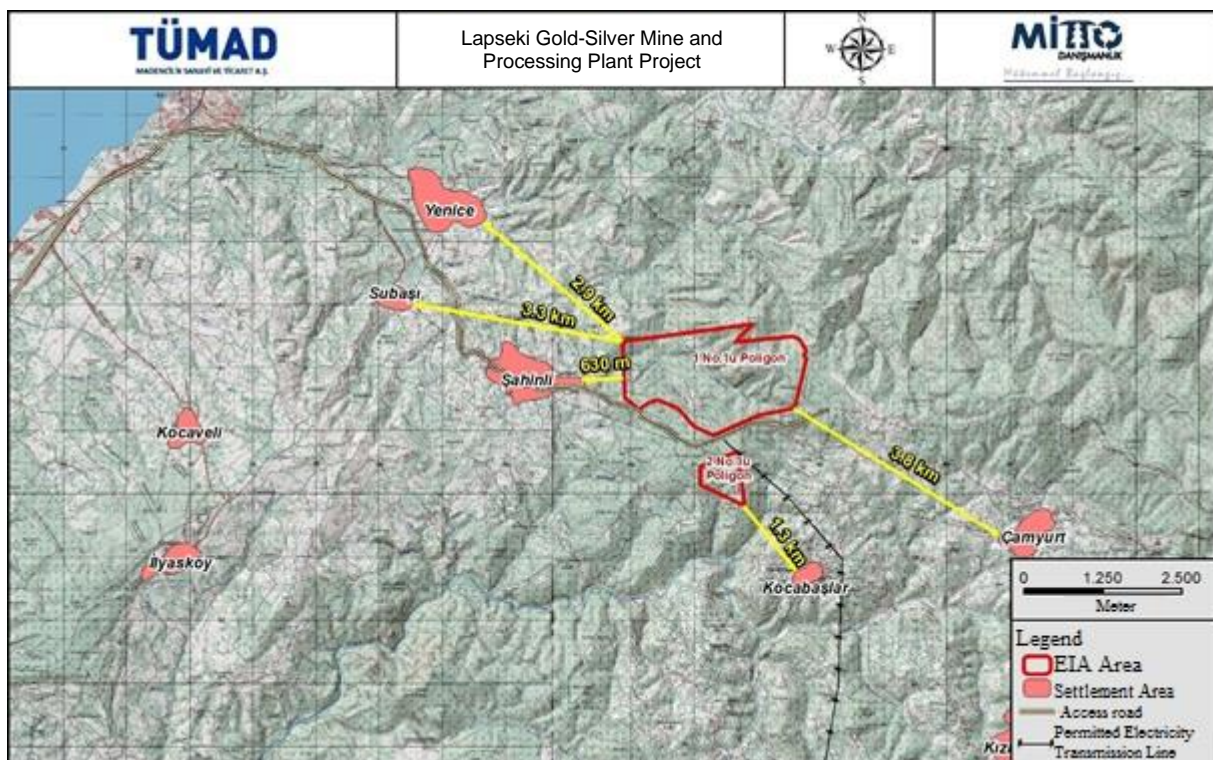


Figure 2: Settlement Areas located around the Project Site



1.3.2 Mining License Area

The Project Site is located within the mine license areas numbered 58380 and 58467, both of which have been assigned to TÜMAD by the General Directorate of Mining Affairs under the Ministry of Energy and Natural Resources. Information regarding the Project licenses is provided in Table 2, and a map depicting the license areas is given in Figure 3.

Table 2: Details of License Areas numbered 58380 and 58467

License Area #58380	
Access Number	1036944
Effective Date	23.09.2009
Expiration Date	23.09.2034
License Group	4 th Group
License Phase	Operation
License Area #58467	
Access Number	1009155
Effective Date	04.09.2009
Expiration Date	04.09.2034
License Group	4 th Group
License Site	Operation

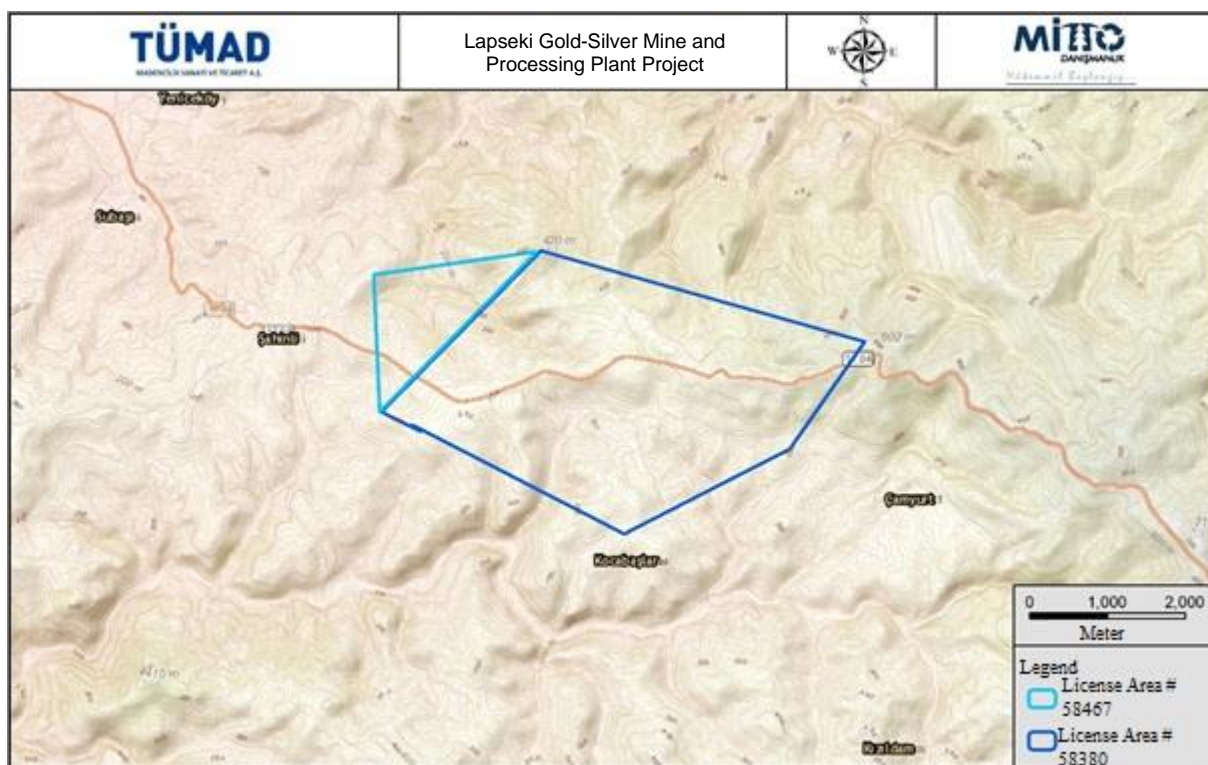


Figure 3: Map of License Areas

1.3.3 EIA Permitted Area

Within the mining licenses, an area was allocated for construction and operation of the mine and was assessed as part of the national EIA process. This area is referred to as the “EIA Permitted Area” or “EIA Area” and is located within the operating licensed areas numbered 58380 and 58467.



The EIA permitted area had been broken down into two polygons, as depicted in Figure 4. The EIA permitted areas have a total surface area of 394.90 ha of which 357.71 ha located within the 1st EIA polygon and 37.19 ha is located in the 2nd EIA polygon.

Table 3: Distribution of Lapseki Project's Units by Polygons

EIA Polygon #1 (357.71 ha)	Kestanelik Pit
	SBX Pit
	Karakovan Pit
	K-Zone Pit
	Processing Plant
	Social Facilities
	SWS-I Area (Dry Tailings Stack Area)
	Soil Storage Area
	Tailings Dumping Area
EIA Polygon #2 (37.19 ha)	SWS -II Area (Dry Tailings Stack Area)
	Top Soil Storage Area

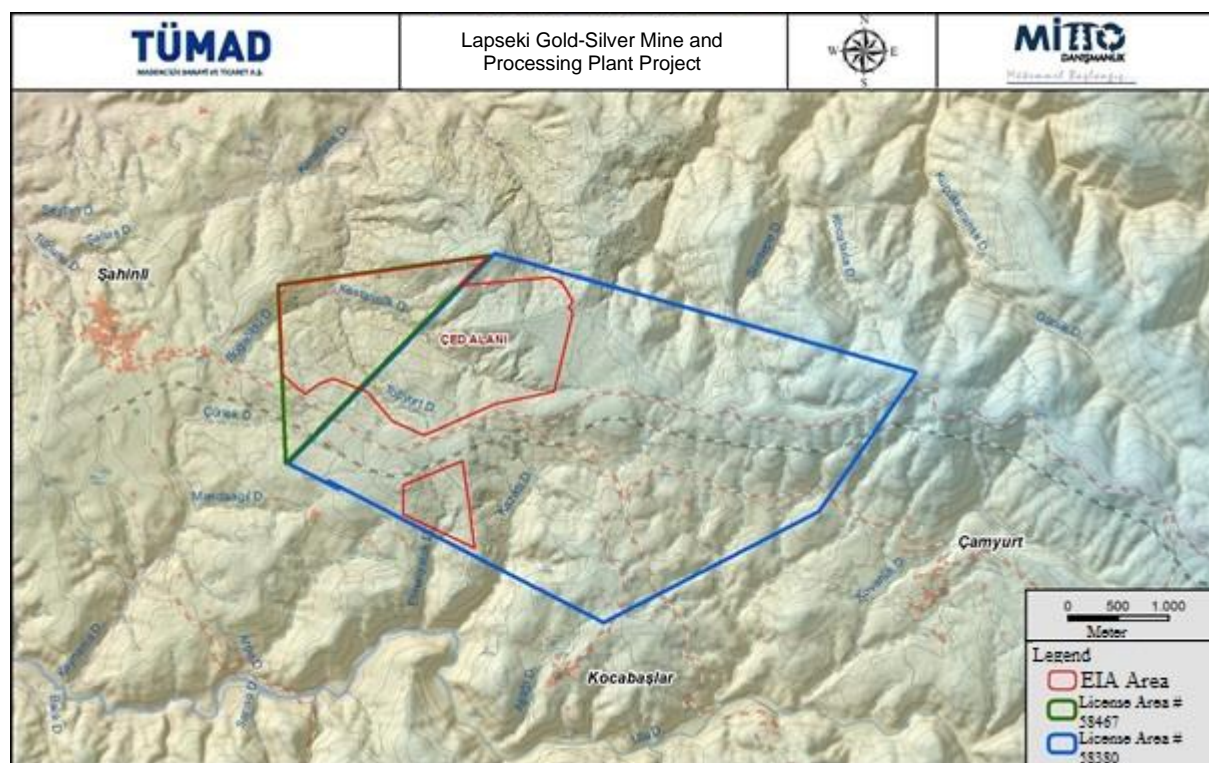


Figure 4: Map of the EIA Area

1.4 Project Components

The main project elements were located considering a set of objectives and constraints mainly including the location of the deposits, topography, terrain, slope and current land use.

The project components are presented below in two groups.

1) Project Facility Area (EIA Permitted Area) which includes:

- The Karakovan and Karatepe Pits,
- The K-Zone Pit,



- The SBX Pit,
- The Tailings Dump Area,
- The Processing Plant Area,
- The Administrative Building,
- The Social Facilities Area,
- The Top Soil Storage Area, and
- The Dry Stack Tailings Storage Area.

Karakovan and Karatepe Pits are located at Kovanlık Hill and K-Zone Pit is located at Kestanelik Ridge and SBX Pit is located at Meydan Hill. The tailings dump area will be set up at Karagürgen Ridge and the processing plant will be established at the Topyurt Hill and Şahinli Village roadside. Furthermore the administrative, social buildings, top soil storage areas and dry stack tailings storage areas will be established.

2) The Supply and Logistics Corridor which includes:

- A power supply line,
- A water Supply line, and
- Roads.

The overall Project Area is presented in the following Figure 5

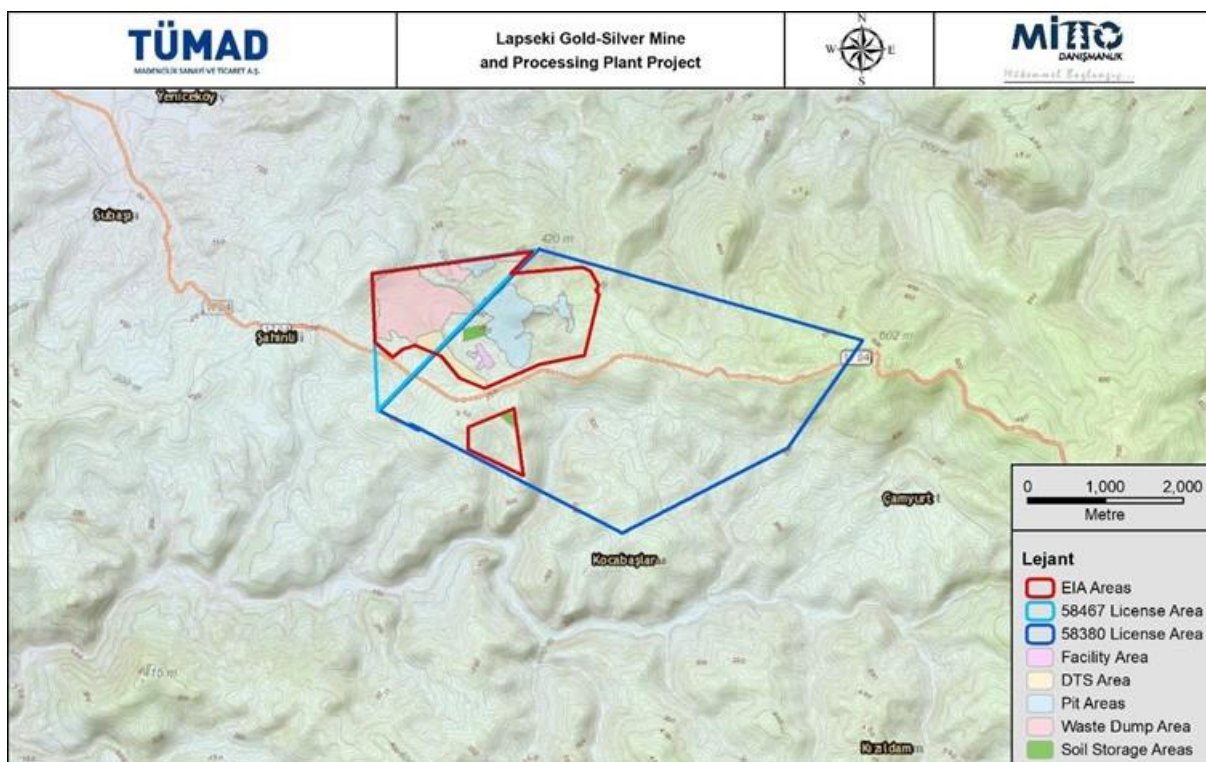


Figure 5: Map of the Project Facilities Layout in EIA Permit Area

1.4.1 Process Description

The process plant facility is designed to have an availability of 90% and an average capacity of 2.055 tpd (750 ktpa). The average head grade for the plant is 1.85 g/t Au, while the design grade is 3.0 g/t Au, in order to accommodate periods of higher grade feed. The average silver head grade is 1.86 g/t Ag, while the design grade is 2.5 g/t Ag.



Run-of-mine material will first be crushed by a jaw crusher. The crushed ore is discharged to a conveyor feeding the primary screen feed bin that in turn feeds the primary double-deck screen, in an open circuit configuration. The screen oversize feeds a secondary cone crusher and the product of the secondary crusher will be discharged to a conveyor feeding the secondary screen feed bin. The secondary screen is a double-deck screen in a closed circuit with the tertiary crusher. The secondary screen oversize material feeds a tertiary cone crusher. The secondary and tertiary screen undersize discharge onto the crushed ore bin feed conveyor feeding the crushed ore silo.

The crushed rock will be reclaimed from the silo using feeders and subsequently conveyed to the grinding circuit, which consists of two (2) ball mills in series, with the second mill operating in closed circuit with a hydrocyclone cluster. The grinding circuit targets a product size P80 of 90 μm . The cyclone overflow feeds a pre-leach thickener before entering the leaching circuit, consisting of six (6) tanks for a total retention time of 48 hours. The cyanide leach is conducted at a slurry density of 45% (w/w) solids. Sodium cyanide is added to the first, second, and fourth tanks, and caustic is added to the first tank to control the pH if required. Oxygen is sparged into the tank to improve reaction efficiency.

The leached slurry will then be transferred to a carousel-type CIP circuit consisting of seven (7) tanks, each containing 2 t of carbon. Under normal operating conditions, one (1) tank from the CIP circuit will be emptied and transferred to the stripping circuit every day. A screen will separate the carbon from the slurry and the slurry is returned to the CIP circuit. The loaded carbon is sent to the stripping circuit where the adsorbed gold and silver will be eluted using a heated solution containing sodium cyanide and caustic. The depleted carbon will be regenerated in a kiln while the pregnant solution is sent to electrowinning. The electrowinning circuit will produce a gold and silver sludge that will be dried and smelted into doré bars as a final product.

The tailings from the CIP circuit will be sent to cyanide destruction. A conventional INCO SO_2 /air process will be used to lower the cyanide level in the tailings to an acceptable level.

The product of the cyanide destruction circuit will be pumped to a filter feed tank ahead of two (2) recessed plate filter presses to dewater the tailings. The tailings will be filtered to a target moisture content below 15%. Both the filtrate and cloth wash solutions are collected and pumped to a clarifier. A portion of the clarifier overflow is reused as cloth wash water, while the remainder is sent to the process water tank. The filter cake is dropped onto a transfer conveyor located under each filter unit, which in turn discharges onto a tailings discharge conveyor. The tailings discharge conveyor extends outside the plant building to load trucks that will transport the cake to the dry tailings stockpile. All process reagents will be located in a separately contained area within the process plant building to prevent contamination of the plant in case of a spill.

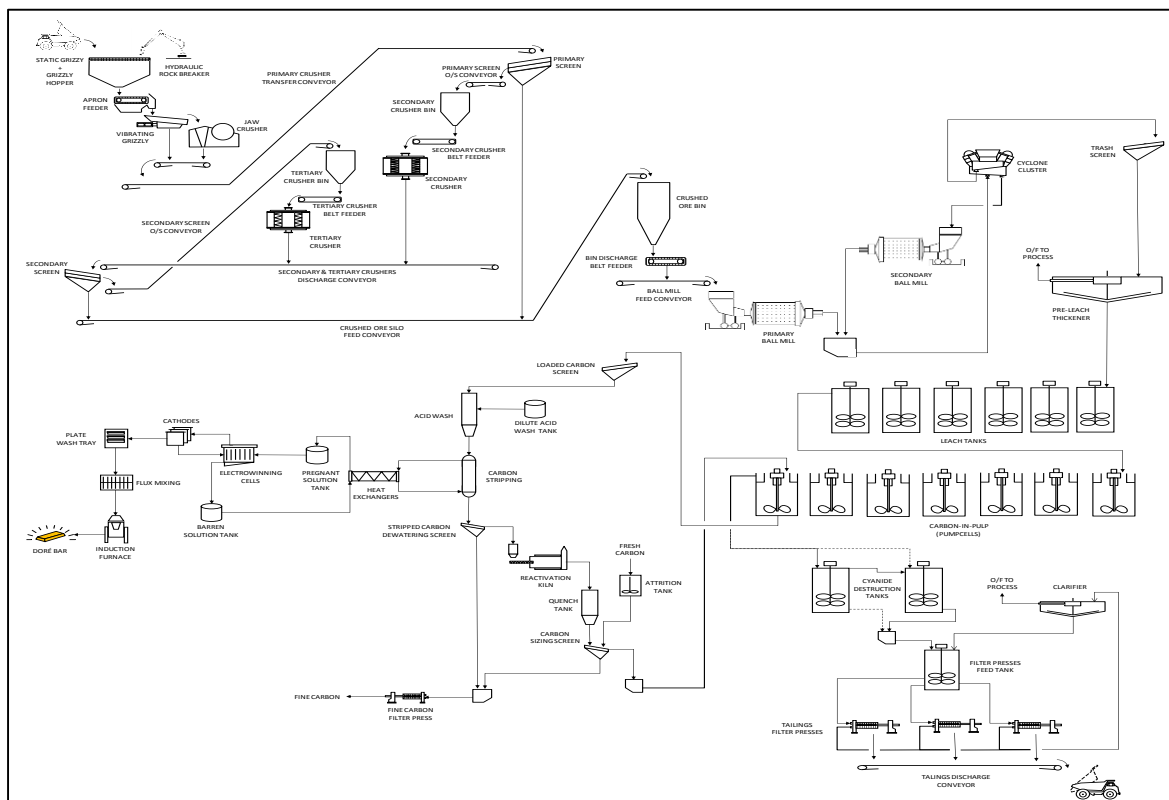


Figure 6: Process Flow Diagram

1.4.2 Pits

The Project will be an open pit operation with approximately 7.16 Mt of material being processed over the Life of Mine (LOM) at a nominal mill annual throughput of 750,000 tonnes. The mine schedule contains one quarter of pre-stripping and envisions a mine operating life of 10 years, exclusive of the pre-production period.

The open pit mining at the site will include five main phases: drilling, blasting, excavation-loading, transport and storage.

Key outcomes from the Feasibility Study are summarized Table 4 and Table 5, and include the following:

- Direct processing Measured and Indicated Mineral Reserves of 7.16 Mt grading 1.85 g/t Au and 1.86 g/t Ag;
- Planned processing rate is 2,055 tpd, and an approximate mine life of 10 years;
- Pre-stripping planned waste removal of 500k tonnes over a period of three (3) months;
- The overall open pit stripping ratio over the LOM is 8.53:1.0.

Table 4: Key Outcomes-Gold Production

Parameter	Units	Outcome
Total Average Gold Grade (LOM)	g/t	1.85
Total Gold Production (LOM)	koz.	403
Average Process Plant Gold Recovery (LOM)	%	94.91

Table 5: Key Outcomes – Silver Production



Parameter	Units	Outcome
Total Average Silver Grade (LOM)	g/t	1.86
Total Silver Production (LOM)	koz.	309
Average Process Plant Silver Recovery (LOM)	%	72.35

1.4.3 Dry Stack Tailings Storage Area

The stages of the open pit operations planned for the project are respectively: preparation of the land; stripping and storage of the topsoil, blasting, loading-transport and unloading. Later, the ores will be sent to the processing plant for enrichment. The waste resulting from the enrichment, treated by the INCO process, separated from chemicals, and whose metals will have been stabilized, will be press filtered and sent to the 1st Class Sanitary Landfill Area classified DST storage areas for storage. The transport of the waste from the processing plant will be carried out through belts, pumps and/or mobile vehicles.

Lapseki Project's waste samples were subjected to Eluate tests pursuant to the provisions of Appendix-1 of the Regulation on Sanitary Landfill Storage of Waste. The results of these tests were compared with the Waste Acceptance Criteria given in the Appendix-2 of the Regulation to determine the category of the waste storage area. Accordingly, despite the fact that many of the results fall under the scope of 3rd Class Landfill Facility limit values; Molybdenum (Mo) complies with the limit values for 2nd Class Landfill Facilities. However, the DST storage areas of the Project will be designed with the criteria for the 1st Class Sanitary Landfill Facilities, which provide the highest level of precaution.

Given that the lithology forming the base of the DST storage areas does not naturally satisfy the impermeability requirements defined in the Turkish regulations, an artificial geological layer of impermeability will be established by use of clay and clay-group minerals. Optimum humidity content will be 15.5 % ($\pm 2\%$) with a compaction ratio of 97%. The impermeability layer will be formed in 2 layers with a total thickness of 0.5 m.

The impermeability of this layer equals 1×10^{-9} m/sec. The reinforcement will be provided with geomembrane. The geomembrane will have a thickness of 2 mm and a density of 941-965 kg/m³. The geomembrane layer will be provided with the characteristics shown in Table 6.

.

**Table 6: Characteristics of HDPE Geomembrane**

RESULTS OF TESTS CONDUCTED AS PER TS EN 13493 STANDARD		
STANDARD NO	CHARACTERISTICS	VALUES
DIN 16726	General Appearance	No Gaps, Spots or Cracks
DIN 53353	Width	6700 mm
ASTM D 751	Thickness	2,00 mm
ASTM D 751	Thickness Single Value	2,00 MM ± %5
TS EN ISO 1183	Density	0,941-965 GR/CM ³
EN 12317-2	Joint Strength	1522 N / 50 mm
EN 527-5	Maximum Tensile Strength at Pour Point	17MPa
EN 527-5	Elongation Ratio (Maximum Stress)	≥ 9 %.
EN 527-5	Tensile Strength at Break	28 MPa
EN 12311-2	Elongation at Break	≥ 707 %.
EN 527-5	Elongation at Break	≥ 867 %.
EN 1928	Water impermeability Test	7 Bar Water Impermeable
ISO 1133	Melt Flow Index	1,45 g/10 Minutes
EN 12961	Impact Resistance	950 mm
ASTM-D 1603-94	Carbon Black Ratio	2 %
ASTM-D 5596-94	Carbon Black Distribution	Category 2
EN 1847	Chemical Material Resistance	7 BAR Impermeable %2, - 2 variable
ASTM D747	Bending Resistance	8500 Kg/cm ²
EN 1876	Cold Bending at -20°C	Exist
EN 12310-1	Tear Resistance	1136 N.
EN 12236	Puncture Resistance	5500 N.
ASTM D 1004	Puncture Resistance	320N

Geotextile will be laid over the geomembrane material to protect it and a drainage layer with a thickness of 0.5 m with minimum $K \geq 1 \times 10^{-4}$ m/sec permeability will be established to collect waste leachate. The water collected by the drainage systems will be channelled to the settlement pond to be constructed outside the Waste Storage Area.

**Table 7: Technical Characteristics of Geotextile**

Standard No	Standard Title
TS EN 13257	Geotextiles and Geotextile-Related Products – Characteristics Required for Use in Solid Waste Storage Area
TS EN 13257/AC	Geotextiles and Geotextile-Related Products – Characteristics Required for Use in Solid Waste Storage Area
TS EN 13257/ A1	Geotextiles and Geotextile-Related Products – Characteristics Required for Use in Solid Waste Storage Area
TS EN 13493	Geo-synthetic Barriers - Characteristics Required Solid Waste Storage and Disposal Locations

For impermeability of the side surfaces, the surface will be covered with geotextile for protection from impacts. A geo-synthetic clay layer (GCL) (final product TSE EN 16416) with an impermeability of 5×10^{-12} m/h will be laid over it. Over the GCL, a rough geomembrane will be laid. Furthermore, drainage composites will be used for side surfaces for channelling the waters to the drainage line.

Table 8: Technical Characteristics of Geo-synthetic Clay Cover

Characteristics	Standard	Values
Bentonite Unit Area Weight	ASTM D 6993	4 kg/m ²
GCL Retention-Tensile Strength (Longitudinal)	ASTM D 6768	70 N/cm
GCL Peeling Resistance	ASTM D 6496	6 N/cm
GCL Permeability	ASTM D 5887	5×10^{-12} m/s
GCL Slip Resistance in Hydrated Status	ASTM D 6243	24 kPa

During the operational phase, dry waste will be laid over the area by means of a dozer and then compacted. The Dry Stack Tailings Waste (DSTW) will be compacted with minimum ratio of 97% as per the Standard Proctor Test (ASTM D 698).

1.4.4 On Site Infrastructure Facilities

In order to ensure satisfaction of infrastructure facility needs with minimum cost and a practical system, the design of the layout was planned according to the daily activities between the facilities and the buildings. Locations of the administrative buildings, cafeteria, vehicle maintenance shops and storage areas were determined accordingly.

The construction site and administrative buildings will be located in the area designated for the enrichment processing plant and social buildings. This area is to be located within the 1st EIA polygon, to the south of the pit and east of the DSTW-I area. Administrative buildings, domestic wastewater treatment plant and processing plant are the units to be established in this area.

In terms of administrative facilities, administrative offices, sample storage units, laboratories, changing rooms, training buildings and mine operation buildings will be established for the management staff, engineers and other relevant personnel. Additionally, workshops, vehicle washing areas and car parks will also be located in this area.

A cafeteria with a capacity of 500-people and an infirmary to be used for interventions in emergency cases and for routine health controls of the employees will also be located in this area.

A guardhouse will be located at the entry gate of the mining site to supervise incoming and outgoing traffic and to provide security. The entire Project Site will be surrounded with a health protection band and only a single entry will be provided for access. The guardhouse will be staffed with security personnel 24 hours a day.



1.5 Permitting and Land Take

Land Take

The EIA Area stretches over private (agricultural area) and forestry lands. A map indicating the ownership statuses within and around the EIA Area is given in Figure 7.



Figure 7: Ownership Status of the EIA Area and the Areas located near it

License area as approved by General Directorate of Mining Affairs (MİGEM) is 1461.75 hectares. The project area will take place on 395 hectares following assessment of environmental impacts and completion of reserve capacity and feasibility calculations. Currently there is no other assessment for the remaining land.

The land that the Project is permitted for operation and permitted be acquired for that purpose is 395 hectares and defined as the EIA area¹. A total of 282.7 hectares of this EIA area is planned to be used as the Project Area.

Table 9 Facilities Area Sizes

Unit	Area Sizes (Decare)	Physical Uses of Unit (Decare)
Mine Area		
Mine Polygon no. 1	270	75
Mine Polygon no. 2	705	338
Mine Waste Disposal Area	1,047	714
Dry Stack Tailing Facility Areas	392	160
Soil Storage Area		
Soil Storage Area - 1	59	59
Soil Storage Area - 2	43	43

¹ Designated EIA area represents the Area presented to Authorities for getting permit to perform the construction and operation of the Project.



LAPSEKI PROJECT - SIP

Unit	Area Sizes (Decare)	Physical Uses of Unit (Decare)
Soil Storage Area - 3	17	17
Mineral Processing and Social Facility Area	296	171
Total	2,827	1,577

The EIA report stipulates the details of the Land Use as in the below table.

Table 10 Land Use According to the EIA Report

Place	Land Use in the designated EIA Area			Land Acquisition Situation		Total	Ratio of the Land for Which Permit for Use has been Received to the EIA Land %
	Agricultural Land 2B (Decare)	Forest (Decare)	Total (Decare)	Forest Area Permit Received (Decare)	Agricultural Land (2B) Permit for Use (Decare)		
Şahinli	95	2,624	2,720	1,130	95	1,226	45%
Kocabaşlar	0	1,230	1,230	0	0	0	0%
Total	95	3,854	3,949	1,130	95	1,226	31%
%	2%	98%	100%	92%	8%	100%	

The Land Use structure in the designated EIA area is presented in the Figure 8 below.

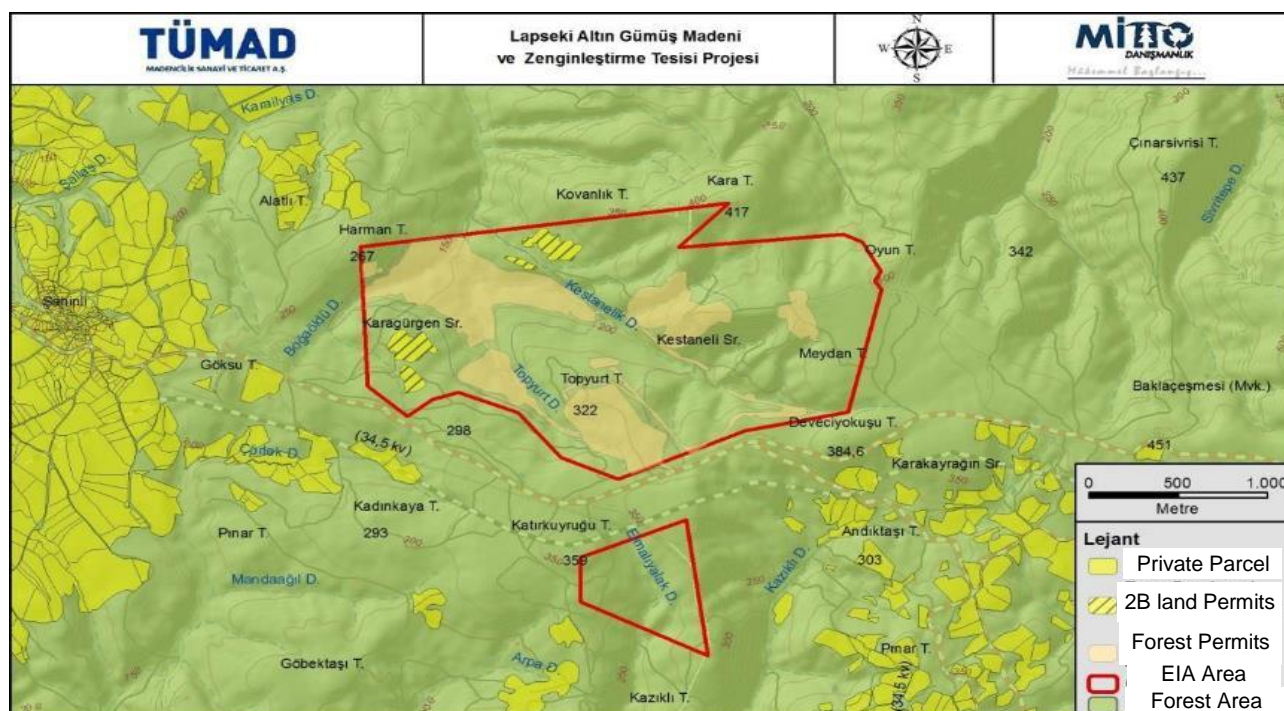


Figure 8 Land Use and Ownership in the Designated EIA Area



Within the scope of the “Soil Protection and Land Use Act no. 5403²”, permit for non- agricultural use was received in May 2015 from the Çanakkale Provincial Directorate of Food, Agriculture and Livestock for 2B agricultural lands (95.2 decares).

Regarding the forest lands; forest permit was received from the General Directorate ³ of Forestry in accordance with the “Forest Law No. 6831”, Article 16 for 1130 decares of forest area. These permits are obtained for a period of 10 years. Yet, forest areas where mining works will be completed will be rehabilitated and restored without waiting for expiry of permits. Forest permits will be received step by step with the production activities.

As of today, acquisition of 1226 decares which corresponds to 31% of the land the EIA designated area has been completed which enables the Project to start operation. The land acquisition for another 840 decares will be performed after the completion of the first three years in operation.

In March 2016, Business and Operation Permits were obtained from the “Special Provincial Administration of Çanakkale” for the entire EIA area.

Additional land take was carried out in the form of expropriation by the Turkish Electricity Transmission Company (TEAİŞ) for the poles of the transmission line (which forms Project Associated Facility, please see below).

Permitting: It should be noted that while TÜMAD completed the EIA (Environmental Impact Assessment Report) in August 2015 Project layout and designs were revised/optimized with the NI-43101 compliant feasibility report completed in October 2016. Since the FS was completed after the approval of the EIA report there are various differences between the two documents/designs. The changes are summarized below:

- A small portion of the Kestanelik pit (feasibility design) is located on the corridor owned by another company (ESAN). EIA report includes a commitment saying that “In case of need for this area, TÜMAD will obtain a consent from ESAN”. TÜMAD has developed a concrete strategy to address the potential environmental and social risks and the mitigation measures.
- TÜMAD excluded the water protection area (South of Kestanelik Pit) from the mine plan during the EIA stage. Enlargement of the Kestanelik pit to the south resulted in encroachment on the water protection area.
- Even though the pits are enlarged, the ore production tonnages presented in the EIA and the Feasibility reports are similar and annual production rates presented in the FS are less than the EIA report.
- EIA boundary covers the feasibility designs excluding the expansion of the Karakovan pit towards the north into ESAN’s license area.
- EIA mine plan is for eight years. The feasibility mine plan includes ten years of operation.
- Enlargement of the Kestanelik Pit to the south, move of the waste rock dump, dry tailings storage (DTSF 1) footprint areas.
- Relocation of the administrative buildings, process plant and the mill towards west.
- Revision of perimeter channels and construction of new diversion channels to divert Kestanelik Creek.

Project layout and designs were revised-optimized with the NI-43-101 compliant Feasibility study (FS) completed in September 2016. Since the FS was completed after the approval of the EIA report, there are various differences between the two documents/designs. The consent of (MoEU) was acquired on the design revisions. MoEU has provided the consent of the validity of the EIA positive decision with these changes and did not require additional impact assessment studies with the letter dated 26.May.2017.

²http://www.mevzuat.gov.tr/MevzuatMetin/1_5_5403-20080326.pdf relevant law text

³http://www.mevzuat.gov.tr/MevzuatMetin/1_3_6831.pdf relevant law text



The discrepancies between the EIA and the Feasibility project facilities are explained in detail below:

Open Pits:

- As previously explained, TŪMAD enlarged the Kestanelik pit towards the south. The pit presented in the EIA report was located outside of the water protection buffer area of the springs providing drinking water to the villages. However, the water quality of the springs is not suitable for drinking purposes, mainly due to high arsenic concentrations. TŪMAD was able to locate new drinking water sources and constructed a new water transmission pipeline to supply drinking water to the villagers. After TŪMAD provided a new drinking quality water source, the drinking water protection area was cancelled by the government thus TŪMAD managed to enlarge the Kestanelik pit toward the south during the feasibility stage.
- Since the Kestanelik pit is planned to be enlarged and the new waste rock dump is located on the Kestanelik Creek. TŪMAD developed a new diversion plan to divert the Kestanelik Stream away from the Kestanelik Pit. Such a major diversion plan is not included to the EIA report and TŪMAD submitted the diversion plan to DSI (Devlet Su İşleri – State Hydraulic Works) and it is approved on 04.05.2017. Any future change in the DSI approved designs should be reviewed and approved again by DSI. Land use permits for the diversion channels located outside of the EIA and the license boundary will be received by TŪMAD. TŪMAD confirms that the channels are considered as supporting infrastructure and constructing them outside of the license and EIA boundary is possible.
- TŪMAD is planning to partially backfill the Karakovan pit and some of the waste rock will be dumped outside of the Karakovan pit. TŪMAD is planning to backfill the SBX pit.
- As mentioned, TŪMAD enlarged the Karakovan pit towards North into ENSAN area. The revised Karakovan pit is located outside of the approved EIA boundary and TŪMAD's Mining License area. Any future activities carried out in the ESAN area will be subject to separate ESIA carried out to standards acceptable to Lenders and subject to public disclosure.

Process Plant Area

- The Process Plant Area has been moved toward the west in order to allow mining in the enlarged Kestanelik pit.

Dry Tailings Storage Facilities

- The EIA report includes two dry tailings storage facility (DTSF). TŪMAD decided to expand the first dry tailings storage facility (DTSF-1) and decided not to construct the second DTSF-2 which is located at the south of the project area.
- Since the construction of DTSF-2 will not be conducted, environmental impacts related to the second DTSF will not be observed. However, in case of resource-reserve increase TŪMAD would consider constructing DTSF-2, as DTSF-1 does not have much additional space for a potential capacity increase.
- EIA report presents that the DTSF-1 will be used for three years and then will be covered by waste rock. TŪMAD decided not to cover the DTSF with waste rock and shift the waste rock dump towards North in order to be able to cancel the construction of DTSF-2.

TŪMAD submitted a detailed design report (application project report) to Ministry of Environment and report approved by the Government.

Waste Rock Dumps

- The new waste rock dump is located on the Kestanelik Creek.

Ore Stockpiles:

- Ore stockpile areas are significantly enlarged in the Feasibility Report. The feasibility mine plan includes the stockpiling of high grade, medium grade and low grade ore that will be re-handled and



fed to the mill on an ongoing basis during the operation. The maximum volumes that are expected during the mine life for the high, medium, and low grade stockpiles are 230,000 m³, 110,000 m³ and 80,000 m³, respectively.

Additional land take was carried out in the form of expropriation by the Turkish Electricity Transmission Company (TEAİŞ) for the poles of the transmission line (which forms Project Associated Facility, please see below).

The list of the current permits of the Project in relation to the relevant Turkish Environmental Legislation is provided below, in Table 11.

Table 11 Issued Permits

Permit Obtained	Date Of Issue	Date Of Expiry	Permit To be Obtained
Operating Licence	23.09.2009	23.09.2034	Temporary Operation Licence
EIA Positive	14.08.2015		Environmental Permit
Unsanitary Facility Permit	23.03.2016	23.03.2017	
Operating Permit	22.04.2016		
Road Connection Permit	16.02.2017		
Blasting Permit	28.12.2016	31.12.2018	
Power Permit	19.01.2016		
Forestry Permit	29.03.2016	23.09.2026	
Groundwater Use Permit	03.07.2014		
Landfill Permit	01.09.2016		
Private Security Permit	29.07.2016		
EIA Exemption Consent On Power Line	10.08.2016		
Discharge Permit	01.06.2017		
Land Mobile Wireless Telecommunication System Exploitation Permit	20.03.2017		
Hazardous Material Permit	15.09.2017		

1.6 Supply and Logistics Corridor

The supply and logistics corridor is composed of the electricity supply line, waterline and roads. This corridor is considered as the associated facilities for the Project.

All facilities in that corridor have been constructed as of September 2017. The details on each component on this corridor are presented in the following subsections.

1.6.1 Electricity Transmission Line

The electricity demand of the Project Site will be supplied from the 154 kV 1272 MCM Koru WPP Transformer Station via a transmission line to the TUMAD Lapseki Transformer Station located at the Site.



The land acquisition of this line will be performed by the governmental authority, Turkish Electricity Affairs (TEİAŞ). The construction of the line was performed by TEİAŞ and the cost will be incurred to TŪMAD. The operation and maintenance of the line will be by TEİAŞ.

Emergency power requirements will be supplied by a diesel generator, which will kick in automatically in cases of power failure.

The OTL (Overhead Transmission Line) route was examined taking into consideration the topographical and geographical conditions of the site. In this investigation the route was established by taking into consideration the distance between the OTL and the settlements; the ease of maintaining and operating the facility; special areas such as marshes, flood beds and landslide areas; forestry, orchards and poplar groves; agricultural areas; military areas; areas under protection by national or international legislation; PTT and telephone lines; railroads; highways; airports; wetlands; zoning development areas, and mining sites.

The impact areas of the overhead transmission line route include some forestland, non-irrigated farming land and shrubbery.

A connection agreement has been signed between TŪMAD and TEİAŞ in January 2016 to establish the overhead transmission lines (OTL) to transmit electricity between the 154 kV 1272 MCM Koru WPP Transformer Station and the TŪMAD Lapseki Transformer Station as stated in the Environmental Impact Assessment, which was completed in August 2016. The construction of the line has been completed and been in service as of September, 2017. The length of the overhead lines is 9675 meters. 25 pylons have been installed along the line.

Concerning the 154 KV Koru WPP TS-TŪMAD Lapseki TS Electricity Transmission Line, a Public Interest Decision was obtained with the decision dated 25.08.2016 and numbered 24-263. The land acquisition works are being managed by TEİAŞ.

Parcels upon which poles are erected and access were expropriated according to the land classification by TEİAŞ. Additionally, the relevant parcels were determined and non-agricultural usage permits were obtained for these parcels.

For forestry area access areas, a protocol was signed between TEİAŞ and the Çanakkale Regional Directorate of Forestry and hence easement was established upon expropriation.

For agricultural lands, an application was filed with the Çanakkale Provincial Directorate of Food, Agriculture and Livestock. Upon on-site examinations carried out by Çanakkale Provincial Directorate of Food, Agriculture and Livestock, non-agricultural use of the lands in question has been permitted pursuant to the Law 5403 on Soil Protection and Land Use.

The route of the OHL can be seen in Figure 9, as follows.

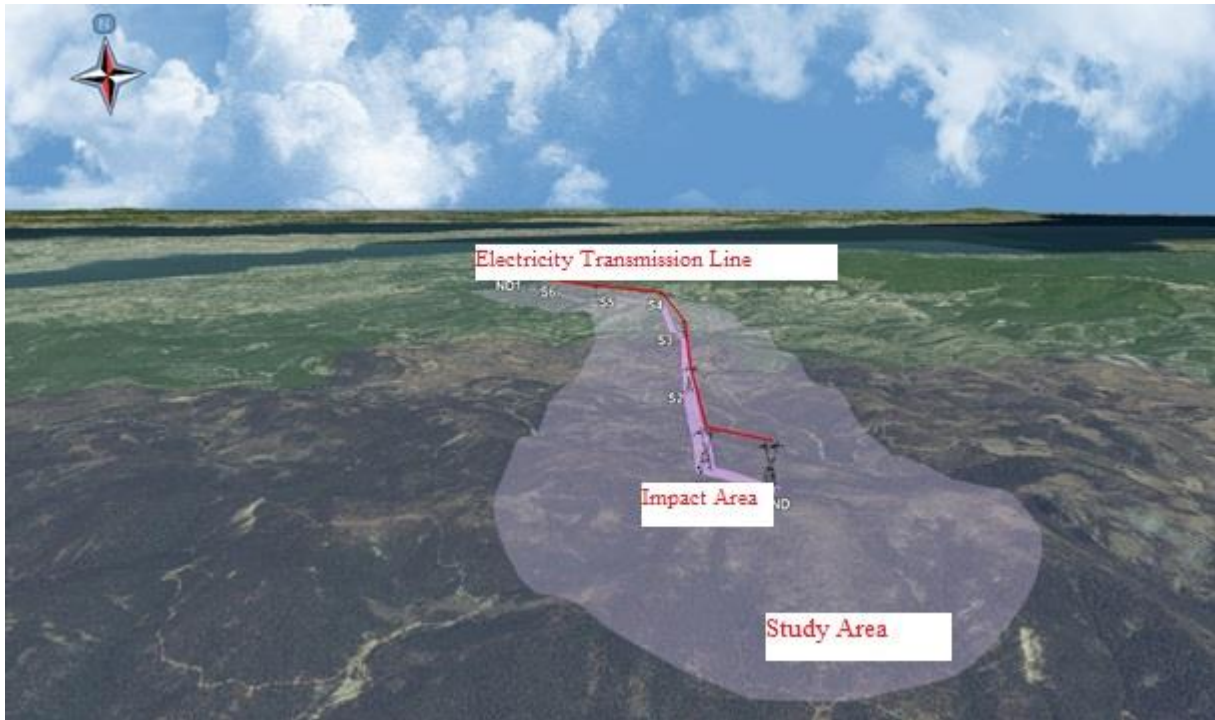


Figure 9: ETL Project Route

1.6.2 Access Roads

The roads to be used within the scope of Lapseki Project are the access roads to the mining site and the service roads within the mining site. The service roads to be used for transport are the roads between the main access road, pit, the tailings dumping site, and the ore preparation and enrichment plants. The width of internal mine service roads will be designed so that no traffic between the units will be hindered and so that the roads can support the heavy-load trucks.

The access road to the mining site branches out from the Bursa-Çanakkale Highway, otherwise known as E.90. Approximately 7.7 km after exiting the highway, the road reaches the town centre of Lapseki and after another 3.8 km it extends to the Village of Şahinli. The existing road to be used to access the mine site is shown in the Figure 10, as follows, in yellow.

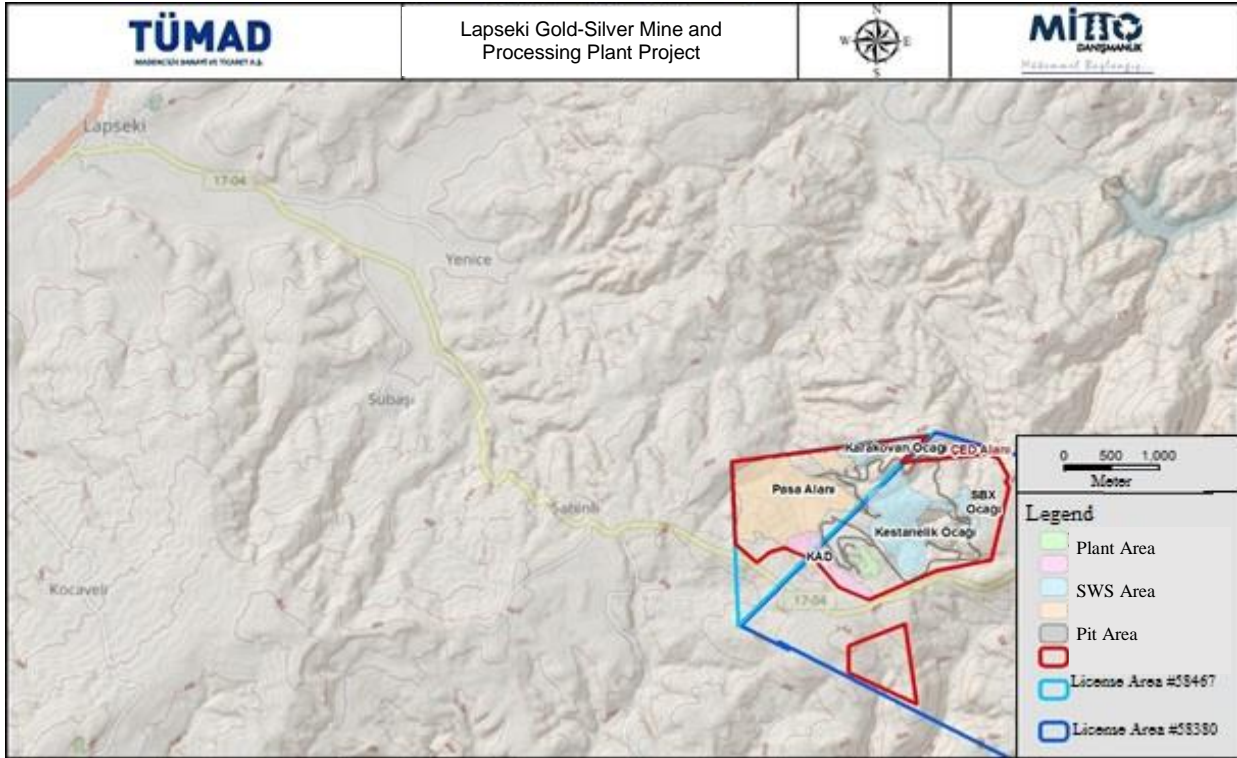


Figure 10: Project Access Road

1.6.3 Water Supply

During the planning phase of the project, a detailed hydrogeological evaluation was conducted as a part of the environmental impact assessment studies and a water management plan was prepared to address the Project's water requirements.

The water source of Şahinli and Kocabaşlar villages were located within the Kestanelik pit boundary and the area was defined as a protection area by the government. However, water quality of the springs is not suitable for drinking purposes mainly due to high arsenic concentrations. TÜMAD managed to locate new drinking water sources located at Laledağ and constructed the Şahinli water transmission pipeline to supply drinking water to the villagers. After TÜMAD provided the new drinking quality water source, drinking water protection area status was removed on February 2016 by the Governorship of Çanakkale, this way TÜMAD was able to enlarge the Kestanelik pit towards the south during the feasibility stage. In that respect the pit presented in the EIA report was located outside of the water protection area of the springs providing drinking water to the villages.

Following the construction of the Şahinli water transmission line and removal of the water protection area, TÜMAD signed a water supply agreement with the Lapseki Municipality in 2016. The process water requirements of the project will be supplied from the groundwater wells of the Lapseki Municipality through the aforementioned water pipeline of 10.12 km from Lapseki to Şahinli, the construction of which has already been completed. The water supply agreement is for 40l/s and the pipeline has the same capacity. Approximately 10 l/s will be used for the process water supply and 2l/s will serve the Villages of Şahinli and Kocabaşlar. The remaining capacity will be used in case of increasing water demands in the future.

Existing water pipelines used to supply water to the villages around the Project Site are as follows:

- Lapseki water pipeline (Projects main pipeline, 10.12 km)
- the Kızılcapınar water pipeline, (4.16 km),
- the Kovanlık water pipeline (6.56 km),
- the Alanpınar water pipeline (1.35 km), and
- the Şahinli water pipeline (22.48 km).



- the Çırpılık water pipeline (providing water to Kocabaşlar Village)

The Şahinli water pipeline will be maintained as an alternative water supply for Villages. The map of these pipelines is given in Figure 11.

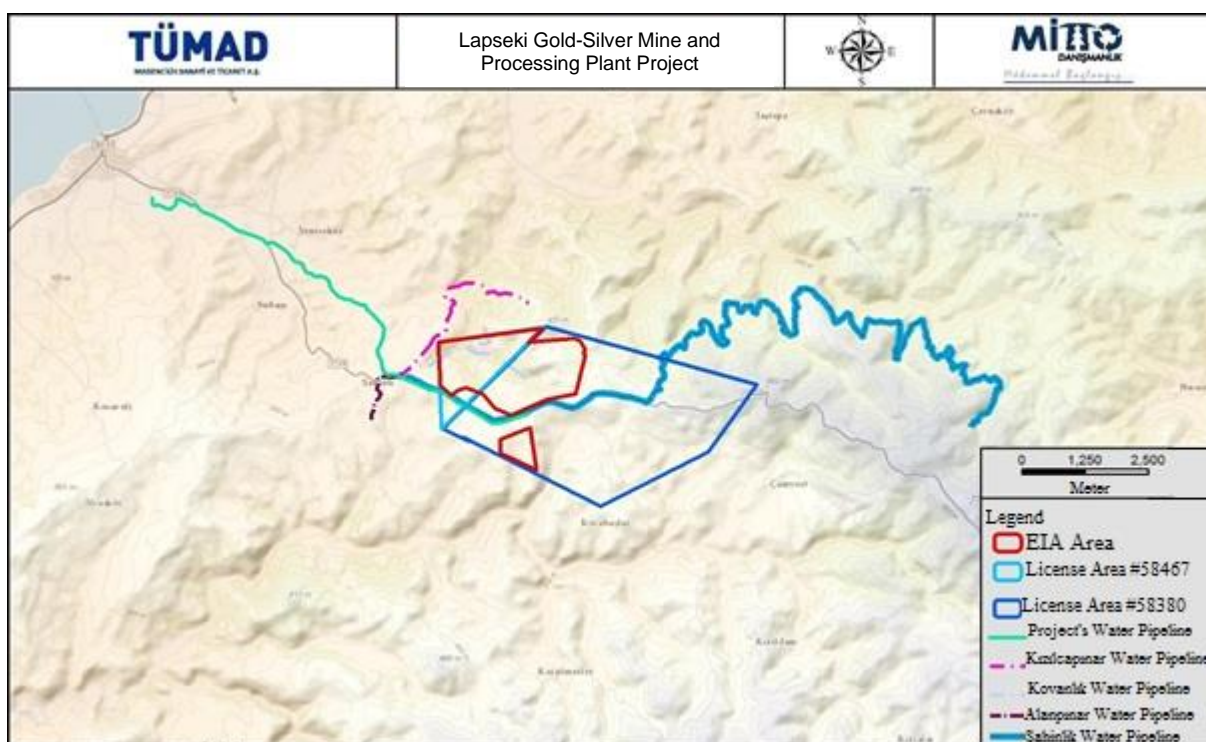


Figure 11: Route of Water Pipeline to be used within the Project

In addition to provisions to obtain water requirements from this water pipeline, with the permit obtained from the Çanakkale 25th Regional Directorate of State Hydraulic Affairs in October 2011, the use of groundwater wells was also provided in cases of emergency.

1.7 Equipment and Materials

Lists of equipment and machinery to be used within the scope of the activities are given in Table 12 and Table 13 as follows:

Table 12: List of Vehicles and Equipment to be used during Land Preparation and Construction Phases

Equipment	Purpose of Use	Number of Units
Trucks	Transportation of material excavated	32
Wheel Loader	For loading excavated materials to the trucks	2
Dozer	For excavation, filling, splitting, hauling and pushing	2
Grader	For grinding, slope inclination, trench digging and road construction.	1
Drill	For drilling blast holes	2
Pumper Truck	For water spraying as a part of dust-prevention on pits and service roads	1
Roller	For compacting roads, such as earth, stabilized, asphalt according to the ground type and structure	1
Crane	For carriage of heavy loads at horizontal and vertical planes	1



Light Tower	Mobile source of light	5
Light Vehicles	Transport of personnel within the site	8

Table 13: List of Vehicles and Equipment to be used during Operation Phase:

Equipment	Purpose of Use	Number of Units
Excavator	For loading and excavation purposes	6
Trucks	Transportation of material excavated	43
Service Truck	For transport and carriage of materials, spare parts and similar items within pits	10
Wheel Loader	For loading excavated materials to the trucks	3
Dozer	For excavation, filling, splitting, hauling and pushing	2
Grader	For Grinding, slope inclination, trench digging and road construction.	1
Drill	For drilling blast holes	1
Drill	For drilling pre-cut holes	1
Pumper Truck	For water spraying as a part of dust-prevention on pits and service roads	1
Roller	For compacting roads, such as earth, stabilized, asphalt according to the ground type and structure	1
Crane	For carriage of heavy loads at horizontal and vertical planes	1
Light Tower	Mobile source of light	5
Pump	For carrying materials like water and mud to higher locations	5
Light Vehicles	Transport of personnel within the site	10

2 HAZARDOUS MATERIALS

Diesel fuel and cyanide are two major hazardous materials to be used in the Project.

A temporary waste storage site at which the hazardous materials to be generated in the plant will be stored has been designed and will be constructed. The management of hazardous waste and hazardous materials have been further detailed in the **Waste Management Plan and Explosives and Hazardous Material Management Plan**.

Leaching is the process of dissolution of gold contained within ore by use of cyanide. Within the scope of the Lapseki Project, the tank in the gold mine will use approximately 0.45 kg of cyanide per tonne crushed rock during the leaching process to extract the gold.

All project works will be executed pursuant to the International Cyanide Management Code (Cyanide Code) of The International Cyanide Management Institute (ICMI). Furthermore, in order to receive professional support regarding cyanide management and to ensure dissemination of information by a third party involvement to the Public. TÜMAD is committed to apply for ICMC membership and complete the certification process in three years of operation. The monitoring of the implementation of the requirements of the Cyanide Code will be performed under supervision of the United Nations Environment Programme (UNEP) can take place. The cyanide supplier selected for the operation phase of the project is operating in line with ICMS requirements.

The Cyanide Code is an initiative document prepared voluntarily for both the gold mining sector and the manufacturers and transporters of the cyanide used in the gold mining sector. This code is determined according to Principles and Applications Standards for production, transportation, loading-unloading, transportation and storage, operation activities, end of operation, worker safety, emergency response and slope. TÜMAD has prepared a detailed **Cyanide Management Plan** including occupational safety,



emergency response and transportation considerations. This plan is aligned with the Cyanide Code requirements.

3 WATER MANAGEMENT

Since the Kestanelik pit is planned to be enlarged and the new waste rock dump is located on the Kestanelik Creek, TÜMAD developed a new diversion plan to divert the Kestanelik Stream away from the Kestanelik Pit. The updated diversion and the surface water management plan is summarized below. Such a major diversion plan is not included to the EIA report and TÜMAD submitted the diversion plan to DSI (Devlet Su İşleri – State Hydraulic Works) and it is approved in 2017. Any future change in the DSI approved designs should be reviewed and approved again by DSI. Land use permits for the diversion channels located outside of the EIA and the license boundary will be received by TÜMAD. TÜMAD confirms that the channels are considered as supporting infrastructure and constructing them outside of the license and EIA boundary is possible.

Drainage channels were designed upstream of the project units in order to both realize mining activities in a safe manner and prevent impact on existing water quality. Regarding the design of drainage channels, 3 staged drainage channels were designed according to the annual mine development plan (Figure 12). Contact and non-contact water volumes and percentages of each micro-basin during the operation period is presented in Table 14.

- Through the drainage channels designed for the initial 2 years comprising the 1st Stage, it is planned to convey 78% of the water passing from precipitation to runoff falling within the project's micro basins to downstream of the project site without contacting the project units. 22 % of the surface water will be collected as contact water between Operation year 0 and 2.
- During the 2-5 years comprising the 2nd Stage, it is planned to convey 66% of the water passing from precipitation to runoff falling within the project's micro basins to downstream of the project site without contacting the project units with the designed drainage channels. 34 % of the surface water will be collected as contact water between Operation year 2 and 5.
- During the 5-10 years comprising the 3rd Stage, it is planned to convey 51% of the water passing from precipitation to runoff falling within the project's micro basins to downstream of the project site without contacting the project units with the designed drainage channels. 49% of the surface water will be collected as contact water between Operation year 5 and 10.
- The non-contact surface water will be discharged to Kestanelik and Kovanlık Stream.
- The Kovanlık stream water quality will be monitored on a regular basis and TÜMAD will take actions to make sure that the water discharge will not cause any adverse impacts on the water quality of the stream.



Table 14 Contact and non-contact water volumes and percentages of each micro-basin during the operation period

Basins	0 - 2 Years				
	Interacting Area (m ²)	Interacting Water (m ³ /year)	Non-Interacting Area (m ²)	Non-Interacting Water (m ³ /year)	Contact Water (%)
Kestanelik Stream	334,615	53,719	2,424,895	389,293	12%
Topyurt Stream	474,524	76,180	573,271	92,033	45%
Boğaöldü Stream	232,491	37,324	788,192	126,536	23%
Kovanlık Stream	126,331	20,281	412,486	66,221	23%
Total	1,167,961	187,505	4,198,844	674,082	22%
Percentage		22%		78%	22%
Basins	2 - 5 Years				
	Interacting Area (m ²)	Interacting Water (m ³ /year)	Non-Interacting Area (m ²)	Non-Interacting Water (m ³ /year)	Contact Water (%)
Kestanelik Stream	968,008	155,404	1,791,502	287,608	35%
Topyurt Stream	474,854	76,233	572,940	91,980	45%
Boğaöldü Stream	232,461	37,319	788,222	126,541	23%
Kovanlık Stream	158,451	25,438	380,367	61,064	29%
Total	1,833,774	294,394	3,533,031	567,193	34%
		34%		66%	34%
Basins	5 - 10 Years				
	Interacting Area (m ²)	Interacting Water (m ³ /year)	Non-Interacting Area (m ²)	Non-Interacting Water (m ³ /year)	Contact Water (%)
Kestanelik Stream	1,365,889	219,280	1,393,621	223,732	49%
Topyurt Stream	566,404	90,931	481,390	77,282	54%
Boğaöldü Stream	527,340	84,659	493,343	79,201	52%
Kovanlık Stream	159,382	25,587	379,435	60,915	30%
Total	2,619,015	420,457	2,747,790	441,130	49%
		49%		51%	49%



LAPSEKI PROJECT - SIP

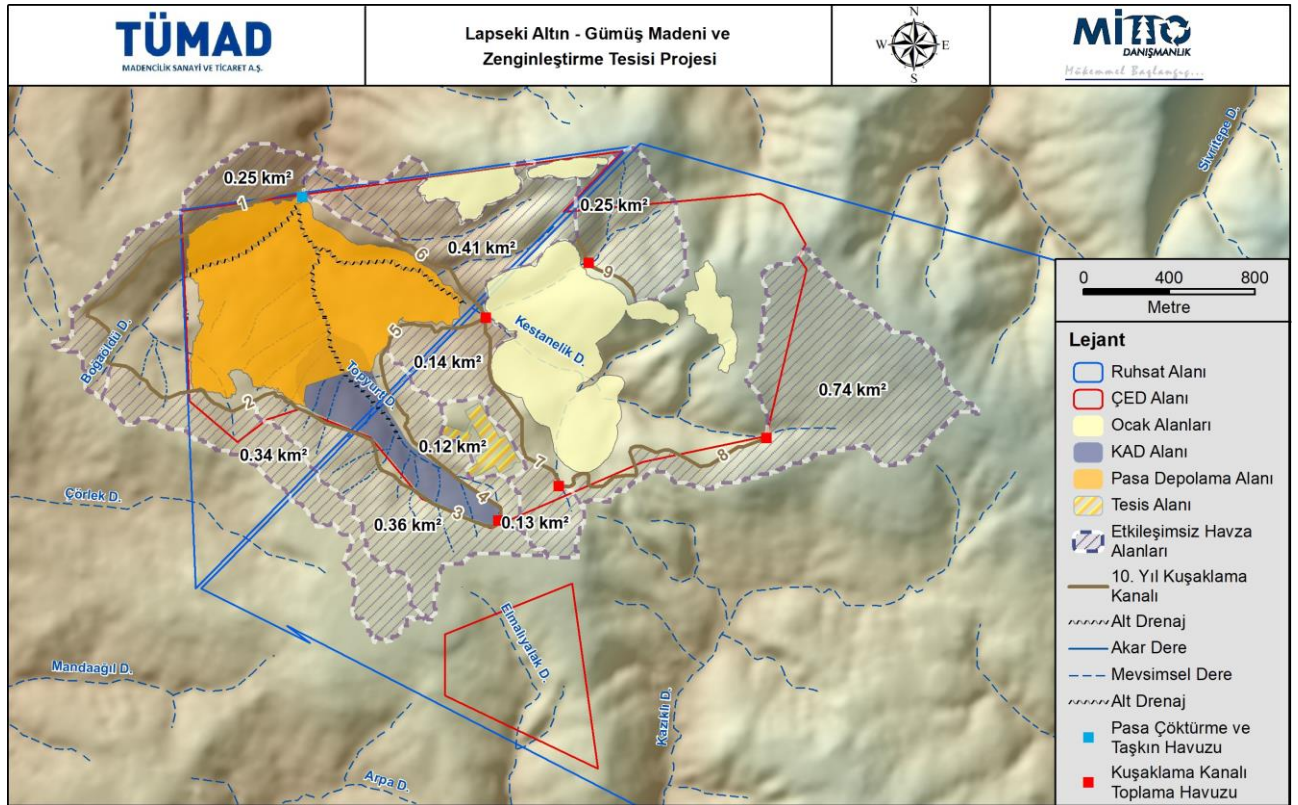


Figure 12: Surface Water Diversion Plan

The annual non-contact water discharge is expected to be 440.000 m³/year (year 5-10 of the operation). A non-contact water collection flowsheet for year 5-10 is presented in Figure 13.

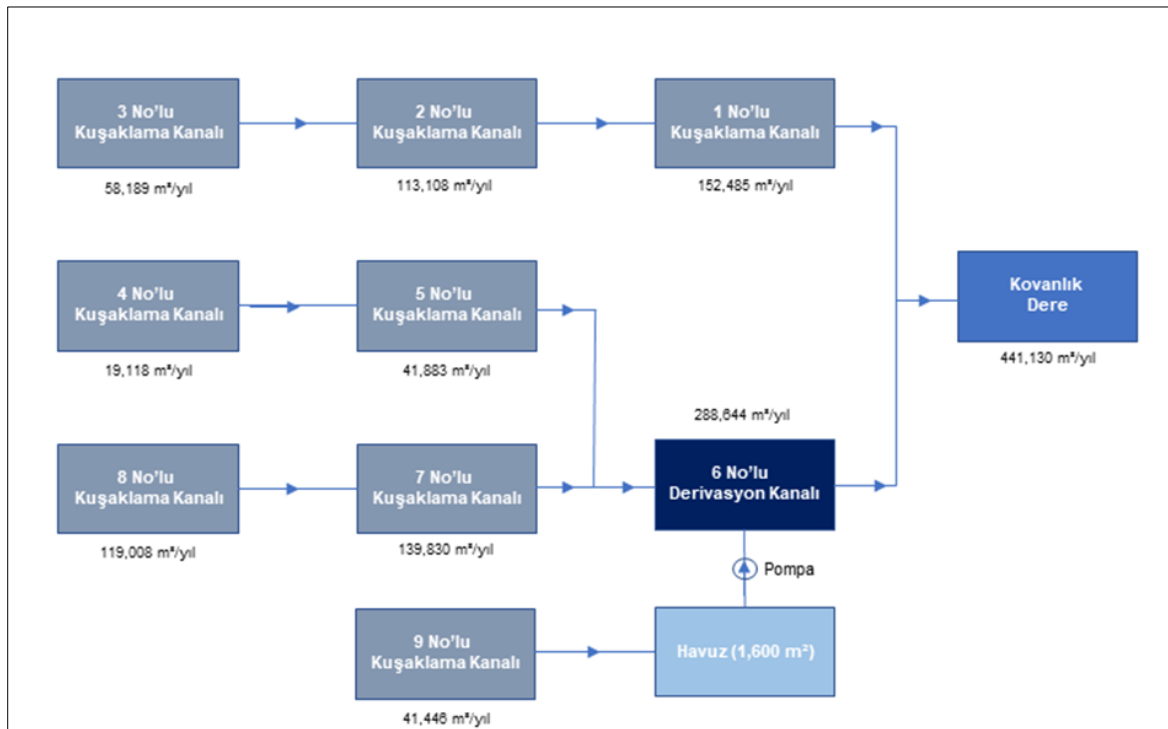


Figure 13: Non-contact water management flowsheet



3.1 Contact Water Management

The contact water strategy includes separation of contact and non-contact water. The contact water generated from the WRD, DTSS and the Pits will be collected in a settling pond to be equalized. There are three open pits. These are the Karakovan Pit, the Kestanelik Pit and the SBX Pit. All three shall produce contact water, which, having contacted the pit walls, has the potential to be impacted by acid rock drainage. Preliminary water quality model predictions have indicated that contact water will not exceed the Project discharge limits with the exception of arsenic at the SBX pit. These modelled results are depicted in Table 16, as follows.

The discharge limits based on “Regulation on Water Quality Control, Table 7.1” and IFC mine effluent discharge standards are presented below. Cyanide will not be discharged to the environment.

The discharge of water from mining operations is covered by a number of EU Directives. The discharge of cyanide is specifically regulated by the Mining Waste Directive 2004/35/EC, which sets a limit of 10 ppm of “weak acid dissociable cyanide at the point of discharge of the tailings from the process plant into the pond”. All other substances are regulated by the Water Framework Directive and the Groundwater Directive. For groundwater this requires a “prohibition of direct discharges of pollutants into groundwater”, subject to certain exemptions (2000/60/EC) and an absolute prohibition on indirect discharges of hazardous substances. For surface water there is a requirement to cease or phase out emissions of hazardous substances and discharge limits are set based on back calculation using the Environmental Quality Standards (2008/105/EC) and Drinking Water Standards (DWS), depending on the type of receiving water body. These surface water discharge limits are determined on a site/discharge specific basis and may include for mixing (2008/105/EC) in the receiving water body. In order to preserve the existing water quality of the Kovanlık stream trigger levels are set based on the existing water quality of the stream. A discharge license will be received from the Ministry of Environment and Urbanization as part of the Environment Permit.

Table 15 Standards for Discharge of Waste Water to Receiving Environment

Parameter	Units	WPCR 7.1	IFC Standards	Project Standards
pH		6 - 9	6 - 9	6 - 9
Total Suspended Solids	mg/l	60	50	50
COD	mg/l	50	150	50
BOD5	mg/l		50	45
Oil and Grease	mg/l		10	10
Arsenic (As)	mg/l		0.1	0.1
Cadmium (Cd)	mg/l	0.2	0.05	0.05
Chromium (Cr)	mg/l	1	0.1	0.1
Copper (Cu)	mg/l	3	0.3	0.3
Cyanide	mg/l	0.1	1	<0.01**
Cyanide WAD	mg/l		0.5	<0.01**
Cyanide Free	mg/l		0.1	<0.01**
Iron (Fe)	mg/l	3	2	2
Lead (Pb)	mg/l	0.5	0.2	0.2
Mercury (Hg)	mg/l	0.05	0.002	0.002
Nickel (Ni)	mg/l		0.5	0.5
Selenium (Se)	mg/l		0.1*	0.1
Phenols	mg/l		0.5	0.5
Zinc (Zn)	mg/l	3	0.5	0.5

WPCR Table 7.1 Water Pollution Control Regulation Table 7.1; **IFC:** International Finance Corporation; *: Based on Former IFC General Environmental Guidelines published on 1998; **Cyanide will not be discharged to the receiving environment



The SBX Pit Arsenic concentrations have been preliminarily modelled as being above the Project discharge limits. However, the same model has consistently shown that once mixed with other wastewaters in the settling pond the arsenic is diluted within concentration limits before being discharged to the receiving body (Kovanlık Stream). Thus, the need for a wastewater treatment facility is not foreseen. However, these are preliminary monitoring results. Further wastewater quality studies should be conducted to form better predictions and to further develop contact water management strategy. Monitoring of the discharge quality to the receiving body will continue throughout the operation of the mine. If during the course of monitoring it is observed that arsenic (or any other contaminant) concentrations exceed triggering concentrations, action will be taken in the form of pilot wastewater treatment and then, ultimately, a tailored wastewater treatment facility.

Trigger levels determined based on the expected contact water quality, Turkish Water Pollution Control Regulation water quality classification as well as the baseline data from the stream are shown in Table 17 Turkish Water Pollution Control Regulation classifies the inland water resources (ambient water). The surface water resources are classified into four classes based on these limits. Kovanlık stream is Class II and is not used for potable water purposes however it is important to maintain the existing Classification (Class II) of the water in the Kovanlık Stream defined according to the Turkish Water Pollution Control Regulation. The trigger Limit will be set at the upper limit of Class II parameters in the downstream of the Kovanlık Stream. In Kovanlık stream, flow measurements, on-site field parameters and water samples will be collected periodically. The monitoring results will be compared with the existing reference conditions at each monitoring point. If the parameter concentrations exceed the defined trigger levels, a risk assessment study will be conducted to identify potential environmental and human health risks that will increase the frequency of monitoring and sampling. Depending on the result of the risk assessment and monitoring studies, further mitigation measures will be applied to reduce the impacts to an acceptable level.

Table 16: Comparison of Water Chemistry Values expected to occur according to the Geochemical Model Results in the Project Pits, Leach, and Mine Waste Areas and the Project Standards

Parameter	Unit	Project Discharge Water Standards	PHREEQC Model Results					
			Kestanelik	Karakovan	Karakovan 4	SBX	Mine waste	Settling Basin
pH		6.0 - 9.0	7.62	8.07	6.46	6.12	6.29	7.22
Aluminium (Al)	mg/l		1.22E-05	4.00E-03	7.12E-01	1.79E+00	2.80E-03	3.36E-02
Antimony (Sb)	mg/l		7.60E-03	0.014	0.002	0.009	8.50E-03	8.00E-03
Arsenic (As)	mg/l	0.1	2.20E-02	1.00E-02	7.00E-03	1.04E-01	1.20E-02	2.00E-02
Barium (Ba)	mg/l		1.00E-02	2.80E-02	2.70E-02	1.70E-02	5.90E-02	2.50E-02
Boron (B)	mg/l		1.70E-02	5.10E-02	2.70E-02	3.50E-02	7.60E-02	3.50E-02
Cadmium (Cd)	mg/l	0.1	1.73x10-5	2.90E-04	1.00E-05	5.00E-04	1.00E-04	1.00E-04
Chlorine (Cl)	mg/l		2.41E+01	1.65E+01	3.62E+01	8.10E+00	2.07E+01	2.28E+01
Chromium (Cr)	mg/l	0.5	3.00E-04	1.00E-03	1.00E-03	1.00E-03	8.00E-04	5.00E-04
Copper (Cu)	mg/l	0.5	3.00E-03	3.00E-03	2.00E-03	6.80E-02	1.30E-03	3.50E-03
Fluoride iodine (F=)	mg/l	20	2.07E-01	3.91E-01	7.00E-02	3.01E-01	2.93E-01	2.37E-01
Iron (Fe)	mg/l	3	3.90E-03	2.00E-03	8.00E-03	5.00E-03	1.70E-03	3.30E-03
Lead (Pb)	mg/l	0.1	1.00E-04	4.00E-06	1.00E-03	6.00E-04	2.00E-04	2.00E-04
Magnesium iodine (Mg ²⁺)	mg/l		3.43E+01	1.25E+01	8.31E+00	9.80E+00	4.13E+01	3.52E+01



LAPSEKI PROJECT - SIP

Parameter	Unit	Project Discharge Water Standards	PHREEQC Model Results					
			Kestanelik	Karakovan	Karakovan 4	SBX	Mine waste	Settling Basin
Manganese (Mn)	mg/l		1.00E-04	1.00E-05	1.20E-02	1.00E-03	3.01E+00	8.68E-01
Mercury (Hg)	mg/l	0.01	<0.0001	1.00E-04	3.00E-04	1.00E-04	2.00E-04	1.00E-04
Molybdenum (Mo)	mg/l		2.00E-03	4.00E-03	4.00E-04	4.00E-03	9.70E-03	4.30E-03
Nickel (Ni)	mg/l	0.5	1.30E-02	7.50E-02	4.00E-04	1.15E-01	7.00E-03	1.44E-02
Phosphate iodine (PO ₄ ²⁺)	mg/l		1.98E-01	4.60E-01	4.30E-02	7.68E-01	6.13E-02	1.73E-01
Selenium (Se)	mg/l	0.1	9.00E-03	6.00E-03	2.00E-04	5.00E-03	4.00E-02	1.78E-02
Silver (Ag)	mg/l	0.5	8.36x10-6	1.00E-04	1.00E-04	1.00E-04	2.00E-04	1.00E-04
Sodium (Na)	mg/l		1.06E+02	1.00E+01	1.29E+01	5.50E+00	1.93E+01	7.62E+01
Sulphate iodine (SO ₄ ²⁺)	mg/l		4.10E+02	9.07E+01	3.43E+01	7.49E+01	1.33E+02	3.15E+02
Strontium (Sr)	mg/l		9.00E-02	1.20E-02	2.00E-03	1.10E-02	1.73E-01	1.10E-01
Uranium (U)	mg/l		1.00E-03	1.40E-02	4.00E-05	4.00E-05	6.00E-04	1.20E-03
Zinc (Zn)	mg/l	2	2.00E-02	2.70E-02	1.40E-02	7.70E-02	4.98E-02	2.96E-02
Cobalt (Co)	mg/l		2.30E-02	7.70E-02	2.00E-04	9.20E-02	7.50E-03	2.08E-02



Table 17 Kovanlık Stream baseline parameters, expected contact water quality at the main settling pond and the trigger limits for the Kovanlık Stream.

	Water Quality Classification ⁴				BASELINE			Expected Contact Water Quality - Settling Pond	Trigger Limits for Kovanlık Stream
Water Parameters	I	II	III	IV	Kovanlık Stream				
					Spring 2015	Autumn 2015	Winter 2016		
pH	6.5-8.5	6.5-8.5	6.0-9.0	Outside of 6,0-9,0	7.72	7.86	7.74	7.22	6.5-8.5
Arsenic (µg As/L)	≤20	20-50	100	> 100	<5	<5	<5	20	20
Cadmium (µg Cd/L)	≤ 2	2.0-5.0	5.0-7.0	> 7	<0,4	<0,4	<0,4	0.1	2
Chromium (total) (µg Cr/L)	≤20	20-50	50-200	> 200	<1	<1	<1	0.5	20
Copper (µg Cu/L)	≤20	20-50	50-200	> 200	<1	<1	1.13	3.5	20
Iron (µg Fe/L)	≤300	300-1000	1000-5000	> 5000	2.9	<2	<2	3.3	300
Lead (µg Pb/L)	≤10	10.0-20	20-50	> 50	<5	<5	<5	0.2	10
Manganese (µg Mn/L)	≤100	100-500	500-3000	> 3000	6.89	0.9	2.45	868	500
Mercury (µg Hg/L)	<0.1	0.1-0.5	0.5-2	> 2	<0,01	<0,01	<0,01	0.1	0.1
Nickel (µg Ni/L)	≤20	20-50	50-200	> 200	<2	<2	<2	14.4	20
Selenium (µg Se/L)	≤10	≤10	10-20	> 20	<10	<10	<10	17.8	10
Sulphate (mg SO4/L)	<200	<200	200-400	> 400	71.9	86.1	54.3	315	200
Zinc (µg Zn/L)	≤200	200-500	500-2000	> 2000	<2	<2	<2	29.6	200
Cyanide (total) (µg Cr/L)	≤10	50	100	> 100	<5	<5	<5	n.a	<10

^{4 4} There are no equivalent surface water classifications in the EU. The approach in the EU is to classify the status of a water body as either high, good, moderate, poor or bad quality based on its ecological and chemical status. The methodology for this is set out in the EU Water Framework Directive and member states are required to do so for each water body or river basin. The basis for the classification depends on the baseline, non-impacted, water quality. This means that a naturally saline water body could have the same quality status as a naturally non-saline water body. Member states must take action to prevent the deterioration in the status of a water body and to improve water quality where a water body has poor or moderate status. As part of harmonization of Turkish Environmental Legislation with EU Legislation, Turkey follow the guidance and requirements presented in this directive harmonization



In addition to discharging to the equalized and diluted contact water to the receiving body, some water will be pumped back to the process plant for re-use.

For safety and efficient mining purposes, pits will be dewatered to maintain dry conditions so the groundwater and surface water run-on will be collected at the sumps excavated at the pit bottoms. Additional and/or new sumps will be excavated together with the progress of the mining operation and pit bottom elevation changes.

The estimated groundwater inflow and the surface water run-on for each pit is presented in Table 18. The SBX pit is located above the groundwater elevation so groundwater inflow will not occur in SBX Pit. The groundwater inflow at Karakovan pit is expected to be limited with 252 m³/year in the last year of the operation. The major groundwater inflow is expected to be observed in Kestanelik pit. The inflow will gradually increase together with the depth of the pit and will reach 266,000 m³/year during the last year of the operation.

The Kestanelik deposit has been defined as a low-sulphidation deposit and near neutral conditions, but elevated arsenic concentrations are typical for such deposits. The groundwater quality baseline data also indicated that elevated arsenic concentrations has been observed in the observation wells which are located close to the ore body. Furthermore, the Şahinli catchment has been observed to have elevated arsenic concentrations. In that respect during the operation elevated arsenic concentrations are expected in the contact waters.

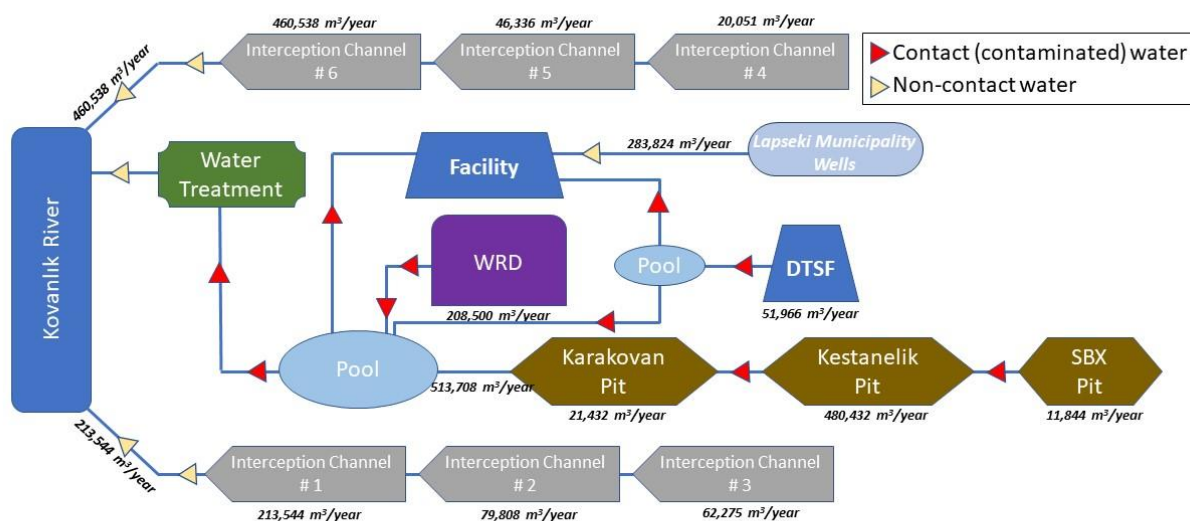
Table 18: Annual Contact Water Volumes expected at each Pit during the Operation Period.

Year	Kestanelik		SBX		Karakovan		TOTAL		Total Open Pit Contact Water (m ³)
	Run-On (m ³)	Groundwater Inflow (m ³)	Run-On (m ³)	Groundwater Inflow (m ³)	Run-On (m ³)	Groundwater Inflow (m ³)	Run-On (m ³)	Groundwater Inflow (m ³)	
1	35,909	3,068	0	0	0	0	35,909	3,068	38,977
2	41,485	3,798	0	0	15,254	0	56,739	3,798	60,537
3	48,431	21,533	0	0	21,793	144	70,224	21,677	91,901
4	65,422	5,107	0	0	21,793	129	87,215	5,236	92,451
5	65,422	5,015	12178	0	21,793	168	99,393	5,183	104,576
6	69,305	145,552	12178	0	21,793	195	103,276	145,747	249,023
7	77,184	146,315	12178	0	21,793	162	111,155	146,477	257,632
8	93,567	147,099	12178	0	21,793	252	127,538	147,351	274,889
9	96,652	205,386	12178	0	21,793	195	130,623	205,581	336,204
10	97,084	266,404	12178	0	21,793	159	131,055	266,563	397,618

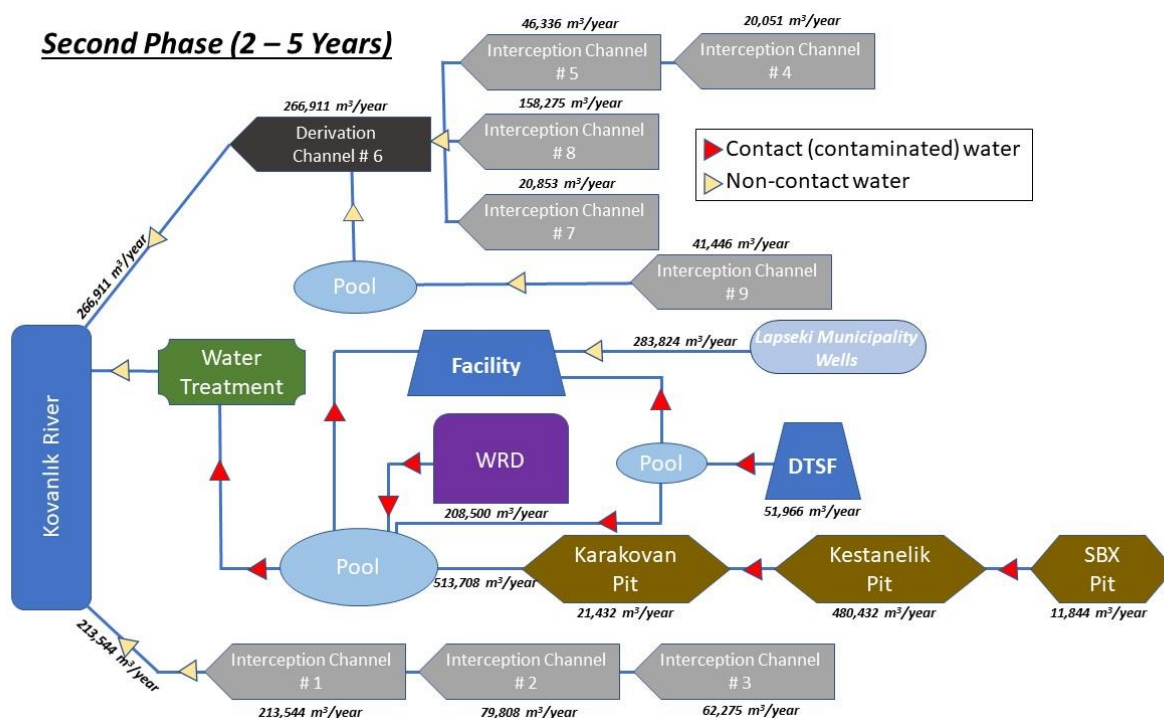
The contact water volume that is expected to result from the WRD contact water collection pond is 208.141 m³/year. It is expected that from the Total Surface Flow (TSF) 51.997 m³/year will flow to the contact water collection pond. The contact water management flowchart is presented in Figure 14. Which is presenting maximum water amounts on a monthly basis. The water management approach of the project facilities are explained in the sections that follow.



First Phase (0 – 2 Years)



Second Phase (2 – 5 Years)



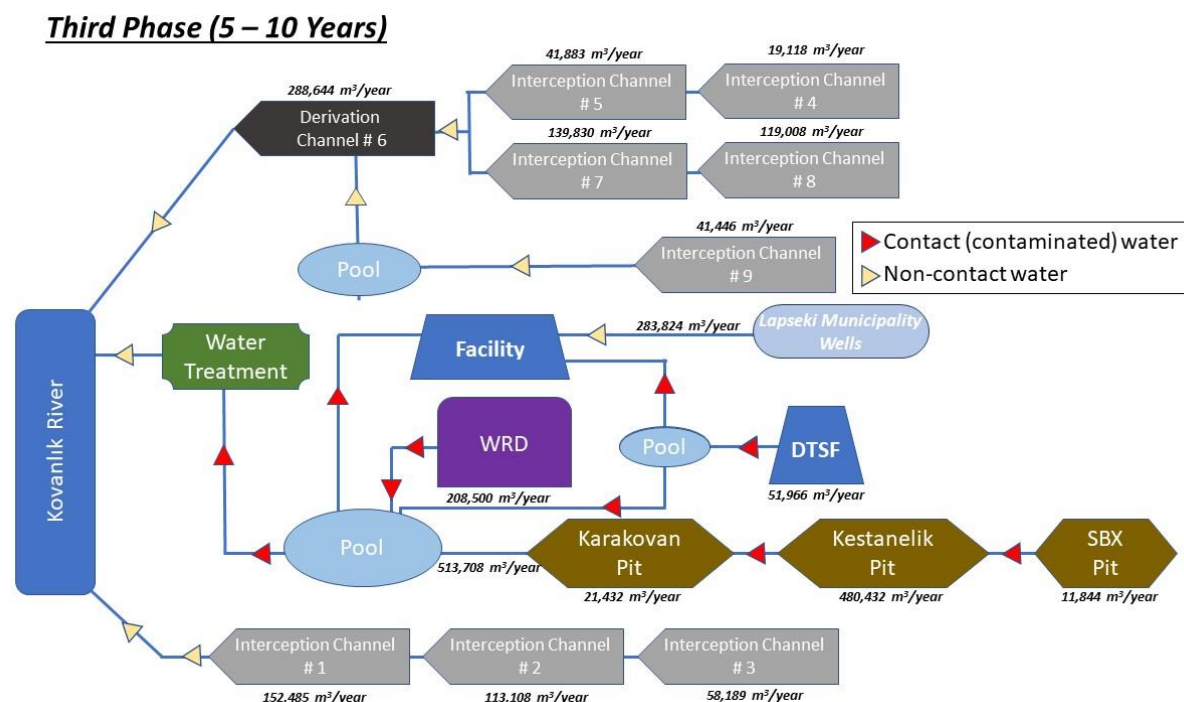


Figure 14: Contact water management flowsheet

3.2 Open Pits

Pits Water in the open pits which has contacted the pit walls has the potential to be impacted by acid rock drainage. Contact water management has been described in the previous section, 3.1.

During operation, discharge of water from the pits to groundwater will be minimized by pit dewatering and management of this water within the contact water management system. A decrease is expected in groundwater levels due to the removal of groundwater from the system during dewatering activities planned at open pits. The reduction in groundwater will be within the impact radius arising from the dewatering activities. The springs and the ground water wells within the impact radius to be formed during dewatering may be affected by the expected reduction in ground water. As part of closure, some of the pits will be partially backfilled with waste rock. A backfill plan will be developed as part of the closure plan for the Project.

The current pit lake study of Mitto indicates that a limited amount of water (10-20m height) will be collected within the Kestanelik Pit. Partially backfilling the Kestanelik pit would prevent development of a pit lake. The EIA indicated that Karakovan and SBX pits will be backfilled and the backfill will prevent development of a pit lake at the Karakovan Pit. According to Mitto's updated study a pit lake development is not expected in the Karakovan Pit.

3.3 Waste Rock Dump

The WRD will be constructed to prevent Potentially Acid Generating (PAG) waste from coming into contact with water as much as possible, the Non-Acid Generating (NAG) waste rock will be used to encapsulate the PAG material. The geochemistry update conducted by Mitto indicate that the 94% of the waste rock will be NAG. In addition, during the operation and closure of the facility, oxidized waste with high buffering capacity will be used to cover the sulphur zone exposed in the open pit surfaces for the purpose of covering the slope surfaces to prevent to contact with water and air. Underdrain channels will be constructed to collect the seepage water, run-off water will be collected by interception channels and the contact water will be collected at the contact water pond which will be constructed at the downstream of the WRD. Contact water will be pumped back to the process facility and/or will be discharged to the Kovanlık stream as depicted in Figure 14.

The original EIA Report indicated that 5.68% of the waste rock is from Sulphur zones and is PAG with the remaining approximate 94% as NAG (Oxide + Transition). However, these percentages changed slightly when the plan for the mine was revised. In accordance with the revised mine plan, the percentage of



Sulphur zone rocks compared to the transition and oxide rocks was re-evaluated. Along with the expanding Kestanelik pit, new sulphide mineralization and transition zones have been incorporated into the pit and ultimately the rate of oxidized zones has slightly decreased. Depending on the revised volume calculations in accordance with the new pit geometries, the percentage of sulphur zone PAG rock will increase by 0.56% and the total PAG rock percentage will be around 6%. The remaining 94% of the waste rock will be composed of oxide and transition zone units which are expected to be NAG (non-acid generating). Further testing will be conducted especially on the transition zone rocks to better evaluate the ARD potential of that material during the operation period and the mitigation measures will be revised if necessary. The excavation quantities calculated by determining the expanded Kestanelik S-Damar Quarry ore and waste distributions together with the sulphur ratios are given in Table 19.

Table 19: Kestanelik S-Damar Quarry Excavation Ratios

Lithology	Ore/Mine Waste		Mineralization	Volume (m³)	Rate (%)	Additional Suggested Samples (Number of Drills/Composites)	Sulphur Content (%) Min-Max
QFP	Ore	High Grade	Ox	595,603	10.57		
			Tr	576,852	10.24		
			S	16,735	0.30		
		Low Grade	Ox	29,663	0.53		
			Tr	60,249	1.07		
			S	3,471	0.06		
	Mine waste		Ox	3712483	65.88		
			Tr	612.309	10.87		
			S	27.960	0.50	4/1	0.01-1.45
QFP Total			5.635.325.00	100.00			
SCH	Ore	High Grade	Ox	972.689	9.72		
			Tr	468.001	4.68		
			S	14.844	0.15		
		Low Grade	Ox	230.143	2.30		
			Tr	353.241	3.53		
			S	0	0.00		
	Mine waste		Ox	5770344	57.68		
			Tr	2123627	21.23		
			S	70.839	0.71	3/1	0.01-1.81
SCH Total			10.003.728.00	100.00			
SED	Ore	High Grade	Ox	66.062	4.64		
			Tr	237.355	16.69		
			S	0	0.00		
		Low Grade	Ox	0	0.00		
			Tr	0	0.00		
			S	0	0.00		
	Mine waste		Ox	777.160	54.64		
			Tr	341.734	24.03		
			S	0	0.00	4/1	0,007-1.71
SED Total			1.422.311.00	100.00			
VOL	Ore	High Grade	Ox	0	0.00		
			Tr	0	0.00		
			S	0	0.00		
		Low Grade	Ox	0	0.00		
			Tr	0	0.00		
			S	0	0.00		



Lithology	Ore/Mine Waste	Mineralization	Volume (m ³)	Rate (%)	Additional Suggested Samples (Number of Drills/Composites)	Sulphur Content (%) Min-Max
	Mine waste	Ox	4886592	71.09		
		Tr	1987104	28.91	3/1	0.05-1.04
		S	0	0.00		
		VOL Total	6.873.696.00	100.00		

3.4 Dry Tailings Storage Facility

The dry stack tailings storage facility will be lined with 2mm HDPE geomembrane and the contact water will be collected in lined contact water ponds. Contact water will be pumped back to the process facility. The facility will be capped with a suitable low permeable cover at the end of the operation.

During the closure the Waste Rock Dump and the Dry Stack Tailings Facility will be capped with a low permeable cover system to minimize ingress of water. There will be monthly monitoring during the life of the mine and after the closure, periodical monitoring will be continued. After the operation, monitoring schedule is quarterly for the first 5 years, then once in a six month for the next five years and once in a year for the final five years after the operation.

3.5 Sanitary Wastewater

Domestic wastewater originating from the use of the staff at the operation shall be used in the operation of dust suppression and garden irrigation after being treated with the 250-person / day capacity package treatment plant. The rest of the solid part will be removed with the help of a sewage truck within the framework of agreements with the municipalities in the operating area. The construction of the domestic waste water treatment plant have been completed during the initiation of the construction activities. The plant designed and constructed according to the standards defined Table -21.1 of the Water Pollution Control Regulation (WPCR) as stated in the EIA report. The standards defined in EU Regulation - 91/271/EEC on Urban Waste-Water Treatment is more stringent than the local Water Pollution Control Regulation (WPCR) standards (BOD 25mg/L, COD 125mg/L, suspended solids 35mg/L). The flow of Kovanlık Stream measured on February 2016 is 27.5 l/s. The domestic waste water discharge will be around 0.35l/s (assuming 30 m³ waste water will be generated everyday) so 20mg/l BOD and 10mg/l Suspended Solids (SS) difference between the regulations is expected not to adversely impact the stream. However the discharge and the Kovanlık stream water quality and flow will be regularly monitored during the project. In case of adverse environmental impacts are observed, TÜMAD will develop further mitigation measures. The mitigation measures will include revising the design and modification of the domestic waste water treatment plant and meeting the 91/271/EEC on Urban Waste-Water Treatment discharge standards. The baseline data of the stream indicate that the BOD is around 1mg/l, COD varies between <5-9 mg/l and the Suspended solids varies between <5 – 38.5mg/l.

Table 20: Standards for Discharge Standards for Domestic Wastewater

Parameter	Unit	Composite sample (2 hours)	Composite sample (24 hours)	91/271/EEC Limits*
Biochemical Oxygen Demand (BOD5)	(mg/L)	50	45	25
Chemical Oxygen Demand (COD)	(mg/L)	180	120	125
Suspended Solid(SS)	(mg/L)	70	45	35
pH	-	6-9	6-9	

WPCR Table 21.1 Discharge Standards for Domestic Wastewater, * will be met in case of adverse environmental impacts are observed during monitoring

4 WASTE MANAGEMENT

The following types of waste will be produced during the project lifecycle.



- Non-hazardous general solid waste
- Mine waste
- Hazardous waste
- Waste Rock
- Wastewater
- Non-hazardous general waste

The amount of non-hazardous waste has been estimated as a maximum of 675 kg/day based on 500 people at site at peak time. For this estimation the statics of Lapseki Municipality by TUIK (2012) on the amount of waste to be created per person (1.35kg/person/day) has been used. This type of waste will be disposed will be stored in appropriate containers and be transferred by TÛMAD to the disposal location designated by Lapseki Municipality with the consent of the Municipality that TÛMAD already has a taken during the EIA process.

The details on the hazardous wastes are provided in the following section.

The details on the characteristics the hazardous wastes originating from the activities are defined below, in Table 21.



Table 21: Hazardous Waste Originated from the Facility Codes, Waste Code, and Areas of Activity

Waste Type	Waste Code	Activity	Areas of activity	Waste Resource	Waste Code Instructions	Disposal/Recovery Method	Disposal/Recovery Method Instructions
Contaminated waste	15 02 02*	Maintenance Actions	Mine Facility	Machine maintenance and repair done in the pits and facilities	Dangerous materials contaminated by absorbents, filter materials (oil filter if not otherwise specified), cleaning cloths, protective clothing (Contaminated, cloths and gloves)	R12	Changes due to the wastes being subjected to any processes between R1 and R11
Contaminated Packaging	15 01 10*	Maintenance Actions	Mine Facility	oil package, paint package, chemical package etc.	Packaging contaminated by hazardous substances or contaminated by residues of hazardous substances	R 12	Changes due to the wastes being subjected to any processes between R1 and R11
Waste Oil	13 02 08*	Maintenance Actions	Mine Facility	From machineries, trucks, maintenance and repair of all machineries and equipment in concentration plant	Other engine, gearbox and lubrication oils	R12	Changes due to the wastes being subjected to any processes between R1 and R11
Oil Filters	16 01 07*	Maintenance Actions	Mine Facility	From machineries	Oil Filters	D5	Regular storage which is required Specific Engineering Methods
Dangerous parts removed from the scrap	16 02 15*	Maintenance Actions	Mine Facility	From machineries, trucks, maintenance and repair of all machineries and	Dangerous parts removed from the scrap equipment	D5	Regular storage which is required Specific Engineering Methods



LAPSEKI PROJECT - SIP

Waste Type	Waste Code	Activity	Areas of activity	Waste Resource	Waste Code Instructions	Disposal/Recovery Method	Disposal/Recovery Method Instructions
				equipment in concentration plant			
Battery	16 06 01*	<u>Administrative Building</u>	Overall Facility	Administrative and technical offices	Leaded Batteries	D15	Storing until being subjected to any processes between D1 and D14
Fluorescent lamps	20 01 21*	<u>Administrative Building</u>	Overall Facility	Administrative building/overall facility lighting	Fluorescent lamps and other mercury-containing wastes	D5	Regular storage which is required Specific Engineering Methods
Wasted toner	08 03 17*	<u>Administrative Building</u>	Overall Facility	Administrative and technical offices	print cartridge toners containing hazardous substance	D15	Storing until being subjected to any processes between D1 and D14
Wasted Oil	20 01 26*	Cafeteria	Cafeteria	Cafeteria wastes	Liquid and solid oil except for 20 01 25	R12	Changes due to the wastes being subjected to any processes between R1 and R11

-* The relevant wastes did not occur in 2017 due to the fact that the plant has had a new activity. In case of occurrence, they will be stored in the hazardous waste area in accordance with their type in the facility. Then it will be sent to Environmental Permit and Licensed Company in return of UATF for being ensured of disposal.



LAPSEKI PROJECT - SIP

Waste codes, waste production amounts, estimated amounts of wastes for coming 3 years are given in the below, in Table 22.

Table 22: Hazardous Waste Codes and Estimated Amounts of Wastes

Waste Type	Waste Code	Waste Production Amount of Declared Year (2017) (kg)	Estimated Waste Amount of 2018 (kg)	Estimated Waste Amount of 2019 (kg)	Estimated Waste Amount of 2020 (kg)	Recovery/Disposal Plans for Estimated Wastes will be produced in the Future (with percentages %)	
						Method	Percentage (%)
Contaminated Packaging	15 01 10*	500	2500	2000	2000	R12	100
Contaminated Waste	15 02 02*	200	200	200	200	R12	100
Other engine, gearbox and lubrication oils	13 02 08*	1000	1000	1000	1000	R12	100
Oil Filters	16 01 07*	100	200	150	150	D5	100
Dangerous parts removed from the scrap equipment	16 02 15*	300	700	500	500	D5	100
Wasted Battery	16 06 01*	100	250	150	150	D15	100
Fluorescent Lamps	20 01 21*	5	10	5	5	D15	100
Wasted Toner	08 13 17*	10	30	25	25	D15	100
Wasted Oil	20 01 26	0	200	200	200	R12	100

The control tools for Mineral and Process Wastes are described in the following table.

Table 23: Control Tools for Mineral and Process Wastes

Applicability / Activity	Control Description
Topsoil salvage and segregation	Prior to disturbing an area by construction (WRD, stockpiles, Dry Stack Tailing Facility (DTSF), HLF and other infrastructure) or mining activities, topsoil must be stripped and transported to an approved, storage location. This will be undertaken in accordance with the Forest Rehabilitation Project & Regulation On Regulatory Storage Of Waste
Mineral Waste segregation	Waste rock, unconsolidated overburden and low high grade and Run of Mine ore will be segregated based upon ore content, total sulphur content and texture in accordance with ARD barrel test result.



LAPSEKI PROJECT - SIP

Applicability / Activity	Control Description
Process Waste	In the Tank –Leach process wastes will be subjected to chemical detoxification (INCO-SO ₂ Air)* and will be dried and dewatered by filter press will be stored built according to the Regulation On Regulatory Storage Of Waste of Dry Stack Tailing Facility (DTSF)
Mineral Waste segregation	All assumed NAF and PAF rock will be placed in separate temporary stockpiles according to ARD results. Based on the final chemistry, this rock will then be transported to a permanent waste rock dump, HLF, DTSF location and/or stockpiled to encapsulation process
Acid Rock Drainage	The overarching Acid Rock Drainage (ARD) control strategies for the WRD and stockpiles will comprise: 1) Static & kinetic test results 2) ARD Barrel Test Results** 3) segregation and separate handling of NAF and PAF material; 4) containment of any contact water within the operation footprint, and 5) Construction of NAF waste rock store and release covers over final PAF waste rock surfaces.
Waste rock Dump Closure	Encapsulation which all PAF materials will be capped with NAF cover material when they are closed or during operations in order to protect runoff water quality, minimize infiltration, control wind erosion and allow vegetation establishment.
WRD Management	The geotechnical and geochemical behaviour of the WRD will be managed and monitored throughout operation and into closure, to ensure that there are no significant environmental or geotechnical risks. Any areas of concern will be subject to appropriate corrective actions to mitigate them.
HLF and WRD Management	HLF slopes, WRD and stockpiles will be visually inspected on a regular basis to identify unacceptable lateral displacement, settlement or erosion during construction and operation.
DTSF Management	DTSF Has been surrounded by drainage channels for water management %80 percent of dewatering performance will be obtained from the filter press Compaction will be performed to stabilization, impermeability and dust prevention of waste which will be stored in DTSF
Surface water management	Surface water and any shallow seepage from the WRD and HLF will be managed through a series of perimeter drains and sumps, which will prevent the uncontrolled release of water and maximize the potential to recycle this water. Mine waste and DTSF areas will be collected by drainage channels and accumulated in the contaminated settling basins in the scope of the Project. Sampling studies will be conducted at outlets of the basins. Analyses will be conducted in accordance with Table 7.1 of By-law on Water Pollution Control in order to determine whether sampled waters comply with discharge criteria as detailed in Water Management Plan (TMD_CEV_PLN.003)
Surface water management	All contact water from the open pits, WRD, stockpiles, DTSF and HLF will be retained on site and be discharged into the process water circuit or be put to other beneficial use.

*INCO SO₂Air Process: INCO (SO₂+Air) chemical decomposition unit Chemical decomposition unit is comprised of the following phases;

- Cyanide decomposition
- Heavy Metal Stabilization

Waste pulp generated from leach and adsorption unit is decomposed at the chemical decomposition unit before transferred to tailing pond in order to ensure limit values declared by the Ministry of Environment. Limit value for free cyanide is 10 ppm.

** Site-scaled kinetic testing studies, which were initiated in January 2015, shall be terminated when the operation phase commences. 11 waste rock samples are placed in a 200 L barrel and seepage from this barrel is collected in the 20 L HPDE barrels and when there is enough amount of seepage water in these barrels, analyses shall be conducted and compared to the lab-scaled kinetic test results.



Control tools for the management of non-mineral waste are presented in the following Table.

Table 24: Control Tools for Non-mineral waste

Waste Type	Waste Resource	Waste Code Instructions	Disposal/Recovery Method per Legislation	Disposal/Recovery Method Instructions
Contaminated waste	Machine maintenance and repair done in the pits and facilities	Dangerous materials contaminated by absorbents, filter materials (oil filter if not otherwise specified), cleaning cloths, protective clothing (Contaminated, cloths and gloves)	R12	Changes due to the wastes being subjected to any processes between R1 and R11
Contaminated Packaging	oil package, paint package, chemical package etc.	Packaging contaminated by hazardous substances or contaminated by residues of hazardous substances	R 12	Changes due to the wastes being subjected to any processes between R1 and R11
Waste Oil	From machineries, trucks, maintenance and repair of all machineries and equipment in concentration plant	Other engine, gearbox and lubrication oils	R12	Changes due to the wastes being subjected to any processes between R1 and R11
Oil Filters	From machineries	Oil Filters	D5	Regular storage which is required Specific Engineering Methods
Dangerous parts removed from the scrap	From machineries, trucks, maintenance and repair of all machineries and equipment in concentration plant	Dangerous parts removed from the scrap equipment	D5	Regular storage which is required Specific Engineering Methods
Battery	Administrative and technical offices	Leaded Batteries	D15	Storing until being subjected to any processes between D1 and D14
Fluorescent lamps	Administrative building/ overall facility lighting	Fluorescent lamps and other mercury-containing wastes	D5	Regular storage which is required Specific Engineering Methods
Wasted toner	Administrative and technical offices	print cartridge toners containing hazardous substance	D15	Storing until being subjected to any



LAPSEKI PROJECT - SIP

Waste Type	Waste Resource	Waste Code Instructions	Disposal/Recovery Method per Legislation	Disposal/Recovery Method Instructions
				processes between D1 and D14
Wasted Oil	Cafeteria wastes	Liquid and solid oil except for 20 01 25	R12	Changes due to the wastes being subjected to any processes between R1 and R11

The disposal methods for different kinds of wastes are summarized below:

- Wastes from the processing plant and settlement pond shall be delivered to the Solid Waste Storage (SWS) area, located on-site. The dry waste storage area will conform to the Class 1 standards provided in the Turkish Regulation on Landfills.⁵
- Non-mineral hazardous wastes will first be stored at the temporary storage area at site which is designed in accordance with legislative requirements and then delivered to licensed hazardous waste facilities.
- Waste (hazardous and non-hazardous) generated from operation and recyclable is sent to Environment Permit and Licensed Disposal Facilities to provide recovery or disposal. Waste that cannot be recovered and does not have suitable recycling characteristics will be sent to the Sanitary Landfill Site and legislation compliant disposal will be ensured. The summary of the disposal methods of these wastes given below:
 - Domestic wastes are collected by municipality and sent to Municipality's landfill. There is a municipal approval on the collection of the domestic wastes from Project Site.
 - Excavation wastes are transferred to the disposal area operated by a waste company to be identified in due time) which has already permits from municipality to store such waste. The wastes transferred with official written report.
 - Hazardous wastes: Temporary storage will be done in the field and the construction of the temporary waste storage area is ongoing.
 - The agreements were made for some of the waste types as below with the licensed companies:
 - Waste batteries will be collected by the licensed private company called TAP.
 - Waste accumulators will be collected by the private company which are the supplier of the accumulators.
 - Waste oils will be collected by the licensed private company called PETDER.
 - Hazardous wastes will be collected by the licensed private company called İZAYDAŞ.

Temporary waste storage area (WSA) will be constructed according to requirement of MoEU and EU standards. This will include the followings:

⁵ Though the waste from processing plant (mineral waste) does not qualify as hazardous, but upgraded design of the storage area meeting Class 1 storage area requirements is additional precaution and commitment from the TUMAD.



- The temporary WSA will be separated from the facilities and buildings, located in a proper place for licensed vehicles to get hazardous wastes and away from human crowd;
- Secondary containment systems will be constructed;
- All required precautions will be taken against fires (fire extinguishers etc.);
- A warning sign "Attention! Hazardous Waste" will be placed at the entrance of the area where hazardous wastes are stored;
- Each waste in the WSA will be labelled. On the label, following information shall be covered:
 - ◆ Waste code;
 - ◆ Whether it is hazardous waste;
 - ◆ Hazard characteristics and risks for the hazardous wastes;
 - ◆ Date of entry;
 - An employee responsible for the temporary waste storage area will identified and the WSA will be enclosed, the entrance door will be lockable, the keys shall be used only by the responsible employee (restricted access).
 - In order to protect the hazardous waste storage area from rainfall, a roof and walls around the WSA will be constructed.
 - An absorbent material, i.e. a spill kit, will be located in the WSA against a spillage.

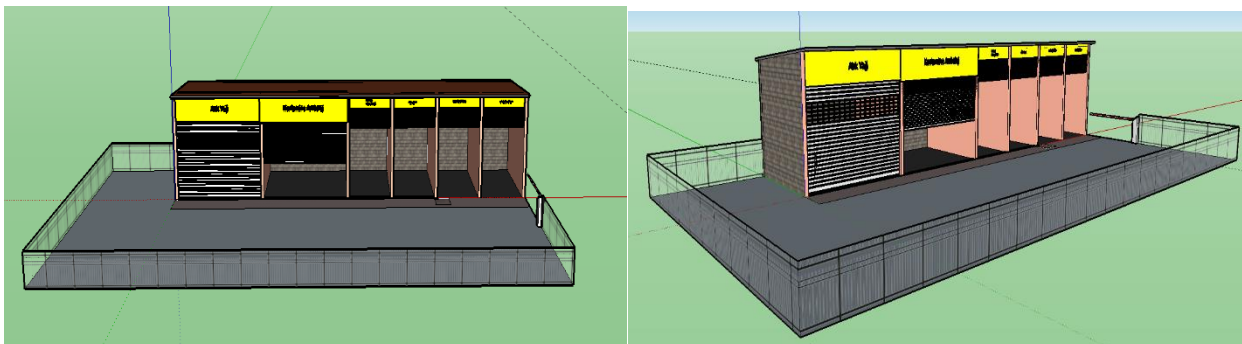


Figure 15: Temporary Hazardous Waste Storage Area

- A training on the management of wastes will be provided to the workers. The training subjects at least includes:
 - ◆ requirements of this management plan
 - ◆ precautions and risks when handling wastes
 - ◆ proper usage of PPEs
 - ◆ waste minimization, categorization, segregation, storage
 - ◆ waste recycling and appropriate disposal

Domestic wastewater originating from the use of the employees at the operation phase shall be used for dust suppression and irrigation after being treated with the 250-person/day capacity treatment plant. The waste



sludge will be removed with a sewage truck within the framework of agreements with the municipalities in the operating area.

PROCESS FLOW CHART

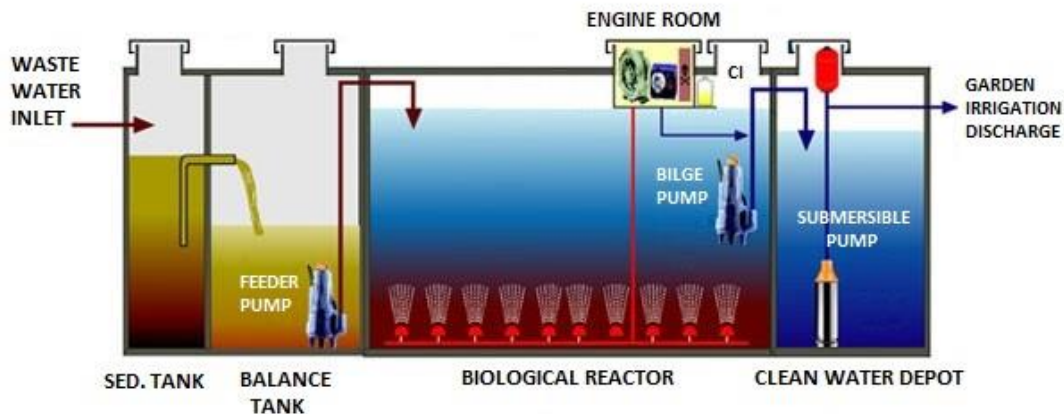


Figure 16 Wastewater Treatment Plant

Waste management is further detailed in the **Waste Management Plan** that has been prepared by TŪMAD to address the management of all these types of wastes.

5 CLOSURE

Land preparation and construction phases of Lapseki Project have already started and their completion is planned to be completed in the 3rd quarter of 2017. The economic life of the mine's production activities is planned to be 10 years.

Upon completion of mine operations, the decommissioning of the project will be commenced. TŪMAD will take all measures within the scope of relevant legislations during construction, operation and decommissioning phases of the project and will show the required sensitivity to human and environmental health by developing impact mitigation strategies.

TŪMAD has drafted a **mine closure framework** which will be revised to include the findings of the ongoing monitoring and further hydrogeological study and requirements of the defined water resources management strategy (See Lapseki Water Resources Impact Assessment Report and 8.1.2.7).

The waste management plan⁶ and the Framework Biodiversity Action Plan (to be developed into a full plan) addresses management of closure impacts.

Chapter 8 provides further information on the principles and targets established for the mine Closure activities.

6 IMPACT ASSESSMENT METHODOLOGY

Impact assessment has been performed for main issues for physical, biological and social components. The common impact assessment methodology consists of five main steps:

⁶ The waste management plan will be aligned with the requirements of Mining Waste Directive and the EC Reference Document on Best Available Techniques for Management of Tailings and Waste-Rock in Mining Activities (January 2009), where applicable.



- identification of Project activities that could contribute to environmental or social change;
- evaluation of the potential effects;
- description of mitigations for potential effects;
- analysis and characterization of residual effects; and
- as necessary, identification of monitoring to evaluate and track performance.

The general methodology adopted by Golder for Environmental and Social Impact Assessment Studies is consistent with the **DPSIR framework** (Drivers-Pressures-State-Impact-Response) developed by the European Environmental Agency (“EEA”). The methodology has been designed to be highly transparent and allow a semi-quantitative analysis of the impacts on the various environmental and social components. In the following paragraphs the methodology is described in its general terms; however the final methodology will be the result of consultation with the client and the relevant stakeholders.

The framework is based on the identification of the following elements:

- **Drivers:** project actions which can interfere significantly with the environment as primary generative elements of the environmental pressures;
- **Pressures** (impact factors): forms of direct or indirect interference produced by the project actions on the environment, able to influence the environmental state or quality;
- **State** (sensitivity): sum of the conditions which characterize the present quality and/or trends of a specific environmental and social component and/or of its resources’;
- **Impacts:** changes undergone by the environmental state or quality because of the different pressures generated by the drivers;
- **Responses** (mitigation measures): actions adopted in order to improve the environmental conditions or to reduce pressures and negative impacts.

The overall impact analysis methodology has been developed by Golder based on its experience in the field of the environmental and social impact assessment; the methodology includes the following phases:

- definition of the current state or quality of the different environmental and social components potentially impacted based on the results of the baseline studies;
- identification of the impacts potentially affecting the environmental and social components in the different phases of the project (construction, operation and decommissioning/closure);
- definition and assessment of the effects of the planned mitigation measures.

The **project actions** that would be the subject of the impact assessment are;

Construction phase

- surface levelling and grading
- temporary stockpiling of the material
- disposal of the demolition and grading material
- transport of construction material
- construction of the plants and facilities
- disposal of the waste deriving from construction



- land acquisition for mine site and Power Transmission Line corridor
- erection of the Power Transmission Poles

Operational phase

- crushing, screening
- leaching
- tailings storage
- hazardous material consumption
- presence and operation of the leaching, carbon absorption, electro winning
- water use
- transportation of the raw materials and of the products
- wastewater treatment plant effluent discharge to the sea
- employment
- land allocation
- use of existing public infrastructures

The **impact factors** in relation to these actions are listed in each section of impact assessment sections dedicated to the components.

The **impact assessment** on the single valued environmental and social component interfered in the different project phases is completed through the use of specific **environmental impact matrices** which compare the component state, expressed in terms of sensitivity, with the relevant impact factors, quantified on the basis of a series of parameters which include:

- duration (short, medium-short, medium, medium-long, long);
- frequency (concentrate, discontinuous, continuous);
- geographic extent (local, regional, beyond regional); and
- intensity (negligible, low, medium, high).

The **duration** (D) defines the length of time when the impact factor is effective and it is differentiated in:

- short, within 1 year;
- medium-short, between 1 and 5 years;
- medium, between 5 and 10 years;
- medium-long, between 10 and 15 years;
- long, longer than 15 years.

The **frequency** (F) defines how often the potential impact factor occurs and is distinguished in:

- concentrate: if it presents one single and short event;
- discontinuous: if it presents an event repeated periodically or accidentally;



- continuous: if distributed uniformly over time.

The **geographic extent** (G) coincides with the area where the impact factor exerts its influence and it is defined as: local, regional, beyond regional.

The **intensity** (I) represents the entity of the impact factor, and can be represented by various physical quantities. The intensity can be also defined as: negligible, low, medium, high.

The impact magnitude (M) is in direct proportion with all duration, frequency, geographic extent, and intensity. Impact magnitude on each components have been qualitatively assessed and provided in the subsequent sections of this Chapter.

The **significance of the impact** is in correlation with the impact magnitude and the sensitivity of the environmental component.

Table 25: Predicting significance of effects

		Magnitude of Impact (M)			
		High	Medium	Low	Negligible
Sensitivity of the Components (S)	High	Major	Moderate	Minor	Negligible
	Medium	Moderate	Minor	Minor	Negligible
	Low	Minor	Minor	Negligible	Negligible

Because of specific characteristics of social studies, the impact assessment methodology applied to the social components presents some differences compared to the methodology used for physical and biological components as applied with the criteria set above. In particular impacts are not always measurable and realised through the perception, concerns and expectations of the social community. Although there are isolated exceptions, most socio-economic impacts are experienced continuously by people; thus, frequency is not a useful attribute for significance assessment. The determination of significance of impact cannot always be estimated through the interaction of the parameters and the matrix presented above.

The scale of social impacts is therefore assessed in this study according to the following criteria;

Table 26: Social Impact Assessment Criteria

Criteria	Description of the Criteria	Assessment Thresholds	
		Threshold	Explanation
Impact Characterisation	Direction	Positive	Impact is an improvement of the existing condition or favourable
		Negative	The impact worsens the current condition or not favourable
		Neutral	The impact does not induce any change over the defined duration
Impact Type	Pathway	Direct	The Project results in direct impacts on the resource/PAPs (Project Affected People).
		Indirect	Indirect Impacts on resources/PAPs.
		Cumulative	Cumulative impacts on resources/PAPs.
Reversibility		Reversible	Impact is reversible



LAPSEKI PROJECT - SIP

	Reversing the physical parameter or the social community to original conditions existing before the impact	Irreversible	Impact is not reversible
Geographic Extension	Describes the area over which the defined impact will result and is related to spatial boundaries of the assessment	Local	The impact is limited to the individuals or population groups/communities in the vicinity of the Project Area
		Regional	The impacts are at district and/or province level
		National	The impact is valid for the whole Turkey
Time	Related to the time of occurrence of the impact	Immediate	The impact occurs right after the Project realisation.
		Delayed	The occurrence of impacts requires a process being released and the impact develops at a certain period of time following the Project activity.
Duration	In relation to how long the project will last and is closely related the Project phase and activity	Short Term	The impact is expected to last a short period of time (two years or less).
		Medium Term	The impact is expected to last a medium period of time (more than two years or less than five years).
		Long Term	The impact is expected to last over the operation phase.
Probability of occurrence	Probability	Negligible	The impact is not expected to occur
		Possible	It is possible that the impact will occur
		Highly Possible	It is highly possible that the impact will occur
Significance	Degree of significance	High	The impacts are measurable and continuous and result in a high level of concern among stakeholders and usually last for a long period of time and not easy to manage
		Medium	The impacts can both be notable and measurable and result in awareness and concern among the stakeholders and are usually medium or short term impacts.
		Neutral	There is no noticeable changes in the socioeconomic conditions.
Degree	Describes the nature and degree	Negligible/ no change	No measurable impact



of the impact and can be quantified in terms of magnitude of change	Low	There is low level and notable impact on individuals/PAPs. Negative impact: A number of changes in the sensitivity level of PAPs Positive Impact : Advantages at lower scale
	Medium	The impacts are notable and measurable and effects the majority of PAPs Negative Impact: Loss of resources however does not affect all of the PAPs Positive Impact: Advantages for PAPs, development areas for PAPs
	High	There is measurable positive and negative impact in relation to social issues. Negative Impact: Loss of resources and integrity, high level of decrease in quality Negative Impact: High level and scale of improvement in resource quality

Resource: SRM Consultancy

Standard mitigation and design measures are assumed to be in place when estimating the impact magnitude and additional specific mitigation measures are recommended for decreasing the residual impacts to the level low as a minimum.

For a-number of cases, the term “receptor” is used to describe features of the environment such as water resources, habitats and species which are valued by society for their intrinsic worth and/or their social or economic contribution; and social groups such as individuals and communities that may be affected by the Project. The specific receptors (settlements, natural resources and such) which are identified for the relevant environmental and social components in the sub sections of this Chapter.

7 ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT SCOPE

The scope of the environmental and social impact assessment as presented in this supplementary information package is described in the following sections.

7.1 Temporal Scope

Assessment of the impacts on the physical and biological environmental components focus on construction, operation and closure phases of the project. Whereas, the social impact assessment focuses on the operation phase of the project considering the fact that the construction phase is to be completed in October.

It has to be noted that the major impacts of the mine closure on physical and biological impacts will be identified and managed through the Mine Closure Plan that is under development.

The ESMMP and the findings of the impact assessment studies will be reviewed and updated for the Closure phase.



7.2 Spatial Scope

The spatial scope of the assessment expands over the Project Study Area and Associated Facilities. The Project Study Area and Associated Facilities would include;

- **EIA Permitted Area;** The Turkish EIA concentrated its assessment on the “EIA Permitted Area”, which coincided with the mine operation area including the pits and mine facilities.
- **Logistics and Supply Corridor:** In addition to the EIA Permitted Area, this ESIA also considers the potential impacts that may be caused by the construction of the water supply pipeline, access road and powerline. The access road corridor, water supply pipeline and powerline routes were previously depicted in Section 1.6. The ESIA has assessed impacts along a 100 m corridor (50 m either side of each infrastructure alignment) along the linear infrastructure.

The overall Project Study Area and Associated Facilities are previously depicted in Section 1.4.

7.3 Study Areas

The study areas are defined to include the Study Area and Associated Facilities of the Project and represent the areas where the data on existing baseline are collected and the potential impacts are assessed. It should be noted that existing baseline conditions for the associated facilities whose construction has already commenced was not available.

7.3.1 Environmental study area

Individual study areas were selected for each discipline, and these are illustrated in Figure 17 and Figure 18 and listed in Table 27, Table 28 and Table 29 and justified in the sections that follow.



LAPSEKI PROJECT - SIP

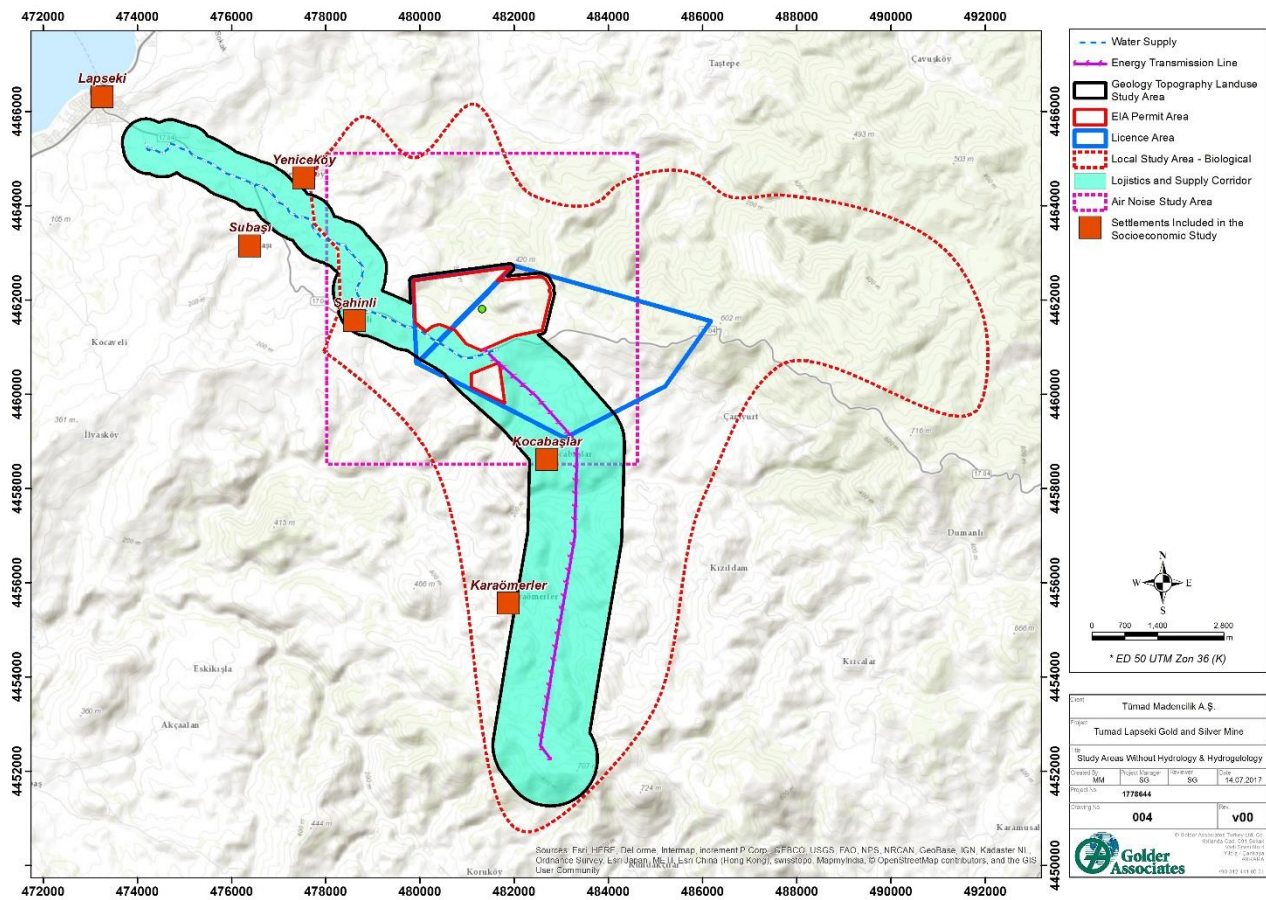


Figure 17: Study Areas



LAPSEKI PROJECT - SIP

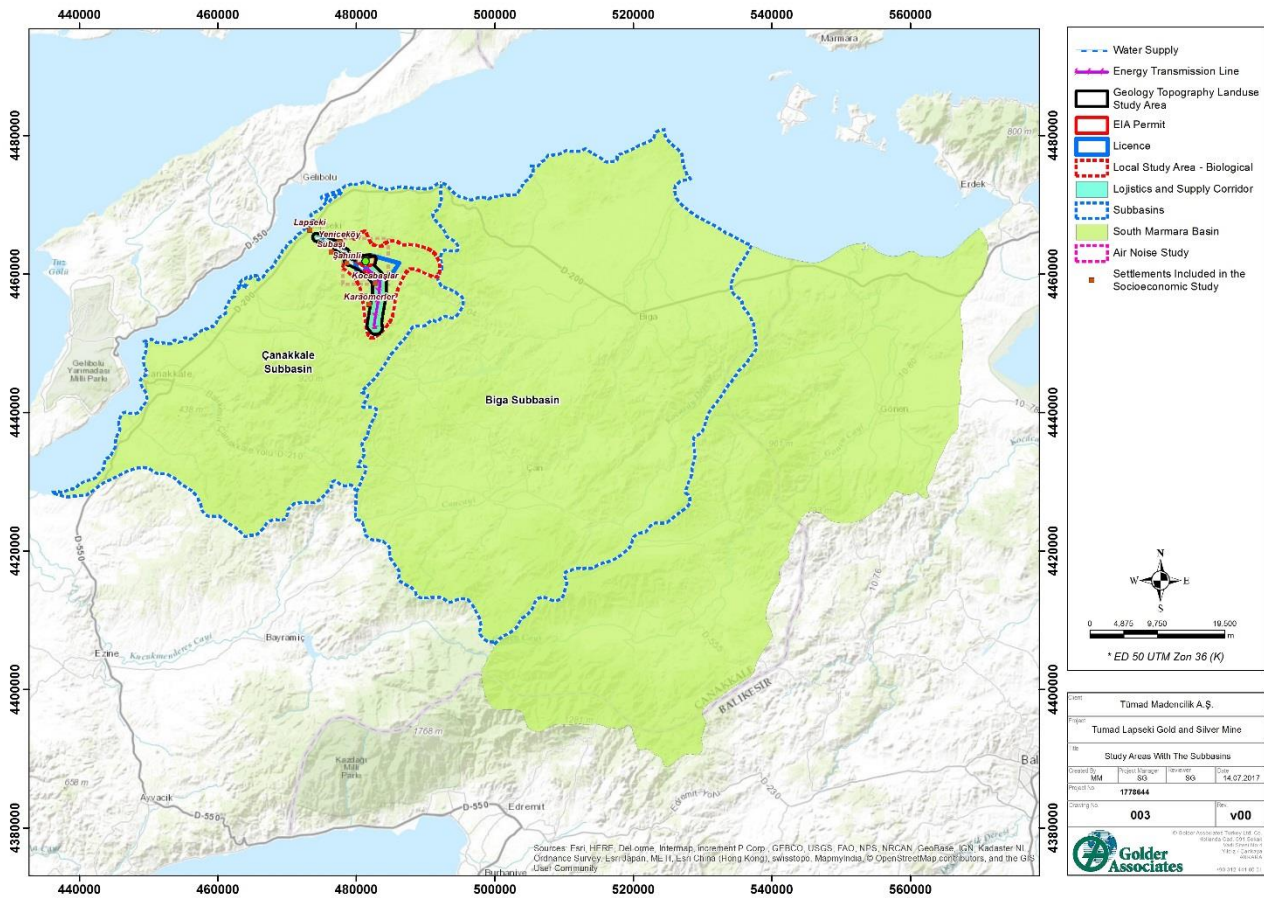


Figure 18: Study Areas with the Basin and Sub basins

Table 27: Physical Environmental Components Study Area

Component	Coverage	Features
Air	The 6.6 km x 6.6 km Study Area covers the Project Area and includes the potentially-affected settlements within the social study area.	<p>Sensitive receptors in respect to the air emissions of the Project facilities and activities</p> <p>Area potentially influenced by the diffuse air emissions during construction and operation.</p> <p>Şahinli and Kocabaşlar villages are the settlements closest to the EIA area. The bird fly distance of the project area is 0.63 km to Şahinli village and 1.3 km to Kocabaşlar village. For other settlements ; The distance of the project area is 2.9 km to Yenice village, 3.8 km to Çamyurt village and 3.3 km to Subaşı village</p>
Noise	The 6.6 km x 6.6 km Study Area covers the Project Area and includes the potentially-affected settlements within the social study area.	<p>Sensitive receptors in respect to the air emissions of the Project facilities and activities</p> <p>Area potentially influenced by the diffuse air emissions during construction and operation.</p>



LAPSEKI PROJECT - SIP

Component	Coverage	Features
		Şahinli and Kocabaşlar villages are the settlements closest to the EIA area. The bird fly distance of the project area is 0.63 km to Şahinli village and 1.3 km to Kocabaşlar village. For other settlements ; The distance of the project area is 2.9 km to Yenice village, 3.8 km to Çamyurt village and 3.3 km to Subaşı village
Geology, Soil, Topography, Land use	The spatial scope of the study area is equal to the Project Area (which is the EIA Permitted Area plus the road, water supply and powerline corridors).	Disturbance to geology, soil and current land use because of the Project facilities and activities.
Water	The study area is defined as the Project Area (the EIA Permitted Area plus the access road and powerline corridor) and the hydrological and hydrogeological features that may be impacted by Project activities namely, the sub-basin of Çanakkale and the Bayramdere and Umurbey micro-basins.	Impact on water sources because of the Project facilities and activities.

Table 28: Biodiversity Study Area

Type	Coverage	Features
Regional Study Area	A Regional Study Area (RSA) corresponding to broader representation of the biodiversity features	Broader representation of the biodiversity features
Local Study Area	<p>Local Study Area (LSA) includes;</p> <ul style="list-style-type: none"> ■ Mine site LSA, ■ Access road LSA ■ Water Supply LSA ■ Powerline LSA 	<p>The biodiversity Local Study Area (LSA) includes the Mine Site, all associated facilities (powerline, roads, temporary facilities, etc.), their expected Area of Influence and an appropriate ecological unit to support the design of a Biodiversity Action Plan.</p> <p>The full length of the water pipeline was not included in the LSA since its route follows an existing main road within modified habitat and no additional impacts on biodiversity components are expected from the construction and operation of this facility.</p>



7.3.2 Social Study Area

Table 29: Social Study Area

Component	Coverage	Feature
Social Area; includes all settlements that will be directly or indirectly impacted by the construction and operation of the Project. In order to determine the settlements, the criteria listed below have been considered: <ul style="list-style-type: none"> Closest settlements to the Project Area; Other settlements that are within 2 km distance to the closest settlements in the Project Area; and The settlements that are impacted by the Project directly and indirectly should be included. 	Kocabaşlar	Closest settlement to the Project Area
	Şahinli	Closest settlement to Project Area
	Subaşı	Neighbouring Şahinli; 2 km distance to the closest settlements in the project area
	Yenice	Neighbouring Şahinli; 2 km distance to the closest settlements in the project area
	Karaömerler	Proposed Transmission Line; Closest settlement to project area
	Kocabaşlar	Proposed Transmission Line; Closest settlement to project area
	Central	Closest district; Project facilities are located within the Lapseki district

8 SUMMARY OF PROJECT IMPACT ASSESSMENT FINDINGS

This section summarises findings of the baseline data collection process and impact assessment findings. The following existing project documentation and the data collection studies have been referred to;

- The Project Environmental Impact Assessment Study (See)
- The Project Description File for the Power Transmission Line approved by Turkish Ministry of Environment and Urbanization;
- Findings of site visits performed by Golder Associates;
- Management Plans issued by TŪMAD
- Socioeconomic survey performed by TŪMAD consultant-Mitto during April-May

The impact assessment findings are structured to be presented in three main sections

- Data collection for the definition of Baseline Conditions
- Impact Assessment Studies and Findings
- Measures identified to mitigate the residual impacts

8.1 Physical Impact Assessment Findings

8.1.1 Baseline

The baseline conditions of the physical environment for the Lapseki Project has been presented through desktop studies and completed field measurements.

In relation to the definition of the baseline conditions of physical environment along the supply and logistics corridor mainly literature and desktop data have been used to represent the conditions before the start of the project associated activities considering the fact that;



1. Power line construction has been started and the baseline conditions before the start of the project associated activities can not anymore be established
- 2 .New road construction will not be performed (except some renovation and repairs on the existing public roads) therefore the baseline conditions will not be changed before the start of the project associated activities
3. Water supply line between Lapseki and the Project site has already constructed. Another water supply line will not be constructed for the project

8.1.1.1 Soils, Geology and Topography

The land use type in Çanakkale province generally consists of forest land and agricultural land. The same applies to Lapseki district covering the Project Area.

The project EIA permit Area the area on which the EIA site comprises of lands of Class VII, i.e. lands that are not suitable for soil tillage farming. Lands of class VII are characterized with limited agricultural capacity due to slope, erosion hazard, stoniness, salinity, or alkalinity.

The entire EIA site is located on non-calcareous brown forest soils. Non-calcareous brown forest soils have a well-formed A-horizon and a porous structure. Their B-horizon is poorly formed. They are brown or dark brown in colour, and have a granular or round-edged block structure. Their horizon borders are transitive and gradual. Non-calcareous brown forest soils generally form under deciduous forest cover.

The supply and logistics corridor of the project (powerline, water and roads) passes through mainly forest land, agricultural land and meadow land. The corridor is composed of mainly lands of Class VII.

As can be seen from Çanakkale Province Land Size Maps prepared by the Repealed General Directorate of Rural Services, as explained in full detail in Chapter 4.2 of the EIA, the EIA permit area where the project facilities will be located is subject to severe erosion.

The degree of erosion used in provincial land size maps has been assessed according to the proportion of eroded top horizons. In this context, EIA permit area is located on areas with severe water erosion of class 3.

The EIA permit Area and the Logistics and Supply corridor is in a 1st degree earthquake zone; 1st degree earthquakes zones are those that are most severely at risk.

8.1.1.2 Climate and Meteorology

In Çanakkale province, Mediterranean and Black Sea climate characteristics are observed in general with more resemblance to the Mediterranean climate properties. In order to understand the meteorological features in detail in the scope of the project and use the features in air quality modelling the meteorological data recorded by the Government Çanakkale Meteorology Station have been used. The detailed presentation of the data is provided in the EIA report Section 4-6.

The some of the main meteorological data over 1960-2013 can be summarised as:

- The average temperature is 15.1 °C;
- The minimum temperature is -11.2°C and observed in the month of February;
- The maximum temperature is 39°C and observed in the month of July;
- The average precipitation is 616.7mm;
- The maximum precipitation is 110 mm and observed in the month of May, and
- The prevailing wind direction is NNE.



8.1.1.3 Air Quality and Noise

A baseline regarding air quality and noise was especially necessary for this Project as there are several other projects in the area that could lead to the creation of noise and release air emissions. The projects that were currently in operation during the conception of the EIA are the following:

- A “Basalt Pit and Crushing-Sorting Facility, belonging to Aydınlık İnş. Harf. Taah. Mad. San. Ve Tic. Ltd. Şti. (to the south of the Project Area);
- A “Mining Pit”, belonging to Okyanus Min. Mad. San. Tic. A.Ş. (approximately 4.9 km to the southwest of the Project Area);
- A “Basalt Pit and Crushing-Sorting Facility, belonging to “Biga Mermer İnş. Malz. San. Tic. Ltd. Şti. (approximately 2.4 km to the west of the Project Area); and
- A “Bentonite (Montmorillonite) Pit”, belonging to Esan Eczacıbaşı End. Ham. San. Tic. A.Ş (approximately 2 km north of the Project Area).

An air quality baseline was established for the Turkish EIA of the Lapseki Project, including settled dust and PM₁₀. To compound upon this data and to monitor the change in air quality during the early stages of construction, a site data collection campaign has been conducted focusing on the sensitive receptors i.e. human settlement areas in relation to the mining operations. The baseline data collection studies for the definition of ambient air quality or the Lapseki Project physical environment were made in and around the future location of the mine and the sensitive receptors, Şahinli Village and Kocabaşlar Village. Initial baseline measurements only included settled dust and PM₁₀. Additional baseline studies were commenced to include not only just settled dust and PM₁₀, but also SO_x and NO_x, PM_{2.5} and the heavy metals in the particulate matter. However, the results of these studies were not ready for the establishment of this baseline and should be studied separately when they become available.

Information regarding all of the ambient air quality data collected has been summarised in Table 30.

Table 30: Site Data collection

Component	Parameters	Locations and Period	Remarks on Selection of Locations	Status
Air Quality,	Settled dust	6 different points for a period of 2 months	The locations are Şahinli Village as a sensitive receptor and five more locations around the project facility area to be impacted as stipulated by the air emission modelling study for construction and operations of the mine	Completed as part of the EIA (8.1.1.3). The results are in mg/m ² .day and changing between a minimum of 10.025 and a maximum of 20.275.
Air Quality	PM ₁₀	3 different points , Instantaneous, ⁷	The locations include Şahinli Village as one sensitive receptor and two locations in the mine site.	Completed as part of the EIA (See 8.1.1.3). The measured results are in 311 µg/m ³ (Şahinli Village) 672 µg/m ³ (Project area no1) 521 µg/m ³ (Project area no2)
Air Quality	PM ₁₀	5 different points , 24 hours, at 6 monthly periods	The locations include the sensitive receptors and potential areas to be impacted as stipulated by the	Monitoring has started in April 2017.

⁷ An instantaneous measurement of PM₁₀ is not best practice methodology for data collection. Therefore the available results of settled dust measurements are taken into consideration for defining the component sensitivity.



LAPSEKI PROJECT - SIP

Component	Parameters	Locations and Period	Remarks on Selection of Locations	Status
			air emission modelling study for construction and operations of the mine	
Air Quality	PM _{2,5}	5 different points , 24 hours, at 6 monthly periods	The locations include the sensitive receptors and potential areas to be impacted as stipulated by the air emission modelling study for construction and operations of the mine	Monitoring has started in April 2017.
Air Quality	Heavy metal in Particulate matter	5 different points , 24 hours, at 6 monthly periods	The locations include the sensitive receptors and potential areas to be impacted as stipulated by the air emission modelling study for construction and operations of the mine	Monitoring has started in April 2017.
Air Quality	SO _x and NO _x	8 different points , 2 months, at 6 monthly periods	The locations include the sensitive receptors and potential areas to be impacted by the mining operations	Monitoring has started in April 2017.

In order to determine the current noise levels at the sensitive receptors, which are Şahinli and Kocabaşlar Villages being in the close vicinity of the Project, in relation to the mining operations a background noise measurement study was performed as part of the EIA study. A detailed presentation of the measurement campaign, which was on 02.09.2015 – a weekday, is given in EIA Section 5.

Measurement results are presented in the following Table 31, exhibiting the characteristics of clean, rural air.

Table 31. Background Noise Measurement Results

	Time	Measurement Results (dBA), daytime	Measurement Results (dBA), evening	Measurement Results (dBA), night
Şahinli-1	First day	47.47	46.09	43.81
	Second day	46.86	46.05	43.80
Şahinli-2	First day	45.94	47.11	44.15
	Second day	46.19	46.76	43.58
Kocabaşlar-1	First day	46.20	44.69	44-.24
	Second day	46.80	45.86	43.52
Kocabaşlar-2	First day	46.65	44.23	45.04
	Second day	47.08	47.01	44.03

The following Figure 19 presents the locations of completed and ongoing measurements for ambient air quality and noise.



LAPSEKI PROJECT - SIP

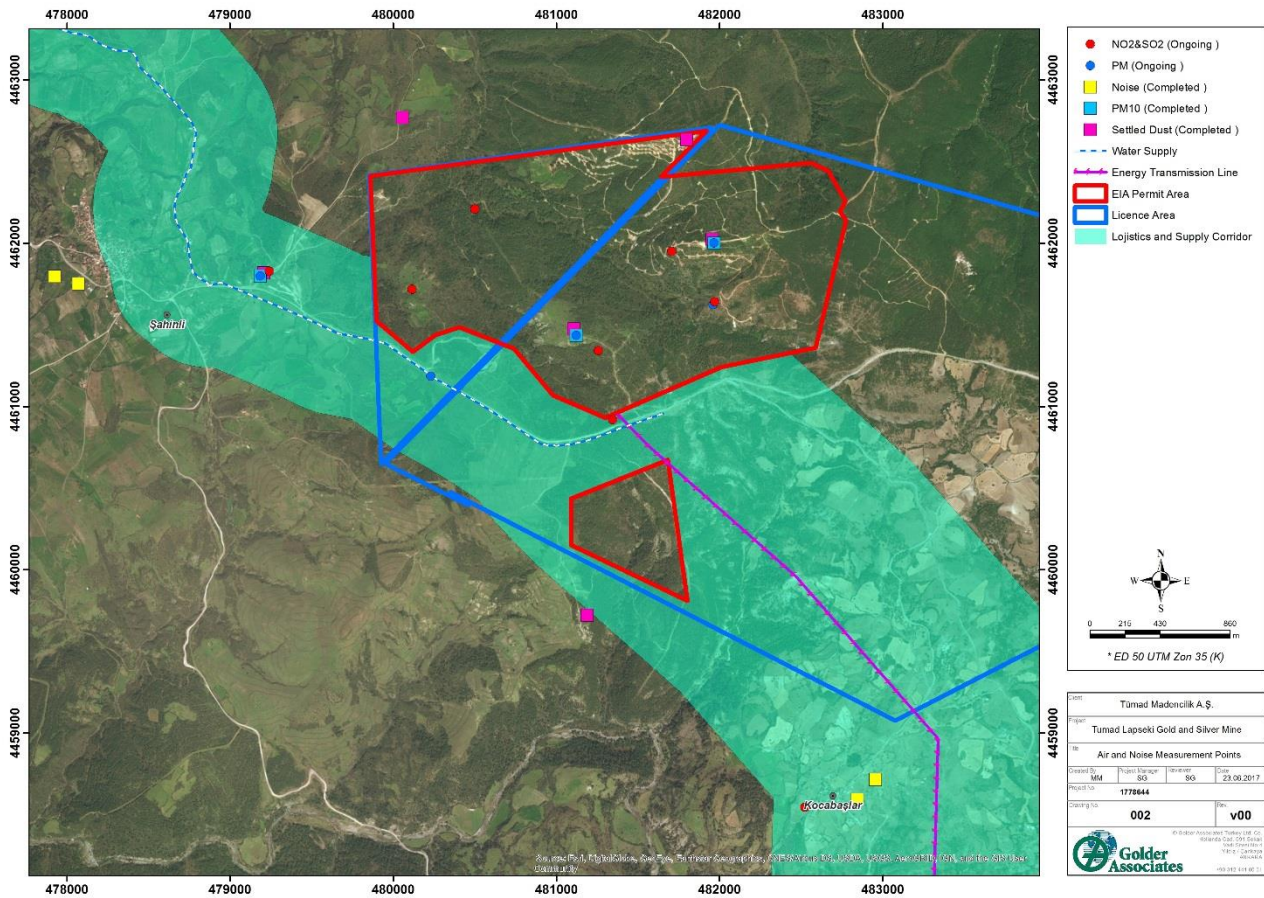


Figure 19: Air and noise measurement locations

8.1.1.4 Hydrology

8.1.1.4.1 Hydrologic Characteristics of the Region

The project area (EIA permit area and logistics and supply corridor) is located within the border of the South Marmara Basin. The South Marmara basin has a total precipitation area of 6.322 km². In terms of sub-basin, the project area is located in the Çanakkale sub-basin covering an area of 1.368 km². The main streams in Çanakkale sub-basin are Koca Stream, Umurbey Stream and Bayram Stream.

The EIA permit area is located in the north part of the Çanakkale sub-basin, in the midpoint of Bayramdere and Umurbey micro-basins. The closest perennial stream to the project site is Köprü Burun Stream which is located within the borders of the Umurbey Micro Basin. The second closest perennial stream to the working area is Bayram Stream. Bayram Stream is located at 6 to 8 km distance to the EIA area.

The main project facilities including the open pits, process plant, waste rock dump and dry stack tailings facility are located within the Bayramdere micro-basin. Dry stack tailings facility-2 which is included to the EIA but excluded from the feasibility and the current ESIA is located in Umurbey Basin.

The main water collection structures located in the vicinity of the Project area includes Bayramdere and Umurbey Dam and Alpagut Reservoir (Figure 20). Bayramdere Dam serves to provide irrigation and drinking water. Protection areas are defined for drinking water dams pursuant to the By-law on Water Pollution Control promulgated in the Official Gazette dated 31.12.2004 no. 25687. Since Bayramdere Dam, which is the closest dam to the project site, is used for drinking water purposes, there are protection areas around the dam (Figure 21). During the planning phase of the Lapseki project, the surface water catchment area of the dam was taken



LAPSEKI PROJECT - SIP

into account and considering potential environmental and social impacts, the project facility footprints and the EIA boundary where the mining activities will be carried out have been located outside of the watershed basin of the Bayramdere dam. The surface water drainages of the project site are located outside the Bayramdere Dam and Alpagut Reservoir watershed areas. The main discharge point – Kovanlık stream is located on the downstream of the Dam so the Project will not have any adverse impacts on the Dam and the Reservoir.

The second dry stack tailings facility (DTSF -2) which was included to the national EIA will not be constructed and excluded from the ESIA so there will not be any mining or tailings deposition activity on Umurbey Watershed Basin therefore the Project will not impact the Elmalıyalak Stream which drains through South to the Umurbey Dam.

The Electric Power Transmission Line cross seasonally and permanently flowing creeks along the route however the poles were not located on any surface water courses, spring or fountain. The creeks include from south to north include the Akyalama Seasonal Creek, Aşı Seasonal Creek, Ulu Dere Creek, Aşağı Seasonal Creek, Kazıklı Seasonal Creek and Kestanelik Seasonal Creek.

Construction material were not disposed in watercourses. Excavated soil and subsoil stored adjacent to the excavation area and were re-used within the working area in order to minimize runoff into local watercourses and waste water were not discharged to surface waters. Temporary settling ponds installed downstream of work areas in order to capture surface water run-off and settlement of sedimentation. The poles were not located on watercourses so no activities were undertaken within the watercourses. Sanitary waste waters were disposed in the settlements along the route of constructed transition lines using waste water disposal systems available in the villages. Refuelling and maintenance of construction machinery were not carried out at the construction site to minimize the risk of accidental spills. Due to applied technique and the applied mitigation measures, the construction activities did not result in direct discharges into surface and ground waters and the construction activities did not physically or chemically impact the surface and groundwater.



LAPSEKI PROJECT - SIP

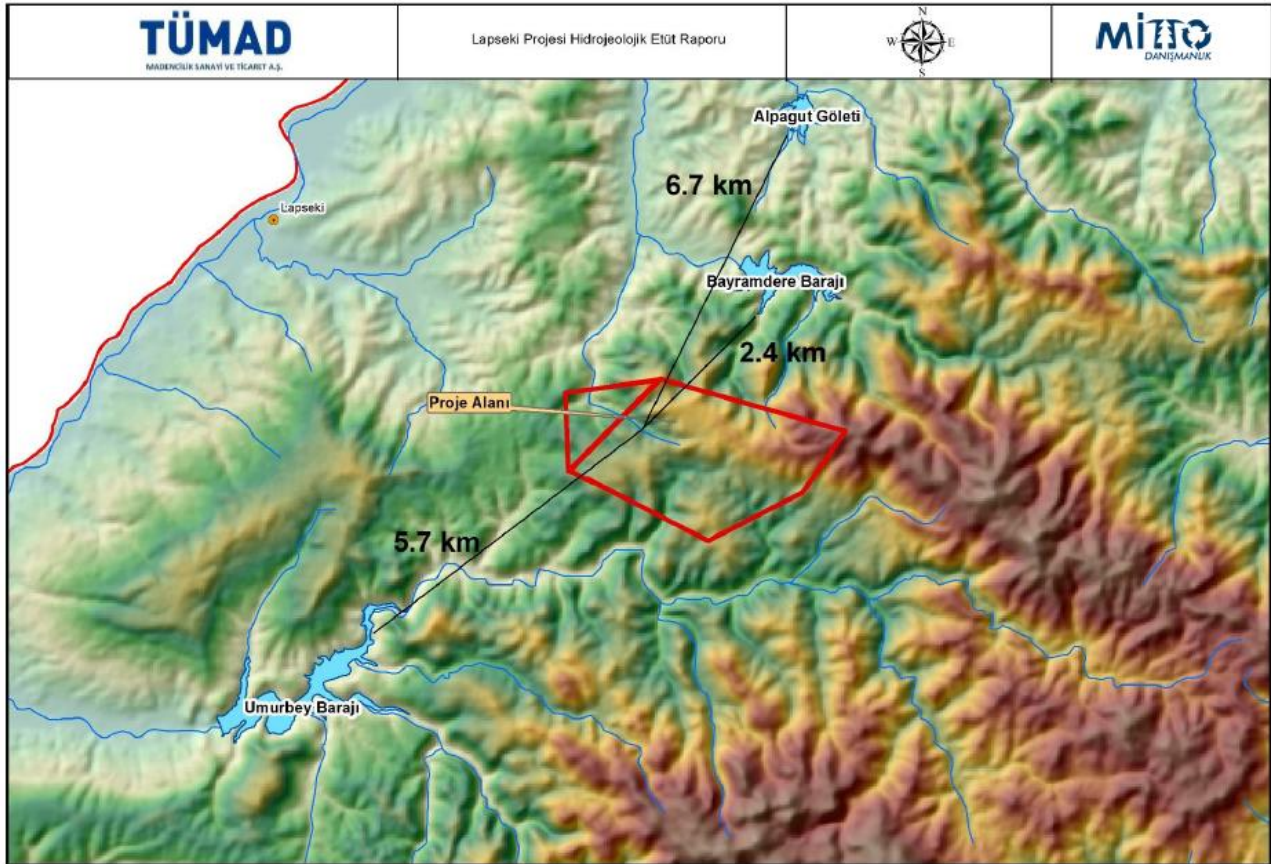


Figure 20: Bayramdere dam water protection area

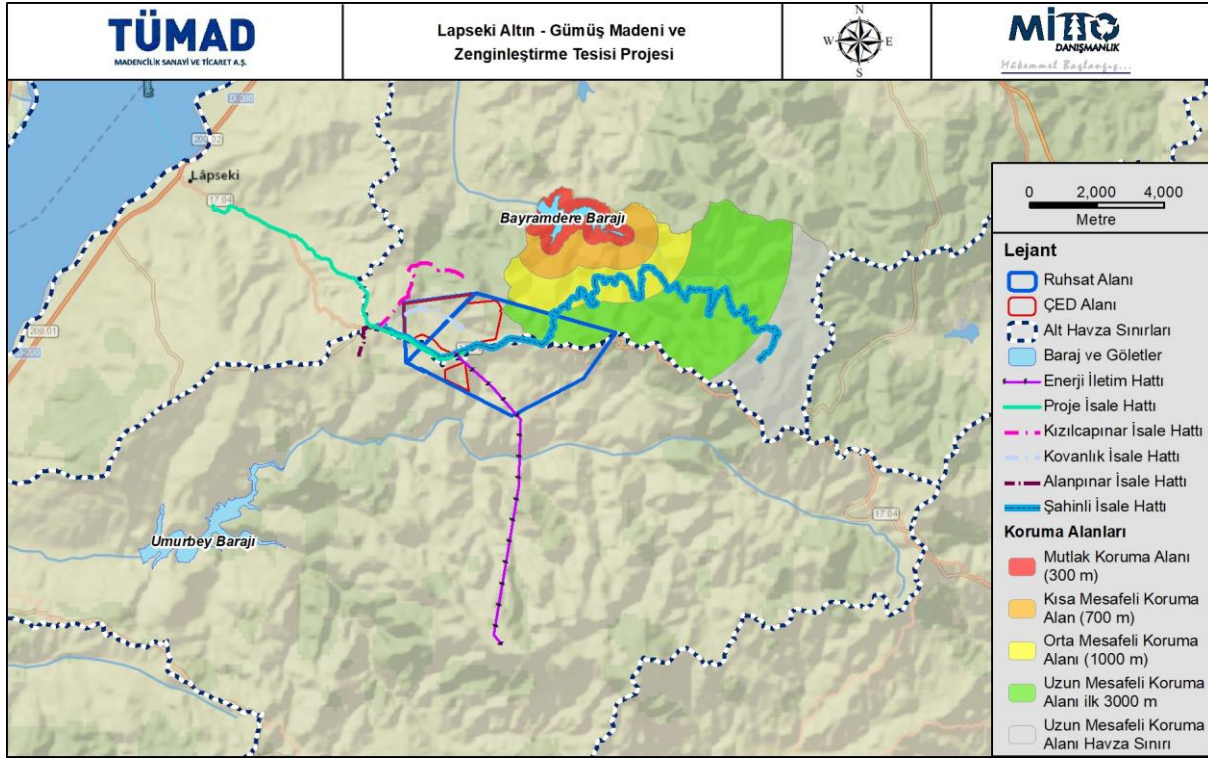


Figure 21: Bayramdere dam water protection area

8.1.1.4.2 Streams

Most of the streams in the vicinity of the project site are ephemeral with no continuous flow. The main ones are Kestanelik Stream, Topyurt Stream, Boğaöldü Stream and Elmalyalak Stream. Kestanelik Stream located north of the working area merges with the Topyurt and Boğaöldü Streams in the downstream region and drains through Kovanlık stream which is the main discharge point of the Project. Micro basins which are located under the footprint of the project facilities are shown in Figure 22. On the southern section,

The waste rock dump area is drained through the Kestanelik Stream, Topyurt Stream, Boğaöldü Stream in the west and north direction.

- The tailings storage facility is drained through the Topyurt Stream in the north direction.
- The Kestanelik pit and SBX pit is drained through the Kestanelik Stream in the west direction
- The Karakovan pit drained through a branch of Kovanlık Stream in the west direction
- The second tailings storage facility presented in the EIA, but scoped out in the ESIA due to a change in design was to drain through the Elmalyalak Stream in the southern direction. Elmalyalak Stream pours into Köprü Burun Stream and mixes there with Ulu Stream and reach the Umurbey Dam.
- Kovanlık stream flow towards North into the drainage of Bayram Stream and flows into the Marmara sea.



LAPSEKI PROJECT - SIP

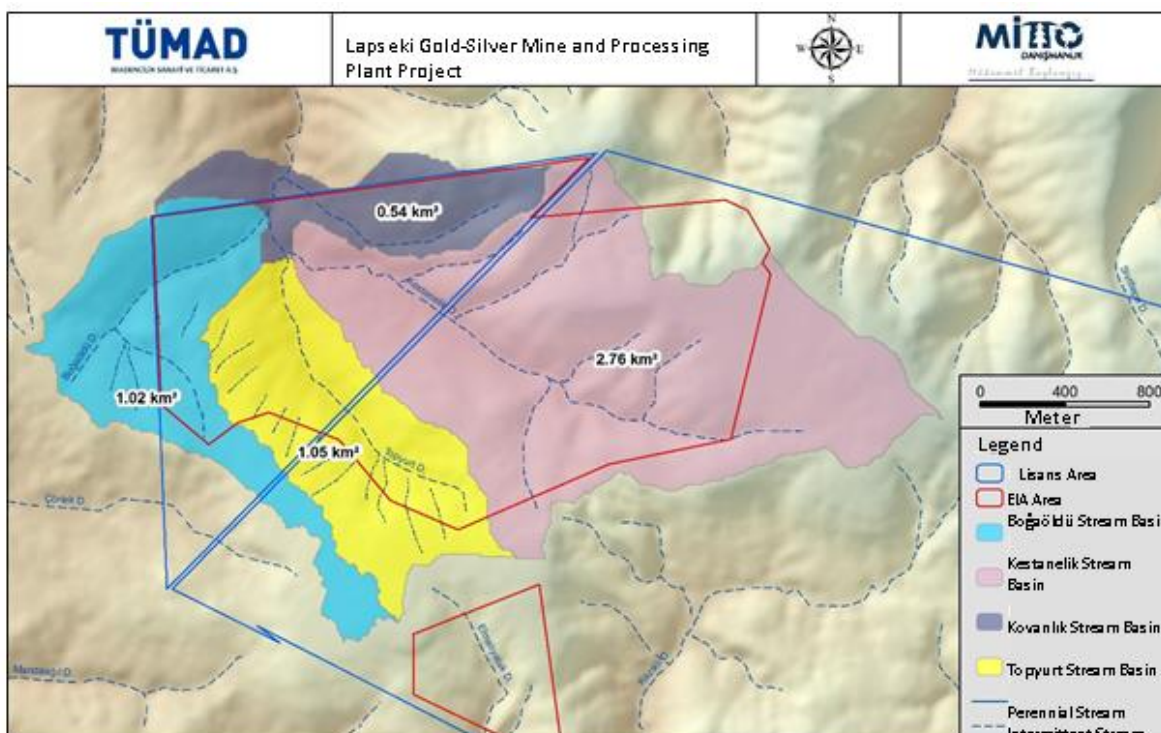


Figure 22: Micro-basins of the Project area.

8.1.1.4.3 Flow Measurements

The surface water quality monitoring were selected on these creeks and their side branches to represent the upstream and downstream of the Project site. There are no weirs installed at the site and instantaneous measurements performed at Kestanelik Stream have shown that the stream has an average flow rate ranging from 2 to 9 l/s and flows 9 months of the year. Maximum instantaneous flow measurements of the project site streams measured on February 2016 are presented in Table 32 and the measurement points are presented in Figure 23.

Table 32 Maximum Flow Measurements of Micro Basins in the Project Site

Creek	Debi (l/s)
Kestanelik Creek Upstream	3.4
Kestanelik Creek Downstream	10.2
Topyurt Creek Downstream	5.4
Boğaöldü Creek Downstream	4
Karakovan Pit Downstream	1.2
Kovanlık Creek	27.5

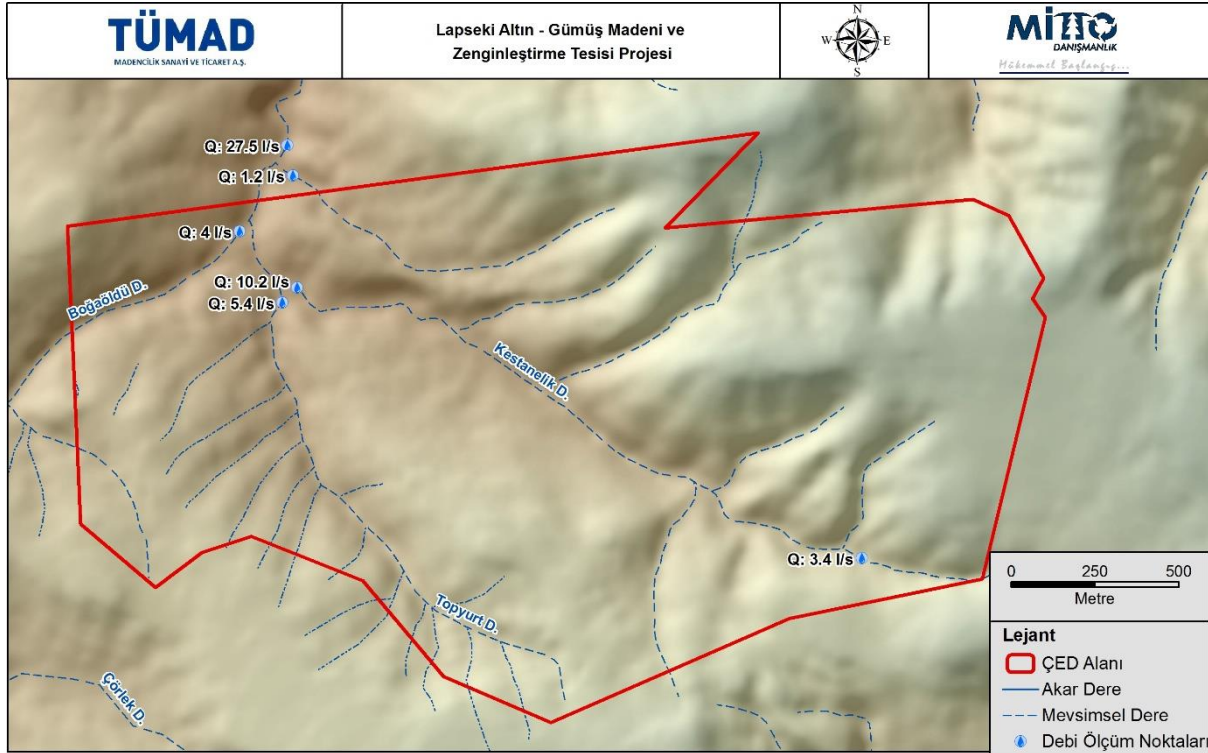


Figure 23: Surface water flow monitoring locations

8.1.1.4.4 Surface Water Quality

Surface water quality analyses results are presented in the EIA report Table 4-32 and 36 and Lapseki Water Resources Impact Assessment. Figure 24 presents the location of all surface and groundwater sampling locations. Yellow dots are the surface water sampling points. The surface water quality class varies between Class 1 and IV. Explanations of the Turkish surface water classification is presented below. Further information is provided in the EIA report.

Class I – High Quality Water;

- 1) Surface water with high potential for drinking water,
- 2) Water suitable for recreational use, including ones that involve body contact, such as swimming,
- 3) Suitable for trout farming,
- 4) Suitable for animal husbandry and farm water supply.

Class II – Slightly Polluted Water;

- 1) Surface water with potential for drinking water,
- 2) Water suitable for recreational use,
- 3) Suitable for fish farming other than trout,
- 4) Irrigation water if compliant with the standards set by the regulation in force.

Class III – Polluted Water;

Water suitable for aquatic farming after proper treatment. Industrial water except for industries requiring quality water, such as food and textile.



Class IV – Highly Polluted Water;

Surface water with lower quality than Class III quality standards and needs proper treatment to achieve higher quality classification.

The water quality analyses results presented in the EIA report indicate that:

- January 2015 Sampling: Kestanelik Stream Upstream (KesMb) is Class II according to Non-metallic Inorganic Parameters. Metal concentrations are Class I. Class II Chloride and Manganese and Class III Aluminium concentrations has been observed in some of the other sampling sessions.
- January 2015 Sampling: Kestanelik Stream Downstream (KesMP) is Class II according to Non-metallic Inorganic Parameters. Metal concentrations are Class I. Class II Iron and Chloride concentrations has been observed in some of the other sampling sessions.
- June 2013 Sampling: Kovanlık Stream (KovD) is Class II according to Non-metallic Inorganic Parameters. Metal concentrations are Class II due to elevated Chloride and Manganese concentrations. Class III Aluminium concentrations has been observed in some of the other sampling sessions.
- January 2015 Sampling: Uludere Stream (UluD) is Class II according to Non-metallic Inorganic Parameters. Metal concentrations are Class I. Class II chloride concentrations has been observed in some of the other sampling sessions.
- pH is near neutral to alkaline in all streams
- Class IV Dissolved oxygen has been observed in streams in some of the sampling sessions.



LAPSEKI PROJECT - SIP

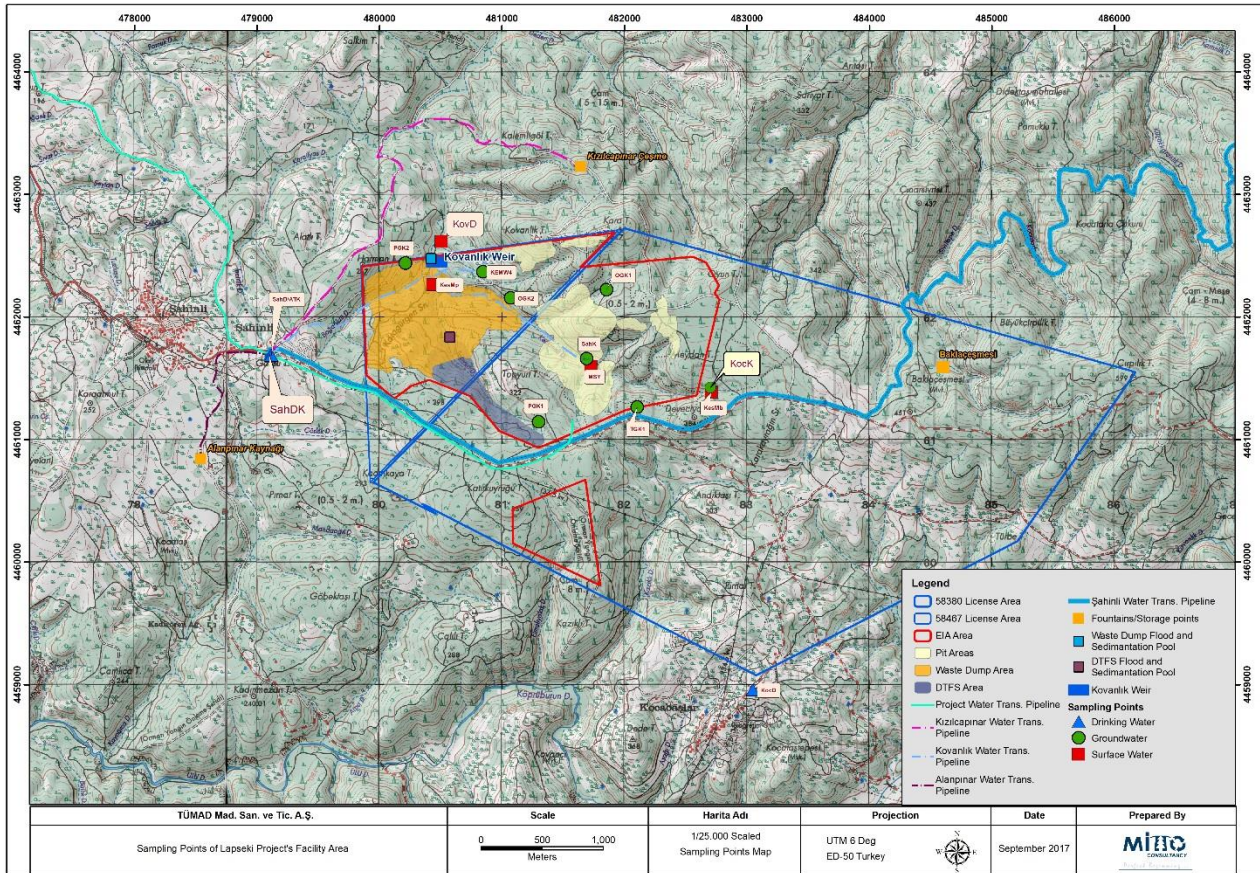


Figure 24: Groundwater, surface water and drinking water monitoring sampling locations

8.1.1.5 Hydrogeology

Hydrogeological site data collection campaigns have been completed and ongoing for the Project mine area of influence. Groundwater studied in 3 groups: spring/fountains, depot-catchments and monitoring wells. A detailed presentation of the Project mine area of influence and baseline data collection studies and groundwater quality assessments are provided in EIA section 4-6.

8.1.1.5.1 Observation Wells

Hydrogeological investigations have been conducted at the Project site since 2009. A total of 26 groundwater observation wells have been drilled by Aecom and Mitto at the Project area. 15 wells will be used for monitoring at the operation and closure stage. Figure 25 presents the location of the groundwater monitoring wells. The wells drilled by Aecom are indicated in red and permanent well drilled by Mitto are indicated in blue.

Aquifer tests have been carried out to determine the hydro-geological parameters at and around the project area. Pumping test, slug test and packer tests have been carried out on several wells. Hydro-geological parameters of each geological unit have been determined with these tests. Details of the groundwater investigation studies are presented in Lapseki Water Resources Impact Assessment Report. Groundwater elevation measurements from the groundwater monitoring wells is presented in Figure 26. The groundwater elevation is close to the surface especially along the Kestanelik Stream. KEMW-6 is an artesian well.



LAPSEKI PROJECT - SIP

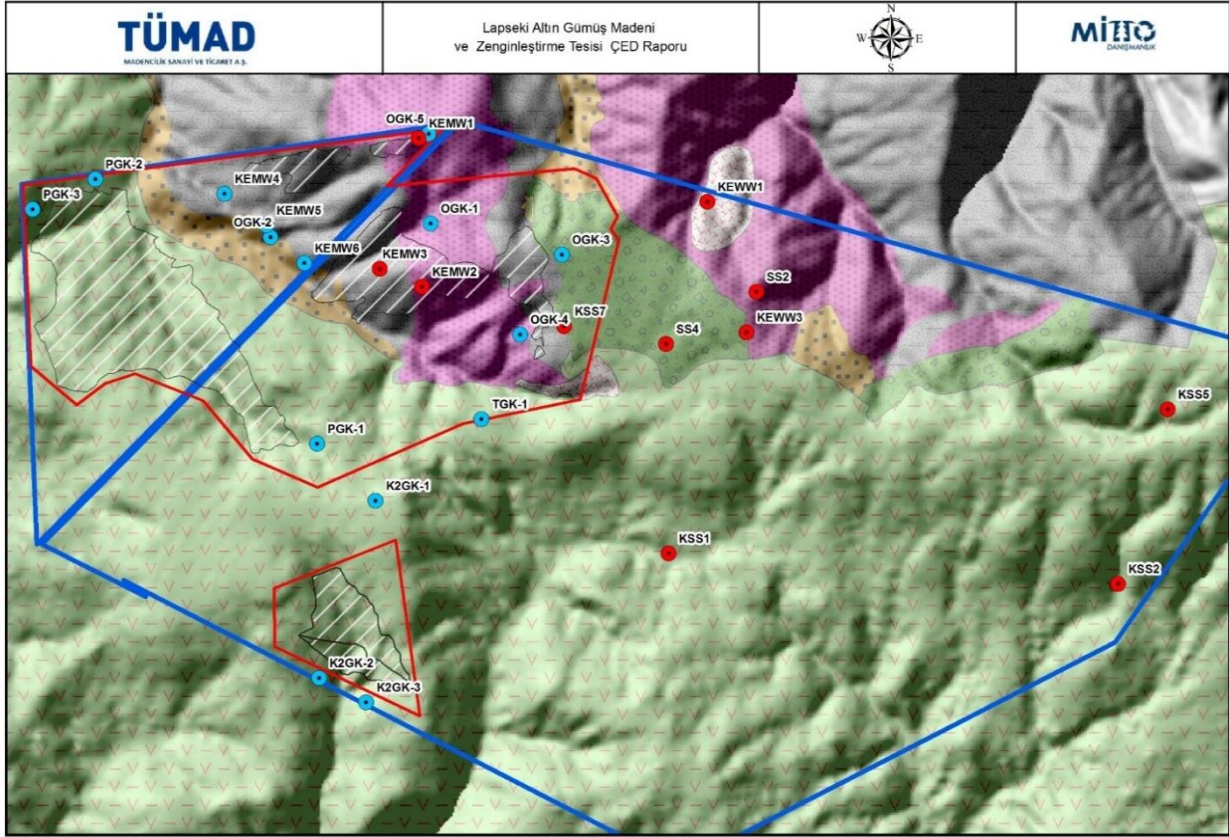


Figure 25: Location map of groundwater monitoring wells

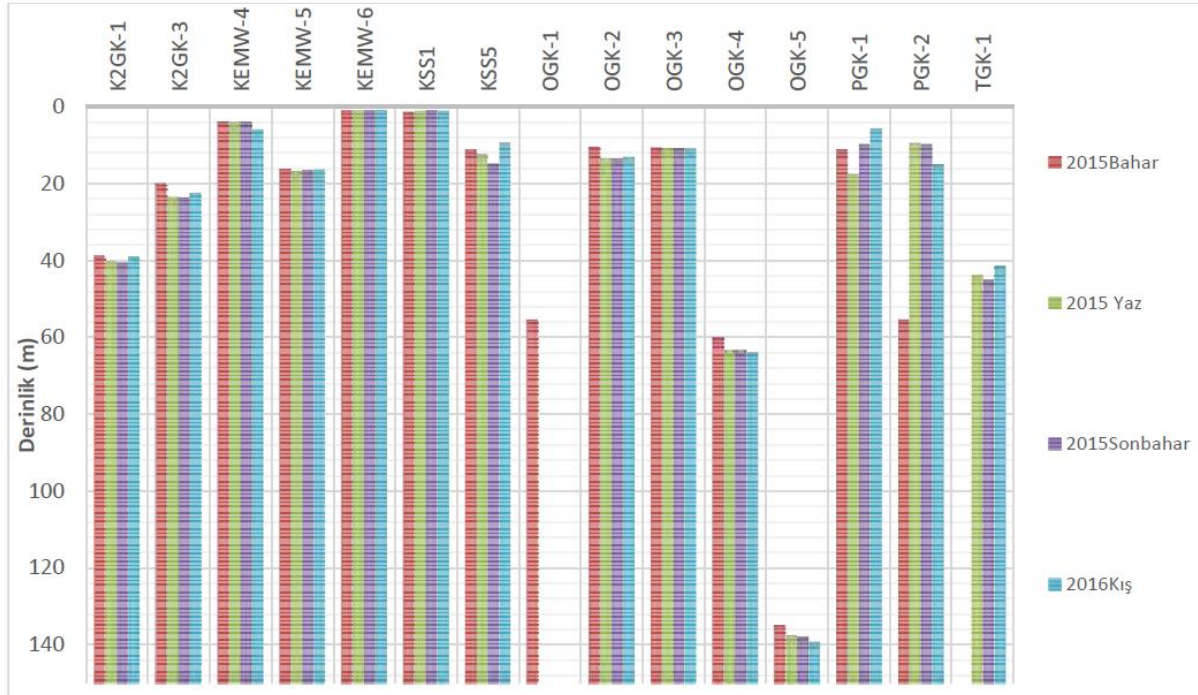


Figure 26: Groundwater elevation of groundwater monitoring wells (Spring 2015 – Winter 2016)



8.1.1.5.2 Groundwater Quality

Ionic characteristics and hydro-geochemical facies of the groundwater within the Project Area were examined by means of the Piper and Schoeller diagrams (EIA Report Chapter 4). The sampling points were evaluated under two headings as spring/fountain and observation well. Groundwater quality analyses results are also presented in Lapseki Water Resources Impact Assessment Report and the EIA report. Sampling is ongoing on a quarterly basis. Sampling locations are presented in Figure 24. pH is near neutral to alkaline in all observation wells. Elevated arsenic concentrations which can reach up to 60 µg /L has been observed in some of the observation wells which are located in the close vicinity of the gold mineralization. WAD cyanide is below the detection limit of 5 µg /L in all analyses (Figure 27). Due to the future mining activities and the use of processing method involving cyanide, an ongoing monitoring programme for detection of cyanide in the environment will be conducted. Further investigations and risk assessments would be initiated if the cyanide concentrations increase and exceeds the pre-operation baseline conditions and if WAD cyanide exceeds 0.005 mg/L limit at the on-site groundwater monitoring wells.

Details of the groundwater monitoring are outlined in the Water Resources Management Plan.

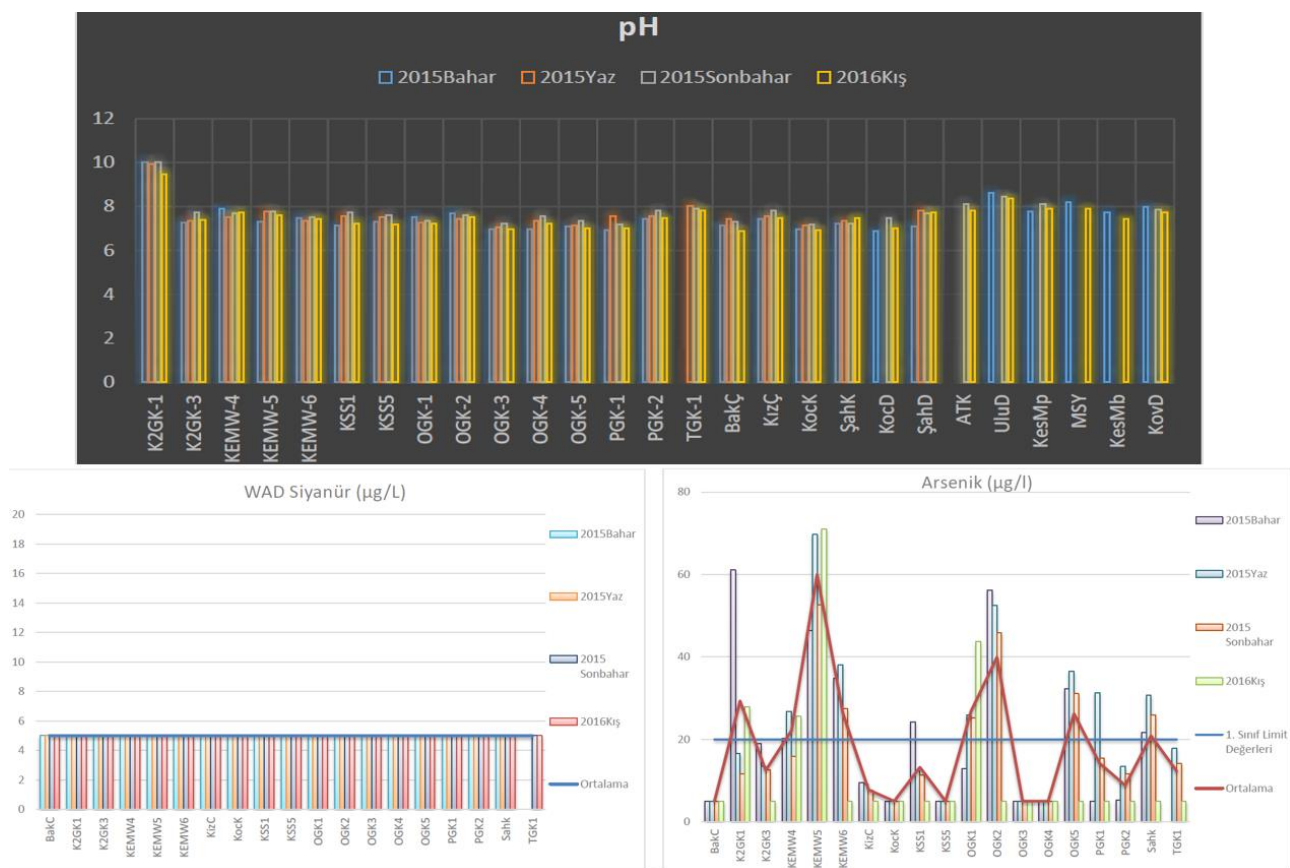


Figure 27: Groundwater quality (pH, WAD Cyanide and Arsenic)

Groundwater Modelling

A 3D underground water flow model was compiled towards the purposes of understanding underground water flow system and examining potential pollution and dewatering scenarios. Through this model, the scenarios for determining the underground water that may enter open pits during operation stage, assessing the impact on nearby springs and wells due to the dewatering to be conducted at pits, and estimating the water level to form at open pit after the operation were researched. The model boundary is presented in



LAPSEKI PROJECT - SIP

Figure 28 and further details are provided in Lapseki Water Resources Impact Assessment Report.

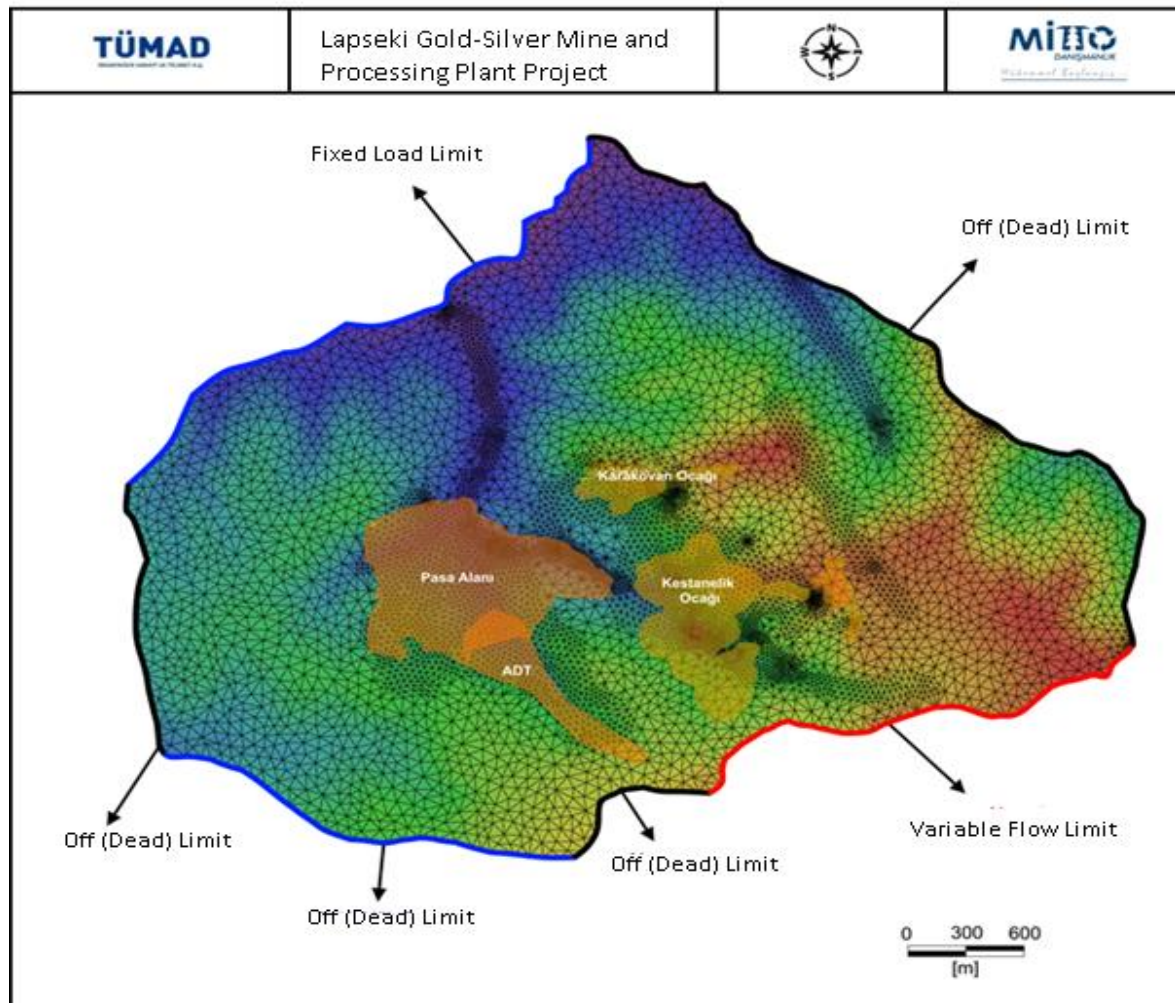


Figure 28: Groundwater Model Boundary

8.1.1.6 Geochemistry – Acid Rock Drainage

Geochemical characterization and evaluation of acid rock drainage and metal leaching potential at the Lapseki project included static and kinetic testing of various lithological units mainly including:

- Waste rock -schist, granodiorite and others (serpentinite, colluvium, volcanic units etc.),
- Ore (QV, QBx and S) and
- Tailings.

A total of 40 composite samples collected from 121 drill core samples and subjected to static testing. The static testing program included the following tests and the drill core sample locations are provided in Figure 29.

- Whole Rock Analysis (WRA)
- Trace Element Analysis
- Mineralogy (CIPW Normative)



- Acid Base Analysis (ABA) Sobek et al. (1978)
- Net acid generation test (NAGpH)
- Short Term Extractability (Leach) Test

The evaluation of the static testing is as follows. Oxide samples were defined NAG and the Sulphide samples are PAG. Transition samples are mainly uncertain and additional kinetic testing was conducted on PAG and Uncertain samples.

The sulphur concentrations of the testing samples mainly represent the low end of the sulphur distribution. One sample has around 1% Total Sulphur, a few samples has around 0.5% Total Sulphur and the rest of the samples has less than 0.1% Total Sulphur content. Neutralization potential (NP) of most of the samples are low and varies between 321 and 0.3 tCaCO₃/t. The sulphur distribution and the ABA test results of the samples are presented in Table 33. Additional samples will be collected to better represent the volume of PAG and NAG rock that will be stored at the WRD or that will be exposed at the pit walls of the ultimate pits.



LAPSEKI PROJECT - SIP

Table 33 ABA results and evaluation of static test samples (EIA report)

Tablo- 31. Lapseki Projesi Asit Baz Analizi Sonuçları

Maden Birimi	Zon	Numune Kodu	Litoloji	Pasta pH	SO ₄ S (Karbonat Liği)	SO ₄ S (HCl Liği)	Sulfide S (S ²⁻)	Toplam S	Inorganik Karbon	NP	MPA	NNP	NPR (NP:MPA)	Fizz Oranı	CO ₂
					%	%	%	%	%	tCaCO ₃ /1000t	tCaCO ₃ /1000t	tCaCO ₃ /1000t			%
PAŞA	Kestanelik	K1	CSch	8.1	0.01	0.01	0.22	0.23	0.59	51	7.2	44	7.1	2	2.2
	Kestanelik	K8	CSch	7.6	0.01	0.01	0.09	0.09	0.18	11	2.8	8	3.91	1	0.7
	Karakovan	KK6	CSch	7.9	0.01	0.01	0.03	0.03	0.94	68	0.9	67	72.53	2	3.5
	Kestanelik	K3	QFP	6.3	0.05	0.03	0.59	0.54	0.05	4	20	16	0.2	1	0.2
	Karakovan	KK4	QFP	4.4	0.12	0.11	0.88	1	0.15	8	31.3	23	0.25	1	0.6
	Kestanelik	K11	QFP	7.8	0.01	0.01	0.05	0.06	0.05	7	1.9	5	3.73	1	0.2
	Kestanelik	K10	QFP	7.8	0.01	0.01	0.01	0.01	0.05	8	0.3	8	51.2	1	0.2
	Karakovan	KK5	QFHP	7.4	0.01	0.01	0.03	0.03	0.05	8	0.9	7	8.53	1	0.2
	Kestanelik	K2	GSch	8.3	0.01	0.01	0.59	0.59	1.14	113	18.4	95	6.13	3	4.2
	Karakovan	KK2	GSch	7.1	0.04	0.02	0.54	0.58	0.26	20	18.1	2	1.1	2	1
	Kestanelik	K12	GSch	7.6	0.01	0.01	0.21	0.22	0.28	10	6.9	3	1.45	1	0.9
	Karakovan	KK1	QGSch	8.1	0.02	0.01	0.59	0.58	0.68	60	18.1	42	3.31	2	2.5
	Kestanelik	K7	MSch	8.1	0.01	0.01	0.01	0.01	0.84	74	0.3	74	236.8	2	3.1
	Karakovan	KK8	QMSch	5.4	0.09	0.09	0.59	1.58	-0.05	5	33.33	19	0.15	1	<0.2
	Kestanelik	K16	QMSch	7.1	<0.01	<0.01	0.03	0.03	-0.05	5	0.94	4	5.33	1	<0.2
DÜŞÜK TEMLİRLİ ÇEVHER	Kestanelik	K17	QMSch	6.6	0.02	0.01	0.22	0.24	-0.05	6	7.5	2	0.8	1	<0.2
	Kestanelik	K15	Ser	8.6	0.01	0.01	0.01	0.01	3.28	321	0.3	321	1037	3	11.9
	Kestanelik	S	S	7.9	0.01	0.02	0.01	0.01	0.05	5	0.3	5	18	1	0.2
	Kestanelik	K5	QMSch	7.7	0.01	0.01	0.01	0.01	0.05	6	0.3	6	19.2	1	0.2
	Kestanelik	K13	QMSch	7.9	0.01	0.01	0.02	0.02	0.05	7	0.6	6	11.2	1	0.2
	Kestanelik	K	QMSch	7.6	0.01	0.02	0.01	0.01	0.05	4	0.3	4	12.8	1	0.2
	Kestanelik	L	QMSch	7.5	0.01	0.01	0.01	0.01	0.05	4	0.3	4	25.6	1	0.2
	Kestanelik	M	QMSch	7.5	0.01	0.02	0.01	0.01	0.05	3	0.3	3	19.2	1	0.2
	Kestanelik	N	QMSch	7.7	0.01	0.02	0.01	0.01	0.05	4	0.3	4	25.6	1	0.2
	Kestanelik	P	QMSch	7.7	0.01	0.02	0.01	0.01	0.05	4	0.3	4	25.6	1	0.2
	Karakovan	D	QMSch	7.5	0.01	0.01	0.01	0.01	0.05	2	0.3	2	6.4	1	0.2
	Karakovan	KK3	QMSch	8.4	0.01	0.01	0.01	0.01	0.07	17	0.3	17	54.4	1	0.3
	Kestanelik	K8	QFHP	7.9	0.01	0.01	0.01	0.01	0.05	5	0.3	5	32	1	0.2
	Kestanelik	K9	QFHP	7.9	0.01	0.01	0.01	0.01	0.05	7	0.3	7	22.4	1	0.2
	Kestanelik	R	QFHP	7.4	0.01	0.05	0.04	0.04	0.05	4	1.3	3	3.2	1	0.2
YÜKSEK TEMLİRLİ ÇEVHER	Kestanelik	K14	QFHP	7.6	0.01	0.01	0.14	0.14	0.05	9	4.4	5	2.06	1	0.2
	Kestanelik	Q	QFHP	7.5	0.01	0.03	0.02	0.02	0.05	3	0.6	2	4.8	1	0.2
	Kestanelik	J	QBx	7.2	0.02	0.01	0.01	0.02	0.05	1	0.6	6	1.6	1	0.2
	Karakovan	B	QV	7.5	0.01	0.01	0.01	0.01	0.06	2	0.3	2	12.8	1	0.2
	Karakovan	C	QV/QBx	7.6	0.01	0.01	0.01	0.01	0.05	2	0.3	2	6.4	1	0.2
	Karakovan	A	QV	7.5	0.01	0.01	0.01	0.01	0.05	2	0.3	2	6.4	1	0.2
	Kestanelik	E	QV	6.9	0.01	0.01	0.03	0.03	0.08	2	0.9	1	2.13	1	0.3
	Kestanelik	F	QV	7.6	0.01	0.01	0.01	0.01	0.05	1	0.3	1	3.2	1	0.2
	Kestanelik	G	QBx	7.2	0.01	0.01	0.01	0.02	0.05	1	0.6	6	1.6	1	0.2
	Kestanelik	H	QBx	7	0.01	0.01	0.01	0.01	0.05	1	0.3	1	3.2	1	0.2

Sulfide Sülfür Sınıflandırması:

Değer>0.3 Potansiyel Asit Üreticisi (PAF) ■

Değer<0.3 Asit Üretmeyen (NAF) ■

NNP Sınıflandırması:

Değer <20 Potansiyel Asit Üreticisi (PAF) ■

-20 < Değer < 20 Belirsiz (U) ■

20< Değer Asit Üretmeyen (NAF) ■

NPR Sınıflandırması:

Potansiyel Asit Üreticisi (PAF) ■

Belirsiz (U) ■

Asit Üretmeyen (NAF) ■

Fizz Oranı Sınıflandırması:

Değer =1 Düşük

Değer =2 Orta

Değer =3 Yüksek

Toplam Sülfür = Sülfat Sülfür +Sulfide Sülfür

MPA = Toplam Sülfür*31.25

NNP=NP:MPA

NPR=NP:MPA

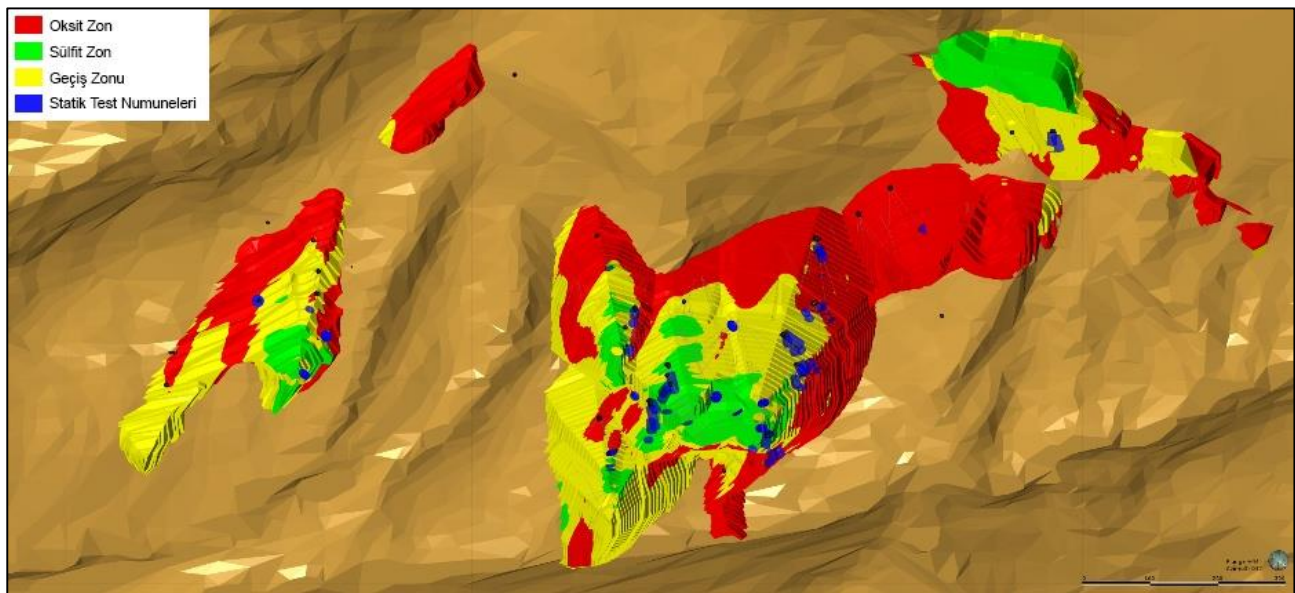


Figure 29: Kestanelik (Kestanelik+SBX) and Karakovan (Karakovan I+Karakovan II) Static Test Samples, Distribution According to Mine Oxidation Classification (Red :Oxide zone, Yellow: Transition Zone, Green: Sulphur Zone, Blue: Static Test Sample Points)

Following the static testing, the PAG (Potentially Acid generating) and U (uncertain) samples subjected to the Kinetic testing. The EIA report includes 20-week results of QMSch lithologies and 37-week results of other lithologies. Detailed information on these results are included in Appendix-33 of the EIA report. TUMAD committed to continue with testing till reaching week 40 (K17, KK8) and week 60 (HCT - 01, HCT - 02, HCT - 03, HCT-04). In addition to lab testing field-scale kinetic tests were started in January 2015 for the ARD/ML monitoring until the operation period. The leachate are supposed to be collected from the barrels on a monthly basis and compared with laboratory scale kinetic tests. Golder has not observed such a comparison yet.

During the operation period, samples will be taken systematically from the mine waste samples for ARD/ML management purposes.

EIA Report indicate that 5.68% of the waste rock is PAG and the remaining 94% is NAG. In accordance with the revised mine plan, Mitto re-estimated the percentage of Sulphur zone rocks compared to the transition and oxide rocks. The percentage of PAG rock will increase by 0.56% and the total PAG rock percentage will be around 6%. The remaining 90% of the waste rock will be composed of oxide and transition zone units.

Contact water quality estimates revised in accordance with the expanded pits are presented in Table 34.

The DTSF will be lined with geomembrane and the seepage-runoff water will be collected in contact water ponds. A robust geochemistry program will be developed to better differentiate the PAG and NAG rock during operation and the water quality estimates will be updated accordingly. The WRD water quality include encapsulation so a more detailed encapsulation plan will be developed by using the annual mine plans and the expected PAG and NAG rock volume on an annual basis. The separation of NAG and PAG rock during the operation is very important to develop a robust waste management and encapsulation strategy.

The groundwater model has been developed to evaluate potential impacts of the project. The model will be reviewed and compared with the actual site and monitoring data and the model will be revised / recalibrated on an annual basis to better represent the groundwater conditions observed during the operation. Based upon this data analysis and conditions at the time, whether additional groundwater wells are needed will be determined. Further technical studies will be conducted to better develop dewatering/depressurization plan for the open pit mining. The contact water quality estimates prepared by PHREEQC will be compared with the monitoring results and the quality estimates will be revised on an annual basis depending on the data collected through the ARD monitoring plan and the PAG-NAG rock volumes excavated during the mining. During the



LAPSEKI PROJECT - SIP

mining phase of the Project, a testing program will be used to classify waste rock and segregate PAG and NAG material by testing method very similar to that used for segregation of ore and waste. During mining, when benches in the pit are drilled, samples will be collected from each borehole for gold assays. The samples will also be measured for sulphur to identify PAG and NAG rock. A sulphur threshold to segregate NAG and PAG rock will be developed during the first year of the mining operation by conducting further static/kinetic testing and barrel testing.

The expected contact water quality of the various facilities and the main settling (contact water pond) is as follows. The arsenic content in the SBX Pit is expected to exceed 4% of the Project limits, but there is no limit exceeding on other water quality parameters. Water shall not be discharged from the SBX Pit directly to the receiving environment. Water will be discharged to the settling pool with water from all other Project areas and therefore the pollutant concentrations will be reduced by mixing with contact water from other pits in this pond. Water quality will be monitored within this settling pool before discharging to the receiving stream.

Table 34 Updated contact water quality estimates of the Project facilities including the pits, WRD and the contact water collection pond

Parameter	Unit	Project Discharge Water Standards	PHREEQC Model Results					
			Kestanelik	Karakovan	Karakovan 4	SBX	Mine waste	Settling Basin
pH		6.0 - 9.0	7.62	8.07	6.46	6.12	6.29	7.22
Aluminium (Al)	mg/L		1.22E-05	4.00E-03	7.12E-01	1.79E+00	2.80E-03	3.36E-02
Antimony (Sb)	mg/L		7.60E-03	0.014	0.002	0.009	8.50E-03	8.00E-03
Arsenic (As)	mg/L	0.1	2.20E-02	1.00E-02	7.00E-03	1.04E-01	1.20E-02	2.00E-02
Barium (Ba)	mg/L		1.00E-02	2.80E-02	2.70E-02	1.70E-02	5.90E-02	2.50E-02
Boron (B)	mg/L		1.70E-02	5.10E-02	2.70E-02	3.50E-02	7.60E-02	3.50E-02
Cadmium (Cd)	mg/L	0.1	1.73x10 ⁻⁵	2.90E-04	1.00E-05	5.00E-04	1.00E-04	1.00E-04
Chlorine (Cl)	mg/L		2.41E+01	1.65E+01	3.62E+01	8.10E+00	2.07E+01	2.28E+01
Chromium (Cr)	mg/L	0.5	3.00E-04	1.00E-03	1.00E-03	1.00E-03	8.00E-04	5.00E-04
Copper (Cu)	mg/L	0.5	3.00E-03	3.00E-03	2.00E-03	6.80E-02	1.30E-03	3.50E-03
Fluoride iodine (F=)	mg/L	20	2.07E-01	3.91E-01	7.00E-02	3.01E-01	2.93E-01	2.37E-01
Iron (Fe)	mg/L	3	3.90E-03	2.00E-03	8.00E-03	5.00E-03	1.70E-03	3.30E-03
Lead (Pb)	mg/L	0.1	1.00E-04	4.00E-06	1.00E-03	6.00E-04	2.00E-04	2.00E-04
Magnesium iodine (Mg2+)	mg/L		3.43E+01	1.25E+01	8.31E+00	9.80E+00	4.13E+01	3.52E+01
Manganese (Mn)	mg/L		1.00E-04	1.00E-05	1.20E-02	1.00E-03	3.01E+00	8.68E-01
Mercury (Hg)	mg/L	0.01	<0.0001	1.00E-04	3.00E-04	1.00E-04	2.00E-04	1.00E-04



LAPSEKI PROJECT - SIP

Parameter	Unit	Project Discharge Water Standards	PHREEQC Model Results					
			Kestanelik	Karakovan	Karakovan 4	SBX	Mine waste	Settling Basin
Molybdenum (Mo)	mg/L		2.00E-03	4.00E-03	4.00E-04	4.00E-03	9.70E-03	4.30E-03
Nickel (Ni)	mg/L	0.5	1.30E-02	7.50E-02	4.00E-04	1.15E-01	7.00E-03	1.44E-02
Phosphate iodine (PO42+)	mg/L		1.98E-01	4.60E-01	4.30E-02	7.68E-01	6.13E-02	1.73E-01
Selenium (Se)	mg/L	0.1	9.00E-03	6.00E-03	2.00E-04	5.00E-03	4.00E-02	1.78E-02
Silver (Ag)	mg/L	0.5	8.36x10 ⁻⁶	1.00E-04	1.00E-04	1.00E-04	2.00E-04	1.00E-04
Sodium (Na)	mg/L		1.06E+02	1.00E+01	1.29E+01	5.50E+00	1.93E+01	7.62E+01
Sulphate iodine (SO42+)	mg/L		4.10E+02	9.07E+01	3.43E+01	7.49E+01	1.33E+02	3.15E+02
Strontium (Sr)	mg/L		9.00E-02	1.20E-02	2.00E-03	1.10E-02	1.73E-01	1.10E-01
Uranium (U)	mg/L		1.00E-03	1.40E-02	4.00E-05	4.00E-05	6.00E-04	1.20E-03
Zinc (Zn)	mg/L	2	2.00E-02	2.70E-02	1.40E-02	7.70E-02	4.98E-02	2.96E-02
Cobalt (Co)	mg/L		2.30E-02	7.70E-02	2.00E-04	9.20E-02	7.50E-03	2.08E-02



LAPSEKI PROJECT - SIP

8.1.1.7 Traffic

The air distance of the activity area of the Lapseki Project to the Çanakkale Province Centre is 34.7 km and to the Lapseki District Centre it is 7.3 km. Access to the Project Area is rendered by following the Bursa-Çanakkale Highway no. E-90 to reach the Lapseki District Centre and then by following the Şahinli Village road, also known as the “Biga-Lapseki” road. (See Figure 30).

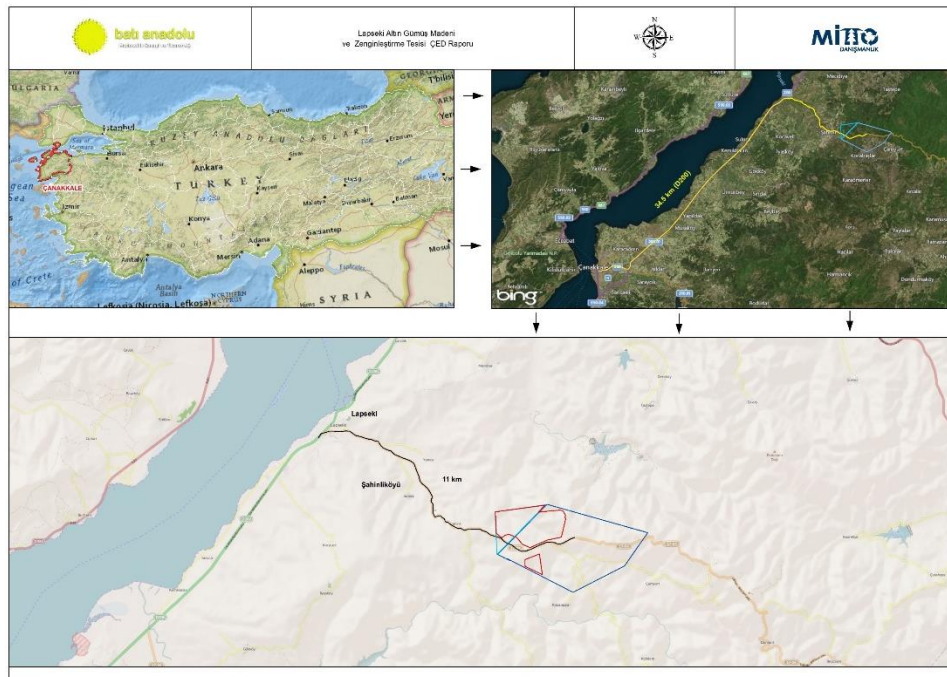


Figure 30: Indication of the Activity Area on the Site Location Map (Unscaled)

The roads to be used in the Lapseki Project are the access roads that provide access to the mine site and the service roads within the mine. The existing roads will be used for access to the Project Area and no new road will be constructed. However, stabilization works will be commenced on portions of these roads to ensure safety. The service roads within the mine to be used during transportation are the link roads between the mine main access road, open pit, mine waste disposal area and ore preparation, and mineral processing plant. The widths of the service roads within the mine will be sufficient to avoid hindering traffic between the units and to carry the trucks carrying heavy loads.

The road to be used for transportation within the scope of the Project is the Biga-Lapseki Road, of which the 3.5 km that spans from the Project Site to the Şahinli village is to be stabilized. This road passes to the south of polygon area no. 1.

There are several sensitive receptors along the Biga-Lapseki Road. From west to east (the farthest sensitive receptor to the closest) these sensitive receptors are the following: the Town of Lapseki, Yeniceköy Village, Subaşı Village, and Şahinli Village. The Biga-Lapseki Road skirts past Yeniceköy Village and Subaşı Village, but it passes directly through Şahinli Village, the closest sensitive receptor to the Project Site.

As a baseline for the traffic load, data from 2013 was taken from the General Directorate of Public Roads at two points nearest to the activity area. These locations are marked data in Figure 31 and the respective data from those points is given in Table 35.



LAPSEKI PROJECT - SIP

Table 35. Traffic Load Results from Two Measurement Points Nearest to the Activity Area

Measure ment Point	Car	Medium Load Commercial Vehicle	Bus	Truck	Truck + Trailer + Tow Truck + Side Trailer	Total
1	4,719	560	226	634	499	6,638
2	2,782	156	152	417	467	3,974

Source: General Directorate of Public Roads Traffic Volume Map 2013

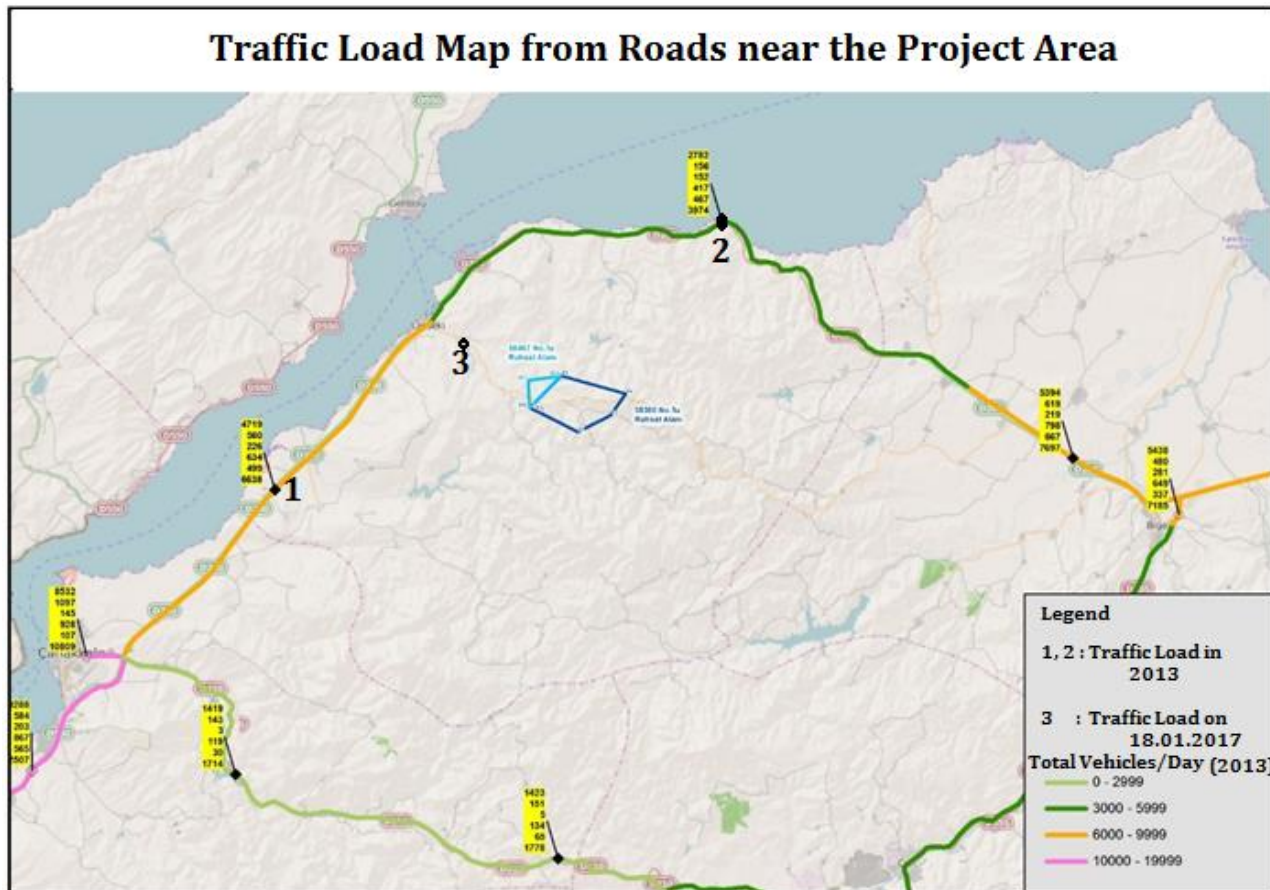


Figure 31: Traffic Load Map

In addition to the desktop information an actual traffic count was performed once the construction had commenced during a 24 hour period on 18.01.2017. This date is a Saturday where there is the local market representing the duration for maximum use of the roads. The counting took place at a location on “Biga-Lapseki Road” approximately at 1.5 km distance from the Lapseki Town Centre in the direction of Şahinli Village. The results of this exercise are presented in Table 36.

Table 36: 24 Hour Traffic Count performed on 18.01.2017

Time	TRAILER	TRUCK	BUS	MINIBUS	CAR	MOTORCYCLE	TRACTOR	OTHER
08:30-09:00		4	2	4	12		4	1
09:00-10:00		10	1	10	28	6		



LAPSEKI PROJECT - SIP

Time	TRAILER	TRUCK	BUS	MINIBUS	CAR	MOTORCYCLE	TRACTOR	OTHER
10:00-11:00	1	10		6	50	5	1	1
11:00-12:00		16	2	7	76		6	
12:00-13:00		10			72	12	3	
13:00-14:00		5		1	75	2		
14:00-15:00		6	1	3	66	7	7	1
15:00-16:00		14	1	12	81	5	4	1
16:00-17:00		16		6	70	7	8	
17:00-18:00		9	2	8	87	3	8	
18:00-19:00		4	3	13	53	4	3	
19:00-20:00		2		4	39		2	
20:00-21:00		1			23		1	
21:00-22:00				1	18	1		
22:00-23:00				1	43			
23:00-00:00			1	1	34	1		
00:00-01:00			1		24			
01:00-02:00			1		8			
02:00-03:00					1			
03:00-04:00					1	1		
04:00-05:00					1			
05:00-06:00								
06:00-07:00		1	2		2	2		
07:00-08:30		4		7	26	1		
Sub Total	1	112	17	84	890	57	47	4
Total	1212							



Statistics on the accident history in Lapseki or the area were not available. However, general accident statistics from the year 2016 were available for the Province of Çanakkale. These have been provided in Table 37 below.

Table 37 2016 Statistics⁸ on Traffic Accidents the Province of Çanakkale

Location	Çanakkale	Turkey in Total
Number of Accidents with Death or Injury	1,777	185,128
Accidents that resulted in Material Damage	1,187	228,039
Deaths at Scene	44	3,493
Accident related Deaths*	55	3,807
Total Deaths	99	7,300
Total Injured	2,956	303,812

*Deaths that are the result of accident related injuries within 30 days of the accident in question.

8.1.1.8 Conclusion

In the light of the data presented for the description of the physical environment for the EIA permitted area and the logistics and supply corridor following sensitivity characterisation for the physical environment is presented in Table 38.

Table 38 Summary of Physical Component Sensitivities

Component	Characterisation	Sensitivity Category
Soil Geology and Topography	<p>There is no contamination at the project area resulting from previous use.</p> <p>The soil cover in the project area of influence is composed of mainly lands of Class VII.; not suitable for soil tillage farming</p> <p>The EIA permit Area and the Logistics and Supply corridor is in 1st degree earthquake zone.</p> <p>EIA permit area where the project facilities will be located is subject to severe erosion</p>	Overall, soils within the study area and surrounds were concluded to have a medium level of sensitivity.
Air Quality, Noise and Vibration	The study area exhibits the characteristics of clean, rural air.	The sensitivity is considered to be medium .
Traffic	The study area exhibits the characteristics of rural low-medium density traffic.	The sensitivity is considered to be medium .

⁸ <http://www.trafik.gov.tr/SiteAssets/istatistik/2016d.pdf>



Component	Characterisation	Sensitivity Category
	Road safety risk associated with increased traffic.	
Hydrology	Surface waters is considered to have moderate natural resilience to imposed stresses that may occur due to mining activities	The sensitivity is considered to be medium .
Hydrogeology	Groundwater is susceptible to impacts arising from mining activities and is in high demand by other users.	The sensitivity of the hydrogeological component is considered high based on the fact that groundwater has moderate natural resilience to imposed stresses that may occur due to mining activities

8.1.2 Impact assessment

8.1.2.1 Impact Factors

The main impact factors associated project actions during construction are following:

- Excavation works,
- Blasting operation to be carried out in mine areas,
- Transportation of material,
- Storage in open area,
- Top soil removal;
- excavation of soil and subsoil
- disruption of natural hydrology;
- increase in vehicular traffic;
- emission of gaseous pollutant and dust in the atmosphere;
- emission of noise and vibration;

The main impact factors associated project actions during operation are following:

- increase of artificial land use;
- excavation of soil and subsoil ;
- disruption of natural hydrology;
- increase in vehicular traffic;
- accidental contamination of soil and surface water
- emission of gaseous pollutant and dust in the atmosphere;
- emission of noise and vibration.



8.1.2.2 Soil and Topography

In line with the characteristics of the mining operations the land use and topography at the mining site will be significantly altered. The soil at the mining area will be removed and replaced.

The intensity of impacts of the mining construction and operation on the soil, topography and land use will be high.

These impacts are discussed in detail in various chapters of the EIA (1, Section 2, 3 and 5).

The water pipeline construction has been completed and the top soil has been laid back. No further impacts are expected.

The impacts on the soil and land use as a result of power line will be localised at the pole locations and the intensity of the impacts are considered to be low. The further impacts on the restricted land use below the High Voltage (HV) powerlines are discussed in the Social Impact Assessment (SIA) section.

The severity level of the impacts on soils is considered as high during construction with short duration, at discontinuous frequency, over local geographic extent, and with high intensity

The severity level of the impacts on soils is considered as high during operation with medium-short duration, at discontinuous frequency, over local geographic extent, and with high intensity

The specific mitigation measures for the management of impacts on soil are discussed in 8.1.3.

8.1.2.3 Air Quality

In Chapter 5 of the EIA report the main source of the air pollution resulting from mining operations are listed as;

- a) Dust emissions as a result of the activities including ;
 - Excavation works,
 - Blasting operation to be carried out in mine areas,
 - Transportation of material,
 - Storage in open area,
- b) Gaseous emissions from the construction, operation and transportation machinery

Dust emissions

The amount of dust emissions during the construction and operation of the mine site has been calculated and presented in section 5 of the EIA report. Dust emission that will occur in case of uncontrolled operation during land preparation and mining activities remains above the limit value of 1.0 kg/hour specified in the "Industrial Air Pollution Control Regulation" entered into force through publication in the Official Gazette No. 27277, dated 07.03.2009 (amended; Official Gazette No. 29211 dated 12.20.2014). Therefore, an air emission dispersion model has been run for the dust emissions during construction and operation.

The output of the model is presented in the following Table 39 and the diffusion graphs for different scenarios are presented in section 5 of the EIA report.

Table 39: Dust Concentrations in the Sensitive Receptors without control measures

	Parameter	Şahinli Village	Kocabaşlar Village
Construction Period	Settled Dust (mg/m ² .day)	<0.27	<0.27
	Suspended Particulate Matter (PM10) (ug/m ³)	<5	<5



LAPSEKI PROJECT - SIP

	Parameter	Şahinli Village	Kocabaşlar Village
Operation Period	Settled Dust (mg/m ² .day)	≤2.7	<2.7
	Suspended Particulate Matter (PM10) (ug/m ³)	≤40	<40
Baseline	Settled Dust (mg/m ² .day)	13.55; 16.375	-
	Suspended Particulate Matter (PM10) (ug/m ³)	N/A	-
Standards (Turkish Regulation on the Control of Industrial Air Pollution)	Settled Dust (mg/m ² .day)	390 (short term)	390 (short term)
Standards (European Parliament and of the Council of 21 May 2008 on Ambient Air Quality and Cleaner Air For Europe)	Suspended Particulate Matter (PM10) (ug/m ³)	50 (24 hr)	50 (24 hr)

The estimated concentrations of the dust at the sensitive receptors are estimated to be below the Project Standards.

In the cumulative impact assessment section of the EIA report additional modelling studies have been presented considering the currently being operated and planned to be operated projects in a foreseeable future (worst case scenario it has been revealed that the modelled dust concentrations will be below the project standards at nearest settlements; Şahinli and Kocabaşlar Villages)

The construction for the water supply line has been completed. No further impacts on air quality in relation to dust emissions are expected on the environment and sensitive receptors are expected.

The construction activity for the power transmission lines will be localised at the pole locations and will be for very short durations and the level impacts on air quality in relation to dust will be trivial.

Gaseous emissions

During the construction and operation works, diesel fuel will be used as the energy source of the construction equipment. All of the construction equipment such as excavator, loader, dozer, cylinder, truck that will be used in construction and operation phase will operate by using diesel fuel. As a result of the emission calculations presented in EIA Section 5 no significant impact on air quality in relation to gaseous emissions are expected.

The construction for the water supply line has been completed. No further impacts on air quality in relation to gaseous emissions are expected on the environment and sensitive receptors are expected.

The construction activity for the power transmission lines will be localised at the pole locations and will be for very short durations and the level impacts on air quality in relation to gaseous will be trivial.

The severity level of the air quality impacts on at sensitive receptors is considered as low during construction with short duration, at discontinuous frequency, over local geographic extent, and with low intensity.



The severity level of the air quality impacts at sensitive receptors considered as low during operation with medium-short duration, at discontinuous frequency, over local geographic extent, and with low intensity.

The standard mitigation measures for dust and emission control will be applied as discussed in 8.1.3.

8.1.2.4 Noise and Vibration

The main source of noise emissions will be the mining construction and operation machinery. A noise modelling study has been performed as part of the EIA report and the levels of the noise emissions at the nearest settlements (Şahinli and Kocabaşlar Village) are estimated. The maximum level of noise felt will be at Şahinli Village during evening 44.44 dBA and during day time 47.54 dBA.

The construction for the water supply line has been completed. No further noise impacts are expected on the environment and sensitive receptors.

The construction activity for the power transmission lines will be localised at the pole locations and will be for very short durations and the level of noise impacts will be trivial.

Since ore on site will be obtained from high strength quartz veins in the porphyry unit, blasting with relaxation method is required.

The calculations made for vibration levels to be observed at Şahinli and Kocabaşlar Village and presented in EIA chapter 5 and summarised below.

Table 40 Expected Vibration Levels at the Nearest Sensitive Receiving Points to the Mines

Receptors	Distance to Blasting Site (m)	Distance (m)	V (Vibration Velocity, mm/s)
Şahinli	2,200	127 mm, 84 kg	0.04
		171 mm, 152 kg	0.06
Kocabaşlar	2,650	127 mm, 84 kg	0.03
		171 mm, 152 kg	0.05

The Maximum Permissible Values of Soil Vibrations set by National Legislation is 50 mm/s. This value is reached at 35 m as estimated by the calculations in the EIA. The vibration values decrease logarithmically at the further distances. The evaluation corresponds to a safe distance of 146 m when the maximum permissible vibration velocity 5 mm/s is reached. There are no residential units or buildings within these distances. Likewise, the distance of the settlement closest to the EIA border is 630 m.

The main sources of noise that will generate an impact on the sensitive receptors is increased traffic, especially as the Şahinli Village is by-passed by the Biga-Lapseki road.

The severity level of the noise impacts on sensitive receptors is considered as low during construction with short duration, discontinuous frequency, local geographic extent, and low intensity

The severity level of the impacts on sensitive receptors is considered as low during operation with medium-short duration, discontinuous frequency, local geographic extent, and low intensity

The standard mitigation measures for dust and emission control will be applied as discussed in 8.1.3.

8.1.2.5 Traffic

Within the scope of project, vehicles that will carry machinery and equipment to the mine site, as well as those that will carry consumables and service busses that will carry the personnel will cause a temporary increase in the traffic load mainly during operation. An estimation of the increase in traffic load during operation is presented below.

**Table 41: Information of Traffic Load Increase**

Vehicle Type	Number of Vehicles at Counting point	Number of Vehicles Stipulated within the Project	Traffic Load Increase (%)
Trailer	1	-	-
Truck	112	11	9.80
Bus	17	-	-
Minibus/Midibus	84	-	-
Car	890	20	3.24
Motorcycle	57	-	-
Tractor	47	4	8.50
Other	4	-	-
Total	1.212	35	2.88

Assuming that all of the vehicles to be used within the project are actively in traffic and passing through the same point, the expected traffic load increase is %2.88 during operation. The traffic load during construction will be considerably lower than this figure.

The limited increase of traffic on the roads induced by the Project activities is expected to result in traffic safety risks. Traffic Management Plan developed by TUMAD for the traffic related to project construction and operation has been prepared and is being implemented.

There are four potential impacts that must be taken into consideration regarding traffic. Three of these have been previously addressed in sections (Air Quality) and (Noise and Vibration). These are the dust, noise and vibrations that are produced by increased road traffic. The fourth is road safety. The impact of safety is two-fold in that it applies to those on the road itself, and those along the road. Those on the road are impacted by traffic safety. Workers, especially drivers, for the Project must be educated on traffic safety, accident prevention and defensive driving as described in the Traffic Management Plan. Sensitive receptors along the road should be contacted and informed of the increase in traffic, the precautions being made to safely transport cyanide and to provide access to the grievance mechanism that has been developed within the scope of the Project as detailed in the Stakeholder Engagement Plan. A Cyanide Management Plan aligned with the Cyanide Management Code (refer to section 2 on management of cyanide use during operation phase) has been prepared address the risks associated with cyanide.

The severity level of the impacts associated with traffic load is considered as low during construction with short duration, discontinuous frequency, local geographic extent, and low intensity.

The severity level of the impacts associated with traffic load low during operation with medium-short duration, discontinuous frequency, local geographic extent, and low intensity.

8.1.2.6 Water Resources

8.1.2.6.1 Power Line Route

The powerline corridor passes through Akyalama, Kestanelik, Aşı, Aşağı, Kazıklı Seasonal Creeks and Ulu Stream. TEİAŞ standard construction measures were put in place for water resources during the route planning and construction. There were not any pylon construction at these water courses. TEİAŞ had procedures in place to prevent any contamination, spill, waste disposal in to these streams.

8.1.2.6.2 Mine Site Study Area

The sensitivity of the water resources component is considered as high, considering that the surface and groundwater quantity and quality are susceptible to impacts that may arise from the mining activities and are in high demand with limited potential for substitution on a regional scale.



A detailed presentation of the impacts on water resources is presented in Lapseki Water Resources Impact Assessment Report.

The water resources section of the Impact Assessment combines Hydrology, Hydrogeology and Geochemistry baseline and modelling studies. Each of the proposed mine facilities during construction, operation and the closure periods will have design engineering to control the discharge of water.

The summary of the water management approach is as follows:

- Minimise erosion of disturbed areas and minimise suspended sediment flow to streams.
- Separate contact and non-contact water as much as applicable,
- Divert the non-contact water and discharge to receiving environment to minimize hydrologic impacts
- Do not use groundwater for the project water supply except emergency situations,
- Provide water to nearby Villages in order to replace their water sources that will be lost during the mining operation
- Collect open pit runoff water to ponds and collection sumps
- Collect WRD runoff and seepage water to contact water ponds
- Collect Tailings Facility runoff and seepage water to contact water ponds
- Use the captured contact water in the processing plant and if necessary treat and discharge the surplus water;
- Partially backfill some of the pits
- Cap the facilities with suitable cover systems and develop a detailed closure plan

Identification of Key Water Receptors

This assessment considers impacts on surface water and groundwater resources. Based on the information, and the conceptual understanding of the hydrologic environment, the key receptors are as follows:

- Bayramdere Dam which is providing drinking water to Lapseki Town
- Alpagut reservoir and Umurbey Dam used for irrigation purposes
- Şahinli, Kocabaşlar and ATK Groundwater Catchments used by Villagers for drinking water supply purposes. Şahinli, ATK Catchment and Kocabaşlar Catchment provide drinking water to the Şahinli and Kocabaşlar Villages. Şahinli Catchment is developed by joining of 3 springs and the total flow rate varies between 0.3 - 1.7 lt/sec. Kocabaşlar Catchment collects four springs and the flow rate varies between 0.06 lt/sec- 0.5 lt/sec. The Şahinli catchment is located on the Kestanelik stream and within the footprint of the Kestanelik open pit so the catchment and the associated springs will permanently be lost during the mining operation. Water quality analyses of the Şahinli catchments include arsenic and manganese concentrations exceeding the Turkish drinking and potable water quality limits. As explained in the water supply section, TŪMAD provided alternative water sources to Şahinli Village to replace the Şahinli catchment. Kocabaşlar Catchment will also be replaced by TŪMAD before the operation. ATK catchment is located at the west of the project facilities and located outside of the EIA boundary. Catchment is used by Şahinli Village.
- Alanpınar, Baklacı, Yetimçeşme and Kızılcapınar Fountains are the other important groundwater sources located in the vicinity of the Project area. The fountains are used for livestock and daily requirements of the villagers.



LAPSEKI PROJECT - SIP

- Springs that support surface water flow and ecology including Kovanlık Stream, Kestanelik Stream, Boğaöldü Stream, Elmalıyalak Stream and Topyurt Stream.
- Groundwater aquifer of the Project site.

Table 42: Key sensitive water receptors

Receptor Sensitivity	Receptor Name	Receptor Sensitivity
Very High	Bayramdere Dam	Sensitive area or receptor with little resilience to imposed stresses.
High	Umurbey Dam Alpagut Reservoir Şahinli Catchment Kocabaşlar Catchment ATK Catchment	
Medium	Project area aquifers/ground water Local fountains used by the villagers including: Alanpınar, Baklacı, Yetimçeşme Kızılcapınar Fountains Project area & local ephemeral creeks/streams receptors Kovanlık Stream Kestanelik Stream Boğaöldü Stream Elmalıyalak Stream Topyurt Stream	The receiving environment or receptor has a moderate natural resilience to imposed stresses.
Low		The receiving environment or receptor has a high natural resilience to imposed stresses.

8.1.2.6.3 Impact assessment

The main surface water and groundwater impacts during the construction and operation of the mine vary according to the different activities associated with each project facility.

The drivers of these impacts include:

- Processing and dry stack tailings storage (dust, seepage water quality),
- River flow changes (runoff from mining area, Stream channel and watershed basin area reduction due to facilities located on Stream beds),
- Dewatering during the open pit mining operation
- Physical disturbance of Şahinli catchment during mining
- Dumping of waste rock (dust, seepage water quality)
- Water quality changes in receiving streams and aquifers (leachate from the pits, waste rock dump and TSF facilities),
- Pit lake development



The description of the impacts and associated mitigation measures address specifically the water issues are presented below:

8.1.2.6.3.1 *Reduction of surface water quality and quantity*

The project facilities are located on ephemeral streams listed as sensitive receptors so the surface flow originated from the project site will be reduced. Drainage collection and diversion channels were designed upstream of the project units in order to both realize mining activities in a safe manner and prevent impact on existing water quality. Between the 5-10th year of operation 49% of the surface water originated from precipitation will be collected as contact water. A certain amount of the contact water will be discharged to Kovanlık stream to reduce the surface water flow reduction at the Kovanlık stream.

A weir is suggested to be installed to Kovanlık stream to gather further baseline data before during and after the operation. Impact on Bayramdere Basin will be low considering the project affected microbasins comprise 6% of the 89.46 km² Bayramdere Basin area.

The contact water generated from the WRD, DTSF and the Pits will be collected in ponds before treatment (if necessary) and discharge or they will be pumped back to the process plant to re-use.

The Lapseki project is a low sulphidation ore deposit and the ARD potential is low according to the conducted testing and modelling studies. The ARD and ML will be mitigated during operation by encapsulation of the PAG rock within the WRD, collection of contact water and covering the sulphur zone rocks on the pit walls. The collected contact water will be monitored on a regular basis. The water quality estimates indicate that the quality of the contact water will meet the project discharge standards. However the ARD will be monitored and the water quality estimates and management plans will be updated on a regular basis during the Project. Kovanlık stream will be the main discharge point. Periodic water quality samples will be taken to detect the changes in the chemical composition of the Kovanlık stream. If adverse effects on stream quality (e.g. significant changes in chemical composition) are observed, remedial measures or other mitigation measures will be taken. In Kovanlık stream, flow measurements, on-site field parameters and water samples will be collected periodically. The monitoring results will be compared with the existing reference conditions at each monitoring point. If the parameter concentrations exceed the defined trigger levels, a risk assessment study will be conducted to identify potential environmental and human health risks that will increase the frequency of monitoring and sampling. Depending on the result of the risk assessment and monitoring studies, further mitigation measures will be applied to reduce the impacts to an acceptable level. Trigger levels are presented in Table 43. Further geochemical testing and modelling studies will be conducted during the operation to develop a better understanding of the operation and closure stage seepage and run-off water qualities of the project facilities. If the contact water quality does not meet the discharge standards or deteriorate the water quality of the sensitive receptors, the contact water will be used in the process and contact water treatment options will be evaluated and implemented depending on the parameters exceeding the discharge standards. Treatment options would include adding certain chemicals to the contact water prior to discharge or design and construction of a treatment plant by TUMAD during the operation stage of the Project. The facilities will be capped by low permeable cover systems during the closure stage and long term chemical and physical stable conditions will be achieved for the permanent project facilities including the waste rock dump, dry stack tailings facility and the pits. Such project changes will be shared with the stakeholders and TUMAD will inform the relevant authorities and receive positive opinions and permits.



LAPSEKI PROJECT - SIP

Table 43 Trigger limits defined for Kovanlık Stream

	Turkish Legislation Water Quality Classification ⁹				BASELINE			Expect ed Contac t Water Quality - Settlin g Pond	Trigge r Limits for Kovanlık Strea m
Water Quality Parameters	I	II	III	IV	Kovanlık Stream				
					Spring 2015	Autumn 2015	Winter 2016		
pH	6.5-8.5	6.5-8.5	6.0-9.0	Outside of 6,0-9,0	7.72	7.86	7.74	7.22	6.5-8.5
Arsenic (µg As/L)	≤20	20-50	100	> 100	<5	<5	<5	20	20
Cadmium (µg Cd/L)	≤ 2	2.0-5.0	5.0-7.0	> 7	<0,4	<0,4	<0,4	0.1	2
Chromium (total) (µg Cr/L)	≤20	20-50	50-200	> 200	<1	<1	<1	0.5	20
Copper (µg Cu/L)	≤20	20-50	50-200	> 200	<1	<1	1.13	3.5	20
Iron (µg Fe/L)	≤300	300-1000	1000-5000	> 5000	2.9	<2	<2	3.3	300
Lead (µg Pb/L)	≤10	10.0-20	20-50	> 50	<5	<5	<5	0.2	10
Manganese (µg Mn/L)	≤100	100-500	500-3000	> 3000	6.89	0.9	2.45	868	500
Mercury (µg Hg/L)	<0.1	0.1-0.5	0.5-2	> 2	<0,01	<0,01	<0,01	0.1	0.1
Nickel (µg Ni/L)	≤20	20-50	50-200	> 200	<2	<2	<2	14.4	20
Selenium (µg Se/L)	≤10	≤10	10-20	> 20	<10	<10	<10	17.8	10
Sulphate (mg SO4/L)	<200	<200	200-400	> 400	71.9	86.1	54.3	315	200
Zinc (µg Zn/L)	≤200	200-500	500-2000	> 2000	<2	<2	<2	29.6	200
Cyanide (total) (µg Cr/L)	≤10	50	100	> 100	<5	<5	<5	n.a	<10

The Lapseki project is a low sulphidation ore deposit and the ARD potential is low according to the conducted testing and modelling studies. The ARD and ML will be mitigated during operation by encapsulation of the PAG rock within the WRD, collection of contact water and covering the sulphur zone rocks on the pit walls. The collected contact water will be monitored on a regular basis. The water quality estimates indicate that the

⁹ There are no equivalent surface water classifications in the EU. The approach in the EU is to classify the status of a water body as either high, good, moderate, poor or bad quality based on its ecological and chemical status. The methodology for this is set out in the EU Water Framework Directive and member states are required to do so for each water body or river basin. The basis for the classification depends on the baseline, non-impacted, water quality. This means that a naturally saline water body could have the same quality status as a naturally non-saline water body. Member states must take action to prevent the deterioration in the status of a water body and to improve water quality where a water body has poor or moderate status. As part of harmonization of Turkish Environmental Legislation with EU Legislation, Turkey follow the guidance and requirements presented in this directive harmonization



quality of the contact water will meet the project discharge standards. However, the ARD will be monitored and the water quality estimates and management plans will be updated on a regular basis during the Project. If the contact water quality does not meet the discharge standards, the contact water will be used in the process and contact water treatment options will be evaluated and implemented depending on the parameters exceeding the discharge standards. Treatment options would include adding certain chemicals to the contact water prior to discharge or design and construction of a treatment plant by TUMAD during the operation stage of the Project. The facilities will be capped by low permeable cover systems during the closure stage and long term chemical and physical stable conditions will be achieved for the permanent project facilities including the waste rock dump, dry stack tailings facility and the pits.

8.1.2.6.3.2 Reduction of Groundwater Quality and Quantity

Dewatering Impacts

Dewatering activities will be performed during the operation stage of the Project. The estimated cone of depression is presented in Figure 32 below.

- The depression will reach to 130 meters at the deepest part of the Kestanelik pit during the last year of the operation. Yetimçeşme fountain, Kızılcapınar fountain, Baklacı fountain, Şahinli and Kocabaşlar catchments are located within the cone of depression boundary and would potentially be impacted from the groundwater drawdown.
- Kocabaşlar catchment is providing drinking water to Kocabaşlar village and TUMAD will provide alternative drinking water sources to Kocabaşlar village.
- Şahinli catchment will be lost during the mining and dewatering activities. TUMAD has already replaced Şahinli catchment.
- ATK catchment used by Şahinli Village is located on cone of depression and would be impacted towards the end of the operation. TUMAD has already provided alternative water sources to the Şahinli Village. TUMAD is committed to engage with local community members and state authorities as per Stakeholder Engagement Plan to address this risk and take necessary actions to develop water supply to Şahinli village from these resources.
- The maximum water requirement for the plant and other facilities throughout the life of the Project has been determined to be around 10 L/s. The water will be supplied from Lapseki Municipality and groundwater will not be used for water supply. The pipeline has a capacity to transport 40 L/s water to the project site so groundwater will not be used for process water supply purposes. The potential base flow reduction has been assumed as negligible during the modelling studies conducted by Mitto. Reduction of base flow is expected to be replaced by the discharge of pit dewatering waters to the Kovanlık Stream.
- TUMAD will operate the Lapseki pipeline during the operation period of the Project. The Şahinli pipeline has gravitational flow and will continue to provide water to Şahinli Village as an alternative water source for the village. After the operation stage of the Project, TUMAD will make sure that the Villages have sustainable water sources.

Following the completion of the dewatering activities at the end of the operation period, it is expected that a pit lake will be developed in Kestanelik open pit due to the accumulation of surface water run-on, precipitation and ground water inflow. The post-operation modelling scenario indicates that the groundwater levels in the area will mostly recover in 30 years after the cessation of dewatering. The recovery at the deepest portion of the Kestanelik pit will take 100 years and the recovered groundwater level will be 5 meters less than the original pre-operation groundwater level.

A robust monitoring plan will be performed during the operation periods. Including continuous groundwater level measurement from the groundwater observation wells and monthly flow measurements from the above



LAPSEKI PROJECT - SIP

mentioned fountains, Kocabaşlar catchment and associated springs. In case of water flow reductions, TÜMAD will provide alternative water sources to replace the impacted receptors.

The monitoring plan include monitoring of the modelling results with the actual field data collected during the initial years of the operation. The models, mitigation and monitoring plans will be updated according to the actual field data. The closure plan and approach will be developed based on the updated models and the actual experience during the operation.

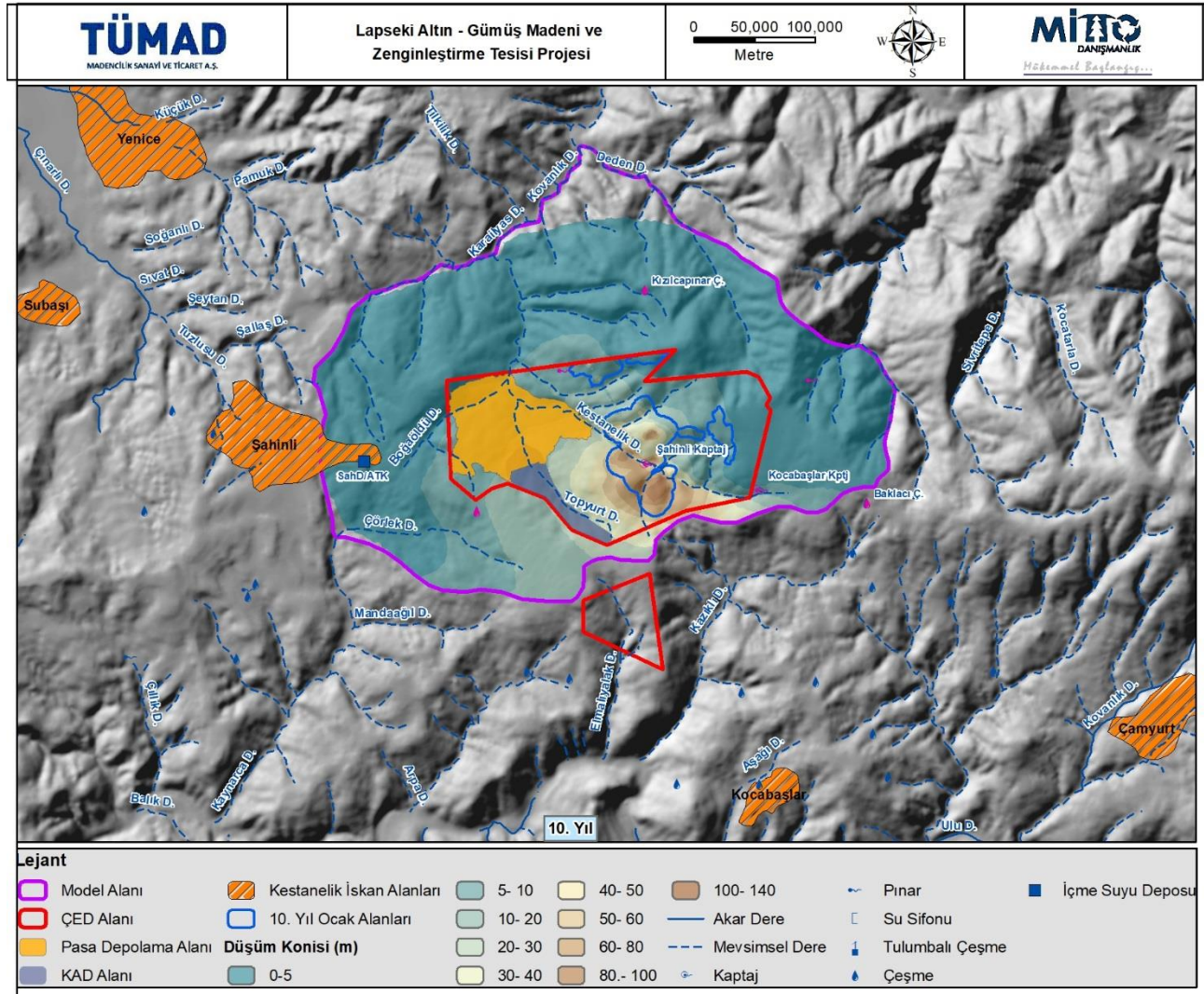


Figure 32 Cone of depression at the end of the Operation (year 10)



Pit Lake Development

It is not expected that there will be ponding in the Karakovan and SBX pits after the operation is completed. In case of no backfilling, it is probable that there will be ponding in some lower pits of the Kestanelik pit. According to the water budget calculations, there is no expectation of ponding in the Kestanelik 5 and 7 pits which have relatively small pit areas and drainage areas, but few meters of ponding is expected in the Kestanelik 1, 3 and 8 pits. On the other hand, since the pit areas and the drainage areas are planned to be excavated relatively large and deeper, in the scenario of no backfilling is performed, in the lower pits 2, 4 and 6 ponding that will be stabilized at 14, 20 and 15 meters above the pit bottom.

After the operation, especially the contact of sulphur containing excavation walls with oxygen and water must be prevented. According to this, it is predicted that partially sulphur containing material will be formed on the southern wall of the Kovanlık pit, the NE wall of the SBX pit and especially the lower pits of the Kestanelik pit with no 1, 2 and 8. During the slope correction within the scope of rehabilitation works in these pits and lower pits where formation of sulphur containing excavation walls is expected, contact of the surfaces with high acid forming potential with the atmosphere will be prevented in order to close the sulphur containing zones. The ponds to be formed in the pits no 2, 4 and 6 of the Kestanelik pit and the levels of these ponds will be stabilized in case of continuation of the current average climate conditions within 4 to 5 years and there will be no discharge to the Kestanelik Creek. Therefore, a possible sulphite oxidation that may occur from the sulphite containing and transition zone excavation walls with the formation of ponding that will act as an oxygen diffusion barrier will be avoided. There will be monthly monitoring during the life of the mine and after the closure, periodical monitoring will be continued. After the operation, monitoring schedule is also seasonal for the first 5 years, then once in a six month for the next five years and once in a year for the final five years after the operation. The Figure 33 and Figure 34 present the ultimate pit geometry, existing groundwater elevation and the steady state pit lake elevation.

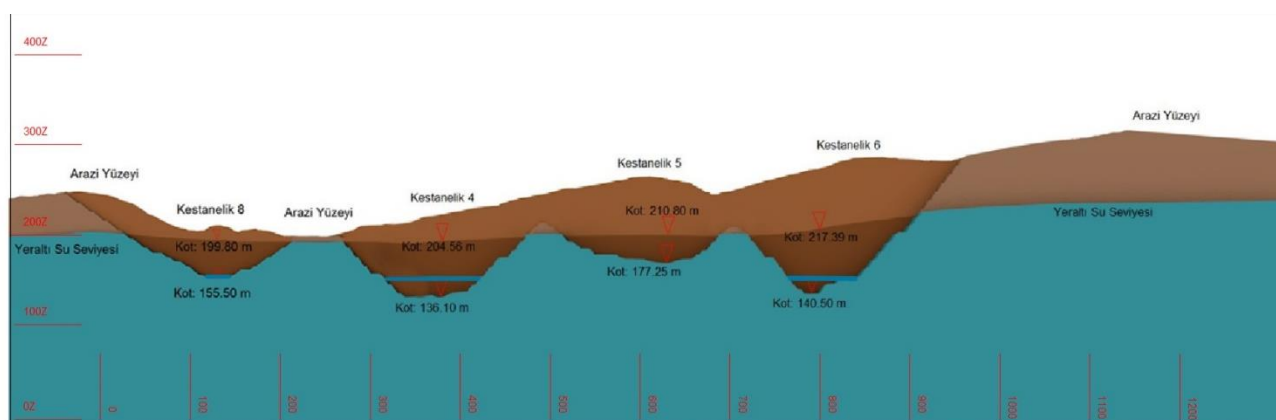
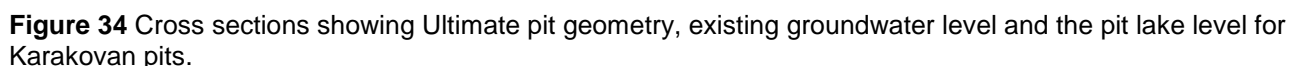


Figure 33 Cross sections showing Ultimate pit geometry, existing groundwater level and the pit lake level for Kestanelik pits.



The potential seepage pathways in groundwater between WRD, Pits and TSF, and nearby surface water features were evaluated using the updated hydrogeological model developed for the Lapseki Project.

Chemicals dissolved in seepage originating from the mine facilities could be transported along the pathways by advection (i.e., movement with average groundwater velocity) and dispersion (i.e., spreading resulting from heterogeneities and velocity differentials at various scales). Dispersion is expected to reduce concentrations of these chemicals below source concentration while the seepage plume spreads down gradient of each facility.

- Mitto's groundwater model results showed that groundwater flow in the area of the WRD directed towards north through local streams. Contaminant plume reach the northern model boundary in 20 years. In case of possible pollution spreading on the base of the waste rock, there is a potential to pollute the Kovanlık and Kestanelik creek from the base flow of creek by moving about 1 km northward along the base creek. However, a concentration of less than 5% of this spread pollutant can only spread through the base of the Kestanelik creek and will decrease over time. Therefore, the risk of a potential pollution originating from the waste storage area reaching the streams is very low but in case of any unpredicted contamination, the rivers will be monitored monthly along with other potential receptors.
- According to the result of pollutant transportation model, it is seen that a point pollutant source that may spread from the dry waste storage area will show a circular spread and then, within 50 years,



maximum 40% of the initial pollutant may remain in a small area at the centre point of the pollutant cloud and the pollutant will decrease and reach about 10% of the initial pollutant concentration 100 years. Predicted groundwater flow pattern near the Kestanelik pit was also radial, the contaminant plume reach the SE model boundary in ten years. THE DTSF will include a geomembrane liner foundation so the risk of any seepage into the groundwater is very low.

- Finally, a pollutant transportation model was run for a scenario of mixing of a pollutant to the groundwater from the Kestanelik pit. The pollutant in this area also shows a circular spread similar to the spread in the dry waste storage area. After the 50th year, the concentration distributions are decreasing below 10% of the initial concentrations and continue to decrease until the 100th year.
- Model results indicate that the contaminant plumes will be reduced by almost 90% (Figure 35)

Groundwater quality will be monitored by monitoring wells located around the tailings facility and the waste rock dump which would identify any the seepage and movement of any leachate within groundwater. If such contamination were to be detected, TUMAD would undertake remedial action to address the source and migration of leachate, preventing it from migrating out of the EIA Permitted Area. It should be noted that the Mitto's contact water quality estimates indicate that the source term water quality will be less than the discharge limits (except SBX pit).

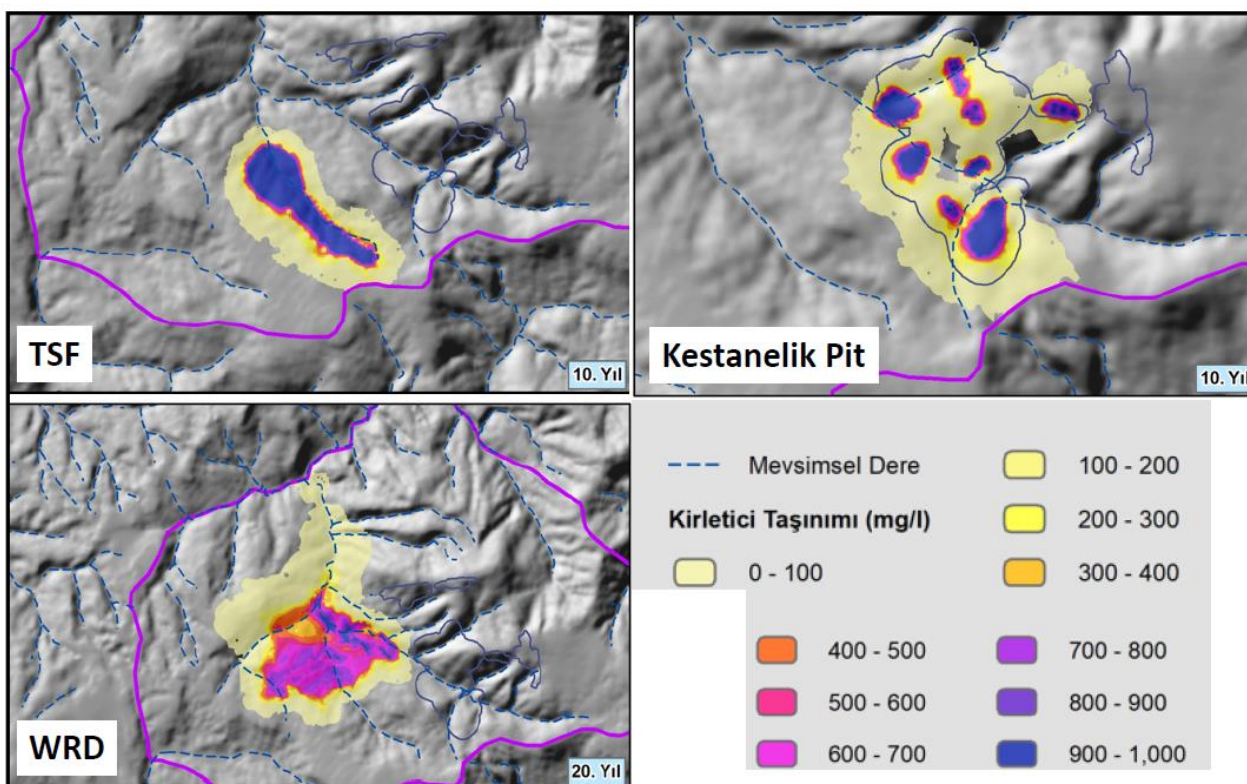


Figure 35 Contaminant transport pathway and concentration dilution



8.1.2.6.4 Impact assessment

The main surface water and groundwater impacts during the construction and operation of the mine vary according to the different activities associated with each project facility.

The drivers of these impacts include:

- Processing and dry stack tailings storage (dust, seepage water quality),
- River flow changes (runoff from mining area, Stream channel and watershed basin area reduction due to facilities located on Stream beds),
- Dewatering during the open pit mining operation
- Physical disturbance of Şahinli catchment during mining
- Dumping of waste rock (dust, seepage water quality)
- Water quality changes in receiving streams and aquifers (leachate from the pits, waste rock dump and DTSF facilities),
- Pit lake development

The description of the impacts and associated mitigation measures address specifically the water issues are presented in Lapseki Water Resources Impact Assessment Report.

8.1.2.7 Mine Closure Management

A mine closure management plan was drawn up by TŪMAD in order to establish a strategy for managing the potential impacts that will remain after the mine has closed, including what mitigation measures will be taken to address these impacts and to design a monitoring program. The main objectives and key approaches to be followed during closure activities have been listed in Table 44.

Table 44: Mine Closure Objectives and Key Approaches

Objective	Key Approaches
Return as much land as possible back to its original state and usage	<ul style="list-style-type: none">• Clean up of mine areas, re-contouring to match the surrounding topography• Rehabilitating disturbed areas with the aim to return land to conditions similar prior to construction• Replanting and reseedling disturbed areas as outlined in the Framework Biodiversity Action Plan• Construction of engineered soil or growth media covers over the WRD and HLF to promote positive drainage and non-erosive run-off, minimize infiltration, minimize wind erosion and support the growth of vegetative cover
Minimise risks to the environment	<ul style="list-style-type: none">• Capping the WRD to minimize ARD generation• Washing the HLF as part of the closure process to remove reagents and potential contaminants• Capping the HLF to minimize ARD generation



Minimising safety risks to local communities	<ul style="list-style-type: none"> • Removal and appropriate disposal of all wastes, chemicals, reagents and materials from the EIA Permitted Area • Demolition and removal of surface infrastructure • Disposal of all inert demolition materials and wastes • Construction of a safety berm and security fence around the open pits to limit to the greatest extent possible the potential for access by wildlife or the public
Minimising economic disruption to the workforce and local communities	<ul style="list-style-type: none"> • Demobilisation of the workforce and provision of support to employees in finding suitable new employment • Develop a long-term community development strategy focused on closure from the outset. The objective will be to ensure that

The impacts and planned mitigation and monitoring strategies have been concisely summarized in Table 45. The Mine Closure Management Plan also lays out a framework for how each the reclamation of each area will be carried out. For further details the actual Mine Closure Management Plan should be consulted.

Table 45: Commitments within the Turkish EIA

Reference	EIA Commitment (Lapseki Project)
Land Acquisition	<p>Lapseki 385.38 ha of the EIA site covering a total size of 394.9 ha, determined as operation area within scope of the Lapseki Project, is forest land, whereas the remaining 9.52 ha is agricultural land. Before commencement of production activities, a Rehabilitation Project has been prepared for forest land pursuant to Forest Law no. 6831 in conjunction with the Regulation on the Implementation of Article 16 of the Forest Law, promulgated in the Official Gazette dated 18.04.2014 no. 28976 (amendment: dd. 19.04.2015 no. 29331), The lands where the project units are positioned will be used for mining activities. Therefore, they will be temporarily removed from the forest land status. The shallow surface soil on these lands will be scraped off and stored in a defined area for use in rehabilitation. Use of these lands as non-forest will be limited with the operation period. At the end of the operation period, all lands will be made ready for forestation and handed over to the Regional Directorate of Forestry and submitted to the approval of the Çanakkale Regional Directorate of Forestry, and a forest permit has been obtained from the Directorate General of Forestry.</p> <p>Lapseki As for agricultural land, an application has been filed at the Çanakkale Provincial Directorate of Food, Agriculture and Livestock, and a non-agricultural utilization permit has been obtained as per Law No. 5403 on Soil Preservation and Land Utilization</p> <p>Before activities are commenced, the borders of the project site has been surrounded with wire cages mesh fence, which will be removed during the permit process and rehabilitation monitoring process.</p>



Reference	EIA Commitment (Lapseki Project)
Top Soil Stripping and Storage	<p>Topsoil stripping works will be commenced after all tree cutting works are performed by the Regional Forest Directorate. An average of 0.10 m thick topsoil will be stripped off from the areas defined within the EIA site and temporarily stored at designated topsoil storage areas for use in rehabilitation works. Topsoil stripping will be carried out simultaneously with the mining activities. The topsoil that will be temporarily stored at the storage area will be stored in a manner that will ensure its contact with oxygen and prevent any loss of fertility. All precautions will be taken to prevent any contamination of the stored topsoil with pollutants or foreign matters, and weed growth on soil piles will be prevented. The top of the stored topsoil will be vegetated to maintain its biologic characteristic and prevent convection by erosion.</p>
Design Criteria for Dry Stack Tailing Facility	<p>The DTSF designed as Class I facility per the Regulation for Landfill of Wastes as published in Gazette 27533 dated October 26, 2010. DTSF will have a composite liner foundation composed of 50cm of $k < 10^{-9}$ m/s clay and 2mm HDPE Geomembrane liner.</p>
Waste Rock Storage Area	<p>Waste rock to be stored in the open area of from the open pit casting area, SWS areas and founding dry wastes, contact with precipitation water and leachate formation will take place. Waters leaking from these areas will be deposited in sedimentation basins that will be installed at the channel outlets of drainage lines to be installed on the basin. These waters will be fed to the facility if possible, otherwise they will be discharged to the receiving centre to provide the limit values of the parameters given in WPCR (Turkish Water Pollution Control Regulation) Table-7.1</p> <p>It is planned to use clay as the selected material for closing cover in order to provide high infiltration conditions as part of detailed closing plan of most efficient closing cover design to minimize water seepage and air ingress into the stored piles of material.</p> <p>Although the closing step parameters (slope angles and heights) of the waste rock dumping area are to be updated during the operating period, the storage of waste rock piles and the arrangement of steps will be finalized before the closing plan so that the undesired deformations can be avoided pursuant to the waste rock management plan</p> <p>The topsoil to be used for rehabilitation works of the waste rock dumping area to be performed simultaneous to production shall be supplied from the topsoil that was stripped off from the area to the extent possible. If not possible, necessary permits shall be</p>



Reference	EIA Commitment (Lapseki Project)
	<p>obtained to purchase fertile soils of sufficient quality for revegetation works.</p> <p>In the project area, the areas where the interception channels and the basins will be installed are the pit, waste rock dump and DTSF areas. Water that will come into these areas with surface runoff from the basin will be collected in the interception channels and transferred to the water collection basins. Water that will come into the areas with precipitation and contaminated due to contact will be collected in the settling basins downstream of the areas via the drainage systems.</p> <p>The waste rock dump area has been designed as 1H:1.75V (29°) on the valley slope in the south-western part of the Karakovan pit and it has been designed according to the 3H: 1V (18 °) slope criterion in the rehabilitation period considering the stability conditions.</p> <p>PAG rock will be encapsulated within the waste rock dump and the waste rock dump will be capped with a low permeable cover system during closure.</p>
Open Pit Areas	<p>The PAG rock exposed on the pit walls will be covered by NAG material.</p> <p>Some of the pits will be partially backfilled</p> <p>After closure of the open pits, the containment ditches (surface flow diversion channels) will be removed and rehabilitated.</p> <p>After closure of the open pits each pit will be surrounded by an embankment of inert material to stop the accidental entrance of surface flows, people, animals and vehicles into open pits. The embankments will be surrounded by wire mesh security fencing with warning signs.</p> <p>Observation wells down gradient of the open pits will be used to monitor groundwater quality.</p>
Surface Water	<p>Geochemical properties of waste rock and ore materials for the characterization of acid rock drainage and potential geochemical test programs for potential ARD / metal leaching that can be generated from these rocks. Data obtained from waste rock deposits at the end of the dry waste storage open pond water quality and the quality of leachate</p> <p>Preventing and controlling ARD in situ by establishing the mixture balance models with PHREEQC program has been determined the measures to be taken in order to protect the chemical stability of the waste areas and the protection of the water quality in the long term in the activity area and the permission period</p> <p>After the closure, the closure top cover will be formed on the waste rock to prevent contact of precipitation</p>



Reference	EIA Commitment (Lapseki Project)
	waters falling on the waste rock and passing to the surface flow with the waste rock. During the operation and until the end of the rehabilitation, surface waters will be transmitted through the containment ducts in the upstream of the waste rock dump area to the natural drainage in the downstream without contacting the waste rock. In order to prevent erosion and sediment transport in the containment ducts, measures such as plantation and/or use of rip-rap, etc. in the ducts will be taken, stability of outlet structures of these ducts will be ensured, and additional structures for sediment retaining will be built at the outlets if necessary.

8.1.2.8 Cumulative Impact Assessment

A cumulative impact assessments for the following were completed for the following factors within the scope of the EIA:

- Ambient Air Quality,
- Water Quality,
- Hydrogeological Regime,
- Ambient Noise Levels,
- Ambient Soil Quality,
- Ground Stabilisation,
- Change to the Topography
- Continental Habitat and
- Ecological Sustainability.

According to these factors several Valued Ecosystem Components were identified including:

- The Şahinli and Kocabaşlar Villages,
- Fountains, Springs and Streams,
- Agricultural Land, Forest Land,
- Flora and Fauna Species,
- Resource Protected Areas, Bayramdere Protection Zones, and
- The nearest settlement areas.

The detailed individual results the Cumulative Impact Assessment for each factor can be found in Appendix 9 of the EIA. Ultimately, it was determined that air quality and noise levels were under the legislative limits, but additional mitigation measures were suggested. In terms of hydrogeological regime, the Project is only to contribute to changes in the range of (3%) on the water potential of the basins. No cumulative impact was foreseen to groundwater, but mitigation measures were explained to prevent acid drainage that could affect the groundwater if none are taken. In terms of land use related cumulative impacts (to ambient soil quality, ground stabilization and change to topography) it is aimed to return the post-closure Project Area to as close to its original state as possible through rehabilitation and to track soil quality throughout the operation period



to prevent impacts. This way, flora and fauna species will be affected less and ecological balance will be more thoroughly restored post-closure. The Project Area is not located within any protect areas, so it is not expected to impact them, however, it is located close to several, so management strategies have been listed to prevent any impacts. With several different mining operation operating in the area, the Project contributes to the positive cumulative impact that is employment.

8.1.2.9 Conclusions

Assessment of the impacts on various components of the physical environment is tabulated below;

Table 46: Estimation of Significance of the Impact

Component	Sensitivity Category (S)	Impact Magnitude (M)	Significance	Recommendations
Soil Geology and Topography	Medium	High	Medium	Application of Standard Mitigation Measures as defined in the Commitments Register, ESMMP and specific management plans Rehabilitation Plan Landscape and Restoration Plan Mine Closure Plan
Air Quality, Noise and Vibration	Medium	Low	Minor	Application of Standard Mitigation Measures as defined in the Commitments Register, ESMMP and specific management plans
Traffic	Medium	Low	Minor	Application of Standard Mitigation Measures as defined in the Commitments Register, ESMMP and specific management plans
Hydrology	Medium	Medium	Medium	Application of Standard Mitigation Measures as defined in the Commitments Register, ESMMP and specific management plans Water Resources Management Plan; Water Resources Monitoring
Hydrogeology	High	Medium	Medium	Application of Standard Mitigation Measures as defined in the Commitments Register, ESMMP and specific management plans Water Resources Management Plan; Water Resources Monitoring

8.1.3 Mitigation Measures

TÜMAD has listed various measures in the EIA in the form of commitments for the mitigation of the impacts on the physical environment during operation and construction. These measures are given in the commitment register in Appendix B.

TÜMAD has also prepared specific Management Plans as dressed below.

There is an Environmental and Social Management and Monitoring Plan for addressing these management plans and the monitoring requirements for the specific items.

A summary of the Project mitigation measures are presented below.

A list of mitigation measures defined for the **impacts on soil and topography** are:



- An average of 0.10 m thick topsoil will be stripped off from the Project activity areas and temporarily stored at designated soil storage areas that will ensure its contact with oxygen and prevent any loss of fertility for use in rehabilitation works that will follow.
- All measures will be taken to prevent any contamination of the stored topsoil with pollutants or foreign matters, and weed growth on soil piles will be prevented.
- During the project's 10-year operating period, rehabilitation works will be performed simultaneous to production activities in areas where the activities are completed.
- The rehabilitation works to be performed will rather aim at rehabilitating disturbed land to a shape that comes closest to its original shape and is in harmony with its environs in every aspect.
- The rehabilitation works to be performed under the Lapseki Project will be based on the principle of complete removal or at least minimization of all environmental risks and all elements that might jeopardize human health.
- The cone ends of slopes that will be formed for the purpose of stepped production will be rounded and laid to the bottom part of the slopes. Thereby, the topographic slope will be smoothened. Thereupon, the tallows collected from the work area during production and stored at the tallow dumping site will be laid on top of these steps, in a way that large parts come to the bottom and smaller parts come to the top, so as to create a drainage system for the land. The purpose here is to restore the stability of the topography disturbed during production and rehabilitate it to its former shape as close as possible.
- Temporary and permanent erosion control measures such as control of surface flows, minimization of bare lands, storage of stripped topsoil at adequate angles of inclination, collection of surface water flows at storage sites, creation of interception channels, and vegetation of storage areas will be taken at the operating area in order to minimize the soil loss and erosion as well as perform sedimentation control during mining operations and also after completion of rehabilitation works subsequent to completion of mining activities.
- During the construction and operation phases of the project, no waste will be thrown or discharged to the ground. Waste and wastewater to be generated within scope of the project will be stored and disposed of in a controlled manner in accordance with relevant regulations.
- Soil quality during the project's land preparation, construction, mine operation and post-operation periods will be regularly monitored under the Project monitoring program.

TÜMAD has issued the following management plans specific for the mitigation of impacts on soil and topography;

- **A Conceptual Mine Closure Plan**
- Waste Management Plan
- Wastewater Management Plan

A list of mitigation measures defined for the **dust and air emissions** are:

- The material conveyors, trucks and other types of carriers will be covered in order to prevent the diffusion of dust by wind.
- The blasting procedure will be performed by using non-electric capsules with delay period of milliseconds and be carried out by specialized persons.
- Dust will be suppressed by watering or spraying the earth roads.
- Speed limit will be 30 km/hour on the roads within the mine.
- Trucks will not be loaded over their capacities.



- Transported material will be kept moist to prevent dust formation.
- Organic based soil stabilizer will be used for dust suppression.
- All broken ore pieces will be stored in a closed area.
- The unused sides of the bulk storage areas will be compacted from the surface.
- The slopes in the bulk storage areas will be reduced according to the dominant wind direction.
- Upper layers in storage areas will be kept with 10% humidity.
- When it is deemed necessary to prevent transport by wind effect, wind breaking plates will be placed in the land.
- Replanting will be carried out at the points where the activity is completed and erosion due to wind will be prevented.

TÜMAD has issued the following management plans specific for the mitigation of air, noise and vibration impacts:

- Air Quality Management Plan
- Noise Management Plan
- Community Health Management Plan

A list of some of the many measures defined for the **management of traffic** are:

- TÜMAD will perform continuous visual inspection along the haulage roads and engagement with the local communities to follow up any grievances regarding traffic management (i.e. dust, noise);
- TÜMAD will control the contractors for the driver's competency and training records, vehicles maintenance records, emergency response procedures and implementation of the requirements set by the Project.
- All time, speed limits will be monitored using GPS vehicle tracking system which will be installed on all vehicle. Drivers found speeding will be subjected to disciplinary penalty as stated in Disciplinary Procedures;
- Appropriate traffic and warning signage will be placed at the roads used during the Project activities
- Nearby communities will be informed and trained on the changes of traffic routes and the precautions taken for the management of the traffic load.
- Road Safety Awareness Trainings for the affected community members especially focusing the children going to school.
- There will be no drugs and alcohol policy

TÜMAD has issued the following management plans specific for the mitigation of impacts associated with increased traffic load on the roads:

- Traffic Management Plan
- Community Health Management Plan

A list of mitigation measures for the potential impacts associated with the use of **hazardous substances** are:

- TÜMAD has started the process for the certification against CYANIDE Code which would a significant and effective tool for the safe management of cyanide during the management of the mining operations including the transportation.



- TÜMAD will dispose all the hazardous wastes produced during the construction of the project through licenced disposal contractor.
- TÜMAD will store the hazardous material at site at specifically designed storage area.
- Trainings will be provided to the personnel and contractors on the management of hazardous material.
- Community members will be informed on the use and management of hazardous material used at the mine construction and operation through the Stakeholder Engagement Process.
- The Emergency Response Plan will defined the actions in case of an accidental release of hazardous material at site.

TÜMAD has issued the following management plans specific for the mitigation of impacts associated with use of hazardous substances;

- Cyanide Management Plan
- Emergency Response Plan
- Hazardous Material Management Plan

A list of mitigation measures defined for management of **impacts on water resources** are presented in Lapseki Water Resources Impact Assessment Report.

8.1.4 Monitoring actions

The monitoring programme is provided in APPENDIX A

8.1.5 ESAP items

An individual ESAP is prepared for the Project and will be disclosed.

8.2 Biological Impact Assessment Findings

The full document “Priority biodiversity Features and Critical Habitat Assessment” is prepared and a summary of the baseline results and of the impact assessment is given in the sections below. Baseline Studies

The Project is situated in the “Aegean And Western Turkey Sclerophyllous And Mixed Forests” ecoregion (PA1201)¹⁰ which is considered part of the broader category “Mediterranean Forests, Woodlands and Scrub”. Communities of maquis, dominated by evergreen shrubs and *Pinus brutia* forests, are the most common formations in this ecoregion.

The **flora** present in the LSA is dominated by elements typical of the Mediterranean phytogeographic region. In the field surveys, conducted between 2013-2016 in the LSA, 145 taxa belonging to 46 families were determined. Out of these species, four are endemic of Turkey, and in particular:

- two are widespread endemic species:
 - *Campanula lyrata subsp. lyrata*, LC;
 - *Dianthus lydus*, LC; and
- one is regional endemic (e.g. limited to the Mediterranean region):
 - *Ferulago humilis*, LC;
- one is a restricted endemic:

¹⁰ According to Terrestrial ecoregions identified by WWF (<http://www.worldwildlife.org/biomes>)



- *Jasione idaea*, VU.

According to the assessment performed, only one vulnerable flora species, *Jasione idaea*, triggers the definition of Priority biodiversity Features (PBF) and Critical Habitat.

No Critically endangered (CR) or Endangered (EN) species was observed.

The **fauna** present in the LSA was determined by local experts based on field surveys conducted between 2013 and 2016 and literature review. As a result, 7 amphibian species, 16 reptile species, 42 bird species, and 19 mammal species were identified. None of these species is endemic. Six of these potentially present species are considered threatened and in particular:

- Common Tortoise (*Testudo graeca*, VU),
- Steppe Eagle (*Aquila nipalensis*, EN),
- Imperial Eagle (*Aquila heliaca*, VU),
- Turtledove (*Streptopelia turtur*, VU),
- Mehely Horseshoe Bat (*Rhinolophus mehelyi*, VU),
- Long-Fingered Bat (*Myotis capaccinii*, VU).

According to the baseline results, vulnerable fauna species that trigger the definition of Priority Biodiversity Features (PBF) potentially present within the LSA are the Common Tortoise (*Testudo graeca*), the Imperial Eagle (*Aquila heliaca*) and the Turtledove (*Streptopelia turtur*).

The presence of this species was confirmed only for Common Tortoise (*Testudo graeca*), and the Turtledove (*Streptopelia turtur*). However, no indication are present on the species distribution and abundance within the LSA. Using a precautionary approach the species were considered as present in potentially suitable habitat within the entire LSA. Additional studies are suggested in order to have a better understanding of the species distribution and habitat use.

The presence of the Mehely Horseshoe Bat (*Rhinolophus mehelyi*), and the Long-Fingered Bat (*Myotis capaccinii*) is considered extremely unlikely within the LSA due to the absence of suitable roosting sites. However, general mitigation and monitoring measures discussed are applicable also to these species.

The **habitat and ecosystems** mapped in the LSA according to EUNIS are summarized in Table 47. The majority of the LSA (78%) is occupied by natural habitats and in particular forests defined according to the EUNIS system as “G3.7 Mediterranean [Pinus] woodland” (26%) and “G.4.8 Mixed non-riverine woodland” (41%). “G3.7 Mediterranean [Pinus] woodland” are constituted for the most part by old forestry plantations that have been naturalized and have an ecological value more similar to natural forests. Modified habitats cover only 22% of the LSA. A permanent river (C2.2 Permanent, fast, turbulent watercourses) with a highly seasonal flow is present in the central part of the LSA.

In addition also “Temporary running waters” (C2.5) and rocky outcrops defined as “Inland cliffs” (H3.1) habitat types are present in the LSA, however, considering the mapping scale, it was not possible to represent them in the habitat map.

Protected and internationally recognized areas of biodiversity value are not present in the LSA or in its immediate vicinity. The Kaz Mountain National Park is situated at about 60 km from the LSA. The Gökçeada Dalyanı (Dardanelle Strait, MAR002) Key Biodiversity Area (KBA) is situated at 5 km from the LSA, while the Biga Dağları KBA is situated at about 10 km from the LSA (MAR 009). Biga Dağları is also considered an Important Plant Area (IPA) for the globally threatened and endemic species *Galanthus trojanus* and *Paeonia mascula subsp. bodurii*. The closest Important Bird Area (IBA) is Saros Bay, situated at about 25 km from the LSA.

**Table 47: EUNIS habitat types present in the EIA area and in the LSA**

Habitat Type	Total LSA	
	ha	%
<u>Modified habitats</u>		
G3.F Conifer plantation	204,63	2
I1.1 Intensive unmixed crops	1984,44	20
J2.3 Rural industrial and commercial sites	5,61	<1
<i>Subtotal modified habitats</i>	<i>2194,67</i>	<i>22</i>
<u>Natural habitats</u>		
C2.2 Permanent, fast, turbulent watercourses	30,05	<1
F5.2 Maquis	1182,36	12
G3.7 Mediterranean [Pinus] woodland	2615,25	26
G.4.8 Mixed non-riverine woodland	4154,62	41
<i>Subtotal natural habitats</i>	<i>7982,27</i>	<i>78</i>
Total (ha)	10176,94	100

8.2.1 Impact assessment

The main impact factors associated project actions during construction are following:

- vegetation removal;
- top soil removal;
- excavation of soil and subsoil
- disruption of natural hydrology;
- increase in vehicular traffic;
- emission of gaseous pollutant and dust in the atmosphere;
- emission of noise and vibration;
- introduction of alien species.

The main impact factors associated project actions during operation are following:

- increase of artificial land use;
- excavation of soil and subsoil ;
- disruption of natural hydrology;
- increase in vehicular traffic;
- presence of powerline;
- accidental contamination of soil and surface water
- emission of gaseous pollutant and dust in the atmosphere;
- emission of noise and vibration.



8.2.1.1 Construction Phase

The potential impacts that could affect natural habitats, Priority Biodiversity Features and Critical Habitats are:

- 1) increased mortality for wildlife due to site preparation and vehicular traffic;
- 2) habitat loss and habitat fragmentation;
- 3) changes in local morphology and hydrology;
- 4) increased exposure to atmospheric pollutants;
- 5) behavioural changes due to noise and vibration;
- 6) spreading of alien species.

Direct impacts from habitat loss and fragmentation will affect 2% of the total LSA. Most of the direct impacts will be on natural habitats and, in particular, on Mediterranean [Pinus] woodland (G3.7, 4% of the total habitat present in the LSA) and mixed non-riverine woodlands (G4.8, 4% of the total habitat present in the LSA). Maquis vegetation (F5.2) and permanent watercourses (C2.2) will also be directly impacted.

Indirect impacts in the 100 m buffer deriving from emission of gaseous pollutants and dust in the atmosphere, changes in morphology and hydrology and introduction of invasive alien species could impact a total of 5% of the LSA. Indirect impacts in the 100 m buffer will be mainly on semi-natural habitats Mediterranean [Pinus] woodland (G3.7, 9% of the total habitat present in the LSA), mixed non-riverine woodlands (G4.8, 3% of the total habitat present in the LSA) and intensive unmixed crops (I1.1, 5% of the total habitat present in the LSA).

Indirect impacts in the 300 m buffer deriving from noise and vibration could impact a total of 12% of the LSA. Indirect impacts within the 300 m buffer will be mostly on Mediterranean [Pinus] woodland (G3.7, 18% of the total habitat present in the LSA), mixed non-riverine woodlands (G4.8, 8% of the total habitat present in the LSA), intensive unmixed crops (I1.1, 14% of the total habitat present in the LSA) and Maquis vegetation (F5.2, 10% of the total habitat present in the LSA).

The overall residual impacts for the PBF and CH are summarized in the table below, considering mitigation measures presented in section 8.2.2.

Table 48: Overall residual impacts on PBF and CH during construction

Receptor	PBF/CH	Receptor sensitivity (S)	Mitigation Measure (M)	Overall Impact value
Common Tortoise (<i>Testudo graeca</i>)	PBF	Medium	Medium/Low	Negligible
Imperial Eagle (<i>Aquila heliaca</i>)	PBF	Medium	Medium/Low	Negligible
Turtledove (<i>Streptopelia turtur</i>)	PBF	Medium	Medium/Low	Negligible
<i>Jasione idaea</i>	PBF/CH	Very High	Medium/Low	Medium

8.2.1.2 Operation Phase

The potential impacts that could affect natural habitats, Priority Biodiversity Features and Critical Habitats are:

- 1) increased mortality for wildlife due to vehicular traffic and presence of powerline;
- 2) occupation and fragmentation of habitat;
- 3) changes in local morphology and hydrology
- 4) increased exposure to contamination of soil and surface water;
- 5) emission of gaseous pollutants and dust in the atmosphere;



6) behavioural changes due to noise and vibration.

Direct impacts from direct habitat loss will affect 2% of the total LSA. Most of the direct impacts will be on natural habitats and, in particular, on Mediterranean [Pinus] woodland (G3.7, 4% of the total habitat present in the LSA) and mixed non-riverine woodlands (G4.8, 4% of the total habitat present in the LSA). Maquis vegetation (F5.2) and permanent watercourses (C2.2) will also be directly impacted.

Indirect impacts in the 100 m buffer deriving from emission of gaseous pollutants and dust in the atmosphere, changes in morphology and hydrology and increased exposure to contamination of soil and surface water could impact a total of 2% of the LSA. Indirect impacts in the 100 m buffer will be mainly on semi natural habitats and concentrated on Mediterranean [Pinus] woodland (G3.7, 6% of the total habitat present in the LSA) and mixed non-riverine woodlands (G4.8, 1% of the total habitat present in the LSA).

Indirect impacts in the 300 m buffer deriving from noise and vibration could impact a total of 4% of the LSA. Indirect impacts within the 300 m buffer will be mostly on natural habitats and concentrate Mediterranean [Pinus] woodland (G3.7, 11% of the total habitat present in the LSA) and mixed non-riverine woodlands (G4.8, 3% of the total habitat present in the LSA).

The overall residual impacts for the PBF and CH are summarized in the table below, considering mitigation measures presented in section 8.2.2.

Table 49: Overall residual impacts on PBF and CH during operation

Receptor	PBF/CH	Receptor sensitivity (S)	Mitigation Measure (M)	Overall Residual Impact value
Common Tortoise (<i>Testudo graeca</i>)	PBF	Medium	Medium/Low	Negligible
Imperial Eagle (<i>Aquila heliaca</i>)	PBF	Medium	Medium/Low	Negligible
Turtledove (<i>Streptopelia turtur</i>)	PBF	Medium	Medium/Low	Negligible
<i>Jasione idaea</i>	PBF/CH	Very High	Medium/Low	Medium

8.2.1.3 Decommissioning and Closure

The decommissioning and closure phase, consisting in the demolition, rehabilitation and re-naturalization operations will likely cover a period of 3 years. However, post-closure activities will continue until the stabilization of environmental impacts, which may last longer will be scrutinized through an environmental monitoring program until the reclamation targets are met. The decommissioning and closure phase is expected to have a total duration of 15 years.

Considering that closure plans are not available at the moment a detailed description of potential impact and mitigation measures for biodiversity is not feasible. A Decommissioning and Closure Plan will be presented to address the rehabilitation and reclamation of all project facilities, including associate facilities. Clear rehabilitation targets, timelines and monitoring measures will to be included in the plan.

Activities performed during closure and post closure could potentially impact PBF and CH present on the LSA in both positive and negative directions. However, this phase is expected to have an overall positive impact on biodiversity. The effects of decommissioning and closure on general biodiversity features are discussed below, while no net loss calculation expected after closure for PBF and CH are described in Priority Biodiversity Features and Critical Habitat Assessment. The potential impacts deriving from the above impact factors that could affect PBFs and CHs are:

- 1) increased exposure to contamination of soil and surface water;
- 2) emission of gaseous pollutants and dust in the atmosphere;
- 3) behavioural changes due to noise and vibration.
- 4) spreading of alien species;



- 5) recreation of morphology and hydrology (positive);
- 6) recreation of natural habitat (positive).

8.2.1.4 No net Loss

Additional studies on vulnerable fauna species are suggested, however based on the present knowledge and considering the mitigation measures proposed, it is not expected that the project will have significant, adverse and irreversible impacts on these PBFs. Therefore, no offset measure is deemed necessary for these species.

Direct adverse impacts could potentially occur on CH determined by the presence of the endemic species of flora *Jasione idaea* (VU), although additional studies are suggested to confirm its distribution and abundance. Net loss calculations for CH are presented below for *Jasione idaea* during the different phases of the project using a precautionary and based on available information. The expected loss of habitat for CH is quantified using a precautionary approach, since no Decommissioning and Closure Plan is available at the moment.

A Biodiversity Offset Strategy that defines the conceptual framework and the main steps are available in the document.

Once the results of the additional studies are available and a Decommissioning and Closure Plan is prepared the residual impacts will be re-evaluated. A Biodiversity Offsets Plan will be prepared to detail the measures that will be implemented to obtain net gain for this CH.

8.2.2 Mitigation measures

8.2.2.1 Construction Phase

The mitigation measures listed below follow the mitigation hierarchy and are proposed for the construction phase for the entire area that will be disturbed by the Project:

■ Avoidance:

- minimising the footprint of individual facilities;
- minimising the length of internal and access roads;
- on-site conservation of endemic flora species will be provided by setting aside specific fenced areas where soil and vegetation will be preserved and access will not be permitted. The identification and delimitation of this areas will be performed during the flowering period of the species;
- hunting and collection of wild animals, and in particular of *Testudo graeca* (Common tortoise) by TUMAD staff and contractors will be strictly prohibited within the Project area.

■ Minimization:

- 5) increased mortality for wildlife due to site preparation and vehicular traffic;
- an ecologist appointed by the Construction Contractor will perform pre-construction surveys in the areas prior to vegetation clearing. The survey will focus on fauna species and nests.
 - If fauna species with limited mobility that cannot move ahead of construction (e.g. Common tortoise) are observed they will be collected by the ecologist and translocated to undisturbed but similar sites within the LSA.
 - If nests are observed, TUMAD will undertake their best efforts to preserve the vegetation in place;
 - speed limits and animal crossing signs will be installed and enforced on the access road and on the site roads. If necessary, speed bumps and noise stripes will also be installed on straight sections of the access road;



- training will be provided to all staff and contractors on road safety, and wildlife awareness.
- 6) habitat loss and habitat fragmentation;
 - construction sites will be fenced or clearly delimited in order to reduce the risk of footprint creep;
 - all vehicles will be driven on designated routes unless otherwise authorised;
 - seeds of all the endemic species will be collected follow the best practice indicated by the Millennium Seed Bank. and donated to the Ankara Seed Bank¹¹. If needed depending on seed availability, seed collections will be repeated on multiple years within the LSA;
 - individuals of *Jasione idaea* determining critical habitats directly impacted by the project will be identified and salvaged. The salvaged individuals will be temporary grown in a greenhouse and used for multiplication in order to create a pool of individuals to be used for future offset measures. Considering that the best time to identify the species is during their flowering periods (between the end of June and the beginning of July), site preparation activities will be postponed to allow for the salvaging of the individuals directly impacted;
 - culverts with specific conducive design to be used by reptiles, and in particular tortoises, will be installed under the access road in a sufficient number to minimize the effects of habitat fragmentation.
- 7) changes in local morphology and hydrology;
 - environmental engineering techniques will be applied in order to create stable slope and minimise the risk of erosion;
 - culverts will be designed and constructed on the access road in line with temporary river beds or other drainage features in order to minimize the interference with local hydrology.
- 8) increased exposure to atmospheric pollutants;
 - vehicle speed should be reduced on dirt road within and outside the mine site;
 - in dry periods dirt roads and soil stock piles should be sprayed with water in order to reduce dust.
- 9) behavioural changes due to noise and vibration;
 - rock blasting activities will be performed during the day time and at regular times to enhance local fauna habituation to noise and avoid disturbance during critical hours for many species (dusk and dawn).
- 10) spreading of alien species;
 - if spreading of invasive species is observed, an appropriate eradication program will be developed and implemented.

■ **Rehabilitation/Restoration:**

- topsoil will be separately stored at the site and used for progressive restoration and rehabilitation after the closure of the mine in accordance to regulations and best practice;
- progressive restoration of areas cleared during construction but not subjected to the placement of permanent facilities (e.g. laydown areas, pipeline route; powerline access roads) will occur with the goal of producing a stable vegetative cover to minimize erosion, dust and spreading of invasive alien species.

In addition, the following additional studies should be performed on PBFs identified as potentially present:

¹¹ (<http://www.kew.org/kew-science/people-and-data/resources-and-databases/millennium-seed-bank-resources>).



- Endemic and vulnerable flora species survey.
- Common tortoise (*Testudo graeca*) Transect Survey
- Imperial Eagle (*Aquila heliaca*) Vantage Point Survey
- Turtledove (*Streptopelia turtur*) Point Count Survey

8.2.2.2 Operation Phase

The mitigation measures listed below follow the mitigation hierarchy and are proposed for the operation phase for the entire area that will be disturbed by the Project:

- Avoidance:
 - minimising the footprint of individual facilities;
 - minimising the length of internal and access roads;
 - on-site conservation of all endemic species and in particular of *Jasione idaea* will be provided during operation by setting aside specific fenced areas where soil and vegetation will be preserved and access will not be permitted;
 - hunting and collection of wild animals, and in particular of *Testudo graeca* (Common tortoise) by TUMAD staff and contractors will be strictly prohibited within the Project area.
- Minimization:
 - 1) increased mortality for wildlife due to vehicular traffic and presence of powerline;
 - speed limits and animal crossing signs will be installed and enforced on the access road and on the site roads. If necessary, speed bumps and noise stripes will also be installed on straight sections of the access road;
 - training will be provided to all staff and contractors on road safety and wildlife awareness.
 - in order to minimize the risk of bird collision with the powerline TUMAD will negotiate the installation of line markers every 10-20 m along the entire length of the powerline.
 - in order to minimize the risk of bird electrocution with the powerline TUMAD will negotiate the installation of insulation of energised parts, discouragers (spikes) to be placed on top of potential perching sites and artificial bird safe perches and nesting platforms placed at a safe distance from the energised parts (Bayle, 1999¹²).
 - 2) occupation and fragmentation of habitat;
 - seeds of all endemic species and in particular of *Jasione idaea* will be collected follow the best practice indicated by the Millennium Seed Bank. and donated to the Ankara Seed Bank¹³. If needed depending on seed availability, seed collections will be repeated on multiple years within the LSA.
 - culverts with specific design conducive to use by reptiles, and in particular tortoises, will be installed under the access road in a sufficient number to minimize the effects of habitat fragmentation.
 - 3) changes in local morphology and hydrology

¹² Bayle, P. 1999. Preventing birds of prey problems at transmission lines in Western Europe. Journal of Raptor Research 33:43–48

¹³ (<http://www.kew.org/kew-science/people-and-data/resources-and-databases/millennium-seed-bank-resources>).



- environmental engineering techniques will be applied in order to create stable slope and minimise the risk of erosion;
 - culverts will be designed and constructed on the access road in line with temporary river beds or other drainage features in order to minimize the interference with local hydrology.
- 4) increased exposure to contamination of soil and surface water;
- an effective and comprehensive Hazardous Material Management Plan will be implemented and constantly updated;
 - employee and contractors will report any accidental spills of hazardous substances on a spill register, reporting the spill type, quantity, location, area impacted, and clean-up methods will be created and constantly updated.
- 5) emission of gaseous pollutants and dust in the atmosphere;
- vehicle speed should be reduced on dirt road within and outside the mine site;
 - in dry periods dirt roads and soil stock piles should be sprayed with water in order to reduce dust.
- 6) behavioural changes due to noise and vibration.
- rock blasting activities will be performed during the day time and at regular times to enhance local fauna habituation to noise and avoid disturbance during critical hours for many species (dusk and dawn).
- Rehabilitation/Restoration:
- progressive restoration of areas cleared during construction but not subjected to the placement of permanent facilities (e.g. laydown areas, pipeline route; powerline access roads) and of filled waste rock dump areas will occur with the goal of producing a stable vegetative cover to minimize erosion, dust and spreading of invasive alien species.

8.2.3 Monitoring actions

8.2.3.1 Construction Phase

In order to monitor the effectiveness of the mitigation measures applied, the following monitoring measures are suggested during the construction phase on potential impacts:

- 1) increased mortality for wildlife due to site preparation and vehicular traffic;
 - accidents involving wildlife or observations of living animal or carcasses along the access road will be registered. The results of the monitoring will be reviewed periodically and additional mitigation measure to avoid road kill will be taken if needed (e.g. fences, wildlife passages)
- 2) habitat loss and habitat fragmentation;
 - on site conservation areas adjacent to active construction sites should be monitored monthly for inadvertent disturbance;
 - the development of the construction sites should be monitored weekly in order to avoid footprint creep within and outside the fence line;
 - culverts will be regularly monitored (once every three months) to avoid any blockages or erosion that would made them unsuitable for target wildlife.
- 3) changes in local morphology and hydrology;



- monitoring of erosion and accumulation of stagnant water on construction sites and areas cleared of vegetation should be performed monthly during the rainy season (October to April). In case of excessive accumulation of stagnant water or erosion phenomena are observed, additional mitigation measures should be put in place as appropriate in an effective and timely manner (e.g. additional culverts on linear infrastructures, deviation channels, environmental engineering techniques for slope stability).
- 4) increased exposure to atmospheric pollutants;
 - dust accumulation in areas characterized by critical habitats and endemic species on-site and within 100 m from the facilities will be monitored every three months in the vegetative season during operation. If excessive dust accumulation or stress signs are noticed, additional site-specific mitigation measures will be applied (e.g. additional dust management measure, temporary dust screens, water spray to clean plants).
- 5) behavioural changes due to noise and vibration;
 - No monitoring required.
- 6) spreading of alien species.
 - the presence and spread of invasive flora species will be monitored every three month during the vegetative season, with particular attention to disturbed and restored areas for at least 3 years after the end of the construction phase.

Rehabilitation/Restoration:

- restored areas will be inspected monthly for the first year during the vegetative season in order to allow for prompt corrective actions if needed. The monitoring will aim to assess the development of the planted/seeded species, the vegetation cover and the presence of stress or erosion signs. After the first year, if no particular problems are observed, monitoring will be performed every three months until the restoration targets are achieved.

8.2.3.2 Operation Phase

In order to monitor the effectiveness of the mitigation measures applied, the following monitoring measures are suggested during the operation phase on potential impacts:

- 1) increased mortality for wildlife due to vehicular traffic and presence of powerline;
 - accidents involving wildlife or observations of living animal or carcasses along the access road will be registered. The results of the monitoring will be reviewed periodically and additional mitigation measure to avoid road kill will be taken if needed (e.g. fences, wildlife passages)
- 2) occupation and fragmentation of habitat;
 - culverts will be regularly monitored (once every three months) to avoid any blockages or erosion that would made them unsuitable for target wildlife
- 3) changes in local morphology and hydrology
 - erosion and accumulation of stagnant water on operation sites and areas cleared of vegetation should be performed monthly during the rainy season (October to April). In case of excessive accumulation of stagnant water or erosion phenomena are observed, additional mitigation measure should be put in place as appropriate in an effective and timely manner (e.g. additional culverts on linear infrastructures, deviation channels, environmental engineering techniques for slope stability).
- 4) increased exposure to contamination of soil and surface water;



- the implementation of the Hazardous Material Management Plan will be monitored and the records on the spill register reviewed. The Hazardous Material Management Plan will be updated regularly as needed.
- 5) emission of gaseous pollutants and dust in the atmosphere;
- dust accumulation in areas characterize by critical habitats and endemic species on-site and within 100 m from the facilities will be monitored every three month in the vegetative season during operation. If excessive dust accumulation or stress signs are noticed, additional site-specific mitigation measures will be applied (e.g. additional dust management measure, temporary dust screens, water spray to clean plants).
- 6) behavioural changes due to noise and vibration.

No additional monitoring required.

■ Rehabilitation/Restoration:

- restored areas will be inspected monthly for the first year during the vegetative season in order to allow for prompt corrective actions if needed. The monitoring will aim to assess the development of the planted/seeded species, the vegetation cover and the presence of stress or erosion signs. After the first year, if no particular problems are observed, monitoring will be performed every three months until the restoration targets are achieved.

8.2.4 ESAP items

An individual ESAP is prepared for the Project and will be disclosed.

8.3 Social Impact Assessment Findings

A complete social impact assessment for the Project has been completed and presented in Lapseki Social Impact Assessment Report. A summary of the findings of this study is given in the following sub-sections.

8.3.1 Baseline Studies

The existing socioeconomic conditions over the Project Study Area and Associated Facilities have been defined through desktop studies and the site data collection campaigns. The site data collection campaign has focused on the directly impacted villages, namely Şahinli and Kocabaşlar villages.

Main features of the socioeconomic conditions are:

Table 50: Summary of Socioeconomic baseline findings focusing on directly impacted settlements

Component	Characterisation
Demography	<p>There is out board migration of the population at the directly impacted villages, namely Şahinli and Kocabaşlar.</p> <p>There is no seasonal changes in the number of population these villages</p> <p>The average age of the population in Şahinli is younger and the average settlement size is bigger than Kocabaşlar Village.</p>



Component	Characterisation
Land use and land ownership	<p>The total land to be acquired by for the mine is 3.949 decares. There are no private parcels in the land to be acquired.</p> <p>Residents of both Kocabaşlar and Şahinli Village use some sections of these land for animal grazing.</p> <p>There are 78 parcels in the Right of Way of the power line corridor. These parcels are agricultural land. It is not known whether these parcels are private land or not since the expropriation process is executed by the Turkish Electricity Transmission Authority (TEİAŞ).</p> <p>Along the power line route the magnitude of the land to be expropriated and where the poles to be erected is 1 decare. The total number of such parcels are 10.</p>
economy	<p>The economy of Lapseki district mainly depends on agriculture and husbandry</p> <p>The main economic activity cited by Şahinli and Kocabaşlar Mukhtar are animal husbandry and workmanship. Muhktars define the Workmanship as the employment by TUMAD</p> <p>Majority of consulted people at both villages have a perception of livelihood resource availability to be difficult or very difficult.</p> <p>There is a high employment expectation by TUMAD among the attendees at the focus group meetings.</p>
Infrastructure	<p>The access to both villages are by E-90 Bursa-Çanakkale highway towards Lapseki District and by the village roads from Lapseki to the villages.</p> <p>The roads used by the villagers for access to the farm lands are not in good condition.</p> <p>The existing power lines are used for the electricity supply.</p> <p>There is public sewerage system in both villages.</p> <p>The water is supplied through public network and local springs.</p> <p>Kocabaşlar mukhtar stated the water supplies to the village is not enough and at good quality</p> <p>Şahinli mukhtar stated that water supplies to the village is enough but not at good quality.</p> <p>There is one public hospital at Lapseki district.</p> <p>The main three problems of infrastructure stated by the mukhtar at Kocabaşlar Village are : access to city centre, water supply access to agricultural fields.</p> <p>The main three problems of infrastructure stated by the mukhtar at Şahinli Village are: access to water supply, unemployment and public educational.</p>
Community health	<p>Following community health concerns in relation to the project are valid among the villagers</p> <p>Occupational health and safety and communicable diseases, cyanide consumption, traffic accidents, dust and noise emissions, contamination of water resources, decrease in available water supply resources.</p>



Component	Characterisation
Cultural heritage	As stated in the EIA there is no tangible cultural site at the mine EIA Permit Area.
Vulnerable groups	The number of women who would fall under vulnerable criteria is 257 as a total at villages. There is no household without a land at both villages. There are two people in Kocabaşlar and 10 people in Şahinli village over 65 years and need livelihood support. The total number of handicaps is 2 at the settlements The number of very poor household at Kocabaşlar is 10 and at Şahinli is 10. The number of children (0-16 ages) is 10 at Kocabaşlar and is 60 at Şahinli Village.
Cumulative	There are 7 operating project, 4 planned projects in the region. One of the existing projects is planning to increase capacity.

8.3.2 Impact Assessment Findings

The summary of impact assessment findings are presented in the following sections and details are presented in Lapseki Social Impact Assessment Report.

Baseline and Impact Assessment Issues

Population

The tendency of the population for out-migration has reduced in both directly affected settlements and the neighbouring settlements with the local employment made during construction period¹⁴. The operational phase has been planned to last for 10 years. For this reason, the imminent impact of local and regional employment will be important against the reduction in the local population and in reducing the tendency for out-migration. Approximately 250 persons will be employed in the operation period. During recruitment, local people will be given priority and thus the negative impacts of external migration will be reduced.

Land Acquisition

The mining license was obtained for an area of 1461.75 hectares. However, only 395 hectares of land specified in the EIA area will be acquired. Of them, 95 decares are 2B agricultural land (a category officially designated to deforested lands repurposed by individuals, companies, villages or towns). The remaining land to be acquired is forest land. While the ownership of the forest land resides with the state, there are households in Şahinli and Kocabaşlar using the forest lands for grazing. There are 5 rightful users in the acquired 2B land.

In the current situation, the acquisition of the land of 1,226 decares has been realized. Thus, land acquisition of 123 hectares of 395 hectares has been realized, allowing the mine to commence operations. Acquisition of another 84 hectares of land will be made after the 3rd year of operation.

The total number of household using land subject to Mine Site land acquisition is 44 for Şahinli and 7 for Kocabaşlar Village. All of these households use this land for mainly animal grazing, herb and mushroom collection. There are cultivated trees of household as reported during baseline interviews. No agricultural use is reported

¹⁴ Local employment figures are presented in employment section.



Kocabaşlar and Şahinli Village headmen have reported that they have used the affected forest lands mainly for animal grazing activities. Four households in Kocabaşlar reported that they have 8 trees in the affected area. 25 households in Şahinli Village have reported that they have 41 trees in the affected area in total. Use of the land for animal grazing has also been confirmed by Households during face to face interviews: among the 67 people interviewed in Şahinli, 30 reported that they use the affected Project Area for livestock grazing, 22 for collecting hay, 28 for gathering herbs, and 18 for firewood (wood cutting, collecting, etc.). Nineteen people reported that they do not use the land. However, these areas are not officially owned by a person or a village legal entity. In general in Lapseki, there are no pastures in the agricultural areas, because of the fertility of the agricultural lands and the dominance of forest land. In the focus group discussions, the headmen and the households reported that they were adversely affected due to the acquisition of the forest areas. The review of data obtained from the Ministry of Food, Agriculture and Livestock on the Livestock numbers do not confirm a direct correlation between the numbers of cattle and sheep with the land acquisition that started on March 2015.

The number of cattle in Şahinli Village decreased from 744 to 732 between 2014 and 2015 (equals to a 1.6% decrease), increased from 732 to 786 by the year of 2016 (equals to a 7.37% increase) and again decreased from 786 to 728 (equals to a 7.7 decrease) in the year of 2017. Whereas, the change in the number of sheep presented a different pattern in Şahinli Village over the same period; and was 2348 in the years of 2014 and 2016, decreased to 1943 (equals to a 17% decrease in 2016) and increased to 2200 in 2017 (equals to a 13.7 increase).

The number of cattle in Kocabaşlar Village, increased from 133 to 96 between 2014 and 2016 (equals to a 28% decrease), and increased from 96 to 180 by the year of 2017 (equals to an 87.5% increase). Whereas, the change in the number of sheep presented a different pattern over the same period; and increased from 1933 to 1953 between 2014 and 2015 (equals to a 1.034% increase), decreased to 1787 by the year 2016

The Energy Transmission Line (ETL) route passes through Karaömerler and Kocabaşlar villages in Lapseki district. The junction point of the line is Şahinli village. The adverse impact of electrical energy transmission line on livelihoods will be minimal over the operation period. Potential health and safety impacts of the ETL are assessed in detailed in this report and measures that will be undertaken during operations are described in the Community Health and Safety Management Plan.

Land rented during the construction period will be restored to its original condition and delivered to the owners upon the completion of the construction phase and will continue to be leased in the operation period if needed.

Local Economy, Livelihoods and Employment

Agriculture and livestock activities are important sources of income in the province of Lapseki. According to the information given by the village headmen, important economic activities are based on **livestock breeding and labour**. Dry farming is carried out in Şahinli and Kocabaşlar settlements. The most common products are wheat barley and oats. Cattle breeding and sheep breeding are at the top in the development of livelihoods. During focus group interviews held in Şahinli, women raised concerns with regards to potential impacts of the Project on animal husbandry and fruit farming (cherries and peaches) and loss of livelihoods due to the decrease in water resources caused by the Project. This issue has been considered in the Stakeholder Engagement Plan; special trainings and meetings targeting women considered in the Plan.

Local communities will be given priority in the operational period. An average of 250 people will be employed during the operating period including contractors. **100% of the unskilled workforce and % 70 of the semi-skilled needed during the operating period will be provided from the local and neighbouring settlements, primarily from the affected settlements.**

During the construction period, the project had **positive impacts** on the local economy. The main economic contributions of the Project during construction were: compensation paid for the leased lands, jobs created and establishment of the transportation service company (*Şahinli 400 Grupları A.Ş*) by Sahinli village community members. During the operation period, transportation service will be provided for all staff employed from the local villages or other regional centers and the service will be continued to be provided by the *Şahinli Hizmet Grupları A.Ş.* Company. Since the operation period of the Project will last for 10 years, the impact of the local and regional purchases on the households and enterprises will be positive. Support to alternative



income generation activities i.e encouraging the continuation of agriculture and livestock production in the region have critical importance because employment income from mining will end up after 10 years if no additional reserves are found in the region. Community Development Plan will be designed and implemented by TUMAD in order to enhance the agriculture and livestock breeding, in addition to vocational trainings, skill development and purchasing local goods and services. This topic will be covered in detail in the Livelihood Restoration Framework and the subsequent Livelihood Restoration Plan as well as Community Development Plan.

Infrastructure and Public Services

During the construction phase, construction traffic resulted in some deterioration in road conditions on the road that provides transportation between the Lapseki district and the project site, and especially the road used by the Yeniceköy, Subaşı and Şahinli Villages. These deteriorations were repaired at certain times by the Special Provincial Administration with the request of the project management and the village legal entities and, occasionally, with the help of the regional highway organization. Road construction works were supported during the construction period, and the Kocabaşlar-Karaömerler road construction work was completed. It is expected that the deterioration and collapses that occurred on the transportation road used also by Şahinli, Subaşı and Yeniceköy during construction and drilling works in the construction phase will not occur again in the operation phase since the high traffic density that occurred during the construction phase will not occur in the operation phase.

During operations phase, TUMAD will supply water from Lapseki Municipality for its own operations and they committed to provide additional water to Şahinli and Kocabaşlar villages and bear the cost of this water coming from municipality in the next 10 years. In this regard; a 10.12 km Lapseki pipeline including two parallel water distribution pipelines (one of them is main line and the other is spare) have been constructed from the Lapseki district network to the Şahinli village within the framework of the protocol signed with the Lapseki Municipality.

Drinking water is identified as an important issue especially in Şahinli village. The headman of Kocabaşlar stated that the water was of poor quality and was inadequate, while the headman of Şahinli stated that the water is adequate, but of poor quality. The Village Headman of Kocabaşlar reported that the issue of drinking water is among the most important problems of the village. TUMAD completed construction of 22.48 km Şahinli water distribution pipeline to provide water from the Dumanlı Village. The Şahinli pipeline has gravitational flow and is considered as an alternative water source to the Municipality Line for the Şahinli village. A three km drinking water line was also built for Kocabaşlar village.

It is not expected that the education services and institutions will be affected by the Project during the operation period because there are no educational institutions or services within the affected communities. The same situation applies to health services and institutions. There are no health facilities or services affected by the project. There will be a health unit dedicated for the workforce including a doctor in the mine. There will be no major impact on the local health care services.

Community Health and Safety

Public health and safety issues come to the forefront among the most important adverse impacts related to the Project and concerns.

Potential Community health and safety impacts of the Mine include:

- Occupational health and safety
- Community health safety and communicable diseases;
- Cyanide use and general concerns of the households about the Project;
- Traffic and road safety;
- Contamination and/ or reduction of water resources;
- Dust and air quality;
- Noise and vibration; and



- Security personnel management and social disputes.

1) Occupational Health and Safety (OHS) and Infectious Diseases

Construction works started in 2015. A total of 14 lost-time accidents occurred during the construction period as of May 2017. The total day loss at the construction is 136 days. **The number of fatal accidents is zero.** This shows that the OSH measures taken during the construction period were effective. A total of 16 hours of OSH trainings were given to approximately 590 people.

OHS measures will continue to be implemented during the operation period in compliance EBRD requirements and ESMS system. With and will include: Revisions to these measures will be made and new measures will be developed if deemed necessary according to the relevant plans and procedures. Infirmary services will be provided during the operation period. A doctor and health technician will be employed on site. A patient transportation vehicle and driver will be kept at the ready at all times.

No communicable diseases were detected during the construction period. Increase in communicable diseases is not expected during the operating period either; because the employees will not stay in mass accommodation facilities. Everyone will stay at their own home. As a measure the project aims to employ workforce locally as much as possible in order to minimise the number of foreign employees coming from other regions in Turkey and TUMAD will ensure that it screens employees and contractor before they are employed and on a periodic basis throughout their employment or contract, and TUMAD will provide education awareness on healthy lifestyles, focusing on: alcohol, personal and food hygiene and communicable diseases.. The facility area is very close to the city centre and it is very easy to access the health services of the employees. In addition, a health unit including one doctor at mine site will be assigned for the health surveillance of employees to be conducted regularly.

2) Cyanide Usage

It has been observed in the focus group interviews that the perception regarding the environmental impact to be caused by the Project is mixed. Some of the participants think that cyanide-solving will have adverse impacts on both the environment and their health, while others seemed to be convinced that the company has taken the necessary mitigations in this regard and will not mix any harmful waste with the soil and/ or water. Participants whose concerns, related to the use of cyanide and its impacts, have yet to be satisfied expect to have more comprehensive, more effective and more informative meetings with visual and auditory methods.

The Project executives took the village headmen to the gold mines using cyanide to allow them to see this process on site, and this concern was largely eliminated in terms of the village headmen.

Regarding this issue, the households need to be informed continuously about the Project and grievance mechanism.

Within the scope of the Project, the works will be performed in compliance with the International Cyanide Management Institute (ICMI), and the International Cyanide Management Code (Cyanide Code) will be adopted and followed. In addition, TUMAD will apply to become member of the ICMC in order to obtain professional support for cyanide management, and to ensure that auditing works carried out under the supervision of United Nations Environment Committee (UNEP) members and that dissemination of information to the public is carried out by a third party.

The Cyanide Code is an initiative document voluntarily prepared for both the gold mining industry and the producers and transporters of cyanide employed in gold mining. This code is determined according to production, transportation, loading-unloading, handling and storage, operation activities, end of operation, worker safety, emergency response and tilting principles and application standards. TUMAD has established a detailed **Cyanide Management Plan** including worker safety, emergency response and transportation.

In addition;

- An Emergency Action Plan has been prepared by TUMAD for the operation period.



- The Emergency Action Plan will be approved by the relevant authorities and the implementation of this Plan will be monitored and will be reviewed on a routine basis and will be ensured to be up-to-date.
- The households will be kept informed at all times in order to eliminate their concerns.
- All of the households in the affected settlements will be provided with information about the grievance mechanism.
- The capacity of the Site Community Relations Unit will be improved and the number of experts employed in this unit will be increased. At least one female specialist will be employed.
- During the operation period, regular on-site visits will be organized for the households and the measures taken will be shown on-site.
- A participatory monitoring mechanism will be developed during the operating period and a Community Advisory Board (CAB) will be established for this purpose¹⁵.
- TÜMAD is committed to share the soil and water monitoring results with the local community members on a routine basis.
- It will be ensured that all of the household in the affected settlements will be informed on the Grievance Mechanism.

The capacity of the Site Community Relations team will be strengthened, and the number of the team members will be increased. There will be at least one woman community relations expert in the team to ease the communication with the women in the region.

3) Traffic

Construction of Lapseki mine is completed. The traffic during operation phase will decrease significantly compare to the construction phase. TUMAD has developed a Traffic Management Plan to address community safety aspects related to the Project traffic and its likely impacts. This plan includes the detailed management controls and mitigation measures including;

- Placing traffic warning signs in the operation area, its surroundings, and the roads used; including and the definition and placement of all necessary warning signs at the mine site.
- Informing and training residents and especially children in the settlements about traffic rules.
- Determination of the speed limits and developing control mechanisms to determine compliance with these limits.
- To reduce the risk of traffic accidents, providing traffic, defensive driving techniques, and similar trainings to the employees of the company and the contractors.
- A video camera system will be installed in the Şahinli village and the passing vehicles will be recorded by the Government Security Forces.
- Installation of a security camera system in the Project Site
- The information on the routes and transportation schedule will be communicated to the community members residing in settlements near transportation routes.
- Installation of GPS in all vehicles.
- Installation of all necessary road signage at the public roads to be used for transportation through consultation with the relevant authorities.

¹⁵The details of the Community Advisory Board are indicated in the social disputes section.



- Establishment and implementation of a training programme on traffic and transportation hazards for all employees and contractor employees who are managing the traffic within the site and transportation to and from the site.
- Preparation and completion of driving training sessions for all operators and drivers on advanced, heavy vehicle and defensive driving. These trainings will be mandatory for all TUMAD and contractor drivers. The chemical suppliers will provide evidence that their drivers have completed such trainings.
- Development and implementation of a Road Safety Awareness Programme for the local community.
- Daily records of the delivery of materials and access of vehicles to the site.
- Development of Emergency Action Plans will be required of the contractors for the off-site emergencies in line with the TUMAD Emergency Action Plan and the Contractor Management Plan.
- Maintenance and verification inspection of the vehicles in line with manufacturers' and national legislation requirements.
- Prohibition of use of alcohol and illegal drugs.

4) Water

A detailed hydrogeological assessment has been carried out within the scope of environmental impact assessment studies during the planning phase of the Project. All water sources, including springs and wells, within and in the near vicinity of the project site were identified and information on current water use by local communities was gathered. In this context, a Water Management Plan has been prepared for to minimise the impacts on water resources. In order to be able to carry out mining operations safely and to ensure that the existing water quality will not be affected, the diversion channels have been designed upstream of the project units. Periodic water quality samples will be taken to detect changes in the chemical composition of the water. Water monitoring results will be shared with the Participatory Monitoring Committee members on regular basis.

The water interacting with the project units will be collected in settling basins. The settling basins, which will be installed inside the pits and downstream of the storage areas, will collect contaminated water. The settling basins will be insulated with impermeable clay and geosynthetic clay, then they will be constructed with epoxy concrete thus it will be leak proof. In addition, flood pools are designed to ensure safety in case of a possible flood.

5) Dust

There will be dust formation as a result of the Lapseki mine activities during operation. Operation of the mine may temporarily deteriorate the air quality for those living at the closest settlements. A computer modelling has been performed for the diffusion of the emitted dust over the project area and the vicinity. The results of the modelling confirmed that the ground level concentrations of dust at the settlement area are below the ambient air quality standards. TUMAD and its contractors have committed to methods to manage these impacts, such as keeping stockpiles covered and dusty roads damp, and will pass these commitments onto their contractors. After these management controls are implemented, it is not predicted that there will be any significant impacts. Monitoring will be undertaken to ensure that the commitments are being effective. Monitoring results will be reported every two months in the format reportable to the Ministry of Environment and mitigation measures for dust emissions will be applied as committed in the EIA. These results can also be shared with the Participatory Monitoring Committee members including village representatives. The community grievance mechanism will be used effectively to collect and address any potential complaints with regards to dust generated by mine operations.

6) Noise and Vibration

Noise and vibration (blasting) will be generated due to Project activities during the operation period. Şahinli village is the closest settlement to the project area and its distance is 0.6 km. Because of this reason, the households in Şahinli will possibly be disturbed and adversely affected. In the course of the assessment of the environmental impact of the project, noise modelling has been carried out for all phases of the activity.



Blasting will occur at regular times during the day time throughout the life of the mine. The type of blasting will be designed to reduce the transmission of noise and modelling indicates that there will not be any vibration impacts from blasting in local settlements. TUMAD Community Relations will notify the residents prior to operation.

During operations, **noise measurements will be performed every month in the nearest sensitive receptors** (Şahinli and Kocabaşlar villages). Also TUMAD and its contractors have committed to keep their machinery in good condition, monitor noise levels and respond to any complaints received.

7) Security

Security of the site will be provided through private security personnel, a perimeter fence (including patrols) and a CCTV system and will be hired through a well-known and reputable security provider. TUMAD will undertake a risk assessment prior to the appointment of security personnel and will implement a Security Management Plan in accordance with Turkish legislation and the Voluntary Principles on Security and Human Rights. The performance of the security contractor will be continually monitored by TUMAD.

TUMAD will include into Security Management Plan the following provisions and relevant training to security personnel on: conflict resolution, crowd management, restraint and cautious exercise of the security activity, proportional use of force (if allowed) and basics of human rights.

TUMAD will consider including ICOCA (International Code of Conduct Association) requirement for Private Security Service Providers into the Security contracts.

Potential Social Dispute Issues

During construction period no social conflicts, protests or tensions have occurred due to TUMAD mining activities and also between the communities. In fact, the attitude toward the project in the settlements is positive.

There is a possibility that there will be social conflicts resulting from the retrenchment incurred during the transition from the construction to the operation period and the selection of the employees during the operation period. However, at the present time, such a conflict has not occurred.

However there are some CSO/NGO activities against mining companies in Turkey and in the region due to various reasons such as poor HSE and social performance in the past by some small companies.

The EIA meeting held in Şahinli in 2014 was protested by the Çanakkale Environment Platform.¹⁶ During this protest, environmentalists and village residents came face to face, but there was no unpleasantness.

This issue is assessed as a potential source for conflict and TUMAD has developed a detailed Stakeholder Engagement Plan to consult all stakeholders throughout the lifetime of the project in a constructive manner.

Cultural Heritage

Detailed archaeological surveys were undertaken in the local area by and these showed that there are no cultural assets under the scope of cultural heritage registered or unregistered, no natural assets, archaeological sites and/or protected areas. No chance finds identified during construction of Lapseki Mine.

During operations there are no anticipated impacts on any cultural heritage; however TUMAD has a Cultural Heritage Plan in place and will prepare a Chance Find Procedure to be followed in the unlikely event that any further archaeological features are discovered during mine operation.

Vulnerable Groups

It is possible that the land acquisition works made and to be made at the Project Site will have adverse impacts on the livelihoods of the identified sensitive groups. This is mainly because Project affected forest areas used as pastures and springs within the fence line are used for grazing during the spring and early summer by some

¹⁶ <http://www.milliyet.com.tr/cevreciler-ile-koyluler-karsi-karsiva-canakkale-yerelhaber-538437/>



of the households from project nearby communities. The grazing land inside the fence line will not be available for use by these people during the operations phase.

According to the SIA findings, 64% of the households interviewed in the affected settlements use the land for various purposes, but they do not have the official ownership of these lands. Some of these people are more vulnerable such as a widow woman in the Şahinli Village who has six heads of cattle and she has been using Project site for grazing. TÜMAD is committed to engage with this user and other vulnerable groups through the Stakeholder Engagement Plan and identify their dependency on Project Affected lands for livelihood and implement restoration measures through Livelihood Restoration Plan.

TUMAD is working with affected households (land users and owners) and other relevant parties to ensure that their livelihoods are not adversely impacted by the operations. Key components of the process and commitments are set out in TUMAD's Livelihoods Restoration Framework. A more detailed Livelihood Restoration Plan will be developed and implemented by TUMAD for these affected communities in the 2018.

Cumulative Impacts

When the already existing projects in the region are evaluated together with the TÜMAD Project, it is found that the Project will have adverse cumulative impacts. The existing projects that will cause this impact are the basalt quarry crushing-screening plant (at a distance of 1 km) which is located the closest to the Project and within the borders of the Şahinli village, and a basalt quarry and crushing plant (at a distance of 2.4 km). The cumulative effects mentioned are very important for the households in the affected settlements and mitigation measures need to be developed. In the focus group interviews, it was learned that the residents of Şahinli were disturbed by the quarries. The greatest concerns of the households are the increasing traffic in the Village and the serious threats posed towards children, elderly and women by the vehicles passing through the Village due to the quarries and the TÜMAD Project. The Cumulative Impact Assessment report prepared in the EIA report will be addressed in case it is confirmed that the Kurtyapı İnşaat Company will increase the capacity of its quarry. The ambient air quality measurement programme will be revised if required. Communication and coordination will be established with the representatives of the companies having projects in the immediate vicinity, including the quarries operating in Şahinli. Efforts will be made to ensure that blasting operations do not coincide with each other.

Continuous management of cumulative impacts require close cooperation and coordination of all actors in the region including state authorities, other industries, universities and communities.

Therefore TUMAD will ensure meetings on a regular basis will be organized with key stakeholders such as local authorities, university representatives, opinion makers and other industry representatives in the region as well as the Association of Gold Mine Producers to identify and manage the cumulative environmental and social impacts of the Gold Mines and other developments in the region. TUMAD is open to cooperation with other players to set up a regional industrial network to discuss cumulative HSE and socio-economic issues and opportunities for the region with the aim of setting up HSES standards and common monitoring measures for Mine operations in the region. Ultimately regional action plan could be developed to clearly define roles and responsibilities of each party involved.

The Company will therefore discuss and facilitate in such a study, but this needs to be done in conjunction with the regulators and other operators and through industry associations such as Gold Mine Association of Turkey.

Impact on Employees:

TUMAD and its contractors will comply with all applicable Turkish worker health and safety legislation, specifically the Law on Turkish Occupational Health and Safety (Law No 6331 of 2012) and EBRD PR 2 requirements including Core ILO conventions during all phases of project. Worker health and safety management systems are currently in place for exploration activities and more detailed management systems and operating procedures are under development for operations.

TUMAD has developed a Labour Management Plan, which applies to TUMAD and its contractors, which outlines procedures and requirements implemented by TUMAD to ensure that TUMAD and its Contractors



respect and protect the fundamental principles and rights of workers through promoting personal respect and a safe work place. This includes:

- fair treatment;
- non-discrimination and equal opportunities for all workers;
- establishing, maintaining and improving a sound worker-management relationship;
- compliance with applicable national labour and employment laws;
- protecting and promoting the safety and health of workers, especially by promoting safe and healthy working conditions;
- Preventing the use of forced labour and child labour (as defined by the ILO and Turkish legislation).

TUMAD will monitor employee standards of its contractors throughout the lifetime of the mine through regular labour and OHS audits.

TUMAD has developed an Emergency Response Plan, which provides the process and procedures that TUMAD will follow, together with local emergency service organisations, in the event of an occupational safety or environment incident during the life of the mine.

Monitoring and Evaluation

TUMAD has a suite of Environmental and Social Management Plans which form part of its Environmental and Social Management System. The Management Plans describe how TUMAD will ensure that environmental and social risks are managed and that identified management activities are carried out by staff and contractors. It makes clear who is responsible for each activity, when tasks need to be completed and how they will be monitored and reviewed.

TUMAD has developed and implemented detailed monitoring measures to ensure that it can check that environmental and social management measures and commitments are working and that it is fulfilling its regulatory requirements and other commitments. The detailed monitoring measures are listed in each Environmental and Social Management Plan, and include a description of what needs to be monitored, how it is monitored, how often, and who is responsible for the monitoring.

TUMAD has also developed a suite of key performance indicators, which are used to track the success of environmental and social management.

TUMAD will continue to monitor environmental and social risks throughout all phases of the Mine, including during decommissioning, and after the Project is closed. TUMAD has a commitment as part of the Turkish EIA to monitor the site for up to 30 years for environmental issues.

SUMMARY OF KEY BENEFITS, IMPACTS AND MITIGATION MEASURES

As result of the baseline assessment and the key issues identified as possible impacts of the Project from social perspective. The key impacts are as follows;

- Project's impact on livelihoods due to land acquisition and risk of decrease in farming land and pasture areas,
- Impact of dust, noise and other operation related works such as blasting on people, agriculture and livestock
- Potential Impacts of mine related activity on human health and safety of the communities and workers
- The potential impact on water resources,
- Concerns of community and risks due to hazardous chemical and explosive substances

These potential impacts remain the highest potential residual significance after the application of mitigation measures. Mitigation measures have been proposed to respond to all of the identified potential impacts, combining a combination of management controls (such as the development and implementation of a Social Management Plan, and internal management procedures, and continuous engagement with stakeholders.



Opportunities for enhancement of beneficial impacts are also available, including strengthening delivery of sustainable community development initiatives in the Project area and formation of a Participatory Monitoring Committee which also includes representatives from TUMAD, governmental bodies and community representatives.

In relation to the relative perception of the Project impacts by community member, 16 out of 34 responders in the closest settlement area, Şahinli village indicated that the project is harmful whereas 11 of 34 responders indicated the Project is beneficial. This information has been taken into account in the preparation of Stakeholder Engagement Plan and will be reflected on the monitoring of the efficiency of the Stakeholder Engagement Plan.

Key benefits of the Project include:

- Creation of direct and indirect employment opportunities for the life of the mine; regarding the employment forecasts of the mine; Number of staff to be employed by TUMAD in the operation phase is 155 in total. Number of labour force foreseen to be supplied from the region is 114 people. Number of labour force foreseen to be employed from outside the region is 41 people. Number of contractor employee is foreseen to be 95 and Contractors will employ 60 of them locally and 35 of them regionally. These numbers may change as the project progresses however the ratio of local to regional will stay at the same level.
- In addition to this, various supports from TUMAD throughout the construction period has also created positive impacts on the local communities. In particular, the support given for the drinking water distribution pipeline of the Şahinli and Kocabaşlar Villages which improved the infrastructure conditions of the households, thus affected the relations positively. The total amount of the financial investments made during the construction period was 2,736,000 TL, and 81% of it was spent for the settlements directly affected by the Project, 5% of it was spent for the neighbouring settlements and 14% of it was spent for Lapseki District Centre.
- Induced job creation from service and supply jobs to meet demands from the resident workforce and the mine itself during operations phase;
- Increase in local procurement opportunities during operational phase;
- Increased revenue to the province and districts in the area through taxes, royalties and other payments, in particular during the operational phase;
- Positively influxes on the demographics of the region due to job opportunities; and
- Strengthened and sustainable community development initiatives implemented in partnership between the Project and key stakeholders.

8.3.3 Mitigation Measures

A part from the summary above the detailed Mitigation Measures are presented in the Social Impact Assessment Report

8.3.4 Monitoring Actions

The monitoring programme is provided in APPENDIX A

8.3.5 ESAP items

An individual ESAP is prepared for the Project and will be disclosed.



Report Signature Page

GOLDER ASSOCIATES (TURKEY) LTD. ŞTİ

Registered in Turkey Registration No. 53/3069

Vat No. 396 056 79 79

Golder, Golder Associates and the GA globe design are trademarks of Golder Associates Corporation.

\\ank1-s-main02\projects\2017\tumad additional\disclosure\management plans\gone to ebrd after comments\approved\sip_lapseki_27.09.2017.docx



APPENDIX A

Environmental and Social Monitoring



LAPSEKI PROJECT - SIP

AIR QUALITY MANAGEMENT PLAN				
No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
AQM-LAP-03	PM ₁₀ 5 different points	Period: 24 hours Frequency: 6 Monthly	Environmental Department	The locations are including the sensitive receptors and potential areas to be impacted as stipulated by the air emission modelling study for construction and operations of the mine.
AQM-LAP-04	PM _{2.5} 5 different points	Period: 24 hours Frequency: 6 Monthly	Environmental Department	The locations are including the sensitive receptors and potential areas to be impacted as stipulated by the air emission modelling study for construction and operations of the mine.
AQM-LAP-05	Heavy metal in Particulate matter 5 different points	Period: 24 hours Frequency: 6 Monthly	Environmental Department	The locations are including the sensitive receptors and potential areas to be impacted as stipulated by the air emission modelling study for construction and operations of the mine.
AQM-LAP-06	SO _x and NO _x 8 different points	Period: 2 Months Frequency: 6 Monthly	Environmental Department	The locations are including the sensitive receptors and potential areas to be impacted by the mining operations.
AQM-LAP-07	PM ₁₀ 2 points	Period: Continuous Frequency: Continuous	Environmental Department	Şahinli Village and inside the plant area. The station inside the Plant area measures the meteorological parameters as well
AQM-LAP-08	HCN 3 points	Period: Continuous Frequency: Continuous	Environmental Department	Within the Facility (Leach area) 2 separate locations in Şahinli
NOISE AND VIBRATION MANAGEMENT PLAN				



LAPSEKI PROJECT - SIP

No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
NVM-01	Noise Level	Monthly, including daytime, evening and night readings Instant during blasting	Environmental Department	In the vicinity of Sensitive Receptors; at Şahinli (at two points) and Kocabaşlar Villages (at two points) for Lapseki These locations correspond to the baseline measurement locations in the EIA. According to the local grievance additional measurement locations will be located No grievance has been raised during completed construction phase of Lapseki
NVM-02	Noise Spectrum	Monthly, including Daytime, Evening and Night readings	Environmental Department	In the vicinity of Sensitive Receptors; at Şahinli (at two points) and Kocabaşlar Villages (at two points) for Lapseki These locations correspond to the baseline measurement locations in the EIA. According to the local grievance additional measurement locations will be located No grievance has been raised during completed construction phase of Lapseki
NVM-03	Blasting Noise and Vibration	Instant during blasting	Environmental Department	In the vicinity of Sensitive Receptors; at Şahinli (at two points) and Kocabaşlar Villages (at two points) for Lapseki These locations correspond to the baseline measurement locations in the EIA.



LAPSEKI PROJECT - SIP

				According to the local grievance additional measurement locations will be located No grievance has been raised during completed construction phase of Lapseki
CYANIDE MANAGEMENT PLAN				
No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
CMP-01	Worker Safety	Continuous	Environmental Department OHS Manager	Continuous monitoring of Hydrogen Cyanide atmospheric concentration. Threshold limit value is 10 ppm (11mg/m3 Drager Multi Warn II Gas Measurement Device Instruction Manual (TMD_LAP_ISG_TLM.008). Personal Gas Measurement Device Instruction Manual (TMD_LAP_ISG_TLM.007)Hydrogen Cyanide Gas Measurement Record Form (TMD_LAP_ISG_FRM.016), HCN Gas Measurement Device Calibration Form (TMD_LAP_ISG_FRM.017)
CMP-02	Environmental Levels (inside and outside the site)	Periodic	Environmental Department	Monitoring of groundwater and surface water quality including cyanide concentrations, which have been determined in Water Resources Management Plan TMD_CEV_PLN.003
CMP-03	Environmental Levels (inside and outside the site)	Periodic	Environmental Department	Water Total Cyanide (TCN) and weak acid dissociable Cyanide (WADCN) shall be monitored at Kestanelik Stream on the downstream direction and the ground water observation wells, which have been specified in



LAPSEKI PROJECT - SIP

				Water Resources Management Plan for Lapseki Project.
CMP-04	Atmospheric Emissions	Continuous	Environmental Department	Atmospheric emissions from ADR plant and Solid Waste Storage Area, which have been specified in Air Quality Management Plan TMD_CEV_PLN.006, shall be continuously monitored, and HCN concentrations shall be maintained below the limit value of 5 m/Nm ³ which is specified in the IAPCR (Industrial Air Pollution Control Regulation).

WASTE MANAGEMENT PLAN

No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
WM-01	Sampling from Biological Waste Water Treatment Plant	Within durations given in the scope of the Environmental Permit	Environmental Department Accredited Laboratory	-
WM-02	Soil Contamination Analyses	Every 6 Months	Environmental Department	-
WM-03	Top Soil Analyses	When deemed necessary/Visual Inspection	Environmental/Related Departments	-
WM-04	Categorical Analysis of Waste Oils	Applies Until the Type of Waste Oil Changes	Environmental Department	-
WM-05	Delivery of Vegetable Waste Oils to Licensed Companies	Variable depending on the amount of waste	Environmental Department	-
WM-06	Ensure the Disposal of Hazardous Wastes	Variable depending on the amount of waste	Environmental Department	-
WM-07	Ensure the Recycling of Non-Hazardous Wastes	Variable depending on the amount of waste	Environmental Department	-
WM-08	Delivery of Packaging Wastes to Recycling Companies	Variable depending on the amount of waste	Environmental Department	-



LAPSEKI PROJECT - SIP

WM-09	Waste Declaration Form	Annually	Environmental Department	-
WM-10	Waste Oil Declaration Form	Annually	Environmental Department	-
WM-11	Applications for Provisional Operating Certificate and Environmental Permit	Every 5 years	Environmental Department Ministry of Environment and Urbanization	-
WM-12	Completion of the Forms for National Waste Transportation during the Delivery of Hazardous Wastes	In Each Delivery	Environmental Department Licensed Transporters Licensed Disposal Companies	-

WATER RESOURCES MANAGEMENT PLAN -LAPSEKI

No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
WRM-LAP-01	Surface Water Quality and Quantity	Monthly	Undertaking Requirement & Regulation on Surface Water Quality Management	Surface Water Sources within Area of Impact of the Plant
WRM-LAP-02	Underground Water Quality	Monthly	Undertaking Requirement & By-law on Protection of Underground Waters against Pollution and Deterioration	Observation wells dug at the plant and within the area of impact
WRM-LAP-03	Water Level Measurements in Observation Wells	Weekly	Internal Monitoring	Observation wells dug at the plant and within the area of impact
WRM-LAP-04	Depot, Spring and Fountain Water Quality and Quantity	Monthly	Undertaking Requirement & By-law on Protection of Underground Waters against Pollution and Deterioration	Drinking and usage water sources of settlements nearby the area of impact of the plant
WRM-LAP-05	Discharge Water Quality	Prior to Discharge	Undertaking Requirement & By-law on Control of Water Pollution	In biological treatment system and settling basins
WRM-LAP-06	ARD Leachate Quality	Monthly	Undertaking Requirement & By-law on Control of Water Pollution	Field Kinetic Tests Barrels (ARD Monitoring)



LAPSEKI PROJECT - SIP

WRM-LAP-07	Contact water/Sedimentation Pond Water Quality	Monthly		Undertaking Requirement & Regulation on Surface Water Quality Management		at settling basins	
WRM-LAP-08	Sampling at the Biological Wastewater Treatment Plant	In Periods Determined in the scope of Environmental Permit		By-law on Control of Water Pollution & Environmental Permit and License Regulation (in the scope of Environmental Permit)		Biological treatment system	
Frequency and Parameters to be Monitored during Operation of Lapseki							
Measurement Point Type	Measurement Point	Parameter	Construction Phase	Operation Phase	Closure Phase		
					1. Period*	2. Period*	3. Period*
Weir Point	Kovanlık Dere Weir	Flow	Continuous	Continuous	Continuous	Continuous	Yearly
		Field parameters (T, pH, EC)	Monthly	Monthly	Quarterly	every sixth month	Yearly
Surface Waters	Kestanelik Dere upstream (KesMb) and Downstream (KesMp), Kovanlık Creek (KovD) MSY Area (MSY)	Flow	Continuous (using prob)	Continuous (using prob)	Continuous (using prob)	Continuous (using prob)	Yearly
		Field parameters (T, pH, EC)	Monthly	Monthly	Quarterly	every sixth month	Yearly
		Chemical parameters (Laboratory analysis)	Quarterly	Quarterly	Quarterly	every sixth month	Yearly
Groundwater Wells	PGK1, PGK2, TGK1, KEMW4, OGK1, OGK2, ŞahK,	Groundwater level	Monthly	Monthly	Quarterly	every sixth month	Yearly
		Field parameters (T, pH, EC)	Monthly	Monthly	Quarterly	every sixth month	Yearly
		Chemical parameters (Laboratory analysis)	Quarterly	Quarterly	Quarterly	every sixth month	Yearly
Catchments & Depots	ŞahDK, ATK, KocD Catchment	Flow	Monthly	Monthly	Quarterly	every sixth month	Yearly



LAPSEKI PROJECT - SIP

	and Village Depots	Field parameters (T, pH, EC)	Monthly	Monthly	Quarterly	every sixth month	Yearly
		Chemical parameters (Laboratory analysis)	Quarterly	Quarterly	Quarterly	every sixth month	Yearly
Fountains	Alanpınar, Baklacı, Yetimçeşme and Kızılcapınar Fountains	Flow	Monthly	Monthly	Quarterly	every sixth month	Yearly
		Field parameters (T, pH, EC)	Monthly	Monthly	Quarterly	every sixth month	Yearly
		Chemical parameters (Laboratory analysis)	Quarterly	Quarterly	Quarterly	every sixth month	Yearly
Water Quality, Quantity and Water Use of the Villages	Şahinli and Kocabaşlar Villages and water pipelines	Flow / Volume	Continuous	Continuous	Continuous	Continuous	Yearly
		Field parameters (T, pH, EC)	Monthly	Monthly	Quarterly	every sixth month	Yearly
		Chemical parameters (Laboratory analysis)	Quarterly	Quarterly	Quarterly	every sixth month	Yearly
Collection Ponds	settlement ponds at the waste rock dump, DTSF and Pits	Flow / Volume	Continuous (using prob)	Continuous (using prob)	Continuous (using prob)	Continuous (using prob)	Yearly
		Field parameters (T, pH, EC)	Monthly	Monthly	Quarterly	every sixth month	Yearly
		Chemical parameters (Laboratory analysis)	Quarterly	Quarterly	Quarterly	every sixth month	Yearly

*Program for monitoring groundwater, surface water and resources (each period shows a period of 5 years at closure phase) Notes: 1. Period: first 5 years after closing, 10 years after closing 2nd period, 15 years after closing 3rd period

ARD Monitoring Program for Lapseki



LAPSEKI PROJECT - SIP

Stage of the Project	Component	Monitoring Spot	Monitoring Method	Parameter	Purpose
Construction and operation period	Waste rock and open-pit surface lithology	Selected rock samples and/or existing barrel samples	<p>Evaluation of updated results of on-going barrel tests</p> <p>Conduct tests on new lithology groups observed during mining</p> <p>Conduct further tests on transition samples</p>	<p>Evaluation of the data of acid generation speed, metal leachate generation rate obtained over the longer period</p> <p>pH, Alkalinity, Acidity, Conductivity, Metals, Anions</p> <p>Acid generation and neutralization potentials, state of metal leachate generation</p>	<p>Update open-pit and waste rock dump closure plans and waste rock management plans</p> <p>Comparison with pre-operation test results and refining the ARD monitoring and mitigation plans</p> <p>Analysis of rocks which have potential to generate ARD or which will be used for neutralization</p>
Operation period	Waste Rock	Continuous Sampling during operation	Conduct tests on rock samples during mining, blasting etc.	Sulphur Content	Identify PAG and NAG rocks during operation and manage and update encapsulate plans
Operation period	Geologic/block model	Waste rock lithology and open-pit surface lithology	<p>Evaluation of updated geologic model</p> <p>Evaluation of PAG rock percentage that will be exposed on the pits walls</p> <p>Evaluation of NAG and PAG material volumes and comparison with the plans</p>	NAG-PAG material volume update	Operational waste rock management and obtaining of final closure planning



LAPSEKI PROJECT - SIP

Operation period	Quality of contact water obtained at the site	Waste rock dump leachates and open-pit surfaces contact waters	Site measurements and sampling	pH, EC, ORP, measurements and chemical analyses	Comparisons with the results of the water quality estimation models, and operational waste rock management and closure planning
		Discharge Water Quality	Evaluation and update of water quality predictions based on site monitoring, new test results and updated geological models, PAG-NAG material volumes		
		Barrel Tests results			

HEALTH & SAFETY PLANS

TRAFFIC MANAGEMENT PLAN

No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
TMP-01	Speed Limits	Continuous monitoring	Head of OHS Department	Speed limits will be monitored using GPS vehicle tracking systems which will be installed on all TUMAD vehicles and will be required on contractor vehicles where necessary and practicable. Drivers found speeding will be subject to disciplinary action
TMP-02	Accidents/Incidents	Daily	Head of OHS Department	All TUMAD drivers will be required to report all report any type of road traffic accident including human harm, animal harm, property damage and, spillages (i.e. chemicals)
TMP-03	Driver Competency and Training	Records maintained and up to date	Head of OHS Department	All TUMAD and contractor drivers will comply with the minimum driver training requirements defined by TUMAD. All drivers will be required to



LAPSEKI PROJECT - SIP

				hold a valid Turkish driving license as well as having attended required TÜMAD training courses and holding appropriate internal permits. Chemical Suppliers will provide evidence to TÜMAD of similar training for drivers.
TMP-04	Contractor Management	Prior to a contractor's initial appointment and then on daily and weekly basis. This frequency can be adjusted depending on contractor's performance over time.	Contractor's Manager	<p>TÜMAD will establish an inspection and audit programme to assess contractors' performance with respect to Transport Management Plan, including:</p> <ul style="list-style-type: none"> - Review of Contractors' ability to meet the requirements of this plan prior to appointment - Contractors' emergency response procedure (including actions to be undertaken by drivers) - Audit of driver competency - Vehicle equipment and maintenance records (daily) - Drivers' training records.
TMP-05	Inspections	Following road construction and/or upgrading and In the event of a complaint	Head of Environment	Visual inspection, by the TÜMAD Head of Environment of dust levels, particularly during construction, along the haulage routes and in particular at sensitive locations e.g. residential areas.
TMP-06	Impact on Communities	On-going	Head of Community Relations Department	TÜMAD will continue to engage with local communities adjacent to haulage routes (specifically the bypass road and site access road) to establish the extent of impact caused by Project traffic.



LAPSEKI PROJECT - SIP

TMP-07	Road Infrastructure	On-going	Operations Manager	Arrangement and design on routes and upgrades. Identify and install, in consultation with relevant authorities, all necessary warning signage on public roads that are used for Project transportation.
TMP-08	Traffic	Annually	Head of Community Relations Department	Community awareness and road safety training programme to be developed and implemented.
TMP-09	Traffic	On-going	Security and OHS Departments	Manage the day-to-day delivery of materials and entry of vehicles onto the site.
TMP-10	Traffic	On-going	Drivers/ Head of OHS and Environments	Cover all dump truck loads with tarpaulins to minimise dust.
TMP-11	Traffic	As per legally required/ manufacturer requirements	Maintenance and Repair Department	Vehicles will be maintained in accordance with manufacturer guidelines and Turkish licensing requirements and periodic verification inspections will be undertaken.
TMP-12	Fit for Work	On-going	Head of OHS Department	All drivers must be fit for work. Employees must not drive after consuming alcoholic beverages and illegal drugs.

EXPLOSIVES and HAZARDOUS MATERIALS MANAGEMENT PLAN

No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
EHM-01	Inventory of Hazardous Materials, Volumes of Hazardous Materials	Continuously	Security	Target: All hazardous materials are recorded.
EHM-02	Daily check of storage areas Evidences of past/current spills (major staining, sign of stressed vegetation, pool of	Daily	Appointed personnel from Environmental/OHS Department	Target: No spills, all conditions are met



LAPSEKI PROJECT - SIP

	liquids, shining on water surfaces SDS available for chemicals Proper and adequate firefighting equipment Restricted access Safety signs in place Sufficient ventilation Suitable spill clean-up materials in place All containers (tanks, drums, etc.) properly closed and adequately stable to avoid liquid overflow Gas cylinders stored in a dedicated ventilated area, vertically, attached, protected from any risk of fall, repaired from direct sunlight and heat sources. Each type of gas cylinders stored in separated groups, according to their content. Fuel and combustible gas cylinders must be stored in separate locations. Condition of the secondary containments.			
EHM-03	Incident Reports/Investigation Reports	When happens	OHS and Environment Departments	Target: Minimize with a target zero per year
EHM-04	Explosives, blasting, vibration, and noise monitoring Reports	Daily, Weekly, Monthly and Annual Reports	Head of Environment and OHS	Target: Legal limits are not exceeded
EHM-05	Number of grievances received from workers,	Continuously	Head of Environment Head of OHS	Target: Minimize with a target zero per year



LAPSEKI PROJECT - SIP

	subcontractors and community members regarding the management of explosives and hazardous materials		Head of Community Relations	
--	---	--	-----------------------------	--

COMMUNITY HEALTH & SAFETY SECURITY MANAGEMENT PLAN

No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
CHSS-01	Communicable Diseases The changes in the trend of the health statistical data. Number of health training sessions run with local community.	Annual	OHS Manager, Occupational Physician CR Manager	-
CHSS-02	Cyanide Use Number of grievances regarding cyanide use.	Continuous	OHS Manager, CR Manager	-
CHSS-03	Traffic Number of grievances regarding traffic Number of recorded traffic incidents involving community members Number of drivers and community members involved in road safety training sessions.	Continuous	OHS Manager, Community Relations Manager	-
CHSS-04	Water Resources Number of grievances regarding water supply.	Continuous	OHS Manager, Community Relations Manager	-
CHSS-05	Dust and Air Quality Number of grievances regarding dust and air quality.	Continuous	OHS Manager, Community Relations Manager	-
CHSS-06	Noise	Continuous	OHS Manager,	-



LAPSEKI PROJECT - SIP

	Number of grievances regarding noise.		Community Relations Manager	
CHSS-07	Vibration Number of grievances regarding vibration	Continuous	OHS Manager, Community Relations Manager	-
CHSS-08	Security Personnel Number of recorded security incidents involving TUMAD workers and members of the local population. Number of grievances regarding security personnel.	Continuous	OHS Manager, Community Relations Manager	-
CHSS-09	Non-conformances about community health, safety & security measures Number of non-conformances about community health, safety & security measures given in CHSS management plan, inspection /audit reports, site observations.	Continuous	OHS Manager, Community Relations Manager Environmental Manager	-
SOCIAL PLANS				
CONTRACTOR MANAGEMENT PLAN				
No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
CM-01	Completion of Contractor Selection Process, Defined Project Standards Due Diligence outcomes according to Preliminary Qualification and Selection on the contractors	Every 3 month	Head of Purchasing Department Operations Manager	-



LAPSEKI PROJECT - SIP

	Contracts including risk assessment and H&S Management Plan, Contractors Handbook			
CM-02	Contractors mobilization Pre-start meeting minutes Contractors Equipment/vehicle inspection reports Contractors Training records Contractors Medical certificates Contractors H&S Management Plans Safety Data Sheets	Before mobilization/Every 3 month	Head of Environment, OHS	-
CM-03	Work Management TUMAD's regular monitoring - reports, inspections and controls Non-conformance and incident investigation reports Refresher trainings Feedback provided to contractors	Routine (Daily/weekly/ monthly)	Head of Purchasing Department Operations Manager	-

LABOUR MANAGEMENT PLAN

No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
LMP-01	Employment Analysis of records of male/female workforce ratio, including those in managerial positions (supervisors and above)	Annual	HR Department	



LAPSEKI PROJECT - SIP

LMP-02	Employment Analysis of records of local/regional /national workforce ratio	Annual	HR Department CR Manager	-
LMP-03	Employment Number of worker grievances submitted, processed and resolved	Annual	HR Department CR Manager	-
LMP-04	Training Percentage of employees completing mandatory training as outlined in Personal Training Profiles and the Annual Training Plan	Annual	HR Department	-
LMP-05	Implementation Number of cases of discrimination or harassment reported	Annual	HR Department	-
LMP-06	Implementation Review of procedure implementation records	Annual	HR Department	-
LMP-07	Contractor Compliance through regular labour audits/OHS inspections Review of records by TUMAD	Quarterly construction Annual (Operations)	HR Department	-

LOCAL PROCUREMENT MANAGEMENT PLAN

No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
LPM-01	Local purchase, Monitoring the purchase records considering percentages values of in-	Every 3 month	Head of Purchasing Department	



LAPSEKI PROJECT - SIP

	country, Project Regions and Project affected villages.			
LPM-02	Supplier Management Evaluation records of the suppliers according to TUMAD management controls in line with the Procurement Procedures TMD_TIC_PRD.001, Supplier Evaluation Procedure, TMD_TIC_PRD.005	Every 3 month	Head of Purchasing Department Operations Manager	

STAKEHOLDER ENGAGEMENT PLAN - Lapseki

No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
SEP-LAP-01	Community Complaints	Monthly	Head of CR Department	<p>TUMAD will review Grievance Log/Database, including complaints <i>closed</i> and those <i>unresolved</i> per period (at a minimum monthly but more likely as they occur) to include:</p> <ul style="list-style-type: none"> number of outstanding complaints and grievances opened in the month; number of complaints and grievances opened in the month and evolution since Project start (graphic presentation); number of complaints grievances closed in the month; and type of grievance. <p>The TUMAD CR team will provide regular reporting back to the community on the treatment of community grievances (including the type of grievance, how they have been addressed and the outcomes arising).</p>



LAPSEKI PROJECT - SIP

				An annual audit will be conducted of the Grievance Procedure. The Mediation Committee will be used to facilitate the implementation and monitoring of the Grievance Procedure.
SEP-LAP-02	Visitors to TÜMAD Çanakkale office	Monthly	Head of CR Department	Community Relations Officers record visitors to TÜMAD offices and report in Monthly Departmental performance report. Include visitor numbers, type of visitor, reason for visit etc.
SEP-LAP-03	Community engagement activities	Monthly 6 monthly	Head of CR Department	Community Relations Officers record formal and informal engagement with local communities in Stakeholder Management System. This will include interactions with committees and working groups. Summarise in Monthly Department performance report. A stakeholder Engagement Tracker will be set up to record and track all engagement activities and actions from those engagements. The engagement activities will be reported internally on monthly basis and externally to the lenders on 6 monthly basis Community Monitoring Committee meeting minutes will also reported as part of monthly and 6 monthly monitoring reports.
SEP-LAP-04	Disclosure materials disseminated	Quarterly	Head of CR Department	Community relations staff will keep records of the types of leaflets, brochures, newsletters prepared and distributed, by location and report to the Community Relations Coordinator per period.



LAPSEKI PROJECT - SIP

SEP-LAP-05	Feedback to local communities	Quarterly	Head of CR Department	The TÜMAD Community Relations team will monitor feedback to local communities by developing and implementing a Community Messaging System and Community Diaries.
LIVELIHOOD RESTORATION FRAMEWORK for LAPSEKI MINE				
No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
LRF-LAP-01	Internal monitoring	Quarterly during the implementation of the LRP and every six months thereafter	Land Acquisition Manager	Land Accustom Manager will evaluate the reports
LRF-LAP-02	External Monitoring	occur every six months	Land Acquisition Manager	will be based on both the reports from the internal monitoring and primary research/ consultation with PAPs
LRF-LAP-03	Completion Audit	After two years, or when the external monitors agree that livelihoods have been restored	Land Acquisition Manager	The methodology for the Completion Audit will be agreed between the TÜMAD and EBRD (see below) the section on Completion Audit.
LRF-LAP-04	Users who have been and will be identified as using 2B and forest land within and surrounding the EIA Permitted Area will be subject to periodic consultation to identify and monitor: Alternative areas being used for animal grazing and forest product collection; Any issues with over-grazing or conflict with other affected users over alternative lands; Affected land users will be consulted on at least an	Periodically as per Livelihood Restoration Plan As per Stakeholder Engagement Plan	Land Acquisition Manager	Forest and 2B land users displaced from the EIA Permitted Area



LAPSEKI PROJECT - SIP

	annual basis, during the summer grazing season.			
LRF-LAP-05	<p>Monitoring of the powerline will require special care and attention. Land owners along the powerline will be subject to monitoring by TUMAD during powerline construction to ensure that all requirements of the Turkish expropriation process have been met and that appropriate compensation has been paid to land owners prior to land being used for construction purposes. With the completion of construction, TUMAD will start undertaking walk-over inspections of the powerline alignment, consult with land owners and consult with <i>muthars</i> to identify any potential land use and livelihoods issues associated with the operation of the powerline. Monitoring will be undertaken during the first year after construction and during the summer growing season. If no issues are identified, monitoring for land use and livelihoods issues will then cease.</p>	<p>Periodically as per Livelihood Restoration Plan As per Stakeholder Engagement Plan</p>	Land Acquisition Manager	Forest users displaced from the Diversion Channel



LAPSEKI PROJECT - SIP

LRF-LAP-06	<p>Livelihood impacts that will occur through processes other than land acquisition will also require specific attention during the monitoring stage.</p> <p>TÜMAD will install dust measurement instrument at suitable locations surrounding the Project and will take regular photographs during the summer growing season at locations where there is considered to be a risk of real/perceived crop damage due to dust from the Project. If local land users claim for crop damage, this will be processed via the Grievance Procedure and compensation will be agreed based on the area of crops affected, the estimated impact on yield and the market price for crops. TÜMAD will also investigate the possible causes for dust emissions that may have caused identified crop impacts and will consider potential mitigation measures to prevent impacts from occurring in the future.</p>	Periodically as per Livelihood Restoration Plan As per Stakeholder Engagement Plan	Land Acquisition Manager	Dust Impacts on Adjacent Crops
CULTURAL HERITAGE MANAGEMENT PLAN				
No	Monitoring Field	Period/ Frequency	Responsibility	Remarks



LAPSEKI PROJECT - SIP

CH-01	Training on the Cultural and Natural Assets and the heritage deemed sacred by the local people	Twice a year during construction, then annually	Head of CR Department	Number of Project personnel and contractor workers trained with Chance Find Procedure (TMD_KTI_PRD.004
CH-02	Events regarding the cultural heritage	Twice a year during construction, then annually	Head of CR Department	Number of events reported in each monitoring period. All event investigations and attached mitigation measures when necessary and their completion Physical copies of the event reports shall be filed

Table given above, should be read in conjunction with the following documents:

- Water Resources Management Plan,
- Livelihood Restoration Framework and Subsequent Plan,
- Framework Biodiversity Action Plan,
- Offset Strategy Plan, and
- Conceptual Mine Closure Framework.

Monitoring measures from Health and Safety Management Plan

No	Monitoring Field	Monitoring Method	Frequency/Timeli ne	Purpose	Responsibility
HSM-01	HSE Policy	H&S Policy	Annually	The validity and efficiency of the warranted and signed HSE Policy by field management related to the obligations that should be followed.	IMS and Sustainability Manager OHS Department General Directorate
HSM-02	HSE Targets	HSE Objective and Targets Table	Annually	Setting out measurable targets to monitor the compliance with the legal requirements and TUMAD Policy and commitments.	IMS and Sustainability Manager OHS Department General Directorate
HSM-03	Compliance with HSE Targets	Monthly H&S reports (HSE statistics) 6 monthly performance reports	Monthly 6 monthly	H&S Targets to be tracked by monthly and annually performance reports.	OHS Department



LAPSEKI PROJECT - SIP

No	Monitoring Field	Monitoring Method	Frequency/Timeli ne	Purpose	Responsibility
HSM-04	Compliance with legal requirements	HSE Legal Requirements List	Project beginning Weekly	Identifying any new requirement which would impact the implementations in the Project, TUMAD to identify necessary measures to comply with all legal requirements.	OHS Department
HSM-05	Identification of H&S issues	Accident/Incident Loss Report, Hazard and Job Safety Proposal Form and Working Area Control Form	Continuously	The noncompliance and actions to prevent reoccurrences to be recorded	OHS Department
HSM-06	Machine and Equipment Maintenance Controls	Machinery & Equipment Periodic Maintenance Plan Tracking Schedule	In time frames stated by the manufacturing company, by national or international standards	The maintenance and the repairs of Machinery & Equipment should be done by authorized persons only within time frames and with methods stated by the manufacturing company and/or in cases of lack of national standards according to the ones mentioned in international standards for Machinery and Equipment.	Maintenance Planning Department
HSM-07	Periodic Checks of Machinery & Equipment	Machinery & Equipment Periodic Maintenance Plan Tracking Schedule	In time frames stated in the Regulation on Safety and Health Conditions in Usage of Work Equipment	Periodic checks by accredited organizations or by the Ministry according to Safety and Health Conditions Regulatory of Work Equipment.	Maintenance Planning Department Accredited institutions
HSM-08	Emergency Action Plan	Emergency Action Plan	Annually When required	To control the efficiency of the existing plan, update it where necessary considering the previous drills, changes in the Project etc.	OHS Department Contractors
HSM-09	Emergency Response Drill	Post Drill Report	Annually	To control the efficiency of the existing plan, to control whether emergency response team is ready for a real crisis situation. Observing the needs for any changes in the Emergency Response Plan.	OHS Department Contractors
HSM-10	Risk Assessments	Risk Assessment Documents	Before the work starts Annually When required	Conducting risk assessment for any activity conducted by TUMAD and ensuring that all control measures are taken to eliminate/reduce risk to acceptable levels. To ensure all Contractors have appropriate risk assessment	OHS Department Contractors Section Managers, engineers
HSM-11	Occupational H&S measurements: <ul style="list-style-type: none">Dust exposure	Lighting, Noise, Dust, and Vibration Record and Assessment Forms	Frequency and timeline to be decided according to the risk assessments	To ensure personal exposures meet the legal standards. Ensuring necessary measures are taken including engineering and administrative measures.	OHS Department Contractors accredited institutions



LAPSEKI PROJECT - SIP

No	Monitoring Field	Monitoring Method	Frequency/Timeli ne	Purpose	Responsibility
	<ul style="list-style-type: none"> Noise and vibration Chemical exposure Illumination 		during whole life cycle of the Projects		
HSM-12	Regular H&S site inspections	Inspection Reports	Weekly	Reviews of field safety provisions and of application & rules. Constitutes an entry to HSE Targets	OHS Department Workplace Physician
HSM-13	Personal Protection Equipment	PPE submission forms	Before work starts	All TUMAD personnel will be provided with suitable personal protective equipment according to the job that they will perform with a submission form. Any contractor personnel who does not have appropriate personal protective equipment will not be allowed to work at Project site.	OHS Department
HSM-14	Health Surveillance	Medical reports	Before work starts Annually When additional examination required	To ensure all workers including Contractors are fit for work. To monitor the worker's health in the long term.	Workplace physician
HSM-15	Legal H&S Training	Training Certificates	Before work starts Annually Refreshed when required legally	Ensure that anyone who works at TUMAD site have appropriate legal H&S training	OHS Department Workplace physician Contractors
HSM-16	Vocational legal training	Training Certificates	Before work starts	Vocational legal training provided by institutions approved by the ministry	OHS Department Accredited Institutions
HSM-17	H&S TUMAD Induction training	Training Certificates	Before work starts	All employees to receive TUMAD induction training to learn about the Project based details including policy, commitments, requirements, emergency response requirements etc.	OHS Department
HSM-18	First Aid Training	Training Certificates	Before work starts	As per First Aid Regulation, adequate number of employees to obtain First Aid Training delivered by institutions approved by the ministry	OHS Department accredited institutions
HSM-19	Emergency Response Team members training	Training Certificates	Before work starts	Appointed personnel to be trained as legally required as per Emergency Response Plan.	OHS Department accredited institutions
HSM-20	H&S technical training (confined space, working at height etc.)	Training Certificates	Before work starts	Personnel to obtain work based training.	OHS Department accredited institutions
HSM-21	Following Training needs	Annual Training Plan	Annually	To identify the training needs and plan for the year	OHS Department



LAPSEKI PROJECT - SIP

No	Monitoring Field	Monitoring Method	Frequency/Timeli ne	Purpose	Responsibility
HSM 22	Reporting accidents/incidents	Accident/Incident Loss Reports	Continuously	Legal requirement To identify the causes of the accidents, necessary control measures to prevent reoccurrences.	OHS Department
HSM-23	Chemicals Management	SDS forms, Chemicals database Chemical storage area check lists	Before any chemical enters the site Weekly monitoring of the chemical storage areas	To know the amount and type of chemical available on site To prevent any chemical incidents by regular monitoring	OHS Department Contractors
HSM-24	Vehicle inspections	Daily check will be performed in security before entering the site	Continuously	To ensure that any vehicle entering the site have appropriate documents	Security
HSM-25	Speed limits	GPS vehicle tracking system	Continuously	All time, speed limits will be monitored using GPS vehicle tracking system which will be installed on all TUMAD vehicle. Drivers found speeding will be subjected to disciplinary penalty as stated in Disciplinary Procedures	OHS Team and Administrative affairs
HSM-26	Occupational H&S Committee	Committee meeting records	Monthly	TUMAD will set up an occupational health and safety committee at workplaces, where a minimum of fifty employees are employed.	Appointed TUMAD and contractor employees
HSM-27	Grievances regarding H&S	Grievance records	Continuously	To ensure any grievances form workers, Contractors, community members are recorded and actions are taken to close out the grievances.	OHS Department Community Relations Department

Framework Biodiversity Action Plan, Monitoring Actions

MO	Monitoring						
MO01	Construction	The development of the construction sites should be monitored weekly in order to avoid footprint creep within and outside the fence line	PR6 par. 7-11-13-16	TUMAD internal resources	Weekly during construction	Record of monitoring - Annual Biodiversity report	Not started
MO02	Construction	On site conservation areas adjacent to active construction sites should be monitored monthly for inadvertent disturbance.	PR6 par. 7-11-13-16	TUMAD internal resources	Monthly during construction	Record of monitoring - Annual Biodiversity report	Not started



LAPSEKI PROJECT - SIP

MO03	Construction	Dust accumulation in areas characterized by critical habitats and endemic species on-site and within 100 m from the facilities will be monitored every three months in the vegetative season during construction. If excessive dust accumulation or stress signs are noticed, additional site-specific mitigation measures will be applied (e.g. additional dust management measure, temporary dust screens, water spray to clean plants).	PR6 par. 7-11-13-16	TÜMAD internal resources	Every three months in the vegetative season (May to November) season during construction	Record of monitoring - Annual Biodiversity report	Not started
MO04	Construction	The presence and spread of invasive flora species will be monitored every three months during the vegetative season, with particular attention to disturbed and restored areas for at least 3 years after the end of the construction phase	PR6 par. 7-11-13-16	TÜMAD internal resources in consultation with external vegetation expert	Every three months in the vegetative season (May to November) season during construction	Record of monitoring - Annual Biodiversity report	Not started
MO05	Construction /Operation	Accidents involving wildlife or observations of living animal or carcasses along the access road will be registered. The results of the monitoring will be reviewed periodically and additional mitigation measure to avoid road kill will be taken if needed (e.g. fences, wildlife passages)	PR6 par. 7-11-13-16	TÜMAD internal resources in consultation with external wildlife expert	During Construction and Operation	Record of monitoring - Annual Biodiversity report	Not started
MO06	Construction /Operation	Culverts will be regularly monitored (once every three months) to avoid any blockages or erosion that would made them unsuitable for target wildlife.	PR6 par. 7-11-13-16	TÜMAD internal resources	Every three months in the vegetative season during construction and operation	Record of monitoring - Annual Biodiversity report	Not started
MO07	Construction /Operation	Signs of erosions in areas characterize by critical habitats and endemic species within 100 m from the facilities will be monitored every three months in the vegetative season. If erosion signs are noticed, additional site-specific mitigation measures will be applied (e.g. erosion control mat, additional engineering measures, additional culvert or channels for storm water	PR6 par. 7-11-13-16	TÜMAD internal resources in consultation with external vegetation expert	Every three months in the vegetative season (May to November)	Record of monitoring - Annual Biodiversity report	Not started



LAPSEKI PROJECT - SIP

MO08	Construction /Operation	Monitoring of erosion and accumulation of stagnant water on construction sites and areas cleared of vegetation should be performed monthly during the rainy season (October to April). In case of excessive accumulation of stagnant water or erosion phenomena are observed, additional mitigation measures should be put in place as appropriate in an effective and timely manner (e.g. additional culverts on linear infrastructures, deviation channels, environmental engineering techniques for slope stability)	PR6 par. 7-11-13-16	TÜMAD internal resources	Monthly during the rainy season (October to April)	Record of monitoring - Annual Biodiversity report	Not started
MO09	Construction /Operation	Areas progressively restored will be inspected monthly for the first year during the vegetative season, after the first year these areas will be inspected every three months at least for the next three years or until the objective of restoration are achieved, in order to allow for prompt corrective actions if required. The monitoring will aim to assess the development of the planted/seeded species, the vegetation cover and the presence of vegetation stress, invasive species or erosion signs	PR6 par. 7-11-13-16	TÜMAD internal resources in consultation with external vegetation expert	Monthly for the first year during the vegetative season (May to November) After the first year every three months during the vegetative season (May to November) at least for the next three years or until the objective of restoration are achieved	Record of monitoring - Annual Biodiversity report	Not started
MO10	Operation	The implementation of the Hazardous Material Management Plan will be monitored and the records on the spill register reviewed. The Hazardous Material Management Plan will be updated regularly as needed.	PR6 par. 7-11-13-16	TÜMAD internal resources	During operation	Record of monitoring - Annual Biodiversity report	Not started

KEY PERFORMANCE INDICATORS

ENVIRONMENTAL PLANS

AIR QUALITY MANAGEMENT PLAN



LAPSEKI PROJECT - SIP

No	Key Performance Indicator	Target	Monitoring and Measurement
AQM-KPI-01	Incidents related to Air Quality	Minimizing the number of reported incidents related to air quality and continuous improvement	Annually reported incidents related to air emissions.
AQM-KPI-02	Nonconformity with Air Quality Standards	Maximum Annual Non-conformance: 5	Number of annual non-compliance with Project air quality standards.
AQM-KPI-03	Complaints	Maximum Complaints, Annual: 5	The number of community complaints related to air quality reported in a year. Number of annual community complaints with regard to air emissions. Number of resolved complaints by removing the corresponding air emission source or if it is not possible, by reducing emissions levels and changing work practices.
NOISE AND VIBRATION MANAGEMENT PLAN			
No	Key Performance Indicator	Target	Monitoring and Measurement
NVM-KPI-01	Noise and Vibration	Minimizing the number of reported Noise and vibration incidents and continuous improvement.	Annually reported noise and vibration incidents.
NVM-KPI-02	Non-compliance With the Standards	Maximum Non-compliance, Annual: 5	Number of annual non-compliance with noise and vibration standards.
NVM-KPI-03	Complaints	Annual Complaints Within the Scope of Activity 0 Maximum Complaints, Annual: 5	Number of annual community complaints with regard to noise and vibration. Number of resolved complaints by removing the corresponding noise source or if it is not possible, by reducing noise levels and narrowing the work duration.
CYANIDE MANAGEMENT PLAN			
No	Key Performance Indicator	Target	Monitoring and Measurement



LAPSEKI PROJECT - SIP

CMP-KPI-01	Total number of non-compliances with cyanide management and monitoring measures identified in this Plan.	To minimize non-compliances and aim at zero per annum.	Non-conformance Reports
CMP-KPI-02	Number of community complaints from local communities related to cyanide management as recorded in the complaint management system	Zero cyanide management complaint from stakeholders; to reduce number of complaints from internal clients and to provide continuous	Grievance Reports
CMP-KPI-03	Number of reported cyanide incidents	To reduce number of complaints from stakeholders to zero; to aim at zero per annum for the complaints from internal clients	Accident/Incident Reports
WASTE MANAGEMENT PLAN			
No	Key Performance Indicator	Target	Monitoring and Measurement
WM-KPI-01	Wastes	WAD Cyanide ≤ 10 ppm	per Hour
WM-KPI-02	Non-compliance With the Standards	Zero non-compliance	Internal investigation monitoring control report and site inspections
WM-KPI-03	Complaints	Zero complaints	Complaints and Feedback Mechanism
WM-KPI-04	ARD	Zero Acid Rock Drainage	Seasonal Barrel Tests
WATER RESOURCES MANAGEMENT PLAN- LAPSEKI			
WRM-LAP-KPI-01	Incidents related to Use of Water Sources	Minimizing the number of reported incidents related to use of sources and constant improvement.	Incidents related to water sources reported in a year.
WRM-LAP-KPI-02	Nonconformity with Water Quality Standards	In the scope of Activities Annual Nonconformity: 0 Maximum Annual Nonconformity: 5	The number of nonconformities not resulting from natural climate conditions and according to Project water quality measured in a year.
WRM-LAP-KPI-03	Complaints	Annual Nonconformity in the scope of Activity 0 Maximum Annual Nonconformity: 5	The number of community complaints related to water quality reported in a year.



LAPSEKI PROJECT - SIP

HEALTH & SAFETY PLANS			
TRAFFIC MANAGEMENT PLAN			
No	Key Performance Indicator	Target	Monitoring and Measurement
TMP-KPI-01	Number of drivers found to be exceeding speed limits of driving unsafe	Zero per year	Review of records of driver speeding and reported safety incidents
TMP-KPI-02	Number of road traffic accidents involving: <ul style="list-style-type: none"> • Human harm • Property damage • Spillages • Wildlife collisions 	Minimize with a target of zero per year	Analysis of incident reporting records
TMP-KPI-03	Number of transport related complaints from local communities	Minimize with a target of zero per year	Grievance records
TMP-KPI-04	Reported non-compliances against the mitigation controls identified in this Traffic Management Plan	Minimise and achieve continuous improvement in number of reported non-compliances	NCRs and corrective actions, reports.
EXPLOSIVES and HAZARDOUS MATERIALS MANAGEMENT PLAN			
No	Key Performance Indicator	Target	Monitoring and Measurement
EHM-KPI-01	Inventory of Hazardous Materials	All hazardous materials are recorded.	Inventory of Hazardous Materials, Volumes of Hazardous Materials
EHM-KPI-02	Daily check of storage areas	No spills, all conditions are met	Audit/Check Reports



LAPSEKI PROJECT - SIP

EHM-KPI-03	Record of all incidents/accidents i.e. Spills	Minimize with a target zero per year	Incident Reports/Investigation Reports
EHM-KPI-04	Explosives, blasting, vibration, and noise	Legal limits are not exceeded	Monitoring Reports
EHM-KPI-05	Grievances	Minimize with a target zero per year	Number of grievances received from workers, subcontractors and community members regarding the management of explosives and hazardous materials
COMMUNITY HEALTH & SAFETY SECURITY MANAGEMENT PLAN			
No	Key Performance Indicator	Target	Monitoring and Measurement
CHSS-KPI 01	Total number of non-compliances with community health safety & security measures identified in Table 4 of the CHSS Plan.	Minimise and target zero per annum.	Non-compliance reports
CHSS-KPI 02	Number of communicable and non-communicable diseases and injuries.	No significant increase in communicable and non-communicable disease and injury rates per 1,000 residents per annum.	Health statistics
CHSS-KPI 03	Number of community health safety & security complaints from local communities as recorded in the grievance management system.	Minimise and continued improvement in number of community health safety and security related complaints.	Number of grievances
CHSS-KPI-04	Number of reported community health & safety incidents	Minimise and target zero per annum.	Incident/Accident records
EMERGENCY ACTION PLAN - LAPSEKI			
No	Key Performance Indicator	Target	Monitoring and Measurement



LAPSEKI PROJECT - SIP

EAP-LAP-KPI-01	Number of non-compliances	Zero per year	Audit and inspection records Records of emergency drills
EAP-LAP-KPI-02	Number of successful emergency drill	Two per year	Records of emergency drills
SOCIAL PLANS			
CONTRACTOR MANAGEMENT PLAN			
No	Key Performance Indicator	Target	Monitoring and Measurement
CM-KPI- 01	The number of contractor OHS and environmental incidents reported (statistics)	Reducing the number of reported incidents and ensuring continuous improvement	The number of contractor incidents reported monthly and annually
CM-KPI-02	The number of recorded community /stakeholder complaints against contractors	Reducing the number of reported complaints and ensuring continuous correction of complaints	The number of complaints reported against contractors monthly and annually. (Contact with TUMAD Department of Community Relations managing the complaint and feedback procedure (TMD_LAP_KTI_PRD.001))
CM-KPI-03	The number of worker complaints against contractors	Reducing the number of reported complaints and ensuring constructive and peaceful working environment	The number of complaints reported against contractors monthly and annually. Complaint and Feedback Procedure (TMD_LAP_KTI_PRD.001)
CM-KPI-04	The number of NCRs/ legal fees and court cases against contractors	Reducing the number of legal fees, and court cases against the Project	The number of NCRs/Fees/ court cases against the project due to contractors activities monthly and annually.
CM-KPI-05	Number of contractors comply with the Project Standards and responsibilities given in section 7 of the plan (Contractor Responsibilities)	%100 compliance with all contractors.	Contractor training records, medical reports, PPE acceptance forms, audit reports
LABOUR MANAGEMENT PLAN			



LAPSEKI PROJECT - SIP

No	Key Performance Indicator	Target	Monitoring and Measurement
LM-KPI-01	Percent of Local People at the Lapseki mine operations	Construction: 100% unskilled workers from local communities. Operation: Area of influence Şahinli, Kocabaşlar, Çamyurt, Dumanlı, Yeniceköy, Subaşı villages; Un-skilled: 100% Semi-skilled: 70% Skilled : 5% Province Sub Province: Çanakkale Lapseki Semi-skilled: 30% Skilled : 50	Employment Records
LM-KPI-03	% of Turkish citizens in the workforce	Construction: 100% of unskilled and semi-skilled workforce and 90% of skilled workforce to be Turkish employees for mining and mining related work. Achieved for Lapseki construction Operation: 100% of all skilled, semi-skilled and unskilled will be Turkish citizens.	Employment Records
LM-KPI-04	Percent of Disabled Personnel in the Labour	Construction: Disabled Personnel percent shall be 3%. (Achieved for Lapseki construction) Operation: Disabled Personnel percent shall be 3%.	Employment Records
LM-KPI-05	Percent of women in the labour force.	Construction: 5% for both mines Achieved for the construction of the Lapseki Project	Employment Records



LAPSEKI PROJECT - SIP

		Operation: %7 for both mines	
LM-KPI-06	Number of worker grievances not closed out within the target timeframe	Construction and Operation: Zero worker complaint that is not closed within the time frame specified in the procedure No complaints were raised during construction of the Lapseki Project	Grievances Records
LM-KPI-07	Training	Construction: Induction (once a year) Environmental awareness (twice a year) HS (twice a year) Community Relation (twice a year) Professional Competence (once a year) Certification (once a year) First Aid (every five years / twice) (All Achieved for Lapseki Mine) Operation: As per the training plan	Training Records
LOCAL PROCUREMENT MANAGEMENT PLAN			
No	Key Performance Indicator	Target	Monitoring and Measurement
LPM-KPI-01	Value of materials and services purchased in-country	%50 of the total purchasing budget	Purchase records



LAPSEKI PROJECT - SIP

LPM-KPI-02	Value of materials and services purchased in the Region of the Project	%14	Purchase records
LPM-KPI-03	Value of materials and services purchased from project affected villages.	%6	Purchase records
LPM-KPI-04	Complaints	Maximum Complaints, Annual: 5	The number of community complaints related to air quality reported in a year. Number of annual community complaints with regard to air emissions. Number of resolved complaints by removing the corresponding air emission source or if it is not possible, by reducing emissions levels and changing work practices
LPM-KPI-05	Nonconformity with Project Requirements	Maximum Annual Non-conformance: 5	Number of annual non-compliance with Project requirements
LPM-KPI-06	Payment to local providers on time	%100 of local providers	Payment records
STAKEHOLDER ENGAGEMENT PLAN - LAPSEKI			
No	Key Performance Indicator	Target	Monitoring and Measurement
SEP-LAP-KPI-01	Number of community complaints or grievances	Total number reduced year on year	Complaints Log/Database
SEP-LAP-KPI-02	Number complaints resolved within one month	Target of 100%	Complaints Log/Database
SEP-LAP-KPI-03	Reporting back to stakeholders on implementation of the Grievance Procedure	Delivery of regular reports to stakeholders on the outcomes of the Grievance Procedure	Reporting



LAPSEKI PROJECT - SIP

SEP-LAP-KPI-04	Auditing Grievance Procedure to ensure that it is being implemented and grievances are being adequately addressed.	Bi-annual audit complete Target of 100% of grievances closed out to satisfaction of complainant within one month	Audit report.
CULTURAL HERITAGE MANAGEMENT PLAN			
No	Key Performance Indicator	Target	Monitoring and Measurement
CH-KPI-01	The number of non-compliances against the key management controls given in this Plan in a year	Minimizing the reported number of non-compliances and aiming for zero.	-
CH-KPI-02	The number of grievances regarding the cultural heritage and the sites sacredly important for communities resolved within the target time frame.	Researching the grievances regarding the cultural heritage (disrespect, destruction, removal, sale of the pieces) and carrying out regarding actions. Rapid response to complaints from local communities regarding inappropriate behaviour of staff on cultural assets. Performing inspections within the period specified in the TUMAD Complaint and Feedback Procedure (TMD_KTI_PRD.001) and performing related actions. Target of 100%	-
COMMUNITY DEVELOPMENT PLAN			
No	Key Performance Indicator	Target	Monitoring and Measurement
CDP-KPI-01	Percentage of Local Residents in Labour Force	Meet to the terms of TUMAD's Labour Objectives	-



LAPSEKI PROJECT - SIP

CDP-KPI-02	Percentage of Disabled People in Labour Force	The rate of disabled employees within labour force will be 3%. All spaces will be properly designed to allow disabled employees to carry out their work comfortably.	-
CDP-KPI-03	Percentage of Women in Labour Force	5% for construction phase (achieved during the construction of Lapseki) 7% for operation phase	-
CDP-KPI-04	The number of complaints filed by employees which are not settled within the time period envisaged	Zero complaints filed by employees which are not settled within the time period envisaged as indicated in the procedure	-
CDP-KPI-05	Training Assessments	Obligation to pass all tests with a minimum score of 80 points or higher at the end of trainings Employment of one trainee who has finished vocational competence courses (Successfully)	-
CDP-KPI-06	The number of vocational trainings and/or medical trainings	At least once training course to be organized every year	-
CDP-KPI-07	The number of persons provided attended the vocational trainings and/or medical trainings	Minimum 3% of the population at the directly affected villages	-
CDP-KPI-08	The number of persons employed after vocational training	One trainee per year who displays 100% achievement in the training assessment	-
CDP-KPI-09	The number of persons who have been supported to become a TUMAD supplier	See above local employment targets	-



LAPSEKI PROJECT - SIP

CDP-KPI-10	Increase in yearly income of the directly impacted communities (%1)	Increase over 1% through local purchasing and local employment	-
LIVELIHOOD RESTORATION PLAN for LAPSEKI MINE			
No	Key Performance Indicator	Target	Monitoring and Measurement
LRF-LAP-KPI-01	Agreements with land users in Şahinli and Kocabaşlar, and other identified and affected land users, established and implemented	Establishment of Agreements with land users from both neighbourhoods, and other identified and affected land users, prior to commencement of operations Implementation of restoration actions as agreed	Quarterly monitoring and reporting to displaced households and their neighbourhood <i>muhtars</i>
LRF-LAP-KPI-02	Household incomes restored to equal to or higher than pre-project standards.	Household incomes to have increased by at least consumer price inflation (CPI) in the previous year	Annual surveying of economically displaced households; Completion audit two years after completion of the LRP implementation
LRF-LAP-KPI-03	Number of users of the lands in the affected communities including those affected by associated facilities such as power line, water and roads	All displaced households included in the Livelihoods Restoration Plan	Quarterly monitoring and reporting to displaced householders and their neighbourhood <i>muhtars</i>
LRF-LAP-KPI-04	Total number of households participating in livelihoods restoration activities	All eligible households participating in livelihoods restoration activities as defined in the Entitlements Matrix.	Quarterly monitoring and reporting to displaced householders and their neighbourhood <i>muhtars</i>
LRF-LAP-KPI-05	Grievances related to livelihoods restoration resolved within one month	All complaints resolved within one month after it is recorded	Monthly review of grievance log and stakeholder engagement records



APPENDIX B

COMMITMENT REGISTER

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	5,43	Mitigation Measures- Geomembrane Handling	The geomembrane rolls will be brought to the site as packaged properly to avoid damage. The geomembrane will be stacked in such a way that it is protected from perforation, dirt, oil, water, moisture, mud, mechanical wear, extreme temperatures and other damages. The surfaces, on which geomembrane will be laid, will be completely cleared from foreign substances. The geomembrane will be fixed with anchor trenches in order to avoid slipping during storage.		Construction, Operation						
MoEU	EIA	5,43	Mitigation Measures- Geomembrane Handling	Compacted clay layer remaining under the area, on which geomembrane will be laid, will be controlled and the geomembrane will be laid after the uncompacted areas are compacted again. If there is moisture or water accumulation on the clay fill, no geomembrane laying will be done. Marking by painting or flagged sticks will be used to find any damage that can occur in the geomembrane during laying process easily and to repair the damage. The geomembrane will be jointed parallel to the slopes starting from the anchor trenches, and perpendicular to the slopes at the base. After the completion of the geomembrane laying and tests, geotextile laying will be made on the surface to protect the geomembrane. The geomembrane will be stored in such a way that it is protected from perforation, dirt, oil, mud, mechanical wear, extreme temperatures and other damages. No equipment or tool will damage the geomembrane during handling and use, or for any other reason. Personnel will not smoke while working on geomembrane, will not wear shoes that will damage geomembrane, and will not move in a way to damage geomembrane. The method used to open the weld strips on the geomembrane will not cause scratches on the bottom floor or the geomembrane or curling. The strips will be opened after the geomembranes are laid and ready for welding. Weather conditions; Geomembrane placement shall be performed provided that the ambient temperature is between 0°C and + 40°C. Welding will not be performed during rain and during dew early in the morning. Weights will be used to prevent removal of geotextile and geomembrane due to the wind. Anchor trenches will be opened to secure the geomembrane to the edges. The anchor trenches will be opened according to the detail project and in parallel to the geomembrane lining works. The geomembrane contact surfaces inside the trench shall be leveled and corrected, and the trench corners adjacent to the geomembrane shall be rounded slightly to avoid sharp curves where the geomembrane joins the trench. The anchor trenches will be filled and compacted according to the details in the construction drawings. 1/3 of the trench will be filled with soil and temporarily fixed; the remaining part will be filled and compacted with a cylinder after welding and geotextile laying are finished. When the trench is filled, it will be noted that the geomembrane and the geotextile will not be damaged. If any damage occurs, it will be repaired before the filling process is completed.		Construction, Operation						
MoEU	EIA	Page 1.1	Land rights	The site with license no. 58380, granted by the Ministry of Energy and Natural Resources / Directorate General of Mining, covers an area of 1.275,42ha located on map section no. h17-b4. The site with license no. 58467 is located on the same map section, and covers an area of 186,43ha (see Annex-1). These two areas are separated by a 16m wide and 2,5km long strip of land owned by ‘Esan Eczacıbaşı Endüstriyel Hammaddeler San. ve Tic. A.Ş’. If necessary, a deed of consent will be obtained from the owner company for said strip of land. 357,71ha of the EIA site having a total size of 394,90ha, determined within scope of the Lapseki Project for the implementation of all activities, are located within EIA polygon #1, whereas the remaining 357,71ha are located within EIA polygon #2 (see Fig. 1 1and Fig. 1 2). The physical use of the units within the determined EIA site having a total size of 394,90ha will cover an area of 157,73ha in total. The mine pits where the production activities will be carried out are located at following distances from Şahinli village: Kestanelik pit 2km, Karakovan-I pit 1,8km, and Karakovan-II pit 2,5km. The SBX pit’s distance from Kocabaşlar village is 2,7km.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 1.11	Commitment- Settlement	It is planned to employ 200 personnel during the project’s construction phase and 500 during the operating phase. Adequate personnel will be selected from the region extending until the district center, with priority given to settlements located closest to the project site, thereby making positive contributions to regional employment rates. Training of personnel to be employed by Lapseki Project is a priority item of investment. The trainings that will be given for this purpose will help to meet the plant’s		Construction, Operation, Decomissioning						
MoEU	EIA	Page 1.11	Commitment- Settlement	The materials that will be needed during the activities will be supplied from the region to the extent the required infrastructure is available.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 1.11 , Page 1.12	Project Time Table	It is foreseen that the project will last for about 10 years, with about 2 years for land preparation and construction works and a total of 8 years for production activities. 3 more years for rehabilitation and closing works, and at least 6 more years for monitoring and control works.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 1.4	Forestry Land Use-Permitting	385,38ha of the EIA site having a total size of 394,9ha, determined as activity area within scope of the Lapseki Project, are forest land, whereas the remaining 9,52ha are agricultural land. Before commencement of production activities, a Rehabilitation Project will be prepared for forest land pursuant to Forest Law no. 6831 in conjunction with the Regulation on the Implementation of Article 16 of the Forest Law, promulgated in the Official Gazette dated 18.04.2014 no. 28976 (amendment: dd. 19.04.2015 no. 29331) and submitted to the approval of the Balikesir Regional Directorate of Forestry, and a forest permit will be obtained from the Directorate General of Forestry.		Pre-construction						
MoEU	EIA	Page 1.4	Agricultural Land Use-Permitting	As for agricultural land, an application has been filed at the Çanakkale Provincial Directorate of Food, Agriculture and Livestock, and a nonagricultural utilization permit has been obtained as per Law No. 5403 on Soil Preservation and Land Utilization (see Annex-7).		Pre-construction						
MoEU	EIA	Page 1.4	EIA-Permitting	Pursuant to Article 27 (a) and (c) in Annex-I of the Regulation on Environmental Impact Assessment promulgated in the Official Gazette dated 25.11.2014 no. 29186, Lapseki Project is classified within the scope of “open pit mines with a work area of 25 hectares or more” and “ore processing plants where biological, chemical, electrolytic or heat treatment methods are applied and/or waste plants associated with these ore processing plants”. This report is prepared in line with requirements of the “Special Format for EIA Reports” enclosed to letter dd. 16.01.2015 no. 784 of the Turkish Ministry of Environment and Urbanization		Pre-construction						
MoEU	EIA	Page 1.5	Permitting	All permits required to be taken within the scope of the project will be realized in line with Environmental Law and other applicable legislation. In addition, the provisions and principles of the Mining Law no. 3213 (amendment: dd. 04.02.2015 no. 6592) and related regulations will be complied with at all stages of the project (land preparation, operation and post-operation). After an “EIA Positive” decision is obtained for Lapseki Project, coordinates of the activity area will be prepared according to the 6-degree band principle and notified to MIGEM (Directorate General of Mining).		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 2.12	Drainfield Information	Bayramdere Dam for drinking and use is located approximately 2.4 km to the north of the EIA area, and Umurbey Dam for use is located approximately 5.7 km to the southwest of EIA area. Project area is outside the Bayramdere Dam drinking water basin. Only the KAD-II area remains in the catchment basin of the Umurbey Dam used for irrigation purposes.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 2.12	Project Activities	The phases of the open pit mining planned in the project are land preparation, stripping and storage of vegetable soil, step design, blasting, loading-transport and unloading respectively. The ore will then be sent to the mineral processing plant for processing. Non-hazardous waste that will be generated as a result of the mineral processing and having sensitized metals will be transported to be DWS areas for storage		Construction, Operation, Decomissioning						
MoEU	EIA	Page 2.13	Forestry Land Use-Procedure	Depending on the progress of the the activities within the scope of the Lapseki Project, land preparation activities will be started after receiving the forest permits. In this context, during site delivery, the trees to be cut by the Regional Directorate of Forestry will be determined and the cutting procedure will be performed by the Regional Directorate of Forestry.		Pre-Construction						
MoEU	EIA	Page 2.13-2.14	Vegetable Soil- Mitigation Measures	Prior to the start of the activities within the scope of the project, the vegetable soil with an average thickness of 0.10 m seen during drillings performed on the areas determined within the boundaries of the EIA area will be removed by soil excavation and stored in the designated soil storage areas. The stripping of the vegetable soil will be carried out simultaneously with the production. The vegetative soil, which will be stored temporarily in the soil storage area, will be stored in such a way		Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 2.25	Blasting-Permitting	Blasting General Parameters in which all drilling – blasting parameters are given, Hole Pattern, Amount of Explosive Filled in One Hole, Unit Consumptions, Consumptions per Blast, Annual Amounts of Explosive of the Project are given in accordance with the letter dated 07.19.2013 and numbered 11239 issued by the Directorate General of Environmental Impact Assessment (Permit and Inspection)		Construction, Operation						
MoEU	EIA	Page 2.3	Permitting	Balıkesir-Çanakkale Planning Area 1/100.000 Scaled Environment Plan of the Balıkesir-Çanakkale Planning Region with the borders covering the Çanakkale province was approved on 02.16.2015 in accordance with the Article 7 of the Decree Law on Organization and Duties of the Ministry of Environment and Urbanization No. 644 and the copy of the map section covering Çanakkale province, plan notes and legend approved by the Ministry of Environment and Urbanization is presented in Appendix-6. EIA areas remain within the areas designated as “forest area” according to the 1/100.000 scale Environmental Plan (see Şekil 2 2). In addition, there is no development plan within the project area within the scope of the opinion of the Çanakkale Provincial Special Administration Directorate of Development and Urban Improvement dated 03.04.2015 and numbered 2333 given in Appendix-7.		Pre-Construction						
MoEU	EIA	Page 2.31	Mine Waste Storage Area	The mine waste which will be generated as a result of production within the scope of the open pit will be stored in the mine waste disposal area determined within the EIA area. Under the production plans, a total of 74,463,100 tons (31,026,291.67 m3) mine waste will be generated within the scope of the operation phase which will last for about 8 years. The mine waste disposal area has been designed by AMDAD and planned in 2 stages. 1st stage has been designed to be 76.48 ha to include the first 3 years. At the		Operation						
MoEU	EIA	Page 2.34	Administrative Facilities	Administrative facilities will include administrative offices, sample depots, laboratories, dressing rooms, training building and mine operation buildings for the use of management staff, engineers and other related personnel. There will also be workshops, car wash areas and car parks within these areas.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 2.34	Cafeteria and Infirmary	A 500-person capacity cafeteria and an infirmary for procedures such as medical intervention in case of emergency and routine health check-ups for employees will also be located in this area.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 2.34	Security	In order to control entrance and exit to the operation and to ensure security, the security building will be located at the entrance to the mine area. The whole project area will be surrounded with health protection strip and entrance to the facility area will be through a single main gate. Security officer / officers will be available in the security building 24 hours a day to ensure security.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 2.34	Domestic Wastewater	Domestic wastewater to be generated during land preparation, construction and operation phases will be collected and treated in the "Domestic Wastewater Treatment Plant" to be installed. This plant will have a capacity to treat domestic wastewater of 106.5 m³/day. Treated water will be supplied to the plant and in case of having excess amount of water, this amount will be discharged to the nearest receiving environment according to the discharge standards given in Table 21.1 of the Water Pollution Control Regulation entered into force through publication in the Official Gazette No. 25687, dated 12.31.2004 (Amended: O. G. No. 28244, dated 03.25.2012). For the water to be discharged to the receiving environment after treatment, the "Environmental Permit Certificate for Waste Water Discharge" will be taken in accordance with the "Environmental Permit and License Regulation" entered into force through publication in the Official Gazette no. 29115, dated 09.10.2014. The treatment sludge to be formed in the domestic wastewater treatment plant will be disposed in the DWS areas after the laboratory analyzes		Construction, Operation, Decomissioning						
MoEU	EIA	Page 2.37	Mineral Processing Units	Mineral processing units to be located to the south of the EIA Polygon No. 1 will cover a total area of 17.14 ha. The Ore Preparation and Mineral Processing Plant with a maximum mineral processing capacity of 140 tons will consist of the following units: • Crushing Unit • Crushed Ore Temporary Storage Unit • Grinding Unit • Thickener Unit • Leaching & Adsorption • Chemical Detoxification (DETOKS) Unit • Stripping Unit • Electrowinning and Smelting Unit		Operation						
MoEU	EIA	Page 2.40	Transportation Roads	The roads to be used in the Lapseki Project are the access roads that provide access to the mine site and the service roads within the mine. The existing roads will be used for access to the project area and no new road will be constructed. The service roads within the mine to be used during transportation are the link roads between the mine main access road, open pit, mine waste disposal area and ore preparation and mineral processing plant. The widths of the service roads within the mine will be sufficient to avoid hindering traffic between the units and to carry the trucks carrying heavy loads. Excavation and fill amounts to be carried out are as follows: Mine Roads: Excavation Volume (721,034 m3), Fill Volume (294,102 m3), Plant Roads: Excavation Volume (502,049 m3), Fill Volume: (19,234 m3).		Construction, Operation, Decomissioning						
MoEU	EIA	Page 2.42	Dry Waste Storage	It is expected to produce maximum 1.2 million tons of waste per year in the project which is planned to be operated for 8 years. All of this waste will be dewatered following the metal stabilization and detox process performed with INCO process method and transported to the impermeable DWS areas for storage. Transfer of waste from the mineral processing plant will be carried out by belts, pumps and / or moving vehicles. Within the scope of the Project, DWS-I and DWS-II areas with the coordinated given in Tablo 2 15 have been determined and 9.64 ha DWS-I area will be used for the first 3 years and 29.52 ha DWS-II area will be used for the following 5 years.		Operation, Decomissioning						
MoEU	EIA	Page 2.42	Waste Disposal	According to the provision indicated in the Regulation on Sanitary Landfill of Wastes entered into force through publication in the Official Gazette No. 27533, dated 03.26.2010 (Amended: O. G. no. 29292, dated 03.1102015), “ARTICLE 15 - (1) The distance of the sanitary landfill facility boundaries to the settlements must be at least 1 km for the class I sanitary landfill facility, at least two hundred fifty meters for class II and class III sanitary landfill facilities..”. The nearest settlement to DWS-I among other DWS ares having Class I Sanitary Landfill Facility feature is Şahinli village and it is 1.2 km away, the nearest settlement to the DWS-II Kocabaşlar village and it is 1.4 km away		Construction, Operation, Decomissioning						
MoEU	EIA	Page 2.44	Water Management- Compliance, Mitigation Measures	Drainage Channels: This system, which collects the contaminated rain waters, will be installed on the bases of the open storage areas and in the pit areas. Waters carried by these systems, which collect rain water contaminated by contacting with the units, will be collected in settling basins to be installed at the channel outlets. These waters, if possible, will be fed to the plant, otherwise they will be discharged to the receiving environment in such a way as to meet the limit values of the parameters given in BSWQM, Table-7.1.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 2.44	Water Management- Compliance, Mitigation Measures	Settling Basins: The purpose of settling basins to be installed in the pits and in the downstream parts of the storage areas is to collect waters to be contaminated and to use them in the plant; if it is not possible to use them, to discharge into the receiving environment after meeting the parameters in BSWQM, Table-7.1. These basins, where contaminated waters will be collected, will be covered with geomembrane. Waters in the settling basin to be located at the base of Karakovan I pit will be taken by pump and sent to the settling basin located downstream of the mine waste disposal area; waters accumulated in the settling basin located at the base of the Kestanelik pit will be fed directly to the plant by pump.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 2.44	Water Management Mitigation Measures	Flood Basins: Although the settling basins are designed to carry 500-year 1-hour maximum precipitation, in order to be in the safe region in case of a flood, flood basins having a volume equal to the volume of the settling basins have been designed to discharge the settling basins into them in case of a flood.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 2.44	Water Management Mitigation Measures	Interception Channels: These are structures that will ensure collection of rain waters falling upstream of the project units without contacting with the plants. They were sized according to basin sizes and 500-year 1-hour precipitation values. Since Karakovan-II pit is located at high elevations topographically, there is no catchment basin that can enter into the pit with surface runoff. For this reason, it was not necessary to design an interception channel for the said pit. Clean waters will accumulate in the water collection basins to be installed at the end of these channels and will be used to meet the raw water requirements of the plant. When it is not used, rain waters will be discharged to the creek. A report regarding the interception channels and water structures has been submitted to the DSİ Regional Directorate and approved		Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 2.45	Water Management Mitigation Measures	Possible floods that may occur in the basins of the pit areas will be avoided by the interception channels to be constructed and thus safe working conditions will be provided.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 2.47	Explosive Storage Area	The characteristics of the explosive magazine are determined by the provisions of the By-law on Rules and Procedures for Production, Import, Transport, Storage, Sales, Use, Disposal, Inspection of Unmonopolized Explosives, Hunting Materials and Similar" entered into force through publication in the Official Gazette no. 19589, dated 09.29.1987 (Amended: O.G. no. 25641, dated 11.12.2004) and examined under Section 2.3.3.		Construction, Operation						
MoEU	EIA	Page 2.47	Electrical Energy-Sourcing, Compliance	Electrical energy to be used within the scope of the activity will be supplied with a single line to Koru WPP TM via R 154 kV, single circuit 1272 MCM ~ 8 km Power Transmission Line. The letter of the General Directorate of Turkish Electricity Transmission Corporation, Department of Planning and Strategic Management, Directorate of Transmission Planning and Coordination related to the subject is presented in Appendix-7. The power transmission line project is not be included within the scope of this project, but the necessary permits regarding the subject within the scope of the EIA Regulation will be received in the future.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 2.5	Permitting	Before starting production activities; The Rehabilitation Project will be prepared for the forest lands according to the Forest Law No. 6831 and the "Regulation Regarding Implementation of Article 16 of the Forest Law" entered into force through publication in the Official Gazette no. 28976, dated 04.18.2014 (Amended, no. 29331, dated 04.19.2015) and will be presented to the Balıkesir Regional Directorate of Forestry and a forest permit will be obtained from Directorate General of Forestry. For agricultural lands, the non-agricultural use permission has been obtained in accordance with the Soil Protection and Land Use Law No. 5403 (see Appendix-7).		Pre-Construction						
MoEU	EIA	Page 2.52	Ore Preparation and Mineral Processing Plant	Within the scope of 8-year production activities, the maximum amount of run-of-mine ore to be fed to the plant will be 1.2 million tons per year, and the mineral processing units will have an average mineral processing capacity of 140 tons of ore per hour. Ore Preparation and Mineral Processing Plant will consist of the following units: - Ore Preparation • Crushing Unit • Crushed Ore Storage Unit • Grinding Unit - Mineral Processing • Thickener Unit • Leaching & Adsorption Unit • Chemical Detoxification (DETOKS) Unit • Stripping Unit • Electrowinning and Smelting Unit		Operation						
MoEU	EIA	Page 2.52-2.53	Crushing Unit-Mitigation Measures	The dust to be formed in the crusher unit will be washed with water and collected in the pit inside the building. The material taken from here by means of the pit pump will be pumped directly to the cyclone feed hopper located in the mill unit. Vacuum dust collection unit lines connected to the inlet, outlet and discharge chutes of the equipment will be installed to prevent dust that may occur in the crusher unit in the dust collecting unit and these lines will be collected in the dust collection unit. The incoming dust will be mixed with water and again pumped to the cyclone feed hopper.		Operation						
MoEU	EIA	Page 2.53	Crushing Unit-HSE Measures	When maintenance of the crusher unit will be performed, the green light next to the bunker will be turned red, and the bucket or truck operator will not perform any feeding. There will be 1 overhead crane for use in case of failure. In addition, protective equipment such as ear protectors, helmets, gloves, work glasses and steel-toed boots will be provided to the operators working in this unit.		Operation						
MoEU	EIA	Page 2.53	Crushed Ore Storage Area	The top of the storage area will be completely covered in the form of dome like the crushed ore storage area and therefore, there will be no dust formation and no visual pollution.		Operation						
MoEU	EIA	Page 2.55	Grinding Unit-Mitigation Measures	The ore in the grinding unit will be ground wet. There is no risk of dust formation since the milling process to be performed will operate in wet system.		Operation						
MoEU	EIA	Page 2.56	Leaching & Adsorption (CIL) Unit-HSE Measures	The pH of the leaching tanks will be obtained with lime given into the mill. However, the lime line will be available on the tanks for sudden pH drops that may occur. It will be kept in the range of pH 10.0 - 11.0 within the tanks, thus cyanide will not be allowed to pass to gas phase.		Operation						
MoEU	EIA	Page 2.57	Leaching & Adsorption (CIL) Unit-Mitigation Measures	The bottom of the tank leaching circuit will be covered with approximately 40-50 cm high concrete. This area have a capacity to hold approximately the sludge in two leaching tanks. There are pit pumps in the concrete area and the wastes to be generated will be pumped to other tanks or detox unit by these pumps.		Operation						
MoEU	EIA	Page 2.57	Leaching & Adsorption (CIL) Unit-HSE Measures	Eye wash, body wash showers and emergency response equipment will be available at the CIL unit and around for the possibility of chemical spills and the splashes on people. In addition, HCN gas detector will be installed on the tanks, especially on CIL # 1, to which cyanide is initially given, at certain distances. The alarm level in the detectors will be set to 5 ppm. Also, each operator will go on top of the tanks with their own personal detector. Within the scope of the project, the works will be performed in compliance with the International Cyanide Management Institute (ICMI), International Cyanide Management Code (Cyanide Code).		Operation						
MoEU	EIA	Page 2.57	Process: Chemical Detoxification Unit	The Chemical Detoxification (Detox) unit will have the following equipment: • Cyanide detoxification tanks • Centrifugal pumps • Waste thickener • Automatic sampler • 2 x Waste Press filter • Conveyor belts • Loader • Truck		Operation						
MoEU	EIA	Page 2.57	Chemical Detoxification Unit- Mitigation Measures	Weak acid dissociable cyanide (WAD cyanide) remained in the slurry as a result of chemical detoxification in the unit and free cyanide will be converted to cyanate. The INCO SO2/air process used for cyanide detoxification will be used in the detox unit. Sodium metabisulfite (SMBS) will be used to convert cyanide to cyanate and copper sulfate will be used as catalyst in this process. At the same time, the pH value of the reaction will be increased by adding caustic to the system in the detox unit. The is because the effective pH range of the INCO process is between 8 and 10. When the reaction occurs, the pH value is constantly decreasing since acid is formed. Caustic addition will be made to prevent this.		Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 2.58	Chemical Detoxification Unit- Mitigation Measures	<p>The filtered sludge will be loaded on the trucks via conveyors and sent to the DWS area. The excess water from the filter and thickener will be sent to the process water tank for reuse.</p> <p>In the detox unit, samples will be taken from the tank and the sludge at certain intervals and it will be checked whether the detoxification is correct or not.</p>		Operation						
MoEU	EIA	Page 2.58	Process: Stripping Unit	<p>The following equipment will be available in the stripping unit</p> <ul style="list-style-type: none">• Acid wash column• Stripping column• HCl acid dilution column• Heat exchangers• Solution tanks• Solution heater• Water tank• Pumps• Carbon regeneration furnace• Dewatering screen		Operation						
MoEU	EIA	Page 2.59	Process: Electrowinning and Smelting Unit	<p>The equipment to be available in the Electrowinning and Smelting unit are listed below:</p> <ul style="list-style-type: none">• Electrowinning Cells• Calcination furnace• Smelting pot• Vacuum filter• Ventilation fans• Pumps• Sludge chamber• Overhead crane• Sludge chamber		Operation						
MoEU	EIA	Page 2.60	Waste Mercury	<p>Mercury to be obtained as a by-product in the mercury unit (retort) will be sold, if it cannot be solved, the mercury will be sent to the licensed disposal facilities for disposal.</p>		Operation						
MoEU	EIA	Page 2.63	Fuel and Oil Consumption- Mitigation Measures	<p>Fuel transported to the site by the tankers will be stored in the tanks located above the ground. In addition, appropriate safety precautions will be taken transportation of diesel fuel to the site during the construction and operation phases. The storage tank shall be protected against the possible leakages that may occur during transfer of diesel fuel from the truck to the storage tank or during filling of the tank.</p> <p>The tanks will be constructed in a suitable way against leakages and spills, and the necessary security measures will be taken to prevent and control fire. An Emergency Action Plan has been prepared for the intervention and cleaning of all kinds of leakages and spills as soon as possible and it is presented in Annex-14. A detailed Emergency Action Plan will also be prepared during the operation phase of the project.</p>		Construction, Operation						
MoEU	EIA	Page 2.63	Fuel and Oil Consumption- Compliance, HSE	<p>The amount of fuel will be evaluated in accordance with the provisions of the Seveso Directive adopted by the European Union Commission and the "Regulation on the Prevention of Major Industrial Accidents and Reducing the Effects" entered into force through publication in the Official Gazette no. 28867, dated 12.30.2013. Before starting the land preparation works, registration to the Environmental Information System of the Ministry of Environment and Urban Planning will be made and the amount of fuel to be used in the project will be reported through Seveso Notification System.</p>		Construction, Operation						
MoEU	EIA	Page 2.63-2.64	Use of Explosives - Permitting	<p>The explosive materials to be used during mining activities within the scope of the project will be provided by means of daily transportation. However, the explosive materials that will be required due to possible failures in blasts will be met from the 2 ton-capacity mobile explosive storage area. Within the scope of the project, the provisions of the By-law on Rules and Procedures for Production, Import, Transport, Storage, Sales, Use, Disposal, Inspection of Unmonopolized Explosives, Hunting Materials and Similar" entered into force through publication in the Official Gazette no. 19589, dated 09.29.1987 (Amended: O.G. no. 25641, dated 11.12.2004) will be followed.</p>		Construction, Operation						
MoEU	EIA	Page 2.65	Use of Explosives - HSE	<p>Ventilation of the magazines will be provided with the chimneys in the building from floor to the roof and the holes opened on them. The chimney holes will be covered with copper or brass wire cages to prevent ingress of animals such as birds, mice, and insects.</p> <p>There will be grounded brass, copper or aluminum plates on the magazine doors and on the walls at the entrance for discharging the static electric charge of the bodies of persons entering the magazine by touching them. For the magazine, a lightning arresters will be installed. The lightning arresters will be absolutely isolated from the magazine building, from the walls and from the roof. The lighting installation shall be carried out with the insulated type armatures and in accordance with the relevant regulations.</p>		Construction, Operation						
MoEU	EIA	Page 2.65	Use of Explosives - Permitting	<p>The magazine will be covered with an earth block that will be 1 meter higher than the tank roof in accordance with the requirements set out in the statute. The earth cover structure will be designed far enough apart from adequate safety distances and in such a way that it will not create any adverse impact on the settlements and the environment. There will be no stone pieces in the earth cover, and the slope of the inner side of the earth cover will be vertical as much as the soil stack permits. Top of the soil earth cover is covered with grass or afforested with shrubs. In addition, it will be surrounded by a wire fence at a distance of minimum 50 meters.</p>		Construction, Operation						
MoEU	EIA	Page 2.65	Use of Explosives - Permitting	<p>The characteristics of the explosive magazine will be in accordance with the provisions of Rules and Procedures for Production, Import, Transport, Storage, Sales, Use, Disposal, Inspection of Unmonopolized Explosives, Hunting Materials and Similar" entered into force through publication in the Official Gazette no. 19589, dated 09.29.1987 (Amended: O.G. no. 25641, dated 11.12.2004).</p>		Construction, Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 2.66	Use of Explosives - Permitting / Mitigation Measures	<p>The following measures will be taken to reduce the environmental and social impacts that may occur in settlements located in the immediate vicinity of the project area:</p> <ul style="list-style-type: none">- Blasting activities will only take place between 08:00 and 18:00 hours. Blasting will not be done outside of daylight hours and on holidays.- It will be continuously checked within the environmental monitoring program whether there is any structural damage caused by blasting in the accommodation units within the project area.- An non-electric ignition system will be used to minimize the effect of airblast .- Blasting will only be carried out by experts (persons qualified for firing) and the site supervisor will not initiate detonation unless he is sure that the area has been completely emptied.- Unauthorized persons will not be allowed to come closer to the blasting area within the site.- The date and time of the blasting will be notified in advance to the relevant gendarmerie station and blasting will be announced in the project area.- During blasting operations, delayed blasting with millisecond blasting caps will be applied to prevent explosion of the explosives at the same time and the possible impact of explosion will be reduced to an acceptable level (not causing damage).- Other activities in the blasting impact area will be stopped during blasting.- During stemming, the type of the material and the length of stemming will be considered so that the environmental impacts such as fly rock will be minimized.- Noise and vibration measurements will be performed regularly throughout the activity. Blasting method and material selection suitable for ground conditions will be made.- In order to prevent creation of risky and dangerous situations in terms of human and environment by the explosives and blasting activities, the provisions of the "By-law on Rules and Procedures for Production, Import, Transport, Storage, Sales, Use, Disposal, Inspection of Unmonopolized Explosives, Hunting Materials and Similar" entered into force through publication in the Official Gazette no. 19589, dated 09.29.1987 (Amended: O.G. no. 25641, dated 11.12.2004) will be followed.		Construction, Operation						
MoEU	EIA	Page 2.66	Use of Explosives - Permitting / Mitigation Measures	<p>Within the scope of the mineral processing plant activity, hazardous chemicals such as sodium cyanide, flocculant, lime and sodium hydroxide will be used, and the Chemical Management Plan prepared for the use of these materials is given in Appendix-13. The Material Safety Data Sheets (MSDS) the materials to be used will be kept available within the scope of operation activities and handling, storage on site and use of them will be carried in accordance with the provisions stated in these data sheets. In addition, within the scope of the project, the works will be performed in compliance with the International Cyanide Management Institute (ICMI), International Cyanide Management Code (Cyanide Code). In addition, application will be made for to be a member of ICMC in order to obtain professional support for cyanide management, to ensure performance of the auditing works carried out under the supervision of the United Nations Environment Committee (UNEP) members and informing the public by a third party.</p>		Construction, Operation						
MoEU	EIA	Page 2.67	Chemical Substances-HSE	<p>Chemical substances will be used by the authorized and trained personnel and personal protective equipment such as dust mask, gloves and goggles will be used. The cleaning kit will be available for emergency use. The precautions to be taken in case of chemical spills and leakages are detailed in the Emergency Action Plan presented in Appendix-14.</p>		Construction, Operation						
MoEU	EIA	Page 2.67	Chemical Substances-	<p>Residues, containers and packages of chemicals will be disposed in accordance with the Regulation on Control of Hazardous Wastes entered into force through publication in the Official Gazette No. 25755, dated 03.14.2005 (Amended: O.G. no. 28812, dated 11.05.2013).</p>		Construction, Operation						
MoEU	EIA	Page 2.67	Transport of Chemical	<p>All chemicals that will be used within the scope of mineral processing plant will be brought to the site in bags, drums, tankers or boxes according to the type of the chemicals and will be transported to the site by existing roads. Transportation of the chemicals will be carried out according to the provisions of the "Regulation on</p>		Construction, Operation						
MoEU	EIA	Page 2.68	Chemical Substances-HSE	<p>All the chemicals to be used within scope of the project will be stored in fire-protected, dehumidified and well ventilated areas. Where it is necessary to store them in the site, care should be taken to bring the minimum amount of chemical to the site as far as possible.</p>		Construction, Operation						
MoEU	EIA	Page 2.68	Chemical Substances-HSE	<p>Stored chemical substances will be arranged and managed in accordance with the "Regulation on Hazardous Wastes" entered into force through publication in the Official Gazette No. 22634, dated 07.11.1993 (Amended: O.G. no. 26760, dated 01.18.2008). During storage, they will be classified separately according to the hazard classes of them, and degradation or interference with other substances will be prevented.</p>		Construction, Operation						
MoEU	EIA	Page 2.69	Commitment- Local Infrastructure	<p>Access to the EIA area is provided by following the Bursa-Canakkale Highway no. E-90 to reach the Lapseki district center and then by following the Şahinli village road. The stabilized road that provides access to the EIA area is existing and there is no need to open a new road. The necessary repair, maintenance and improvement work on the existing roads around the project area will be carried out together with the relevant local authorities.</p>		Construction, Operation						
MoEU	EIA	Page 2.69	Mitigation Measures	<p>In accordance with the opinion of the Provincial Special Administration presented in Appendix-7, the commitment for road use is given in Appendix-36. In order to prevent dust emission on the mentioned road; watering will be carried out depending on the season and the rate of evaporation. In order to prevent environmental contamination in the intermediate / main arteries connected to the transport route used by the transportation vehicles, the wheels of the vehicles will be kept clean</p>		Construction, Operation						
MoEU	EIA	Page 2.69	Mitigation Measures	<p>In addition, organic based soil stabilizers will be used within the scope of the activity. These soil stabilizers form a versatile binding matrix with the interconnection and cross-linking of millions of molecules by means of their linear molecular structures. They form massive masses by connecting the dust particles together on the surfaces they are applied to. Because they make these surfaces waterproof, they protect the surfaces against effects of erosion and material losses. Such practices increases the carrying capacities of roads, prevent slides, provides resistance to water and UV, prevent dust (prevent dust by suppressing particles smaller than PM10 and PM2.5 microns), provides a safe driving environment, reduces fuel consumption and delays wearing of tires .</p>		Construction, Operation						
MoEU	EIA	Page 2.69	Permitting	<p>During transportation of the materials produced, the provisions of the "Highway Traffic Law" entered into force through publication in the Official Gazette no. 18195, dated 10.18.1983 (Amended, no. 27658, dated 07.31.2010) and the "Regulation on Highway Traffic" entered into force through publication in the Official Gazette no. 23053, dated 07.18.1997 (Amended, no. 29183, dated 11.22.2014) will be complied with.</p>		Construction, Operation						
MoEU	EIA	Page 3.14	Social Commitments	<p>Except for technical personnel, all personnel to be employed under the project will be recruited from local residents. Thus, social infrastructure services such as accommodation etc. will be satisfied from the villages. On the other hand, the personnel's daily and social needs will be met from the worksite that will be erected at the plant. Transport to and from the site of personnel to be recruited from the region will be ensured by the company through shuttle service. Food, cleaning, consumables and other similar needs of the personnel to be employed under the project will be procured from external sources.</p>		Construction, Operation						
MoEU	EIA	Page 3.19	Mitigation Measures	<ul style="list-style-type: none">• During mining activities, the operator shall strictly follow the monitoring program set forth in Chapter 7.• After completion of mining activities, the closing activities described in Chapter 5.7 shall be performed along with rehabilitation works.• The operator shall take necessary measures to mitigate the impact of traffic density that will be created on the land route to be used during activities.• The EIA site shall be surrounded with a health protection band to prevent the local residents and/or nearby animals from entering the mining site.• All environmental impacts in the vicinity of the project site such as noise, vibration, air, water and soil pollution as well as the measures to be taken have been elaborated in full detail and are given in Chapter 5.		Construction, Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 3.19-3.20	Permitting, Timetable	<p>First, property permits will be obtained within scope of activities and then necessary applications will be filed to obtain a Workplace Opening and Operating License pursuant to the "Regulation on Workplace Opening and Operating Licenses" promulgated in the Official Gazette dated 10.08.2005 no. 25902 (amendment: dd. 26.11.2014 no. 29187).</p> <p>After all required permits are obtained; production activities planned to last 8 years within scope of the project will be commenced subsequent to a 2-year land preparation and construction period. Following the completion of mining activities, rehabilitation works will be initiated for the activity area, and monitoring activities will follow.</p>		Construction, Operation, Decomissioning						
MoEU	EIA	Page 3.7	HSE Mitigation Measures	<p>The health and life safety of workers and the safety of the workplace, the environs of the activity area and the produced product falls within the scope of occupational safety. The aim of occupational safety is to protect the workers' health, increase safety of both production and enterprise, and protect the ecological environment. Occupational safety trainings will be given to the workers before and during work in order to prevent such hazards and risks.</p> <p>Besides, unauthorized will not be allowed to access the pit sites in order to prevent any risks or hazards to human health. For this purpose, warning signs will be placed in the project site.</p>		Construction, Operation						
MoEU	EIA	Page 3.7	Social Commitments	It is planned to employ 200 personnel during the project's construction phase and 500 during the operating phase. The economic improvements that come with employment will also bring along social services and infrastructure investments.		Construction, Operation						
MoEU	EIA	Page 3.8	Social Commitments	About 80% of the workers to be employed in the project will be recruited from nearby villages, while the remaining 20% are planned to be recruited from Çanakkale province and Turkey in general, with priority to neighboring districts.		Construction, Operation						
MoEU	EIA	Page 3.8	Social Commitments	Along with that, by employing local residents in the project it will be made sure that they receive job-specific training. Besides, special courses will be organized to raise the workers' awareness of mining, occupational health and safety, and environmental issues.		Construction, Operation						
MoEU	EIA	Page 5.14	HSE-HCN gas	Due to the adverse effects of HCN gas on human health, its control will be carried out meticulously. When the chemical equilibrium of the solution in the leach tanks is obtained, cyanide is present in the HCN phase and its amount varies inversely proportional to pH and temperature. For this reason, the solution will be controlled by continuous measurements to ensure control of HCN gas.		Operation						
MoEU	EIA	Page 5.14	Compliance-HCN Gas	According to the Industrial Air Pollution Control Regulation entered into force through publication in the Official Gazette No. 27277, dated 07.03.2009 (Official Gazette No. 29211 dated 12.20.2014), Table 17.2.1 Inorganic Steam and Gases Table, HCN is specified as Class II and HCl is specified as Class III. In this context, the emission limit values of these inorganic compounds will be 5 mg/Nm3 for emissions of 50 g/h or above in HCN or 30 mg/Nm3 for emissions of 300 g/h or above in HCl.		Operation						
MoEU	EIA	Page 5.16	Compliance-Air Emissions	Since the mass flow rate values calculated for the construction equipment are below the values given in the Industrial Air Pollution Control Regulation entered into force through publication in the Official Gazette No. 27277, dated 07.03.2009 (Official Gazette No. 29211 dated 12.20.2014), Appendix-2, Table 2-1, they will not adversely affect the current air quality.		Construction, Operation						
MoEU	EIA	Page 5.16	Mitigation Measures-Air Emissions	All the vehicles to be used within the plant will operate by using diesel fuel and exhaust emissions of these vehicles shall be measured regularly by the public authorities and it shall be documented that they comply with the limit values set for exhaust emissions.		Construction, Operation						
MoEU	EIA	Page 5.17	Compliance-Air Emissions	<p>In the furnace chimney of the Casting Chamber, included in the Industrial Air Pollution Control Regulation, Appendix-5, subparagraph g "Seventh Group Facilities: Foundries";</p> <p>- Waste gases containing dust should be thrown into the outside air after being passed through a dust removal system.</p> <p>- Dust emissions in waste gases should not exceed 75 mg/Nm³ for the plants with a mass flow rate of less than 1 kg/h and the ones with a mass flow rate of above 1 kg/h should not exceed 50 mg/Nm³.</p> <p>- Emissions from the foundries where magnesium and its compounds are cast using sulfurous additives should be discharged to the atmosphere according to Appendix-4.</p> <p>- Organic gas compounds resulting from core production, casting and cooling should be collected, recovered, if possible, and sent to the treatment plant. The relevant rules given in Appendix-1, subparagraph (h) should be complied with for organic gases resulting from the plant.</p> <p>- The technology related to these plants and the relevant Turkish Standards published in the studies on reduction of dust emissions and the best available techniques should be followed.</p> <p>- The activities will be performed in accordance with the provisions of "The rules given in Appendix-1 should be followed".</p>		Construction, Operation						
MoEU	EIA	Page 5.17	Mitigation Measures	Another gas emission is Ammonium Nitrate – Fuel Oil (ANFO) which is used during blasting activities performed in open pits. The sulfur dioxide (SO2), nitrogen oxides (NOx), carbon monoxide (CO) gases will be released during blasting, even in a little amount. The amounts of explosives to be used, the depths and frequencies of the holes will vary according to the characteristics of the natural rock and the works will be continued with the aim of minimum emission formation.		Construction, Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 5.17-5.18	Permitting	<p>The articles of Appendix-1 and Appendix-2 lists of the Environmental Permit and License Regulation entered into force through publication in the Official Gazette No. 29115, dated 09.10.2008 in which the Lapseki Project is included are presented in Table5 12. In this context, environmental permit regarding air emission will be received.</p> <p>If it is in Appendix-1,</p> <p>8. Waste Management</p> <p>8.1 Waste interim storage, recycling and disposal facilities (The exemption granted for environmental permit regarding air emissions do not apply to all recycling facilities and incineration and co-incineration facilities. The exemption granted for environmental permit regarding Environmental Noise does not apply to waste battery and accumulator and end-of-life tire recycling facilities.</p> <p>If it is in Appendix-2,</p> <p>2. Mining and Building Materials Industry</p> <p>2.16 Mines where explosives are used.</p> <p>2.17 Mines with a production capacity of 200 tons/day and above and from which the minerals included in Group I a and b, Group II (including limestone), Group IV and Group V of the Mining Law No. 3213, dated 06.04.1985 (Amended: law no. 6592, dated 02.04.2015) are extracted.</p> <p>2.18 Plants with a production capacity of 200 tons/day and above and which are installed for crushing, grinding, sieving of the minerals, slag and debris included in Group I a and b, Group II (including limestone), Group IV and Group V of the Mining Law.</p> <p>2.20 Coal and / or ore preparation and / or mineral processing plants.</p> <p>9. Storage, Filling and Discharge of the Materials</p> <p>9.11 Open or not fully closed storage or sieving-packing facilities where bulk materials in an amount of 200 tons/day and above that may be dusting when they are dry are filled and discharged by means of dumper trucks or dumping depots, buckets or technical tools and equipment. (The facilities to which materials over 200 tons/day are transferred and scrap metal storage areas are included and excavation works are excluded).</p> <p>10. Other Plants</p> <p>10.3 Urban and / or domestic wastewater treatment facilities for a population of less than 100,000 persons.</p>		Construction, Operation						
MoEU	EIA	Page 5.20	Water Management	<p>Drinking water for personnel will be provided through purchasing dispenser size bottled water from market, and domestic water will be provided from the licensed wells of the DSI.</p> <p>During the course of the works, areas will be moistened by performing spraying and watering in the movement areas of the trucks and in the working areas of construction equipment. Water to be used for watering purpose will be obtained from the treated water in the domestic wastewater treatment plant or from the wells licensed for use.</p>		Construction						
MoEU	EIA	Page 5.20	Water Management	<p>The operational period water management system within the scope of the Lapseki Project will be shaped in line with the following objectives.</p> <p>- Obtaining water required by the process with maximum recycling of water,</p> <p>- Having minimum discharge to the receiving environment,</p> <p>- Collecting and removal of storm waters in the basin of the region before it contacts with the units,</p> <p>- Collecting contaminated storm waters contacting with the units and gain them as input to the plant,</p> <p>- Taking precautions to protect surface and groundwater quality,</p> <p>The main elements of the water management plan to be established for the Lapseki project will consist of interception channels and drainage channels. The interception channel will be used to protect and collect storm waters coming to the region and the drainage channels will be used to protect groundwater; and precipitation falling on the units (contaminated water) will be collected to be used in the plant. Waste water discharges will not be made to the receiving environment without being treated, either directly or indirectly.</p>		Operation						
MoEU	EIA	Page 5.21	Water Requirements	Drinking water for personnel will be provided through purchasing dispenser size bottled water. Domestic water will be supplied from the licensed wells of DSI.		Construction, Operation						
MoEU	EIA	Page 5.21	Water Source for Dust Supression	. The water that will be required will be provided from the domestic wastewater treatment plant and / or from the licensed wells.		Construction						
MoEU	EIA	Page 5.23	Water Sources	<p>Amounts of water required by the plant a will be supplied from;</p> <p>- Water From Interception Channels (Water Collection Basins)</p> <p>- Water From Drainage Channels (Settling Basins)</p> <p>- Mine Dewatering Waters,</p> <p>- Water From Domestic Wastewater Treatment Plant and</p> <p>- Water From Licensed Wells of DSI.</p>		Construction, Operation						
MoEU	EIA	Page 5.23	Permitting-Wells	The amount of waters that will come from the licensed wells of DSI and the wells for which it is planned to receive license was determined to be 4.97 l/s. In arid periods, the decrease in the amount of water that will come from the sedimentation and water collection basins will be compensated by the waters that will come from the wells. In addition, application to be made to the DSI Regional Directorate for the use of water from the wells, for which aquifer tests are continuing, when deemed necessary		Construction, Operation						
MoEU	EIA	Page 5.24	Compliance-Wastewater Discharge	<p>Wastewater that will be generated will be returned to the process after being treated at the domestic wastewater treatment plant to be installed on the project site. In case of excessive water, it will be discharged to the nearest receiving environment according to the discharge standards given in Table 21.1 of the Water Pollution Control Regulation entered into force through publication in the Official Gazette No. 25687, dated 12.31.2004 (Amended: Official Gazette No. 28244, dated 03.25.2012). For the water to be discharged to the receiving environment after treatment, the "Environmental Permit Certificate for Waste Water Discharge" will be taken in accordance with the "Environmental Permit and License Regulation" entered into force through publication in the Official Gazette no. 29115, dated 09.10.2014.</p>		Construction, Operation						
MoEU	EIA	Page 5.24	Mitigation Measures Rainwater Runoff	Mine waste extracted from the mine area and dry waste from the plant will be stored in open area, thus they will contact with storm waters. Waters leaking from these areas will be collected and transferred to the settling basins by means of the drainage lines to be installed on the base. Waters will be used in the plant.		Construction, Operation						
MoEU	EIA	Page 5.24	Compliance-Rainwater Runoff	In case of increase of precipitation and deterioration of equilibrium in water cycle, excess water to be collected from settling basins and to be treated in accordance with the BSWQM Table 7.1 criteria will be discharged to the receiving environment within the scope of the "Environmental Permit Certificate for Waste Water Discharge" to be received according to the "Environmental Permit and License Regulation" entered into force through publication in the Official Gazette no. 29115, dated 10.09.2014.		Construction, Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 5.25	Compliance Rainwater	<p>Most of the rainwater falling to the open pit areas planned to be operated within the scope of the project will be collected in the water collection basin by means of the interception channels and will be given to the system to be used in the plant. In case of excessive rainfall, the rainwater collected in the water collection basins will be discharged to the receiving environment. There will be no wastewater originating from the rain water collected with the interception channels.</p> <p>Contaminated waters contacting with the surface of the open pit shall be removed from the open pit area by means of a pump and collected in settling basins. These waters will be reused as process water in the mineral processing plant. In case of increase of precipitation and deterioration of equilibrium in water cycle, excess water to be collected from settling basins and to be treated in accordance with the BSWQM Table 7.1 criteria will be discharged to the receiving environment within the scope of the "Environmental Permit Certificate for Waste Water Discharge" to be received according to the "Environmental Permit and License Regulation" entered into force through publication in the Official Gazette no. 29115, dated 10.09.2014.</p>		Construction, Operation						
MoEU	EIA	Page 5.25	Compliance Runoff	No effect of the plant is expected on the underground and surface water resources. In addition, in order to protect the water quality of the receiving waters after discharge, the provisions of the "Surface Water Quality Management Regulation" no. 28483, dated 11.30.2012, "Law on Ground Waters" no. 10688, dated 12.23.1960, with decision number 167, "Regulation on the Protection of Ground Waters against Pollution and Deterioration " no. 28257, dated 04.07.20012 and "Water Pollution Control Regulation" no. 25687, dated 12.31.2004 (Amended; O.G. dated 03.25.2012 with No 28244) entered into force through publication in the Official Gazette will be followed.		Construction, Operation						
MoEU	EIA	Page 5.26	Training-Solid Waste	The necessary training will be given to the employees to minimize the generation of non-recyclable solid wastes and to comply with the issues specified in national legislation.		Construction, Operation						
MoEU	EIA	Page 5.26-5.27	Solid Waste Disposal Plans	Domestic solid wastes to be generated will be collected in closed containers to be placed on the construction site and will be transported to the place deemed appropriate by the Lapseki Municipality with closed special vehicles by the activity owner with its own means. The letter of the Lapseki District Municipality regarding receiving solid wastes is presented in Appendix-7. Solid wastes to be generated will be collected separately according to their qualities (organic, plastic, glass, paper, metal, battery, medicine, etc.) and accumulated in a way not to pollute the environment in terms of appearance, smell, dust, leakage, and similar factors. The treatment sludge to be formed in the domestic wastewater treatment plant to be established in the plant will be transferred to the DWS areas after the laboratory analyzes and will be disposed. The sediments accumulated at the bottom of the basins, where the waters from the drainage channels to be built within the scope of the activity are collected, will be collected in certain periods and will be transferred to the DWS areas after the analyzes are made for disposal. As a result of the analysis, the wastes that are not suitable to be stored in DWS areas will be sent to licensed disposal facilities. Mine waste which will be generated as a result of the mine activities will be shipped to the mine waste disposal area.		Construction, Operation						
MoEU	EIA	Page 5.27	Mine Waste Management Plan	The mine waste management plan prepared according to the mine waste design is a plan in which design of interception channels and the way of storage of AKD/ML rocks are identified and the angles of the steps to be established, their slopes and details of mine waste such as height are indicated. It will be continuously updated as a result of monitoring activities to be performed during the operating period, and it will be used for the final closing plan. The operation period mine waste management plant will be configured according to the issues stated in the section on potential effects that may arise from the mine waste disposal area and measures in the context of the effects determined during the EIA Report.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.27	Mine Waste Management	For the purpose of managing the mine waste excavated in open pit, first of all the sulfur-containing mine waste must be analyzed regularly. During the operation, the mine waste will be mapped and it will be analyzed after sampling. The sampling of the material proposed to be analyzed on-site will be performed by taking daily samples from the production faces and explosive holes of the open pits. Samples will be collected from additional designated areas within the specified period by internationally recognized laboratories		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.27	Surface Runoff Mitigation Measures	The surface runoff to the mine waste disposal area will be prevented with the help of the interception channels to be constructed around the mine waste disposal area. The rainwater that comes into contact with the mine waste disposal area and flows through it will be directed to the settling basins, where the leachate is collected, by means ofthe drainage channels.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.29-5.30	Waste Lanfill Compliance	The waste sample was subjected to the Eluate test according to the provisions of the BLW Appendix-1. The results were compared with the Waste Acceptance Criteria in Appendix-2 of the Regulation and the storage area class was determined. According to this, although many criteria belonging to waste remain within the limit values of Class III Storage Facility, Molybdenum (Mo) remains within the limit values of Class II Storage Facility. However, it will be designed according to the "Class I Sanitary Landfill Facility", where the measures taken for the DWS areas are at the highest level, within the scope of the project.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.3	Compliance-Dust	Settled dust and PM10 measurement results meet the limit values specified in the Industrial Air Pollution Control Regulation entered into force through publication in the Official Gazette No. 27277, dated 07.03.2009 (amended; Official Gazette No. 29211 dated 12.20.2014).		Construction, Operation						
MoEU	EIA	Page 5.34	Dry Waste Storage Mitigation Measures	<p>The first application of the impermeability system in the DWS areas is the bottom drainage system, which will be formed by the base slope suitable for water flow. Surface waters coming to the region by a 300φ diameter perforated pipe to be placed in a trapezoidal channel to be established in the bottom of the valley and gravel material (CaCO3 ≤ 20%) filling around it and groundwater will be protected against pollution. The end of this drainage system is connected to the settling basin and it is possible to use this construction, which has the main purpose of protecting ground water, as a leak detection system. The monitoring activities to be carried out, including the operation and post-operation periods, will be carried out here, and detailed information on monitoring is given in Section-7. Since the lithology that forms the base of the DWS areas does not naturally fulfill the impermeability conditions, an artificial geological impermeability layer will be formed with clay and clay group minerals. With appropriate moisturizing and compaction conditions, it will be composed of 2 layers in total thickness of 0.5 m. The impermeability of this layer is 1 x 10-9 m/s and reinforcement will be done with geomembrane. The geomembrane to be used at the base will have a density of 941-965 kg/m3 and a thickness of 2 mm. Geotextile will be laid on the geomembrane material for protection and a drainage layer with a thickness of 0.5 m and a permeability of at least K ≥ 1 x 10-4 m/s will be formed in order to collect waste leakages. Waters collected with the drainage systems will be collected in the settling basin to be constructed outside the Waste Storage Area.</p> <p>For the impermeability application of the inclined side surfaces, geosynthetic clay with impermeability of 1 x 10-9 m/s will be used on geotextile in order to protect against ground effects. In order to strengthen the impermeability, rough geomembrane with high resistance against inclination will be preferred on the side surfaces. In addition, there will be a drainage layer on the side surfaces in order to provide drainage.</p>		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.34	Vegetative Soil Stripping	Fertile soil on the DWS-I area will be stripped in the first year of the construction works and it will be stored in the Soil Storage Area-2. In the second year of construction activities, the area will be established in line with the designs. Construction of DWS-II will be started during productions. The fertile soil will be stripped and stored in Soil Storage Area-3. Then the reservoir excavation works will be started.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.36	Compliance of Interception Channel Size	The 1.520 m long interception channel of the DWS-II area is also dimensioned according to the same flow rates and the basin boundaries of the Interception channels and the schematic channel sizes are presented in Figure5 12. The report including the hydraulic calculations approved by the 25th Regional Directorate of DSI regarding interception channels is given in Appendix-31.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.38	Pollution Prevention-Sourcing Materials from Excavated Material	DWS excavation material will be used as body fill. The necessary extra fill will be provided from the material coming from totally 1,223,083 m3 road excavations in the pit. Excess amount of excavated soil will be transferred to the Mine Waste Disposal Area and impermeable filling material will be supplied by purchasing from material quarries.		Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 5.4	Mitigation Measures-Dust	Discharge and filling will be carried out without throwing around. The tops of the conveyors and other carriers and the connection parts of them discharging material onto each other will be covered. Fine particle formation will be prevented with the blasting design suitable for purchasing of material in desired sizes. Blasting procedures to be performed during operation will be performed by using non-electric capsules with delay period of milliseconds. Blasting procedure will be carried out by specialized persons. Dust will be suppressed by watering or spraying to be carried out on the earth roads. Speed limit will be 30 km/hour on the roads within the mine. Trucks will not be loaded over their capacities. Transported material will be kept moist to prevent dust formation. The tops of the trucks will be covered with canvas against falling of material due to wind. Organic based soil stabilizer will be used for dust suppression. All broken ore will be stored in a closed area. The unused sides of the bulk storage areas will be compacted from the surface. The slopes in the bulk storage areas will be reduced according to the dominant wind direction. Upper layers in storage areas will be kept with 10% humidity. The equipment necessary to ensure this situation will be installed. When it is deemed necessary to prevent transport by wind effect, windbreaking plates will be placed in the land. Replanting will be carried out at the points where the activity is completed and erosion due to wind will be prevented.		Construction, Operation						
MoEU	EIA	Page 5.4	Mitigation Measures-Dust	Dust formation will occur during the site preparation, construction and operation works of the project. In order to keep dust emissions at a minimum level, the roads will be dampened by watering, especially due to seasonal conditions. The trucks will comply with the speed limits and top of them will be covered with canvas to prevent falling of material.		Construction, Operation						
MoEU	EIA	Page 5.40	Compliance-Sealing Layer	Sealing layer systems will be established in the constructed DWS areas in accordance with the requirements of the "Regulation on the Sanitary Landfill of Wastes" entered into force through publication in the Official Gazette no. 27533, dated 03.26.2010 (no. 29292, dated 03.11.2015).		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.41	Mitigation Measures-Bottom Drain System	<div>- Protecting the ground floor system of DWS areas by draining underground water,</div> <div>- Providing leakage control through impermeability systems,</div> <div>- Performing quality monitoring of waters under impermeability system.</div> <div>For this purpose, bottom drain systems will be installed on the valley bases, where the DWS-I and DWS-II areas will be established, with slopes suitable for water flow. The bottom drain system will be established with 300 mm perforated pipes inside the trapezoidal channels to be opened at the bottom of the valley and gravels to be laid around. Transfer of water to the settling basins located at the end of the mine waste disposal area will be provided by using HDPE corrugated pipes without holes at the point where this channel enters under the body. Inner surfaces of the settling basins will be covered with impermeable geomembrane material.</div>		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.42	Compliance Dry Waste Storage	In the DWS areas that will have Class I Sanitary Landfill Facility feature, clay in two layers and with a thickness of 25 cm will be laid gradually and it will be compacted to have a total thickness of at least 50 cm. The laid clay layer will be combined with the subsequent layer.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.42-5.43	Compliance Dry Waste Storage	The geomembrane to be applied on the bottom and side surface of the DWS areas will be used to strengthen the impermeability of the clay fill because it is resistant to chemical substances, has high tensile strength, low permeability, and is extremely resistant to perforation and cracking. High Density Polyethylene (HDPE) Geomembrane to be used in the DWS areas will be preferred with a density of 941-965 kg/m3 and a thickness of 2 mm. Smooth geomembrane is used at the base, but rough geomembrane with high resistance against inclination will be used on the inclined side surfaces. The standards for the geomembrane to be used are given: TS EN 13257 Geotextiles and Geotextile Related Products - Features Required for Use in Solid Waste Storage Areas TS EN 13257/AC Geotextiles and Geotextile Related Products - Features Required for Use in Solid Waste Storage Areas TS EN 13257/ A1 Geotextiles and Geotextile Related Products - Features Required for Use in Solid Waste Storage Areas TS EN 13493 Geosynthetic Barriers - Features Required for Use in Solid Waste Storage and Disposal Locations Reference: Regulation on the Sanitary Landfill of Wastes, Appendix-3		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.44	Compliance-Geomembrane Handling	The welding works of the geomembranes will be done by automatic machine in the form of fusion welding or extrusion welding. "Site Trial Welds" shall be carried out to check the appropriateness of the welding and welding conditions before commencing the site welding operations. The sample taken for trial welding will fulfill the minimum requirements of Shear Strength ≥ 90% and Peeling Strength ≥ 60%. Slip Strength Test will be made in accordance with TS EN 12317-2 standard and Peeling Strength Test will be made in accordance with TS EN 12316-2 standard.		Construction, Operation						
MoEU	EIA	Page 5.44	Mitigation Measures-Geomembrane Handling	Vacuum box test and air pressure test will be performed in the areas where laying and jointing processes are completed. The places where laying is completed and the tests are positive will be delivered with the protocols to be made.		Construction, Operation						
MoEU	EIA	Page 5.44	Compliance-Geotextile Handling	Geotextile to be laid on the surfaces in order to protect the geomembrane to be laid on the DWS areas will be supplied in accordance with the standards set out in Appendix 3 of the Regulation on Sanitary Landfill of Wastes.		Construction, Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 5.44	Mitigation Measures- Geotextile Handling	<p>Although geotextile acts as a protective structure; it may also be used due to its porous structure allowing the passage of water and its ability to retain fine-grained materials. The geotextile will be used on the geomembrane and in the form of a base application on slopes of the side surfaces in the DWS areas.</p> <p>In the stages of geotextile laying;</p> <ul style="list-style-type: none">- The geotextile will be laid flatwise as much as possible, and places with wrinkles will be smoothed.- During the application, the geotextiles will be overlapped at least 400-500 mm (20-25 cm single wing). However, if the geotextiles are sewn, the overlapping will be at least 100 mm and sewing process will be performed using polypropylene yarn.- The geotextile will be anchored into the trench at the beginning of the slope and then laid downward.- Geotextile laying will be downwards on the sloping surfaces after the carried out primarily in the anchor channel. Upon completion of the sloping side surfaces, the work will be continued on the horizontal surfaces.- Geotextile and geomembrane applications will be performed in parallel with each other. Geomembrane lining will be applied after every 1000-1,500 m2 geotextile laying.- Geotextile and geomembrane lining process will be started from the body and the prepared slopes. The base of the site will be lined after lining of the slopes.		Construction, Operation						
MoEU	EIA	Page 5.44 - Page 5.45	Top Drain System Application	The drain thickness will be at least 50 cm and its permeability will be K> 1x10-4 m/s. Drainage pipes will be laid on the impermeable base and the leaking water will be collected at one point. The longitudinal slope of the storage base will be favorable to ensure flow of minimum amount of water. Drainage pipes, as individual pipes, will be installed linearly, without forming any horizontal and vertical bends, towards outside the storage area and then to the settling basin. The flood pool located downstream of the mine waste disposal area will be used as the flood pool of the DWS-I area. Sediments that accumulate at the bottom of the settling basin downstream of the mine waste disposal area will be transferred for storage in the DWS-II area.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.45	Mitigation Measures- Active Area Drainage	It is very important to remove the rainwater falling on the area, where storage is made under these conditions, with the most efficient way from the area. In such an area where storage is constantly carried out, an active drainage system will be established to collect water from the surface. In the area, where storage will be made with slope, rain water flows will be collected at one point, a drainage pipe to be installed perpendicular to the top drain system main line will collect these waters and ensure collection of them in the settling basin.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.45	Mitigation Measures- Top Cover Establishment	The top cover soil with a thickness of at least 50 cm depending on the plant species to be cultivated will be laid on the drainage layer in the DWS-II area in a way to allow cultivation of plants. The drainage layer applied instead of the top cover soil in the DWS-I area will be connected to the bottom drain system of the mine waste disposal area and mine waste will be disposed on the DWS area.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.45	Compliance- Mineral Professing Plant Waste	The works related to the mineral processing plant waste will be carried out in accordance with the provisions of the "Regulation on Sanitary Landfill of Wastes" entered into force through publication in the Official Gazette no. 27533, dated 03.26.2010 (no. 29292, dated 03.11.2015), "Waste Management Regulation" entered into force through publication in the Official Gazette no. 29314, dated 04.02.2015 and the Circular no. 2014/13 published by the Directorate General of Environmental Management.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.45	Compliance- Solid Waste Handling	Solid wastes to be generated within the scope of the project will be collected separately from other wastes in accordance with the provisions regarding the separate collection and transport of solid wastes of the "Waste Management Regulation" entered into force through publication in the Official Gazette no. 29314, dated 04.02.2015 and the provision "It is forbidden to pollute the environment by pouring the wastes into the soil, seas, lakes, rivers and similar receiving environments, directly filling and storing them." will be followed.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.46	Compliance- Packaging Waste	Packaging waste constituting 30% of the domestic solid wastes to be generated during the project will be collected in accordance with the provision "Regardless of the material used and its source of generation, packaging wastes generated as a result of consumption must be collected at places where they were generated as separated from other wastes in order to reduce environmental pollution, to benefit from sanitary landfill facilities at the maximum level and to make contribution to the economy" given in the Regulation on Packaging Wastes Control entered into force through publication in the Official Gazette no. 28035, dated 08.24.2011, Article-23. Recyclable packaging wastes such as glass, plastic bottles and nylon that will be generated during works will be selected in accordance with the regulation and sent to licensed recycling facilities for recycling.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.46	Pollution Prevention- Packaging Waste	Prevention of formation of packaging wastes in order to protect natural resources and reduce the amount of waste to be stored; in cases where waste generation is inevitable, reuse, recycling and recovery of them will be essential.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.46	Compliance- Hazardous Waste	The wastes that may be generated within the scope of the project have been evaluated within the scope of "Waste List" given in the "Waste Management Regulation" entered into force through publication in the Official Gazette no. 29314, dated 04.02.2015.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.46-5.47	Compliance and Mitigation Measures- Hazardous Waste	<p>In accordance with the Regulation on Control of Hazardous Wastes entered into force through publication in the Official Gazette No. 25755, dated 03.14.2005 (Amended: O.G. no. 28812, dated 11.05.2013);</p> <ul style="list-style-type: none">- Necessary measures will be taken to minimize waste generation.- Waste management will be provided to minimize the harmful effects of wastes on human health and environment. A three-year waste management plan will be prepared and submitted to the Governorate.- Records will be kept the wastes generated and waste will be sent to the recycling / disposal facilities having environmental license by packaging and labeling it according to internationally recognized standards.- The waste declaration form will be filled in each year until the end of March of the following year by using the web-based program prepared by the Ministry and containing the information of the previous year, it will be approved and printed, and one copy of it will be kept for a period of five years.- The wastes will be stored temporarily in solid, leak-proof, safe containers complying with the internationally recognized standards placed on the concrete site to be installed in the plant.- There will be an indication of hazardous waste on the containers, the quantity and the date of storage of the stored material will be indicated on the containers, if the containers are damaged, the wastes will be transferred to another container having the same characteristics, the containers will always be kept closed and the wastes will be temporarily stored by preventing occurrence of any chemical reaction of them. <p>All kinds of measures related to the health and safety of the employees who are responsible for the collection, transport and temporary storage of wastes within the plant will be taken.</p>		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.47	Compliance- Waste Oil	Maintenance and repair operations of the construction equipment, trucks used within the scope of the project and all the machinery and equipments in the mineral processing plant will be performed on site. Waste oils to be generated will be temporarily stored in separate tanks / containers according to the categories specified in the "Waste Oil Categories and Permissible Pollutant Parameter Limit Values" included in the By-law on Control of Waste Oils entered into force through publication in the Official Gazette No. 26952, dated 07.30.2008 (Amended; Official Gazette No. 28812, dated 11.05.2014), Appendix-1. These tanks / containers will be red colored and there will be "Waste Oil" indication on them.		Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 5.47	Mitigation Measures- Waste Oil	The parts of the plant area which are in contact with waste oil will have reinforced concrete floor with a thickness of at least 25 cm for the purpose of floor impermeability and bund side walls. The inner surfaces of the sump will be built as coated with epoxy paint, geomembrane and similar insulating material to protect against spillage and protected against rain.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.47	Compliance- Waste Oil	According to the By-law on Control of Waste Oils (BCWO), waste oils to be generated within the scope of the project will be collected in separate tanks / containers on the impermeable floor according to the categories specified in the "Waste Oil Categories and Permissible Pollutant Parameter Limit Values" included in Appendix-1. According to BCWO, Article-9, - Waste oils in different categories originating from the plant will not be mixed with each other, PCB and other hazardous wastes. - Waste oils will be transported to the treatment and disposal facilities having environmental license by the transporters having transport license. - When the waste oil is to be transported outside the plant, the National Waste Transportation Form will be filled in.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.47	Compliance- Waste Oil	The Waste Oil Declaration Form included in Appendix-2 of the related regulation will be filled every year and sent to the Çanakkale Provincial Directorate of Environmental and Urban Planning by the end of February of the following year.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.48	Mitigation Measures- Vegetable Waste Oils	The vegetable waste oils generated in this way will be collected in collection containers such as leak-proof bins / containers having corrosion resistant inner and outer surfaces.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.48	Compliance and Mitigation Measures- Vegetable Waste Oils	According to Article 10 of the Regulation on the Control of Vegetable Waste Oils entered into force through publication in the Official Gazette No. 25791, dated 04.19.2005 (Amended: O.G. no. 28812, dated 11.05.2013), the vegetable waste oils to be generated within the scope of the project; - Will be accumulated as separated from the other materials and garbage in the collection containers such as leak-proof bin, container and tank having corrosion resistant inner and outer surfaces. - Waste oils will be sent to licensed recycling or disposal plants with the transporters having environmental license. - National waste transport form will be used for waste oil transportation and after each transportation a copy of them will be sent to the Çanakkale Governorate. These documents will be kept for a period of five years in the plant.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.48	Mitigation Measures- End-of-life Tires	These tires will be stored in the temporary storage area to be built as impermeable where necessary precautions for fire are taken.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.48	Compliance and Mitigation Measures- End-of-Life Tires	They will be stored in the temporary waste storage area with impermeable floor until the date of delivery of the tires to the companies which distribute and sell the tires or to the vehicles with transportation license free of charge, in accordance with the By-law on Control of End-of-Life Tires entered into force through publication in the Official Gazette No. 26357, dated 11.25.2006 (Amended: O.G. no. 29292, dated 03.11.2015). Top and surrounding of the tire piles will be regularly sprayed to prevent breeding of mosquitoes, mice and other harmful substances.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.49	Compliance and Mitigation Measures- Used Batteries	Used batteries will be collected separately from domestic wastes. The used batteries and accumulators will be stored in the temporary storage area to be built according to the legislation. In accordance with Article 13 of the By-law on Control of Used Batteries and Accumulators entered into force through publication in the Official Gazette No. 25569, dated 08.31.2004 (Amended: O.G. no. 29214, dated 12.23.2014); - Used batteries will be collected separately from domestic wastes and delivered to companies which distribute and sell the battery products or to the collection points established by the municipalities. - Used accumulators will be kept in temporary storage area until they are delivered to companies which distribute and sell the products.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.5	Mitigation Measures	Prior to the start of the activities within the scope of the project, the vegetable soil on the areas determined within the boundaries of the EIA area will be removed by soil excavation and stored in the designated soil storage area. It has been seen during the geotechnical and mining drilling works that the vegetable cover has an average thickness of 0.10 m. The first year of land preparation works planned to last for 2 years will be allocated for the works of stripping the vegetable soil. In this context, first of all the vegetable soil will be stripped from the section of the DWS-I area, the plant area and mine waste disposal area to be used for the first year. The vegetable soil stripping process in other areas will be carried out simultaneously with production. In this context, while all of the 9.64 ha DWS-I area and 17.14 ha plant area are stripped, the maximum area of use for the mine waste disposal area and the mines for the 1st year are taken considering the maximum requirements. 12.45 ha of the Kestanelik Mine, 1.63 ha of the Karakovan mine and 13 ha of mine waste disposal area are planned to be used in the first year. Although the land preparation works will be conducted in a controlled manner, all calculations have been made according to the uncontrolled situation, taking into account the worst case scenario. The amount of vegetable soil to be stripped from the areas is 22.73 ton/hour and the works will be carried out for 350 days a year and 8 hours a day.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.50	Compliance and Mitigation Measures- Medical Waste	In accordance with Article 13 of the By-law on Control of Medical Wastes entered into force through publication in the Official Gazette No. 25883, dated 07.22.2005 (Amended: O.G. no. 28948, dated 03.21.2014); - Medical wastes will be collected separately by health personnel during their formation at the source and without being mixed with other wastes. Collecting equipment will be located at the point that the nearest point to the source of the waste and appropriate to the nature of the waste. Medical wastes will in no way be mixed with domestic wastes, packaging wastes and hazardous wastes. - In the collection of medical waste; red colored plastic bags that are resistant to tearing, perforation, explosion and transport, made of original medium density polyethylene raw material, impermeable, manufactured with double sutured base and without gusset, that have a double layer thickness of 100 microns and a lifting capacity of at least 10 kilograms, and the "International Biohazard" emblem and the indication of "CAUTION MEDICAL WASTE" that are large enough to be seen on both sides on them will be used. The bags will be filled in a ratio of maximum ¾, their mouths will be firmly tied and, where deemed necessary, each bag will be placed in another bag with the same characteristics to ensure absolute sealing. - The wastes with cutting and perforating properties are separated from other medical wastes and will be collected in the boxes or containers made of plastic resistant against perforation, tearing, fracture and explosion and that cannot be opened or mixed and having the "International Biohazard" emblem and the indication of "CAUTION! CUTTING AND PERFORATING MEDICAL WASTE" on them or in the boxes and containers made of laminated cardboards with the same characteristics. These collection containers will be filled in a ratio of maximum ¾, their mouths will be closed and they will be placed in red plastic bags.		Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 5.50	Compliance and Mitigation Measures- Medical Waste	According to Article 8 of the By-law on Control of Medical Wastes, - An unit waste management plan including separate collection, transportation and temporary storage of wastes and the precautions to be taken in the event of an accident will be prepared and implemented. - Separately collected medical and domestic wastes will be transported separately only with the vehicles allocated for this work. - The wastes will be stored in a temporary storage area constructed as leak-proof. - Special clothes will be provided to the personnel responsible for the management of medical wastes. - Information on the amount of medical waste generated will be recorded regularly and sent to the Governorate by the end of the year, and such information will be kept for a period of at least three years and will be kept open for review by the Ministry, if requested.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.54	Compliance- Noise	The limit values of noise occurred due to construction activities that should not be exceeded at the nearest receiving point are given in the By-law on Assessment and Management of Environmental Noise (BAMEN), Appendix-VII, Table 5: Activity type (construction, demolition and repair) Ldaytime (dBA) Building 70 Road 75 Other sources 70 According to the calculations, the limit values of noise occurred due to construction activities that should not be exceeded at the nearest receiving point are obtained (see Appendix-32).		Construction,						
MoEU	EIA	Page 5.54-5.55	Compliance- Noise	For the estimated noise levels that will occur in the mine sites, that are noise source during the operational phase of the project, and reach to the nearest accommodation units, the values given for "The areas where housing is dense among the areas where there are both commercial buildings and the uses sensitive to noise" situation in BAMEN, Appendix-VII Table-4 : Areas Ldaytime (dBA) Levening (dBA) Lnight (dBA) The areas where education, culture and health care, as well as summer and camping sites are intense among the uses sensitive to noise 60 55 50 The areas where housing is dense among the areas where there are both commercial buildings and the uses sensitive to noise 65 60 55 The areas where workplaces are dense among the areas where there are both commercial buildings and the uses sensitive to noise 68 63 58 For each facility within the Organized Industrial Zone or the Specialized Industrial Zone 70 65 60		Operation						
MoEU	EIA	Page 5.55	Compliance- Noise	According to the calculated results, the noise level to be generated at the sensitive receiving points in the operating period meets the limit values given for "The areas where housing is dense among the areas where there are both commercial buildings and the uses sensitive to noise" (see Appendix-32).		Operation						
MoEU	EIA	Page 5.55	Compliance- Vibrations	The calculations made were compared with the "Maximum Permissible Values of Soil Vibrations to be Generated Outside the Nearest Extremely Sensitive Area of Use by the Vibrations to be Occurred Due to Blasting in Mine and Quarries and Similar Areas" in the By-law on Assessment and Management of Environmental Noise: Vibration Frequency (Hz) Maximum Permissible Vibration Rate (Peak Value-mm/s) 1 5 4-10 19 30-100 50		Construction, Operation						
MoEU	EIA	Page 5.57	Compliance- Blasting Activities	The "Maximum Permissible Values of Soil Vibrations to be Generated Outside the Nearest Extremely Sensitive Area of Use by the Vibrations to be Occurred Due to Blasting in Mine and Quarries and Similar Areas" in the By-law on Assessment and Management of Environmental Noise is 50 mm/s. This value is reached at 35 m and the vibration values decrease logarithmically at the further distances. The evaluation corresponds to a safe distance of 146 m when the maximum permissible vibration velocity is 5 mm/s. There are no accommodation units or buildings within these distances. Likewise, the distance of the settlement closest to the EIA border is 630 m. The quantities of the explosives to be used for this reason are safe numbers.		Construction, Operation						
MoEU	EIA	Page 5.57	HSE- Blasting Activities	Blasting activities will only take place between 08:00 and 18:00 hours. Blasting will not be done outside of daylight hours and on holidays. Blasting will only be carried out by experts (persons qualified for firing) and the site supervisor will not initiate detonation unless he is sure that the area has been completely emptied. The date and time of the blasting will be notified in advance to the relevant gendarmerie station and blasting will be carried out in the presence of the gendarmerie, and at the same time the announcement will be made in the project area.		Construction, Operation						
MoEU	EIA	Page 5.58	Settlements Commitment- Blasting	The impact distance for detonations to be made using explosives up to 152 kg per hole was found to be 1,817.7 m. In this case, the nearest settlements to the mine areas will not be adversely affected by the vibration amplitude which will arise due to blasting.		Construction, Operation						
MoEU	EIA	Page 5.59	Mitigation Measures- Fly Rock	The following issues will be applied for the control of fly rock: • Balanced homogeneous distribution of explosive materials in rock using holes with appropriate diameter and size, • Appropriate charging by calculating the appropriate hole geometry, • Leaving stemming length with a size equal to at least the hole-face (charge) distance and stemming of the mouth using a suitable material, • Implementation of the delayed firing method.		Construction, Operation						
MoEU	EIA	Page 5.60-5.61	Mine Waste and Cover Management Planning	The quantities of mine waste and cover to be used for closure and rehabilitation will be determined according to the final closing plan to be established as a result of the monitoring and studies performed during the operating period of the open pit. It will be preferred to have simultaneous rehabilitation of the mine waste disposal area with the operation.		Operation, Decomissioning						
MoEU	EIA	Page 5.64-5.65	Compliance- Extraction	In the short-term extractability tests, "Quality Values According to the Classes of Continental Water Resources" in the By-law on Water Pollution Control, Table-1 were used in the classification of the elements. The metal leaching results expected to occur from the units were evaluated separately as mine waste disposal area, temporary ore stockpile area and DWS areas. However, for dry waste, the ABA and eluate test were repeated and the chemical processes to be realized in the plant were also represented. Detailed information on dry waste characterization is detailed under section "5.3 Wastes (Land preparation, construction, operation and post-operation waste types, quantities, disposal)". In addition, short-term extractability analysis results and element release rates evaluated by trace element analysis results of these results are given in Appendix-33.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.72	Low Risk Water Management- Open Pit Operation	It has been determined that a low risk water management will be developed according to the data obtained from the site (such as solid, water and hydraulic characterization, static and kinetic tests) and model results. The results of the model will be continually updated during the operating period with detail studies related to the extent to which the data project the site environment and will be able to provide prediction. The design will be strengthened by providing updated data on the separation and long-term storage design of the mine wastes extracted from excavation areas during the operation period.		Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 5.72-5.73	Combined Water Managment Plan	A detailed Combined Water Management Plan will be developed to provide detailed analysis of the amount of water to be used within the scope of the project, process water inputs and outputs, interception channel management and lake formation after closure of the mines. An operational design that will limit the long-term effects and ensure understanding and management of water-rock interaction reactions on site (by identifying typical intersection points defining the reactions that can determine balance, mixture and trend) will be configured. Monitoring studies will enable identification of short- and long-term water-rock relationships, understanding natural balances and taking measures to ensure compliance of the water quality with environmental conditions.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.73	Rehabilitation and Mitigation Measures	When the open-pit mine production activity is completed, the rehabilitation of the mine slopes will be started and the parts of the mine walls above the lake level will be planted by laying soil on top of them to the extent permitted by the topography slopes. Priority will be given to the formation of the cover layer and rehabilitation on the mine walls where QMsch S and QFP S zone rocks are exposed. Soil loss and erosion effects will be prevented by observing the mine slopes. Within the scope of the rehabilitation procedures, in the parts of the Kestanelik, Karakovan I and SBX mine walls where QMsch S and QFP S zone rocks (Sulfite-containing Zone) are exposed, if necessary, mine waste and / or limestone with high-buffering capacity will be laid on these areas to cover the exposed sulfite-containing zones. Thus, the crushed mine waste and / or limestone will be covered with a fine-grained cover layer to minimize water contact. Regular monitoring works will be carried out to establish a water quality database after the operation period and the closure period of the open pits. Regular monitoring of groundwater quality will be provided through the observation wells located downstream of the open pit, including the operating period and the post-operating period. The monitoring program is presented in Section 7		Operation, Decomissioning						
MoEU	EIA	Page 5.73	Mitigation Measures- Filling Excavation Areas	Filling of the excavation areas in the presence and absence of pyritic material with reduced size is a situation that can directly affect the new water quality conditions in the mine waste storage area and excavation lake. With the help of the data obtained from the studies in the entire system operating period predicted due to geochemical characterization, the different scenarios and the effects that may be created will be reviewed, updated and the necessary measures will be taken to protect the environmental conditions.		Operation, Decomissioning						
MoEU	EIA	Page 5.74	Mitigation Measures- Ground Preparation	The ground will be leveled in order to ensure proper drainage conditions following the stripping of 10 cm thick vegetative soil within the scope of land preparation works in the mine waste disposal area. The leveled ground, bottom drainage system will ensure that leachate which can pass through the pile during operation, will be collected in the settling basin located downstream by removing the possibility of lake formation with an average of 3 degrees. Storage in the mine waste storage area will be started after the drainage system is established.		Construction						
MoEU	EIA	Page 5.74	Mitigation Measures- Storage	Storage designs will be constantly updated by considering the possibility of variation of the representatively accelerated conditions such as grinding, temperature, high water and gas activity in the laboratory conditions depending on many physical, chemical and biological activity such as mineral content, size distribution differences, temperature, water composition, biological activity in area, climate and operation processes and validity of material representation, and with the help of distinguishing the units according to their mineral contents and reactivities in current situation in the operation period within the mine waste management, the		Operation						
MoEU	EIA	Page 5.75	Mitigation Measures- Storage	It will be ensured that surface and underground waters in the downstream will be monitored regularly to protect the leachate quality during the stacking of mine waste in the storage area and the physical parameters such as pH, EC (electrical conductivity) and temperature of leachates that may occur in the storage area will be monitored monthly. Within the scope of the monthly monitoring, suspended solids, total dissolved solids and metals, semimetals and anions will be analyzed periodically. For the collection of leachate, a settling basin with leak-proof based geomembrane will be installed downstream of the mine waste disposal area. Monitoring activities to be carried out in the Lapseki project are detailed in the ARD Monitoring section. The mine waste will be discharged into the mine waste disposal area by means of truck and rocks with high ARD/ML potential will definitely not be placed on the bottom of the mine waste disposal area and its slopes open to the atmosphere. The natural slopes that will occur in the mine waste disposal area are around 30 degrees. The waters to be collected in the leak-proof settling basin shall be adjusted to the pH range (about 6-9) which ensures the desired equilibrium conditions by mixing them with limestone / lime, if necessary, during the operation. If pH is greater than 7, acidic chemicals such as Fe3Cl will be added and if pH is less than 7, water will be basicified with lime and NaOH addition. Mine waste disposal area design will be reviewed and updated in such a way that the basin water quality will meet the discharge or using criteria with minimum intervention.		Operation						
MoEU	EIA	Page 5.75	Compliance- Discharge	If the site minerals cannot satisfy the equilibrium conditions, precipitation of metal oxide-hydroxide and sulfate-containing minerals, adsorption of some metals to the surface formed during precipitation will be ensured by neutralization with limestone and the quality of the leachate will be kept under the By-law on Water Pollution Control discharge standards (Table 7.1).		Operation						
MoEU	EIA	Page 5.75	Dry Waste Storage Area Water Management	If manganese removal is required, it is planned to use permanganate, ozone and lime. If aluminum removal is required, use of aluminum sulfate - alum is planned. Waters to be collected in a leak-proof based settling basin will be used as process water in case of water deficit, if necessary, and it will be used for watering to provide dust suppression in open pit or will be discharged after meeting the discharge standards of the By-law on Water Pollution Control, Table 7.1. Sediments that accumulate in the basin will be collected with certain periods and will be transported to the DWS areas for disposal after the analyzes are made. As a result of the analysis, the wastes that are not suitable to be stored in DWS areas will be sent to licensed disposal facilities.		Operation						
MoEU	EIA	Page 5.75	Dry Waste Storage Area Water Management	The surface runoff to the mine waste storage area will be prevented with the help of the interception channels to be constructed around the mine waste area. The rainwater that comes into contact with the mine waste storage area and flows through it will be directed to the leachate settling basins by means of the drainage channels.		Operation						
MoEU	EIA	Page 5.75	Dry Waste Storage Area Water Management	At the end of the monitoring to be performed during the operation period, the amount of lime to be added according to the acid rock drainage mass balance table in order to improve the buffering capacity of the encapsulation process in the mine waste disposal area and to improve the quality of the leachate, if necessary, will be between approximately 5 kg CaCO3/ton and 15 kg CaCO3/ton. The limestone levels between the sulfur-containing layers will provide neutralization of the acid which can be produced from these rocks, and ensure that the leachate will stay in neutral pH balance. During operation and closing activities of the project, the oxidized mine waste will be used to cover sulfur-containing zones on open pit surfaces and mine waste with high buffering capacity will be used to cover the slope surfaces.		Operation, Decomissioning						
MoEU	EIA	Page 5.76	Dry Waste Storage Area Water Management	If necessary, limestone, which will be added to the settling basins and sulfur-containing layers, will be supplied from limestone areas around Çanakkale province of Biga peninsula.		Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 5.76	Mitigation Measures- Mine Waste Management Plan	<p>The mine waste management plan will be a plan that specifies the details such as interception channels design in the mine waste storage area, the way of storage of ARD/ML rocks, angles, slopes of the steps to be created and the height of the material. The casing management plan to be prepared will be constantly updated as a result of the monitoring activities to be performed during the operation period and will be used for the final closing plan.</p> <p>During the production phase to be carried out, the oxidation class, the quantity of the material to be excavated during that year and the parts, where the material will be stored, will be examined again and the mine waste management plan will be updated every year. In addition, the drawings showing the quantity and oxidation class of the material to be placed in each section will be prepared and recorded.</p> <p>To prevent erosion and soil erosion in drainage areas, drainage channels will be constructed and slopes will be controlled. The top surfaces and steps of the mine waste stack formed in the disposal area will be arranged so that there will be no slipping or settlement.</p>		Operation, Decomissioning						
MoEU	EIA	Page 5.76	Mitigation Measures- Eroision	Slope stability will be continuously monitored during the operation period. Continuous measurements will be made within the framework of the mine waste management plan. Within the scope of the rehabilitation activities to be carried out simultaneously with the operation, since the slopes of the mine waste area will be gradually improved, 0.3 m of clay and 0.25 m of vegetative soil will be laid on the surface of the mine waste areas and erosion resulting from rain water and wind will be prevented by planting the appropriate plants in the area.		Operation						
MoEU	EIA	Page 5.76	Mitigation Measures and Compliance- Stormwater	Since there is a possibility of having rain water and the soil and rock fragments brought by rain water to the interception channels, these channels will be cleaned in certain periods. A clean water collection basin will be constructed at the end of the interception channels. Sediments that accumulate in the clean water collection basin will be collected in certain periods and sent to DWS areas for disposal of them. The water in the clean water collection basin will be used for process water or dust suppression. If the amount of water that accumulates in the clean water collection basin is more than the requirement, then it will be discharged into the nearest receiving environment after meeting the discharge standards of the By-law on Water Pollution Control, Table 7.1.		Operation						
MoEU	EIA	Page 5.76	Mitigation Measures- Eroision	Measures such as using rip-rap will be taken in the places with high slope to prevent erosion, sediment transport in the interception channels around the mine waste disposal area and to balance the flow rate and the stability of the outlet structures of these channels will be provided. If necessary, sediment retaining additional structures will be installed at the exit points.		Operation						
MoEU	EIA	Page 5.76	Runoff Management Measures	In order to establish the final closing plan, ABA and Short Term Extractability Analysis will be carried out by taking samples from the mine waste disposal area and DWS areas throughout the operation period. As a result of the analyzes, kinetic tests will be performed, if necessary, and a database for ARD/ML will be established.		Operation, Decomissioning						
MoEU	EIA	Page 5.77	Mitigation Measures- Closure	In addition to the parts mentioned above within the scope of the potential impacts and the measures that have to be taken during the closure period, surface runoff management, management of reactive barrier until water collection basin and settling basin, water quality management in discharge standards, closure cover and improvement works to reduce the infiltration that may occur in mine waste will be performed in order to provide flow-controlled water management by establishing structures such as interception and drainage channels. The main objective of the works to be carried out is to minimize the impacts of the ARD/ML and to implement the determined program of measures to limit the impacts on the water quality downstream of the project area. The designs, which are constantly updated with the additional works done on site during the operation period, will enable configuration of the rehabilitation plan according to site by means of the barriers limiting the formation of ARD physically, chemically and biologically.		Operation, Decomissioning						
MoEU	EIA	Page 5.77	Mitigation Measures- Surface Runoff	Transportation of suspended solids to Kovanlık and Kestanelik Creeks will be prevented by controlling the surface runoff and leachate within the scope of the reactive barrier management up to the water collection basin and settling basin and water quality management in discharge standards. In addition, it will be ensured that discharges from the settling basin will be in accordance with the By-law on Water Pollution Control, Table 7.1. Monitoring works will be carried out including the operating period and the post-operation period in order to monitor the water quality and to examine the ARD/ML formation characteristics of the mine waste. In order to monitor groundwater quality, the observation wells downstream of the mine waste disposal area will be monitored regularly during the operation period and after operation. Monitoring of the quality of the waters to be transferred from the drains to the settling basins in the mine waste disposal area will be performed during operation. Leachate from mine waste will be directed to the leak-proof based settling basins by means of drains and controlled. The sedimentation pools will be monitored at certain periods to check the amount of ARD that can occur in the transported contaminated water that is present in the leachate.		Operation, Decomissioning						
MoEU	EIA	Page 5.77	Mine Waste Storage Management Plan	Continuation of the ABA analyzes in the contents required according to the analysis and test program required for mine waste storage is necessary for ARD management in the mine waste disposal area. In addition, kinetic analyzes will be carried out for 40 weeks in the selected samples of the mine waste types, if deemed necessary. In addition, if different geochemical properties or different lithological units are observed during production in the operation period, the mine waste management and closure plans will be updated continuously according to them. In order to determine the optimum conditions in terms of operation and closure, it is aimed to achieve the optimum mine waste composition in the mine waste disposal area by carrying out mine waste management planning as part of operation planning.		Operation, Decomissioning						
MoEU	EIA	Page 5.78	Mitigation Measures- Ore Temporary Storage Area	Ore content will be regularly checked during the operating period and if it contains sulfur containing minerals, the precautions to prevent the formation of ARD due to waiting will be taken.		Operation						
MoEU	EIA	Page 5.78	Compliance- Health Protection Strip Distance	A 10 m health protection strip is proposed by the Ministry of Health within the EIA area in relation to the project (See Appendix-7) . However, if necessary, the plant area may be determined by the investigation boards specified in the provisions of the "Regulation on Business and Operation Licenses" for the health protection strip.		Constrution, Operation						
MoEU	EIA	Page 5.78	Mitigation Measures- Dust and Noise	It will be ensured that the vehicles to be used in the project area will comply with the determined speed limits. Noise and dust emissions to be caused by vehicle traffic will be kept at a minimum level and gas emissions from vehicles will be minimized by performing continuous maintenances. The site will be constantly moistened to prevent dust. Security measures will be taken to prevent unauthorized access to the project area and the project area will be surrounded with fence. Fire fighting equipment in an adequate and appropriate number will be kept in the project area for the possibility of fire.		Constrution, Operation						
MoEU	EIA	Page 5.79	Mitigation Measures- Rehabilitation works	In these areas where the production activities are completed, the heights of the open pit slopes will be decreased to a maximum of 35º and rehabilitation will be started with appropriate planting works.		Operation, Decomissioning						
MoEU	EIA	Page 5.79	Mitigation Measures- Rehabilitation works	<p>in the parts of open pit walls in the Kestanelik mine that are above the lake level, i.e., at elevations above 170 m, the stability will be obtained by reducing the slopes to the extent permitted by the topography slopes, vegetable soil will be laid and the necessary planting works will be carried out.</p> <p>Within the scope of the rehabilitation procedures, in the parts of the Kestanelik, Karakovan I and SBX mine walls where QMsch S and QFP S zone rocks (Sulfite-containing Zone) are exposed, if necessary, mine waste and / or limestone with high-buffering capacity will be laid on these areas to cover the exposed sulfite-containing zones. Thus, the crushed mine waste and / or limestone will be covered with a fine-grained cover layer to minimize the contact with water. In the regions where the production is completed, the slope reducing process will be done to increase the stability and the planting works will be carried out after the necessary vegetable soil laying process. With the monitoring activities mentioned in Section 7, a water quality database will be established during the operating period. The groundwater quality will be monitored regularly through the observation wells located downstream of the open pit in the operating period including the post-operating period.</p>		Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 5.8	Compliance-Dust	As a result of the calculations, dust emission that will occur in case of uncontrolled operation during land preparation and mining activities remains above the limit value of 1.0 kg/hour specified in the "Industrial Air Pollution Control Regulation" entered into force through publication in the Official Gazette No. 27277, dated 07.03.2009 (amended; Official Gazette No. 29211 dated 12.20.2014).		Construction, Operation						
MoEU	EIA	Page 5.83	Mitigation Measures- Rehabilitation works in the DWS Area	The first work that will start with the completion of the storage is the leveling of the area. Since the DWS-I area will form a base for the mine waste to be stored on it, this area will be filled with a slope suitable for the flow. The slopes to be formed during leveling will have the purpose of transporting water to the bottom drainage system of the mine waste disposal area. Upon completion of the leveling process, compacted clay in 2 layers and with a thickness of 50 cm will be laid on the area. To strengthen the impermeability of the clay unit, a geomembrane will be laid on it. The drainage layer having a minimum thickness of 50 cm and a permeability of $K \geq 1.0 \times 10^{-4}$ m/s will be established on the impermeability system. While this system prevents water entry into the DWS area, it will provide collection of the water infiltrated through mine waste and transferring it to the settling basin. In the DWS-II area, these processes are leveling of the area and laying of impermeability layer (compacted clay in 2 layers and with a thickness of 50 cm). To strengthen the impermeability of the clay unit, a geomembrane will be laid on it. Then, the drainage layer at a thickness of minimum 50 cm and the top cover at a thickness of minimum 50 cm will be laid. After planting of the top cover soil in conformity with the environment, the rehabilitation works will be completed.		Operation, Decomissioning						
MoEU	EIA	Page 5.83	Mitigation Measures- Rehabilitation of the Mine Waste Area	The encapsulation during storage in the mine waste disposal area will be performed for the rocks having acid forming potential with neutralizing rocks having high buffering capacity and the blending rates will be determined in the mine waste management plan during the operating period. The mine waste management plan prepared is based on 3D geological model and annual productions. The mine waste management plan to be prepared during the operating period will be continuously updated on the basis of daily productions. Encapsulation operations will be carried out by transportation of the mine waste from open pits to the mine waste disposal area by trucks and placement of mine waste in the form of compacted layers. It is based on the principle of isolation (encapsulation) of acid forming mine waste laid in layers of 1 m with the non-acid forming mine waste having a buffering capacity in a thickness of minimum 5 m. The required leveling process is performed on this formed pile to obtain suitable drainage conditions for surface runoff. The mine waste pile will be covered so as to minimize infiltration trough the pile and rehabilitation of the cover 1 (0.3 m clay and 0.25 m vegetable soil) will be ensured.		Operation, Decomissioning						
MoEU	EIA	Page 5.84	Mitigation Measures- Rehabilitation of the Mine Waste Area	Within the scope of the rehabilitation to be performed simultaneously with the production, the surface cover which is known as "store-and-leave" will be planted after laying. The store-and-leave cover system keeps water in rainy seasons and provides evaporation or transpiration during periods of no precipitation. Rehabilitation of the mine waste reaching the final level in the disposal area will be started simultaneously with the production. The cover layer to be used will be leveled to prevent lake formation on mine waste and slopes will be appropriate for the drainage system. Although the base of the mine waste disposal area is leveled, the slopes are appropriate, and the bottom drainage systems are built, the amount of sediments and pollutants that can be carried to the groundwater will be minimized by minimizing the amount of leachate. The planting works will be carried out simultaneously with laying of vegetable soil after laying the closing cover. It is planned to use clay with a thickness of 0.3 m as the material selected for the closing cover to be used for high infiltration conditions as detailed closing plan of the most efficient closing cover design to minimize water infiltration and air entrainment into the pile of the stored material. The closing step parameters (slope angles and heights) of the mine waste disposal area, within the scope of the long term environmental safety due to the mine waste management plan to be updated during the operation period, the storage of the mine waste piles and the arrangement of the steps will be finalized before the closure plan so as not to observe any other undesirable deformations.		Operation, Decomissioning						
MoEU	EIA	Page 5.84	Mitigation Measures and Permitting- Rehabilitation of the Mine Waste Area	In the mine waste disposal area, the vegetable soil to be used within the scope of the rehabilitation works to be carried out simultaneously with the production will be supplied from the vegetative soil layer which is scraped from the area as far as possible. If not provided, necessary permits will be obtained and fertile soil in sufficient quality for planting will be purchased.		Operation, Decomissioning						
MoEU	EIA	Page 5.9	Compliance-Dust	PM10 and settled dust concentrations in the accommodation units nearest to the activity area are given in Table5 8. As a result of the calculations, dust concentrations that may occur in the course of the project activities were found to be below the short and long term ambient air quality standards, the limit values of the Industrial Air Pollution Control Regulation. The necessary measures will be taken within the framework of the Industrial Air Pollution Control Regulation and the Air Quality Assessment and Management Regulation for the dust emissions to be generated within the scope of the activity, the provisions of the said regulations will be complied and the limit values stated in the regulation will not be exceeded.		Construction, Operation, Decomissioning						
MoEU	EIA	Page. 5.24	Sources of Wastewater	Within the scope of Lapseki Project, liquid wastes to be generated are; - Domestic wastewater originating from personnel, - Rainwater that will come from the bottom and surface of the mine waste disposal area and DWS areas.		Construction, Operation						
MoEU	EIA	Page 5.86	Mine Closure Commitments	The prefabricated structures to be installed within the scope of the project will be removed from the site after the completion of the operation activities. Infrastructures such as power lines and roads will not be removed from the site, if deemed necessary, and they will be allocated for use by nearby villages.		Operation, Decomissioning						
MoEU	EIA	Page 5.86	Mitigation Measures- Erosion	During the rehabilitation works, and grading and planting works will be carried out for erosion control and prevention of landslides. In order to facilitate plant growth, the vegetable soil which will be enriched with elements such as nitrogen, phosphorus and organic matters will be spread to the area where the rehabilitation work is done. This will shorten the development of the plant cover. Planting and / or afforestation works shall be carried out on the fertilized area taking into account the characteristics of the soil and the climate characteristics of the region. Thus, the region will be improved visually and erosion due to any precipitation or mining activities will be prevented.		Operation, Decomissioning						
MoEU	EIA	Page 5.89	Mitigation Measures- Flood Risk	<ul style="list-style-type: none">• During the opening of the Kestanelik mine, the bed of the Kestanelik Creek in the Mine area will be surrounded by bypass in order to avoid the possible impacts that may occur in the Kestanelik Creek.• In order to protect the project area from flood risks, interception channels, water collection basin and settling basins will be established according to the 1-hour floods of 500 years.• Water to be collected in the mine waste area as a result of precipitations will be transferred to the settling basin located on the other side of the Kestanelik Creek by aqueduct or siphon so as not to affect Kestanelik Creek.• Within the scope of the project, flood basins have been designed downstream of settling basins considering 1-hour flood flow rates of 500 years. Totally 2 flood basins, including one in the mine waste and DWS-I area and one in the DWS-II area, will be constructed.		Pre-construction, Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 5.89	Mitigation Measures- Earthquake Risk	<ul style="list-style-type: none">• The OBE value indicating the earthquake accelerations with a 144-year return period has been used in the stability of the mine and mine waste areas where the wastes will be stored during the activity. In the stability of DWS areas, earthquake ground acceleration value MDE with 475 year return period has been used for post-operation period while OBE has been used for the operation period.• The explosive storage areas, where the explosive materials to be used during the production activities to be carried out in Mine are stored, are among the sensitive areas that must be protected during a possible earthquake. Construction will be carried out, including the plant area with the same sensitivity, considering the MCE value with 475 year return period that is defined as the most severe earthquake ground acceleration that can occur in the region.• The emergency action plan will be distributed to the project employees.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.89	Mitigation Measures- Fire Risk	<ul style="list-style-type: none">• During the works to be carried out on the project site, no waste and similar material will be burned in the area, mobile firefighting equipment will be kept in offices and administrative buildings, and trainings on forest fires will be given to the personnel.• Firefighting team will be established.• The trained personnel will intervene in the forest fires that may occur in the project site or around it and the nearest fire brigade will be informed.• The emergency action plan will be distributed to project employees.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.89-5.90	Mitigation Measures- Accident and Injury Risk	<ul style="list-style-type: none">• An infirmary will be established on the project site and a permanent health staff will be available.• First aid training will be provided to the project employees.• Employees will be required to comply with the Chemical Management Plan and the Emergency Action Plan.• OHS trainings will be given to all employees.• OHS reminder trainings will be held every 6 months.• Personal Protective Equipments suitable for the latest technology will be used.• Mine Search and Rescue Team and similar units will be established and OHS representatives and Mine Search and Rescue Team personnel will be present in each shift.• Job Security Analysis (JSA) will be done.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.90	Mitigation Measures- Excessive Noise Risk	<ul style="list-style-type: none">• Maintenance of the machinery and equipment to be used will be carried out regularly.• Continuous speed control will be done on site.• In order to be able to control the noise level, noise measurement will be performed in sensitive receiving environments.• If the equivalent noise level in the nearest accommodation unit cannot be achieved, the number of vehicles to be operated will be reduced.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.90	Mitigation Measures- Landslide Risk	<ul style="list-style-type: none">• Slope angles will be designed in a way to prevent landslides.• Chemical and physical stability will be provided within the scope of the project.• Necessary trainings will be given to the excavator operators.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.90	Mitigation Measures- Traffic Risk	<ul style="list-style-type: none">• The speed limit will be set in the project area and the vehicles will comply with the speed limit.• On-site roads will be wide enough for passing of the vehicles.• It will be ensure that on-site roads will be undamaged and safe.• Maintenance and repair of all vehicles will be regularly performed.• It will be ensured that the project employees will comply with the Emergency Action Plan.• The roads on site will continuously be kept moist especially during summer months and the risk of accidents due to excessive dust will be minimized.• Continuous leveling procedures will be carried out and maintenance will be provided for the roads on-site.• Necessary trainings will be given to the project staff.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.90-5.91	Mitigation Measures- Spillage of Chemicals Risk	<ul style="list-style-type: none">• Material Safety Data Sheet of each chemical to be used will be followed.• Personnel using chemical substances will be required to use personal protective equipment specified in the Material Safety Data Sheets.• All the chemicals to be used within scope of the project will be stored in fire-protected, dehumidified and well ventilated areas.• Chemicals will only be used by the authorized persons.• Eye wash, body wash showers and emergency response equipment will be available for chemical spillages and possibility of splashing of chemicals on people in the CIL unit and around it.• HCN gas detector will be installed on the tanks, especially on CIL # 1 tank, to which cyanide is initially given, at certain distances. The alarm level in the detectors will be set to 5 ppm. Also, each operator will go on top of the tanks with their own personal detector.• Concrete pool with a volume sufficient to cover the entire content of the tanks in case of an overflow will be built below the tanks.• The chemicals will be stored in safe sunless areas. In addition, hydrogen peroxide tubes will be kept ready for emergency in the areas where tanks are located.• Cyanide kit will be kept in the activity area.• In the case of possible chemical spills, the area will be surrounded with the necessary equipment and will be made safe.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.91	Mitigation Measures- Blasting Risk	<ul style="list-style-type: none">• Blasting activities will only take place between 08:00 and 18:00 hours. Blasting will not be done outside of daylight hours and on public holidays.• Vibration measurement will be done during each explosion.• It will be continuously checked within the environmental monitoring program whether there is any structural damage caused by blasting in the accommodation units within the project area.• An non-electric ignition system will be used to minimize the effect of airblast .• Blasting will only be carried out by experts (persons qualified for firing) and the site supervisor will not initiate detonation unless he is sure that the area has been completely emptied.• The date and time of the blasting will be notified in advance to the relevant gendarmerie station and blasting will be performed in the presence of the gendarmerie. It will also be announced in the project area.• During blasting operations, it is aimed to reduce the effect of airblast by applying delayed blasting with millisecond capsules.• During stemming, the type of the material and the length of stemming will be considered so that the environmental impacts such as fly rock will be minimized.• In order to prevent creation of risky and dangerous situations in terms of human and environment by the explosives and blasting activities, the provisions of the "By-law on Rules and Procedures for Production, Import, Transport, Storage, Sales, Use, Disposal, Inspection of Unmonopolized Explosives, Hunting Materials and Similar" entered into force through publication in the Official Gazette no. 19589, dated 09.29.1987 (Amended: O.G. no. 25641, dated 11.12.2004) will be followed.		Construction, Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 5.91	Mitigation Measures-Erosion Risk	<ul style="list-style-type: none">• Interception and drainage channels will be constructed for the control of the surface runoff and mulch application will be performed if deemed necessary.• Vegetable soil will be spread onto the areas to be rehabilitated after the end of the operation activities of the project and appropriate environment will be created for the rapid planting of these areas and thus measures will be taken for potential erosion.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.91	Permitting/ Compliance	In addition, in order to minimize all risks and hazards in worker safety issues, the Environmental Law No. 2872 and the Law on Occupational Health and Safety No. 6331 (Amended, dated 04.23.2015 and numbered 29335) and other related laws and regulations will be complied with.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 6.4	Stream Management	There are 3 creeks having seasonal flow around the mine waste area. These are Topyurt Creek, Boğaöldü Creek and Kestanelik Creek. Interception channels and bypass channels have been designed to ensure the continuity of the flow in the Topyurt and Boğaöldü Creeks. Also, aqueduct or siphon engineering structures have been designed to avoid any interference to the Kestanelik Creek passing near the mine waste area. The waters collected in the mine waste disposal area will be conveyed to the settling basins located on the other side of the Kestanelik Creek, by means of the engineering structure.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 6.4	Soil Storage Area	Contact of vegetable soil, which will be temporarily stored in the soil storage areas determined in the site, with oxygen will be provided.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 6.5	Mitigation Measures-Dust	Irrigation systems are being built in the waste storage areas. In the DWS areas, dry wastes passed through press filter contain 20% moisture and they are spread on the area and compacted in the maximum conditions, therefore dust emission can be easily controlled.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 7.1	Surface and Underground Water Monitoring Program	Sedimentation Ponds and Outlet Points; Contaminated material that will be collected in Landfill and SWS Areas will be collected in sedimentation ponds through drainage canals. Sampling will be performed at outlet points of the ponds. Analyses will be performed as per BWPC Table 7.1 in order to find out whether the water samples are in conformity with the discharge criteria.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 7.1-7.2	Surface and Underground Water Monitoring Program	Spring - Fountain Sampling Points; Monitoring activities have been in progress since 2009 on fountains, catchments and village storages that are located in and around the project area. The mentioned monitoring activities will also be continued in land preparation, construction, operation and post-operation periods of the project. Details about the monitoring parameters and periods are presented in Table 7 1.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 7.2	Surface and Underground Water Monitoring Program	Water Reservoirs; Fresh water to be collected by means of interception channels will be collected in water reservoirs. Sediment may be accumulated in interception channels and water reservoirs due to dusting in the vicinity during the activities to be carried out in scope of the project. Monitoring activities will be performed on water reservoirs so that the quality of sediment-laden water will be monitored.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 7.2	Surface and Underground Water Monitoring Program	Underground Water Sampling Points; In scope of monitoring activities, sampling will be continued on wells which have been subject to analysis since 2009. Additionally, newly drilled upstream-downstream wells of the landfill, upstream- downstream wells of the mine pit areas, upstream- downstream wells of the SWS II area and wells in the plant area will be included in the monitoring program.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 7.2	Surface and Underground Water Monitoring Program	Surface Water Sampling Points; Surface water points being analyzed since 2009 have not been included in the scope of monitoring; the monitoring activities will be continued on the same points.		Pre-construction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 7.2	Surface and Underground Water Monitoring Program	During the process of final closure, open casts will be compared to results of water quality estimation models in respect of water quality in open casts, leachate quality in landfills and SWS areas, underground water quality in the area where the project site is located, and water quality to be arranged in scope of the project. An assessment report containing an assessment of the current situation and efficiency of measures will be issued and submitted to the General Directorate of State Hydraulic Works for their opinion once in every 5 years and before the closure.		Decomissioning						
MoEU	EIA	Page 7.6	Wastewater Management Program	<p>Domestic waste water will be produced as a result of utilization of water for various purposes. Waste water to be produced will be collected at the domestic waste water treatment plant and then treated and utilized at the plant. Excessive water will be discharged into the nearest receiving body upon meeting the discharge standards indicated in BWPC Table 21.</p> <p>Contaminated water contacting the open cast surface will be removed from the pit area by means of a pump. Water accumulated in sedimentation ponds on the bottom of Karakovan pit will be channeled to the sedimentation pond in the landfill and from there to the plant. Water accumulated in the sedimentation pond on the bottom of Kestanelik pit will be channeled to the plant by means of a pump. In case of an increase in precipitation and a loss of balance in the water cycle, water will be collected from sedimentation ponds and discharged to the receiving body upon meeting the criteria required in BWPC Table 7.1.</p> <p>Waste removed from the pit area and dry waste removed from the plant may contact rainwater as they will be stored outdoors. Water leaking from such areas will be collected by means of drainage lines to be installed at the bottom and channeled to sedimentation ponds. Following the treatment process, treated water will be used at the plant. In case of an increase in precipitation and a loss of balance in the water cycle, water will be collected from sedimentation ponds and discharged to the receiving body upon meeting the criteria required in BWPC Table 7.1.</p>		Construction, Operation,						
MoEU	EIA	Page 7.6	Air Quality Monitoring Program	<p>PM10 and settled particulate matter measurements will be performed in the nearest receiving environments (Şahinli and Kocabaşlar villages) every month in order to find out whether the planned project has any impact on ambient air quality.</p> <p>In addition to the activities mentioned above, pH adustment will be performed to control HCN emissions which may occur in the tank leach field. HCN measurements will be performed via mobile devices within the plant area, primarily including the tank leach field, ponds and SWS areas and on 2 separate locations to be designated on the EIA border (in the direction of Şahinli and Kocabaşlar villages) of the project area.</p> <p>Air Sources Monitoring Program is presented in Table 7 2. Results of monitoring activities will be reported to the Ministry of Environment and Urban Planning, Republic of Turkey, and relevant bodies.</p>		Construction, Operation,						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 7.6-7.7	Noise and Vibration Monitoring Program	Noise measurements will be periodically performed every month in villages in order to identify the impact of construction and operation-related noise of the project on the nearest sensitive receiving environments. Results of noise measurements will be compared to boundary values of BAMEN; additional measures will be taken such as noise barriers in case boundary values are exceeded. Results of monitoring activities will be reported to the Ministry of Environment and Urban Planning, Republic of Turkey, and relevant bodies.		Construction, Operation						
MoEU	EIA	Page 7.9	Soil Quality Monitoring Program- Compliance	Soil quality monitoring activities involve analyses on whether the fertile soil stored in soil storage areas are stored under the conditions stipulated in the project and whether the rehabilitation activities carried out simultaneously with the operation are compliant with the environment. This program also involves monitoring activities carried out by Mitto to create a database in scope of the By-law dated 08.06.2010 and numbered 27605 (Amendment: 11.07.2013, 28704) on Control of Soil Pollution and Sites Contaminated by Point Sources, and monitoring of agricultural lands in the impact area.		Construction, Operation						
MoEU	EIA	Page 7.9	Soil Quality Compliance	Soil quality sampling has been performed to assess current soil quality of the project site, and laboratory analyses have been carried out by having regard to the parameters in scope of "Precious Metal Production" with code NACE 2441 and "Other Non-Ferrous Metal Ore Mining" with code NACE 729 in Table-2 listed in Appendix-2 of the By-law on Control of Soil Pollution and Sites Contaminated by Point Sources dated 08.06.2010 and numbered 27605 (Amended: dd. 11.07.2013		Construction, Operation, Decomissioning						
MoEU	EIA	Page 7.9	Soil Quality Compliance	Monitoring activities will be carried out visually and, where required, the heavy metal content and fertility analyses may also be performed on the samples to be collected from the soil. As the analyses will be procured before closure, practices such as soil refinement, improvements (fertilization, etc.) on the soil will be realized in scope of the By-law on Control of Soil Pollution and Sites Contaminated by Point Sources dated 08.06.2010 and numbered 27605 (Amended: dd. 11.07.2013 nr. 28704).		Construction, Operation						
MoEU	EIA	Page 7.9-7.10	Soil Quality Monitoring	AMD monitoring activity has been planned to cover the operation and post-operation periods. Results of monitoring activities to be carried out by TMAD Madencilik will be forwarded to the Provincial Directorate of Environment and Urban Planning, Ministry of Environment and Urban Planning in form of monitoring reports to be issued on semi-annual basis. Apart from inspection activities to be carried out by official bodies of the state, sampling and on-site measurements will be performed by the personnel of Batı TMAD Madencilik. Laboratory analyses will be performed at an internationally accredited laboratory. Monitoring activities will start from the construction period of the project and continue in the post-operation period of the mine. The kinetic test initiated in January 2015 at the field scale will be terminated when the operation period is initiated. Analysis procedures will be carried out and results of analyses will be compared to kinetic tests at laboratory scale when there is adequate leachate available in the content of 20 L HDPE containers for the 11 pcs of 200 L container into which waste will be placed.		Construction, Operation, Decomissioning						
MoEU	EIA	Page7.10	Soil Quality Monitoring	Measures have been designed to minimize potential AMD in scope the current report, and implementation of those measures will be continued during the service life. Surveys will be carried out to ascertain the most efficient and productive methods for AMD control throughout the operation period. It will be ensured that an AMD database is created for use in the closure phase of the mine on basis of the monitoring data obtained during the operation. Existing geochemical assessments will be updated by using geological modeling developed through drilling activities performed for purpose of developing reserves in scope of Lapseki Project. Additionally, acid production potentials of units excavated from the open cast will be checked through repeated geochemical analyses. Samples will be collected from waste and pit walls to identify characterization in scope of AMD database formation. ABA and short-term leach test on the collected samples will be provided. As a result of such static tests, monitoring of metal leach will be continued by carrying out kinetic analyses at laboratory scale on the samples with acid production potential for 40 weeks which will represent the long term during the course of operation. Amount of waste in the sulfide containing zone within the landfill and especially the amounts for the zone QMSch and the zone unit QFP S will be updated and such amounts will be used in the waste management plan and closure plans. Mass ratios of waste as well as on open cast surfaces will be continuously monitored and the AMD database created at the closure stage will be used.		Construction, Operation						
MoEU	EIA	Page 7.11	Flora Management	Accordingly, the endemic species Jasione idaea Stoj. is in VU (vulnerable) category as per the IUCN criteria. Measures to be taken for the mentioned species have been ascertained in 2 stages. During the first stage, seeds of the species will be collected and sent to the Research Center for Seed and Genetic Resources in Ankara. During the second stage, seeds of the species will remain within the soil during laying of topsoil, so the roots will sprout again and this will ensure restoration of the site into its original condition.		Construction, Decomissioning						
MoEU	EIA	Page 7.11	Socialeconomic Resources Management Program	The socio-economic resources monitoring program will enable monitoring of sources of employment, analysis of time-dependent benefits and monitoring of impacts which will result from closure of the mine.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 7.12	Civil Engineering Structures Monitoring Program	Stabilities and strengths of all structures will be monitored on the site during the operation period. Monitoring of physical and environmental conditions will be continued in the closure period. • During the monitoring activities to be arranged for dry waste storage area, open cast, soil storage and landfill, structural deteriorations such as subsidence/ settlement, annual expansion/ elevation ratios, types of rock (oxidized - sulfide containing) stored for the landfill and their locations, and dewatering and compaction ratios will be monitored. • Visual inspections will be performed on interception channels and outlets of drainage canals to detect any blockage, structural deteriorations, etc.. • Visual inspections will be performed on water collection and sedimentation ponds and measures will be taken against overflows; accumulated sediments will be collected and transferred to SWS Areas. Additionally, water quality will be monitored on sedimentation pools in which contaminated water is collected.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 7.12	Monitoring Program for Manufacturing-related Waste	The mineral processing plant will be monitored in frame of the following parameters under monitoring programs. • Amounts of waste to be transferred to SWS Areas will be kept under record on daily basis. • Cyanide measurements will be carried out on daily basis in the waste generated by INCO process and process water returned to the system. • Daily checks will be performed to detect any cracking, leakage, etc. in tanks. • Analyses will be performed for once during the operation period in accordance with the Appendix-2 Waste Acceptance Criteria of the By-law on the Landfill of Waste.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 7.14	Emergency Action Plan	In occurrence of an emergency situation, EAP will be implemented for Lapseki Project and the situation will be taken under control. The Emergency Action Plan covering all possible situations which may cause risks at the plant has been drawn up and is presented in Appendix-14. The Emergency Action Plan will be updated by the occupational health and safety specialist during the operation period of the project.		Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 7.15	Monitoring Compliance	Pursuant to the provision in Clause 4, Article 9 of the Communiqué on Certificates of Competency which came into effect upon being published on the Official Gazette dated 18.12.2209 no 27436, stating that: “With regard to projects awarded with a Positive EIA Certificate, the project owner shall be liable to assign any of the entities/ corporations authorized in scope of this Communiqué to visit the project site and perform on-site monitoring control until the commissioning stage of the investment in order to check whether the commitments specified have been fulfilled in the initial and construction periods of the investment. Such entity/corporation authorized by the project owner shall be liable to fill out the “Monitoring- Control Form for the Construction Period of the Investment Regarding Commitments Declared in the EIA Reports” in Appendix-4 of this Communiqué and to forward the form to the Ministry within twenty business days from the end of the periods of monitoring- control”, monitoring activities will be carried out by an entity to be authorized by TÛMAD Madencilik San. ve Tic. A.Ş. at the intervals designated by the Ministry of Environment and Urban Planning for the activities to be performed until the operation stage of Lapseki Gold-Silver Mine and Mineral Processing Plant Project.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 9.1	General Details	TÛMAD Madencilik Company is planning to produce gold and silver ore by using open cast mining method on the sites with operating licence numbers 58380 and 58467 in Şahinli and Kocabaşlar villages in Lapseki district of Çanakkale province. The produced ore will be subject to processing through vat leach process and dore metal containing gold and silver will be obtained as the final product.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 9.1	Licensing	The EIA Area is located within two licence areas pertaining to the operation owner. The area with the operating licence no 58380 granted by the General Directorate of Mining, Ministry of Energy and Natural Resources covers a 1.275,42 ha area on the plot no h17-b4. The area with the operating licence no 58467, on the other hand, is located on a 186,43 ha area on the sample plot. Of the EIA Area designated in scope of Lapseki Project, with a total size of 394,90 ha on which all the activities will be carried out, the 357,71 ha part remains within the EIA polygon no. 1, and the 37,19 ha part remains within the EIA polygon no. 2. The physically used area of the units will be 157,73 ha within the 394,90 ha EIA area designated.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 9.1	Land Use Compliance/Permitting	Prior to commencement to production activities, a Rehabilitation Project will be drawn up for forest lands and submitted to the District Directorate of Forestry, Balıkesir as per the Forest Law no 6831 and the Implementation Regulation on Article 16 of the Forest Law that came into effect upon being published on the Official Gazette dated 18.04.2014 no 28976 (Amended: dd. 19.04.2015, nr. 29331), and forest permit will be obtained from OGM (the General District Directorate of Forests). For agricultural land, the non-agricultural utilization permit has been obtained pursuant to the Law No. 5403 on “Soil Preservation and Land Utilization” (see Appendix-7).		Preconstruction						
MoEU	EIA	Page 9.1	Operation Licensing	Once the property ownership licences have been obtained, necessary applications will be filed to obtain the Business Launch and Operation License in line with the “Regulation on Business Launch and Operation Licenses” which came into effect upon being published on the Official Gazette dated 10.08.2005 and numbered 25902 (Amended: dd. 26.11.2014 nr. 29187).		Preconstruction						
MoEU	EIA	Page 9.2	General Details	Phases of the open pit mining operations planned under the project include: Land preparation, stripping and storage of the vegetative soil, blasting, loading-carrying and discharging. The ore will later be sent to the mineral processing plant for processing. The waste resulting from the mineral processing, passed through the INCO process, separated from its chemicals, with its metal content made stable, and filter-pressed, will be transferred so as to be stored in SWS areas that will be Class I Landfill Areas.		Construction, Operation						
MoEU	EIA	Page 9.3	Groundwater	For AMD control, efficient and productive activities that can provide environmental management stability for the long term will be performed by means of the most advanced scientific and technical methods during the operation period. It will be ensured that an AMD/ML management database is created for use in the closure phase of the mine on basis of the monitoring data obtained during the operation.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 9.3	Landfill Classification	When the test results are evaluated together, it is found that the waste does not produce acid and the Mo (molybdenum) element is conformity with the BLW “Class II Landfill” criteria. However, the SWS areas to be designed within the scope of the project will possess the features of “Class I Landfill” where measures are taken at the utmost level.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 9.3	Mineral Processing Plant Waste	Following exit from the Mineral Processing Plant, waste with 40% solid density will be subject to dewatering through waste thickener and filter pressing, and then be sent to SWS areas with 80% solid density.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 9.3-9.4	Solid Waste Storage	As the lithology of the base of SWS areas cannot naturally provide impermeability conditions, an artificial geological impermeability layer will be created by using clay and minerals in clay group. With convenient humidification and compaction conditions, 2 layers will be created in a total thickness of 0,5 m. The layer will have an impermeability of 1 x 10-9m/sec; reinforcement process will be performed with geomembrance. The geomembrane to be used on the base will have a thickness of 2 mm and a density of 941-965 kg/m3. Geotextile will be laid on the geomembrane material for purposes of protection; a drainage layer will be created with thickness of 0,5 m and a minimum permeability of K≥ 1 x10-4 m/sec to collect waste leakage. Water collected by drainage systems will be collected in the sedimentation ponds to be built outside the Waste Storage Area. The initial application of the impermeability system for SWS areas is the sub-drainage system to be created with a suitable base inclination for flow of water. Surface water and underground water flowing into the valley will be taken under protection against pollution by means of perforated pipe with a diameter of 300φ which will be placed into a trapezoid canal to be built on the bottom of the valley, and will be covered by aggregate filling (CaCO3 ≤ 20%). The outlet of this drainage system is connected to the sedimentation pond, and its primary purpose is to protect underground water. In impermeability applications for inclined lateral surfaces, geosynthetic clay with 1 x 10-9 m/sec impermeability will be used on geotextile for protection against ground impacts. To strengthen impermeability, highly porous geomembrane with high strength against slope will be preferred for lateral surfaces. Additionally, drainage ditches will be created in order to provide drainage on lateral surfaces. This system will		Construction, Operation, Decomissioning						
MoEU	EIA	Page 9.4	Water Management Plan	consist of interception channels and drainage channels. Interception channels will ensure protection and collection of rainwater in water collection ponds, while drainage channels will enable protection of underground water and collect the precipitation water falling on the units (contaminated water) in sedimentation ponds for use at the plant. 8 sedimentation ponds, 6 water collection ponds and 2 flood reservoirs will be built in scope of the project.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 9.4	Domestic Wastewater Compliance	Waste water to be produced by personnel during land preparation, construction and operation stages of the Project will be treated at the domestic waste water treatment plant to be built on the project site, and then returned to the process. In case of excess of water, the surplus water will be discharged to the nearest receiving body as per the discharge standards in BWPC Table 21.1 which came into effect upon being promulgated on the Official Gazette dated 31.12.2014 no 25687 (Amended: dd. 25.03.2012 no 28244).		Construction, Operation, Decomissioning						
MoEU	EIA	Page 9.4	Stormwater Management- Compliance	Waste removed from the pit area and dry waste removed from the plant may contact rainwater as they will be stored outdoors. Water leaking from such areas will be collected by means of drainage lines to be installed at the bottom and channeled to sedimentation ponds, and re-channeled to the system for use at the plant. In case of an increase in precipitation and imbalance in water cycle, the water to accumulate in the sedimentation ponds will be treated in conformity with the criteria in BWPC Table 7.1 and discharged to the receiving body in scope of the “Certificate of Environmental Permission for Waste Water Discharge” to be obtained as per the Regulation on Environmental Permissions and Licenses which came into effect upon being promulgated on the Official Gazette dated 10.09.2014 no 29115.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 9.4	Pond Sediments	Whereas, sediments accumulated on the bottom of the ponds, which will collect the water coming from drainage channels to be built in scope of the activity, will be collected in certain periods and analyzed, and their disposal will be ensured after they are transferred to the SWS area.		Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 9.5	Dust Management	In order to minimize dust emission, water will be sprayed by a sprinkler depending on season and evaporation rate, especially in dry seasons. Moreover, crushed ore will be stored in an indoor area in dome form for dust control. Mill sizing equipment in the mineral processing plants will be kept in an indoor area.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 9.5	Blasting	<p>Blasting processes to be performed during operation will be realized by non-electrical millisecond - delay blasting caps and the blasting will be under supervision by experts. Blasting activities will be performed only between the hours 08.00 - 18.00 and under the supervision of the gendarmerie. Blasting will not be performed out of day hours and during official holidays. For the blasting process, perforation will be carried out by means of boring machines with suitable distance between holes, suitable hole diameters and suitable hole sizes, depending on the blasting pattern. Tallow and ore loosened by blasting (high and low grade) will be excavated separately via an excavator; tallow will be loaded onto trucks via a loader and transferred to the landfill area, while ore will be transferred to the temporary ore storage area at the plant site for subsequent transfer to the plant.</p> <p>10 m grade heights are applied to ensure that ore and tallow are crushed in suitable sizes during blasting processes; final beveling heights may be up to 15 m.</p>		Construction, Operation						
MoEU	EIA	Page 9.5	Social Commitments	The employment opportunities created by the project are expected to reduce the unemployment rates in the region. Along with that, by employing local residents in the project it will be made sure that they receive job-specific training. Besides, special courses will be organized to raise the workers' awareness of mining, occupational health and safety, and environmental issues. Furthermore, it is obvious that the implementation of the project will bring along an increase in the number of high school and university graduates as observed in districts where mining activities were formerly performed.		Construction, Operation						
MoEU	EIA	Page 9.5	Social Commitments	Prefabricated structures to be built on the site in scope of the project will be disassembled and removed from the site upon completion of the operating activities. Infrastructure such as power lines and roads will not be removed from the site if deemed necessary; they will be made available for neighboring villages.		Construction, Operation						
MoEU	EIA	Page 9.5	Erosion Control	Grading and planting activities will be performed to control erosion and prevent landslide during rehabilitation works. Topsoil that will be enriched with elements such as nitrogen, phosphorus and organic substances will be laid on the rehabilitation area in order to facilitate plant growth.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 9.5	Environmental Monitoring Program	An environmental monitoring program will be carried out in scope of Lapseki Project in order to assess efficiency of practices that are approved in theory, inspect the compliance of the project in line with the Environmental Legislation, identify unforeseeable environmental impacts and take measures in a timely manner.		Construction, Operation, Decomissioning						
MoEU	EIA	Page 9.6	Permitting	Production will be initiated after obtaining Temporary Certificate of Activity under the project as per the Regulation on Environmental Permissions and Licenses which came into effect upon being promulgated on the Official Gazette dated 10.09.2014 no 29115; and an application will be filed for obtaining an Environmental Permission within 6 months at the latest. Provisions of the Legislation in Force will be followed under the Project.		Preconstruction, Construction, Operation						
MoEU	EIA	Page 9.6	Permitting	Provisions and principles of the Mining Law no 3213 (Amended: Law no 6592 adopted on 04.02.2015) and the relevant Regulation and the Occupational Health and Safety Law No 6331 (Amended: Law no 6645 adopted on 04.04.2015) will be followed in all stages of the project.		Preconstruction, Construction, Operation						
MoEU	EIA	Page 4.1	Land Use/ Quality	The EIA site, where the works are planned within scope of the project, has been determined in form of 2 polygons. 385,38 hectares of the EIA polygons are forest land, and 9,52 hectares are agricultural land. The agricultural land located inside the project site correspond to approximately 0,34% of the agricultural land across Çanakkale province. However, no agricultural activities are performed on these agricultural lands. According to the Land Size Map given in Annex-16, these agricultural lands are located on soils of class VII, which are characterized with limited agricultural capacity due to slope, erosion hazard, stoniness, salinity, or alkalinity.		Preconstruction, Construction						
MoEU	EIA	Page 4.6	Agricultural Land Mitigation Measures	All necessary measures will be taken to prevent any adverse impact on agricultural activities performed in the environs of the project site during mine operations and transportation of materials.		Preconstruction, Construction, Operation						
MoEU	EIA	Page 4.9	Current Forestry Compliance	<p>The opinion of Balikesir Regional Forest Directorate has been sought to identify the forest characteristic of the EIA site where the project activities will be performed. In response, an EIA Inspection & Survey Form has been prepared by Lapseki Sub-District Forest Directorate and enclosed to the Regional Forest Directorate's letter dated 24.02.2015 no. 328 (see Annex-7).</p> <p>According to the EIA Inspection & Survey Form enclosed hereto in Annex-7, the EIA site is located outside of forest land with fire history, rejuvenation or afforestation areas, or dam basins as per Article 18 of Forest Law no. 6831. Likewise, the EIA site is neither located within the borders of any protection forest, gene conservation forest, research forest allocated for scientific studies, research station, research project test fields, city forest, endemic or protected rare ecosystem areas, seed stand, national park, game wildlife, game breeding sites, tourism areas, special environmental protection areas, prohibited military zones, or protected areas.</p> <p>The EIA Inspection & Survey prepared by Lapseki Sub-District Forest Directorate for the EIA site where the activities are to be performed is enclosed hereto in Annex-7. According to said form, there is about 7.000 m3 of forest asset at the EIA site.</p>		Preconstruction, Construction, Operation						
MoEU	EIA	Page 4.14	Fire Sensitivity	According to the According to the EIA Inspection & Survey Form obtained from the Balikesir Regional Forest Directorate and enclosed hereto in Annex-7, the EIA site is not located on forest land with fire history as defined in Article 18 of Forest Law no. 6831. The EIA site where the activities are to be performed has first degree sensitivity in terms of forest fire.		Preconstruction, Construction, Operation						
MoEU	EIA	Page 4.14	Tree Clearing Compliance	According to data set forth in the Management Plan issued in 2008, the number of trees located inside the areas that will be used physically during the project is 7.317. Forest permits (drilling, roads) for about 66,7 ha of forest land have been obtained for the project's 7-year exploration period, while the clearing of approximately 3.208 trees has been carried out by the related Sub-District Directorate. After the EIA Positive decision is obtained, the remaining 4.109 trees covered by forest permit will be cut by the related Sub-District Directorate. Trees in a number 10 times higher than the number of trees to be cleared will be planted in areas deemed fit by the related Sub-District Directorate.		Preconstruction, Construction, Operation						
MoEU	EIA	Page 4.15	Topsoil Mitigation Measures	Topsoil stripping works will be commenced after all tree clearing works are performed by the Regional Forest Directorate. An average of 0,10 m thick topsoil will be stripped off from the areas defined within the EIA site through digging and temporarily stored at designated soil storage areas for use in rehabilitation works that will follow. Topsoil stripping will be carried out simultaneous to production activities. The topsoil that will be temporarily stored at the storage area will be stored in a manner that will ensure its contact with oxygen and prevent any loss of fertility. All measures will be taken to prevent any contamination of the stored topsoil with pollutants or foreign matters, and weed growth on soil piles will be prevented. The top of the stored topsoil will be greened to maintain its biologic characteristic and prevent convection by erosion.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 4.15	Forest Fire Prevention Measures	During the works to be carried out on the project site, no waste and similar material will be burned in the area, mobile firefighting equipment will be kept in offices and administrative buildings, and trainings on forest fires will be given to the personnel. The trained personnel will intervene in the forest fires that may occur in the project site or around it and the nearest fire brigade will be informed.		Preconstruction, Construction, Operation						
MoEU	EIA	Page 4.16	Cultural and Natural Properties Compliance	There are no cultural or natural properties at the EIA site where the project activities are to be performed. However, if a cultural or natural property is discovered during works to be performed within scope of activities, the works shall be suspended immediately and the nearest museum directorate or local authority shall be notified within 3 days at the latest as per Article 4 of Law no. 2863 on the Conservation of Cultural and Natural Property.		Preconstruction, Construction, Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 4.17	Tree Clearing Remediation	During the project's 10-year operating period, rehabilitation works will be performed simultaneous to production activities in areas where the activities are completed. Trees in a number 10 times higher than the number of trees to be cleared will be planted in areas deemed fit by the related Sub-District Directorate. Besides, the company has already planted about 5.000 tree saplings at diverse locations across Turkey.		Decomissioning						
MoEU	EIA	Page 4.17	Tree Clearing Remediation	The land, which will be destroyed by works to be performed at the mine pit and the natural balance of which will be disturbed in consequence, cannot be expected to return to its original shape despite the various recreation and re-cultivation methods that will be applied post operation. Therefore, the rehabilitation works to be performed will rather aim at rehabilitating disturbed land to a shape that comes closest to its original shape and is in harmony with its environs in every aspect. The rehabilitation works to be performed under the Lapseki Project will be based on the principle of complete removal or at least minimization of all environmental risks and all elements that might jeopardize human health.		Decomissioning						
MoEU	EIA	Page 4.17	Topsoil and Erosion Mitigation Measures	Topsoil that will be enriched with elements such as nitrogen, phosphorus and organic substances will be laid on the rehabilitation area to facilitate plant growth. This will shorten the development of the plant cover. Planting and / or afforestation works shall be carried out on the fertilized area considering the characteristics of the soil and the climate characteristics of the region. Thus, the region will be improved visually and erosion due to any precipitation or mining activities will be prevented.		Decomissioning						
MoEU	EIA	Page 4.17	Rehabilitation Project	A Rehabilitation Project containing a gradual closing plan, which set outs the rehabilitation and re-cultivation works to be performed in line with the targeted final shape of the area after closure of the license area in line with afforestation and silvicultural techniques to restore the forest ecosystem in dumping and storage areas during the time from the start to expiry of the forest permit, is enclosed hereto in Annex-17.		Decomissioning						
MoEU	EIA	Page 4.17-4.18	Stability Mitigation Measures	The cone ends of slopes that will be formed for the purpose of stepped production will be rounded and laid to the bottom part of the slopes. Thereby, the topographic slope will be smoothened. Thereupon, the tallows collected from the work area during production and stored at the tallow dumping site will be laid on top of these steps, in a way that large parts come to the bottom and smaller parts come to the top, so as to create a drainage system for the land. The purpose here is to restore the stability of the topography disturbed during production and rehabilitate it to its former shape as close as possible.		Decomissioning						
MoEU	EIA	Page 4.18	Access/Egress Mitigation Measures	Before activities are commenced, the borders of the project site will be encircled with cage-type wire fence, which will be upheld also during the permit process and rehabilitation monitoring process.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 4.18	Road Pollution Prevention Measures	The roads to be built within scope of mining activities will be constructed using excavators in a manner that will prevent any soil slipping down the slopes. In addition, maintenance and repair works will be performed on the forest roads that will be used.		Preconstruction, Construction, Operation						
MoEU	EIA	Page 4.18	Forest Fire Mitigation Measures	In case of forest fire, the nearest security and fire departments will be notified and the emergency control team will take measures to ensure environmental safety. The firefighting teams will immediately respond to fire. A sufficient number of firefighting equipment will be kept available at all times against the possibility of fire outbreak. If the cause of fire is electrical, then the sources of flammable materials near the fire will be isolated immediately.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 4.18	Forest Pollution Prevention Measures	The working areas will be irrigated during construction and operation phase using a sprinkler. Every unit that is a source of dust in the operation area and at facilities to be installed will be installed as closed system. In addition, waste oils and other parts of construction machinery that will be used during construction will not be poured out into forest areas.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 4.18	Agricultural Land Permitting	For agricultural land in question, the non-agricultural utilization permit has been obtained pursuant to the Law No. 5403 on "Soil Preservation and Land Utilization".		Preconstruction, Construction						
MoEU	EIA	Page 4.18	Endemic Species Preservation Measures	The seeds of Jasione idaea Stoj., which is an endemic species classified as VU (vulnerable) according to IUCN criteria, will be collected during the land preparation, construction and operating phases of project activities, and sent to the Seed and Gene Sources Research Center. Topsoil will be laid back after the operating phase is completed and the species in question will be replanted in the region. Along with other species, Jasione idaea Stoj. will be given a chance to re-germinate through proper storage and subsequent laying of topsoil by adequate methods in the restoration process of the area.		Preconstruction, Decomissioning						
MoEU	EIA	Page 4.23	Soil Quality Monitoring	Soil quality monitoring activities involve analyses on whether the fertile soil stored in soil storage areas are stored under the conditions stipulated in the project and whether the rehabilitation activities carried out simultaneously with the operation are compliant with the environment. This program also involves monitoring activities carried out by Mitto to create a database in scope of the By-law dated 08.06.2010 and numbered 27605		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 4.28	Landscape Restoration Plan-Mitigation Measures	A Landscape Restoration Plan Report has been prepared in order to ensure that, within scope of Lapseki project, the areas affected at the activity area and its immediate environs as result of activities to be performed during and after construction activities as well as those areas disturbed or damaged during mining activities are brought to their original condition as close as possible with minimum impact and that the required measures, actions and protection-rehabilitation techniques are identified in this context. Said report is enclosed hereto in Annex-19.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 4.28	Landscape Restoration Plan-Mitigation Measures	Temporary and permanent erosion control measures will be taken at the operating area in order to minimize the soil loss and erosion as well as perform sedimentation control during mining operations and also after completion of rehabilitation works subsequent to completion of mining activities. Erosion and sedimentation control will be achieved at most efficient level by taking diverse measures such as control of surface flows, minimization of bare lands, storage of stripped topsoil at adequate angles of inclination, collection of surface water flows at storage sites, creation of interception channels, and vegetation of storage areas. Details about erosion control, control methods, action to be taken and monitoring activities are set out in the Landscape Restoration Plan enclosed hereto in Annex-19.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 4.30	Rehabilitation Project	Topsoil that is enriched with elements such as nitrogen, phosphorus and organic substances will be laid on the rehabilitation area in order to facilitate plant growth. This will shorten the development of the plant cover. Planting and / or afforestation works shall be carried out on the fertilized area taking into account the characteristics of the soil and the climate characteristics of the region. Thus, the region will be improved visually and erosion due to any precipitation or mining activities will be prevented. Works and operations will be performed according to the Rehabilitation Project, which has been prepared for the area in question in line with the provisions and principles stipulated in the regulation on implementing Article 16 of Forest Law and is enclosed hereto in Annex-17.		Preconstruction, Decomissioning						
MoEU	EIA	Page 4.30	Soil Quality Pollution Prevention Measures	Temporary and permanent erosion control methods will be applied at the project site against the risk of erosion. In this scope, interception and drainage channels will be constructed for the control of the surface runoff and mulch application will be performed if deemed necessary. During the construction and operation phases of the project, no waste will be thrown or discharged to the ground. Waste and wastewater to be generated within scope of the project will be stored and disposed of in a controlled manner in accordance with relevant regulations and in line with management practices described in this EIA Report. Soil quality during the project's land preparation, construction, mine operation and post-operation periods will be regularly monitored under the monitoring program given in Chapter 7.		Preconstruction, Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	Page 4.59	Earthquake Design Measures	<p>The Solid Waste Storage (SWS) areas where the wastes will be stored throughout the activity will be designed considering the current earthquake risks in the region. The facility wastes planned to be stored as solid wastes will be stored as a mass that is subject to maximum compression and on a base that is constructed as a impermeability layer. This mass will be protected from the holes inside the pile and from the watery pocket formations that weaken the sensitivity, and it will be the strongest storage structure against earthquake risks.</p> <p>In the stability of the SWS areas; OBE is used for the operating period and earthquake ground acceleration value MDE with a return period of 475 years is used for the post-operation period.</p> <p>Construction will be carried out, including the plant area with the same sensitivity, considering the MCE value with 2475 year return period that is defined as the most severe earthquake ground acceleration that can occur in the region.</p> <p>In the Seismic Risk Analysis Report it is stated that, "In line with the March 2011 dated "Seismic Hazard Analysis of the Dams" publications of the General Directorate of State Hydraulic Works, it is suggested that the MDE acceleration is used for the Dam's Body structure and the OBE acceleration is used for the design of the other auxiliary structures and facilities</p>		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 4.60	Disaster Response Compliance	<p>In disasters such as earthquake, fire, flood, landslide, rock fall, avalanche, subsidence etc.; the required measures (stability works, planting works, first aid trainings, protective equipment etc.) will be taken and the provisions of the "Law No. 7269 on Aids to be provided with the measures that will be taken due to disasters effecting the public life", which enter into force after being published on the Official Gazette dated May 25, 1959 and numbered 10213, will be conformed to.</p> <p>In any kind of structure that will be made at the project field, provisions of the Regulation on Structures to be Made at the Disaster Zones will be precisely conformed to.</p>		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 4.121	Future Additional Ground Water Sampling Parameters	<p>Pursuant to the Regulation on the Protection of Underground Waters against Pollution and Degradation, an application was filed at the Directorate General for Water Management, asking for their direction on which parameters need to be analyzed within scope of underground water analyses. In reply, the Directorate General for Water Management decided to continue the parameters previously taken and to monitor all the parameters in Appendix-2 and Appendix-3 of the "Regulation on the Protection of Underground Waters against Pollution and Degradation", along with those parameters in Annex-9 that are likely to be seen in the process. The reply letter of the Directorate General for Water Management is enclosed hereto in Annex-7.</p> <p>In line with the notified decision, Total Cyanide, WAD Cyanide, Adsorbable Organic Halogens (AOX) for Water, Total Petroleum Hydrocarbons (TPH) and Grease-Oil parameters have been added to already sampled analysis studies.</p>		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 4.122	Ground water Monitoring Compliance	<p>The aim of monitoring the trend between the current status and future status of water by means of analyses performed according to Article 4, Article 5, Article 7, Article 11, Appendix-2, Appendix-3 and Appendix-9 of the "Regulation on the Protection of Underground Waters against Pollution and Degradation" promulgated in the Official Gazette dated 07/04/2012 no. 28257 is to take as reference the current status prior to mining activities. In this context, the comparisons to be made for underground waters are made based on the reference values taken, not on the specified limit values.</p>		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 5.129-130	Future AOX Measurements	<p>The AOX (Absorbable Organic Halogens) parameter has a high potential for self-induced formation in environments with high acidity. Therefore, there is a possibility that the waters may get contaminated by pollutants which will increase water acidity during works to be performed after the pit mining works are commenced. Therefore, a follow-up of the AOX parameter is required. There is no visible density in measurements made to date.</p>		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	Page 4.161-162	Water Pollution Prevention Measures	<p>The wastes will be stored at solid waste storage (SWS) area for long terms, ensuring bottom ground impermeability. Leachates, which might emerge if the solid wastes that remain stable under atmospheric conditions in the SWS area get under the influence of precipitation waters, will be collected in a pool (atmospheric and equilibrium reactions will be ensured as a precaution) and discharged in accordance with Table 7.1 of the By-law on Water Pollution Control after it is made sure that they do not contain any pollutant (i.e. that the system functions properly). The SWS area will at the same time serve as a means of natural deformation in the event trace amounts of cyanide is trapped in the wastes.</p>		Preconstruction, Construction, Operation, Decomissioning						
	Air Quality Management Plan	Page 16-18	Monitoring Programme	<p>The air quality monitoring programme for the Project (See Table 6) will be complied with.</p>		All Phases						
	Cyanide Management Plan	Page 9	Legislative Compliance	<p>Cyanide usage and commitment has been given in final EIA report in Section 2 for Lapseki Project.</p>		Operation						
	Traffic Management Plan	Page 35	Shuttle Schedule	<p>The Lapseki Project Shuttle Routes and Frequencies have been listed in Appendix 2.</p>		Operation						
	Stakeholder Engagement Plan	Page 7	Reviewing	<p>This Management Plan will be reviewed at a minimum on an annual basis to ensure that it remains valid and meets the needs of TUMAD, local communities and other relevant stakeholders as identified in this SEP and to determine whether any changes or updates are required to the Management Framework unless a more frequent update is required to reflect changing project design or ESMS requirements and procedures.</p>		All phases						
	Stakeholder Engagement Plan	Page 7	Disclaimer Commitment	<p>Any requests for changes to this Management Plan must be addressed to the owner of this Management Plan and will be subject to appropriate review and approval processes as outlined in the Management of Change Procedure (TMD_EYS_PRD.006).</p>		All phases						
	Stakeholder Engagement Plan	Page 9	Contractors	<p>Contractors shall work in compliance with related requirements, standards been set in this Plan.</p>		All phases						
	Stakeholder Engagement Plan	Page 10	Legislative Compliance	<p>All activities and implementations, within the scope of projects and operations, of TUMAD shall comply with relevant standards. These are as follow;</p> <ul style="list-style-type: none">• Applicable Turkish Legislation• Requirements by the Ministry of Environment and Urbanization• International Standards (ISO9001, ISO14001, OHSAS18001, ISO31000, EBRD PR10, IFC PS1 and others)• Commitments made to and requirements of, in accordance with relevant laws and regulations, relevant subsidiaries and institutions of Ministries of Turkish Republic• All policies, standards, directives, plans, lists and standard operation procedures of TUMAD and Integrated Management Systems• ICMC International Cyanide Management Code		All phases						
	Stakeholder Engagement Plan	Page 11	Legislative Compliance	<p>International standards to be observed by TUMAD are ISO9001, ISO14001, OHSAS18001, ISO31000 and other similar ones.</p>		All phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Stakeholder Engagement Plan	Page 12	Legislative Compliance	In relation with stakeholder engagement, EBRD Performance requirement 10, IFC: Performance Standard 1 shall be complied with. Basic requirements are as follow: <ul style="list-style-type: none">• Description of stakeholders,• Preparation of a Stakeholder Engagement Plan,• Provision of necessary information about the project and operation to the communities that have been affected or potentially to be affected,• Provision of significant consultancy services by means of early and continuous engagement,• TÜMAD Lapseki Project is a Category A project. Requirements in relation with these projects and operations shall be disclosed through formal evaluation process comprising of provision of necessary information in transparent, correct and open manner, and engagement of stakeholders,• Participating to external reporting procedures during implementation and operation phases of the projects,• A grievance and feedback mechanism aiming at concerns, discontents, requests and demands of the stakeholders, in relation with projects and operations of TÜMAD, being learned and handled on timely manner.		All phases						
	Stakeholder Engagement Plan	Page 12	EBRD Requirements	The key requirements related to stakeholder engagement from EBRD PR10 are summarized below; <ul style="list-style-type: none">• Evidence that stakeholder engagement has been free of manipulation, interference, coercion and intimidation and the engagement was exercised based on timely, relevant, understandable and accessible information• Stakeholders are individuals or groups who are affected or likely to be affected by the Lapseki project (affected-parties)or may have an interest (other interested-parties)• Disclosure of environmental and social action plans or mitigation measures• Documentation of the community consultation process• Provision of EIA documents in the public domain and• Grievance available and will not cause retribution		All phases						
	Stakeholder Engagement Plan	Page 13	Grievance and Feedback Procedure	This procedure shall be disclosed to all stakeholders.		All phases						
	Stakeholder Engagement Plan	Page 13	ICMC	TÜMAD shall carry out its all design, construction, operation and closure works and activities in accordance with terms and principles of International Cyanide Management Code in relation with Cyanide Production, Transportation and Usage for Gold Extraction and shall stay in application standards.		Operation						
	Stakeholder Engagement Plan	Page 14	Roles and Responsibilities	The roles and responsibilities in relation to the implementation of this plan are presented in Table 1.		All phases						
	Stakeholder Engagement Plan	Page 17	Vulnerable People	It will be ensured that these people are given full opportunity to be informed of and to inform the project. Engagement activities will be designed to enable full participation of these groups.		All phases						
	Stakeholder Engagement Plan	Page 18	Stakeholder Engagement	TÜMAD will continue the engagement with the suitors and the other concerned NGOs/CSOs through various activities summarised in this stakeholder engagement plan (SEP) and acknowledge their concerns on the Project environmental and social risks and develop the responsive actions in the form of engineering and management controls and provision of technical information in relation to their concerns.		All phases						
	Stakeholder Engagement Plan	Page 20	Traffic Management Plan	The details of the developed Traffic Management Plan will be disclosed to the public though SIP disclosure process and stakeholder engagement activities.		All phases						
	Stakeholder Engagement Plan	Page 20	Road Safety	TÜMAD will implement road safety training programme targeting the settlements along the access roads. TÜMAD will inform the community members on the traffic routes and traffic increases induced by the Project during the engagement meeting. The details of the developed Traffic Management Plan will be disclosed to the public though SIP disclosure process and stakeholder engagement activities.		All phases						
	Stakeholder Engagement Plan	Page 20	Local Employment	TÜMAD has a commitment to consider all the concerns during early consultations and during various other consultation meetings held in the SIA process and addressed concerns in the project mitigation measures (engineering and management controls). The details of these measures will be shared with all stakeholders during the disclosure process (as detailed in the following sections of the Plan)		All phases						
	Stakeholder Engagement Plan	Page 20	Water	TÜMAD will use the water from Lapseki wells for process water supply and to provide water to Şahinli and Kocabaşlar Villages to meet the village water requirements.		All phases						
	Stakeholder Engagement Plan	Page 21	Transportation Company	TÜMAD has endorsed the establishment of a transportation company at Şahinli village which has been incorporated by 60 shareholders. This company will be employed for TÜMAD transportation needs. As a support for local economy, all shuttling services and trucking needs of the mine operation will be procured from this company.		Construction, Operation						
	Stakeholder Engagement Plan	Page 21	Other Community Activities	<ul style="list-style-type: none">• Water exploration works for the villages around the project site, and water supply works when required,• Maintenance, repair and infrastructure works for buildings such as mosque, cemetery, café, fountain, imam house, primary school, and village house, cooperative storage building, toilets, etc. at nearby villages,• Contributions for upgrading or maintaining village service buildings.		All phases						
	Stakeholder Engagement Plan	Page 23-32	Future Stakeholder Engagement Programme	Table 5 summaries key planned stakeholder engagement activities during commissioning and operation phase. TÜMAD has the overarching goal of developing sustainable relations with stakeholder through the life time of the project and therefore will continue to engage stakeholders through various activities as detailed in the following Stakeholder Engagement Programme. The programme will be reviewed annually during operations, to ensure that it remains valid and meets the needs of TÜMAD, communities and other relevant stakeholders as identified in this SEP.		Construction, Operation						
	Stakeholder Engagement Plan	Page 33	Information Disclosure	TÜMAD will develop open, consistent information provision material that will be timely and available for local communities. Prior to any information provision activity, TÜMAD will prepare a pre-information provision plan that describe information sharing process in order to give opportunity to all main groups to get information on the project and to make comment on.		Operation						
	Stakeholder Engagement Plan	Page 33	Information Disclosure	TÜMAD will keep information on the Project updated on its website in Turkish and English.		Operation						
	Stakeholder Engagement Plan	Page 33	Information Disclosure	Information sheets on key project issues and TÜMAD’s approaches to minimise, mitigate and manage, will be prepared and made available on the TÜMAD web site and at its Şahinli office. Their copies will be available at Şahinli and Kocabaşlar mukhtar offices and cafes as well.		Operation						
	Stakeholder Engagement Plan	Page 33	Information Disclosure	As is indicated in the Procedure for Grievances and Feedback (TMD_KTİ_PRD.001), TÜMAD will immediately give full and timely responses to expectations, comments and questions of local communities as well as pursuing grievance procedure that would be implemented for certain problems and expectations. All expectations shall be treated respectfully, and people shall be convinced through explaining the reasons, and by referring to social plan if it is not possible to meet expectations of the people.		Operation						
	Stakeholder Engagement Plan	Page 33	Information Disclosure	Both at community relations office and company web site, booklets, CDs, films, brochures, posters and similar material providing information about different stages of the project will be available, and stakeholders will be kept posted by company officials.		Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Stakeholder Engagement Plan	Page 33	Information Disclosure	Time to time, particular matrices and informative documents will be prepared as a response to concerns, discontents and expectations of stakeholders and local communities on the basis of impact assessment surveys carried out by upper management of the company and meetings participated by them to ensure effective consultation. As long it is appropriate, relevant project information will be disclosed to the public.		Operation						
	Stakeholder Engagement Plan	Page 33	Information Disclosure	Project information will be supplied to public media in a way it is considered appropriate such as interviews, press releases and similar. This will be especially done during commissioning and operation stages, and when any major change that may affect local communities and land users occurs in the project. These activities will be coordinated with Corporate Communications Department.		Operation						
	Stakeholder Engagement Plan	Page 33	Information Disclosure	SIP and Environmental and Social Management Plans will be disclosed to the Public prior to operation in 29th September 2017 for 60 days.		Pre-Operation						
	Stakeholder Engagement Plan	Page 34-35	Information Disclosure	<ul style="list-style-type: none">Supplementary Information Package (SIP) including the EIA, SIA and E&S Management Plans, Non-technical summary (NTS), ESMS Framework and ESAP will be made available at the websites of TUMAD and hard copies will be maintained at various locations for the review and comments of stakeholders for 60 days between 29th September – end November 2017). The full ESIA disclosure package can be found at the following addresses:Web site of TUMAD : http://tumad.com.tr <p>TUMAD Head Quarter in Ankara/Turkey: Address: TUMAD Madencilik A.Ş. General Directorate, Buğday Sokak No:9 Kavaklıdere Çankaya ANKARA Email: info@tumad.com.tr Telephone: 0 312 455 16 10 Fax: 0 312 455 16 01</p> <p>TUMAD office in Lapseki/Canakkale: Address: TUMAD Madencilik A.Ş. Lapseki Altın Madeni İşletmesi Beyçayır Yolu 12.Km Lapseki / ÇANAKKALE Email: info@tumad.com.tr Telephone: 0312 505 00 06</p> <p>TUMAD office in Ivrindi/Balikesir: Address: İğdeburnu Mevkii Burhaniye Balikesir Email: info@tumad.com.tr Telephone: 0312 505 00 06</p> <p>Nurol Holding/Istanbul: Address: Büyükdere Caddesi No:255 Kat: 19 Maslak /İSTANBUL Email: info@tumad.com.tr Telephone: +90 312 455 10 00 Fax: +90 312 455 10 60</p>		Pre-Operation						
	Stakeholder Engagement Plan	Page 35	Information Disclosure	EBRD website: In accordance with EBRD’s own information provision policy, project information and connection with TUMAD web site will be provided. In addition EBRD will upload SIP documentation in English and Turkish to its own web site at (http://www.ebrd.com/esia/html).		Pre-Operation						
	Stakeholder Engagement Plan	Page 35	Information Disclosure	Also hard copies of the full disclosure package will be available at: - EBRD Resident Office in Ankara (Eskişehir Yolu, Armada İş Merkezi, No:6 Kat:4, Söğütözü, 06520 Ankara) - at the office of the Ivrindi Governorship (Sakarya Mah. Atatürk Meydanı Hükümet Konağı Ivrindi, Balikesir) - at the office of the Ivrindi Municipality (Bedrettin Mahallesi, Hükümet cad. No:68, 10770 Ivrindi/Balikesir) - at the office of the Balikesir Governorship (Eski Kuyumcular Mah. Hükümet Cad. No:2 Karesi / BALIKESİR) - at the office of the Lapseki Governorship (Cumhuriyet Mah. Zübeyde Hanım Caddesi No:13 Lapseki / ÇANAKKALE) - at the office of the Lapseki Municipality (Gazi Süleymanpaşa Mah. Çanakkale Cad. No:32 Lapseki/ ÇANAKKALE) - at the office of the Lapseki Çanakkale Governorship (Cevatpaşa Mahallesi,, Kayserili Ahmet Paşa Caddesi, No:26, Hükümet Konağı, Çanakkale) Electronic copies will be sent to the 18 Mart University in Çanakkale and Balikesir University in as well as key Governmental institutions including Ministry of Environment.		Pre-Operation						
	Stakeholder Engagement Plan	Page 35	Disclosure Meetings	TUMAD will conduct disclosure meetings with the affected communities October and November 2017 at the below locations. There will also be women only disclosure meetings at these locations. <ul style="list-style-type: none">Şahinli village,Kocabaşlar villageÇamyurt villageLapseki District Center Exact dates and venues of these meetings will be announced minimum one week prior to the meetings dates I order to ensure participation of the communities and other regional stakeholders to these meetings.		Pre-Operation, Operation						
	Stakeholder Engagement Plan	Page 35-36	Information Disclosure	During this engagement phase, disclosure and consultation activities will be designed along the following general principles: <ul style="list-style-type: none">Consultation events and opportunities must be widely and proactively publicised, especially among Project affected parties, at least 1 week prior to any meeting;The non-technical summary must be accessible prior to any event to ensure that people are informed of the assessment content and conclusions in advance of the meeting;The location and timing of any meeting will be designed to maximise accessibility to Project affected stakeholders;Information presented will be clear and non-technical, and will be presented in the local language understood by those in the communities;Facilitation will be provided to ensure that stakeholders are able to raise their concerns;Issues raised are answered at the meeting or actively followed up.		Operation						
	Stakeholder Engagement Plan	Page 36	Disclosure Meetings	Information provision meetings will be open to all public and be announced at local media. And, they will be held at village mukhtar offices or village cafes depending on availability,		Operation						
	Stakeholder Engagement Plan	Page 36	Information Disclosure	TUMAD will inform the public, via newspapers, meetings, media and other similar means, about how people access to SIP documents and project time table, and how they can make comment over SIP.		Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Stakeholder Engagement Plan	Page 36	Grievance and Feedback Procedure	According to TUMAD Grievance Procedure all grievances will be: <ul style="list-style-type: none">• Acknowledged within 3 days; and• Responded to no later than 30 days.		All phases						
	Stakeholder Engagement Plan	Page 37	Monitoring Requirements	Project standards and monitoring measures to be applied during construction and operation stages in order assess appropriateness are explained in Environmental and Social Management and Monitoring Plan. In the event that monitoring identified non-conformance with Project Standards, these will be investigated and appropriate corrective actions identified (see Non-conformance incident and action management of the TUMAD ESMS). TUMAD is committed to creating a participatory monitoring mechanism to create a committee of local stakeholders to conduct in situ monitoring of mining activities during the operating period. The functioning of the board, membership structure, meeting frequency, how the secretariat will be executed, tasks, etc. will be further be clarified further with a specific analysis on the local expectations and local stakeholders. TUMAD will share the regular Project monitoring reports on such as water quality, ambient environmental conditions, traffic incidents, cyanide consumption. TUMAD will engage with this committee on the design and implementation of the community development projects.		All phases						
	Stakeholder Engagement Plan	Page 38	Key Monitoring Measures	TUMAD will monitor the implementation of the stakeholder engagement process. TUMAD will monitor the effectiveness of the engagement processes by analysing the feedback received from engagement activities thus involving the engaged stakeholders into the monitoring process. Where appropriate, during all engagement activities, questions will be asked to stakeholders to on the effectiveness of the meeting and the process of stakeholder engagement.		All phases						
	Stakeholder Engagement Plan	Page 38-39	Key Monitoring Measures	The key monitoring measures to be employed during the Project are lised in Table 6.		All phases						
	Stakeholder Engagement Plan	Page 39	Key Performance Indicators	The key performance indicators to be employed during the Project are lised in Table 7.		All phases						
	Stakeholder Engagement Plan	Page 39	Training	All employees of TUMAD and contractors are required to participate in community relations and human rights training as part of the standard induction programme. This training is designed to help Turkish and foreign workers on the TUMAD Project understand and respect different cultures and points of view and operate effectively as team members, as well as and behave appropriately when they are within local communities.		All phases						
	Stakeholder Engagement Plan	Page 40	Training	Specific training on stakeholder engagement and the application of the Grievance Procedure will be provided to Community Relations Officers and other personnel and supervisors of TUMAD and contractors involved in or overseeing activities with local communities.		All phases						
	Stakeholder Engagement Plan	Page 40	Training	Additional specialist training shall be provided to key personnel involved in community and stakeholder engagement on an “as needed” basis.		All phases						
	Stakeholder Engagement Plan	Page 40	Audit	Conformance will be monitored in accordance with Auditing Procedure of TUMAD. All incidents and non-conformances will be reported as per the requirements of the TUMAD ESMS Management System as described in the ESMS Framework Document.		All phases						
	Stakeholder Engagement Plan	Page 40	Audit	Contractors will be subject to inspection and audit by TUMAD prior to a contractor’s initial appointment and then on an annual basis as outlined in the Contractor Management Plan (TMD_ISG_PLN.003).		All phases						
	Stakeholder Engagement Plan	Page 40	Audit	Conformance with this plan will be subject to periodic assessment by Nurol Group corporate audit and assurance programmes and separately by Project Lenders.		All phases						
	Stakeholder Engagement Plan	Page 40	Reporting	The following records will be kept in accordance with TUMAD procedures; 1. Consultation meetings 2. Stakeholder engagement activities 3. Raised grievances 4. Opinions/suggestions/comments provided by community members during consultation meetings and stakeholder engagement activities (to be recorded in the grievance mechanism) 5. Press releases and interviews 6. Records of audits, inspections and incidents.		All phases						
	Emergency Action Plan	Page 7	Plan Update	This Management Plan will be reviewed on a minimum of a six monthly basis during construction and commissioning. During operation phase, this Plan will be reviewed on an annual basis to determine whether any changes or updates are required to the Management Framework		Preconstruction, Construction, Operation, Decomissioning						
	Emergency Action Plan	Page 9	Project Standards	TUMAD will comply with; <ul style="list-style-type: none">• Communiqué on Major Accident Prevention Policy Documents (Official Gazette 29435, 4 August 2015).• Regulation on Prevention and Effect Control of Major Industrial Accidents (Official Gazette 28867, 30 December 2013).• Regulation on Emergency Situation at Workplaces (Official Gazette 28681, 18 June 2013).• EBRD Performance Requirement• International Cyanide Management Code• UNEP APELL for Mining• ISO 9001:2015 “Quality Management System Requirements”• ISO 14001:2015 “Environmental Management System Requirements”• OHSAS 18001:2007 “Occupational Health and Safety” Management System”		Preconstruction, Construction, Operation, Decomissioning						
	Emergency Action Plan	Page 16	Communication	Emergency contact flow chart and telephone list will be hanged where employees can easily see and read. Internal and external emergency contact numbers and Radio and Horn communication instructions are given in Appendix 1. Emergency contact numbers will be controlled and updated when there is a change in appointed personnel or their contact number.		Preconstruction, Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Emergency Action Plan	Page 17	Announcement	The evacuation decision of the working area will be taken by the General Manager or his representatives. The evacuation decision of the work area will be announced with a general alarm wherever there is an audible alarm. The alarm is done by radio, telephone and/or personally where there is no audible alarm. The relevant manager is responsible for the evacuation of all personnel from the designated area. The General Manager and Department Managers are responsible for promptly notifying all other employees/contractors/visitors/suppliers of evacuation of an area in Lapseki Mine Field or the surrounding area.								
	Emergency Action Plan	Page 17	Emergency Action Style	When hearing the announcement all employees/contractors/visitors/suppliers or any other person who is available in mine site will: • Stop work immediately, • Leave workplace and proceed to the safest assembly point, • Stay calm and do not run and panic other people, • Warn others in the vicinity on the way to the assembly point, • Stay in the assembly area and await further instructions. Each department manager is responsible for counting all staff in his/her department during evacuation. The department manager may appoint another person to perform this task. Evacuations shall be carried out according to the list on the Safety Unit and/or on the work schedule.		Preconstruction, Construction, Operation, Decomissioning						
	Emergency Action Plan	Page 17	Visitors	The visitor/suppliers register maintained by the security unit includes a list those visit the mine site in the day of incident. The register will include the departments/persons which they are visiting. The persons in this list must be reached during evacuation. Visitors and suppliers will be reached by the department which are visiting.		Preconstruction, Construction, Operation, Decomissioning						
	Emergency Action Plan	Page 17	Affected Communities	Head of Community Relations is responsible to assess the emergency situation that would impact the surrounding communities together with the OHS and Security Departments. TUMAD will have the key contact numbers of possible affected communities (e.g. mukhtars, their helpers, owner of village houses etc.). Considering the level of the emergency situation and the impact on the neighbourhood communities, affected communities will be informed and external emergency services will be included where necessary for the evacuation processes.		Preconstruction, Construction, Operation, Decomissioning						
	Emergency Action Plan	Page 17	Law Enforcement Force	Lapseki District Gendarmerie Command Office is the competent law enforcement force to be informed if law enforcement support is needed in case of emergency in mine site.		Preconstruction, Construction, Operation, Decomissioning						
	Emergency Action Plan	Page 18	Duties and Responsibilities	All staff members mentioned in this Plan are obliged to be informed on the content and individual responsibilities as part of this plan. Every individual assigned with the role will have an alternate that will assume this role if the individual is absent or should they get injured. Likewise, personnel undertaking any of the mentioned in this Plan duties are responsible for informing their representatives in case of their absence in relation to the duties and responsibilities of this Plan. No person shall be allowed in any case by the senior management to renounce his/her responsibilities without the appropriate appointment of the person concerned.		Preconstruction, Construction, Operation, Decomissioning						
	Emergency Action Plan	Page 22	Evacuation Procedures	For the purposes of this plan, evacuation procedures will be prepared and for different emergency scenarios and added to the Appendix. The emergency evacuations will mainly divided into two groups. These are Total Evacuation of the Minefield and Evacuation of the Area.		Preconstruction, Construction, Operation, Decomissioning						
	Emergency Action Plan	Page 22	Emergency Assembly Areas	There are defined Emergency Assembly Areas in Lapseki Mine Field. These locations are defined in the work area plan behind the annexed evacuation flow chart. Emergency Assembly Areas are indicated by large green and white coloured plates bearing the "Emergency Assembly Area". However, this may not be possible in some workplaces that are subject to constant environmental changes. In this case, a distinct geographic area will be designated as the Emergency Assembly Area. The layout showing the locations of the Emergency Assembly Areas are given in Appendix 2.		Construction, Operation,						
	Emergency Action Plan	Page 22-23	Emergency Response equipment	Emergency Response equipment will be checked on a regular basis for their availability, efficiency and maintenance. Lapseki Emergency Response Map and Building Emergency Chats showing the location of emergency response equipment is given in Appendix 3.		Construction, Operation,						
	Emergency Action Plan	Page 23	Training	Department Managers of Lapseki Project are responsible for getting staff and contractors to be informed on the requirements of this plan. Department Managers must also ensure that the staff and contractor employers are aware of the actions described in this plan for the area they work in. Training involving the relevant aspects of this plan will be provided by the OHS Department to all mining staff. This training will include evacuation, firefighting, general intervention to first aid, spill containment and response, appropriate disposal of waste from emergency response, and other possible emergency situations. The results of the OHS meetings and drills may identify other training topics. Training will be delivered to all staff including contractors at least on an annual basis.		Construction, Operation,						
	Emergency Action Plan	Page 23	Emergency Drills	Emergency drills will be held at least twice a year. Each drill will include a set number of observers who will record the incidents and response of the staff and provide participants with information about the status of the emergency. Contractors will be involved in the emergency drills which would ensure that the contractors are aware of the emergency response measures and increase the efficiency of communication line between TUMAD and contractors. Contractors will be briefed about their performance after each drill.		Construction, Operation,						
	Emergency Action Plan	Page 23-24	Audit	Daily inspections will be carried out by operational area superintendents / supervisors covering a broad range of operational aspects, including community health safety and security issues as appropriate to activities outside the fence line. Any contractor activity may be subjected to observation, inspection and auditing by TUMAD at any time. The schedule, the frequency, the scope and objectives of the audit as well as the responsible internal inspectors will be indicated in the Audit Program that will be developed and updated by TUMAD. The audit/inspection items will include: • The correct implementation of this Plan and Project Standards, • Adequacy of emergency response measures and routes, • Ensure that emergency response team members are up to date, • Availability of correct and proper emergency response equipment, PPE, • Ensure that ERT members (or the alternates), workplace physicians/nurses are available on site, • Appropriate training of all staff including contractors and special training of ERT members.		Construction, Operation,						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Emergency Action Plan	Page 24	Reporting	Head of Community Relations will ensure that the following authorities are informed as appropriately: <ul style="list-style-type: none"> • Governor • Gendarme • Police • Provincial Directorate of Environment and Urbanization (environmental incidents) TÜMAD will inform Çanakkale Directorate of Environment and Urbanization and submit the report including the date of the accident, location of the accident, type and amount of waste, reasons for the accident, type of waste treatment and rehabilitation of the accident site within 3 working days. All emergency cases will be reported and investigated according to the Incident Accident Investigation Loss and Reporting Procedure (TMD_LAP_ISG_PRD.007). Inspections, incidents and non-compliances shall be documented and administered in accordance with the Record Management Procedures of TÜMAD (TMD_EYS_PRD.004).		Construction, Operation,						
	Emergency Action Plan	Appendix 5 - Spill Clean Up Plan	Oil Spills	Oil, grease and similar hydrocarbon spills must be cleaned up in accordance with the relevant laws and regulations and without causing any harm to the environment and human health. All oil spills occurred in the mine site must be reported. Spill clean-up materials are used in order to clean up this type of spills within the site. The use of these materials is described in detail in the article "Use of Spill Clean-Up Materials" of the plan. For oil spills occurred in the mine site, the relevant department or the environment department intervenes with spill clean-up powder having feature to cause oil decomposition. The area on which powder is poured is stripped and stored in black nylon bags or in blue drums and brought to the waste collection area within the knowledge of the Environment Department. Since soil contaminated with oil is hazardous waste, it is sent to the licensed disposal facilities with the licensed vehicles to be disposed together with other hazardous wastes.		Construction, Operation,						
	Emergency Action Plan	Appendix 5 - Spill Clean, Up Plan	Chemical Spills	Caustic, acid and similar hazardous chemicals are located in the plant area and the customs area in the mine site. When a major chemical spill occurs (greater than the one that can be intervened by one person), the flow chart of the Emergency Management Plan prepared by the Occupational Health and Safety Department is followed. If the spill happens on a small scale; intervention is performed by using the appropriate spill clean-up materials as specified in the Material Safety Data Sheet (MSDS) of the chemical. It cannot be decided whether the chemical spill happened on a large or small scale only by looking at the spill area. This decision depends on the following pints: <ul style="list-style-type: none"> • The content of the chemical. • Whether the spill is dry or liquid. • Whether the spill is under control or suitable to spread. • General weather conditions. If one person is unable to cope with the spill and / or it cannot be controlled and / or it causes smoke, dust or damage to the environment, spill is large scale. Soil, cloth, barrels and all similar materials contaminated with any chemicals in the mine area are sent to the licensed disposal facilities with the licensed vehicles for disposal of all materials.		Construction, Operation,						
	Emergency Action Plan	Appendix 5 - Spill Clean Up Plan	Cyanide Spills	For cyanide spills, the intervention methods specified in the Sodium cyanide spill clean-up instruction prepared by the plant are applied. Regardless of the scale of the spill, The Plant Shift Supervisor MUST BE INFORMED and the Plant Shift Supervisor MUST INFORM the Plant Chief Engineering. The Plant Chief Engineer the will inform the Environmental Supervisor.		Operation						
	Emergency Action Plan	Appendix 5 - Spill Clean Up Plan	Process Sludge Spills	In case of process sludge spills that may occur in the plant area, pipelines or in case of cleaning and similar situations, it is ensured that; <ul style="list-style-type: none"> - If the spill is in a concrete area and recovery of it is possible, the sludge is taken to the appropriate unit in the plant and the process is continued, - If it is not possible to take it to the process or to perform recovery of it, it is treated in the detox unit and sent to DWS. 		Operation						
	Emergency Action Plan	Appendix 5 - Spill Clean Up Plan	Oil Spill Clean Up Materials	These kits are located in the yellow containers in the relevant sections in the mine site. The oily soil is scraped and filled into black nylon bags or blue drums by means of a shovel and brought to the Waste Collection Area within the knowledge of the Environment Department. It is stored in the hazardous waste area. Other oil spill clean up materials must be thrown into a black coloured "oily waste" waste container.		Construction, Operation,						
	Emergency Action Plan	Appendix 5 - Spill Clean Up Plan	Chemical Spill Cleaning Materials	These materials are kept in red containers and placed in the locations of the mine site where work is performed with chemicals. All pads and sausages used must be thrown into the black containers located next to these kits.		Construction, Operation,						
	Emergency Action Plan	Appendix 5 - Spill Clean Up Plan	Monitoring/Audit	Daily Inspections: environmental department perform these inspections in accordance with the activities inside the fence boundary by including a wide range of operation issues whether is a spill that has run out of sight or has not been reported. It is checked by the operation manager that it is complete and complete. Any incident or non-compliance determined during these inspections shall be recorded and reported according to the documents of the Accident Incident Loss Investigation and Reporting Procedure (TMD_ISG_PRD.007) Legal responsibilities and Management System Responsibilities are periodically inspected by government agencies and inspectors within the framework of Spill Clean-Up Plan.		Construction, Operation,						
	Emergency Action Plan	Appendix 5 - Spill Clean Up Plan	Reporting	When an accidental or deliberate disposal of wastes and similar incidents occur, TÜMAD will inform Çanakkale Directorate of Environment and Urbanization and submit the report including the date of the accident, location of the accident, type and amount of waste, reasons for the accident, type of waste treatment and rehabilitation of the accident site within 3 working days. Evidences of the implementation of the mitigation actions/measures and related results are collected through inspection and auditing activities will be reported in line with the Internal Audit Procedure (TMD_KAL_PRD.001).		Construction, Operation,						
	Waste Management Plan	Page 9	Plan Update	This Management Plan will be reviewed on a minimum of a six monthly basis during construction and commissioning. During operation phase, this Plan will be reviewed on an annual basis to determine whether any changes or updates are required to the Management Framework unless a more frequent update is required to reflect changing project design or ESMS requirements and procedures.		Preconstruction, Construction, Operation, Decomissioning						
	Waste Management Plan	Page 10	EIA Requirements	* During the activities, DSTF (Solid Waste Storage) areas shall be designed by considering earthquake risks within the region. Process tailings that are planned to be stored in solid phase shall be stored as a mass, which is subject to maximum compaction on an impermeable base layer. * Wastes shall be stored in DSTF area for a long time in such a way that the ground impermeability is achieved. The seepage that may be generated when the dry wastes, which are stable at DSTF area under atmospheric conditions, are subject to precipitation water shall be collected in a pond (as a precaution, to ensure balance reactions with atmosphere) and it shall be discharged according to the Table 7.1 of the WPCR (Water Pollution Control Regulation) by ensuring that it does not include any pollutant (that the system works under appropriate conditions). * Top Soil to be stripped during the land preparation activities from the areas, where the units to be established will exist, shall be stored at soil storage area to be used again. Top Soil at the pit areas shall be stripped simultaneously with the production activities.		Preconstruction, Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Waste Management Plan	Page 10	Applicable Turkish National Standards	The activities with regard to the processing plant waste shall be carried out in accordance with the provisions of the “Regulation on Regular Storage of Wastes” which was published in and enacted by the Official Gazette No. 27533 dated March 26, 2010 (No. 29292 dated March 11, 2015), those of the “Regulation on Waste Management” which was published in and enacted by the Official Gazette No. 29314 dated April 02, 2015, and those of the Notice No. 2014/13 published by the General Directorate of Environment Management. Tümad will comply with; Regulation on the Control of Waste Oils, Regulation on the Control of Vegetable Waste Oils, Regulation on the Control of Hazardous Wastes, Regulation on the Control of Solid Wastes, Regulation on the Control of Packaging Wastes, Regulation on the Control of Hazardous Wastes, Regulation on the Control of Waste Oils, Regulation on the Environmental Permit and License, Other Applicable Regulations							Preconstruction, Construction, Operation, Decomissioning	
	Waste Management Plan	Page 11	Company Commitments and Commitment Requirements	EIA commitments with respect to Waste; ☑ Seepage will be generated since precipitation water will contact to waste dump area, DSTF area and the open area where dry waste from processing plant will be stored. Seepage from these areas shall be collected in the settling ponds, which will be built at the outlet of drainage channels at the base. If possible, this water shall be pumped back to the processing plant, otherwise it shall be discharged to the receiving environment by ensuring that the limit values for the parameters given in Table 7.1 of WPCR which is given in Water Resource Management Plan (TMD_CEV_PLN.003) are not exceeded. Contact with precipitation water shall be encountered since the waste from open pit and the dry waste from processing plant will be stored in open atmosphere. Seepage from these areas shall be collected in the settling ponds by means of drainage channels to be built at the base. The water shall be used at the plant. If precipitation increases and water cycle balance is unstable, excess water to be collected from settling ponds and treated as per the criteria of Table 7.1 of WPCR shall be discharged to the receiving environment within the scope of “Environmental Permit on Waste Water Discharge(01.06.2017 Date and AAT01590 numbered of TÜMAD Domestic Waste Water Discharge Approval Form)” which will be obtained as per the “Environmental Permit and License Regulation” which is published in and enacted by the Official Gazette No. 29115 dated September 10, 2015. Peripheral channels and ponds shall be located at open pit, waste dump and DSTF areas in the project area. Waters that will come from these areas by means of surface flow shall be collected in peripheral channels and transferred to settling ponds. Waters, which will come into these areas through precipitation and which will be contaminated by contact, shall be collected in the settling ponds at the downstream of the areas by means of drainage systems.							Preconstruction, Construction, Operation, Decomissioning	
	Waste Management Plan	Page 11	International Standards and Guides	Tümad will comply with; EBRD Performance Requirements (particularly PR1: Environmental and Social Appraisal and Management and PR3: Pollution Prevention and Abatement). Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries.							Preconstruction, Construction, Operation, Decomissioning	
	Waste Management Plan	Page 12	TÜMAD Policy Procedure and Instructions	Ore from the open pits that will be used in mineral processing shall be stored in the open atmosphere at the temporary storage area for a short period of time. In the meantime, ARD potential due to contact between precipitation and the material has been investigated. Static testing results have shown that there will be no dominant acid generation with rarely uncertain features. SPLP test results have shown that the ore will not generate ARD and that it does not have a dissolvable metal content. According to the kinetic testing, the results of HCT-2 sample have similarly shown that there will be no ARD generation or metal leaching. No geochemical modelling study was required since the ore will not generate ARD during temporary storage based on the available data. During operation period, content of the ore shall be regularly controlled and if it is determined that it contains sulphide minerals, then the preventive measures shall be taken against ARD generation. Thresholds and Standards about ARD is given in Water Resources Management Plan (TMD_CEV_PLN.003).							Operation,	
	Waste Management Plan	Page 13	Waste Management Planning	TÜMAD will implement a mineral waste management planning approach to identify, assess and document the quantities, physical and chemical characteristics and hazards of the wastes that will be generated by mining and processing of each distinct section of the mineral deposit. This will be developed in line with development of the TÜMAD Mineral Waste Inventory and will enable TÜMAD to manage its mineral and non-mineral wastes inventory and maintain an up to date conceptual model of the long-term physical and chemical waste behavior and impacts on the environment. This will be validated using data from testing and monitoring. The TÜMAD Mineral Waste Inventory will address mineral waste management, acid rock drainage; leachate management and waste rock dump management, Dry Stack Tailing facility management and will contain: • a summary assessment of the chemical and physical hazards posed by the waste and disposal facilities; • the measures to mitigate the chemical and physical hazards; • assignment of clear accountabilities and responsibilities for mineral waste management and for implementing the management plan on an on-going basis under actual field conditions; • detailed on-going monitoring and data collection requirements; • guidance on emergency plans and contingency measures for response to unplanned conditions or unexpected impacts.						Construction, Operation,		
	Waste Management Plan	Page 13-14	Implementation	This Waste Management Plan will be implemented by means of the TÜMAD Mineral and Non-Mineral Waste Inventory and by the Measuring and Monitoring Environment Activities Procedure (TMD_CEV_PRD.006). In addition to the TÜMAD Mineral or Non-Mineral Waste Inventory and Mineral Waste Monitoring and Measurement Table (TMD_CEV_TAB.003), which are related to the appropriate segregation, transport, storage and management of waste rock material the Plan will be supported by the following Procedures. These present more details on specific aspects of the day-to-day mineral & non-mineral waste management activities at TÜMAD: • Forest Rehabilitation Project, related to the removal, handling and storage of topsoil; • Environmental Monitoring and Measurement Procedure.							Construction, Operation,	
	Waste Management Plan	Page 15	Topsoil salvage and segregation	Prior to disturbing an area by construction (WRD, stockpiles, Dry Stack Tailing Facility (DSTF), HLF and other infrastructure) or mining activities, topsoil must be stripped and transported to an approved, storage location. This will be undertaken in accordance with the Forest Rehabilitation Project & Regulation On Regulatory Storage Of Waste							Construction	
	Waste Management Plan	Page 15	Mineral Waste segregation	Waste rock, unconsolidated overburden and low high grade and Run of Mine ore will be segregated based upon ore content, total sulphur content and texture in accordance with ARD barrel test result.							Operation	
	Waste Management Plan	Page 15	Process Waste	In the Tank –Leach process wastes will be subjected to chemical detoxification (INCO-SO2Air)* and will be dried and dewatered by filter press will be stored built according to the Regulation On Regulatory Storage Of Waste of Dry Stack Tailing Facility (DSTF)							Operation	
	Waste Management Plan	Page 15	Mineral Waste segregation	All assumed NAF and PAF rock will be placed in separate temporary stockpiles according to ARD results. Based on the final chemistry, this rock will then be transported to a permanent waste rock dump, HLF, DSTF location and/or stockpiled to encapsulation process							Operation	
	Waste Management Plan	Page 16	Acid Rock Drainage	The overarching Acid Rock Drainage (ARD) control strategies for the WRD and stockpiles will comprise: 1) Static & kinetic test results 2) ARD Barrel Test Results 3) segregation and separate handling of NAF and PAF material; 4) containment of any contact water within the operation footprint, and 5) Construction of NAF waste rock store and release covers over final PAF waste rock surfaces.							Operation	

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Waste Management Plan	Page 16	Waste rock Dump Closure	Encapsulation which all PAF materials will be capped with NAF cover material when they are closed or during operations in order to protect runoff water quality, minimize infiltration, control wind erosion and allow vegetation establishment.		Operation, Decomissioning						
	Waste Management Plan	Page 16	WRD Management	The geotechnical and geochemical behavior of the WRD will be managed and monitored throughout operation and into closure, to ensure that there are no significant environmental or geotechnical risks. Any areas of concern will be subject to appropriate corrective actions to mitigate them.		Operation						
	Waste Management Plan	Page 16	HLF and WRD Management	HLF slopes, WRD and stockpiles will be visually inspected on a regular basis to identify unacceptable lateral displacement, settlement or erosion during construction and operation. Additionally, topographical measurement will regularly conducted in order to be identify unaccepted displacement.		Construction, Operation,						
	Waste Management Plan	Page 17	DSTF Management	DSTF Has been surrounded by drainage channels for water management %80 percent of dewatering performance will be obtained from the filter press Compaction will be performed to stabilization, impermeability and dust prevention of waste which will be stored in DSTF		Operation						
	Waste Management Plan	Page 17	Surface water management	Surface water and any shallow seepage from the WRD and HLF will be managed through a series of perimeter drains and sumps, which will prevent the uncontrolled release of water and maximize the potential to recycle this water. Mine waste and DSTF areas will be collected by drainage channels and accumulated in the contaminated settling basins in the scope of the Project. Sampling studies will be conducted at outlets of the basins. Analyses will be conducted in accordance with Table 7.1 of By-law on Water Pollution Control in order to determine whether sampled waters comply with discharge criteria as detailed in Water Management Plan (TMD_CEV_PLN.003) All contact water from the open pits, WRD, stockpiles, DTSF and HLF will be retained on site and be discharged into the process water circuit or be put to other beneficial use.		Construction, Operation,						
	Waste Management Plan	Page 18	Chemical decomposition unit	INCO (SO2+Air) chemical decomposition unit. Chemical decomposition unit is comprised of the following phases; • Cyanide decomposition • Heavy Metal Stabilization Waste pulp generated from leach and adsorption unit is decomposed at the chemical decomposition unit before transferred to tailing pond in order to ensure limit values declared by the Ministry of Environment. Limit value for free cyanide is 10 ppm.		Operation						
	Waste Management Plan	Page 18	ARD Barrel Test	Site-scaled kinetic testing studies, which were initiated in January 2015, shall be terminated when the operation phase commences. 11 waste rock samples are placed in a 200 L barrel and seepage from this barrel is collected in the 20 L HPDE barrels and when there is enough amount of seepage water in these barrels, analyses shall be conducted and compared to the lab-scaled kinetic test results.		Operation						
	Waste Management Plan	Page 19	Impact Mitigation Measures	In order to measure WAD cyanide ratio at the outlet of chemical decomposition unit, hourly samples are taken and measurements are made by means of picric acid test. In addition, a sample to be taken by an automated sample taking equipment is analysed at the laboratory with the distillation method. If the cyanide value exceeds 10 ppm, the plant is certainly shut down and waste transfer to solid waste storage area is stopped. The plant is not commissioned until the problem is solved. The waste having a cyanide value of less than 10 ppm is dewatered at the filter press units and delivered to the solid waste storage area.		Operation						
	Waste Management Plan	Page 20	Impact Mitigation Measures	Below mitigation measures will be carried out by Tümad; * Domestic wastewaters shall be treated at the biological treatment plant. They shall be fed to the plant after treatment. * Domestic solid wastes shall be delivered to the municipal storage area. * Wastes from processing plant and settlement pond shall be delivered to DSTF area. * According to the regulation on Regular Storage of Wastes, dry waste storage area shall be constructed in such a way that it will conform to the 1st class standards. * Hazardous wastes (such as batteries, waste oil, and contaminated wastes) shall be first stored at the temporary storage area (Figure 4) and then delivered to the licensed waste facilities. * Temporary waste storage area (WSA) will be constructed according to requirement of MoEU and international standards. This will include the followings: o The temporary WSA will be separated from the facilities and buildings, located in a proper place for licensed vehicles to get hazardous wastes and away from human crowd; o Secondary containment systems will be constructed; o All required precautions will be taken against fires (fire extinguishers etc.); o A warning sign "Attention! Hazardous Waste" will be placed at the entrance of the area where hazardous wastes are stored; o Each waste in the WSA will be labelled. On the label, following information shall be covered waste code, whether it is hazardous waste, hazard characteristics and risks for the hazardous wastes, date of entry, o An employee responsible for the temporary waste storage area will identified and the WSA will be enclosed, the entrance door will be lockable, the keys shall be used only by the responsible employee (restricted access). o In order to protect the hazardous waste storage area from rainfall, a roof and walls around the WSA will be constructed. o An absorbent material, i.e. a spill kit, will be located in the WSA against a spillage. * A training on the management of wastes will be provided to the workers. The training subjects at least includes requirements of this management plan, precautions and risks when handling wastes, proper usage of PPEs, waste minimization, categorization, segregation, storage and waste recycling and appropriate disposal.		Preconstruction, Construction, Operation, Decomissioning						
	Waste Management Plan	Page 21	Waste Management Plan	TÜMAD Madencilik Sanayi ve Ticaret A.Ş. shall implement a Waste Management Plan approach in order to determine, evaluate and document the amount, physical and chemical properties and hazards of the waste materials that will be generated due to mining activities to be carried out on each different section of the mineral deposit. This approach shall be prepared in accordance with the Waste Inventory List TMD_CEV_LST_001 (which is given in Appendix 1) and TÜMAD shall ensure that it will manage the Waste inventory and maintain an updated conceptual model for the long-term physical and chemical behaviors and impacts of the inventory on the environment. This model shall be verified by using the results to be obtained from the tests and monitoring studies.		Preconstruction, Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Waste Management Plan	Page 22, 23, 24	Non-mineral Wastes	Waste Codes and definitions and the codes and the definitions regarding to the methods of collecting- segregating and disposal/recovery have been given in the line with Waste Management Regulation, which was published in the Official Gazette dated 02.04.2015 and numbered 29314. The Table 3. of this Paln "Hazardous and Non-Hazardous Waste Originated from the Facility Codes, Waste Code, and Areas of Activity" should be considered during waste management. There is no disposal unit in the facility. Waste generated from operation and recoverable is sent to Environment Permit and Licensed Disposal Facilities to provide recovery or disposal. Waste that cannot be recovered and does not have suitable recycling facilities will be sent to the Sanitary Landfill Site and disposal will be ensured. The summary of the disposal methods of the wastes given below: <ul style="list-style-type: none">• Domestic wastes are collected by municipality and sent to Municipality's landfill. There is a municipal council decision about the collection of the domestic wastes from Project Site.• Excavation wastes are transferred to the area operated by private company which has permits from municipality. The wastes transferred with official written report.• Hazardous wastes: Temporary storage will be done in the field and the construction of the temporary waste storage area is ongoing.• The agreements made for some of the waste types with the licenced companies:<ul style="list-style-type: none">o Waste batteries will be collected by the licenced private company called TAP.o Waste accumulators will be collected by the private company which are the supplier of the accumulators.o Waste oils will be collected by the licenced private company called PETDERo Hazardous wastes will be collected by the licenced private company called İZAYDAŞ.		Preconstruction, Construction, Operation, Decomissioning						
	Waste Management Plan	Page 25	Wastewater Treatment Plant	Domestic wastewater originating from the use of the employees at the operation phase shall be used for dust suppression and irrigation after being treated with the 250-person / day capacity treatment plant. The rest of the solid part will be removed with the help of a sewage truck within the framework of agreements with the municipalities in the operating area.		Operation						
	Waste Management Plan	Page 25, 26, 27, 28. 29	Monitoring	Within the scope of TŪMAD activities, monitoring and measurement activities to be performed as per the international standards and guidelines are defined in Waste Management Plan. In addition, this plan also includes corrective and preventive plans which shall be applied in case of determination of a non-compliance. ARD monitoring studies have been planned to cover operation and post-operation phases of the project. Results of the monitoring studies to be carried out by TŪMAD Madencilik during the operation phase shall be submitted to the Provincial Directorate of Ministry of Environment and Urbanization by means of biannual monitoring reports. Except the inspection studies to be performed by government institutions, sampling and in-situ measurements shall be performed by the personnel of TŪMAD Madencilik. Laboratory analyses shall be conducted in an internationally accredited laboratory. Monitoring studies shall commence at the construction phase of the project and continue at the post-operation phase. Within the scope of the existing report, minimizing measures have been planned for the locations where ARD is possible and these measures shall be practically continued during the course of operation period. Studies shall be conducted during the operation period in order to determine the most efficient and effective methods for ARD control. ARD database shall be created based on the monitoring data, which are obtained during operations, in order to be used at the mine closure phase. ARD Monitoring will be performed according to the Table 6 of this Plan, "ARD monitoring data for operations" Wastes Monitoring will be performed according to the Table 7 of this Plan, "Wastes Monitoring Program" Basic performance monitoring of Waste Management Plan and the corresponding Procedures and Instructions are provided Table 8 of this Plan, "Key Performance Indicator".		Preconstruction, Construction, Operation, Decomissioning						
	Waste Management Plan	Page 29	Training	All employees of TŪMAD as well as contractors shall have a training on special site entry induction and environmental awareness training and they shall be subject to comprehensive medical screening. A training on the usage of the chemicals and management of wastes shall be provided to the workers and the trained persons shall use the chemicals as per the standards. The training subjects at least includes requirements of this management plan, precautions and risks when handling wastes, proper usage of PPEs, waste minimization, categorization, segregation, storage, waste recycling and appropriate disposal. All personnel who start to work at the mine site are provided with orientation trainings periodically under supervision of Department Administrators. Plant operators and key personnel, who are engaged site cleaning, construction or material usage activities, shall be provided with Job-specific specialist training.		Preconstruction, Construction, Operation, Decomissioning						
	Waste Management Plan	Page 29	Inspection	Daily Inspections: operation supervisors and inspectors perform these inspections in accordance with the activities outside the fence boundary by including a wide range of operation issues, including community health and safety. Any incident or non-compliance determined during these inspections shall be recorded and reported according to the documents of the Integrated Management System of TŪMAD. Legal responsibilities and Management System Responsibilities are periodically inspected by government agencies and inspectors within the framework of Waste Management Plan in the line of Inspection Procedure (TMD_KAL_PRD.001). Waste contractors will regularly monitored and audited in order to be ensure their compliance of this management plan.		Construction, Operation,						
	Waste Management Plan	Page 30	Reporting	Inspections, incidents and non-compliances shall be documented and administered in accordance with the Instructions and Procedures of TŪMAD. Record Management Procedures (TMD_EYS_PRD.004).		Construction, Operation,						
	Livelihood Restoration Framework	Page 6, 7	Project Standards	Tŭmad will comply with; * Land Registry Law No. 2644, amended by Law No. 6302, which entered into force on 18 May 2012. * Cadastral Law No. 3402. * The Expropriation Law No. 2942 * Forest Law No.6831 * Pasture Law No. 4342. * Land Registry Code (Official Gazette No. 28738).		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 7	Project Standards	Once a final identification of land users has been completed by TŪMAD, a detailed Livelihood Restoration Plan – based on this Framework – will be prepared.		Preconstruction, Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Livelihood Restoration Framework	Page 7	Project Standards	Tümad will comply with EBRD’s Performance Requirement 5: Land Acquisition, Involuntary Resettlement and Economic Displacement. PR5 states that when economic displacement occurs the Project must: <ul style="list-style-type: none">• Promptly compensate economically displaced persons for loss of assets or access to assets. This process should be initiated prior to displacement.• Compensate, in cases where land acquisition affects commercial structures, the affected business owner for:<ul style="list-style-type: none">o the cost of re-establishing commercial activities elsewhere;o lost net income during the period of transition;o the costs of the transfer and reinstallation of the plant, machinery or other equipment, as applicable.• Provide replacement property (for example, agricultural or commercial sites) of equal or greater value, or cash compensation at full replacement cost where appropriate, to persons with legal rights or claims to land which are recognised or recognisable under national laws.• Provide assistance that will offset any loss of a community’s commonly held resources. This could take the form of initiatives that enhance the productivity of the remaining resources to which the community has access, in-kind or cash compensation for loss of access or provision of access to alternative sources of the lost resource.• Compensate economically displaced persons who are without legally recognisable claims to land for lost assets (such as crops, irrigation infrastructure and other improvements made to the land) other than land, at full replacement cost.• Provide additional targeted assistance (for example, credit facilities, training or job opportunities) and opportunities to restore, and where possible improve, their income earning capacity, production levels and standards of living.• Provide transitional support to economically displaced persons, as necessary, based on a reasonable estimate of the time required to restore their income-earning capacity, production levels and standards of living.		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 9	Land Access And Livelihood Restoration Principles	TÜMAD has set the following Objectives for the land access and acquisition process; <ul style="list-style-type: none">• avoid or, when unavoidable, minimise, involuntary resettlement by exploring alternative project designs;• mitigate adverse social and economic impacts from land acquisition or restrictions on affected persons’ use of and access to assets and land by:<ul style="list-style-type: none">o (i) providing compensation for loss of assets at replacement cost; ando (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation and the informed participation of those affected;• restore or, where possible, improve the livelihoods and standards of living of project affected persons to pre-project levels. TÜMAD recognises that it may have land access and livelihoods impact across the Project footprint. of both Lapseki and Ivrendi Mines.		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 9, 10	Key Principles	The key principles guiding land access and livelihood restoration for Lapseki Project are as follows: <ul style="list-style-type: none">• TÜMAD will avoid physical resettlement (no physical resettlement is planned as part of the Project design).• TÜMAD will seek to minimise the area of land required for permanent features and will minimise the time that Project activities disrupt or interfere with land users access to public land.• TÜMAD will use Turkish legal processes for the acquisition of land and the temporary access to land for operation purposes.• In addition to Turkish legal requirements for land acquisition, TÜMAD recognizes the need for livelihood restoration for those households that are displaced from access to lands and natural resources as a result of the Project in line with EBRD PR 5. TÜMAD will compensate the loss of informal users of public lands both at mine site and at project associated facilities including power line (ETL) where the formal acquisition of land is under the responsibility of state owned TEIAS.• Wherever possible, acquisition of private lands will be based on a market-based “willing seller-willing buyer” approach, with expropriation used as a last resort when all other options have been attempted.• Livelihoods will be restored to a same or better level, based on evidence such as household census/inventory/qualitative data, and restoration may include support to continue the same livelihood, an alternative livelihood or a combination.• Where restrictions on land access lead to impacts at a group or community level, livelihoods support will be provided on a group level, rather than on an individual basis.• Where restrictions on land access lead to impacts that can be identified and quantified at the level of individual households, impacted households need to have options to choose which approach to livelihood restoration best suits their situation.• TÜMAD will take into account any individuals or groups that may be disadvantaged or vulnerable. In particular, TÜMAD will take necessary actions to ensure that vulnerable groups are not disadvantaged in the land acquisition process, are fully informed and aware of their rights, and are able to benefit equally from the resettlement opportunities and benefits.		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 10	Key Principles	The temporary loss is of access to common animal grazing areas, herb, hay and other forestry products collection, and water resources, and as the area used is communal the livelihood restoration measures are to be common between all displaced users. <ul style="list-style-type: none">• Livelihood restoration is a temporary, transitional activity only to bridge the gap between loss of access to natural resources and being able to meet the same or better livelihood to an agreed level through the same or a different means.• Long-term livelihoods activities are achieved through other tools, including, for example, the Community Development Framework/Plan.• Livelihood restoration is not cash compensation, or where a cash payment is made, households may require financial management support in order to invest their compensation to provide for their household’s sustainable future.		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 10	Land Access and Acquisition Requirements	All land acquisition has been and will be undertaken in conformance with Turkish Expropriation Laws and no land will be used until: <ul style="list-style-type: none">• the land has been purchased from the existing owner based on a “willing-buyer willing-seller” transaction and payment has been made;• the land has been expropriated in accordance with the Expropriation Law and compensation has been paid;• access to state-owned land has been granted by the Government under applicable legislation;• Where there are differences between Turkish Expropriation Law and EBRD PR 5 (i.e. users of pasture land, forest land or other state lands who are not entitled for compensation according to Turkish Expropriation Law), TÜMAD will develop and implement a Livelihood restoration Plan in line with the EBRD PR 5 requirements. In other words, the absence of legal title to land or other assets is not, in itself, a bar to compensation for lost assets or to other resettlement assistance. Project Land Acquisition will be performed in line with the Table 2 of this Framwork, "Project Land Acquisition Framwork".		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 11	Status of Land Acquisition for Lapseki Mine (September 2017)	Acquisition of 1226 decares (122.26 hectares) which corresponds to 31% of the land the EIA designated area has been completed which enables the Project to start operation. The land acquisition for another 840 decares will be performed after the completion of the first three years in operation. <ul style="list-style-type: none">• Lands used by private people (2B): Within the scope of the “Soil Protection and Land Use Act no. 5403 ”, permit for non- agricultural use was received in May 2015 from the Çanakkale Provincial Directorate of Food, Agriculture and Livestock for 9.52 hectares 2B agricultural lands.• Forests lands: Regarding the forest lands; forest permit was received from the General Directorate of Forestry in accordance with the “Forest Law No. 6831”, Article 16 for 113 hectares of forest area (includes the area for diversion channels). These permits are obtained for a period of 10 years. Yet, forest areas where mining works will be completed will be rehabilitated and restored without waiting for expiry of permits. Forest permits will be received step by step with the production activities. The diversion channel area is included in these forests lands.		Preconstruction, Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Livelihood Restoration Framework	Page 11, 12	Status of land acquisition for associated facilities (September 2017)	ETL: Lan acquisition for Energy Transmission Line is completed by TEİAŞ. The project will do a gap assessment retrospectively on land acquisition done for ETL and pay for the losses if anyone is left out through LRP. Diversion Channel: Due to expansion of Kestanelik pit and location of waste rock dump on Kestalinec Creek. Such a major diversion plan is not included to the EIA report and Tümad submitted the diversion plan to DSI (Devlet Su İşleri – State Hydraulic Works) and it is approved on 04.05.2017. Any future change in the DSI approved designs should be reviewed and approved again by DSI. Land use permits for the diversion channels located outside of the EIA and the license boundary will be received by Tümad. Tümad confirms that the channels are considered as supporting infrastructure and constructing them outside of the license and EIA boundary is possible and the Forest Permits for these lands have been received. No land acquisition is required for access road and water pipelines.		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 12-15	LIVELIHOODS RESTORATION PLAN	The livelihood restoration plan will be developed in 6 steps by the first quarter of 2018. These steps will occur iteratively and at times, in parallel, still are described in order, and detailed in this Framwork. Responsibility for implementation of these steps lies with the TÛMAD Community Relations Department. This steps should be considered during all activities		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 15	LRP IMPLEMENTATION SCHEDULE	TÛMAD will develop a detailed implementation schedule, based on the requirements outlined in this Livelihood Restoration Framework and in accordance with the requirements of PR 5. This Framework will guide activities until the detailed implementation schedule is in place. The Implementation Plan will be agreed with the Project Lenders and PAPs and well publicised through TUMAD website. The community will also be kept informed of any changes to the LRP Implementation Plan.		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 17-20	Monitoring	Monitoring is the responsibility of the Community Relations Manager with the support of TÛMAD land/permit experts. In the event that monitoring identifies a non-conformance with Project Standards, it will be investigated and appropriate corrective actions identified. The monitoring activities as should be performed considering this Framework, including progress monitoring, implemetation monitoring and effectiveness monitoring.		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 18	Monitoring	Users who have been and will be identified as using 2B and forest land within and surrounding the EIA Permitted Area will be subject to periodic consultation to identify and monitor: • Alternative areas being used for animal grazing and forest product collection; • Any issues with over-grazing or conflict with other affected users over alternative lands; Affected land users will be consulted on at least an annual basis, during the summer grazing season.		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 18	Monitoring	Monitoring of the powerline will require special care and attention. Land owners along the powerline will be subject to monitoring by TÛMAD during powerline construction to ensure that all requirements of the Turkish expropriation process have been met and that appropriate compensation has been paid to land owners prior to land being used for construction purposes. With the completion of construction, TÛMAD will start undertaking walk-over inspections of the powerline alignment, consult with land owners and consult with muthars to identify any potential land use and livelihoods issues associated with the operation of the powerline. Monitoring will be undertaken during the first year after construction and during the summer growing season. If no issues are identified, monitoring for land use and livelihoods issues will then cease		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 18	Monitoring	Livelihood impacts that will occur through processes other than land acquisition will also require specific attention during the monitoring stage. TÛMAD will install dust measurement instrument at suitable locations surrounding the Project and will take regular photographs during the summer growing season at locations where there is considered to be a risk of real/perceived crop damage due to dust from the Project. If local land users claim for crop damage, this will be processed via the Grievance Procedure and compensation will be agreed based on the area of crops affected, the estimated impact on yield and the market price for crops. TÛMAD will also investigate the possible causes for dust emissions that may have caused identified crop impacts and will consider potential mitigation measures to prevent impacts from occurring in the future.		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 19	Monitoring	Internal monitoring. Quarterly during the implementation of the LRP and every six months thereafter.		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 19	Monitoring	External monitoring will occur every six months and will be based on both the reports from the internal monitoring and primary research/ consultation with PAPs.		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 20	Audit and Reporting	Conformance with this Framework (and subsequent Plan) will be subject to periodic assessment as part of the TÛMAD audit programme and separately by Project Lenders. Records of audits, inspections and incidents will be managed in accordance with TÛMAD procedures.		Preconstruction, Construction, Operation, Decomissioning						
	Livelihood Restoration Framework	Page 20	Audit and Reporting	TÛMAD will organise for a completion audit to be carried out by an external auditor on the effectiveness of the Livelihoods Restoration Plan. The completion audit will be undertaken 2 years after completion of the LRP implementation to ensure compliance with livelihood restoration objectives and requirements.		Preconstruction, Construction, Operation, Decomissioning						
	Water Resources Management Plan	Page 6	4.1 EIA Requirements	All phases of these activities will be conducted in accordance with the "Regulation on Protection of Wetlands" published in the Official Gazette no. 28962 and entered into force on 04.04.2012. No effect of the plant is expected on the underground and surface water resources. In addition, in order to protect the water quality of the receiving waters after discharge, the provisions of the "Surface Water Quality Management Regulation" no. 28483, dated 11.30.2012, "Law on Ground Waters" no. 10688, dated 12.23.1960, with decision number 167, "Regulation on the Protection of Ground Waters against Pollution and Deterioration " no. 28257, dated 04.07.20012 and "Water Pollution Control Regulation" no. 25687, dated 12.31.2004 (Amended; O.G. dated 03.25.2012 with No 28244) entered into force through publication in the Official Gazette will be followed.		All Phases						
	Water Resources Management Plan	Table 1, Page 10	4.3 Water Monitoring Standards	The water monitoring standards that will be used in the water quality monitoring works carried out under the project are given in the table 1.		All Phases						
	Water Resources Management Plan	Table 2, Page 10	4.3 Water Monitoring Standards	The drinking water standards used for drinking water supply of the personnel that will work during the mining activity and the discharge standards for wastewater are given in Table 2.		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Water Resources Management Plan	Page 15	4.4 Company Undertakings and Requirements of Undertakings	The Material Safety Data Sheets (MSDS) the materials to be used will be kept available within the scope of operation activities and handling, storage on site and use of them will be carried in accordance with the provisions stated in these data sheets. In addition, within the scope of the project, the works will be performed in compliance with the International Cyanide Management Institute (ICMI), International Cyanide Management Code (Cyanide Code). In order to protect the water quality of the receiving waters after discharge, the provisions of the "Surface Water Quality Management Regulation" no. 28483, dated 11.30.2012, "Law on Ground Waters" no. 10688, dated 12.23.1960, with decision number 167, "Regulation on the Protection of Ground Waters against Pollution and Deterioration " no. 28257, dated 04.07.20012 and "Water Pollution Control Regulation" no. 25687, dated 12.31.2004 (Amended; O.G. dated 03.25.2012 with No 28244) entered into force through publication in the Official Gazette will be followed. Any unpredicted impacts that might influence on users of the local water resources in case of water quality degradation or quantity reduction due to the mining activities will be compensated by TUMAD.		All Phases						
	Water Resources Management Plan	Page 16	4.4 Company Undertakings and Requirements of Undertakings	Minimise erosion of disturbed areas and minimise suspended sediment flow to streams. Separate contact and non-contact water as much as applicable, Divert the non-contact water and discharge to receiving environment to minimize hydrologic impacts Do not abstract groundwater from the wells located in the close vicinity of the Project site except emergency situations, Provide water to nearby villages in order to replace their water sources that will be lost during the mining operation Collect open pit runoff water to ponds and collection sumps Collect WRD runoff and seepage water to contact water ponds Collect DTSF runoff and seepage water to contact water ponds Use the captured contact water in the processing plant or discharge if it meets the Project discharge standards Encapsulate the PAG rock with NAG rock within the WRD Cover the sulfide zones within the pit with NAG rock during closure Conduct monitoring and update the plans and mitigations if necessary Cap the facilities with suitable cover systems and conduct rehabilitation		All Phases						
	Water Resources Management Plan	Table 8, Page 17, 18	4.4 Company Undertakings and Requirements of Undertakings	Impact Controls Listed in Table 8 - Management Controls will be complied with.		All Phases						
	Water Resources Management Plan	Page 20	6 MITIGATION MEASURES AND MANAGEMENT CONTROLS	The interception channel will be used to protect and collect storm waters coming to the region and the drainage channels will be used to protect groundwater; and precipitation falling on the units (contaminated water) will be collected to be used in the plant. Waste water discharges will not be made to the receiving environment without being treated, either directly or indirectly. Where there is no defined discharge limit for a given parameter, or where the reference concentration is already above the discharge limit, the average reference values observed in Kovanlık Creek will be used to define the trigger levels.		All Phases						
	Water Resources Management Plan	Page 21	6.1.5 Contact and Non-Contact Water	Surface run-off due to rainfall on open pit walls will be collected at the ponds/sumps that will be excavated at the lowest elevation of the pits together with the groundwater seeping through the pit walls; water accumulated in the sumps will be used for dust suppression and road spraying within the pits and/or will be pumped to contact water collection ponds. Waste rock dump seepage and run-off water will be collected in the contact water collection pond and will be re-used in the process or will be discharged to Kovanlık Stream after meeting the project discharge standards. An underdrain system will be constructed and connected to the contact water collection pond to capture the seepage water. The capacity of the main settling pond (contact water collection pond) to be constructed at the downstream of the waste rock dump is 60,000 m3. The contact water collected within the pit sumps will also be pumped back to the main settling pond (contact water collection pond). DTSF will have a separate contact water collection pond. Contact water from the DTSF will be re-used in the project. If it meets the project discharge standards, the DTSF contact water will be pumped to the WRD contact water collection pond and will be discharged to Kovanlık stream. The contact water quality will be monitored on a regular basis and further mitigation measures including design or management approach changes or construction of a contact water treatment plant will be evaluated if the contact water quality exceeds the discharge standards.		All Phases						
	Water Resources Management Plan	Page 22	6.1.5 Contact and Non-Contact Water	All water collected through interception channels has been designed to be discharged to the downstream of the project site, to the Kovanlık stream. Diversion channels have been designed to keep the stream interrupted by the mining areas away from the mine field. These diversion channels in the project site are designed to be wider than the existing seasonal stream beds in order to ensure that they do not overflow in possible extreme rainfalls. Their sizes are conservatively designed to handle extreme rainfall events that is observed once in a 500 years. Figure 1 presents the water management flowchart for the three stages of the project.		All Phases						
	Water Resources Management Plan	Page 22	6.1.7 Open Pit Based waters	During rainy seasons, surface water inside the open pit accumulates inside basins/ponds/sumps built at the lowest elevation of the pit and it will send to sedimentation/contact water collection pond and these water discharged to receiving in the consideration of environmental project standards. If the contact water quality does not meet the discharge standards, or cause quality changes in the environmental receptors, the contact water will be used in the process and contact water treatment options will be evaluated and implemented depending on the parameters causing environmental impacts. Treatment options would include adding certain chemicals to the contact water prior to discharge or design and construction of a treatment plant by Tümad during the operation stage of the Project. This accumulated water will also be used for dust suppression and road spraying within the pits.		All Phases						
	Water Resources Management Plan	Page 22	6.1.8 Personnel based Waters	Employees at the mine consume water at a rate of approximately 0,213m3/day per person. Domestic wastewater will be treated with biological treatment process in accordance with the discharge standards defined in Table-4 , Standards for Discharge Standards for Domestic Wastewater. It will then be discharged to the receiving environment in accordance with project standards. Alternatively, it is used in dust suppression and road spraying.		All Phases						
	Water Resources Management Plan	Page 22	6.1.9 Groundwater Observation Wells	There are eight DSI certified groundwater production wells together with other groundwater monitoring wells drilled at the downstream of the solid waste storage area. Groundwater abstraction from the wells will only be conducted in case of an emergency situation. Groundwater wells will be monitored on a regular basis and will be replaced or deepened if the wells are lost during the mining operation to allow continuous monitoring during and after operation.		All Phases						
	Water Resources Management Plan	Page 22	6.1.10 Water Wells of Lapseki Municipality and Lapseki Water Transmisson Pipeline	Tümad has signed an water supply agreement with the Municipality of Lapseki to use the water from the Lapseki Municaplity wells. The owner of the wells is the Lapseki Municipality, the agreement is for ten years and Tümad will pay annual fees to the Municipality and will be responsible with the maintenance and operation costs of the wells, pumps and the Lapseki pipeline. Lapseki Municipality owns four water supply wells and water usage permits provided by DSI. The total yield of the four wells assessed and approved by DSI is 55 l/sec. DSI allocated drinking water to Lapseki Municipality from Bayramdere Dam so the wells are no longer required by the Lapseki Municipality. Tümad will use the water from Lapseki wells for project water supply and to provide drinking water to Şahinli and Kocabaşlar Villages to meet the village water requirements. In this context, the construction of 10.12 km Lapseki (main pipeline) has been completed by Tümad. Approximately 10 l/s will be used for the process water supply and 2 l/s will serve the Villages of Şahinli and Kocabaşlar. The remaining capacity would be used in case of increasing water demands in the future. Tümad will operate the Lapseki pipeline during the operation period of the Project. Tümad will provide water to the Şahinli and Kocabaşlar villages from the Lapseki water transmission line during the operation period of the project. During the closure phase of the Project, Tümad will make sure that sustainable water sources are allocated to the Villages in order to compensate the water sources that would be impacted from the mining operation.		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Water Resources Management Plan	Page 23	6.1.11 Village Water Supply Pipelines	Çırpılık water distribution pipeline will be constructed by Tümad to supply water to the Kocabaşlar village.		All Phases						
	Water Resources Management Plan	Page 27	6.2.1 Revision of the Water Sources Management Plan	This management plan will monitor construction and operation phases of TÛMAD in periods of six months in order to determine stability. In addition, legal responsibilities and changes in Instructions and Procedures of TÛMAD will be reviewed and updated in one year periods. In case of a revision on the Water Sources Management Plan, the up-to-date version will be delivered to all TÛMAD employees and subcontractors.		All Phases						
	Water Resources Management Plan	Page 27	7.1.1 Overview (Monitoring)	Monitoring and measurement activities which will be carried out in the scope of international standards and guides in the scope of TÛMAD activities have been defined in the Water Sources Management Plan and related Procedures and Instructions.		All Phases						
	Water Resources Management Plan	Page 27, Table 9 - 10	7.1.2 Monitoring Activities	Monitoring undertakings stated in the EIA Report, monitoring due to legal requirements, and monitoring and measurement requirements in the scope of the Integrated Management System are listed in the table 9. After the operation, monitoring schedule will be conducted quarterly for the first 5 years, then once in a six month for the next five years and annually for the final five years after the operation. So that the monitoring will be continued for 15 years after the operation in accordance with the monitoring schedule defined by the Ministry of Environment and Urbanization during the EIA process. Frequency and Parameters to be Monitored during Operation are presented in table 10		All Phases						
	Water Resources Management Plan	Page 29, Table 11, Table 5, Page 12, Table 2, Page 10,	7.1.2 Monitoring Activities, Section 4.3 Water Monitoring Standards	The water quality analyses will include the parameters provided in Table 11 for the groundwater samples. Surface water and drinking water samples will be analyzed according to the project standards defined in Table 5 and Table 2. The monitoring parameters will be reviewed and revised if necessary at the end of the 4th water quality monitoring period.		All Phases						
	Water Resources Management Plan	Page 30 - 31	7.1.2 Monitoring Activities,	Contact Water Ponds and Outlets; Sampling studies will be conducted at outlets of the ponds. Analyses will be conducted in accordance with Table 7.1 of By-law on Water Pollution Control and project groundwater and surface water standards in order to determine whether sampled waters comply with discharge criteria. Spring-Fountain, Catchment and Village Depot Sampling Locations; The monitoring studies will continue throughout land preparation, construction, operation and post-operations phases of the project. The quality and quantity of the water provided to the villages and the water consumption of the Şahinli and Kocabaşlar Villages will be monitored on regular basis. Non-Contact Water Collection Basins; Non-contact water collected by interception channels will be accumulated in water collection basins. Channels and basins will be inspected and cleaned on a regular basis. Groundwater Sampling Locations; Springs and groundwater wells located around and downstream of the project facilities will be included into the monitoring program. The sampling points are shown in Figure 3. Surface Water Sampling Locations; Surface water locations which are being analyzed since 2009 are included into the monitoring and monitoring activities will continue at the same locations. A weir will be installed to Kovanlıkdere to obtain continuous flow measurements to monitor flow changes. Water quality at open pits, leachate quality at mine waste and SWS areas, underground water quality of the project site area during the final shutdown process will be compared to the results of water quality estimation models prepared in the scope of the Project, after which a report which includes current status report and effectiveness of measures will be repared and submitted to General Directorate of State Hydraulic Works every 5 years and prior to the shutdown phase		All Phases						
	Water Resources Management Plan	Page 33	Table- 12. ARD Monitoring Program	Acid production and metal leaching potentials of the lithological units to be excavated during the operation phase will be examined by performing geochemical analysis of advanced rock and water. Acid-base calculations and short-time static tests will be performed for new lithologies to be encountered during mining operations. In this context, the pit walls shall be continuously monitored and sulfur analysis shall be performed on samples to be taken from the new surface of the pit after each blasting, and wall washing tests shall be performed on the surfaces where the result is different from the specified lithology /% s ratio. The acid rock drainage monitoring program under the Lapseki Project is included in Tabşe 12.		All Phases						
	Water Resources Management Plan	Table 13, Page 34	KPIs Table 13	KPIs are presented in Table- 13. Table of Performance Indicators		All Phases						
	Water Resources Management Plan	Page 34	Section 8 Training	All necessary trainings, workplace site induction trainings, orientation trainings and work-specific trainings will be given. Site-specific site induction training, environmental awareness trainings and extensive health screening will be provided to all personnel and subcontractors working at the site of TÛMAD. Orientation training will be given at certain intervals under the supervision of Department Chiefs to all personnel starting to work at the site. Work-specific specialized training will be given to plant operators and all key personnel taking part in activities that involve land clearance, construction or use of materials.		All Phases						
	Water Resources Management Plan	Page 35	Section 9 Auditing	Daily inspections will be carried out at the operating site by supervisors and auditors, covering a wide range of operating aspects, including community health and safety issues, in accordance with activities outside the fence borders. Any incidents and nonconformities detected during these inspections shall be recorded and reported in accordance with Integrated Management System documents of TÛMAD. Legal responsibilities and Management System Responsibilities are audited by official bodies and auditors at certain periods within the framework of the Water Sources Management Plan.		All Phases						
	Water Resources Management Plan	Page 35	Section 10 Reporting	Audits, incidents and nonconformities shall be documented and managed pursuant to instructions and procedures of TÛMAD. All records shall be kept according to requirements of the Records Management Procedure (TMD_EYS_PRD.004).		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Contractor Management Plan	Page 13	Definition of Scope of Work	All requirements applicable to Project(s) and set forth in IMS of companies will particularly be included in the contract. It will include all conditions suitable for the work that will be carried out based on the contract and will express issues such as accident incident loss reporting and investigation, necessary investigations, permit systems tracking.		All Phases						
	Contractor Management Plan	Page 13	Definition of Scope of Work	Contract language will clarify contractual penalties against performance that falls below contractor standards and requirements		All Phases						
	Contractor Management Plan	Page 13	Definition of Scope of Work	The contracts will include condition on stopping works in case of continuous violation of the Environmental, Social and OHS rules defined by the Project(s)		All Phases						
	Contractor Management Plan	Page 13	Equipment and Materials	Required Safety Data Sheet Forms will be submitted in any case		All Phases						
	Contractor Management Plan	Page 13	Equipment and Materials	All equipment used by subcontractors and suppliers in the company will be subject to supervision including occupational health and safety and emergency equipment status.		All Phases						
	Contractor Management Plan	Page 13	Pre-Project Meetings	A pre-employment conference will be held between the subcontractor and company personnel in order to review Occupational Health and Safety Loss Prevention procedures and requirements before the subcontractor starts working.		All Phases						
	Contractor Management Plan	Page 13	Preliminary Qualification and Selection of Contractors	A system will be developed for preliminary qualification and selection of suppliers/subcontractors.		All Phases						
	Contractor Management Plan	Page 13	Preliminary Qualification and Selection of Contractors	Licenses and necessary registrations, existing IMS of the contractor and performance results of IMS will be taken into consideration during preliminary qualification and selection processes of contractors.		All Phases						
	Contractor Management Plan	Page 14	Contract Signing	The contracts will be signed after the receipt of the Contracts Risk Assessment and Occupational Health and Safety (OHS) plan outlined in line with the requirements of the Contract classification in the Scope of Work		All Phases						
	Contractor Management Plan	Page 14	Contract Signing	The Risk assessment and/or OHS plan of the contractor will be reviewed by Project(s) personnel and if required corrective action requests will be forwarded to the Contractor. The revised risk assessments and OHS plans will be approved by the Project(s) designated personnel.		All Phases						
	Contractor Management Plan	Page 14	Contract Signing	A pre-employment conference will be held between the contractor and Project (s) personnel in order to review Occupational Health and Safety procedures and requirements before the contractor starts working.		All Phases						
	Contractor Management Plan	Page 14	Execution of Works	Subcontractors and suppliers are required to submit documents proving fitness of their equipment such as licenses, legal examination records, mandatory motor insurance and traffic insurance. Also, examinations will be conducted by maintenance and planning personnel at relevant mining site.		All Phases						
	Contractor Management Plan	Page 14	Execution of Works	Use of equipment supplied by TMAD (for example security forces) will be monitored in order to ensure that they are being used only for intended purposes		All Phases						
	Contractor Management Plan	Page 14	Execution of Works	Contractors, workers and Project(s) representatives will hold routine coordination meetings regarding transportation and use of materials that require OHS/Environment/Community Relations coordination among other departments at the site, coordinate future works regarding other activities, and review past performance		All Phases						
	Contractor Management Plan	Page 14	Execution of Works	The contractors’ performance will be monitored through, but not limited to, the following; <ul style="list-style-type: none">• Monitoring work permits• Inspection of Activities• Effective and regular communication		All Phases						
	Contractor Management Plan	Page 16	Contractor Management	Employer will prepare a contractor handbook which will contain training and implementation examples along with subjects in order to ensure that contractors work in compliance and coordination with employer management systems.		All Phases						
	Contractor Management Plan	Page 16	Contractor Management	A Risk Assessment accepted by the IMS unit relevant to the work of the contractor will be used to have the contractor develop plans and activities towards eliminating or minimizing the impact of these risks and the human resource that will conduct this study will be requested		All Phases						
	Contractor Management Plan	Page 17	Contractor Management	All materials, equipment, services and workforce purchased or supplied must fulfil all conditions set forth regarding controlling HSMP, community and conformity risks related to use or activity planned as defined during the risk assessment process.		All Phases						
	Contractor Management Plan	Page 17	Contractor Management	Hazardous materials approved for used at the site (preferably based on an inventory system) must be recorded. This record will be maintained and used as a reference in order to control purchasing and provision for use of new materials. All hazardous materials brought in by contractors must be included in these records or assessed.		All Phases						
	Contractor Management Plan	Page 17	Contractor Management	Properties of all substances that pose a serious risk for OHS and HSMP performance (including process mid-products, by-products and waste) must be sufficiently understood, certified, and integrated into business procedures. Legally suitable Safety Data Sheet forms (SDS) for these substances (including products) must be present prior to their delivery and use.		All Phases						
	Contractor Management Plan	Page 18	Contractor Management	The contractor must have a procedure regarding procurement, storage, distribution and transportation of all equipment and materials that is in accordance with the Project Standard and in proportion with the risk being assessed. Note: (i) Risk assessments will be conducted per incident as a part of the supply process. (ii) The contractors will develop H&S Management Plans (which can include an Emergency Action Plan (EAP)) and these plans will be reviewed by TMAD (HS Supervisor and managing director) before contractors arrive at the site.		All Phases						
	Contractor Management Plan	Page 18	Contractor Management	The contractor must have a procedure regarding management of disposal of excess/used materials, chemical substances, hazardous waste and equipment in a safe and approved manner in accordance with Project Standards. This procedure must define actions aiming at minimizing any type of obligation that may arise in the future		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Contractor Management Plan	Page 19	Contractor Management	The process regarding management of contractors covers the stages below: a) Qualification and Resource Use b) Preparation of the contractor c) Mobilisation d) Orientation and training e) Work Management f) Assessment and Closing Individuals assigned temporary or daily to be working in the scope of current Project (s) activities/sites must receive employment training, and these individuals must be managed in the same manner as other employees.		All Phases						
	Contractor Management Plan	Page 19	Contractor Management	A scope of work including analysis of risks connected to activities carried out by the contractor including non-conformity risks of all contractor or service contracts or conformity to Project Standards must be developed. The scope of assessment of anticipated risks will be determined during the scope of work evaluation process, meanwhile HSMP, community and conformity risks defined, in minimum, in the Scope of Work Template applies to HSMP contractors and includes processes for inspection and evaluation of whether vehicles and equipment of all contractors are safe and in compliance with TUMAD standards and site procedures		All Phases						
	Contractor Management Plan	Page 19	Local Sourcing	TÜMAD will use local sources and local sub-contractors where possible		All Phases						
	Contractor Management Plan	Page 19	ESHS Code of Conduct	Code of conduct would address particular risks of the contract such as: • Labour influx • Sexual harassment and gender based violence • Illicit behaviour and crime • Maintaining safety • Compliance with general labour and working conditions specified in the labour law and in EBRD PR 2. The contract must also have mechanisms to enforce the above		All Phases						
	Contractor Management Plan	Page 18	Monitoring	The manager responsible for the contract will be responsible for monitoring contractor activities regularly in order to ensure compliance with requirements of IMS and Community Relations.		All Phases						
	Contractor Management Plan	Page 18	Auditing	The company will audit contractor management systems in order to approve contractor effectiveness and company control level		All Phases						
	Contractor Management Plan	Page 18	Auditing	The level of contractor monitoring and auditing will be determined based on the issues below: • Current contractor management system and procedures; • Execution of contractor management system and procedures; and • Type and risks of activity		All Phases						
	Contractor Management Plan	Page 20	Monitoring	TUMAD will supervise all activities undertaken by contractors		All Phases						
	Contractor Management Plan	Page 20	Monitoring	TUMAD will undertake daily workplace inspections by operational area superintendents / supervisors covering a broad range of operational aspects, including community health safety and security issues as appropriate to activities outside the fenceline		All Phases						
	Contractor Management Plan	Page 20	Monitoring	Contractor responsibilities will be defined in individual contracts, but will include: • Preparing (as appropriate) health and safety, environmental management and/or community relations plans as outlined in contract documentation; • Implementing plans in coordination with TUMAD Management Plans and procedures; • Meeting training and competence requirements as defined by TUMAD; • Ensuring all workers are fit for work and are provided with appropriate personal protective equipment; • Complying with all Turkish regulatory requirements and TUMAD Project Standards; • Ensuring that all work is carried out safely, in compliance with TUMAD instructions; • Undertaking regular internal inspections and audits as required by Turkish regulatory requirements and TUMAD requirements; • Establishing incident management procedures, including reporting and notification, in conformance with TUMAD requirements; • Undertaking non-conformance and incident investigations in conjunction with TUMAD		All Phases						
	Contractor Management Plan	Page 20	Monitoring	TÜMAD will conduct a contractor audit at the end of their contract in order to ensure that all obligations arising from the contract have been fulfilled.		All Phases						
	Contractor Management Plan	Page 20	Monitoring	All incidents in which contractor/supplier personnel have been involved will be investigated and reported according to TÜMAD Reporting and Investigation Procedure and a corrective measures system will be put into practice according to TÜMAD Corrective and Preventive Measures Procedure		All Phases						
	Contractor Management Plan	Page 20	Monitoring	Contractor will prepare plans for the management of Occupational Health and Safety/Environment/Community Relations and define the process for the monitoring of their performance in these plans		All Phases						
	Contractor Management Plan	Page 21	Monitoring	Any non-conformances identified with the Project Standards will be investigated and appropriate corrective actions will be identified in accordance with the Corrective Action Procedure		All Phases						
	Contractor Management Plan	Page 14	Preliminary Qualification and Selection of Contractors	Management does not award contracts until the preliminary qualification process is complete.		All Phases						
	Contractor Management Plan	Page 14	Preliminary Qualification and Selection of Contractors	Contractors that do not demonstrate sufficient levels of competency in the various pre-qualification checklist categories will be informed on their deficiencies and how to correct them for future consideration.		All Phases						
	Contractor Management Plan	Page 22	Training	A comprehensive Employment Training will be provided to all contractor personnel		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Contractor Management Plan	Page 22	Training	Employment training programme of contractor personnel will be defined according to the points below: <ul style="list-style-type: none">• Duration and type of contract;• Hazards of the work undertaken; and• Work environment to which contractor personnel will be assigned. At minimum, employment trainings will cover the subjects below: <ul style="list-style-type: none">• Basic Principles of Occupational Safety and legal rights and responsibilities• Emergency Action procedures;• Occupational health and safety, environment and social management system and ethical behaviour policies of TÛMAD;• Social Policies and Management Plans of TÛMAD.• Personnel and Contractor Behaviour of TÛMAD.• Cross-Cultural Awareness Training;• Occupational Health and Safety Plan and Community Relations risks as applicable to the Works that the contractor will undertake		All Phases						
	Contractor Management Plan	Page 23	Training	Necessary training will be provided as part of workplace orientation training (training that are specific to work and department and occupational proficiency trainings are necessary and will be provided)		All Phases						
	Contractor Management Plan	Page 23	Training	All Contractors shall provide a copy of the training certificates of their employees to TÛMAD as per the Regulation on Procedures and Principles of Occupational Health and Safety Training of Employees shall be provided		All Phases						
	Contractor Management Plan	Page 23	Training	All TÛMAD employees and contractors working at TÛMAD will participate in routine Occupational Health and Safety meetings.		All Phases						
	Contractor Management Plan	Page 23	Training	Contractor will have a representative in the Committee of Occupational Health and Safety		All Phases						
	Contractor Management Plan	Page 23	Training	Purchasing personnel will receive training on contract management and any other expertise training deemed necessary.		All Phases						
	Contractor Management Plan	Page 23	Training	Qualification and training records, training repeat records, occupational proficiency certificates and other proof documents for competency of the contractor employees will be collected by TÛMAD for qualification verification		All Phases						
	Contractor Management Plan	Page 23	Grievence	Contractors must have in place a robust Grievance and Redress Mechanism (GRM) for workers and where relevant for communities which is well publicised and follows a structured and timely process		All Phases						
	Contractor Management Plan	Page 23	Auditing	The contractors will be audited as part of the TÛMAD Audit Plan and Programme against the requirements this Management Plan, ESMS of TÛMAD and the Contract. The schedule, the frequency, the scope and objectives of the audit as well as the responsible internal inspectors will be indicated in the Audit Program to be developed		All Phases						
	Contractor Management Plan	Page 23	Auditing	Any non-compliances detected during these audits and inspections will be recorded as part of the Audit Procedure		All Phases						
	Contractor Management Plan	Page 23	Auditing	In this context, a third party consultancy who are specialised in labour issues will conduct these evaluations and audits on behalf of TÛMAD and Project Creditors quarterly during construction and biannually during operations		All Phases						
	Contractor Management Plan	Page 23	Auditing	National Authorities may conduct similar evaluations against national legislative requirements. Contractor will provide the audit reports of the national authorities to TÛMAD		All Phases						
	Contractor Management Plan	Page 23	Reporting	Evidences of the implementation of the mitigation actions/measures and related results are collected through TÛMAD IMS procedures		All Phases						
	Community Health and Safety Plan	Page 6	Bi-annual Revision	This Management Plan will be reviewed on a minimum of a six monthly basis during construction and commissioning		Construction, Commissioning						
	Community Health and Safety Plan	Page 6	Annual revision	During operation phase, this Plan will be reviewed on an annual basis to determine whether any changes or updates are required to the Management Framework unless a more frequent update is required to reflect changing project design or ESMS requirements and procedures		Operation						
	Community Health and Safety Plan	Page 7	Project Standards	Applicable Standards must be complied with for all Project activities (the “Project Standards”). Project Standards comprise: <ul style="list-style-type: none">• applicable Turkish Standards;• Turkish EIA requirements;• applicable international standards and guidelines;• applicable Nurol Holding an TÛMAD standards, policies and procedures;• Other industry guidelines with which TÛMAD has committed to comply or align with		All Phases						
	Community Health and Safety Plan	Page 14	Legal Compliance	TÛMAD and the personnel of the security company as sub-employer will comply with the relevant community institution and organization officers and the Private Security Law No.5188, EBRD PR4 (23) and the instructions specified Voluntary Principles on Security and Human Rights		All Phases						
	Community Health and Safety Plan	Page 14	Mitigation Measure	TÛMAD commits to ensure that its security personnel are adequately trained and in appropriate behaviour against the local communities and act in accordance with the applicable law and in line with the Voluntary Principles on Security and Human Rights.		All Phases						
	Contractor Management Plan	Page 20	Mitigation Measure	Key Monitoring Activities which are presented in Table 4 of the Contractor Management Plan of TÛMAD will be complied.		All Phases						
	Community Health and Safety Plan	Page 15 to 27	Mitigation Measure	Key CHSS Risks and Management Controls for the Lapseki and İvrindi Project, presented in the Table 4 of the Communtiy Health & Safety Security Management Plan of TUMAD, will be complied with.		All Phases						
	Community Health and Safety Plan	Page 28	Monitoring	Key Monitoring Activities, presented in Table 5 of the Communtiy Health & Safety Security Management Plan of TUMAD, will be complied with		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Community Health and Safety Plan	Page 29	Training	Department Head of Community Relations will undergo following trainings: <ul style="list-style-type: none">• TÜMAD mission, vision, strategy, values and objectives• Organizational structure, working environment, policies and IMS awareness and requirement• Occupational Health and Safety and Environment Trainings• Development of managerial technical competence and skills to manage the effectiveness and efficiency of company processes• Leadership, coaching leadership (mentoring), understanding communication styles, managing conflicts, motivation for effective organization of people, effective presentation techniques• Developing problem solving and decision making skills• Trainings on introduction to the communication channels of the company, developing the feedback techniques and managing the performance of the employees• Implementation of the TÜMAD Complaint Mechanism		All Phases						
	Community Health and Safety Plan	Page 29	Training	The security personnel will be subjected to following trainings: <ul style="list-style-type: none">• Information on Occupational Health and Safety policy, plan, procedure, instruction and site implementation rules for healthy working conditions and security• Introduction to working environment, policies and practices, introduction to organization structure and company mission, vision, values and objectives• TÜMAD Madencilik mission, vision, strategy, values and objectives• All private security personnel will receive training on communication with local people, crowd management, conflict management and problem solving, cautious performance of security operations and appropriate force use and human rights.		All Phases						
	Community Health and Safety Plan	Page 29	Training	Trainings to be provided to the employees: <ul style="list-style-type: none">• Trainings for all employees and sub-employers will include community health and safety issues.		All Phases						
	Community Health and Safety Plan	Page 29	Training	Trainings to be provided to the community members: <ul style="list-style-type: none">• How to make complaints• Road safety awareness training• Health awareness training		All Phases						
	Community Health and Safety Plan	Page 30	Auditing	Daily inspections such as wide range of operational OHS site inspections, work area inspections, including community health safety and security issues will be carried out by expert inspectors in accordance with the activities outside the mine area.		All Phases						
	Community Health and Safety Plan	Page 30	Auditing	The incidents detected in these examinations will be reported as specified in the TÜMAD Accident Incident Loss Reporting Form (TMD_EYS_FRM.003)		All Phases						
	Community Health and Safety Plan	Page 30	Auditing	Monitoring will be carried out by means of the annual, six-month and monthly internal inspection programs in accordance with the existing Inspection Program based on the Existing Management System of TÜMAD. This system will be used to assess the wide range compliance to the requirements of the Environment management system		All Phases						
	Community Health and Safety Plan	Page 30	Auditing	All incidents and non-conformities identified in these reviews are reported according to the requirements of TÜMAD Management System		All Phases						
	Community Health and Safety Plan	Page 30	Reporting	All incidents and non-conformities detected in inspections and examinations are reported in accordance with the inspection program in monthly, 6-month and annual basis in accordance with the requirements of TÜMAD Madencilik Management System (Internal Inspection Procedure) (TMD_KAL_PRD.001)		All Phases						
	Cultural Heritage Management Plan	Page 6	Bi-annual Revision	This Management Plan will be reviewed on a minimum of a six monthly basis during construction and commissioning.		Construction, Commissioning						
	Cultural Heritage Management Plan	Page 6	Annual revision	During operation phase, this Plan will be reviewed on an annual basis to determine whether any changes or updates are required to the Management Framework unless a more frequent update is required to reflect changing project design or ESMS requirements and procedures		Operation						
	Cultural Heritage Management Plan	Page 8	Project Standards	TÜMAD has committed to protect all the cultural and social heritage and all sites and resources that are sacred to the local people in case of discovery.		All Phases						
	Cultural Heritage Management Plan	Page 11	Loss of Cultural Heritage sites and/or objects	TÜMAD will implement Cultural Heritage Management Procedures. Specifically <ul style="list-style-type: none">• Implementation of the Chance Find Procedure• Monitoring/”watching briefs” conducted at specific construction and other sites• Consultation with local communities related to cultural resources• Communication and cooperation with the Contractors and the Çanakkale and Balıkesir Museums and/or other appropriately qualified archaeological specialists.• The Cultural Heritage Management Procedure is to apply and be made available to Contractor staff and their subcontractors, so the Plan is recognised, adopted and implemented by Contractors prior to the commencement of Construction or Operations work.		Construction, Operation						
	Cultural Heritage Management Plan	Page 12	Loss of Cultural Heritage sites and/or objects	Following to be implemented for Lapseki Project (Lapseki district, Şahinli and Kocabaşlar and nearby villages) and İvrindi Project (İvrindi District, Değirmenbaşı, Küçükılca, Karadere settlements): <ul style="list-style-type: none">• Giving sponsorship support to various cultural events that are considered important by local community and regional stakeholders.• Implementation of the Management Plan of Areas Being Important for Local Community in Terms of Cultural Heritage.• Organization of a "hayr" festival annually by TÜMAD, to which all the nearby villages and institutions are invited.• Keeping communication and relationship with stakeholders continuously and developing them according to the Stakeholder Participation Plan.		Construction, Operation						
	Cultural Heritage Management Plan	Page 12	Loss of Cultural Heritage sites and/or objects	TÜMAD will prepare the Chance Find Procedure to identify the procedures to be followed in case of finding movable and immovable cultural and natural assets		All Phases						
	Cultural Heritage Management Plan	Page 13	Monitoring	Key Monitoring Activities presented in Table 4 of the Cultural Heritage Management Planof TUMAD will be complied with.		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Cultural Heritage Management Plan	Page 14	Training	The Project will make train its own personnel on the issue of the importance of cultural heritage, the possibility of chance find and the procedures to follow in the event of a chance find		All Phases						
	Cultural Heritage Management Plan	Page 14	Training	Contractors will be required to carry out a similar procedure with their staff and also to ensure that sub-contractors also have a procedure in place		All Phases						
	Cultural Heritage Management Plan	Page 14	Training	Training records shall be kept by HR, Community Relations and Environmental Department		All Phases						
	Cultural Heritage Management Plan	Page 14	Auditing	Internal Audit Daily supervisions shall be carried out by shift chiefs/supervisors, covering a wide range of operating aspects, including cultural heritage (particularly incidental findings)		All Phases						
	Cultural Heritage Management Plan	Page 14	Auditing	External Audit Implementation of this plan will be subject to the periodic assessment of audit programme to be defined by the Project Lenders.		All Phases						
	Cultural Heritage Management Plan	Page 14	Recording	Records of inspections, inspections and events shall be managed in accordance with Tümad Mining Records Management Procedure (TMD_EYS_PRD.004).		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 7	Bi-annual Revision	This Management Plan will be reviewed on a minimum of a six monthly basis during construction and commissioning.		Construction, Commissioning						
	Explosives and Hazardous Materials Management Plan	Page 7	Annual revision	During operation phase, this Plan will be reviewed on an annual basis to determine whether any changes or updates are required to the Management Framework unless a more frequent update is required to reflect changing project design or ESMS requirements and procedures		Operation						
	Explosives and Hazardous Materials Management Plan	Page 8	Scope	The requirements of all applicable Project(s) Management Plans and Procedures will be applicable to Project(s) contractors. Such requirements will be set out in contracts and contractors will also be obliged to comply directly with these requirements		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 8	Scope	All of TÛMAD Policies, Management Plans, Standard Operational Procedures (SOP), Instructions, and Permit requirements will also apply to TÛMAD’s contractors. These requirements will be stated in contractor tender packages and in the contracts and contractors will be obliged to fully comply with the Management Plan and Procedures, instructions, and permits, either directly or indirectly		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 10	Roles and Responsibilities	The plan shall be monitored to ensure compliance by all site personnel, TÛMAD supervision shall be responsible for identification, reporting and correction of areas found to be in noncompliance to the plan, and adapt the plan where required, to encompass operational change during the phases of construction		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 11	Mitigation Measure	An explosive manufacturer will supply the blasting materials to the Project Sites		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 11	Mitigation Measure	Explosives will be safely delivered from the explosives manufacturing plant to the mine site by licensed/approved operators by a designated mobile manufacturing unit (MMU) vehicle		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 11	Mitigation Measure	It is TÛMAD’s policy to ensure that the supplier is committed to zero harm for everyone and caring for the community and the environment		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 11	Mitigation Measure	The blasting works will be fully compliant with the requirements of the Blasting Safety Ordinance issued by the Ministry of Interior		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 11	Mitigation Measure	Blasting works will be conducted under the responsibility of the Open Pit Chief Engineer and the blasting works will be escorted and supervised by the firemen and transporters appointed according to the Turkish law (29.09.1987 dated and 87/12028 numbered, Blasting Safety Ordinance issued by the Ministry of Interior) together with the gendarmerie		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 11	Mitigation Measure	Transportation of explosive and hazardous materials will be fully compliant with the requirements set in the Regulation on Transportation of Hazardous Materials by Road.		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Explosives and Hazardous Materials Management Plan	Page 12	Mitigation Measure	According to the Turkish Regulation on Transportation of Hazardous Materials by Road, drivers carrying hazardous materials on national and international roads are obliged to have Dangerous Good Driving Training Certificate (SRCS)/ADR Driver Training Certificate. Hazardous materials will only be moved or transferred within the Site areas by the suppliers who are qualified, trained vehicle operators, using appropriate industrial forklifts or other vehicles. The trainings for the use of vehicles inside the mine site is provided by OHS Department.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 12	Mitigation Measure	All hazardous materials will be checked upon receipt and that quantities and material descriptions match associated shipping manifests		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 12	Mitigation Measure	TÜMAD will maintain an inventory of all hazardous materials purchased, delivered, stored and used on sites		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 12	Mitigation Measure	Uncontrolled storage of hazardous materials will be avoided		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 12	Mitigation Measure	The inventory list will be kept at the entrance to the sites and handed to the Emergency Response services such as fire brigade, upon their arrival on site, so they know what they are dealing with and what the risks are.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 12	Mitigation Measure	TÜMAD will ensure that the chemical substances that are classified as hazardous, whether as individual substances or as ingredients in mixtures, are stored in accordance with the Project requirements		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 12	Mitigation Measure	A risk assessment of hazardous substances and mixtures will be carried out by TÜMAD in order to comply with Turkish regulations and Project Standards.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 12	Mitigation Measure	Following control measures will be implemented for the storage of hazmats: o Restrict access to the chemical store. o Provide a store with sufficient space, well organised, well lit, well ventilated and fire prevented. o The store should have an impervious floor that is resistant to the chemicals used and is easy to clean. o Store incompatible materials safely. Define the areas and put up clear signs. o Keep tanks and containers in defined, bunded areas. o Label tanks, containers and line clearly. o Provide bulk storage with dust filtration or air cleaning for the displaced air. o Provide explosion relief where necessary. o Vent air displaced from bulk liquids to a safe place. o Eliminate or control ignition sources. o Separate substances that should not be kept together in accordance with SDS. o Suitable spill clean-up materials must be kept close to the storage area and readily available. o Access roads and pathways to the storage area must be free of obstacles. o All storage areas must be provided with fire extinguishers according to the Emergency Preparedness and Response Plan. Location of fire extinguishers, first aid kits and clean-up materials must be clearly identified. o Access to storage areas to be restricted to authorized and qualified personnel. o Signs must be posted advising the type of hazardous materials stored in		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 12	Mitigation Measure	Safety Data Sheets (SDS) of all stored materials will be available in the hazardous materials storage locations and major usage points		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 12	Mitigation Measure	Handling, storage on site and use of them will be carried in accordance with the provisions stated in these data sheets.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 12	Mitigation Measure	Inspections and maintenance checks of storage tank system, piping and delivery system will be ensured in line with the legal requirements by the Maintenance and Repair Unit under the responsibility of Operations Manager.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 12	Mitigation Measure	Secure storage and labelling substances in line with manufacturer’s recommendations will be ensured and measures will be taken to prevent contact with untrained personnel, birds, animals or fish.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Secondary containment will be designed and managed to ensure rainwater does not reduce the minimum capacity requirements.		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Secondary containment for storage of hazmats must provide minimum 110% containment of the largest tank or 125% of the total volume of a tank farm.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Location of equipment, containers and distribution lines, containing hazmats will be above ground with provision of appropriate containment.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Any installation of hazmats below ground will require risk assessment and Project approval.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Storages areas and LNG stations will be situated at a safe distance from distance from sensitive areas including mitigation based on risk assessment		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Risk assessment will be conducted for the activities including the transportation, storage and handling of hazardous materials for the construction and operation periods for the Projects in line with the Turkish Regulation on Occupational Health and Safety Risk Assessment		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Storage facilities and pipelines carrying hazardous material will have spill detection systems installed		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Transfer points will have secondary containment		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Oil and water separators and grease traps will be installed at fixed refuelling facilities, workshops, washing bays, parking areas and fuel storage areas		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Use of drip trays and other temporary measures during servicing or fuelling of vehicles and equipment on site will be ensured		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	All spent solvents, liquid wastes and spent fuels/ lubricants will be stored in lined, bunded areas, and transported off-site for safe disposal using accredited sub-contractors		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Vehicle re-fuelling, washing and maintenance will only take place within designated areas		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	All vehicles, plant and equipment will be regularly checked and maintained to minimise the risk of fuel or lubricants leakage		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Spill kits and other necessary equipment will be readily available on site at the hazardous materials are storage areas and the major usage points		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Eye-wash, showers and first aid kits will be available for emergency situations		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Site staff will be trained in safe storage and handling practices for hazardous materials and in the use of spill kits (TMD_LAP_ISG_PLN.009)		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Hazardous substances will be used by the authorized and trained personnel and personal protective equipment such as dust mask, gloves and goggles will be used depending on the type of the materials used		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Checks for damage and leaks at least once a day. Any cracks and holes will be repaired. All non-conformances will be recorded.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Repackaging and labelling, or disposal of the contents of leaking containers will be ensured as soon as possible.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Residues, containers and packages of chemicals will be disposed in accordance with the Regulation on Waste Management.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Cyanide Management Plan will be prepared to set out the principles for the implementation of International Cyanide Management Code which will include the transport, storage, use and disposal of cyanide		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure	Regardless of the scale of the hazardous material incident/spill, plant shift supervisor will be informed immediately and the Emergency Action Plan (TMD_İSG_PLN.002) and Spill Clean Up Plan (TMD_CEV_PLN.008) will be implemented depending on the type of the incident		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 14	Monitoring	"Explosives and Hazardous Materials Monitoring Plan" provided in Table 2 of the Explosives and Hazardous Materials Management Plan of TUMAD will be complied with.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Training	The overall training process to be implemented for the TÛMAD Project activities will address the identification of training requirements by job description and will provide basic procedures for conducting and documenting training activities		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Training	All TÛMAD employees and subcontractors will receive induction training which will consist of the spill response and emergency response plans		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Training	Workers having access to or handling of Hazmats will receive training in the procedures to be followed if a release is discovered, including notification of the appropriate site personnel, ensuring co-worker and public safety, and taking direct action to control or contain the release wherever possible.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Training	Site personnel who may be called upon to respond to workplace releases will be trained in this, as well as in the first aid procedures noted in the Emergency Preparedness and Response Plan		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Training	All employees who will work with the hazardous materials will be subject to routine training on the safe storage and handling of the hazardous materials.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Training	All relevant personnel will be trained in the use and maintenance of protective equipment.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Training	All employees receiving Hazmats worker training will be required to pass a written test to ensure their understanding of the subject matter covered		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Training	Refresher training will also be conducted for all Hazmats workers on at least an annual basis		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Training	Training will include recognition of the Hazmats or Hazmats-bearing materials that may be present at the site.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Training	Training on this Plan will be delivered by the Head of OHS as a competent personnel and experienced in effective communication techniques.		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Explosives and Hazardous Materials Management Plan	Page 16	Training	TÜMAD Training and Documentation Coordinator shall be responsible for the implementation of this Component.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Training	Records documenting all levels of training related to the use of Hazmats in the workplace will be retained in accordance with OHS Training Procedures (TMD_LAP_ISG_PRD.001) and Training Management Plan (TMD_LAP_ISG_PLN.001). Training records will include the names of the employee and the trainer, the date of training, the topics covered, and employee proficiency test results, where required.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Auditing	All incident and non-conformities will be reported as per the requirements of the Incident Reporting Procedures (TMD_ISG_PRD.007).		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Auditing	Any incident identified during these inspection will be reported by OHS team, daily inspection will be carried out by operational area supervision covering a broad range of operational aspects.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Auditing	Implementation of the TÜMAD's management system will be monitored monthly, 6 monthly and annually according to the Audit Program. This system will be used to assess the broad compatibility of environmental management system requirements.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Auditing	The schedule, the frequency, the scope and objectives of the audit as well as the responsible internal inspectors will be indicated in the Audit Program to be developed by the OHS Department.		All Phases						
	Explosives and Hazardous Materials Management Plan	Page 16	Reporting	Evidences of the implementation of the mitigation actions/measures and related results are collected through inspection and auditing activities will be reported in line with the Internal Audit Procedure (TMD_KAL_PRD.001).		All Phases						
	Labour Management Plan	Page 7	Bi-annual Revision	This Management Plan will be reviewed on a minimum of a six monthly basis during construction and commissioning.		Construction, Commissioning						
	Labour Management Plan	Page 7	Annual revision	During operation phase, this Plan will be reviewed on an annual basis to determine whether any changes or updates are required to the Management Framework unless a more frequent update is required to reflect changing project design or ESMS requirements and procedures.		Operation						
	Labour Management Plan	Page 12	Employement	Human Resources practices and procedures are being progressively developed, implemented and updated as the Project moves towards operations in Lapseki Mine. Contractors and subcontractors of TÜMAD are required to implement equivalent recruitment procedures and to have all associated documentation in place.		All Phases						
	Labour Management Plan	Page 13	Employement	TÜMAD has started employment process aiming to set up a team for operation phase, but these personnel will be employed during construction phase with the aim of developing their capacities until the commencement of operation.		All Phases						
	Labour Management Plan	Page 13	Employement	TÜMAD has designed a range of policies and procedures designed to ensure that recruitment and hiring practices are fair and transparent, and that that they take into consideration local conditions and expectations to the greatest extent possible		All Phases						
	Labour Management Plan	Page 14	Employement	Discrimination in relation to recruitment and employment on the grounds of race, gender, age, disability, sexual orientation, or religious or political beliefs is not permitted under any circumstances		All Phases						
	Labour Management Plan	Page 14	Employement	Opportunities for direct employment will be constrained by the availability of appropriate skills. Taking into consideration the skills limitation within the affected area, the focus of the employment strategy will be employment of the unskilled and semi-skilled workforce if necessary.		All Phases						
	Labour Management Plan	Page 14	Employement	Therefore, Community Development Strategy of TÜMAD will focus on; • Supporting existing vocational training centers and aligning vocational trainings to increase employability of PAPs in the mine. • Other possible vocational training opportunities in cooperation with local university and vocational training centers • Supporting education of local students; Scholarships • Business skills and SME support initiatives/diversifying local economy to prevent dependency • Job-readiness and on the job trainings by TÜMAD		All Phases						
	Labour Management Plan	Page 16	Employement	Recruitment procedures in relation to information provision include the following: • vacancy announcements and advertisements will have appropriate approvals from TÜMAD; • TÜMAD and its contractors will ensure that relevant announcements are made for all available vacancies; • means of information distribution include advertising of employment opportunities in the local daily newspapers, online resources (including TÜMAD website, www.yenibiris.com and www.kariyer.net); • the Human Resources Manager is responsible for the public distribution of vacancy announcements and provides advertising support for the internet; • for specialist roles, professional recruitment firms may also be used		All Phases						
	Labour Management Plan	Page 16	Employement	TÜMAD community relations team will inform local residents about the application process and of conditions for employment		All Phases						
	Labour Management Plan	Page 16	Employement	Appropriate communications channels will be used to ensure that all directly affected settlements are informed about all job opportunities, for example, through advertisements and notices in the media, through village leaders, notices in tea houses etc.		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Labour Management Plan	Page 17	Employement	Contracts of employment will be in writing and may be for a fixed term or for permanent employment. All employees will receive a copy of their employment agreement, which will, as a minimum, address the following: <ul style="list-style-type: none">• job title;• job duties;• basic salary;• labour conditions. Working hours will be in compliance with Turkish Labour Law. All relevant attendance and leave requirements are set out in individual employment contracts and other relevant Human Resources documentation.		All Phases						
	Labour Management Plan	Page 17	Employement	All wages and salaries paid to employees and Contractors must accord with the HR policies of TŪMAD.		All Phases						
	Labour Management Plan	Page 17	Employement	Employees (local or regional workers) at TŪMAD will be provided a competitive salary in relation to market rates.		All Phases						
	Labour Management Plan	Page 18	Employement	Social security, government health insurance, workers’ compensation, state disability and unemployment insurance are requirements of the Turkish Labour Law and Social Security Institution and are documented through written employment agreements.		All Phases						
	Labour Management Plan	Page 18	Employement	All worker terminations will be performed strictly according to Turkish legal requirements and TŪMAD policies.		All Phases						
	Labour Management Plan	Page 18	Employement	A demobilisation plan will be prepared prior to the end of construction period at both mines.		Construction, Commissioning						
	Labour Management Plan	Page 18	Employement	A separate Retrenchment Plan will be prepared for operations and prior to mine closure.		Operation						
	Labour Management Plan	Page 18	Employement	Key elements that will be described in these plans are: <ul style="list-style-type: none">• at the time of hiring, the period of employment and the conditions for hiring and layoff will be clearly explained to new recruits and included in individual employment contracts;• Information on Project’s schedule and potential layoffs (particularly for temporary construction jobs) will be shared with worker representatives during regular meetings held by Human Resource;• the Project intends to avoid Collective Redundancies (as defined in EBRD PR2);• the Project is responsible for returning workers to the place from where they were recruited or to their domicile (the place of hire will be specified and transport service or cost of transportation will be covered).• Redundancy does not include the planned cessation of temporary employment, such as the demobilisation of contractor workers at the end of their assignment.• Responsibility for further development of the redundancy procedures lies with the Human Resources Department of TŪMAD.• Planned termination such as when a contract comes to an end will not be considered as redundancy in line with Turkish Employment Law.		Operation						
	Labour Management Plan	Page 18	Employement	Where collective dismissals are proposed, they should be carried out with an analysis of alternatives. If the analysis does not identify viable alternatives, a Retrenchment Plan will be developed according to PR2 requirements.		All Phases						
	Labour Management Plan	Page 18	Employement	In the event that Collective Redundancies as defined above cannot be avoided, they will be managed as follows (these requirements apply to both TŪMAD and Contractors or Sub-Contractors): <ul style="list-style-type: none">• 30 days’ notice of redundancy will be given to ISKUR and to EBRD• Consultation will be made with trade unions or workers’ representatives (where there are no trade unions) on redundancy reasons, schedule and compensation		All Phases						
	Labour Management Plan	Page 18	Employement	Severance will be paid in line with the requirements of Turkish Labour Law (either one month’s base pay as a minimum), or the amounts agreed in consultation with unions or workers’ representatives.		All Phases						
	Labour Management Plan	Page 18	Employement	Selection criteria for those to be retrenched will be transparent and may be based on the following: <ul style="list-style-type: none">• length of service;• skills assessment;• disciplinary record;• performance record;• absence record;• knowledge		All Phases						
	Labour Management Plan	Page 19	Employement	A formal Redundancy Plan shall be prepared for consultation with workers and shall include the following sections: <ul style="list-style-type: none">• the reasons why job losses are necessary;• the timescale;• Who will be consulted;• How employees will be selected;• How alternative jobs will be sought;• How severance pay will be calculated;• What measures are in place to assist those losing their jobs to seek new work;• How broader community impact issues are to be addressed.		All Phases						
	Labour Management Plan	Page 19	Employement	Any proposed Collective Redundancies as defined above will be notified in advance to Lenders. Notification will include the reason for the proposed redundancy, the number of workers affected, and the time frame		All Phases						
	Labour Management Plan	Page 19	Employement	At the end of the commercial life of the Project TŪMAD will help its local workforce to transition from an operating mine into the post-closure period, specifically to deal with the impacts of loss of employment and discontinuation of other spin off revenue to local businesses and to governments through taxes.		Operation						
	Labour Management Plan	Page 19	Employement	The Human Resources Department will work closely with government and private recruitment and training agencies to establish career transition or employee mitigation programmes to ease the impact of closure.		Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Labour Management Plan	Page 19	Employment	Regular community and employee consultation will be critical in establishing the best adjustment programmes to transition effectively from an operating mine to the post closure period, while maintaining local sustainable development		Operation						
	Labour Management Plan	Page 19	Employment	TÜMAD will develop a demobilization plan and share it with the Lenders two months prior to its implementation.		Operation						
	Labour Management Plan	Page 19	Employment	TÜMAD will treat its employees, whether they are member of a Union or not, in a manner that is in compliance with the laws and EBRD PR2, and in an understanding, sensitive, respectful and indiscriminate manner and with equal and fair payments and side benefits as it specified in its policies		All Phases						
	Labour Management Plan	Page 19	Employment	TÜMAD will not in any way attempt to prevent establishment of worker Unions or other worker groups that have been legally set up		All Phases						
	Labour Management Plan	Page 19	Employment	In collective bargaining, workers will be represented by a trade union or, if there is no trade union, by representatives elected from a meeting of employees		All Phases						
	Labour Management Plan	Page 19	Employment	If, in the future, there are multiple trade unions that are relevant to collective bargaining negotiations, the unions are required to form a single negotiating body with participation relative to the proportion of workers that they represent		All Phases						
	Labour Management Plan	Page 19	Employment	Collective agreements will be negotiated by TÜMAD and all major contractors working at Project sites, will be registered, and will be renegotiated as required, with an adequate period of notice given to Unions or workers representatives, as required by the Turkish Labour Law, before the formal renegotiation process starts.		All Phases						
	Labour Management Plan	Page 19	Employment	We, as TÜMAD, believe that the investment on human is the most productive investment. We exercise due care when analysing the training requirements to improve personal and technical competencies of our employees, determining accurate trainings and trainers and objectively assessing the provided contributions. In this way, we aim at obtaining results to address job related needs and increase the existing performance of our employees through trainings in order to make them work in the most efficient manner and at the same time have them get pleasure from their jobs.		All Phases						
	Labour Management Plan	Page 19	Employment	Data obtained as a result of performance evaluation process shall be used when implementing Training and Improvement, Career Management and Wage Management systems		All Phases						
	Labour Management Plan	Page 20	Employment	At the end of the performance and competency assessment processes to be conducted each year, an administrator potential pool shall be established		All Phases						
	Labour Management Plan	Page 20	Employment	Back up plans shall be discussed in Human Resources Planning Meetings and the employees, who are deemed as potential, shall be subject to special trainings and provided with improvement opportunities and they shall be ready for the next position in this way		All Phases						
	Labour Management Plan	Page 20	Employment	All open positions within Nurol Group companies shall be posted in the internal announcement system. By means of this system, employees take the opportunity of lateral or promotional transfer to the other companies		All Phases						
	Labour Management Plan	Page 20	Employment	Each year an “Employee Loyalty Research” shall be carried out by an independent inspection company as an indicator of the value that we put upon TÜMAD employees		All Phases						
	Labour Management Plan	Page 20	Employment	TÜMAD shall obtain opinions of its employees through yearly surveys by taking the “Human First” principle as a target.		All Phases						
	Labour Management Plan	Page 20	Employment	With the help of this application, improving action plans shall be prepared and implemented by obtaining opinions of employees and measuring their job satisfaction and loyalty levels through investigations to be carried out at different levels from working environment to company management, from performance assessment system to in-house communication and wage/site benefits.		All Phases						
	Labour Management Plan	Page 20	Employment	the company management shall perform applications that increase employee satisfaction and motivation by preparing action plans		All Phases						
	Labour Management Plan	Page 20	Employment	worker grievance redress mechanism (GRM) is developed and made accessible to all workers (TMD_ISG_FRM.001). The GRM will allow for confidential complaints to be raised and addressed.		All Phases						
	Labour Management Plan	Page 20	Employment	Contractors will be required to implement similar employee grievance mechanisms.		All Phases						
	Labour Management Plan	Page 20	Employment	The OHS Committee developed as per legislation will include workers representative to bring worker grievances issues to the attention of management.		All Phases						
	Labour Management Plan	Page 20	Employment	The GRM will be well disseminated amongst the worker so that they are all aware of its existence and how it works, it will be accessible and follow a clear due process and there will be rigorous analysis of each complaint and a thorough review and attempt to find the appropriate solution.		All Phases						
	Labour Management Plan	Page 20	Employment	Worker grievance mechanism will also be available for the use of Contractor workers in case their companies fail to address their complaints in the mine construction and operation.		All Phases						
	Labour Management Plan	Page 20	Employment	TÜMAD as a responsible employer will ensure rights of all contracted workforce is protected as its own direct employees		All Phases						
	Labour Management Plan	Page 20	Management of Contractors	Contractors and Sub-Contractors working at the Project sites shall comply with all TÜMAD standards and requirements (as appropriate and as defined in this plan, the Contract Management Framework and as set out in contractor contracts)		All Phases						
	Labour Management Plan	Page 20	Management of Contractors	TÜMAD shall ensure that contractual provisions reflect these requirements. Compliance by Contractors and Sub-Contractors will occur either by adopting TÜMAD policies and procedures or by implementing their own equivalent procedures that are approved by TÜMAD.		All Phases						
	Labour Management Plan	Page 20	Management of Contractors	The contractor workforce will be accommodated in the district centers of Lapseki and İvrindi.		All Phases						
	Labour Management Plan	Page 20	Management of Contractors	TÜMAD and the main Contractors will approve sub-contractor accommodation and facilities to ensure that they meet applicable Project standards for worker accommodation. EBRD/IFC Guideline on Worker Accommodation Camps will be followed		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Labour Management Plan	Page 20	Management of Contractors	Labour and working conditions for contractors and their adherence to the applicable policies and requirements will be monitored by the Human Resources Department on monthly basis		All Phases						
	Labour Management Plan	Page 20	Management of Contractors	Compliance verification will be used to assess contractors’ performance against TÜMAD procedures, applicable Turkish Law, and international standards (particularly those of EBRD).		All Phases						
	Labour Management Plan	Page 20	Management of Contractors	Audits will be conducted directly by the TÜMAD Human Resources Department or by authorised government inspection agencies		All Phases						
	Labour Management Plan	Page 20	Management of Contractors	During construction, audits of Contractor HR policies, procedures and performance will be undertaken on a quarterly basis against Turkish regulatory requirements, EBRD PR 2 requirements and TÜMAD requirements. During operations, audits will be undertaken on an annual basis as a minimum.		All Phases						
	Labour Management Plan	Page 21	Management of Contractors	The focus of Contractor monitoring will be on ensuring that employment arrangements do not contravene applicable Turkish Law or international standards and on monitoring the working and living conditions at Project work sites and in construction camps and accommodation		All Phases						
	Labour Management Plan	Page 21	Supply Chain Management	All suppliers to the Project will be expected to comply with the Turkish labour standards, with the applicable standards of the ILO and the EBRD’s Performance Requirement 2 and 4		All Phases						
	Labour Management Plan	Page 21	Supply Chain Management	As a minimum, the TÜMAD suppliers are required to maintain and implement policies to comply with Turkish laws and regulations, and prohibit the employment of forced, bonded or child labour, with a process for assuring compliance.		All Phases						
	Labour Management Plan	Page 21	Supply Chain Management	As a minimum, the TÜMAD suppliers are required to maintain and implement policies that respect basic human rights and dignity, without distinction on any basis, including the rights to life, liberty, and security of person, freedom from slavery and cruelty, and equal protection under applicable Turkish and International laws and constitutions and a process to assure compliance		All Phases						
	Labour Management Plan	Page 21	Supply Chain Management	As a minimum, the TÜMAD suppliers are required to maintain compliance with all Health, Safety and Environment (HSE) requirements of TÜMAD and to demonstrate strong organisational commitment to responsible HSE management and the elimination of workplace injuries and illnesses, with a process for obtaining assurance on compliance with those policies, both internally and externally, by regular audits, reviews and reports		All Phases						
	Labour Management Plan	Page 21	Supply Chain Management	As a minimum, the TÜMAD suppliers are required to demonstrate organisational commitment to responsible and productive community relationships. Suppliers will commit to this standard by maintaining business relationships that will have a positive and enduring effect on the local communities and neighbours affected by TÜMAD’s operations		All Phases						
	Labour Management Plan	Page 21	Supply Chain Management	TÜMAD requires that all suppliers pay specific attention to the management of their subcontractors. All subcontractors must be approved in writing by the Procurement team, and must meet the strict HSE and quality requirements of the contract. Subcontractors failing to comply with TÜMAD safety requirements will be prevented from future works on the Project TÜMAD and its associated businesses if they cannot meet the requirements set out above after being requested to bring their procedures into compliance.		All Phases						
	Labour Management Plan	Page 21	Contractor Verification Process	Labour and working conditions for contractors and their adherence to the applicable policies and requirements will be monitored by the Procurement and HR Departments. Compliance verification covers recruitment, hiring and employment practices, as well as working conditions and training within TÜMAD Departments and for all key Contractors.		All Phases						
	Labour Management Plan	Page 21	Contractor Verification Process	Compliance verification will assess TÜMAD and Contractors performance against HR procedures, Turkish Law, and international standards (particularly those of the EBRD). Compliance verification may be conducted directly by the TÜMAD Audit Department or externally by third parties hired by TÜMAD for this function		All Phases						
	Labour Management Plan	Page 22	Monitoring	"Key Monitoring Activities" presented in Table 8 of the Labour Management Plan of TÜMAD will be complied with.		All Phases						
	Labour Management Plan	Page 24	Training	TÜMAD shall ensure that all of its employees and contractor personnel will be subject to induction training and that they will become familiar with Company Policies and Procedures, related national laws and international directives		All Phases						
	Labour Management Plan	Page 24	Training	It shall be ensured that employees and sub-employers will have clear, understandable and transparent relationships with local community in a mutual trust environment.		All Phases						
	Labour Management Plan	Page 24	Auditing	Appropriateness of the subjects specified within the scope of this Plan shall be monitored by means of annual, biannual and monthly inspection programs in accordance with the existing inspection Program of the existing Management System of TÜMAD Madencilik.		All Phases						
	Labour Management Plan	Page 24	Auditing	Contractors will be subject to inspection and audit by TÜMAD prior to a contractor’s initial appointment.		All Phases						
	Labour Management Plan	Page 24	Auditing	During construction, audits of Contractor HR policies, procedures and performance will be undertaken on a quarterly basis against Turkish regulatory requirements, EBRD PR 2 requirements and TÜMAD requirements.		All Phases						
	Labour Management Plan	Page 24	Auditing	During operations, audits will be undertaken on an annual basis as a minimum.		All Phases						
	Labour Management Plan	Page 24	Auditing	TÜMAD will consider conducting independent labour reviews and employee satisfaction surveys by external experts as part of its HR management system during operations.		All Phases						
	Labour Management Plan	Page 24	Auditing	TÜMAD will also consider conducting independent labour reviews and employee satisfaction surveys by external experts as part of its HR management system during operations		All Phases						
	Labour Management Plan	Page 24	Auditing	Conformance with this plan will be subject to periodic assessment as part of the NUROL HOLDING audit programme and separately by Project Lenders.		All Phases						
	Labour Management Plan	Page 24	Auditing	National Authorities will perform audits against the requirements of National Legislation		All Phases						
	Labour Management Plan	Page 24	Reporting	Inspections, incidents and non-compliances shall be documented and administered in accordance with the Record Management Procedures of TÜMAD Madencilik Sanayi ve Ticaret A.Ş (TMD_EYS_PRD.004).		All Phases						
	Labour Management Plan	Page 24	Reporting	There will be reporting to National Authorities as per the National Legislation on Labour issues		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Noise and Vibration Management Plan	Page 7	Bi-annual Revision	This Management Plan will be reviewed on a minimum of a six monthly basis during construction and commissioning.		Construction, Commissioning						
	Noise and Vibration Management Plan	Page 7	Annual revision	During operation phase, this Plan will be reviewed on an annual basis to determine whether any changes or updates are required to the Management Framework unless a more frequent update is required to reflect changing project design or ESMS requirements and procedures.		Operation						
	Noise and Vibration Management Plan	Page 8	Project Standards	As per the Assessment and Management of Environmental Noise Regulation, the provision of “noise levels at a workplace, workshop, production plant or similar places, which are close to noise-sensitive/very sensitive receivers and which may have impacts on the places where noise-sensitive/very sensitive receivers exist, should not exceed the background noise levels of 5 dBA in terms of Leq” shall be applied within the scope of the project.		All Phases						
	Noise and Vibration Management Plan	Page 11	Mitigation Measure	Noise sources shall be controlled and, if necessary, noise barriers shall be installed. Mechanical Equipment and vehicles shall be regularly maintained and noise levels of these equipment shall be controlled. As described in the Regulation on Assessment and Management of Environmental Noise, it is not required to take special control measures for a noise level, which is lower than limit value.		All Phases						
	Noise and Vibration Management Plan	Page 11	Blasting Activities	During blasting activities, simultaneous explosion of explosives shall be prevented by using milli-second delay blasting method and thus, noise and vibration induced by blasting activities shall be minimized. In addition, proper blasting method and material shall be selected based on ground conditions. Blasting activities shall be regularly carried out at certain time intervals.		All Phases						
	Noise and Vibration Management Plan	Page 11	Blasting Activities	Delay detonators shall be used in blasting activities in order to mitigate environmental impacts, mainly vibration, to prevent fly rocks and to enable extraction of suitable size ore. Delay detonators of 25 ms for cross-hole transitions, those of 42 ms for transition between rows and of 500 ms inside the holes shall be used.		All Phases						
	Noise and Vibration Management Plan	Page 12	Mitigation Measure	Noise levels should be kept at normal levels by carrying out periodic maintenance works of all equipment and machinery.		All Phases						
	Noise and Vibration Management Plan	Page 12	Mitigation Measure	All noise sources shall be isolated as long as possible. (For example, isolation of generator devices and installing sound absorbers to the equipment).		All Phases						
	Noise and Vibration Management Plan	Page 12	Blasting Activities	Necessary precautions shall be taken in order to reduce noise, which may occur during loading and transportation activities at the open pit. According to the daily plan prepared by the Mining Department, number of equipment that will be used at the open pit shall be determined, and accumulation of construction equipment and the corresponding noise shall be prevented accordingly		All Phases						
	Noise and Vibration Management Plan	Page 12	Blasting Activities	Open pit blasting activities shall be performed based on blast hole pattern, which is to be designed by considering the results of trial blasting activities conducted at the pit.		All Phases						
	Noise and Vibration Management Plan	Page 13	Blasting Activities	A stability assessment report will be prepared before the start of blasting activities. This report will identify structures and building in the blasting impact area which are susceptible to resulting vibration levels and define any required specific mitigation measure.		All Phases						
	Noise and Vibration Management Plan	Page 13	Blasting Activities	Blasting plan and design given in the EIA report shall be complied with. Blasting Procedures and Instructions in which design and operations are defined for blasting shall be prepared and these Procedures and Instructions shall be complied with.		All Phases						
	Noise and Vibration Management Plan	Page 13	Blasting Activities	In addition to TMAD Procedures and Instructions; <ul style="list-style-type: none">• Drilling and Blasting activities shall be monitored and improved,• Delay blasting method shall be used and it should be ensured that the most suitable blasting rate is achieved,• Appropriate blasting plans, which are to be optimized in blast model by using the best techniques, shall be prepared.• Blasting activities may be restricted due to meteorological conditions (wind and temperature change),• Blasting activities will not be carried out during night time.		All Phases						
	Noise and Vibration Management Plan	Page 13	Noise Control	Noise caused by the activities of mineral processing equipment shall be controlled within the scope of the Procedures on Measurement and Monitoring of Environmental Activities as well as Noise and Vibration Measurement Instructions. These equipment will not be operated during night time.		All Phases						
	Noise and Vibration Management Plan	Page 13	Vehicle Usage	Noise from vehicle traffic shall be limited by setting speed limits inside and outside of the plant are		All Phases						
	Noise and Vibration Management Plan	Page 13	Flora and Fauna	Road traffic and noisy equipment shall be controlled in order to minimize potential disturbance of the wild life.		All Phases						
	Noise and Vibration Management Plan	Page 14	Community Relations	In case of complaints from communities in regards to noise and vibration Monitoring records will be checked to confirm the actual emission values, The process will be revised or equipment will be replaced if possible and needed, Measurements are done to confirm the noise levels are reduced, Compliant is communicated throughout the process		All Phases						
	Noise and Vibration Management Plan	Page 14	Monitoring	Continuous noise and vibration measurement device have been installed in Sahinli village and measurements have been taken during construction.		Construction						
	Noise and Vibration Management Plan	Page 14	Monitoring	Within the scope of Environmental Monitoring Program, it shall be continuously checked if there is a structural damage at settlement areas within the project area due to blasting activities.		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Noise and Vibration Management Plan	Page 14	Monitoring	Noise and Vibration measurement results shall be compared to the limit values given in the Regulation on Assessment and Management of Environmental Noise, and if the limits are exceeded, additional precautions, such as noise barriers, shall be taken. Reports shall be submitted to The Ministry of Environment and Urbanization within the scope of Environmental Monitoring Program.		All Phases						
	Noise and Vibration Management Plan	Page 14	Monitoring	In order to comply with the limit values, noise and vibration measurements shall be made by Environment Department personnel by using blasting measurement device. After measurements are taken, the device shall be connected to the computer and the records shall be transferred to database. Technical details and information about blasting shall be kept in the Open Pit Department.		All Phases						
	Noise and Vibration Management Plan	Page 15	Monitoring	Measurement devices shall be made available in case of a request by the departments of the mine or a complaint from the villagers and measurements shall be made when necessary.		All Phases						
	Noise and Vibration Management Plan	Page 15	Monitoring	If an issue is raised in accordance with the complaint and feedback procedure (TMD_KTI_PRD.001) by the departments at the Mine Site or surrounding settlement areas due to noise caused by the activities, a feedback should be provided by removing the corresponding noise source or if it is not possible, by performing studies to reduce noise and taking necessary measures.		All Phases						
	Noise and Vibration Management Plan	Page 15	Monitoring	"Noise and Vibration Monitoring Program" provided in Table 2 of the Noisen and Viration Management Plan will be complied with.		All Phases						
	Noise and Vibration Management Plan	Page 18	Training	All employees of TÛMAD as well as contractors shall have a training on special site entry induction and environmental awareness training and they shall be subject to comprehensive medical screening.		All Phases						
	Noise and Vibration Management Plan	Page 18	Training	All personnel who start to work at the mine site are provided with orientation training periodically under supervision of Department Administrators		All Phases						
	Noise and Vibration Management Plan	Page 18	Training	Plant operators and key personnel, who are engaged site cleaning, construction or material usage activities, shall be provided with Job-specific specialist training.		All Phases						
	Noise and Vibration Management Plan	Page 18	Training	All construction and operation contractor workers will be trained on: <ul style="list-style-type: none"> • Project noise and vibration limits • Limitations on night works • Recording and responding community complaints on noise and vibration 		All Phases						
	Noise and Vibration Management Plan	Page 18	Training	All TÛMAD operation workers will be trained on; <ul style="list-style-type: none"> • Project noise and vibration limits • Limitations on night works • Recording and responding community complaints on noise and vibration 		All Phases						
	Noise and Vibration Management Plan	Page 18	Training	Personnel assigned for the monitoring of the noise and vibration will be trained on using the measurement equipment and reporting the measurement results		All Phases						
	Noise and Vibration Management Plan	Page 18	Auditing	Operation supervisors and inspectors perform daily inspections in accordance with the activities outside the fence boundary by including a wide range of operation issues, including community health and safety.		All Phases						
	Noise and Vibration Management Plan	Page 18	Auditing	Any incident or non-compliance determined during these inspections shall be recorded and reported according to the Integrated Management System of TÛMAD.		All Phases						
	Noise and Vibration Management Plan	Page 18	Auditing	The activities defined by this Management Plan is subject to auditing as per the TÛMAD Audit Procedures.		All Phases						
	Noise and Vibration Management Plan	Page 18	Reporting	Inspections, incidents and non-compliances shall be documented and administered in accordance with the Record Management Procedures of TÛMAD (TMD_EYS_PRD.004).		All Phases						
	Noise and Vibration Management Plan	Page 18	Reporting	Third party environmental monitoring company will prepare Construction Phase Environmental Monitoring Reports every three months in the format defined by Ministry of Environment and Urbanisation (MoEU) to be submitted to MoEU when required.		All Phases						
	Air Quality Management Plan	Page 7	Bi-annual Revision	This Management Plan will be reviewed on a minimum of a six monthly basis during construction and commissioning.		Construction, Commissioning						
	Air Quality Management Plan	Page 7	Annual revision	During operation phase, this Plan will be reviewed on an annual basis to determine whether any changes or updates are required to the Management Framework unless a more frequent update is required to reflect changing project design or ESMS requirements and procedures.		Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Air Quality Management Plan	Page 8	Legislative Compliance	Standards applicable to the Project must be complied with during all Project activities (the “Project Standards”). TÜMAD comply with the more stringent of national standards and other applicable standards. Project Standards are defined by; • applicable Turkish Standards; • Turkish Environmental Impact Assessment (EIA) requirements; • other commitments to and requirements of Turkish Government authorities; • applicable international standards and guidelines; • applicable TÜMAD standards, policies and procedures; • Other industry guidelines with which TÜMAD has committed to comply.		All Phases						
	Air Quality Management Plan	Page 12	Roles and Responsibilities	Primary roles and responsibilities with respect to implementation of Air Quality Management Plan are given in Table 4.		All phases						
	Air Quality Management Plan	Page 13	Mitigation Measure	Dust: Excavation Activities • Discharge and filling will be carried out without scattering around. • The top surfaces of the conveyors and other carriers and their connecting parts will be covered.		All phases						
	Air Quality Management Plan	Page 13	Mitigation Measure	Dust: Blasting Activities • Fine particle formation will be prevented with the blasting design. • Blasting procedures to be performed during operation will be performed by using non-electric capsules with delay period of milliseconds. • Blasting procedure will be carried out by specialized persons.		All phases						
	Air Quality Management Plan	Page 13	Mitigation Measure	Dust: Transportation Activities • Dust will be suppressed by watering or spraying the earth roads. • Speed limit will be 20 km/hour on the roads within the mine. • Trucks will not be loaded over their capacities. • Transported material will be kept moist to prevent dust formation. • The surfaces of the truck dampers will be covered. • Organic based soil stabilizer will be used for dust suppression.		All phases						
	Air Quality Management Plan	Page 14	Mitigation Measure	Dust: Storage Activities • All broken ore will be stored in a closed area. • The unused sides of the bulk storage areas will be compacted from the surface. • The slopes in the bulk storage areas shall be reduced considering the dominant wind direction. • Upper layers in storage areas will be kept with 10% humidity with installation of necessary equipment.		All phases						
	Air Quality Management Plan	Page 14	Mitigation Measure	Dust: Transportation by Wind • When it is deemed necessary wind breaking plates will be placed on the land to prevent transport by wind effect. • Replanting will be carried out at the points where the activity is completed and erosion due to wind will be prevented.		All phases						
	Air Quality Management Plan	Page 14	Mitigation Measure	Cyanide: Plant, Leach Adsorption Tank, Desorption Tank, Column Electrolysis Area • HCN (hydrogen cyanide) gas and HCl (hydrochloric acid) spray may form during mineral processing operations. • Due to the adverse effects of HCN gas on human health, its control will be carried out meticulously. • When the chemical equilibrium of the solution in the leach tanks is obtained, cyanide is present in the HCN phase and its amount varies inversely proportional to pH and temperature. For this reason, the solution will be controlled by continuous measurements to ensure control of HCN gas. • Against the formation of HCN gas, the pH in the leach tanks will be kept under constant control with NaOH (sodium hydroxide) addition. • Although the pH range of the solution will vary depending on the process dynamics, it will be held constant between 10.0 and 11. • Under no circumstances will the pH value be lowered below 10.0. When regular measurements are taken with the pH meters in the tanks. • The tank personnel will perform manual measurements at least twice in each shift. • In addition, HCN detectors taking measurements automatically will be installed on the leaching tanks and at certain points in the plant. • The alarm level of the detectors will be set to 5 ppm.		Operation						
	Air Quality Management Plan	Page 15	Mitigation Measure	HCL: Plant, Columns • Will be used in strict compliance with the operation procedures and instruction		Operation						
	Air Quality Management Plan	Page 15	Mitigation Measure	Gaseous Emissions: All Equipment and Vehicles • The lowest sulphur content diesel available from local fuel suppliers will be used • Road vehicles will be inspected as per the Legislation for conformance with exhaust gas standards		All phases						
	Air Quality Management Plan	Page 15	Mitigation Measure	Risk Records: All Activities • Maintain and develop the risk register to identify health and environmental hazards (and nuisance) arising from the operational activities. Prioritise emission controls and abatement targets on the basis of risk levels determined through TÜMAD risk assessments procedures (TMD_ISG_PRD.004). • The Community Health, Safety and Security Management Plan (TMD_PLN.006) will also provide procedures to manage community-related hazards and nuisance.		All phases						
	Air Quality Management Plan	Page 15	Mitigation Measure	GHG Emissions: Power Lines, Fuel Burn, Dry Stack Tailing Facility • Measures to manage Greenhouse Gas (GHG) emissions will be implemented for all Project facilities, equipment and activities. The GHG emission inventory will be updated annually and GHG emission reduction initiatives implemented where necessary. • The GHG emissions inventory will be implemented as part of the Procedure on Measuring and Monitoring Environmental Activities (TMD_CEV_PRD.006).		All phases						
	Air Quality Management Plan	Page 16	Monitoring	Monitoring of the air quality during construction and operation at the same points where baseline measurements are done during EIA process shall be performed and shall be submitted to The Ministry of Environment and Urbanization (MoEU) within the scope of Environmental Monitoring Program.		Construction, Operation						
	Air Quality Management Plan	Page 16	Monitoring	Monitoring of the air quality during construction and operation at points representing the sensitive receptors shall be performed. This will require monitoring of air quality at points in addition to the baseline sampling points.		Construction, Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Air Quality Management Plan	Page 16	Mitigation Measure	If an issue is raised in accordance with the complaint and feedback procedure (TMD_KTI_PRD.001) by the departments at the mine site or surrounding settlement areas due to Project(s)' air, a feedback should be provided by removing the corresponding air emission source or if it is not possible, by performing studies to reduce emissions and taking necessary measures.		Construction, Operation						
	Air Quality Management Plan	Page 16	Monitoring	One device for H2S measurement will be at site before the operation phase in order to measure hydrogen sulphide gas emission at the mine site. The device will be mobile and kept in a ready to use condition.		Construction, Operation						
	Air Quality Management Plan	Page 22	Key Performance Indicators	Key Performance Indicators for the Project (See Table 8) will be used.		All Phases						
	Air Quality Management Plan	Page 23	Employee Training-General	<ul style="list-style-type: none"> •All employees of TŪMAD as well as contractors shall have a training on special site entry training and environmental awareness training and they shall be subject to comprehensive medical screening. •All personnel who start to work at the mine site are provided with orientation training periodically under supervision of Department Administrators. •Plant operators and key personnel, who are engaged site cleaning, construction or material usage activities, shall be provided with Job-specific specialist training. •Some outline of training for construction contractors and operation contractors/workers shall be provided. •General aspects of environmental management will be included in induction training to be provided to all employees. 		All Phases						
	Air Quality Management Plan	Page 23	Employee Training-Specific	All construction and operation contractor workers will be trained on: <ul style="list-style-type: none"> • Project air emission limits • Proper maintenance of vehicles • Air emission mitigation measures • Use of cyanide • Response to accidental emissions • Recording and responding community complaints on dust and other air emissions 		Construction, Operation						
	Air Quality Management Plan	Page 23	Employee Training-Specific	All TŪMAD operation workers will be trained on; <ul style="list-style-type: none"> • Project air emission limits • Proper maintenance of vehicles • Air emission mitigation measures • Use of cyanide • Response to accidental emissions • Recording and responding community complaints on dust and other air emissions 		Operation						
	Air Quality Management Plan	Page 23	Employee Training-Specific	Personnel assigned for the monitoring of the air emissions will be trained on using the measurement equipment and reporting the measurement results.		All Phases						
	Air Quality Management Plan	Page 23	Auditing	Daily Inspections: operation supervisors and inspectors perform these inspections in accordance with the activities outside the fence boundary by including a wide range of operation issues, including community health and safety.		Operation						
	Air Quality Management Plan	Page 23	Auditing	Any incident or non-compliance determined during these inspections shall be recorded and reported according to the documents of the Integrated Management System of TŪMAD.		All Phases						
	Air Quality Management Plan	Page 23	Reporting	Inspections, incidents and non-compliances shall be documented and administered in accordance with the Records Management Procedure of TŪMAD (TMD_EYS_PRD.004).		All Phases						
	Air Quality Management Plan	Page 23	Reporting	Third party environmental monitoring company will prepare “Construction Phase Environmental Monitoring Reports” every three months in the format defined by MoEU to be submitted to MoEU when required.		Construction						
	Cyanide Management Plan	Page 7	Contractor	It also requires that the manufacturer and transporter of the cyanide used at the operation is also a demonstration of protective manner.		Operation						
	Cyanide Management Plan	Page 7	ICMC	Implementation of this Code demonstrates that TŪMAD will employ internationally recognized best management practices (BMPs) for the management of cyanide, and TŪMAD reserves the option of becoming a code signatory and independently certifying the compliance of its cyanide operations with the Code's principles and standards of practice.		Operation						
	Cyanide Management Plan	Page 7	ICMC	TŪMAD will seek ICMC certification for its operations and the whole life-cycle of the Cyanide such as procurement, transport, storage, use and disposal.		Operation						
	Cyanide Management Plan	Page 7	Stakeholders, Community and Environment	All of the required processes to determine, minimize, assess and control all kinds of risks, which may be posed when the cyanide is being delivered and transported to mine site, shall be included by considering the possibility that the stakeholders, community and environment may be exposed to risk.		Operation						
	Cyanide Management Plan	Page 7	Contractor	TŪMAD shall be responsible for the preparation of all cyanide management plans and procedures for the storage and preparation of cyanide for use at the Mine Site. The contractor shall be responsible for the transportation of the Cyanide, however TŪMAD will prepared instructions/guidelines for the usage of the contractor with respect to the transportation of cyanide outside the Project area. TŪMAD will be ensured the external transportation contractor has valid licence to transport cyanide and TŪMAD will monitor its performance based on the requirements listed in the Contractor Management Plan (TMD_ISG_PLN.003).		Operation						
	Cyanide Management Plan	Page 7	General Commitment	TŪMAD shall be responsible for the preparation of all site management and monitoring procedures, emergency planning and stakeholder engagement.		Operation						
	Cyanide Management Plan	Page 9	Legislative Compliance	Current Standards (“Project Standards”) shall be complied with in all Project activities. Project Standards include the followings: <ul style="list-style-type: none"> • Applicable Turkish Standards; • Turkish Environmental Impact Assessment (EIA) requirements; • Other commitments given to Turkish government institutions and requirements of such institutions; • Applicable international standards and guidelines; • Applicable TŪMAD IMS standards, policies, plans and procedures. 		All Phases						
	Cyanide Management Plan	Page 10	Legislative Compliance	The standards, which TŪMAD shall implement, are those specified by European Bank for Reconstruction and Development (EBRD): EBRD Performance Requirement 1, 3, 4, 6, and 10.		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number	
	Cyanide Management Plan	Page 10	Action determined by Seveso II Requirement	TÜMAD will include the requested information in a Safety Report to be submitted to appropriate local and regional authorities.		Operation							
	Cyanide Management Plan	Page 10	Action determined by Seveso II Requirement	TÜMAD major accident prevention policy is defined in Spill Clean Up and Emergency Response Plan; the plan will be appended to (and submitted with)		Operation							
	Cyanide Management Plan	Page 10	Action determined by Seveso II Requirement	The project-specific Safety Report will contain or reference the process plant and Tailings Management Facility design information developed in the project EIA (“Technological Processes”).		Operation							
	Cyanide Management Plan	Page 10	Action determined by Seveso II Requirement	Such review and revision requirements are included in the document updating requirements presented Cyanide Management Plan and in the Spill Clean Up & Emergency Response Plan		Operation							
	Cyanide Management Plan	Page 10	Action determined by Seveso II Requirement	TÜMAD has prepared the Spill Clean Up & Emergency Response Plan and will 1) provide a copy to appropriate local and regional authorities, TÜMAD the update or development of external (community) emergency plans.		Operation							
	Cyanide Management Plan	Page 10	Action determined by Seveso II Requirement	The Spill Clean Up & Emergency Response Plan fully addresses the documentation and reporting of major accidents; mandatory corrective/preventive action investigation processes are involved for all significant spills, releases, or emergency situations for which TÜMAD is responsible, in accordance with the Spill Clean Up & Emergency Response Plan and in the TÜMAD ESMS Plan.		Operation							
	Cyanide Management Plan	Page 11	ICMC	TÜMAD will seek ICMC certification for its operations and the whole life-cycle of the Cyanide such as procurement, transport, storage, use and disposal.		Operation							
	Cyanide Management Plan	Page 12	Principles and Standards	Production: • Encourage responsible cyanide manufacturing by purchasing from manufacturers who operate in a safe and environmentally protective manner. Standard of practice; • Purchase cyanide from manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide and to prevent releases of cyanide to the environment.		Operation							
	Cyanide Management Plan	Page 12	Principles and Standards	Transportation: • Protect communities and the environment during cyanide transport. Standard of practice; • Establish clear lines of responsibility for safety, security, release prevention, training, and emergency response in written agreements with producers, distributors, and transporters. • Require that cyanide transporters implement appropriate emergency response plans and capabilities, and employ adequate measures for cyanide management.		Operation							
	Cyanide Management Plan	Page 12	Principles and Standards	Handling and Storage: • Protect workers and the environment during cyanide handling and storage. Standard of practice; • Design and construct unloading, storage, and mixing facilities consistent with sound, accepted engineering practices, and quality control and quality assurance procedures. Spill prevention and spill containment measures. • Operate unloading, storage, and mixing facilities using inspections, preventive maintenance, and contingency plans to prevent or contain releases and control and respond to worker exposures.		Operation							
	Cyanide Management Plan	Page 12	Principles and Standards	Operations: • Manage cyanide process solutions and waste streams to protect human health and the environment. Standard of practice; • Implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and preventive maintenance procedures. • Introduce management and operating systems to minimize cyanide use, thereby limiting concentrations of cyanide in mill tailings. • Implement a comprehensive water management program to protect against unintentional releases. • Implement measures to protect birds, other wildlife, and livestock from adverse effects of cyanide process solutions. • Implement measures to protect fish and wildlife from direct and indirect discharges of cyanide process solutions to surface water. • Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of ground water. • Provide spill prevention or containment measures for process tanks and pipelines. • Implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications. • Implement monitoring programs to evaluate the effects of cyanide use on wildlife, and surface and ground water quality		Operation							
	Cyanide Management Plan	Page 12	Principles and Standards	Decommissioning: • Protect communities and the environment from cyanide through development and implementation of decommissioning plans for cyanide facilities. Standard of practice; • Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife, and livestock. • Establish an assurance mechanism capable of fully funding cyanide- related decommissioning activities.		Operation, Decommissioning							
	Cyanide Management Plan	Page 17-18	Legislative Compliance	TÜMAD shall comply with the strictest standards of national and applicable creditor standards, and thus, the strictest standards shall represent the Project Standards.		All Phases							
	Cyanide Management Plan	Page 18-19	Roles and Responsibilities	TÜMAD shall be responsible for the preparation of all site management and monitoring procedures, emergency planning and stakeholder engagement.		All Phases							
	Cyanide Management Plan	Page 20	Mitigation Measure	Cyanide Purchase: • TÜMAD shall purchase cyanide from an ICMC signatory producer (ORICA, HEBEI CHENGXIN, CY PLUS etc.)		Operation							

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Cyanide Management Plan	Page 20	Mitigation Measure	Cyanide Transportation: <ul style="list-style-type: none">• TÜMAD has developed a transportation procedure, which specifies clear responsibility principles for safety, security, release prevention, training and emergency intervention subjects during the entire supply chain from production by the cyanide supplier, which it has commissioned, to transportation from port and delivery at the mine site TMD_LAP_ISG_PRD.009• TÜMAD stipulates that the cyanide supplier that it has commissioned shall develop appropriate emergency intervention plans and opportunities and take sufficient precautions for cyanide management during supply chain.		Operation						
	Cyanide Management Plan	Page 20	Mitigation Measure	Cyanide Transportation: Responsibilities during Transport <ul style="list-style-type: none">• As part of its contractual arrangements, TÜMAD will prepare written agreements with the cyanide manufacturer and transporter, which will outline which party will be responsible for the following health, safety and environmental issues during each phase of cyanide transportation: packaging; labelling; storage prior to shipment; evaluation and selection of routes to reduce risks establishment of protocols for driver/TÜMAD communications; storage and security at ports of entry; interim loading, storage and unloading during shipment; transport to the TÜMAD process plant; unloading at the process plant; proper maintenance and operation of transportation vehicles throughout each delivery activity; accident prevention, emergency response, and safety training for transporters and handlers throughout the transportation process; and co-ordination of security and emergency response actions throughout the transportation process. All transport for dangerous goods inside the EU will be performed by transport companies audited by an independent party.• These agreements will also specify that any designated responsibilities of TÜMAD, the cyanide manufacturer, and the cyanide transporter extend to any subcontractors used by these parties for any activities related to cyanide transportation, and that all affected parties are required to inform subcontractors of their designated responsibilities. At the discretion of the Operation Manager & Department Head of OHS Department, copies of training records and other related information may be made available in response to external information requests, via the communications.		Operation						
	Cyanide Management Plan	Page 21	Mitigation Measure	Usage and Storage: TÜMAD shall design and build consistent discharging, storage and mixing facilities in accordance with the current and accepted engineering practices as well as quality control and quality assurance procedures and by taking leakage prevention and limiting precautions into consideration. TÜMAD shall develop standard operation procedures to operate discharging, storage and mixing facilities by taking the advantage of investigations, preventive maintenance and unexpected circumstance plans in order to prevent or limit releasing and intervene worker exposures. Cyanide Preparation and Storage Procedure (TMD_LAP_ISG_PRD.012) Cyanide Storage Procedure (TMD_LAP_ISG_PRD.010) Cyanide Transportation Procedure (TMD_LAP_ISG_PRD.009) Cyanide Spillage Cleaning Procedure TMD_LAP_ISG_PRD.011		Operation						
	Cyanide Management Plan	Page 21	Mitigation Measure	Operational Management: <ul style="list-style-type: none">• TÜMAD shall develop and implement management and operation systems, including unexpected circumstance plans and investigations as well as maintenance procedures that are designed to protect human health and environment.• TÜMAD shall develop and implement management and operation systems to use cyanide as effective as possible in order to reduce cyanide usage.• TÜMAD shall develop and apply a comprehensive process water management program in order to minimize the possibility and amount of unintentional releases.• TÜMAD shall take precautions to protect birds, other wildlife and herds against negative impacts of cyanide process solutions.• TÜMAD shall take precautions to protect wildlife against direct or indirect discharge of cyanide process solutions to surface water.• TÜMAD shall implement measures to manage seepage from cyanide facilities in order to protect groundwater quality.• TÜMAD shall take leakage prevention and/or secondary barrier precautions for process tanks and pipelines which contain cyanide.• TÜMAD shall implement quality control / quality assurance procedures to verify that cyanide facilities have been built in accordance with the accepted engineering standards and conditions.• TÜMAD shall conduct monitoring programs to assess impacts of cyanide usage on wildlife, surface water and groundwater quality.		Operation						
	Cyanide Management Plan	Page 22	Mitigation Measure	Decommissioning: <ul style="list-style-type: none">• TÜMAD shall prepare a decommissioning plan, which considers the requirement of effective decommissioning of the cyanide facilities, in order to protect human health, wildlife and herds.• TÜMAD shall develop a Closure plan that includes a guaranty mechanism, which can completely finance decommissioning activities of the cyanide.		Decommissioning						
	Cyanide Management Plan	Page 22	Mitigation Measure	Worker Safety: <ul style="list-style-type: none">• TÜMAD shall specify potential cyanide exposure scenarios and take necessary precautions to eliminate, mitigate and control these risks.• TÜMAD shall operate and monitor cyanide facilities in order to protect workers' health and safety and periodically assess effectiveness of health and safety precautions.• TÜMAD shall improve and implement emergency case plans and procedures to intervene cyanide exposure of workers.		Operation						
	Cyanide Management Plan	Page 22	Mitigation Measure	Emergency Case Intervention: <ul style="list-style-type: none">• TÜMAD shall prepare a detailed emergency case intervention plans for potential cyanide release scenarios• TÜMAD shall engage site personnel and stakeholders in the planning process.• TÜMAD shall assign suitable personnel for urgent intervention and provide necessary equipment and sources.• TÜMAD shall develop procedures for internal and external emergency case notifications and reporting.• TÜMAD shall include monitoring items and improvement precautions, which explain additional hazards caused by usage of cyanide refining chemicals, in the intervention plans.• TÜMAD shall periodically assess the intervention procedures and opportunities and revise the same in due manner.		Operation						
	Cyanide Management Plan	Page 23	Mitigation Measure	Worker Training: <ul style="list-style-type: none">• TÜMAD shall train workers to ensure that hazards regarding the cyanide usage are understood.• TÜMAD shall train suitable personnel to ensure that the plant is operated in accordance with the system and procedures that protect human life, society and environment.• TÜMAD shall train suitable workers and personnel, who will intervene worker exposure and cyanide release to the environment.		Operation						
	Cyanide Management Plan	Page 23	Mitigation Measure	Stakeholder Engagement: <ul style="list-style-type: none">• TÜMAD shall provide stakeholders with the opportunity to express their apprehension• TÜMAD shall initiate communications to explain cyanide management procedures and sensitively discuss the determined subjects.• TÜMAD shall provide stakeholders with the information regarding the cyanide activities and environmental issues.		Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Cyanide Management Plan	Page 24	Wildlife Protection	Due to the chemical detoxification and Dry Stack Tailing Facility in Lapseki, Floating Bird Balls on Process Solution Pond and Temporary Netting On Heap Leach Pad Solution for the Ivrindi and for both project access to cyanide solutions is strictly limited and project zero discharge principle will be appliend.		Operation						
	Cyanide Management Plan	Page 24	Wildlife Protection	In order to further minimize any exposure possibility, TMAD will expedite the neutralization and clean-up of any accidental releases of cyanide solution, as noted in the Spill Clean Up Plan (TMD_CEV_PLN.009) and Emergency Response Plan (TMD_ISG_PLN.002).		Operation						
	Cyanide Management Plan	Page 24	Wildlife Protection	TMAD will also prepared, SOP's for all process for cyanide usage, and will train employees in the process area to observe their workplace for incidents of wildlife mortality and to immediately report any such observations to their supervisors.		Operation						
	Cyanide Management Plan	Page 24	Wildlife Protection	Inspection, documentation and management of wildlife mortality due to potential exposure to poisons is addressed in standard operating procedures. This procedure ensures that such inspections are part of the process plant operator's daily routine; it requires a daily notation of such observations, includes specific corrective and preventive action procedures to be followed in the event that a mortality occurs.		Operation						
	Cyanide Management Plan	Page 24	ICMI	Principle 4; • Operations: Manage cyanide process solutions and waste streams to protect human health and the environment. • Standard of Practice 4.3: Implement a comprehensive water management program to protect against unintentional releases. • Standard of Practice 4.4: Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.(Floating Bird Balls on Process Solution Pond and Temporary Netting On Heap Leach Pad Solution • Standard of Practice 4.5: Implement measures to protect fish and wildlife from direct and indirect discharges of cyanide process solutions to surface water.		Operation						
	Cyanide Management Plan	Page 25	Reporting & Responsibility	This plan shall be reviewed in six months periods at most during the construction and commissioning phases. It shall be reviewed annually and necessary revisions shall be made in order to reflect changed conditions and TMAD operation requirements. IMS and Sustainability Manager, who is in charge of the plan, and TMAD General Manager shall be responsible for the revision of this Management Plan.		All phases						
	Cyanide Management Plan	Page 25	Monitoring	The circumstances, which, according to the monitoring studies, are determined as non-compliances of the Project Standards, shall be investigated, and appropriate corrective actions shall be specified for these circumstances. Corrective Activity Procedure (TMD_EYS_PRD.002) Monitoring Requirements as per Turkish EIA Monitoring requirements, which have been determined for cyanide within the framework of Turkish EIA, are included in the following management plans: • Air Quality Management Plan (TMD_CEV_PLN.003) • Water Resources Management Plan (TMD_CEV_PLN.006)		All phases						
	Cyanide Management Plan	Page 26	Key Monitoring Measures	Key Monitoring Measures for the Project (See Table 8) will be used.		All phases						
	Cyanide Management Plan	Page 27	Key Performance Indicators	Key Performance Indicators for the Project (See Table 9) will be used.		All phases						
	Cyanide Management Plan	Page 27	Training	ICMC Principle and Standards of Practice about Training; • Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner. • Standard of Practice 8.1: Train workers to understand the hazards associated with cyanide use. • Standard of Practice 8.2: Train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment. • Standard of Practice 8.3: Train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.		All phases						
	Cyanide Management Plan	Page 27	Training	All TMAD employees and contractors working at Çanakkale Lapseki and Balıkesir Ivrindi Gold Mine Projects shall be provided with general workplace orientation training, site-specific orientation training as well as comprehensive health, safety and environmental awareness trainings and the trainings shall be evaluated.		All phases						
	Cyanide Management Plan	Page 27	PPE	Appropriate Personal Protective Equipment (PPE) shall be made available to the personnel if necessary. All relevant personnel shall be trained in the use and maintenance of personal protective equipment.		All phases						
	Cyanide Management Plan	Page 27	Training	Additional specialist trainings shall be provided to workers, who may be exposed to cyanide solutions as part of their working activities or who work in areas where cyanide is used. (OHS-HR and Environment)		All phases						
	Cyanide Management Plan	Page 27	Training	General aspects of environmental management shall be included in orientation training to be provided to all employees.		All phases						
	Cyanide Management Plan	Page 28	Stakeholders, Community and Environment	• Dialogue: Engage in public consultation and disclosure. • Standard of Practice 9.1: Provide stakeholders the opportunity to communicate issues of concern. • Standard of Practice 9.2: Initiate dialogue describing cyanide management procedures and responsively address identified concerns. • Standard of Practice 9.3: Make appropriate operational and environmental information regarding cyanide available to stakeholders.		All phases						
	Cyanide Management Plan	Page 28	Auditing	Daily inspections, which cover a broad range of subjects regarding the activities, including the compliance with this Plan and cyanide management as appropriate to activities inside and outside the site boundary, shall be carried out by operational area superintendents / supervisors within the scope of IMS, General Directorate, Quality, Internal Inspection and Project inspection programs. Independent external inspections and also periodic assessments by Project creditors shall be carried out. Records of inspections, supervisions and incidents shall be managed according to Tmad Madencilik Record Management Procedure (TMD_KAL_PRD.001).		All phases						
	Cyanide Management Plan	Page 28	Auditing	Key Points for GAP Analysis/Pre-Audit. The operation must pass all 196 check points to get full certification. (Points are listed on the Cyanide Code Website)		All phases						
	Cyanide Management Plan	Page 28	Reporting	Audits, incidents and nonconformities shall be documented and managed pursuant to the Records Management Procedure of TMAD (TMD_EYS_PRD.004).		All phases						
	Health and Safety Management Plan	Page 7	Reporting	This Management Plan will be reviewed on a minimum of a six monthly basis during construction and commissioning. During operation phase, this Plan will be reviewed on an annual basis to determine whether any changes or updates are required to the Management Framework unless a more frequent update is required to reflect changing project design or ESMS requirements and procedures.		Construction, Commissioning, Operation						
	Health and Safety Management Plan	Page 7	Disclaimer Commitment	Any requests for changes to this Management Plan must be addressed to the owner of this Management Plan and will be subject to appropriate review and approval processes as outlined in the Management of Change Procedure (TMD_EYS_PRD.006).		All phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Health and Safety Management Plan	Page 7	Contractor	The requirements of all applicable Project(s) Management Plans and Procedures will be applicable to Project(s) contractors. Such requirements will be set out in contracts and contractors will also be obliged to comply directly with these requirements.		All phases						
	Health and Safety Management Plan	Page 8-9	Responsible Parties	Primary roles and responsibilities with respect to implementation of Health and Safety Management Plan are given in Table 1.		All phases						
	Health and Safety Management Plan	Page 9	PDCA	TÜMAD will implement The PDCA (Plan, Do, Control, Act) cycle for the management of health and safety management system elements in line with the OHSAS 18001 standard.		All phases						
	Health and Safety Management Plan	Page 9	Mitigation Measure	<p>The following measures will be implemented regarding appointment of the occupational safety specialists and workplace physician:</p> <ul style="list-style-type: none">• TÜMAD will designate workers as occupational safety specialist, occupational physician and other health staff.• Employing an occupational safety specialist with (A) class certificate in enterprises classified as very hazardous and mentioned in article 8 of Law No.6331 shall be deemed as met on condition that an occupational safety specialist with (B) class certificate is employed in these enterprises until 1/1/2020.• The weekly working hours of the workplace physicians and occupational specialists will be determined according to the current legal regulations (Regulation on the Duty, Authority, Responsibility and Training of Occupational Specialists and Regulation on the Duty, Authority, Responsibility and Training of Occupational Physicians).• It is not obligatory to hire other health care staff where there is a full time occupational physician.• In the case where full time employment of occupational safety specialist and workplace doctor is required due to the determined working hours; employer establishes an occupational health and safety department. Occupational health and safety department should meet the legal requirements as set in the Regulation on Occupational Health and Safety Services.		All phases						
	Health and Safety Management Plan	Page 9	Mitigation Measures	<p>Occupational safety specialists shall fulfil the roles and responsibilities legally set out in the Regulation on the Duty, Authority, Responsibility and Training of Occupational Specialists including but not limited to the following:</p> <ul style="list-style-type: none">• With respect to works performed and changes to be made at the workplace, to give recommendations to employer in order to ensure that design, situation, maintenance and selection of machinery and other installations, application, planning and organization of the workplace including the materials to be used and selection, provision, use, maintenance, storage and testing of personal protective equipment are conducted according to the occupational health and safety legislation and as well as general rules of occupational health.• To notify employer, in written, of the precautions required to be taken with regard to occupational health and safety.• To perform studies to investigate reasons of work accidents and occupational diseases and to take precautions to ensure that these work accidents and occupational diseases will not be repeated, and to give advices to employer in this regard.• To conduct studies to investigate reasons of incidents, which occur at the workplace and have a potential to damage an employee, equipment or workplace although they do not result in death or injury, and to give recommendation to employer accordingly.• To participate in risk assessment studies and practices on occupational health and safety, to give advices to employer on health and safety precautions to be taken based on the results of risk assessment studies and to follow up the process.• To plan working environment inspections and periodical maintenance, control and measurements, which are required to be performed at the workplace as per occupational health and safety legislation, and to control implementation of these plans.• To participate in studies to prevent accidents, fire or explosion at the workplace, to give advice to employer on these, to follow-up applications; to participate in studies to prepare emergency plans for circumstances such as natural disasters, accidents, fire or explosion, to follow-up and control periodical trainings and practices in this regard and to ensure that emergency plan is obeyed.		All phases						
	Health and Safety Management Plan	Page 10	Mitigation Measures	<p>Occupational safety specialists shall fulfil the roles and responsibilities legally set out in the Regulation on the Duty, Authority, Responsibility and Training of Occupational Specialists including but not limited to the following:</p> <ul style="list-style-type: none">• To perform studies to plan for employees' occupational health and safety trainings according to the relevant legislation and submit the plans to the employer's approval, to implement and control these plans.• To prepare annual assessment report, to which the results of occupational health and safety studies and inspections with regard to workplace are recorded and by collaborating with workplace doctor.• To organize informative activities for employees and submit these activities to employer for approval and control the implementation.• To prepare occupational health and safety instructions and work permit procedures to be used at the required areas, to submit these to employer for approval and control the implementation.• To carry out evaluation on work accidents and occupational diseases together with workplace doctor, to prepare necessary preventive action plans by performing research and investigation studies to ensure that the hazardous incident will not be repeated, and to follow-up the implementation process of these plans.• In collaboration with workplace doctor, to prepare annual work plan in which occupational health and safety activities of the next year are present,• To work in collaboration with the occupational health and safety committee, if any, of which he/she is a member,• To support activities of employee representative and supporting personnel and to be in collaboration with these persons,		All phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Health and Safety Management Plan	Page 10-11	Mitigation Measures	Workplace physicians shall fulfil the roles and responsibilities legally set out in the Regulation on the Duty, Authority, Responsibility and Training of Occupational Physicians including but not limited to: <ul style="list-style-type: none">• To inform employees of and get their consents on health inspections, and to sufficiently and accordingly inform them of health risks and medical examinations• To carry out health inspections of employees including the assessment and prevention of health damaging risks, and within the scope of the occupational health and safety legislation, to perform employees’ pre-job medical examinations, which indicate that they are suitable for the job, as well as periodical medical examinations at the specified intervals• To determine if there is a relationship between absence due to health problems and health hazards to be encountered at the workplace• To carry out return-to-work-examinations of persons• To carry out studies to prevent infectious diseases and to perform immunization studies, and to conduct health examinations for infectious diseases• To ensure necessary tests, laboratory analyses and radiological analyses of employees during health inspection• To perform studies to plan for employees’ occupational health and safety trainings according to the relevant legislation• To record health inspection studies at the workplace• to make an assessment on work accidents and occupational diseases by collaborating with occupational safety specialist• to prepare necessary preventive activity plans by conducting research and investigation studies in order to ensure that hazardous incidents will not be repeated• to prepare annual plans to include all of these subjects and submit these plans to employer for approval• to prepare annual assessment report• Based on the results of health inspection, to propose to perform necessary measurements within the scope of workplace inspections to be conducted in collaboration with occupational health and safety specialist, and to assess measurement results,• To work in collaboration with the occupational health and safety committee, if any, of which he/she is a member,		All phases						
	Health and Safety Management Plan	Page 11	Mitigation Measure	Workplace physicians shall fulfil the roles and responsibilities legally set out in the Regulation on the Duty, Authority, Responsibility and Training of Occupational Physicians including but not limited to: <ul style="list-style-type: none">• To be in collaboration with the related parties to provide information and training for occupational health and safety subjects,• To participate in the studies for improvement of the existing applications, such as analysis of work accidents and occupational diseases, programs for improvement of work practices as well as assessment of and testing new technology and hardware in terms of health,• In accordance with the Regulation on Working Power and Vocational Incapacity Ratio, to work in collaboration with the hospitals, which are authorized to issue health care commission reports for occupational diseases, and to be in collaboration with the relevant departments for rehabilitation of employees, who have had a work accident or caught an occupational disease,• To participate in the researches to be made on occupational health and safety subject,• To contribute to occupational safety specialist when preparing occupational health and safety instructions and work permit procedures to be used at the required areas,• In collaboration with occupational safety specialist, to prepare annual work plan in which occupational health and safety activities of the next year are present,• To support activities of employee representative and supporting personnel and to be in collaboration with these persons,• To carry out evaluation on work accidents and occupational diseases together with occupational safety specialist, to prepare necessary preventive action plans by performing research and investigation studies to ensure that the hazardous incident will not be repeated, and to follow-up the implementation process of these plans.• To report the precautions, which are to be taken regarding occupational health and safety and which pose life-threatening risks and which have been notified to the employer in written but are not handled by the employer within a reasonable period of time to be determined by the occupational safety specialist, to the provincial directorate of labor and employment agency to which the workplace is registered.• To consult employer to cease works, if the hazard determined at the workplace is critical and unavoidable and if this hazard requires immediate intervention.		All phases						
	Health and Safety Management Plan	Page 11	Risk Management	Identification of the hazards is the major component for the risk management of the Projects. Within the scope of the Risk Assessment Procedure (TMD_ISG_PRD.003) risk assessment will be completed for all hazards that may arise from TUMAD activities and all external hazards that may impact the health and safety of workers, sub-contractors, visitors and the environment. Necessary measures will be defined for all activities to eliminate and control the identified hazards.		All phases						
	Health and Safety Management Plan	Page 12	Incidents and Accidents	Recording of all incidents and accidents is legally required in the work premises. TUMAD will record all incidents and accidents that occur during the whole lifecycle of the Projects and will conduct and investigation to identify the causes and control measures to prevent re-occurrences. Details of the implementation are given the Accident/Incident Loss Report & Investigation Procedure (TMD_ISG_PRD.007).		All phases						
	Health and Safety Management Plan	Page 12	Training	TUMAD will ensure that all employees have appropriate legally required H&S training according to the Regulation on Procedures and Principles of Occupational Health and Safety Training of Employees. Principles on training are detailed in the Training Plan (TMD_ISG_PLN.001).		All phases						
	Health and Safety Management Plan	Page 12-13	Training	TUMAD will implement following principles: <ul style="list-style-type: none">• Annual training plan will be prepared.• All training will be recorded.• Workers’ representatives will have appropriate training.• Workers failing to present documents to prove that they have received vocational training on their job might not be employed in jobs classified as hazardous and very hazardous which require vocational training.• Workers who have had occupational accident or disease shall receive additional training on reasons for the accident or disease, ways to protect themselves and safe working methods. Furthermore; workers who are away from work for any reason for more than six months shall receive refresher training before return to work.• Workers from outside undertakings and/or enterprises might not start to be employed in jobs classified as hazardous and very hazardous unless they can present documents to prove that they have received appropriate instructions regarding health and safety risks.• The employer who is the party to temporary employment relationship shall ensure that the worker receives training on health and safety risks.• Trainings in no circumstances will bring financial burden to workers.• Training will be refreshed as legally required intervals.		All phases						
	Health and Safety Management Plan	Page 13	Employment Process	After the personnel with the required qualifications has been found, s/he is not allowed to enter into the site before registration and health check processes are completed. The related procedure will be prepared by the Human Resources Department.		All phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Health and Safety Management Plan	Page 13	Employment Process	Liability of employees according to Law No.6331 are given below and will be explained to employees during training		All phases						
	Health and Safety Management Plan	Page 13	OHS Committee	TÜMAD will set up an occupational health and safety committee at workplaces, where a minimum of fifty employees are employed and permanent work is performed for more than six months. TÜMAD will implement the requirements set in the Regulation on Occupational Health and Safety Committees. After commencement of studies and setting up Occupational Health and Safety Committee, Committee will prepare an Internal Regulation.		All phases						
	Health and Safety Management Plan	Page 13	OHS Committee	Committee will be comprised of the following persons and will conduct meetings on a monthly basis: <ul style="list-style-type: none">• Employer or employer representative,• Occupational safety specialist,• Workplace physician,• A person who is responsible for human resources, personnel, social affairs or administrative and financial affairs,• Civil defence expert, if any• Foremen, head-worker or workman, if any• Employer representative or chief representative if there is more than one employer representative at the workplace		All phases						
	Health and Safety Management Plan	Page 14	Employee Representative	TÜMAD will assign a number of employee representatives in accordance with the following subclauses through an election to be made amongst employees or through appointment if it not possible through election, by considering risks and number of employees at different departments of the workplace and by taking care of balanced distribution.		All phases						
	Health and Safety Management Plan	Page 14	Employee Representative	Employee representative: <ul style="list-style-type: none">• One representative for workplaces between two and fifty employee.• Two representatives for workplaces between fifty one and one hundred employees.• Three representatives for workplaces between one hundred one and five hundred employees.• Four representatives for workplaces between five hundred one and thousand employees.• Five representatives for workplaces between one thousand one and two thousand employees.• Six representatives for workplaces of two thousand one and more employees. If there is more than one employee representative, a chief representative is elected amongst the other employee representatives.		All phases						
	Health and Safety Management Plan	Page 14	Employee Representative	Employee representatives are entitled to submit proposal to employer and ask employer to take appropriate measures in order to remove source of hazard or to mitigate risks posed by hazards. Rights of employee representatives or support personnel cannot be restricted as they perform their duties, and employer provide them with necessary means to enable them to exercise their duties.		All phases						
	Health and Safety Management Plan	Page 14	Health and Safety Coordinators	Following principles will be implemented according to the 10. and 11. Articles of the “Regulation on Occupational Health and Safety for Construction Works” that came into effect by being issued on the Official Gazette No. 28786 on October 05, 2013 as per the 30. Article of the Law No. 6331 on Occupational Health and Safety, <ul style="list-style-type: none">• Health and Safety Preparation Coordinator worked during project preparation phase,• One or more Occupational Health and Safety Coordinator from contractors and supplier companies shall work during implementation phase depending on workload and number of employees.• Implementation Coordinator shall be announced to all employees,• Following determination, Occupational Health and Safety Coordinators, who will work during implementation, shall be assigned through written notification.• They shall be trained for their duties, authorities and responsibilities.• Certificates shall be given to participants at the end of training.• Weekly meetings shall be held among coordinators.		All phases						
	Health and Safety Management Plan	Page 14	Visitors	Visitors of the mine site shall be escorted by a personnel, who has completed the site pre-work training. Visitors shall enter into the site from the Security Gate Department by using the Visitor Card given to them, and they shall carry this card during their presence at the site in such a way that the card is visible. TÜMAD personnel shall be responsible to convey the information on the Visitor Brochure to his/her visitor. TÜMAD personnel shall be responsible for any incident and accident, which the visitor may encounter. Escorting is not always required for the persons, who regularly bring materials to the mine site. These persons, however, shall be wearing Personal Protective Equipment (boots, helmet, goggles) that are provided by the Security Department.		All phases						
	Health and Safety Management Plan	Page 15	Medical Examinations	Personnel can only start to work after the workplace physician completes examination and expresses his/her positive opinion. Medical examinations will be repeated annually for all workers.		All phases						
	Health and Safety Management Plan	Page 15	Contractor	Contractors should submit their medical report to TÜMAD which indicates that they are fit for work.		All phases						
	Health and Safety Management Plan	Page 15	Health Risks-Exposure	In this respect, TÜMAD will conduct risk assessments and identify the need for personal exposure measurements which would include the following: <ul style="list-style-type: none">• Dust exposure• Noise and vibration• Chemical exposure• Illumination Personal exposure measurements shall be made by accredited institutions and will be included in the monitoring plans. TÜMAD will ensure that personal measurements meet the legal standards by taking appropriate engineering and administrative control measures.		All phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Health and Safety Management Plan	Page 15	Safe Work Principles	TÜMAD will implement all legal H&S requirements and best practices throughout the lifecycles of the Projects. HSE activities have priority over the other construction site activities. All employees are required to have sufficient information on HSE related Laws and Regulations as well as construction site rules defined by Project Management. All employee studies, behaviours and attitudes should conform to Laws and construction site rules. Sub-contractor handbook with regard to general rules of mine site will be published and distributed to the personnel. When entering into the mine site, supplier training that explains mine site rules will be provided. Newly hired personnel are not allowed to work at the site unless they take the pre-work HSE training given by safety specialist. Each department is responsible to prepare and implement the procedures and instructions that are related to its job. The personnel, who disobey the procedures and instructions, are reported. In order to prevent accidents and incidents throughout the mine site, Occupational Safety Hazard Suggestion system will be applied. Relevant forms and procedures with regard to all of these applications shall be kept in the AXAPTA system. All TÜMAD personnel will be provided with suitable personal protective equipment according to the job that they will perform with a submission form. Any contractor personnel who does not have appropriate personal protective equipment will not be allowed to work at Project site.		All phases						
	Health and Safety Management Plan	Page 15-16	Instructions	The following instructions shall be prepared and delivered to all employees. • Heavy Vehicle Site Entrance Instruction • Contractor Performance Control Instruction • Barricading Instruction • Work Authorization and Permits Instruction • Power Disabling Instruction • HSE Committee Working Instruction • Accident Notification and Casualty Referral Instruction • Accident Incident and Loss Investigation Team Working Instruction • Instructions on Diesel Supply with Pumping • Rod Fire Use and Maintenance Instruction • Quarterly Tagging System Instruction • Fire Protection and Fighting Instruction • Fire Extinguisher Control and Replacement Instruction • Working Area Controls Procedure • Communications and Intercommunications Procedure • HSE Objectives and Targets Procedure • HSE Corrective and Preventive Activity Procedure • HSE Training Procedure • HSE Monitoring and Measurement Procedure • Job Safety Analysis Procedure • Workplace Alcohol and Drugs Procedure • Record Management Procedure • Accident Incident and Loss Reporting and Investigation Procedure • Risk Assessment Procedure • Field Driver Rules Procedure • Field Driver Rules and Authorization Procedure		All phases						
	Health and Safety Management Plan	Page 16	Machinery Legal Requirements	TÜMAD will implement following legal requirements and principles: • Lifting Equipment and Pressure Containers: Periodic inspections of Lifting Equipment shall be performed quarterly by Maintenance Planning Department. Lifting Equipment and Pressure Vessels shall have been tested by Accredited Inspection Companies. • Lightning Rod Tests: Lightning Rods at the mine sites shall be tested annually. • Grounding Tests:		All phases						
	Health and Safety Management Plan	Page 16	Power Transmission Line Pole	Power Transmission Line Pole grounding measurements shall be performed by TÜMAD.		All phases						
	Health and Safety Management Plan	Page 16	Machinery	all equipment at the mine site shall be subject to tagging system quarterly. Any equipment without a tag shall not be allowed for use. Disabling system shall be implemented for the equipment for which maintenance and repair works are being performed. This system shall be provided by using locks and cards. Procedures on performance of these rules shall be prepared and transferred to AXAPTA system.		All phases						
	Health and Safety Management Plan	Page 16	Objectives and Targets	When determining the method to be followed to achieve the objectives and targets and the performance during the process, HSE Monitoring and Measurement Procedures (TMD_İSG_PRD.014), HSE Legal Requirements List (TMD_İSG_LST.001), HSE Objective and Targets (TMD_İSG_PRD.006) Table will be used. This will be presented at R.M.M. meetings. Results will be announced to employees through bulletin boards.		All phases						
	Health and Safety Management Plan	Page 17	Responsible Parties	Each department manager is responsible to announce the objectives and targets to his/her department. OHSE prepares and follows the HSE Objectives and Targets Table to determine next year’s activities, responsibilities and source requirements in order to comply with the occupational safety policy and relatedly to achieve occupational safety objectives and targets.		All phases						
	Health and Safety Management Plan	Page 17	HSE Management	HSE management performance is evaluated every six months.		All phases						
	Health and Safety Management Plan	Page 17	HSE Management	If necessary, management program activities and terms are revised. Completed performances are marked by OHSE in “HSE Objectives and Targets Table”. “P” Planned and “C” Completed activities are followed. The activities, whose completed performances are marked, are updated in the electronic environment monthly. If the activity, target and deadline change and/or if there are addition to these items, then “HSE Objectives and Targets Table” is revised. OHSE submits it to Operations Manager by for approval and then it is transferred to electronic environment. Originals of “HSE Objectives and Targets Table” are kept as occupational safety records at OHS Department for 2 years under the responsibility of Occupational Safety Data Entry Officer. Originals of HSE Objectives and Targets shall be destroyed at the end of this period in such a way that a minute shall be taken by Occupational Safety Data Entry Officer in order to ensure that these documents cannot be used again.		All phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Health and Safety Management Plan	Page 17	Monitoring	TÜMAD will prepare an annual monitoring plan to identify the health and safety elements to be followed including the timelines and the responsible people. This plan shall be reviewed and updated annually and if there is any changes in the Project components, processes, legal requirements, location changes etc. Monitoring the legal compliance of the Project components will be done over Official Gazette and/or mevzuat.gov.tr. In case of identifying any new requirement which would impact the implementations in the Project, TÜMAD will identify necessary measures to comply with all legal requirements.		All phases						
	Health and Safety Management Plan	Page 17	Reporting	Evidences of the implementation of the mitigation actions/measures and related results are collected through inspection and auditing activities will be reported in line with the Internal Audit Procedure (TMD_KAL_PRD.001). Compliance assessments will be reported on a six monthly basis.		All phases						
	Health and Safety Management Plan	Page 18-22	Monitoring Plan	Monitoring details to be followed are listed in Appendix 1.		All phases						
	Local Procurement Management Plan	Page 7	Reporting	This Management Plan will be reviewed on a minimum of a six monthly basis during construction and commissioning. During operation phase, this Plan will be reviewed on an annual basis to determine whether any changes or updates are required to the Management Framework unless a more frequent update is required to reflect changing project design or ESMS requirements and procedures.		Construction, Commissioning, Operation						
	Local Procurement Management Plan	Page 7	Disclaimer Commitment	Any requests for changes to this Management Plan must be addressed to the owner of this Management Plan and will be subject to appropriate review and approval processes as outlined in the Management of Change Procedure (TMD_EYS_PRD.006).		All phases						
	Local Procurement Management Plan	Page 8	Legislative Compliance	Project Standards are defined by; <ul style="list-style-type: none">• applicable Turkish Standards;• Turkish Environmental Impact Assessment (EIA) requirements;• other commitments to and requirements of Turkish Government authorities;• applicable international standards and guidelines;• applicable TÜMAD standards, policies and procedures;• Other industry guidelines with which TÜMAD has committed to comply.		All phases						
	Local Procurement Management Plan	Page 8	EBRD Performance Requirement 1	Specifies the need for the Banks projects/ clients to identify risks and associated with its supply chain. Management systems are required to include processes for taking action to address environmental and social issues identified. Account will be taken of (i) whether the client caused or contributed to the issues, (ii) the clients leverage over the supplier, (iii) how crucial the relationship is to the client, (iv) the severity of the issue (v) whether terminating the relationship with the supplier would have adverse consequences.		All phases						
	Local Procurement Management Plan	Page 9	EBRD Performance Requirement 2	A part of the supply chain management is to identify and assess the risk of child labour and forced labour being used in its supply chain of goods and services. If either situation is detected, the client should first take action to remedy this with the supplier, and only continue to purchase from supplier if satisfactory evidence is received from the supplier that remedial action is being taken. There should be monitoring on a regular basis.		All phases						
	Local Procurement Management Plan	Page 9	EBRD Performance Requirement 6	The client is required to adopt and implement a sustainable resources procurement policy. Clients should give preference to purchasing living natural resources according to internationally recognized principles and standards where they exist.		All phases						
	Local Procurement Management Plan	Page 10	Responsible Parties	The roles and responsibilities of this management plan are listed in Table 1.		All phases						
	Local Procurement Management Plan	Page 11	Procurement Process	Some of the key measures to be implemented and monitored by TÜMAD throughout the lifetime of the mines are as follows but not limited to: <ul style="list-style-type: none">• Setting a local procurement policy,• Providing priority to local companies in procurements,• Specifying which goods and services (food, shuttle service etc.) will be locally procured,• Informing suppliers, their representatives and key stakeholders in the district on procurements opportunities• Supporting local companies to meet the standards necessary to be considered for the supply chain of the Project.• Establishing a Community Development Program,• Supporting other small entrepreneurs through CDP in order to diversify the local economy and make sure it doesn't just rely on mining.• Creating a Community Advisory Panel (CAP) as a result of this workshop and electing its members,• Evaluating the requests received and informing the stakeholders through CAP,• Establishing a service cooperative for the workers transportation.		All phases						
	Local Procurement Management Plan	Page 11	Purchase Requisition	All requests for goods and services will be made on a Purchase Requests for requisition through Axapta. The purchase request for requisition includes: a) Identifies the person and departments requiring the goods or service. b) Specifies the requirements (description, quantity, quality, service and schedule). c) Indicates the cost center to be charged. d) Indicate the estimated value, budget value where appropriate. e) Suggest possible sources of supply. f) Be properly approved. g) The requisition is then sent to purchasing.		All phases						
	Local Procurement Management Plan	Page 11	Purchase Order	The formal written authority to commit TÜMAD to the purchase of goods or services must be in the form of a purchase order or contract. A complete purchase order should include: a) Identification of the supplier; b) Description, quantity and specifications of the goods or services; c) Agreed unit and total price and currency; d) Applicable law, regulations and taxes; e) Delivery and shipment instructions; f) Invoicing and mailing instructions; g) Payment terms; h) General and specific terms and conditions;		All phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Local Procurement Management Plan	Page 11	Procurement Stage	When executing the purchase the purchasing department should: a) Review the detail for clarity and completeness; b) Identify and contact qualified suppliers; c) Negotiate terms; d) Prepare purchase order;		All phases						
	Local Procurement Management Plan	Page 11	Procurement Stage	Purchasing department ensure to obtain offers minimum 3 suppliers as a standard application wherever it is possible. But due to nature of the business it may not be possible at all time. Exceptions to 3 offers may be in following cases; a) Equipment manufacturer or distributor, b) Repair of equipment or component, c) Urgent purchases, d) Preferred supplier (if defined by purchasing for a specific item group), e) Local purchase, f) Purchases referenced to a contract,		All phases						
	Local Procurement Management Plan	Page 11-12	Vendor Selection	Vendor selection will be based upon specifications, quality, price, delivery, service, capability, technical acceptability, regional industrial benefits and financial requirements. In addition those, vendors are selected by their man power, technical and financial background, safety and environmental performance and conformity. If the above qualifications are equal and there are no special job requirements, the selection shall be the lowest bidder. Other requirements are; • Quality System Certificates (ISO's) • Technical specifications of products • Technical Service availability • References • Customer satisfaction • On time delivery • Quantity suitability • Policy suitability		All phases						
	Local Procurement Management Plan	Page 12	Procurement Guidelines	TÜMAD and its sub-contractors will carry out procurement before, during, and after construction and during operation of related project in accordance with the following guidelines: a) To maximize local supply of goods and services in accordance with the defined supplier and contractor zones during the construction and operation of the related project. b) To enable local suppliers to competitively tender for opportunities. c) To give priority to local suppliers and individuals in the case of suitable price, quality and capacity for periodic and systematic supply of mine consumables and services.		All phases						
	Local Procurement Management Plan	Page 12-13	Procurement Principles	As part of TÜMAD's local purchasing strategy TÜMAD and its main sub-contractors will provide: a) Top priority to Local Suppliers Give priority to local suppliers, who can demonstrate adequate qualifications and who submit competitive bids in accordance with TÜMAD's policies and the tender conditions. b) Opportunity for Local People Promote local employment by negotiating levels of local employment consistent with the TÜMAD's local hiring commitments for unskilled labor and as appropriate for the services being provided and commensurate with the availability of unskilled labor in the local market. TÜMAD agreements will include contractual commitments by the service provider for negotiated employment levels for unskilled labor. c) Top priority to Local Based Traders/Shop owners Promote local purchases of goods and services by negotiating such levels as appropriate, for the service being provided and commensurate with the availability of the required goods and services in the local area. All contractual obligations between the company and its main sub-contractors will include written commitments to ensure the procurement of goods and services commensurate with those outlined in the contractual agreements signed between the company and the third party contractor.		All phases						
	Local Procurement Management Plan	Page 14-18	Mitigation Measure	Control measures that are to be taken to mitigate against potential risks have been listed in Table 2.		All phases						
	Local Procurement Management Plan	Page 19	Key Monitoring Activities	The key monitoring activities that will be implemented are listed in Table 3.		All phases						
	Local Procurement Management Plan	Page 19-20	Key Performance Indicators	The key performance indicators that will be implemented are listed in Table 4.		All phases						
	Local Procurement Management Plan	Page 20	Training	All purchasing administrators and supervisors, department engineers and managers who are directly related or responsible for purchasing activities will be trained on the requirements of this Management Plan in specifically • Project Standards in terms Local Procurement Management • Supplier Selection Criteria and Process • Supplier evaluation Criteria and Process		All phases						
	Local Procurement Management Plan	Page 20	Auditing	Implementation of the TÜMAD's supply management system will be monitored monthly, 6 monthly and annually according to the Audit Program. The schedule, the frequency, the scope and objectives of the audit as well as the responsible internal inspectors will be indicated in the Audit Program.		All phases						
	Local Procurement Management Plan	Page 20	Reporting	The Company's primary suppliers should report their procurement and supply chain activities to the purchasing department via written report on a monthly basis.		All phases						
	Local Procurement Management Plan	Page 20	Reporting	Audits, incidents and nonconformities shall be documented and managed pursuant to the Records Management Procedure of TÜMAD (TMD_KAL_PRD.001).		All phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Traffic Management Plan	Page 7	Reporting	This Management Plan will be reviewed on a minimum of a six monthly basis during construction and commissioning. During operation phase, this Plan will be reviewed on an annual basis to determine whether any changes or updates are required to the Management Framework unless a more frequent update is required to reflect changing project design or ESMS requirements and procedures.		All phases						
	Traffic Management Plan	Page 7	Disclaimer Commitment	Any requests for changes to this Management Plan must be addressed to the owner of this Management Plan and will be subject to appropriate review and approval processes as outlined in the Management of Change Procedure (TMD_EYS_PRD.010).		All phases						
	Traffic Management Plan	Page 8	Legislative Compliance	Project Standards are defined by; <ul style="list-style-type: none">• National Legislation;• Turkish Environmental Impact Assessment (EIA) requirements;• other commitments to and requirements of Turkish Government authorities;• applicable international standards and guidelines;• applicable TÜMAD standards, policies and procedures;• other industry guidelines with which TÜMAD has committed to comply.		All phases						
	Traffic Management Plan	Page 8-9	National EIA Commitments	<ul style="list-style-type: none">• For the transportation of the materials, the provisions of the Highway Traffic Law (Official Gazette No. 18195, 18.10.1983) and Highway Traffic Regulation (Official Gazette No. 23053, 18.07.1997) will be followed.• Speed limit will be set in the project area and the vehicles will be made to comply with the speed limit.• On-site roads will be wide enough for cars to pass.• It will be ensured that on-site roads are undamaged and safe.• All vehicles will be regularly serviced and maintained.• It will be ensured that all project personnel comply with the Emergency Action Plan.• On-site roads will be regularly moisturized especially during the summer months, therefore the accident risk due to extreme dust can be minimized.• On-site roads will be maintained and levelled continuously.• Necessary training will be delivered to the Project staff.		All phases						
	Traffic Management Plan	Page 9	EBRD Performance Requirement 4	<ul style="list-style-type: none">• The client will evaluate and monitor the potential traffic and road safety risks to workers and potentially affected communities throughout the project life cycle and develop measures and plans to address them.• For projects that operate moving equipment on public roads and other forms of infrastructure, the client will seek to prevent the occurrence of incidents and injuries to members of the public associated with the operation of such equipment.• Consideration should be given to relevant EU road and safety measures. Consistent with the objectives of Directive 2008/96/EC of 19 November 2008 on Road Infrastructure Safety Management.• Technically and economically feasible and cost effective road safety components will be incorporated in project design to mitigate potential road safety impacts on locally affected communities.• Where appropriate, a road safety audit will be undertaken for each phase of the project and routinely monitor incident and accident reports to identify and resolve problems or negative safety trends.• For projects which utilize vehicles or fleets of vehicles (owned or leased), the client will appropriate training to workers on driver and vehicle safety. The client will ensure regular maintenance of all project vehicles.		All phases						
	Traffic Management Plan	Page 9	TÜMAD Standards, Policies and Procedures	List of applicable TÜMAD standards, policies and procedures are given in Section 2.1. Additionally following documents have been prepared to support the implementation of this Plan. <ul style="list-style-type: none">• Risk Management Procedure (TMD_LAP_ISG_PRD.003)• Weekly vehicle maintenance form (TMD_IDR_FRM.002)• Daily vehicle maintenance form (TMD_IDR_FRM.004)• Vehicle Driving Procedure (TMD_IDR_PRD.001)• Field Driving Rules Procedures & Delegation Procedures (TMD_ISG_PRD.015)• Field Driving Rules Procedures (TMD_ISG_PRD.016)• General Field Driver's License Evaluation Form (TMD_ISG_FRM.035)• Alcohol and Drug Addiction Procedure (TMD_ISG_PRD.004)• Alcohol Control Instruction (TMD_GUV_TLM.002)		All phases						
	Traffic Management Plan	Page 9-10	TÜMAD Standards, Policies and Procedures	TÜMAD will obtain the following international certificates to manage the OHS risks in construction and operations of the mines: <ul style="list-style-type: none">• ISO 9001:2015 “Quality Management System Requirements”• ISO 14001:2015 “Environmental Management System Requirements”• OHSAS 18001:2007 “Occupational Health and Safety Management System”		All phases						
	Traffic Management Plan	Page 10	ICMC	TÜMAD will protect communities and the environment during cyanide transport. Standard of practice TÜMAD will establish clear lines of responsibility for safety, security, release prevention, training, and emergency response in written agreements with producers, distributors, and transporters (ICMC) as defined in Cyanide Management Plan (TMD_CEV_PLN.008).		All phases						
	Traffic Management Plan	Page 10-11	Responsible Parties	The roles and responsibilities of this management plan are listed in Table 1.		All phases						
	Traffic Management Plan	Page 18	Mitigation Measure	TÜMAD will minimize traffic impacts through designing and building bypass routes and identifying and performing road upgrades, in consultation with relevant authorities, all necessary warning signage on public roads that are used for Projects’ transportation.		All phases						
	Traffic Management Plan	Page 18	Communication and Disclosure	Traffic management plan shall be communicated; <ul style="list-style-type: none">• to all TÜMAD and contracting personnel, initially by site induction, additional information shall be conveyed by toolbox meetings and safety meetings.• to all visitor by site induction• to affected communities and other stakeholders at stakeholder engagement meetings and with hard copies of the traffic management plan available at the TÜMAD site office and safety office for review of• to all stakeholders through disclosure at TÜMAD’s website		All phases						
	Traffic Management Plan	Page 18	Communication	TÜMAD will carefully take the all required measures in order to form strong and continuous communication of traffic plan among all stakeholders.		All phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Traffic Management Plan	Page 18	Training	All of the TÜMAD personnel will be trained in inductions and orientations concerning traffic management plan before they enter the site. Same methodology will also be applied to all of the contractors to be working on the fields. These trainings will be given by OHS department. After these trainings are completed, they will signed and recorded. All visitors to site will also be subjected to same safety induction and as part of the safety induction they will also be briefed for key parameters of the plan as well. OHS department will also issue toolbox document and training to overall site personnel including TÜMAD and all contractors in order to refresh the ground rules of the Traffic Management Plans. If needed, there will be separate training sessions for refreshment and reminder of the program.		All phases						
	Traffic Management Plan	Page 18-19	Communication and Disclosure	In case any change is required in Traffic Management of the site, overall site will be notified for duration and place of the change. Print copies of the notifications will also be put in the overall site. Community will also be informed in order to increase awareness and knowledge of Traffic Management plan in regular meetings with local communities. Services routes and schedules will clearly be communicated to local community. Printed out copies will be available on operation offices. Special care to schools and children will be given in order to increase their awareness regarding overall Traffic flow of in the project area.		All phases						
	Traffic Management Plan	Page 19	Communication and Disclosure	Additional community awareness and road safety trainings will be provided to the school children through a community awareness and road safety training programme.		All phases						
	Traffic Management Plan	Page 19	Communication and Disclosure	The community relations team will communicate transport route(s) and predicted schedule to communities where the transport route(s) run close to or through villages.		All phases						
	Traffic Management Plan	Page 19	Emergency Situations	For each mine, there are ambulances, rot-fire vehicles and firefighting trucks in order to take action at once. In the operation teams, there always be main and standby drivers among operators even in the shifts so that these vehicles can be used in case of needed Emergency vehicles shall have right of way on the mine site at all times. Vehicles shall be informed either by radio communications or upon hearing the warning siren, relocate the vehicle to the nearest off road position and turn of the ignition. All personnel shall cease work activities and proceed to nominated assembly areas (Reference is made to Emergency Action Plan (TMD_ISG_PLN.002)). As stated in emergency action plans, radio channel of VHF1, sirens, all related traffic and emergency signs will be on the site area. Muster points and all related maps as well as signs will be operational on the project sited as described in the emergency action plan		All phases						
	Traffic Management Plan	Page 19	Driving Safety	<ul style="list-style-type: none">• All drivers shall have defensive, offensive, advance driving, off-road driving training.• All vehicles must have a top lamp at mine site.• The persons who have the field driving license can use the vehicle by being tested by the OHS Department (Field Driving Rules Procedures-TMD_ISG_PRD.016- Field Driving Rules Procedures & Delegation Procedures TMD_ISG_PRD.015, General Field Driver’s License Evaluation Form)(TMD_ISG_FRM.035)• All vehicle occupants shall always be in a driver or passenger seat and wear a seatbelt.• The driver shall not put the vehicle into motion until all occupants have fastened their seatbelts.• Drivers shall wear suitable sturdy footwear whilst driving. (“Flip-flops” are not permitted).• Heavy vehicle drivers shall wear safety shoes whilst on duty.• Drivers shall remove ignition keys from the vehicle when it is not in use.• Drivers shall not use cell phones – including “hands-free” units - while driving. It is also strongly recommended that drivers stop their vehicles in a safe position when receiving or making radio calls.		All phases						
	Traffic Management Plan	Page 19	Vehicle Maintenance and Inspection	TÜMAD’s, Visitor, and Contractors e.tc. All vehicles shall be subject to periodic maintenance and inspections. <ul style="list-style-type: none">• Maintenance Period - Time or Distance Based• Equipment / Vehicle Maintenance Areas• Inspections• First Use Inspections• Daily Checks• Safety Inspections – Time or Distance Based		All phases						
	Traffic Management Plan	Page 19-20	Reversing	<ul style="list-style-type: none">• Prior to reversing, drivers of long vehicles shall ensure that banksman or spotters are available to ensure safe reversing.• Where necessary, reverse alarms will be installed to large/long vehicles and work machines.• All vehicles parking shall reverse into their parking spaces. Owners of personal vehicles, subcontractors and visitors are expected to comply with safe reversing plans.		All phases						
	Traffic Management Plan	Page 21	Entrance Controls	Visitors, delivery vehicles and plant entering the site are required to report to the TÜMAD office to enter. Delivery of materials and entry of vehicles on site will be managed on a daily basis by Mechanical Department and their vouching will be done by Security. Before entrance to the mine site, all vehicles have to be checked (ID check, Mechanical check,) by mechanical department. In line with the vehicle control form (TMD_ISG_FRM.035)		All phases						
	Traffic Management Plan	Page 21	Road Signage	Traffic movement shall be controlled in all construction areas by the installation of signage at predetermined locations, indicating: travel direction, speed limitations, and right of way. Signage shall be installed and displayed to satisfy: <ul style="list-style-type: none">• Direction• Safe Movement• Speed Limitation Location requirements: <ul style="list-style-type: none">• Signage is within driver’s vision.• Signage cannot be obscured / blocked.• Signage cannot obscure other signage from the driver’s vision.• Signage cannot become a hazard.• Signage cannot direct traffic into an undesirable path.		All phases						
	Traffic Management Plan	Page 21	Vehicle Safety Equipment	All equipment and vehicles, shall have an operational flashing identification light attached at all times during movement on the construction site and mining lease. All equipment and vehicles, shall have an operational audible reversing alarm. Light vehicles shall carry a first aid kit and vehicle fire extinguisher with a current inspection tag.		All phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Traffic Management Plan	Page 21	Signage and Move-of Procedures	<p>All equipment and vehicles, shall comply with traffic signage located in the construction area and mine site area.</p> <p>All equipment and vehicles, outside the perimeter of the construction area, both Lapseki and İvrindi mining lease shall be subject to the speed restrictions and vehicle operations move off procedure imposed by the TUMAD management. All vehicles and plant shall use the following vehicle operation horn signals must be used in all areas:</p> <ul style="list-style-type: none">• Engine start – single blast.• Move off forward – two blasts.• Move off reverse – three blasts. <p>Operating (stationary) plant, equipment, shall have high-visibility cones separating the operational area from areas of moving traffic.</p> <p>All equipment and vehicles, will not be left unattended whilst in operation. All equipment and vehicles not in operation will be deactivated. Additional personnel will be made available, should operations require the use of a spotter/guide, (restricted areas of movement, restricted vision, and congested areas).</p> <ul style="list-style-type: none">• Wearing seat belts is compulsory in all TUMAD services and contractor, equipment and vehicles.• Overtaking of a moving vehicle on the construction site is prohibited at all times.		All phases						
	Traffic Management Plan	Page 22	Speed Restrictions	Speed limits for cars and trucks are defined in Figure 6		All phases						
	Traffic Management Plan	Page 22	Other Road Users	<p>For drivers are travelling through built up areas such as towns and villages, there should be an establishment of culturally appropriate courteous behaviour to minimize potential conflicts. Specific measure includes:</p> <ul style="list-style-type: none">• Minimizing the use of fog-lights and beams• Minimizing the use of compression braking• Only parking in designated areas• Consideration of vulnerable users such as pedestrians and cyclists• Implement dust control measures such as watering or roads, speed restrictions, travel time restrictions, reducing the use of heavy vehicles on unsealed roads.		All phases						
	Traffic Management Plan	Page 22	School Bus Routes	Bus routes are identified in both Projects in the surrounding road networks particularly that of school bus routes. School children pick up/drop off points and service times will be identified. This will allow heavy vehicles to actively avoid these times. Thus TUMAD reviews and considers school bus and pickup and drop off times along the access routes when programming heavy traffic movement.		All phases						
	Traffic Management Plan	Page 22-23	Unloading/Loading	<ul style="list-style-type: none">• Unloading and uploading of vehicles shall take place away from general access areas, roads, and sidewalks. No unloading/uploading shall take place near overhead electric cables, where there is possibility of a person unloading or uploading the vehicle coming into contact with them. The vehicles' routes shall be identified based on the lowest overhead electric cable height and measures shall be applied to ensure safe distance from overhead transmission lines.• Drivers of vehicles shall be in a safe place unless required to advice on the distribution of the load. If appropriate, warning tapes shall be placed around the unloading/uploading operation.• No vehicles shall be loaded beyond its rated capacity or beyond the legal limit of gross weight. Persons not involved in the operation should not be present in the vicinity.• Loads containing hazardous materials should be advised prior to arrival and safety data sheet should be made available to enable forward planning to take place.		All phases						
	Traffic Management Plan	Page 23	Critical Transport	<p>TUMAD will utilize routes inside fenced construction areas as much as practicable for the transportation.</p> <p>In any case, following measures will be taken:</p> <ul style="list-style-type: none">• The load will be placed on the trailer in balance and will be secured by using chain hoists or come-along,• The route will be analysed for the safe transportation, including the width and the strength of the route (culverts), the overhead clearance and the turning radius for the roads,• OHS Department will be informed about the route and the time of transportation,• Banksman at the front and the end of vehicle will be available for guidance,• Another vehicle will lead the transport in advance to clear the road and warn the other parties.		All phases						
	Traffic Management Plan	Page 23	Communication	Communities and project personnel will be made aware of the grievance mechanism in case they wish to report a project related traffic incident.		All phases						
	Traffic Management Plan	Page 23	Mine Site Access	<p>Access to operational areas related to mine sites will be restricted to authorized site personnel through the usage of signs, gates and security personnel where appropriate. Security cameras were be used.Clear procedures will be in place for entering and leaving mine site. Facilities that potentially present danger to persons or wildlife such as the electrical substation and settling ponds will be fenced or barricaded as appropriate to prevent access. The barriers need to be effective, but at the same time ensure that they are not harmful to people, farm animals or wildlife. All mine traffic on haul routes will be radio controlled. Signage will be installed at appropriate locations in order to warn the public of haul routes.</p> <p>In the event that temporary closure occurs, access to mine and mill sites will be further restricted through the use of fences and gates as appropriate. Buildings and ancillary facilities will be locked and secured; road management and public safety and construction events notification are presented here:</p> <ul style="list-style-type: none">• Private employee off-road vehicles will be prohibited on the mine access roads and at the mine site.• Snow cleaning will be done on site to maintain the mine access roads.• Signage will be posted near all construction areas.		All phases						
	Traffic Management Plan	Page 23	Employee Transportation	To the extent possible employees will use project shuttle services from the nearest villages to the mine sites, thereby reducing overall vehicle traffic. Fleet vehicles will be utilized by staff as necessary. Lapseki Project's shuttle service routes and frequencies are given in Appendix 2. İvrindi Project shuttle service routes and frequencies will also be determined.		All phases						
	Traffic Management Plan	Page 23	Speed Restrictions	Speed limits will be enforced for mine traffic and posted along the access and site roads (maximum 40 km/hr, reduced to 20 km/hr at blind corners and bridge crossings). Mine traffic on the mine and mill access roads will be radio controlled for safety and speed control. Speed limits will be monitored using a GPS device for all TUMAD vehicles.		All phases						
	Traffic Management Plan	Page 24	Speed Restrictions	<p>Employees and contractors will be educated on road safety including traffic protocols and speed limits during mandatory orientation. Routine traffic inspections and/or speed indicator signs will be used to encourage safe and responsible driving and ensure that TUMAD traffic and safety protocol are adhered to. TUMAD will investigate and take appropriate modification of policy and/or disciplinary action in the event of any traffic incidents or complaints. Incident Accident Loss Investigation and Reporting Procedures (TMD_ISG_PRD.007) Disciplinary Procedure (TMD_IK_PRD.004).</p>		All phases						
	Traffic Management Plan	Page 24	Designated Parking	<p>A predetermined area will be delineated for office and personnel parking at the mine entrance. The nominated parking area shall be marked with removable high visibility barricading securely attached</p> <p>Signage shall be displayed at the entrance to the car parking facility, indicating location of office and visitors vehicle parking area.</p> <p>Signage shall be displayed indicating reverse parking only.</p>		All phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Traffic Management Plan	Page 24-27	Management Controls	TÜMAD's basic management mitigation measures are listed in Table 4.		All phases						
	Traffic Management Plan	Page 28-29	Key Monitoring Measures	The Key Monitoring Measures for the Project that will be used are listed in Table 5.		All phases						
	Traffic Management Plan	Page 29-30	Key Performance Indicators	The Key Performance Indicators for the Project that will be used are listed in Table 5.		All phases						
	Traffic Management Plan	Page 30	Training	All employees of TÜMAD and their Sub-contractors working at Lapseki and İvrindi Silver and Gold mine site will be provided with general induction, site specific induction, health and safety, environmental awareness and community relation training before entering to the site. All drivers must have valid driving license and they should have necessary trainings taken (off road, defensive driving, advanced driving etc.) to drive in mine site. Community awareness and road safety training will be provided to the school children through a community awareness and road safety training programme.		All phases						
	Traffic Management Plan	Page 30	Auditing	All incident and non-conformities will be reported as per the requirements of the Incident Accident & Loss Investigation and Reporting Procedures (TMD_ISG_PRD.007). Any incident identified during these inspection will be reported by H&S team, daily inspection will be carried out by operational area supervision covering a broad range of operational aspects including community health safety and security issues as appropriate to activities outside the Mine Licence Area.		All phases						
	Traffic Management Plan	Page 30	External Audit	Conformance with this plan will be subject to periodic assessment as part of the TÜMAD audit programme and separately by Project Lenders.		All phases						
	Traffic Management Plan	Page 30	Reporting	Inspections, incidents and non-compliances shall be documented and administered in accordance with the Instructions and Procedures of TÜMAD Madencilik Sanayi ve Ticaret A.Ş.		All phases						
	Traffic Management Plan	Page 31-34	Traffic Risk Assessment	The Traffic Risk Assessment Matrix to be employed during the project is provided in Table 7 (Appendix 1).		All phases						
	Conceptual Mine Closure Framework	Page 11	5.6 Mine Closure Commitments In The Turkish EIA and the ESIA	The commitments included to the EIA and the ESIA are presented in the table in Section 5.6		All Phases						
	Conceptual Mine Closure Framework	Page 21	6.1 Overall Mine Closure Objectives	<ul style="list-style-type: none"> Return as much land as possible back to its original state and usage; Minimize risks to the environment; Minimizing safety risks to local communities Minimizing economic disruption to local communities; Implement long-term post-closure monitoring to ensure that stable and safe land forms are left behind. 		All Phases						
	Conceptual Mine Closure Framework	Page 22	Table 4: Mine Closure Objectives and Key Approaches	The key approaches listed in Table 4 will be used to achieve the overall closure objectives.		All Phases						
	Conceptual Mine Closure Framework	Page 24	6.4 Process for Mine Closure Planning	TUMAD will undertake a mine closure planning process in line with ICMM guidelines, this will include: <ul style="list-style-type: none"> issues identification and management planning; defining closure goals and outcomes; engaging stakeholders in the closure planning process; developing actions plans for closure; defining post-cost monitoring and evaluation; defining and managing closure costs. 		All Phases						
	Conceptual Mine Closure Framework	Page 24	6.5 Risk identification and Management	A Closure Risk Assessment Workshop will be held at an early stage in closure planning to ensure that all issues related to closure are considered in an integrated manner.		All Phases						
	Conceptual Mine Closure Framework	Page 24	6.5.1 Closure Risk Assessment Workshop	A Closure Risk Assessment Workshop will be held with key TUMAD staff to identify and assess key risks related to closure. This will be undertaken using a standard methodology for closure risk assessment. Based on the Risk Assessment Workshop, an outline Closure Risk Management Programme will be developed to manage risks to acceptable levels based on the TUMAD Risk Assessment Procedure.		All Phases						
	Conceptual Mine Closure Framework	Page 24	6.5.2 Closure Goals and Outcomes	Based on the Risk Assessment Workshop and the outline Closure Risk Management Programme, closure goals and outcomes will also be developed. This will include: <ul style="list-style-type: none"> Environmental goals Safety goals Community goals Based goals on the risk identification and management process will ensure that closure goals are achievable and address the key risks related to mine closure. Defining goals will also ensure that monitoring metrics can be developed to measure progress towards achieving the desired closure status.		All Phases						
	Conceptual Mine Closure Framework	Page 24	6.6 Stakeholder Engagement	Due to the short planned mine-life, the Stakeholder Engagement Plan (TMD_EYS_PLN.001) will be updated following completion of the Risk Assessment Workshop. TUMAD will define principles & objectives of stakeholder engagement for closure planning and integrate these into the Stakeholder Engagement Plan. These will include: <ul style="list-style-type: none"> Commencing engagement on closure at an early stage in the operational life of the project; Soliciting views and opinions from relevant stakeholders on how best to manage and minimise closure impacts; Building closure planning into the Community Development Plan (TMD_EYS_PLN.007) to ensure that dependence on TUMAD is not built into community development activities. 		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Conceptual Mine Closure Framework	Page 24	6.7 Monitoring and Evaluation	Based on the identified closure goals, a monitoring and evaluation framework will be developed. This will be based on quantitative data and will be focused on measuring progress towards achievement of closure goals. Social closure goals may also include qualitative goals.		All Phases						
	Conceptual Mine Closure Framework	Page 25	6.8 Closure Cost Estimation	<p>The determination of high cost issues related to mining will be examined under three topics</p> <ul style="list-style-type: none">• Open pit mine• Backfill, Partially Back Fill, Slope Angle reclamation• Waste dump• Waste dump improvement• Heap leach and dry stack tailing facilities <p>When discussing mining issues, different closure options will be developed and examined considering cost and environment</p> <p>As part of the mine closure planning process a closure cost estimate will be developed. This will include the construction, demobilisation, demolition, removal and remediation of all plant facilities as well as all other ongoing remediation activities. The closure cost estimate will include direct and indirect costs and will be within a typical order of magnitude study cost range of -30/+30%. Cost categories will include:</p> <ul style="list-style-type: none">• Site rehabilitation and restoration;• Dismantling;• Workforce retrenchment;• Socio-economic activities;• Post-closure management & monitoring;• Administration;• Other costs as defined by engineering studies;• Contingency. <p>Closure costs will be accounted for in line with International Financial Reporting Standards. Closure costs will be included in successive updates of the Closure Plan. The closure cost estimate, as reported in the Project financial statements, will be updated annually during the operation’s life to reflect known developments, including scope changes, the effect of a further year’s inflation, exchange rate differentials and new regulatory requirements. Closure cost estimation procedures will ensure that identified post-closure costs, whether ongoing or one-off, are realistically estimated and incorporated into the estimate.</p>		All Phases						
	Conceptual Mine Closure Framework	Page 25	6.9 Closure Cost Provisioning	TUMAD has estimated mine closure costs throughout the operational life of the Project and will accrue mine closure cost provisions from operating cash flow on a quarterly basis and reviewed annually . This will ensure that at all times the accrued closure provision will cover potential closure costs for temporary and permanent and planned and unplanned closure events. In the event of temporary and/or unplanned mine closure; TUMAD will develop and agree with the relevant Turkish regulatory authorities a care and maintenance regime, the costs for which would be covered by TUMAD’s own cash reserves and cash-flows.		All Phases						
	Conceptual Mine Closure Framework	Page 25	6.10 Unexpected Closure	<p>TUMAD will develop contingency plans for unexpected closure including:</p> <ul style="list-style-type: none">• temporary closure/shut-downs;• unexpected permanent closure prior to the planned end of mine-life. <p>This will include the retrenchment of workers, including provision for collective redundancy as outlined in the Labour Management Plan (TMD_IK_PLN.002).</p>		All Phases						
	Conceptual Mine Closure Framework	Page 26	6.12 Scope of Issues Addressed by the Mine Closure Plan	<p>The Mine Closure Plan will cover all facilities owned and operated by TUMAD. This will include:</p> <ul style="list-style-type: none">• Open pit mining:<ul style="list-style-type: none">o Long-term use and security of the former open pit areas;o Long-term Slope stability;o Pit access and mining benches.• Materials handling:<ul style="list-style-type: none">Crushers;Conveyors; Vehicles.• Heap leach facility• Processing facilities• Buildings and surface infrastructure:<ul style="list-style-type: none">• Buildings;• Site access roads;• On-site access roads;• On-site power lines;• Water supply wells and pipeline;• Borrow pits and quarries.• On-site water management facilities:<ul style="list-style-type: none">• Industrial water supply;• Potable water supply.• Mine waste management:<ul style="list-style-type: none">• Waste rock dumps;• Other stockpiles.• Other potentially impacted areas• Community initiatives• Economic initiatives• Local and regional opportunities at closure <p>The Mine Closure Plan will cover all facilities owned and operated by TUMAD. This will include:</p> <ul style="list-style-type: none">• Open pit mining:<ul style="list-style-type: none">o Long-term use and security of the former open pit areas;o Long-term Slope stability;o Pit access and mining benches.• Materials handling:<ul style="list-style-type: none">Crushers;Conveyors; Vehicles.• Heap leach facility• Processing facilities• Buildings and surface infrastructure:<ul style="list-style-type: none">• Buildings;• Site access roads;		All Phases						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Conceptual Mine Closure Framework	Page 26	6.1 Post Closure Monitoring	<p>The Mine Closure Plan will set out:</p> <ul style="list-style-type: none">• Physical stability monitoring:• Open pits;• Mine site and disturbed areas; o Waste rock dumps; o Heap leach facility; o Site security features.• Chemical stability:• Open pits;• Mine site and disturbed areas; o Waste rock dumps; o Heap leach facility.• Environmental impacts and anticipated mitigation, management measures and associated monitoring• Expected maintenance requirements• Monitoring of community initiatives• Monitoring of socio-economic activities <p>The duration of post-closure monitoring may be up to 30 years.</p>		All Phases						
	Conceptual Mine Closure Framework	Page 27	7 Training	<p>All necessary trainings, workplace site induction trainings, orientation trainings and work-specific trainings will be given.</p> <p>Site-specific site induction training, environmental awareness trainings and extensive health screening will be provided to all personnel and subcontractors working at the site of TŪMAD Madencilik Sanayi ve Ticaret A.Ş</p> <p>Orientation training will be given at certain intervals under the supervision of Department Chiefs to all personnel starting to work at the site.</p> <p>Work-specific specialized training will be given to plant operators and all key personnel taking part in activities that involve land clearance, construction or use of materials.</p>		All Phases						
	Conceptual Mine Closure Framework	Page 27	8 Reporting	<p>Daily inspections will be carried out at the operating site by supervisors and auditors, covering a wide range of operating aspects, including community health and safety issues, in accordance with activities outside the fence borders.</p> <p>Any incidents and nonconformities detected during these inspections shall be recorded and reported in accordance with Integrated Management System documents of TŪMAD Madencilik Sanayi ve Ticaret A.Ş.</p> <p>Legal responsibilities and Management System Responsibilities are audited by official bodies and auditors at certain periods within the framework of the Mine Closure Plan.</p> <p>Audits, incidents and nonconformities shall be documented and managed pursuant to the Records Management Procedure of TŪMAD Madencilik Sanayi ve Ticaret A.Ş (TMD_EYS_PRD.004).</p>		All Phases						
	Framework Biodiversity Action Plan	Page 10	Monitoring	The development of the construction sites should be monitored weekly in order to avoid footprint creep within and outside the fence line		Construction						
	Framework Biodiversity Action Plan	Page 10	Monitoring	On site conservation areas adjacent to active construction sites should be monitored monthly for inadvertent disturbance.		Construction						
	Framework Biodiversity Action Plan	Page 10	Monitoring	Dust accumulation in areas characterized by critical habitats and endemic species on-site and within 100 m from the facilities will be monitored every three months in the vegetative season during construction. If excessive dust accumulation or stress signs are noticed, additional site-specific mitigation measures will be applied (e.g. additional dust management measure, temporary dust screens, water spray to clean plants).		Construction						
	Framework Biodiversity Action Plan	Page 11	Monitoring	The presence and spread of invasive flora species will be monitored every three month during the vegetative season, with particular attention to disturbed and restored areas for at least 3 years after the end of the construction phase		Construction						
	Framework Biodiversity Action Plan	Page 11	Monitoring	Accidents involving wildlife or observations of living animal or carcasses along the access road will be registered. The results of the monitoring will be reviewed periodically and additional mitigation measure to avoid road kill will be taken if needed (e.g. fences, wildlife passages)		Constrcution/Operation						
	Framework Biodiversity Action Plan	Page 11	Monitoring	Culverts will be regularly monitored (once every three months) to avoid any blockages or erosion that would made them unsuitable for target wildlife.		Constrcution/Operation						
	Framework Biodiversity Action Plan	Page 11	Monitoring	Signs of erosions in areas characterize by critical habitats and endemic species within 100 m from the facilities will be monitored every three months in the vegetative season. If erosion signs are noticed, additional site-specific mitigation measures will be applied (e.g. erosion control mat, additional engineering measures, additional culvert or channels for storm water		Constrcution/Operation						
	Framework Biodiversity Action Plan	Page 11	Monitoring	Monitoring of erosion and accumulation of stagnant water on construction sites and areas cleared of vegetation should be performed monthly during the rainy season (October to April). In case of excessive accumulation of stagnant water or erosion phenomena are observed, additional mitigation measures should be put in place as appropriate in an effective and timely manner (e.g. additional culverts on linear infrastructures, deviation channels, environmental engineering techniques for slope stability)		Constrcution/Operation						
	Framework Biodiversity Action Plan	Page 12	Monitoring	Areas progressively restored will be inspected monthly for the first year during the vegetative season, after the first year these areas will be inspected every three month at least for the next three years or until the objective of restoration are achieved, in order to allow for prompt corrective actions if required. The monitoring will aim to assess the development of the planted/seeded species, the vegetation cover and the presence of vegetation stress, invasive species or erosion signs		Constrcution/Operation						
	Framework Biodiversity Action Plan	Page 12	Monitoring	The implementation of the Hazardous Material Management Plan will be monitored and the records on the spill register reviewed. The Hazardous Material Management Plan will be updated regularly as needed.		Constrcution/Operation						

As a global, employee-owned organisation with over 50 years of experience, Golder Associates is driven by our purpose to engineer earth's development while preserving earth's integrity. We deliver solutions that help our clients achieve their sustainable development goals by providing a wide range of independent consulting, design and construction services in our specialist areas of earth, environment and energy.

For more information, visit golder.com

Africa	+ 27 11 254 4800
Asia	+ 86 21 6258 5522
Australasia	+ 61 3 8862 3500
Europe	+ 44 1628 851851
North America	+ 1 800 275 3281
South America	+ 56 2 2616 2000

solutions@golder.com
www.golder.com

Golder Associates (Turkey) Ltd. ŞTI
Hollanda Cad. 691. Sok. Vadi Sitesi No:4
Yıldız 06550 Ankara
Turkey
T: +90 312 4410031

