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İVRİNDİ GOLD AND SILVER MINE AND PROCESSING PROJECT

SUPPLEMENTARY INFORMATION PACKAGE- İVRİNDİ GOLD and SILVER MINE PROJECT

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REPORT



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Table of Contents

ABBREVIATIONS.....	7
STUDY LIMITATIONS	9
1.0 INTRODUCTION	11
1.1 PROJECT DESCRIPTION	13
1.2 Project History.....	13
1.3 Project Site.....	14
1.3.1 General Characteristics	14
1.3.2 Mining License Area.....	15
1.3.3 EIA Permitted Area.....	16
1.4 Project Components.....	17
1.4.1 Process Description	18
1.4.2 Pits	20
1.4.2.1 Crushing.....	20
1.4.2.2 Agglomeration.....	21
1.4.2.3 Heap Leach Systems.....	21
1.4.2.3.1 Conveying & Stacking.....	21
1.4.2.3.2 Solution Application & Leaching	21
1.4.2.3.3 Solution Storage	22
1.4.2.3.4 Heap Leach Facility	22
1.4.2.3.5 Solution Handling and Management.....	23
1.4.2.4 Metal Recovery	23
1.4.2.4.1 Adsorption	23
1.4.2.4.2 Carbon Acid Wash.....	23
1.4.2.4.3 Desorption	24
1.4.2.4.4 Electrowinning & Refining.....	24
1.4.2.4.5 Carbon Handling & Regeneration.....	25
1.4.2.4.6 Reagent Mixing & Handling	25
1.4.2.5 On Site Infrastructure Facilities	26
1.5 Supply and Logistics Corridor	26
1.5.1 Electricity Transmission Line	26
1.5.2 Access Roads	27



1.5.3	Water Supply	28
1.6	Project Implementation Schedule	29
1.7	Permitting and Land take	29
1.8	Equipment and Materials	31
2.0	HAZARDOUS MATERIALS	32
3.0	WATER MANAGEMENT	33
3.1	Management of Domestic Water	33
3.2	Non-Contact Water Management	33
3.3	Contact Water Management	34
3.3.1	Management of Contact Water	34
3.3.2	Open Pits	36
3.3.3	Waste Dump	38
4.0	WASTE MANAGEMENT	41
5.0	CLOSURE	49
6.0	IMPACT ASSESSMENT METHODOLOGY	50
7.0	ENVIRONMENAL AND SOCIAL IMPACT ASSESSMENT SCOPE	54
7.1	Temporal Scope	54
7.2	Spatial Scope	55
7.3	Study Areas	55
7.3.1	Environmental study area	56
7.3.2	Social Study Area	57
8.0	SUMMARY OF PROJECT IMPACT ASSESSMENT FINDINGS	58
8.1	Physical Impact Assessment Findings	58
8.1.1	Baseline Studies	58
8.1.1.1	Soils, Geology and Topography	59
8.1.1.2	Climate and Meteorology	59
8.1.1.3	Air Quality and Noise	59
8.1.1.4	Hydrology	63
8.1.1.4.1	Hydrologic Characteristics of the Region	63
8.1.1.4.2	Flow Measurements	65
8.1.1.4.3	Baseline Water Quality	65
8.1.1.5	Hydrogeology	67
8.1.1.5.1	Groundwater Wells	67



8.1.1.6	Geochemistry – Acid Rock Drainage	69
8.1.1.7	Traffic.....	73
8.1.1.8	Conclusion	73
8.1.2	Impact assessment	74
8.1.2.1	Impact Factors	74
8.1.2.2	Soil and Topography	75
8.1.2.3	Air Quality	75
8.1.2.4	Noise and Vibration.....	78
8.1.2.5	Traffic.....	78
8.1.2.6	Water Resources	79
8.1.2.6.1	Power Line Route	79
8.1.2.6.2	Mine Site.....	79
8.1.2.6.2.1	Impact Factors.....	81
8.1.2.6.3	Impact Assessment Findings	81
8.1.2.6.3.1	Reduction of surface water quality and quantity	81
8.1.2.6.3.2	Reduction of groundwater quality and quantity	82
8.1.2.6.4	Impact assessment.....	89
8.1.2.7	Mine Closure Management.....	89
8.1.2.8	Cumulative Impact Assessment.....	93
8.1.2.9	Conclusions	93
8.1.3	Mitigation measures	94
8.1.4	Monitoring actions	108
8.1.5	ESAP items	108
8.2	Biological Impact Assessment Findings.....	108
8.2.1	Baseline Studies.....	108
8.2.2	Impact assessment	110
8.2.2.1	Construction Phase.....	110
8.2.2.2	Operation Phase	111
8.2.2.3	Decommissioning and Closure	112
8.2.3	Mitigation measures	113
8.2.3.1	Construction Phase.....	113
8.2.3.2	Operation Phase	115
8.2.4	Monitoring actions	116
8.2.4.1	Construction Phase.....	116



8.2.4.2	Operation Phase	117
8.2.5	ESAP items	118
8.3	Social Impact Assessment Findings.....	118
8.3.1	Baseline Studies.....	118
8.3.2	Impact assessment findings	120
8.3.3	Monitoring actions	131
8.3.4	ESAP items	131

TABLES

Table 1: Project Schedule-Summary	14
Table 2: Information on the License Areas numbered 83480, 201400088 and 201500273	15
Table 3: Pits to be opened within the Scope of the Project	20
Table 4: Amounts of Water to be Supplied from Pit Areas and Wells for Use in the Plant (l/s).....	28
Table 5: Project Schedule-Summary	29
Table 6: Land Acquisition	31
Table 7: Permitting Status	31
Table 8: List of Machinery and Equipment	31
Table 9: Auxiliary and Supporting Equipment for Mine	32
Table 10: Amounts of contact - Non-contact Water in the Micro Basins in the Project Area	34
Table 11: Groundwater Input Came to Pits Annually and Total Amount of Water From Surface Runoff	37
Table 12: Total Volumes of Water Foreseen to be Collected in Project Area Pits	38
Table 13: Hazardous and Non-Hazardous Waste Originated from the Facility Codes, Waste Code, and Areas of Activity	42
The control tools for Mineral and Process Wastes are described in the following Table.	44
Table 15: Control Tools for Mineral and Process Wastes.....	44
Table 16: Control Tools for Non-mineral waste	46
Table 17: Predicting significance of effects	52
Table 18: Social Impact Assessment Criteria	52
Table 19: Physical Environmental Components Study Area	56
Table 20: Biodiversity Study Area.....	56
Table 21: Ivrandi Mine Area of Influence Settlements	57
Table 22: Air Quality Monitoring Programme for Ivrandi Mine Site	60
Table 23: PM10 Measurement Results	62
Table 24: Background Noise Measurement Results.....	63
Table 27: Comparison of water chemistry values expected to occur according to the geochemical model results in the pits, leach and mine waste areas and the project standards	69
Table 28: Standards for Discharge of Waste Water to Receiving Environment.....	70



Table 29: Sipacı and Madra Stream baseline parameters, expected contact water quality at the main settling pond and the trigger limits	71
Table 30: Summary of Physical Component Sensitivities.....	73
Table 31: Highest PM10 Concentrations Expected in Settlements as the Result of Modelling	76
Table 32: Highest Settled Dust Values Expected in Settlements as the Result of Modelling	76
Table 33: Highest Concentration and Sedimentation Values Expected in Settlements As the result of Cumulative Impact Assessment	77
Table 34 Traffic Count (Current and Estimated) for İvrindi Project	79
Table 35: Water resource sensitive receptors	81
Table 36: Amounts of Water to be Supplied from Pit Areas and Wells for Use in the Plant (l/s).....	82
Table 37: Details of Springs and Fountains and Projected Impacts from Mining Activities and Monitoring Frequencies.....	84
Table 38 Mine Closure Objectives and Key Approaches.....	90
Table 39: Commitments within the Turkish EIA.....	91
Table 40: Estimation of Significance of the Impact	94
Table 41: Water Resources Construction Phase Impacts and Mitigation Measures	98
Table- 42: Impacts of Operation Phase and Impact Mitigation Measures	100
Table 43: Impacts of Closure Phase and Impact Mitigation Measures	105
Table 44: EUNIS habitat types present in the EIA area and in the LSA	109
Table 45: Overall residual impacts on PBFs during construction.....	111
Table 46: Overall residual impacts on PBFs during operation	112
Table 47: Summary of Socioeconomic baseline findings focusing on directly impacted settlements	118

FIGURES

Figure 1: Overview of Project Site	14
Figure 2: Settlements around the Project Area.....	15
Figure 3: Map of License Areas.....	16
Figure 4: Map of EIA Area	17
Figure 5: Map of the Project Facilities Layout in EIA Permit Area	18
Figure 6: Simplified Process Flow Diagram.....	19
Figure 7: ETL Project Route	27
Figure 8: Access Road of Project	28
Figure 9: Route of Water Pipeline.....	29
Figure 10: Ownership Status of the Project Area.....	30
Figure 11: Interception Channels to be Constructed Around the Pit Area and Channel Basins	34
Figure 12: Project Area Pits Waste Water Transmission Lines, Settling Basins and Değirmenbaşı Transmission Line.....	35
Figure 13: Flow Chart of Water Management of Contact and Non-Contact Waters in the First Phase of the Project	36



Figure 14: Flow Chart of Water Management of Contact and Non-Contact Waters in the Second Phase of the Project	36
Figure 15: Karteldere. Kabaktepe. Ballıktepe. Güney Zon (Southern Zone) Pits. Pit Areas and Catchment Basins of Pit Areas	37
Figure 16: Locations of the Basins Planned to be Constructed in the Project Area	39
Figure 17: Temporary Hazardous Waste Storage Area.....	48
Figure 18: Wastewater Treatment Plant	49
Figure 19: Study Areas.....	55
Figure 20: İvrindi Mine Influence Area for Social Components, Source: SRM, 2017.....	58
Figure 26: Groundwater Model Boundary	68
Figure 27: Existing Traffic Load on Edremit - Havran	73
Figure 28: Locations of the Resources and Fountains Determined in the Hydro Census Studies and Where Physical Parameters were Measured and Spread of Cone of Depression in the Seventh Year of the Operation in Which the Maximum Drawdowns Caused by the Operation have Occurred	83
Figure 29: Spreads of Cone of Depression Formed by the Pit Areas for the 10th year and the 20th year after the end of the operation.....	88

APPENDICES

APPENDIX A

Environmental and Social Monitoring

APPENDIX B

COMMITMENT REGISTER



ABBREVIATIONS

ABA:	Acid Base Analysis
CH:	Critical habitat
CR:	Critically Endangered Species
DPSIR:	Drivers-Pressures-State-Impact-Response
DSI:	State Hydraulic Works
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
HPGR:	High Pressure Grinding Rolls
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



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PAG:	Potentially Acid Generating
PAP:	Project Affected Person
PBF:	Priority Biodiversity Features
PR:	Performance Requirements
PTT:	Turkish Post
ROM:	Run of Mine
SIA:	Social Impact Assessment
SWS:	Solid Waste Storage
TEİAŞ:	Turkish Electricity Transmission Company
The Project:	Ivrindi Gold and Silver Mine and Processing Plant Project
TSF:	Total Surface Flow
TÜMAD:	TÜMAD Madencilik San. ve Tic. A.Ş.
UNEP:	United Nations Environment Programme
VU:	Vulnerable
WRA:	Whole Rock Analysis
WRD:	Waste Rock Dump



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 Tümad Madencilik Sanayi ve Ticaret A.Ş. ("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 Ivrandi 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 Ivrandi 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



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- 2) The extension of the forestry road between Havran and Project Site has been completed therefore the baseline conditions will not be changed before the start of the project associated activities.



1.0 INTRODUCTION

This document is the Supplementary Information Package for the İvrindi Gold-Silver Mine and Processing Plant Project (the Project) that is planned to be established in Değirmenbaşı and Küçükılca Villages of the İvrindi District of Balıkesir Province.

The project is categorized as Category A in accordance with EBRD Requirements.

The EIA (Environmental Impact Assessment Report) has been approved by the Ministry of Environment and Urbanization (MoEU) on 11 August 2016 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) report completed in November 2016 which was agreeable with the EIA Report.

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 (PRs).

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 Priority Biodiversity Features and 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 Emissions Management Plan
 - Community Health and Safety Security Management Plan
 - Community Development Plan minimum for 3 years of operations
 - Conceptual Mine Closure Plan
 - Contractor Management Plan



- Cultural Heritage Management Plan
- Cyanide Management Plan
- Emergency Response Plans
- Explosives and Hazardous Materials Management Plan
- Framework Biodiversity Action Plans
- Health and Safety Management Plan
- Labour Management Plan
- Local Procurement Management Plan
- Livelihood Restoration Framework
- Waste Management Plan
- Noise and Vibration Management Plan
- Stakeholder Engagement Plans
- Traffic Management Plan
- Waste Management Plan
- Water Resources Management Plans

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.
- 11) A Priority Biodiversity Features and Critical Habitat Assessment according to EBRD PR6 requirement over the Project Study Area and Associated Facilities.
- 12) Social Impact Assessment over the Project Study Area and Associated Facilities.
- 13) 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.
- 14) 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.
- 15) 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.
- 16) Environmental and Social Management and Monitoring Plan.
- 17) Commitment Register including the commitments given in EIA and the commitments defined after the completion of the EIA study.
- 18) Non-Technical Summary.
- 19) Stakeholder Engagement Plan
- 20) 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

The İvrindi Gold and Silver Mine and Processing Plant Project (the İvrindi Project, or “the Project”) is planned to be established and operated in Değirmenbaşı and Küçükıllica Villages of the İvrindi District of Balıkesir Province by TÜMAD Madencilik San. ve Tic. A.Ş. (TÜMAD).

Within the scope of the Project, gold and silver minerals will be obtained from 4 pits (namely the Ballıktepe, Karteldere, Kabaktepe and Güney-Boyun pits). Extraction shall be performed via explosive mining methods. The produced ore will be subjected to enrichment process by heap leaching and dore gold and silver will be obtained as final product.

An Environmental Impact Assessment (EIA) Report was prepared for the İvrindi 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, and approved as indicated by the “EIA Positive Decision” dated 11 August 2016.

This chapter has been prepared to present:

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

1.2 Project History

The General Directorate of Mineral Research and Exploration started mineral exploration activities in the region in the early 90s. Mine exploration activities were conducted in the area by TÜPRAG in the year 1996 and later by the companies Eurasia and Teck Mining performed exploration studies. TÜMAD acquired the area through a tender in the year 2012.

During the feasibility study phase of the Project, detailed studies were carried out to determine the reserve volume of the Site. Numerical figures describing the extent of these studies are presented as follows:

- 448 rock samples were collected;
- 450 soil samples were collected;
- 185 points were sampled for geophysical parameters (total length of 203 m);
- 45.6 km of measurements were taken for magnetic & gravity and 48.6 km of measurements were taken for IP/resistivity; and
- 462 points were drilled (a total length of 86,100 m) and 63,700 samples were collected.

It is planned to open 4 pits within the scope of the Project. It is estimated that a total amount of 964,602 ounces of gold and 2,350,997 ounces of silver are contained in the pits. The ratios of gold per ton and silver per ton are 0.67 g and 1.62 g, respectively. Within the scope of the Project, the total ore production will be 45M tons and the total waste production will be 101M tons.

**Table 1: Project Schedule-Summary**

TASK	START DATE	FINISH DATE
Basic Design	23.06.2017	15.12.2017
Detailed Engineering	22.06.2017	13.04.2018
Construction	22.06.2017	13.04.2018
Commissioning	1.11.2018	30.12.2018
Operation	30.12.2018	2028

1.3 Project Site

1.3.1 General Characteristics

The Province of Balıkesir is located in the Southern Marmara Area of the Marmara Region with some parts located in the Aegean Region. The Province of Balıkesir has coasts on both the Marmara and Aegean Seas. The Province is bordered by the Provinces of Bursa and Kütahya to the east, the Provinces of Manisa and İzmir to the south, and the Province of Çanakkale to the west. The coastal Aegean area maintains a Mediterranean Climate and hence is dry and hot in summer, and warm and rainy in winter. Continental climatic characteristics can be observed towards the eastern and southern parts of the region. For this reason, the further inland portions of the Province are cold and snowy in winter. The Marmara coastline, on the other hand, is under the influence of the Black Sea climate, hence Balıkesir has mild summers.

The İvrindi Project Area is located approximately 60 kilometers (km) away from the Balıkesir City Center, 4 km from the Village of Küçükılıca, 4.8 km from the Village of Değirmenbaşı and approximately 8 km away from the Village of Karadere.

Access to the mining site is provided with a 7.5 km road branching out from Balıkesir-Edremit highway. The access road route of the project is given in Figure 1.

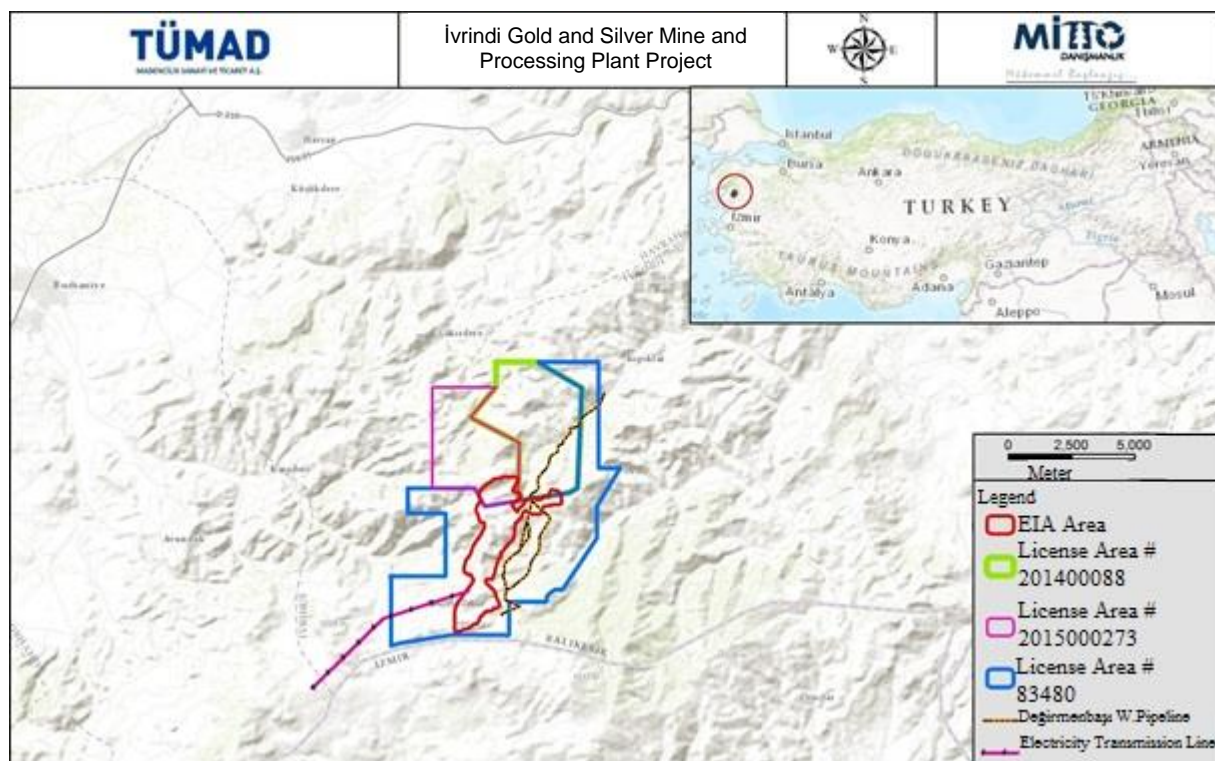


Figure 1: Overview of Project Site



The Project is surrounded by the Villages of Küçükılıca, Değirmenbaşı, Çakmak and Kozdere. The nearest settlements to the impact area of the Project are the Villages of Küçük İlica and Değirmenbaşı. The Project Site is located at a distance of approximately 4 km from the Village of Küçükılıca and 4.8 km from the Village of Değirmenbaşı (see Figure 2).

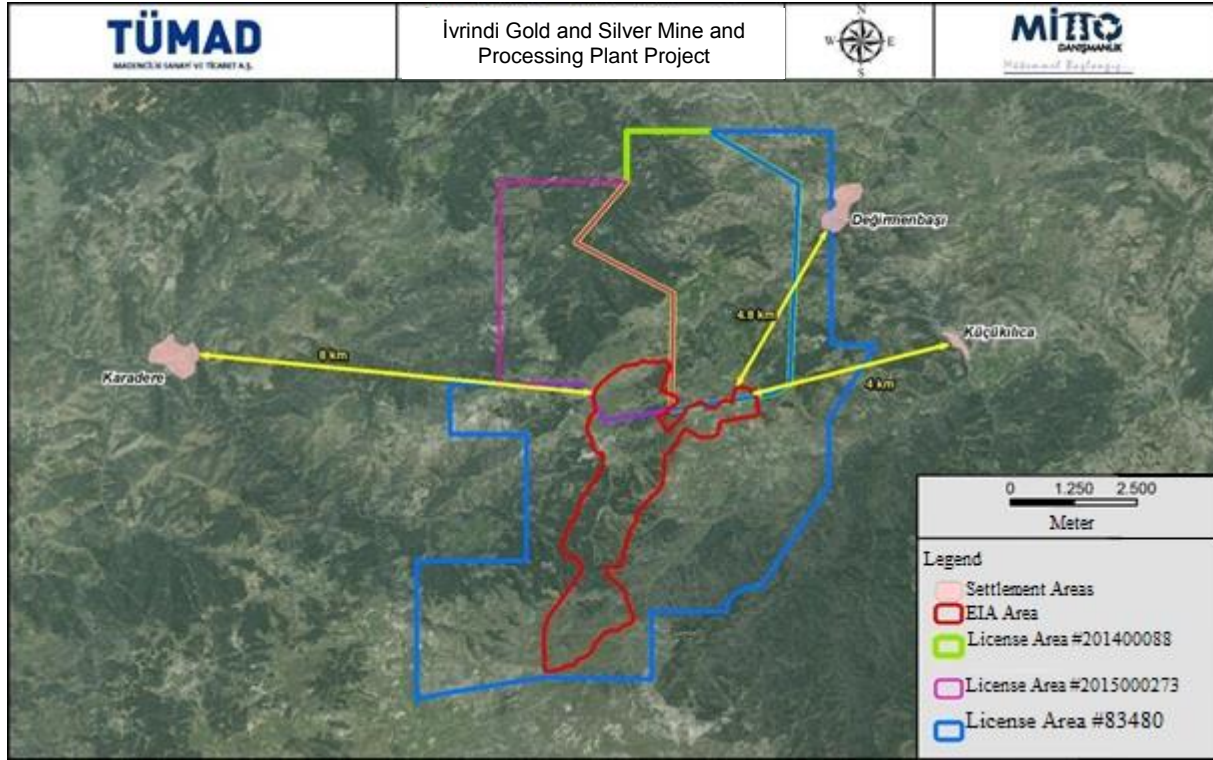


Figure 2: Settlements around the Project Area

1.3.2 Mining License Area

The Project Site is located within the operation license area numbered 83480 and the exploration license areas numbered 201400088 and 201500273, both of which have been assigned to TÜMAD by the General Directorate of Mining Affairs under the Ministry of Energy and Natural Resources. Information on the licenses belonging to the Project are given in table below.

Table 2: Information on the License Areas numbered 83480, 201400088 and 201500273

License Area #83480	
Access Number	3312051
Effective Date	21.01.2014
Expiration Date	21.01.2044
License Group	4 th Group
License Phase	Operation
License Area #201400088	
Access Number	3143330
Effective Date	08.05.2015
Expiration Date	08.05.2017



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License Area #83480	
License Group	4 th Group
License Phase	General Exploration Period
License Area #201500273	
Access Number	3321019
Effective Date	27.04.2016
Expiration Date	27.04.2018
License Group	4 th Group
License Phase	General Exploration Period

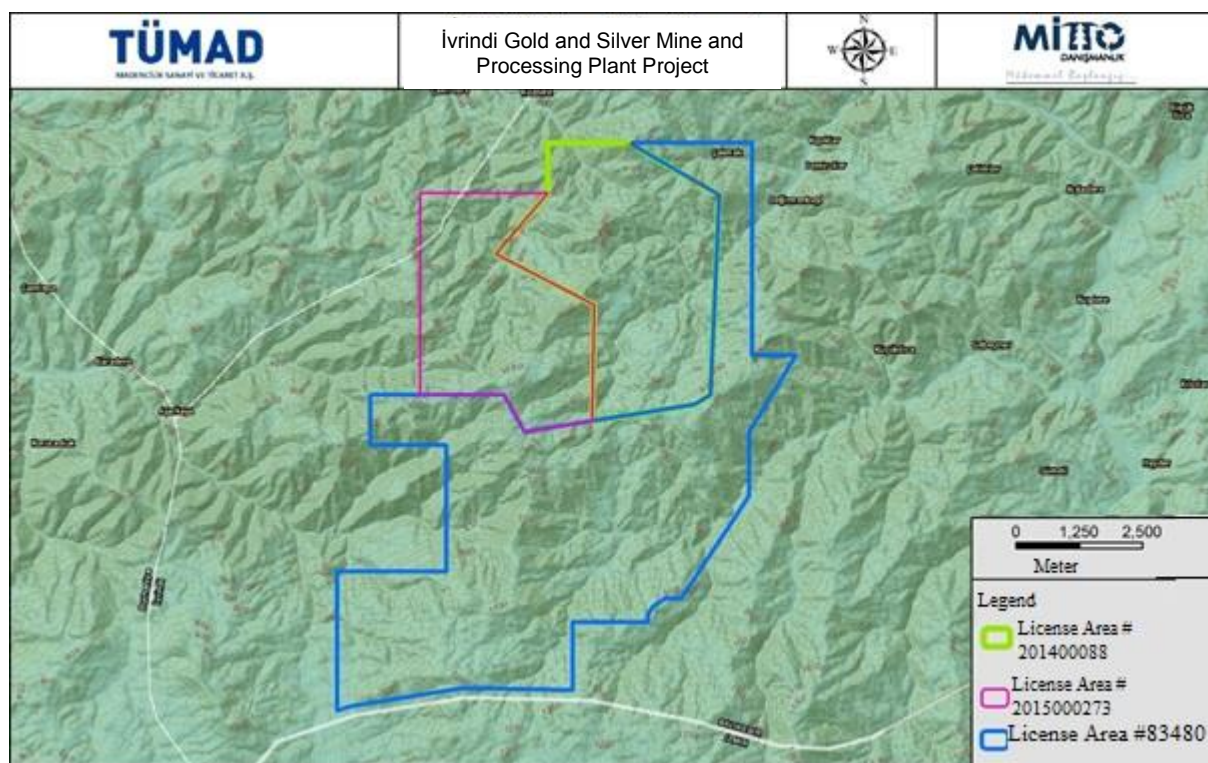


Figure 3: Map of License Areas

1.3.3 EIA Permitted Area

An EIA area of 835.53 ha has been determined within the license areas numbered 83480, 201500273 and 201400088 (see Figure 4).

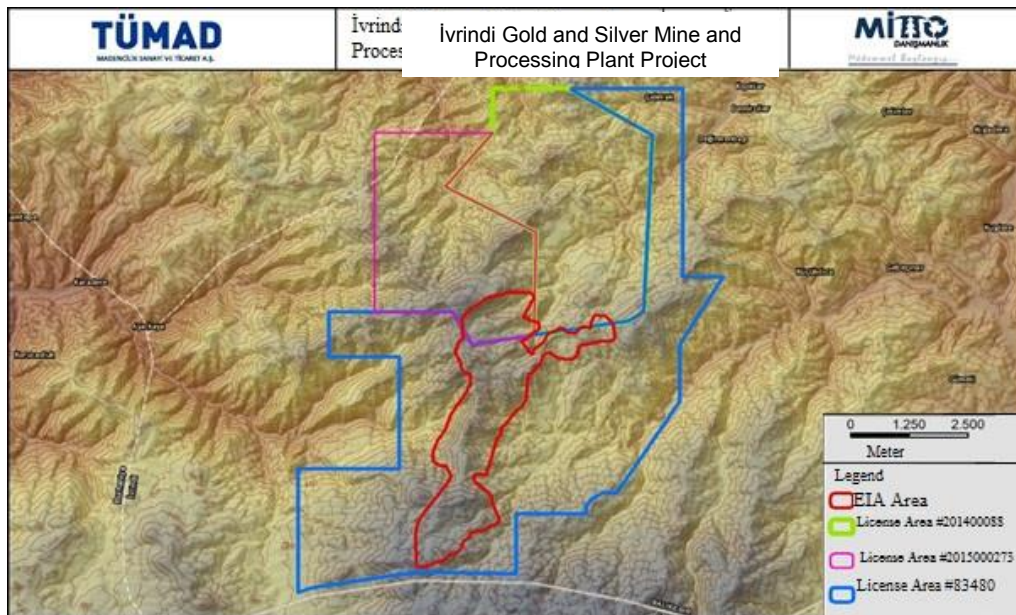


Figure 4: Map of EIA Area

1.4 Project Components

The Project's major elements were positioned considering a set of objectives and constraints mainly set by the location of the deposits, topography, terrain, slope, current land use etc.

The Project components are presented below in two groups.

1) Project Facility Area (EIA Permitted Area) which is composed of:

- Ballıktepe Pit,
- Karteldere Pit,
- Kabaktepe Pit,
- Güney-Boyun Pit,
- Waste Dumping Area,
- Ore Stocking Area,
- Heap Leach Facility,
- ADR Plant,
- Administrative Building,
- Social Facilities Area, and
- Topsoil Storage Area.

2) The Supply and Logistics Corridor which is composed of:

- Power supply line,
- Roads.

As the associated facilities of the Project.



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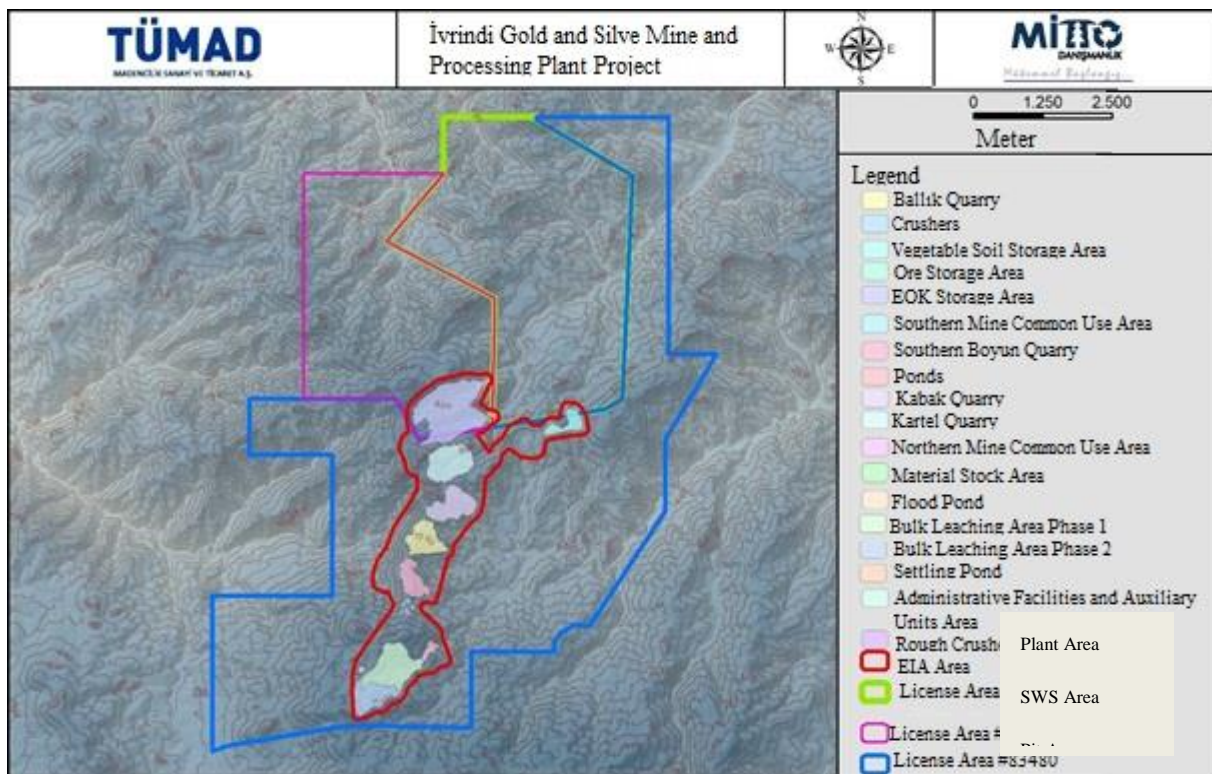


Figure 5: Map of the Project Facilities Layout in EIA Permit Area

1.4.1 Process Description

Testwork developed by KCA has indicated that the İvrindi material is amenable to cyanide heap leaching with an estimated field gold recovery of 70% and silver recovery of 46% at a crush size of P100 = 6.3 mm with material gold recovery improvements with finer crush sizes. Cement addition is required at an estimated 12 kg/t material. Based on a modelled measured and indicated reserve of approximately 45.0 million tonnes and an established processing rate of 21,260 tonnes/day, the project has an estimated 6.1 year mine life.

The İvrindi Project has been designed as an open-pit mine with heap leach operation utilizing a multiple-lift, single-use pad. The pad will be constructed in 2 phases for the 45M tonnes of reserve, a third phase is included in the designs to allow for future expansion up to 69M tonnes of ore. The second phase is oversized due to the high likelihood of increased reserve. Engineering and design of a 7.76 million tonne/year processing plant was undertaken for complete crushing, leaching and recovery systems. Material will be crushed using a three stage, closed circuit crushing plant followed by drum agglomeration. Crushed and agglomerated material is heap leached conventionally as a multiple lift heap in ten meter lifts. Gold and silver are leached using a dilute cyanide solution and recovered from the solution using a carbon adsorption-desorption recovery (ADR) process to produce dore bars. The simplified process flowsheet is presented below.



1.4.2 Pits

Within the scope of the Project, mining with explosives and open pit method will be used. The pit operations at the Site will include five main phases: drilling, blasting, excavation-loading, transport and storage.

Four pits have been designed within the scope of the Project; information regarding these pits have been given in table below.

Table 3: Pits to be opened within the Scope of the Project

Pit	Size (ha)
Ballıktepe Pit	30.67
Karteldere Pit	43.73
Kabaktepe Pit	36.65
Güney-Boyun Pit	23.16

1.4.2.1 Crushing

Crushing for the İvrindi Project is accomplished by a three-stage crushing system with an open primary crushing circuit and closed secondary and tertiary crushing circuits operating seven days/week, 24 hours/day at a rate 21,260 t/d. ROM material will be delivered and directly dumped, as much as possible, by haul trucks from the mine to a coarse material bin. A front-end loader will also deliver material from a ROM stockpile into the coarse bin. A stationary grizzly will be positioned above the coarse bin to prevent oversized material from entering or obstructing the feeder. A rock breaker attachment on a back hoe will be used to break any oversized material. ROM material from the coarse bin will be delivered by an apron feeder at an average rate of 886 dry t/h to a vibrating-grizzly feeder; oversize material is crushed using a primary jaw crusher while the undersize material is combined with the primary jaw product on a primary crusher discharge conveyor. The primary jaw crusher is operated in open circuit and is designed to crush vibrating-grizzly oversize to 100% passing 200 mm. The primary crushing product is stockpiled by a coarse ore stockpile feed conveyor.

Material from the primary crushed stockpile is reclaimed using apron feeders and is conveyed to the secondary crushing circuit by the secondary screen feed conveyor. The secondary crushing circuit includes one double deck vibrating screen and one standard cone crusher. The secondary crushing circuit is operated in closed circuit with a product size of 100% passing 50 mm.

Primary crushed ore is combined with the secondary cone product and is fed to the secondary screen. The secondary screen oversize is transferred to the secondary cone crusher by conveyors and is fed to the secondary cone crusher by a belt feeder. The secondary cone crusher discharge recycles back to the secondary screen.

Secondary screen undersize material is stockpiled by the pre-tertiary stockpile feed conveyor, reclaimed using belt feeders and is transferred to the tertiary crushing circuit. The tertiary crushing circuit consists of a fine screening plant and HPGR (high pressure grinding rolls) crusher operated in closed circuit with a final crushed product of 100% passing 6.3 mm.

Reclaimed material from the pre-tertiary stockpile is transferred to the HPGR crusher. The product from the HPGR is conveyed to a bin. The bin discharge has two discharge feeders that feed onto separate conveyors. The two conveyors feed each feed a separate silo. The silos are mounted over the fine screening plant and are each equipped with two belt feed conveyors which each feed one of four double deck vibrating screens operated in parallel. Oversize material from the screens is recycled back to the HPGR. The fine screening plant undersize product is combined on the crushed product transfer conveyor, and is stockpiled by the pre-agglomeration stockpile overland conveyor.



1.4.2.2 Agglomeration

Crushed ore from the pre-agglomeration stockpile is reclaimed using belt feeders and is transferred to the agglomerator feed conveyors by the pre-agglomeration reclaim conveyors. Cement is added to the ore on the agglomerator feed conveyors at a varying rate between 4 kg/tonne ore and 14 kg/t ore, based on ultimate heap height, from two 375 tonne silos equipped with bin activators, screw feeders, variable speed feed conveyors and dust collectors. The average cement addition rate for heap Phases 1 and 2 is 12 kg/t. The cement addition rate is controlled by the output of a weightometer mounted on the conveyor belts. After cement is added the ore is fed to the agglomeration drum circuit.

The agglomeration drum circuit consists of two agglomeration drums each, operated in parallel. Crushed ore and cement are mixed in the agglomeration drums along with barren process solution; process solution is added to the agglomeration circuit so that the final agglomerated product has a moisture content of 10% to 12% by weight.

The agglomeration drums discharge onto an overland conveyor which conveys the agglomerated ore to the heap leach stacking system. The agglomeration circuit and overland conveyors are both over contained areas (either concrete or plastic liner) to contain any potential spills of process solution.

1.4.2.3 Heap Leach Systems

1.4.2.3.1 Conveying & Stacking

The heap leach will be constructed in ten meter high lifts using a mobile conveyor stacking system. The leach pad conveying and stacking system will consist of two overland conveyors, 31 mobile grasshopper conveyors, an index feed conveyor, a horizontal index conveyor and a radial stacker. The overland conveyors transfer material to the mobile grasshopper conveyors which feed the conveyor stacking system. As the radial stacker progresses, the system is periodically stopped to add or remove grasshopper conveyors as needed. Phase 2 will increase the leach area without any additional equipment required.

Stacked material will consist of crushed and agglomerated ore. Once a lift of cells has finished leaching, and is sufficiently drained and dry, a new lift can be stacked over the top of the old lift. The old lift will be cross-ripped with a dozer prior to stacking the new lift to break up any compacted ore cemented sections and to redistribute material that may have been winnowed by the irrigation solution or rainfall. Stacked lifts will progress in a stair-step manner.

1.4.2.3.2 Solution Application & Leaching

Following stacking, the material is irrigated with a dilute sodium cyanide barren leach solution and the resulting gold and silver bearing solutions are collected into the pregnant solution pond. The Ivirindi project has been designed as a single pass system with no recycle of intermediate solutions to the heap leach. The heap will be irrigated using a drip-tube irrigation system for solution application. PVC pipes are used to distribute the solution to the drip-tubes on top of the heap. Anti-scaling agent is added at the barren and pregnant solution pumps' suction inlets to reduce the potential for scaling problems within the system.

The total leach cycle of 155 days has been designed for the heap leach system, which is based upon metallurgical test work to date. Leach solutions will be applied to the ore at a nominal application rate of 10 L/h/m² with an approximate cyanide concentration of 250 ppm to the heap. Three vertical turbine pumps operating in parallel at the barren tank will be used for the barren solution application to the heap.

The barren pumps will be mounted inside the barren tank along with a process solution pump and an agglomeration solution pump along the side of the tank. High-strength sodium cyanide solution and an anti-scaling agent will be added to the suction side of the barren leach solution pumps by metering pumps. The combined nominal flow to the heap is 2,415 m³/h.

Gold and silver bearing solutions draining from the leach pad are collected by a network of perforated drainage pipes and are directed to the pregnant solution pond. Pregnant solution is pumped from the pregnant solution pond by submersible pumps to the head tank of the carbon adsorption columns. The pregnant solution will flow by gravity through the carbon in the columns before being returned to the barren solution tank.



1.4.2.3.3 Solution Storage

The solution containment and storage system includes the following facilities:

Barren Solution Tank,

Pregnant Solution Pond, and

Storm Water Excess Solution Pond.

The barren solution tank and barren solution booster tank are each 11 m diameter by 11 m high carbon steel tanks and have been sized to provide 10 minutes of operating storage capacity at the design flow rate of 2,900 m³/h. The operating range is between the tank overflow and the minimum depth of 4 m to provide the suction head required by the turbine pumps.

The pregnant and excess solution ponds have been sized to ensure that all the leach solutions can be managed in a controlled manner to prevent any discharges of solution to the environment. The pregnant solution pond has a capacity of 85,000 m³ and is sized to hold a 24-h working volume of solution. The excess solution pond has a capacity of 457,000 m³ and is sized to hold the wet season accumulations plus 24 hours of heap drain-down and the 24 hour/100-year storm event over the entire lined area.

Both ponds utilize a double 2 mm HDPE (High Density Polyethylene) liner system on top of 500 mm compacted soil liner and the pregnant pond also has GCL (geosynthetic clay liner). Leak detection is provided by geonet sandwiched between the two HDPE liners on top of a low permeability soil liner or GCL and a collection system to detect any solution between the liners in the event there is leakage through the primary liner. There is a second similar leak detection and collection system installed under the bottom of the HDPE liner and either the compacted soil liner or the GCL. This type of double redundancy liner and leak detection system significantly reduces the possibility of solution entering the environment below the pond. The leak detection systems are checked and logged for solution each shift during operations.

1.4.2.3.4 Heap Leach Facility

The preliminary design of the Heap Leach Facility (“HLF”) is intended to minimise the environmental risk of the facilities of impacting the local soils, surface water, and ground water in and around the Site. The HLF is intended to operate as a zero discharge system; therefore, the design includes provisions to accommodate upset conditions such as severe storms and temporary loss of electric power or pumps.

The HLF will have the following lining system from top to bottom:

One meter thick, gravel pad cover,

2 mm LLDPE single side textured geomembrane.

Clay or Geosynthetic Clay Liner.

500 mm of compacted soil.

The drainage gravel pad cover over-liner is placed on the top of the geomembrane to protect the liner and act as a basal drainage layer. Perforated collection pipes are embedded in the gravel layer to enhance solution drainage and provide a rapid return of pregnant solution after it has passed through the ore. The piping and collection layer also minimizes the depth of solution (head) over the liner system.

An under-drain system consisting of perforated pipes is installed below the low permeability GCL liner to collect and convey any near surface underground water below the pad. In addition, the under-drains act as an early leak detection system that collects any solution that may leak through the composite liner system and allow it to be captured and pumped back to the circuit.

The collected solution is directed to the pregnant pond and then pumped to the ADR process plant for metal extraction.



1.4.2.3.5 Solution Handling and Management

The Ivirindi heap leach and processing facilities are designed as zero discharge facilities for both surface water and ground water. Pregnant solution from the heap is collected in a pregnant solution pond. The pregnant solution is pumped from the pregnant solution pond to a carbon adsorption circuit and the resulting barren solution is transferred to the barren solution tank where it is pumped back to the heap. An excess solution pond is present to accommodate seasonal variations from the process as well as storm water surges from the lined area.

Solution management for the Ivirindi Project is generally simple. Solution in the pregnant solution pond should be maintained in the mid-to-lower range of its working capacity.

The excess solution pond should normally be maintained at empty or low levels whenever possible. When solution is diverted to the excess solution pond, it should be pumped back to the leach system at the barren tank as make-up solution as soon as practical. Every effort should be made to avoid storing excess solution over a long period of time.

1.4.2.4 Metal Recovery

The recovery plant is designed to recover gold by an adsorption-desorption-recovery (ADR) process. Precious metals in the heap leach pregnant solution will be adsorbed onto activated carbon in the carbon adsorption circuit (adsorption). Loaded carbon from the carbon adsorption circuit is then desorbed in a high-temperature elution process coupled to an electrowinning circuit (desorption), followed by drying and smelting of the resulting sludge to produce doré bullion (recovery). Prior to elution, each batch of carbon will be acid washed to remove any scale and other inorganic contaminants that might inhibit gold adsorption on carbon.

1.4.2.4.1 Adsorption

The adsorption section of the ADR will consist of three carbon column trains each consisting of five cascade type open-top up-flow carbon adsorption columns. Each of the carbon columns will have a capacity of seven tonnes of activated carbon.

Pregnant solution is pumped to the carbon adsorption columns by submersible pumps in the pregnant solution pond. Anti-scale agent is added at the pump suctions to prevent scaling of the carbon that can affect carbon loading. Barren solution exiting the last carbon columns flows through a screen to separate and capture any floating carbon from the solution.

Adsorption of gold and silver from the pregnant solution is a continuous process. Periodically the carbon contained in the lead column(s) in the series becomes loaded with gold and silver and is transferred to the acid wash and desorption circuit as a batch using carbon pumps.

Carbon in the remaining columns is then advanced, one at a time, and a batch of new (or stripped/regenerated) carbon is transferred into the final empty column from the unloaded carbon storage tank.

Generally, the stripping of carbon will occur 6 to 7 times each week with higher stripping frequencies during the first two years of operation.

1.4.2.4.2 Carbon Acid Wash

Acid washing consists of circulating a dilute acid solution through the bed of carbon to dissolve and remove scale from the carbon. Acid washing is performed on a batch basis.

After carbon is transferred into the acid wash column, but before any acid is introduced, fresh water is circulated through the bed of carbon to remove any entrained caustic cyanide solution. This rinse solution is pumped to the waste collection pipe with the acid wash circulation pump where it transferred to the barren tank. A dilute acid solution is then prepared in the mix tank, and circulation is established between the acid wash vessel and the acid mix tank. Concentrated acid is injected into the recycle stream to achieve and



maintain a pH ranging from 1.0 to 2.0. Completion of the cycle is indicated when the pH stabilizes around 2.0 without acid addition for a minimum of one full hour of circulation.

After acid washing has been completed, the acid wash pump will pump spent acid solution from the acid mix tank and wash vessel either to the acid recovery tank or directly to the waste collection pipe. The carbon is then rinsed with raw water followed by rinsing with dilute caustic solution to remove any residual acid. Total time required for acid washing a seven tonne batch of carbon is four to six hours. After acid washing is complete, a carbon transfer pump will transfer the carbon to the desorption section.

1.4.2.4.3 Desorption

A Zadra pressure elution, hot caustic desorption circuit has been selected for the Ivirindi Project. This type of circuit requires 24 hours or less to complete a cycle and for this reason each strip batch is sized for seven-tonnes of carbon. Each desorption cycle requires the transfer of a seven-tonne batch from the acid wash circuit to the strip vessel.

The desorption circuit is sized to elute, or “strip,” the gold from a seven-tonne batch of carbon into pregnant eluate solution. During the elution cycle, gold and silver are continuously extracted by electrowinning from the pregnant eluate concurrently with desorption. A complete desorption cycle will require approximately 18 hours.

After a batch of carbon has been transferred to the elution vessel, barren strip solution (eluant) containing sodium hydroxide and sodium cyanide is pumped through the heat recovery and primary heat exchangers, and is introduced to the elution vessel at a temperature of 135°C and a nominal operating pressure of approximately 340 kPa (50 psig).

Under normal operating conditions, barren eluant solution from the solution storage tank will pass through the heat recovery exchanger to be preheated by hot pregnant eluant leaving the elution column. The barren eluant solution then passes through the primary heat exchanger to raise the temperature up to 149 °C using pressurized hot water from the boiler system.

The elution column contains internal stainless steel inlet screens to hold carbon in the column and to distribute incoming stripping solution evenly in the column. Pregnant eluant solution leaving the elution column passes through external stainless steel screens before passing the cooling heat exchanger to reduce the eluate temperature to about 75°C (to prevent boiling). The cooled pregnant eluate solution is sent to the electrowinning cells.

After desorption is complete, half of the stripped carbon is pumped to carbon reactivation dewatering screens to remove water and carbon fines, and transferred to carbon regeneration. The other half of the carbon is screened to remove fines and transferred to the carbon storage tank.

1.4.2.4.4 Electrowinning & Refining

The electrowinning circuit is operated in series with the elution circuit. Solution is pumped continuously from the barren eluant tank through the elution vessel, then through the electrowinning cells, and back to the barren eluant tank in a continuous closed loop process.

The gold and silver-laden solution exiting the elution column is filtered to trap any carbon escaping from the column; passes through the heat recovery exchanger and the cooling exchanger, to reduce the solution temperature to 75°C, and flows to the electrowinning circuit.

Gold and silver are won from the eluant in the electrowinning cells using stainless steel cathodes and a current density of approximately 50 amperes per square meter of anode surface. Caustic soda (sodium hydroxide) in the eluate solution acts as an electrolyte to encourage free flow of electrons and promote the precious metal winning from solution.

To keep the electrical resistance of the solution low during desorption and the electrowinning cycle, make-up caustic soda must sometimes be added to the barren eluant tank. Barren eluate solution leaving the



electrolytic cells discharges to the E-cell discharge pump box where it is pumped back to the eluate storage tank for recycle through the elution column.

Periodically, all or part of the barren eluant is dumped to the barren tank and new solution is added to the eluate storage tank. Typically, about one-third of the barren eluant is discarded after each elution or strip cycle. Sodium hydroxide and sodium cyanide are added as required from the reagent handling systems to the barren eluant tank during fresh solution make-up.

The precious metal-laden cathodes in the electrolytic cells are removed about once or twice per week and processed to produce the final doré product. Loaded cathodes are transferred to a cathode wash box where precipitated precious metals are removed from the cathodes with a pressure washer. The resulting sludge is pumped to a plate-and-frame filter press to remove water and the filter cake is loaded into an electric dryer to remove moisture from the filter cake.

After drying, the gold sludge will be mixed with fluxes and smelted in an electric furnace to produce doré bullion.

Periodically, slag produced from the smelting operation is re-smelted on a batch basis to recover residual metal values, or will be manually added to the on to the heap leach pad. A hood collects the furnace fumes which will pass through a bag house to remove particulates, then through an induced draft fan. The system will be designed to remove over 99.5% of the particulates present in the exhaust fumes.

1.4.2.4.5 Carbon Handling & Regeneration

Thermal regeneration consists of drying the carbon thoroughly and heating it to approximately 750° C for ten minutes. It is expected that thermal reactivation will be performed after every elution cycle to maintain carbon activity levels.

The seven-tonne carbon batch to be thermally reactivated is dewatered on a static screen, transferred to the regeneration kiln feed hopper and fed to the regeneration kiln by a screw feeder. Hot, regenerated carbon leaving the kiln falls into a water-filled quench tank for cooling and storage. Carbon in the carbon quench tank is pumped to a vibrating screen; screen oversize is sent to the carbon storage tank and the screen undersize is collected in the carbon fines tank, where periodically the carbon fines are dewatered using a filter press and stored in bulk bags. Ultimately, quenched regenerated carbon is pumped to the adsorption circuit dewatering screen to remove any fines and the coarse carbon is added to the adsorption circuit.

New carbon is first added to the carbon conditioning tank which is equipped with an agitator and is used for attritioning new carbon. After attritioning, the new carbon is transferred to the unloaded carbon tank from which it is transferred to the adsorption circuit by a carbon transfer pump.

1.4.2.4.6 Reagent Mixing & Handling

The reagent mixing and handling system includes equipment used to mix and store sodium cyanide batches and to add sodium cyanide to the barren eluant solution tank, and to the barren leach solution system. Reagent mixing and storage take place at ambient temperature and pressure.

Cyanide Mixing and Handling

Solid, sodium cyanide briquettes are delivered to the site in 1,000 kg bulk bags. Cyanide mixing will be performed in 6,000 kg batches. During mixing, raw water or barren solution is used to partially fill the cyanide mix tank and a small amount of sodium hydroxide (pumped from the caustic storage tank) is added to the tank prior to the addition of sodium cyanide briquettes. The caustic addition will insure that proper alkaline pH is maintained, thereby minimizing waste of cyanide by dissociation and possible generation of toxic HCN gas.

An electric hoist is used to lift the sacks to the top of the cyanide mix tank. A bag breaker system is mounted above the mix tank to discharge cyanide briquettes into the mix tank. The tank is designed to contain and dissolve solid sodium cyanide briquettes and yield a solution containing 20% (by weight) sodium cyanide. After dissolution, the cyanide solution is transferred to a storage tank from which it is distributed.



All cyanide distribution lines will have double-containment, either by “pipe-within-pipe” or “pipe-over-liner” containment systems.

1.4.2.5 On Site Infrastructure Facilities

In order to ensure satisfaction of infrastructure facility needs with minimum cost and a practical system, the daily activities between the facilities and the buildings were planned for designing the layout. Locations of the administrative buildings, cafeteria, vehicle maintenance shops and storage areas were determined in the light of this approach.

A worksite will be established to be used by the personnel of the owner and of the contractors during construction and operation phase of the project. A service area will be constructed in the designated area to include offices and service buildings and the training room. Considering the capacity of the project site, it appears that such common usage areas must be established at two different locations (northern and southern common use areas).

Office and service buildings will be constructed for management staff and other relevant personnel (such as engineers, drilling crew, etc) in the service area of the mine site. This area will also include a training room. An infirmary with adequate capacity will also be provided in the service area. Also, an ambulance will be available to ensure timely transportation of personnel to nearby health institutions in cases of emergency. This room will feature lockers where in personnel can place their personal items and daily cloths, showers, restrooms, etc. A separate changing room will be provided for female personnel. Moreover the cafeteria that will serve to the mining personnel will also be located in the service area.

There will be 500 workers at the peak time of construction. There will not be mess accommodation of construction workers at site.

1.5 Supply and Logistics Corridor

1.5.1 Electricity Transmission Line

The electricity will be supplied via the 154 kV 2x1272 MCM Bergama-Edremit Branch Line to TŪMAD Burhaniye transformer station which will supply the electricity for the İvrindi Project. A connection agreement was signed between TŪMAD and TEİAŞ in January 2016 to establish the necessary overhead lines for transmitting electricity between the 154 kV 2x1272 MCM Bergama-Edremit Branch Line to the TŪMAD Burhaniye transformer station; the Environmental Impact Assessment process was completed in July 2016 for this 7,5 km power line. The land acquisition of this line will be performed by the governmental authority, Turkish Electricity Affairs (TEİAŞ). The construction of the line will be 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 ETL route was determined taking into consideration the topographical and geographical conditions of the Site. The route was established in due consideration with the distance between the ETL and the settlements, facility, maintenance and operational considerations, special areas such as marshes, flood beds and landslide areas, forestry, orchards and 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 electricity transmission line route include some forestry and arid farm land including publicly owned parcels.

Locations at which poles will be erected and used for easement were expropriated according to the land class, and assignment purpose modifications were duly completed for this purpose. A Public Interest Decision was obtained with the decision dated 25.08.2016 and numbered 24-267, concerning the 154 KV (Bergama-Edremit) Branch Line-TŪmad Burhaniye TS Electricity Transmission Line.



A protocol was signed between TEIAS and Balıkesir Regional Directorate of Forestry regarding the easement of passage through forest area; hence, the easement was established upon expropriation. The easement area approximates to 37 ha.

An application was filed with the Balıkesir Provincial Directorate of Food, Agriculture and Livestock regarding the agricultural land present. Upon on-site examinations carried out by the Balıkesir 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.

It is planned to erect 19 energy transfer pylons along the Electricity Transmission Line (ETL): 2 of these poles will be final poles (FP), 5 Arresters (A), 11 carriers (C) and 1 corner arrester (CA).

Along the electricity transmission line 1 intersection point will be established near the Güneşli neighborhood. The route of the ETL can be seen in figure below.



Figure 7: ETL Project Route

1.5.2 Access Roads

The İvrindi Project Area is located approximately 60 kilometers (km) away from the Balıkesir City Center, 4 km from the Village of Küçükılıca, 4.8 km from the Village of Değirmenbaşı and approximately 8 km away from the Village of Karadere.

The access to site during mobilization was supplied through Değirmenbaşı Village road. Access to the mining site is provided with a 7.5 km road branching out from Havran on the Balıkesir-Edremit highway. This road is a forest road and extended and upgraded to provide access to the mine site. The extension works have been completed. The route of the Project access road is given in figure below.

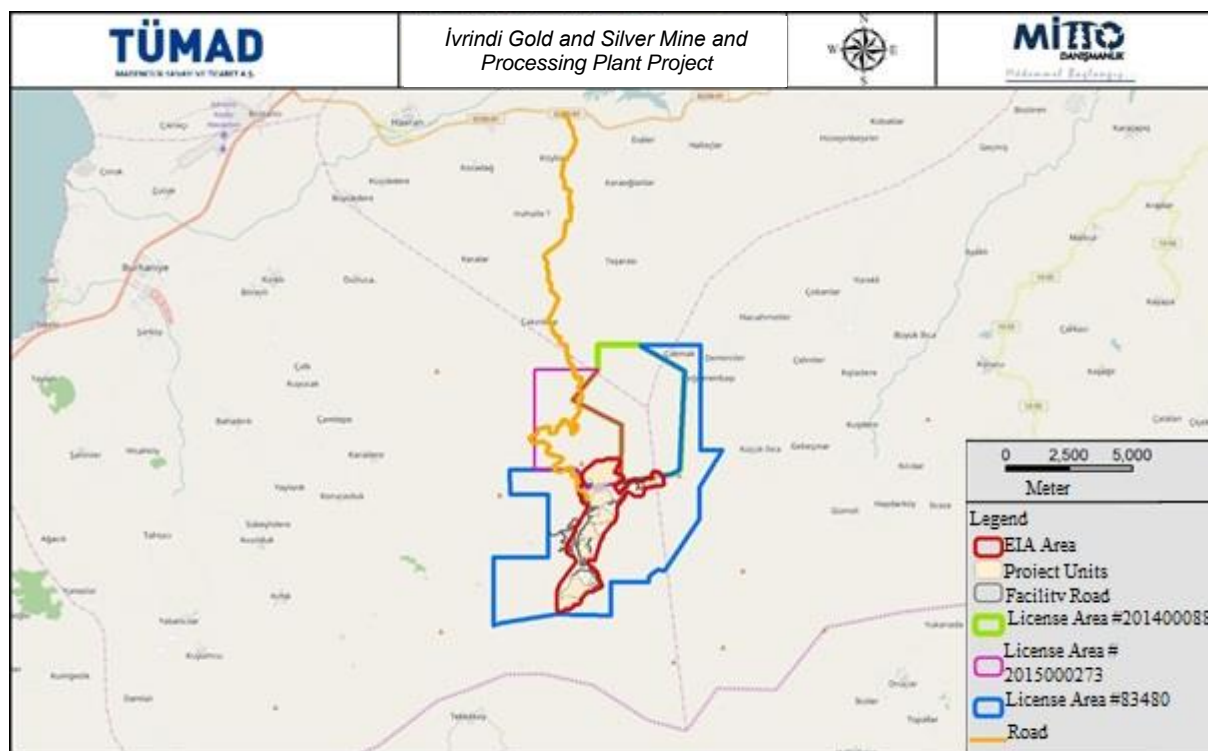


Figure 8: Access Road of Project

1.5.3 Water Supply

As a result of the feasibility studies performed, it has been determined that a water source with a peak flow of about 58 l/s will be required to meet the operational water need. It is planned to supply required water for the plant partly from the dewatering activities in the Kabaktepe and Karteldere pits and mine waste area the remaining part from the 6 groundwater wells in the region in case of need. In the calculations made assuming that the average annual climatic conditions will remain constant, the quantities of water to be supplied from the pits and the mine waste area and the quantities of water to be obtained by wells are given in Table 4 on an annual basis. Location of the wells are presented in Figure 9. There is also a village water supply pipeline located in the close vicinity of the Project site which is providing water from Isale Fountain/Spring to Değirmenbaşı Village (Figure 9).

Table 4: Amounts of Water to be Supplied from Pit Areas and Wells for Use in the Plant (l/s)

Year	Kabaktepe Pit	Karteldere Pit	Güney Zon Pit	Ballıktepe Pit	Mine waste	Total	Total need of water met by wells
1	0.95	1.08	-	-	14.42	16.45	41.25
2	1.42	1.62	-	-	14.42	17.46	40.24
3	2.46	2.16	-	-	14.42	19.05	38.65
4	4.46	2.70	-	-	14.42	21.59	36.11
5	4.73	2.70	-	-	14.42	21.85	35.85
6	4.58	2.71	0.28	0.92	14.42	22.91	34.79
7	-	-	0.42	1.39	14.42	16.22	41.48
8	-	-	0.56	1.85	14.42	16.82	40.88
9	-	-	0.70	2.31	14.42	17.43	40.27
10	-	-	0.70	2.31	14.42	17.43	40.27

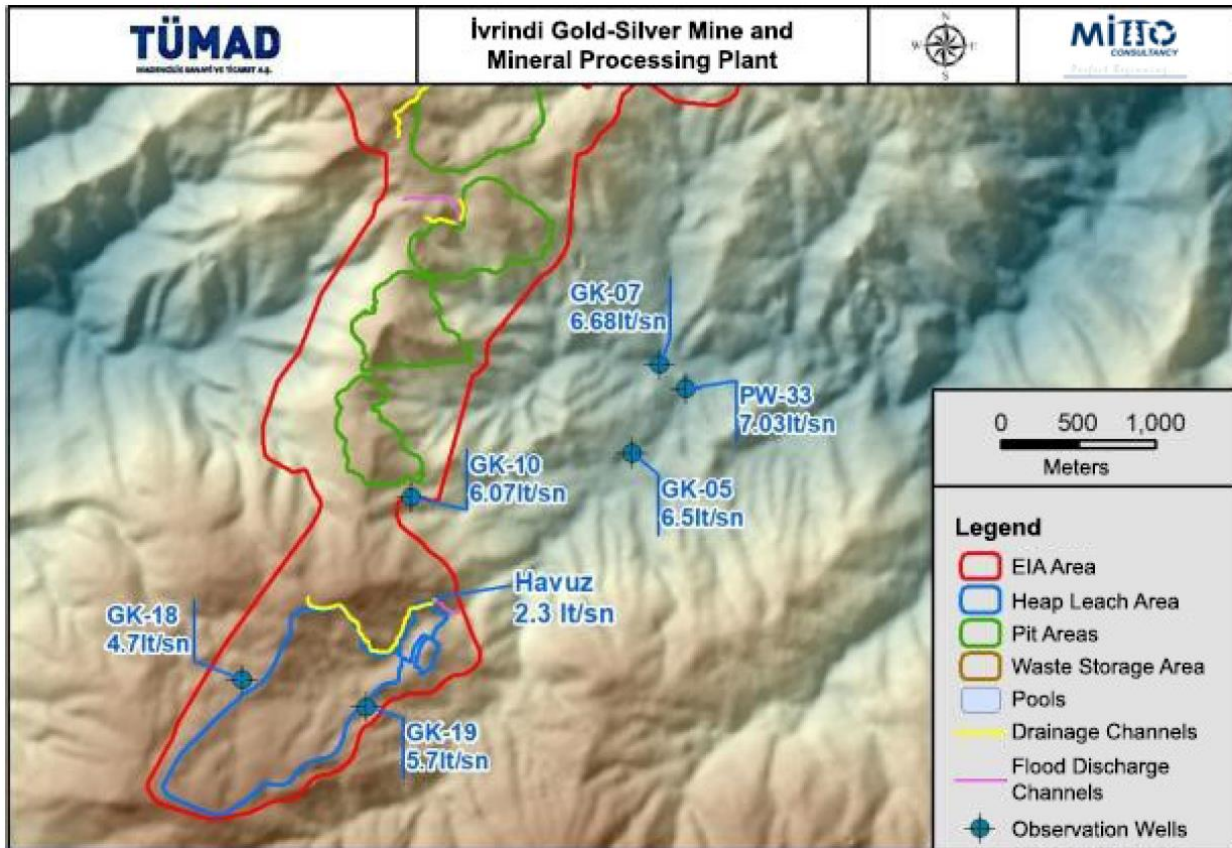


Figure 9: Water Supply Well Location Map

1.6 Project Implementation Schedule

The project basic design phase has been completed and mobilisation and site preparation activities have started. The key milestone for the implementation of the project and start for operation is presented below table.

Table 5: Project Schedule-Summary

TASK	START DATE	FINISH DATE
Basic Design	23.06.2017	15.12.2017
Detailed Engineering	22.06.2017	13.04.2018
Construction	22.06.2017	13.04.2018
Commissioning	1.11.2018	30.12.2018
Operation	30.12.2018	2028

1.7 Permitting and Land take

The EIA area stretches over state owned pasture and forestry lands. The map indicating the ownership statuses of the Project Area is given in Figure 10.

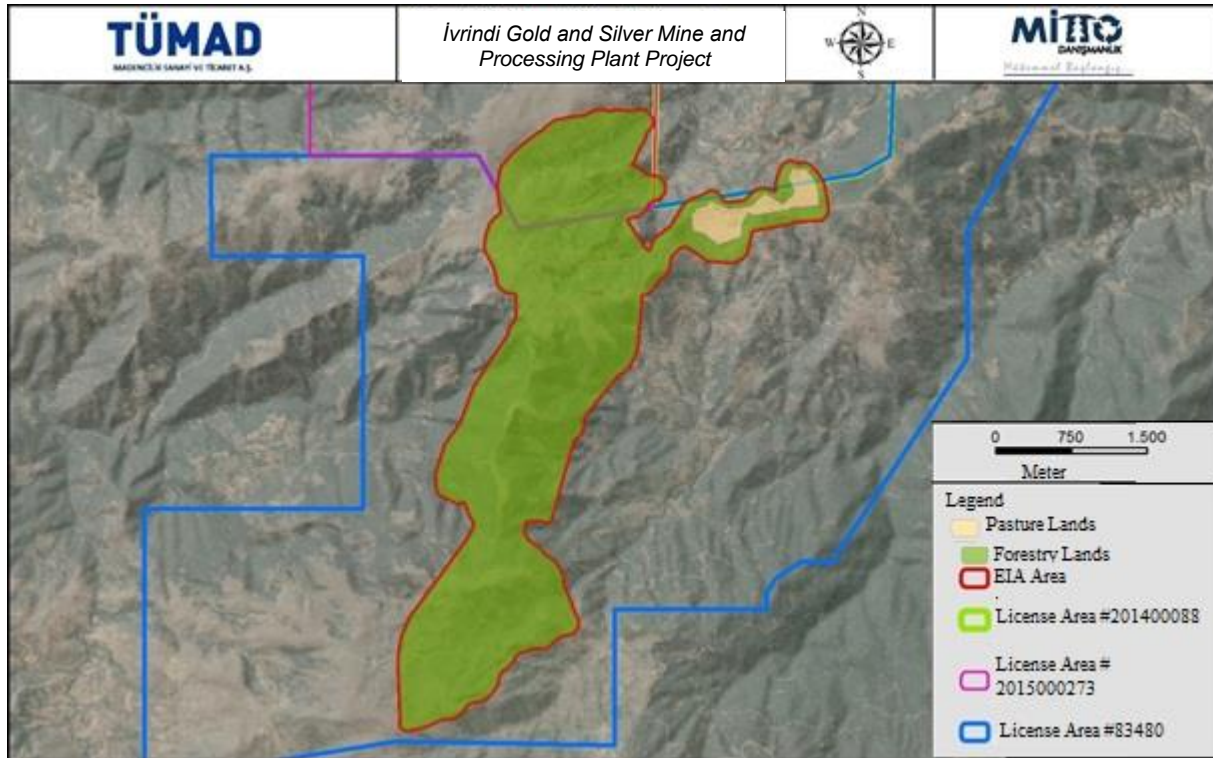


Figure 10: Ownership Status of the Project Area

All permits required for operation under Turkish Legislation will be obtained prior to start land preparation and construction works of the project.

The total EIA area determined within the scope of Ivrandi Project is 836 hectares. Physical area requirement for the project that would be subject to land acquisition is 238 hectares out of which 4 ha is pastureland and 234 ha is forestland.

No private or agricultural land will be acquired.

Forestlands, where the activities will be carried out, have been received from the corresponding forest administration, and the file to change the purpose of allocation for the pastureland have been submitted to and approved by General Manager of the General Directorate of Mining Affairs. Other transaction to take the pasture land from the Provincial Directorate of Agriculture of Balıkesir are ongoing. Permits for forestlands will be obtained stage wise in line with the mine plan.

Land acquisition of 102 hectares out of 238 hectares were completed. The acquisition of the remaining land will be carried in accordance with the following time line:

During pre-production period 43.7 ha of Kartaldere pit,

3rd year 36.6 ha of Kabak Tepe pit and

5th year 53.9 ha of Ballık and Güney pit.



Table 6: Land Acquisition

Project Area	Pastureland	Forestland	Total
	Hectare	Hectare	Hectare
EIA Area	30	805	836
EIA Physical Area	4	234	238
TÜMAD Realized	4	98	102
Area to be Taken in the Future as per EIA Physical Area	-	136	136

3% of the pit areas in forestlands belongs to Karadere village, the remaining area belongs to Değirmenbaşı village; besides, pasturelands are also in Değirmenbaşı village.

The permitting status for the Project is summarised in the following

Table 7: Permitting Status

PermiteTaken	App Date	Exp Date	Permits to be Taken
OPERATION LICENCE	21.01.2014	21.01.2044	TEMPORARY OPERATION LICENCE
EIA	11.08.2016		ENVIRONMENTAL PERMISSION
Unsanitary Facility Permit	18.10.2016		OPERATION PERMISSION
ENERGY ALLOWANCE	06.01.2016		ROAD CONNECTION PERMISSION
UNDERGROUND WATER EXPLOITATION PERMISSION	23.02.2016		PRIVATE SECURITY PERMISSION
DOCUMENT OF EIA IS NOT NECESSARY FOR ENERGY TRANSMISSION LINE	27.07.2016		
EXPLOSIVE PURCHASE AND USE PERMİT	18.05.2017		
LAND MOBILE WIRELESS USE PERMİT	17.09.2017		
FOREEST PERMİT	12.06.2017	12.06.2027	

1.8 Equipment and Materials

List of equipment and machinery to be used within the scope of the activities are given in Table 8 and Table 9.

Table 8: List of Machinery and Equipment

Production Year	422 Diesel Top Drilling - Ore Blasting	422 Diesel Top Drilling - EOK Blasting	Hydraulic Excavator (4 m³) ore	Hydraulic Excavator (6 m³) EOK	Mine truck (50 tons) Ore	Mine truck (50 ton) EOK
-1	1	1	1	1	6	5
1	2	4	2	4	12	28
2	2	4	2	4	12	28
3	2	4	2	4	12	24
4	2	3	2	3	14	18
5	2	2	2	2	16	14
6	2	2	2	2	12	12
7	2	2	2	2	8	10
8	2	2	2	2	10	8



9	2	2	2	2	10	8
10	2	2	2	2	12	8

Table 9: Auxiliary and Supporting Equipment for Mine

Equipment Type	Maximum Number
Pallet dozer (7 m ³)	2
Wheel dozer (2,66 m ³)	1
Grader (3,7 m)	1
Water tanker (30.000 m ³)	1
Service loader	1
Secondary drill	1
Vibrating compactor (2-3 m)	1
Integrated carrier	1
Fuel / oil tank (20 ton)	1
Mechanic carrier	2
Rubber carrier	1
Truck/pick-up	8
Mobile Crane (35 ton)	1
Rough terrain forklift	1
Forklift	1
Pump	2
Lightening	8
Conveyor system	1
Mobile radio	25
Security equipment	1
Engineering/geology equipment	1
Maintenance management system	1
Mapping equipment	1

2.0 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 Ivindi 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. TUMADis 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.

3.0 WATER MANAGEMENT

Waters to be evaluated within the scope of water management during project operation phase divided into three as domestic waste water, non-contact water and contact water.

3.1 Management of Domestic Water

Assuming that 0.213 m³ of water will be used per person per day, it is estimated that a total of 42.6 m³ of wastewater will be generated. In order to treat the wastewater, a package domestic wastewater treatment plant in a sufficient capacity will be installed on site. The domestic wastewater will be treated in accordance with the Project discharge standards defined according to EU Regulation - 91/271/EEC on Urban Waste-Water Treatment. Treated water will be transmitted to the pool built on the downstream of the waste storage area along with the other water amounts originating from waste storage and pit areas to be sent to the facility for operational use. The treated water will be discharged to Sıpacı (Yahu Creek) in accordance with the project standards

3.2 Non-Contact Water Management

The open pit areas planned to be opened within the scope of the project are usually located at relatively high elevations at the intersections of the catchment area boundaries of the basins. For this reason, the surface water collection areas of the pits are very limited. In general, the catchment basin areas and the pit excavation areas are very close to each other. However, interception channels were designed upstream of the project units in order to perform the mining operations safely as well as to prevent entering waters coming to outside the pit area into the pit area and affecting of water qualities by these waters (Figure 11). Water structures designs performed by Mitto Consultancy have been approved by the 25th Regional Directorate of DSİ. With the designed channels, it was tried to minimize the amount of water that will be affected by mining activities due to contact with the project units. With the designed channels, it was planned to discharge 92% of precipitation falling micro basins where project units take place and passing into surface runoff to the receiving environment without contacting with the project units.

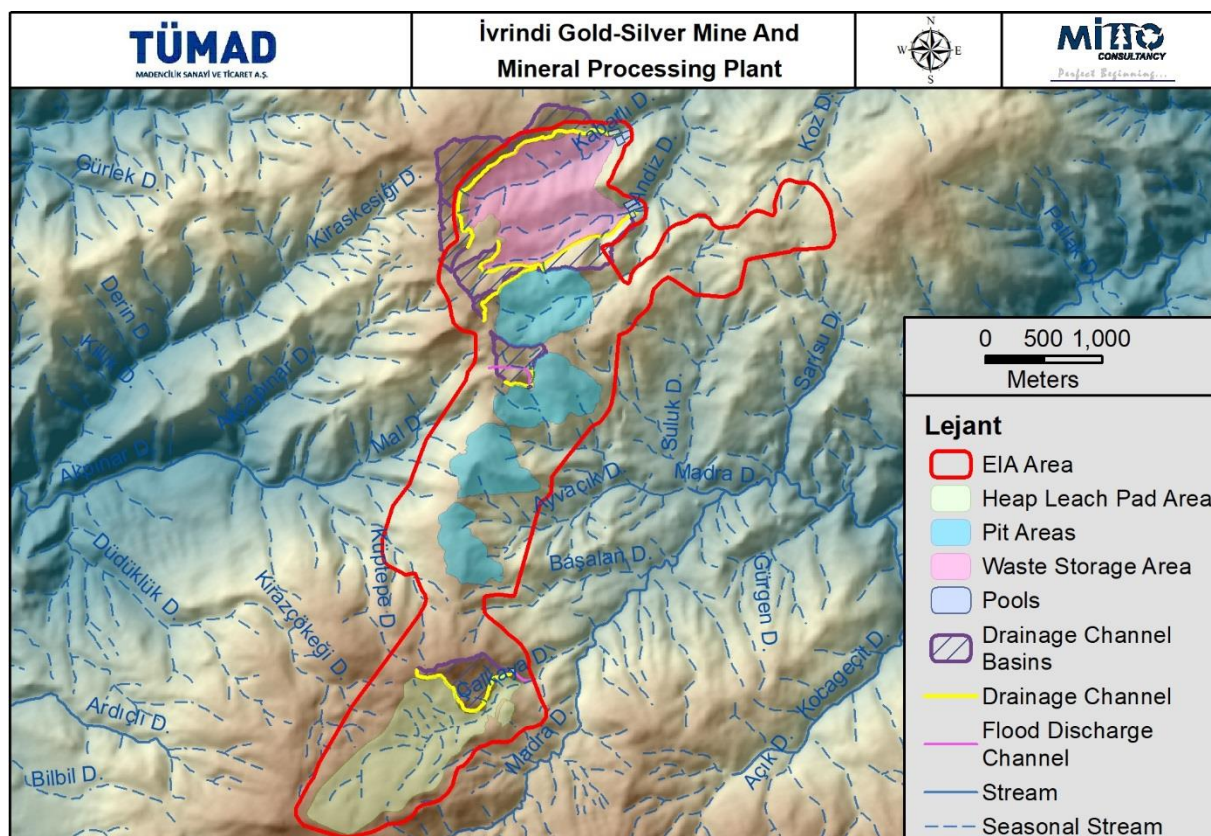


Figure 11: Interception Channels to be Constructed Around the Pit Area and Channel Basins

Table 10: Amounts of contact - Non-contact Water in the Micro Basins in the Project Area

Basins	Contact Area (m ²)	Contact Water (m ³ /year)	Non-contact Area (m ²)	Non-contact Water (m ³ /year)
Yahu Dere Micro Basin	1,617,425	679,254	20,363,975	8,552,055
Akpınar Dere Micro Basin	153,812	64,595	7,652,388	3,213,697
Ballık and Kabaktepe Micro Basin	775,505	325,681	4,113,095	1,727,335
Madra Dere Micro Basin	1,081,908	454,358	8,060,992	3,385,294
Total	3,628,651	1,523,888	40,190,449	16,878,381

It is envisaged that an average of 427,000 m³ of water will be collected annually by the interception channels. It is planned that about 355,000 m³ of water collected with the interception channels located other than the leaching area interception channel will be entirely discharged directly to the receiving environment. It is planned to collect 72,000 m³ water collected with the leaching area interception channel in a basin to be built at the bottom elevation of the interception channel to be used in the plant.

3.3 Contact Water Management

3.3.1 Management of Contact Water

Within the scope of dewatering activities, it is planned to use the water discharged from the quarries primarily within the facility. However, in case of having water more than the water requirement of the plant



in case of an extreme rainfall event, it is planned to discharge the excess water to receiving environment (Sıpacı stream) by considering the project limits regarding the waste water discharges.

Accumulated water in the Karteldere, Kabaktepe, Ballıktepe and Güney Zon pits will be continuously discharged to the settling pools by pumps to be used in the facility within the scope of dewatering activities during operation period. For this purpose, dewatering pools are designed at the bottom of each pit. These pools will be opened at the bottom of each pit and renewed as excavation continues. Thus, water that is expected to leak into the pit will be collected in these pools.

Water collected within the settling pools located at the downstream of the mine waste area will be transmitted to the facility via water transmission pipelines to be used in the processes. The water transmission pipelines will be used to transmit water from the settling basin to the facility and water from the pits will also be transmitted via the same transmission pipeline during dewatering activities (Figure 12). Contact and non-contact water management flowsheets are presented below.

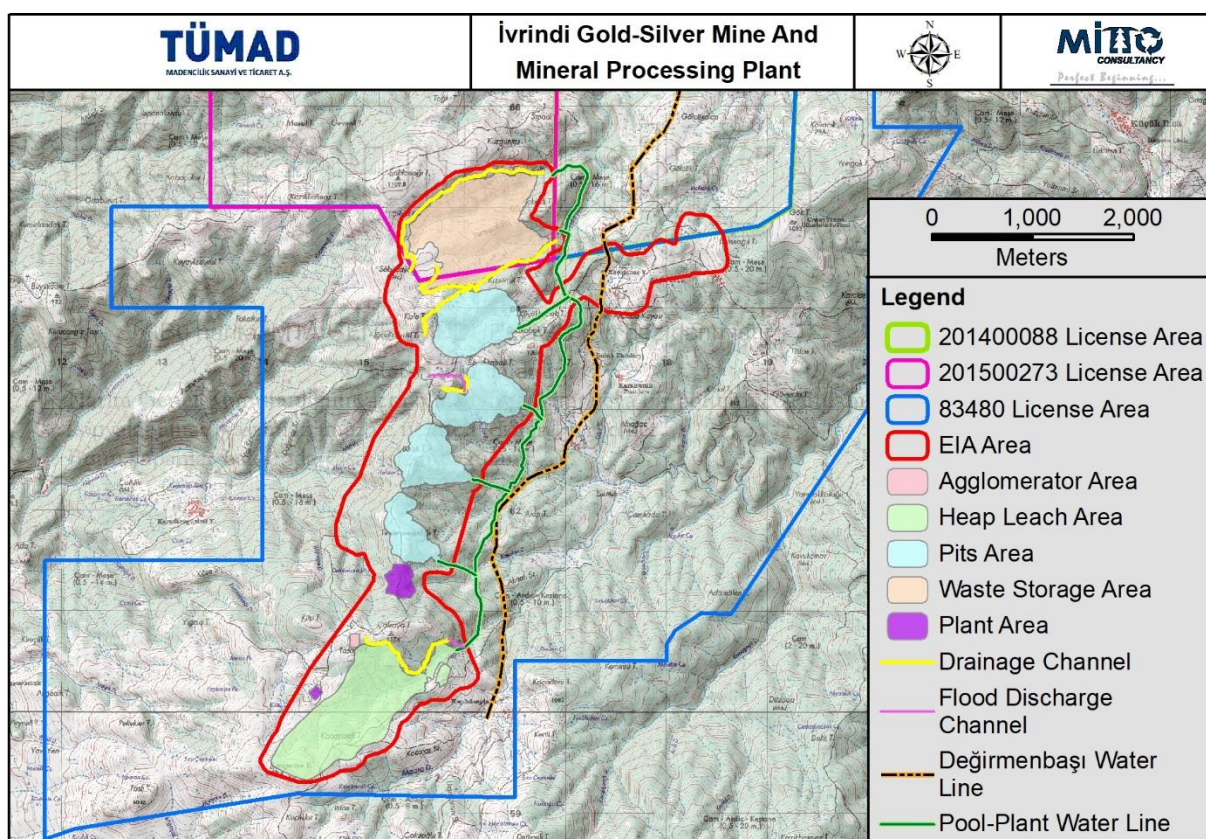


Figure 12: Project Area Pits Waste Water Transmission Lines, Settling Basins and Değirmenbaşı Transmission Line

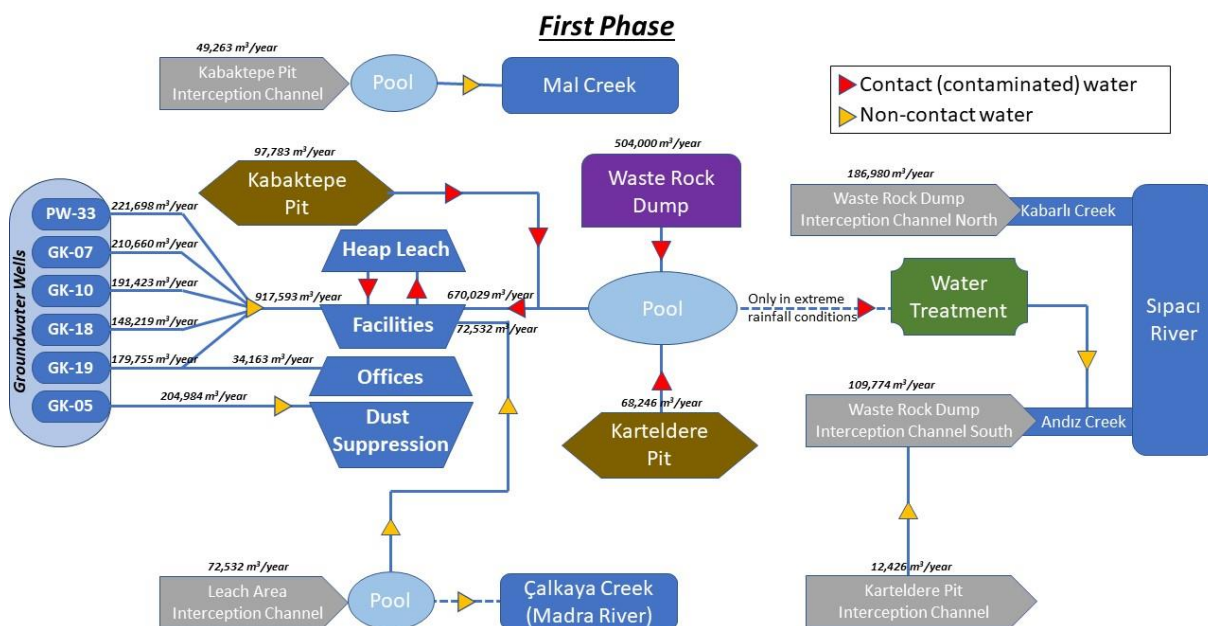


Figure 13: Flow Chart of Water Management of Contact and Non-Contact Waters in the First Phase of the Project

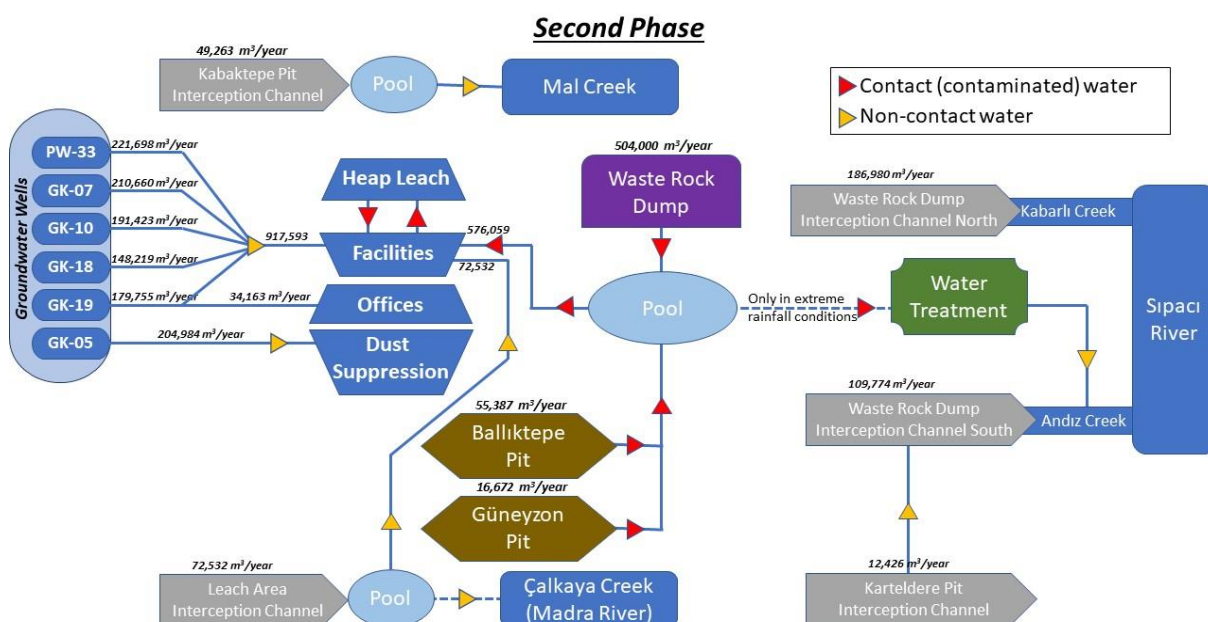


Figure 14: Flow Chart of Water Management of Contact and Non-Contact Waters in the Second Phase of the Project

3.3.2 Open Pits

The water interacting with the project units will be collected in settling basins as stated in the İvrindi Project EIA report. The settling basins, which will be installed in the pits and downstream of the storage areas, will collect contaminated water. All the water collected in the settling pools will be sent to the facilities to be used in facility processes. When a situation occurs where the waters to be accumulated from project areas are required to be discharged to the receiving environment, chemical analysis of these waters will be carried out before the discharge and discharge will be carried out after applying certain treatment procedures depending on the water quality. The water budgets of each pits were calculated separately and their



situations during the operation and after the operation were examined. The basins of the aforesaid pits are shown in the Figure 15.

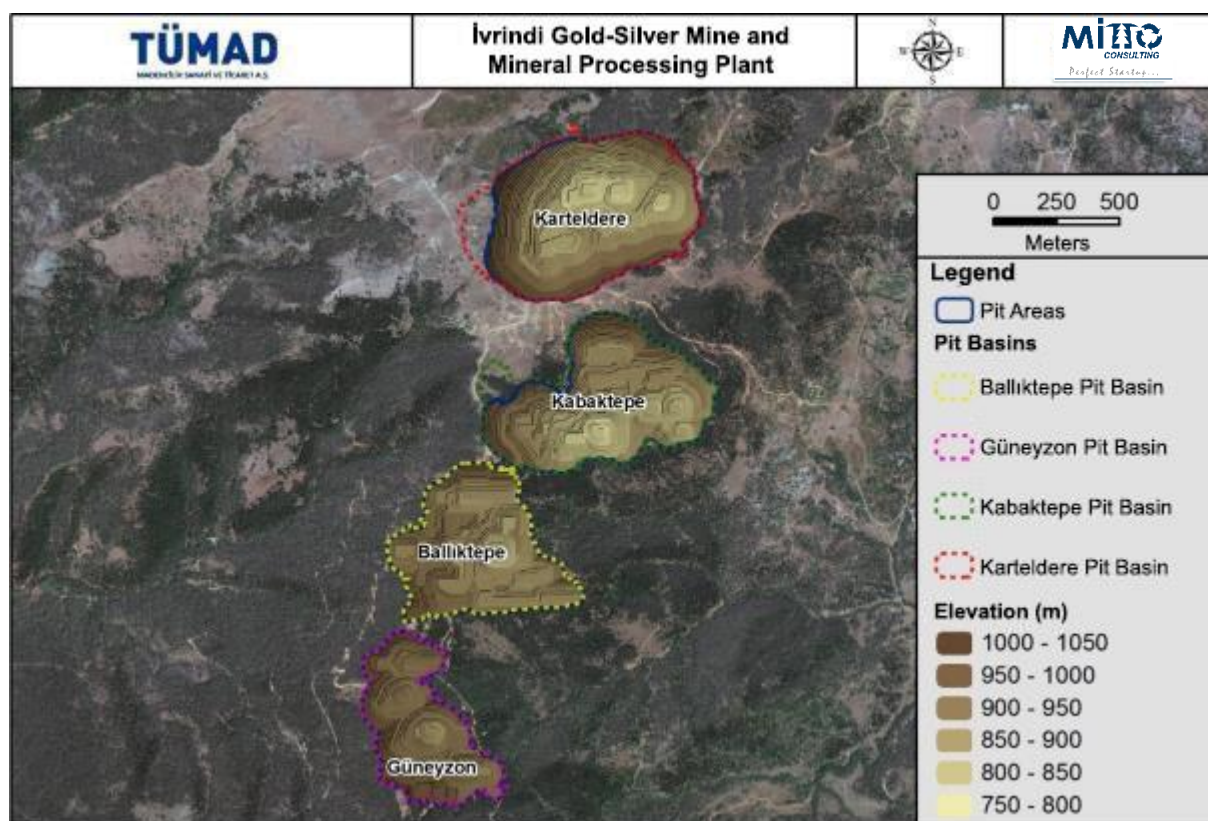


Figure 15: Karteldere. Kabaktepe. Balliktepe. Güney Zon (Southern Zone) Pits. Pit Areas and Catchment Basins of Pit Areas

During the excavation work, the amount of water that is expected to enter into the pit areas through surface runoff due to rainfall and groundwater (GW) leakages were calculated on an annual basis. The groundwater input values were configured by using the FEFLOW 3D groundwater flow model and calculated from the groundwater flow model. Since the groundwater level in the Balliktepe and Güneyzon pit area will remain below the pit floor area. There will not be any groundwater entry into these pits. The expected groundwater inputs at the Kabaktepe and Karteldere pits were calculated using the mentioned model. Surface runoff was calculated from precipitation observations. The total amount of water leaking from the groundwater entering into the Güney Zon, Balliktepe, Kabaktepe and Karteldere pits and the surface runoff are given in table below. The waters that will enter into the pit area will be discharged continuously from the pits and sent to the settling basins.

Table 11: Groundwater Input Came to Pits Annually and Total Amount of Water From Surface Runoff

Pits	Kabaktepe Pit (l/s)		Karteldere Pit (l/s)		Güney Zon Pit (l/s)		Balliktepe Pit (l/s)	
Drainage Areas	0.40 km ²		0.47 km ²		0.23 km ²		0.31 km ²	
Year	GW entry	Surface Water entry	GW entry	Surface Water entry	GW entry	Surface Water entry	GW entry	Surface Water entry
1	0.00	5.21	0.00	6.32	0.00	3.08	0.00	4.08
2	0.00		0.00		0.00		0.00	
3	0.57		0.00		0.00		0.00	



Pits	Kabaktepe Pit (l/s)	Karteldere Pit (l/s)	Güney Zon Pit (l/s)	Ballıktepe Pit (l/s)
4	2.10	0.00	0.00	0.00
5	2.37	0.00	0.00	0.00
6	2.22	0.00	0.00	0.00
7	2.59	3.60	0.00	0.00
8	0.23	0.54	0.00	0.00
9	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00

Table 12: Total Volumes of Water Foreseen to be Collected in Project Area Pits

Years	Amount of Water accumulated in Kartaldere pit base	Amount of Water accumulated in Kabaktepe pit area (m³/year)	Amount of Water accumulated in Ballıktepe pit area (m³/year)	Amount of Water accumulated in Güney Zone pit area (m³/year)	Annual amount of water to be discharged for dewatering activities (m³/year)	
	m³/year	m³/year	m³/year	m³/year	m³/year	l/s
1	34.122	29.822	The pit is not starting yet.		63.944	2.06
2	51.182	44.733			95.915	3.08
3	68.243	77.661			145.904	4.69
4	85.304	140.746			226.050	7.27
5	85.304	149.164			234.468	7.54
6	85.318	144.572	29.151	8.775	267.816	8.61
7	Backfilling will be carried out for pits.		43.727	13.162	56.889	1.83
8			58.302	17.550	75.852	2.44
9			72.878	21.937	94.815	3.05
10			72.878	21.937	94.815	3.05

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.

3.3.3 Waste Dump

An area of approximately 1.00 km² is planned to be used as the mine waste storage area. Interception channels will be constructed in order to minimize the interaction of the mine waste area with natural waters. A limited amount of water other than the waters collected with the interception channels will also come into the mine waste area with surface runoff. The total drainage area of the mine waste storage is 1.18 km². It is expected that water with surface runoff from the drainage area and directly from precipitation will come to the mine waste area. In total the annual averages of these values are 73.654 and 701.197 m³/year respectively. Percentages of water budget components for the mine waste area were assumed to be realized similar to the Thornthwaite method prepared for the region. According to this, 35% of the water coming to the mine waste area will be lost by evaporation while the remaining 65% will reach to the bottom drainage pipes by surface runoff and filtration and then transmitted to the settling basins at the exit of the



mine waste area. An average of 503.653 m³/year of water will be discharged to the settling basins annually. It is planned to transport an average of 42,000 m³/month of water to settling basins from the mine waste area each month. It is expected that a total of 93, 422 m³/month of water will be come to the settling basins from the mine waste area during December, which is the wettest month. As it is indicated in the EIA report, it is planned to construct 2 settling basins on the north and south sides of the mine waste downstream. Their volumes were determined as 61,418 m³ and 81,369 m³ respectively. These volumes are highly safe for the determined average flow rates. The locations of the mine waste settling basins are shown in Figure 15.

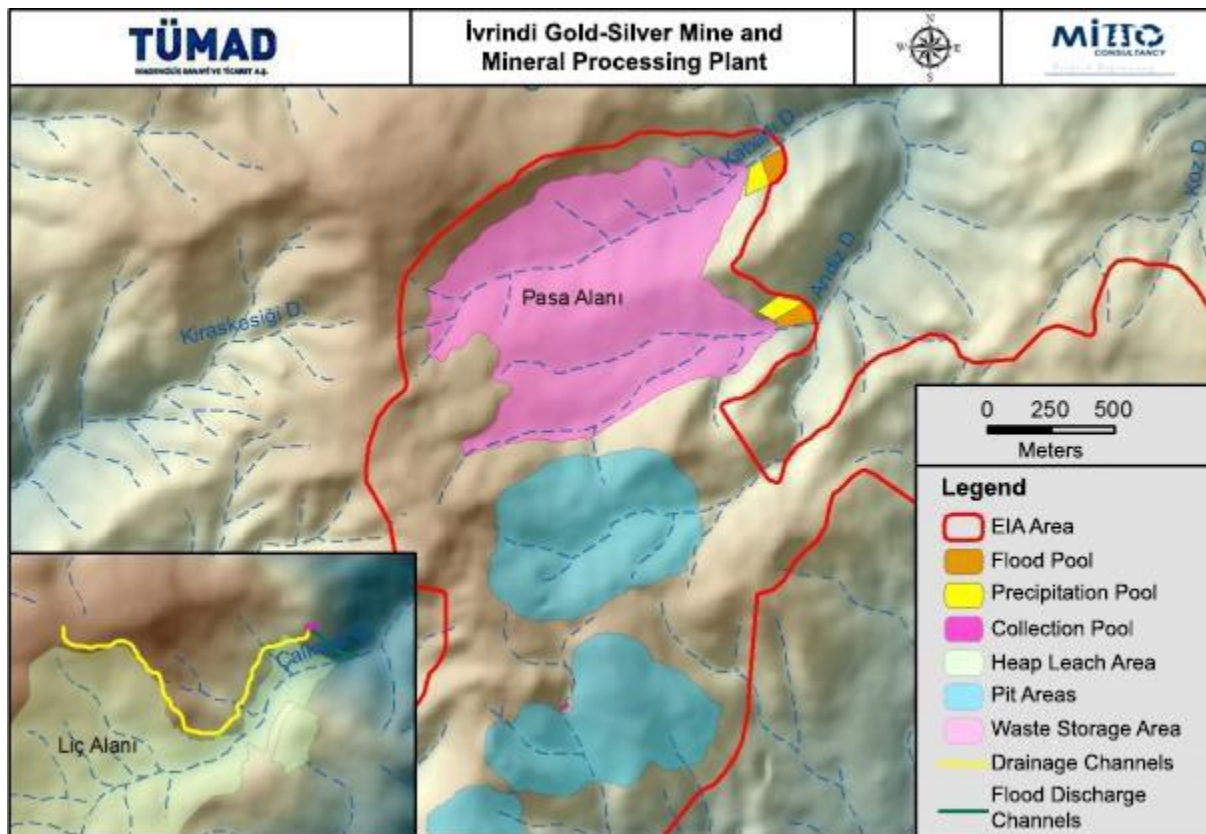


Figure 16: Locations of the Basins Planned to be Constructed in the Project Area

Waste rock which includes more than 0.3% sulfide sulfur will be defined as PAG (Potentially acid generating) and will be encapsulated with NAG (non-acid generating) rock within the waste rock dump. Mine waste area is one of the permanent structures in the project area. 70% of the total mine waste material to be excavated in the open pit will be leveled in the mine waste storage area located in the project area with the store and leave method in the first 6 years and it will be stacked by operating the encapsulation processes. For the remaining 4 years, the rest 30% mine wastes which will be extracted from Güney Zon and Ballıktepe pits will be used to partly refill Karteldere and Kabaktepe pits. The static and kinetic tests performed describe the physical and chemical reactivity of the mine waste. As a result of the data prepared according to the 3D geological model, when the units to be excavated step by step in the İvrindi project and the distribution percentages were examined according to the distribution percentages of these excavated units to be poured into the mine waste area, it was seen that the sum of the oxidized units to be poured into the mine waste area is more than 76% and the distribution of the units having ARD/ML forming potential in the mine waste composition is 1.48% (Andesite PA S 0.77%, MET S 0.21%. Volkanosedimanter PA S 0.50%). However, the physical, chemical and biological properties which determine the reactivity of the material extracted during the operating period may be quite different from the laboratory conditions. In that respect 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 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 sulfur to identify PAG and NAG rock. The sulfur threshold to segregate NAG and PAG rock would be revised during the first year of the mining operation by conducting further static/kinetic testing and barrel testing.

3.3.4 Water Management in Heap Leach Facility

Heap Leach Facility will be designed as a zero discharge facility and robust construction quality assurance studies will be performed during the construction to minimize any potential defects on the liner system. The composite lining system will include with 2mm HDPE and 50cm low permeable clay or GCL Heap leach barren, pregnant and storm event ponds will be covered with liner systems having adequate impermeability similar with heap leach area. This lining system will be equipped with leak detection system to identify potential leakages identified. The leach solution will be collected by perforated pipes to be placed in the drainage layer. The collected solution will be sent to the pregnant solution pond for the enrichment process. An impermeable layer will also be constructed beneath the solution collection pipeline to prevent any possible leakage. The heap will be rinsed during the closure and will be covered with a low permeable cover system. The details of the water management during rinsing and the closure cover design will be developed during the operation period.



4.0 WASTE MANAGEMENT

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

- Non-hazardous general solid waste including municipal waste and recyclables
- Mine waste
- Hazardous waste
- Waste Rock
- Wastewater

The amount of non-hazardous waste has been estimated as a maximum of 560 kg/day based on 500 people at site at peak time. For this estimation the statics of İvrindi Municipality by TUIK (2012) on the amount of waste to be created per person (1.12 kg/person/day) has been used. This type of waste will be disposed will be stored at appropriate containers and be transferred by TÛMAD to the disposal location designated by İvrindi 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 and non-hazardous wastes originating from the activities are defined below, in

Table 13.



Table 13: Hazardous and Non-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 Packing	15 01 10*	Maintenance Actions	Mine Facility	oil package, paint package, chemical package etc.	Packings 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 equipment in concentration plant	Dangerous parts removed from the scrap equipment	D5	Regular storage which is required Specific Engineering Methods
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



IVRINDI- SIP

Waste Type	Waste Code	Activity	Areas of activity	Waste Resource	Waste Code Instructions	Disposal/Recovery Method	Disposal/Recovery Method Instructions
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.



IVRINDI- SIP

Waste codes, waste production amounts, estimated amounts of wastes for coming 3 years are given in table below. The control tools for the mineral and process wastes are presented in table below.

Table 14: Waste Codes, Waste Production Amounts, 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 Packings	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 15: Control Tools for Mineral and Process Wastes Lapseki and Ivrandi Projects

Applicability / Activity	Control Description
Topsoil salvage and segregation	Prior to disturbing an area by construction (WRD, stockpiles, 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 test result. PAG rock will be encapsulated within the Waste rock dump.
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 (DSTF). HLF will be a permanent facility and the spent ore will be rehabilitated in-situ.



IVRINDI- SIP

Applicability / Activity	Control Description
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
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, separate handling and encapsulation 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 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.
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.
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
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)
Surface water management	All contact water from the open pits, WRD, stockpiles, DSTF 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 16: 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 Packing	oil package, paint package, chemical package etc.	Packings 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



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:

- Non-hazardous solid waste produced by personnel will be delivered to the municipal storage area. The agreement with the municipal waste area in the region will be made in due time.
- 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. ¹
- 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 a 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 licenced companies:
 - Waste batteries will be collected by the licenced 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 licenced private company called PETDER
 - Hazardous wastes will be collected by the licenced private company called İZAYDAŞ.

¹ 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.



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

- 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.

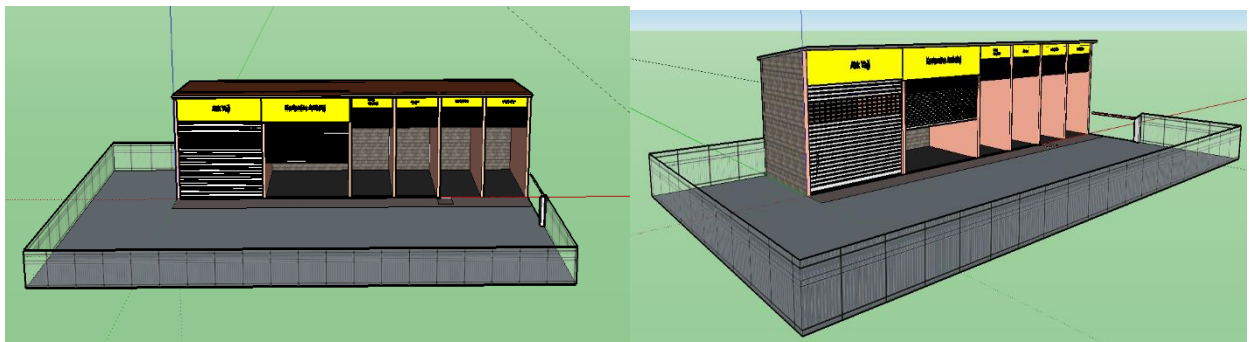


Figure 17: Temporary Hazardous Waste Storage Area

- 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

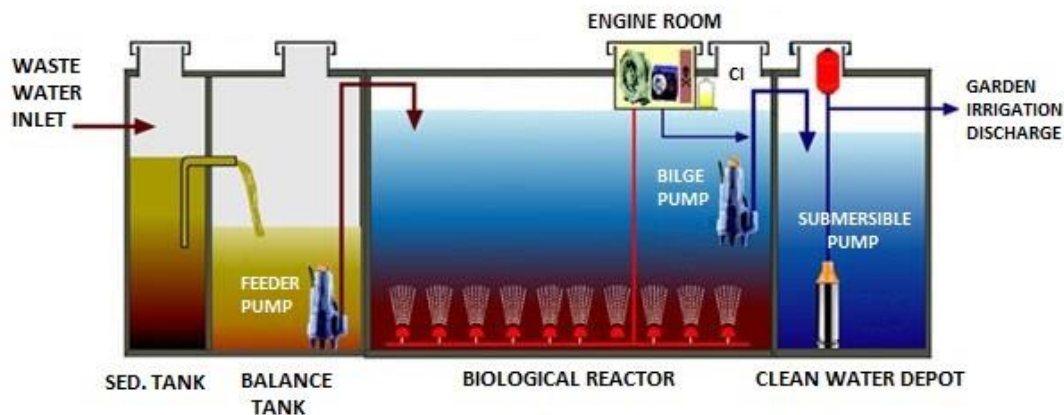


Figure 18: Wastewater Treatment Plant

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

5.0 CLOSURE

The land preparation and construction phases of the İvrindi Project have yet to commence and will be completed in 2018. 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. TÜMAD 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.

TÜMAD 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.

The waste management plan² and the Framework for Biodiversity Action Plan (to be developed into a full plan) addresses management of closure impacts.

Chapter 8 of this SIP document provides details in regards to Mine Closure objectives and key approaches.

² 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.



6.0 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:

- 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
- heap leaching
- 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 assesses 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 17: 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 18: 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 favorable
		Negative	The impact worsens the current condition or not favorable
		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/PEPs (Project Effected People).
		Indirect	Indirect Impacts on resources/ PEPs.



IVRINDI- SIP

		Cumulative	Cumulative impacts on resources/PEPs.
Reversibility	Reversing the physical parameter or the social community to original conditions existing before the impact	Reversible	Impact is reversible
		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 Related to the	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 of the	Negligible/ no change	No measurable impact



impact and can be quantified in terms of magnitude of change	Low	There is low level and notable impact on individuals/PEPs. Negative impact: A number of changes in the sensitivity level of PEPs Positive Impact : Advantages at lower scale
	Medium	The impacts are notable and measurable and effects the majority of PEPs Negative Impact: Loss of resources however does not effect all of the PEPs Positive Impact: Advantages for PEPs, development areas for PEPs
	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.

7.0 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.

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 Area of Influence. The Project Area of Influence would include;

- **EIA Permitted Area:** The Turkish EIA concentrated its assessment on the “EIA Permitted Area”, which reflected the area that was the physical mine operation area, which included the pits and mine facilities.
- **Logistics and Supply Corridor:** In addition to the EIA Permitted Area, the SIP and related studies also considers the potential impacts that may be caused by the construction of the water supply pipeline, access road and powerline. The ESIA has assessed impacts along a 100 m wide corridor along the linear infrastructures, with 50m on either side of each infrastructure.

The area that represents both the EIA Permitted Area, plus the infrastructure corridors, is collectively known as the “Project Area”.

7.3 Study Areas

The study areas are defined to include the Area of Influence of the Project and represent the areas where the data on the existing baseline are collected and the potential impacts are addressed.

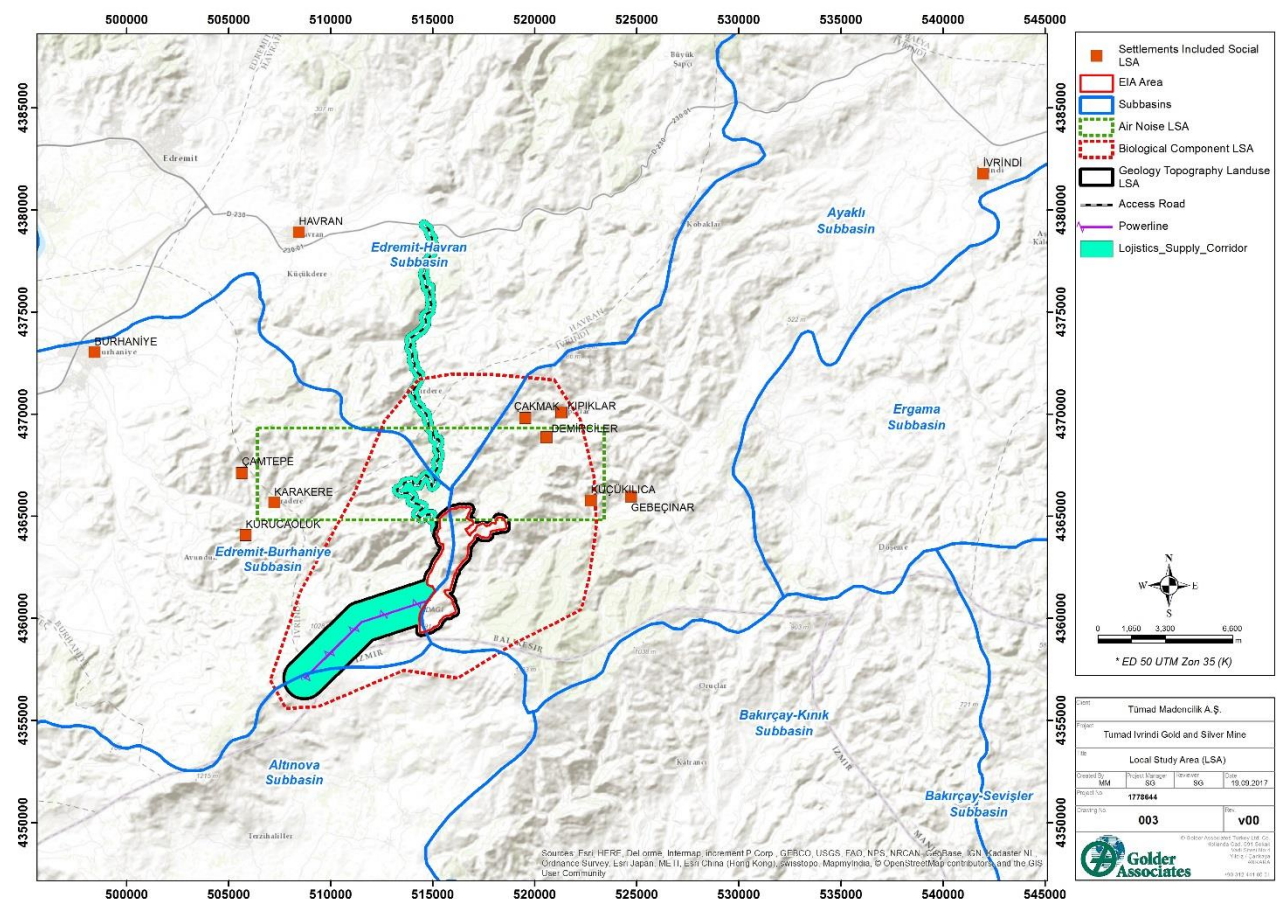


Figure 19: Study Areas



7.3.1 Environmental study area

Individual study areas were selected for each discipline, and these are illustrated and justified in the following sections.

Table 19: Physical Environmental Components Study Area

Component	Coverage	Features
Air	The (4.5 km×17 km) Study Area covers the Project Area and includes the potentially-affected settlements within the social study area.	Sensitive receptors in respect to the air emissions of the Project facilities and activities Area potentially influenced by the air emissions during construction and operation. Küçük Ilıca and Değirmenbaşı Villages are the nearest settlements The project area is approximately 4 km away from Küçük Ilıca Village and around 4.8 km away from Değirmenbaşı Neighbourhood.
Noise	The (4.5 km×17 km) Study Area covers the Project Area and includes the potentially-affected settlements within the social study area.	Sensitive receptors in respect to the noise emissions of the Project facilities and activities Area potentially influenced by the diffuse air emissions during construction and operation. Küçük Ilıca and Değirmenbaşı Villages are the nearest settlements The project area is approximately 4 km away from Küçük Ilıca Village and around 4.8 km away from Değirmenbaşı Neighbourhood.
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-basins of the area.	Impact on water sources because of the Project facilities and activities

Table 20: 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	Local Study Area (LSA) including: Mine site LSA, Access road LSA Water Supply LSA Powerline LSA	Potential disturbance to biodiversity components because of the Project facilities and activities



IVRINDI- SIP

Type	Coverage	Features

7.3.2 Social Study Area

The Social Study 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 should be considered:

Closest settlements to the project area;

Other settlements that are within a distance of 2 km to the closest settlements in the Project Area; and

The settlements that are impacted by the project directly and indirectly should be included.

For the İvrindi mine, the AoI includes directly impacted settlements, settlements in the vicinity of the directly impacted settlements and district centres that are critical for the Project. Accordingly, there are 3 directly impacted settlements in İvrindi and there are 6 settlements that are close (within 2km distance) to these impacted settlements. Since the drilling for the Project is located within the Burhaniye District, Burhaniye Center is also included in the AoI. İvrindi center is also included in the AoI since the Project facilities are located within İvrindi district,

Table 21: İvrindi Mine Area of Influence Settlements

Province	District	Settlement	Reason for Selection
Balıkesir	İvrindi	Küçükılıca	Closest settlement
Balıkesir	İvrindi	Değirmenbaşı	Closest settlement
Balıkesir	Burhaniye	Karadere	Closest settlement
Balıkesir	Burhaniye	Çamtepe	Neighbours Karadere
Balıkesir	Burhaniye	Kurucaoluk	Neighbours Karadere
Balıkesir	Havran	Çakmak	Neighbours Değirmenbaşı
Balıkesir	İvrindi	Demirciler	Neighbours Değirmenbaşı
Balıkesir	İvrindi	Kıpıklar	Neighbours Değirmenbaşı
Balıkesir	İvrindi	Gebeçinar	Neighbours Küçükılıca
Balıkesir	İvrindi	Merkez	Closest settlement
Balıkesir	Burhaniye	Merkez	Closest settlement
Balıkesir	Burhaniye	Karadere	Transmission Line
Balıkesir	Burhaniye	Kurucaoluk	Transmission Line

Source: SRM, 2017.



IVRINDI- SIP

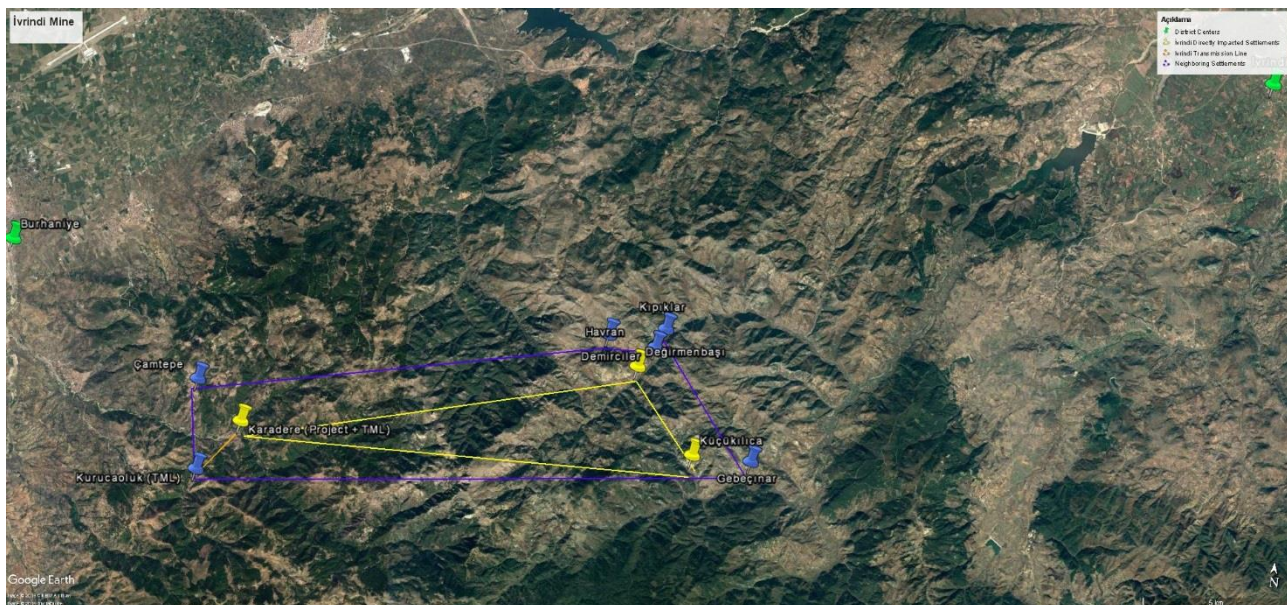


Figure 20: Ivrandi Mine Influence Area for Social Components, Source: SRM, 2017.

8.0 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
- The Project Description File for the Power Transmission Line approved by Turkish Ministry of environment and Urbanisation;
- Findings of site visits performed by Golder Associates;
- Management Plans issued by TUMAD
- Socioeconomic survey performed by TUMAD consultant-Motto 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 Studies

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



8.1.1.1 Soils, Geology and Topography

The entire license area (except the residential area of approximately 11 hectares in area 83480) and therefore the EIA area are all made up of non-calcareous brown forest soil from large land groups.

Agricultural area is not available on the project area according to information received from İvrindi Deed Directorate. According to the information, approximately 30 hectares of pasture land is available in the EIA area. Other than 30 hectares of pasture lands, EIA area completely consists of forest areas. Activities shall be performed within scope of 4342 numbered Pasture Law in pasture areas

According to assessments performed, usage abilities of all lands remaining within the EIA area and whose land uses are defined as pasture areas and forests are defined as VII class and very small area (1.6%) of VI class. Erosion for such land groups is among the risks recorded with soil insufficiency. Therefore, it can be deduced that there may be a risk of erosion in the EIA area.

According to this map, the Balıkesir province, in which the project area is located, is located entirely in the 1st degree earthquake zone except for a very small section.

The land along the transmission land corridor is composed of pastureland and dry agricultural land.

8.1.1.2 Climate and Meteorology

The Mediterranean climate characterised by hot and dry summer months and temperate and rainy winter months and prevailing along the Aegean coastline is dominant in Balıkesir Province, which is situated in the Aegean Region. The continental climate becomes more dominant, going from west toward east and from north toward south across the Province. In Balıkesir Province, while winter months are cold in inner areas, Black Sea climate prevails along the coastline of the Sea of Marmara.

The Meteorological Station in Burhaniye has been designated as the station representing best the meteorological conditions of the area where the project site is situated in line with the opinions of the Turkish State Meteorological Service.

Some of the main meteorological data between 1974 and 2014 are summarised below:

- Average temperature is 16.2°C. The highest temperature measured was 43.1°C and it was recorded in July. The lowest temperature measure was –12.0°C in January.
- Annual average local pressure is 1,012.4 hPa. The lowest pressure observed during the observation period was 985.4 hPa in January and the highest pressure was 1,035.2 hPa again in January.
- Total average rainfall is 559.9 mm per annum. The highest total average rainfall is 102.4 mm in December and the lowest total average rainfall is 4.4 mm in August.
- Annual average relative humidity rate is 60.2%. The lowest average relative humidity rate is 46.8% in July and the highest average relative humidity rate is 70.9% in December.
- Annual average number of snowy days is 2.1 and the annual average number of snow-covered days is 0.6.
- Total annual average exposed surface evaporation is 1,359.1 mm.
- According to the total annual blow, 1st degree dominant wind direction is E (east), the 2nd degree dominant wind direction is NE (north-east), the third degree dominant wind direction is ENE (east - north-east) and the 4th degree dominant wind direction is W (west).

8.1.1.3 Air Quality and Noise

Considering location of the project area, no industrial facility is currently causing emission in the vicinity. Project area vicinity generally consists of forest areas, and no industrial activity is available in the close vicinity. Project



IVRINDI- SIP

area is accessed via village roads, and there is not any highway with dense traffic in the vicinity. Therefore, air pollution is not in question at the project location.

The following site data collection campaigns are included in the baseline data collection studies for definition of ambient air quality for the İvrindi Project physical environment.

The site data collection campaign has focused on the sensitive receptors i.e. human settlement areas in relation to the mining operations and included the measurement of the following parameters;

- Settled dust
- PM10 and PM 2,5

The air quality ambient site data collection campaigns are summarised in the following .

Table 22: Air Quality Monitoring Programme for İvrindi Mine Site

Parameters	Locations (See figure below)	Period	Frequency	Remarks on Selection of Locations	Status
Settled dust	4 different points	2 months	Monthly	Değirmenbaşı, Küçükılca and Karadere Villages and one in the plant area. These locations are included in the EIA baseline measurement campaigns.	Completed as part of EIA. Monitoring is continued by third party consultant. Results are reported monthly in the format of MoEU.
PM10	3 different points ,	Instantaneous	Monthly	Değirmenbaşı and Karadere Villages and one in the vicinity of the plan area. These locations are included in the EIA baseline measurement campaigns.	Completed as part of EIA (results are given in). Monitoring is continued by third party consultant. Results are reported monthly in the format of MoEU.
PM10	4 different points, According to the local grievance additional measurement locations will be located	24 hours	6 monthly	Değirmenbaşı, Küçükkılca and Karadere Villages and one in the plant area. The locations are including the sensitive receptors and potential areas to be impacted as stipulated by the air emission modelling study for construction	Not started.



IVRINDI- SIP

				and operations of the mine.	
PM2,5	4 different points , According to the local grievance additional measurement locations will be located	24 hours	6 monthly	Değirmenbaşı, Küçükkılıca and Karadere Villages and one in the plant area. 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.	Not started
Heavy metal in Particulate matter	4 different points , According to the local grievance additional measurement locations will be located	24 hours	6 monthly	Değirmenbaşı, Küçükkılıca and Karadere Villages and one in the plant area. 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.	Not started
SO _x and NO _x	4 different points , According to the local grievance additional measurement locations will be located	2 months	6 monthly	Değirmenbaşı and Küçükkılıca Villages and four in the plant area. The locations are including the sensitive receptors and potential areas to be impacted by the mining operations.	Not started
PM 10	2 points, According to the local grievance additional measurement locations will be located	continuous	continuous	Not decided yet	Not started
HCN	3 points	continuous	continuous	Not decided yet	Not started



Station	Location	Measurement Date		PM10 Measurement Results (µg/m³)
		Start	End	
T-P1	Küçükılıca Neighborhood	30.01.2014	31.01.2014	18.48
		29.04.2014	30.04.2014	29.18
		11.11.2015	12.11.2015	66.58
T-P2	Karadere Neighborhood	29.01.2014	30.01.2014	7.57
		29.04.2014	30.04.2014	14.07
		08.11.2015	10.11.2015	12.48
T-P3	Değirmenbaşı Neighborhood	12.11.2015	13.11.2015	29.13



In order to determine the current noise levels at the sensitive receptors, which are Değirmenbaşı, Küçükılıca and Karadere 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. Monthly, including daytime evening and night time readings will continue to be conducted at the same locations. According to the local



IVRINDI- SIP

grievance additional measurement locations will be located. A detailed presentation of the measurement campaign is given in EIA Section 5.

Measurement results are presented in the following table.

Table 24: Background Noise Measurement Results

Location	Date of Measurement		Measurement Results (dBA), daytime	Measurement Results (dBA), evening	Measurement Results (dBA), night
Küçükılıca Neighborhood	1/11/2014	1/12/2014	53.3	49.3	50.4
	4/29/2014	4/30/2014	53.7	52.3	51.8
	11/11/2015	11/12/2015	53.9	46.9	46.8
Karadere Neighborhood	1/10/2014	1/11/2014	61.7	58.5	54.9
	4/29/2014	4/30/2014	54.3	53.5	54.3
	11/9/2015	11/10/2015	55.1	42.0	49.8
Değirmenbaşı Neighborhood	11/9/2015	11/10/2015	53.9	50.1	51.6
	1/11/2014	1/12/2014	53.3	49.3	50.4
	4/29/2014	4/30/2014	53.7	52.3	51.8

The following figure presents the completed and ongoing measurement locations for noise measurement.

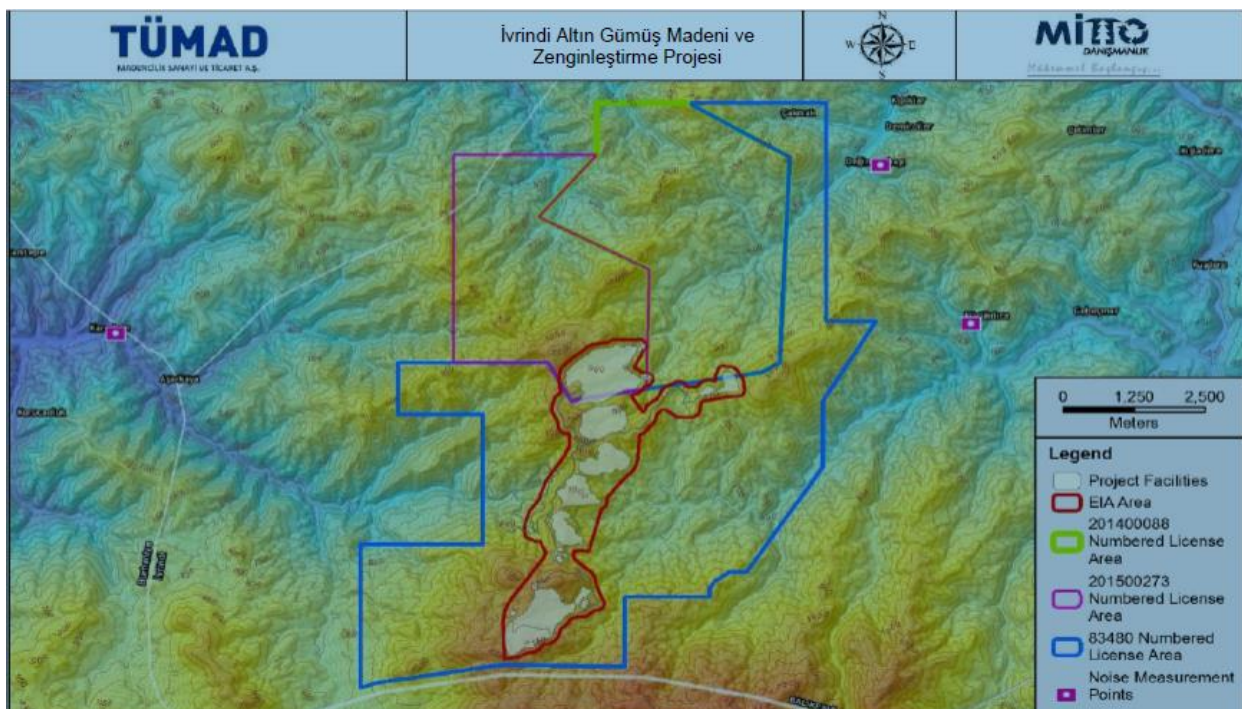


Figure 22: Noise Measurement Locations for İvrindi Project

8.1.1.4 Hydrology

8.1.1.4.1 Hydrologic Characteristics of the Region

The project area is located at the boundary of the Aegean Basin and Susurluk Basin (Figure 23). The total precipitation area of the North Aegean Basin is 10,003 km² and annual average flow is 2.90 km³. The average



İVRINDI- SIP

yield of the basin is 7.4 l/s/km² and the potential participation rate throughout Turkey is 1.1%. The total precipitation area of the Susurluk Basin is 22,399 km² and the average annual flow is 5.43 km³. The average yield of the basin is 7.2 l/s/km² and the potential participation rate throughout Turkey is 2.9%.

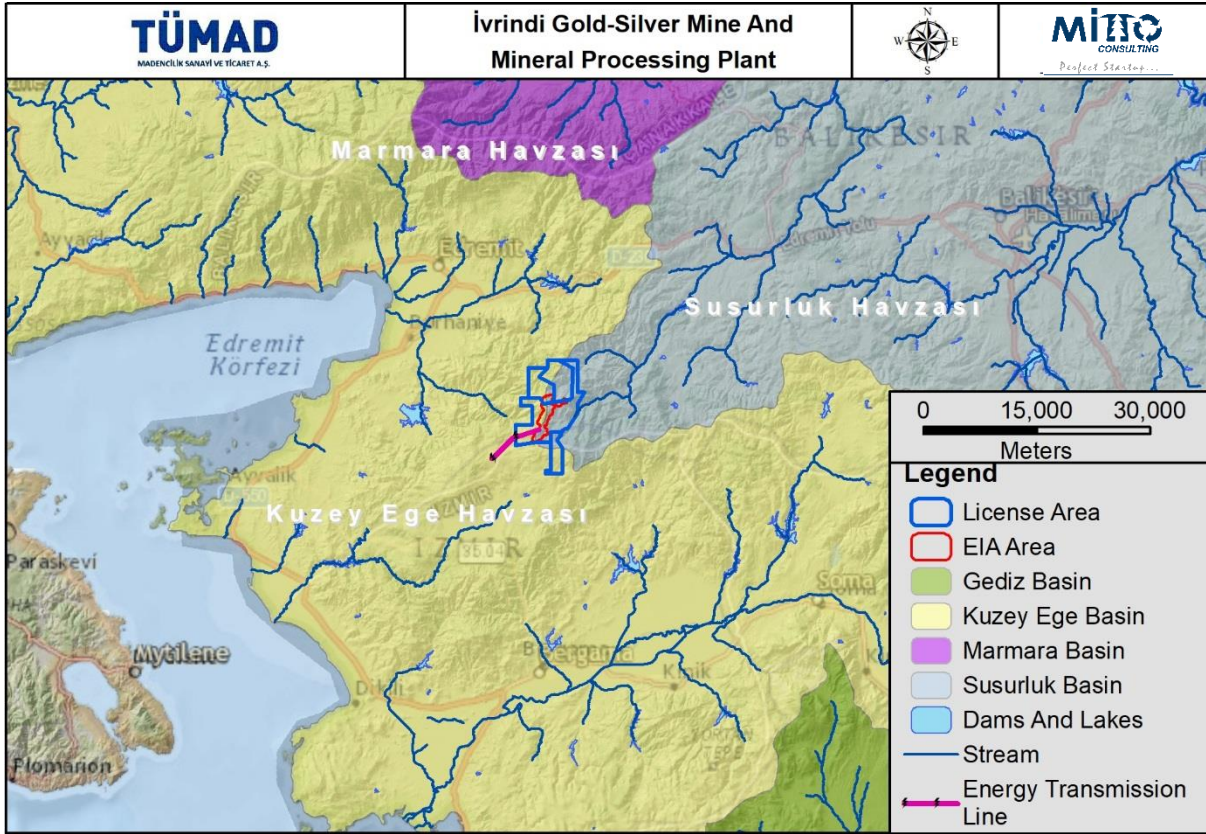


Figure 23: Project Area Macro Basins

The Project site is out of the protected areas of all the dams and lagoons either already constructed/ to be constructed for use for drinking water and service water in Balıkesir Province. The project site is located at the intersection region of 4 micro basins (Figure 24). These basins are Akpınar Dere Basin in the west, Yahu Dere Basin in the north, Ballık and Kabaktepe Basin in the east and Madra Dere Basin in the south Akpınar Dere Basin, Yahu Dere Basin, Ballık and Kabaktepe Basin, and Madra Dere Basin cover an area of 8 km², 22 km², 5 km² and 9 km² and total area of them is 44 km². The study area of the ETL to be installed to provide electrical energy to the project is located in the Karadere micro basing having an area of 121.8 km² located in the Edremit- Burhaniye sub-basin. Most of the streams in the vicinity of the project site are ephemeral with no continuous flow. Microbasins which are located under the footprint of the project facilities are shown in Figure 24. Madra stream has continuous flow and will be monitored on a regular basis.

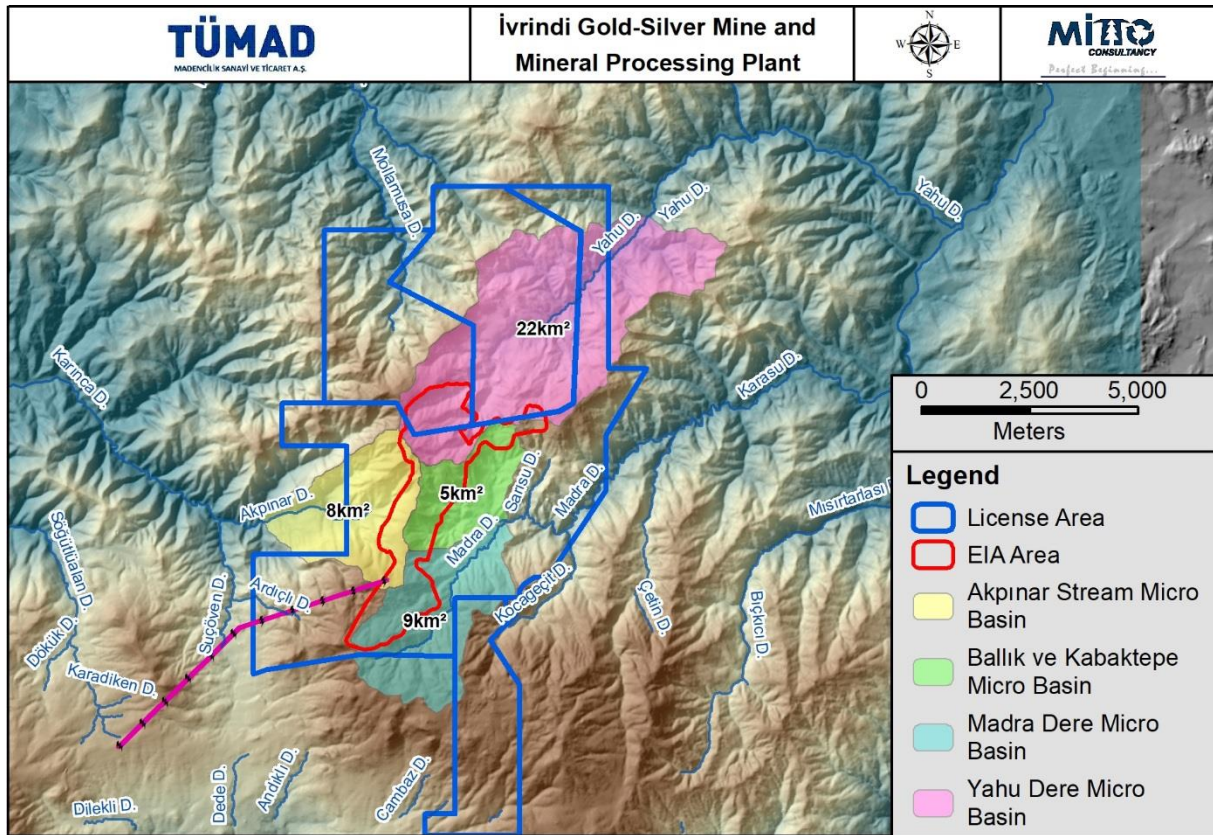


Figure 24: Distribution of Micro Basins Located in the Project Area Project Area

8.1.1.4.2 Flow Measurements

There no weirs installed at the site. Weirs will be installed to Madra and Sıpacı (Yahu Dere) streams to monitor the flow during the operation of the project.

8.1.1.4.3 Baseline Water Quality

Sampling is performed periodically from 11 surface water points having water quality values given in Table 25. The properties of these observation points and the points from which samples are taken and the aims of sampling are as follows:

- SW01: Determination of potential pollutants in seasonal creek, downstream of pit areas
- SW02: Determination of potential pollutants in Suluk creek, downstream of pit areas
- SW03: Determination of potential pollutants in Ayvacık creek, downstream of pit areas
- SW04: Determination of the pollutants upstream of Madra creek,
- SW05: Determination of the pollutants downstream of Madra creek,
- SW06: Determination of potential pollutants in Çalkaya creek, upstream of leach area
- SW07: Determination of potential pollutants in Çalkaya creek, downstream of leach area
- SW08: Determination of potential pollutants in Boşalan creek, downstream of leach area
- SW09: Determination of potential pollutants in Andız seasonal creek, downstream of mine waste area
- SW10: Determination of potential pollutants in Seasonal Creek, downstream of Güney Zon pit area



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■ SW11: Determination of potential pollutants in Mal creek, downstream of pit areas

When the surface water quality parameters in the region are examined, it is understood that water qualities are generally included in the first water quality class. However, in some parameters such as nitrogen, phosphorus, pH and EC, and the especially bacteriological parameters, water qualities show variation to second class and in some places third class water qualities. In addition to surface water, periodical analyses carried out from the springs, fountains and the groundwater observation wells. Groundwater quality is good and metal concentrations are within the Class I of the surface water classification scheme in the region.

Table 25: Quality Classification of Surface Waters (EIA Report Table 2.72)

STATION	September 2015		November 2015	
	Water Quality Class	Parameters Defining Water Quality Class	Water Quality Class	Parameters Defining Water Quality Class
SW01	-	-	Class III	Total Phosphorous
SW02	-	-	Class II	Total Phosphorous, Faecal Coliform
SW03	-	-	Class II	Oxygen Saturation, Total Kjeldahl Nitrogen, Faecal Coliform, Total Coliform
SW04	Class II	Total Kjeldahl Nitrogen, Faecal Coliform	Class II	Faecal Coliform
SW05	Class II	Faecal Coliform	Class III	pH
SW06	-	-	Class II	Total Kjeldahl Nitrogen, Faecal Coliform
SW07	Class II	Total Kjeldahl Nitrogen	Class III	pH
SW08	-	-	Class II	Oxygen Saturation, Faecal Coliform, Total Coliform
SW09	Class II	Total Phosphorous, Faecal Coliform	Class III	pH
SW10	-	-	Class III	pH
SW11	-	-	Class II	Faecal Coliform

Sampling locations where water samples are taken, surface waters, ground waters and drinking water locations are presented below.



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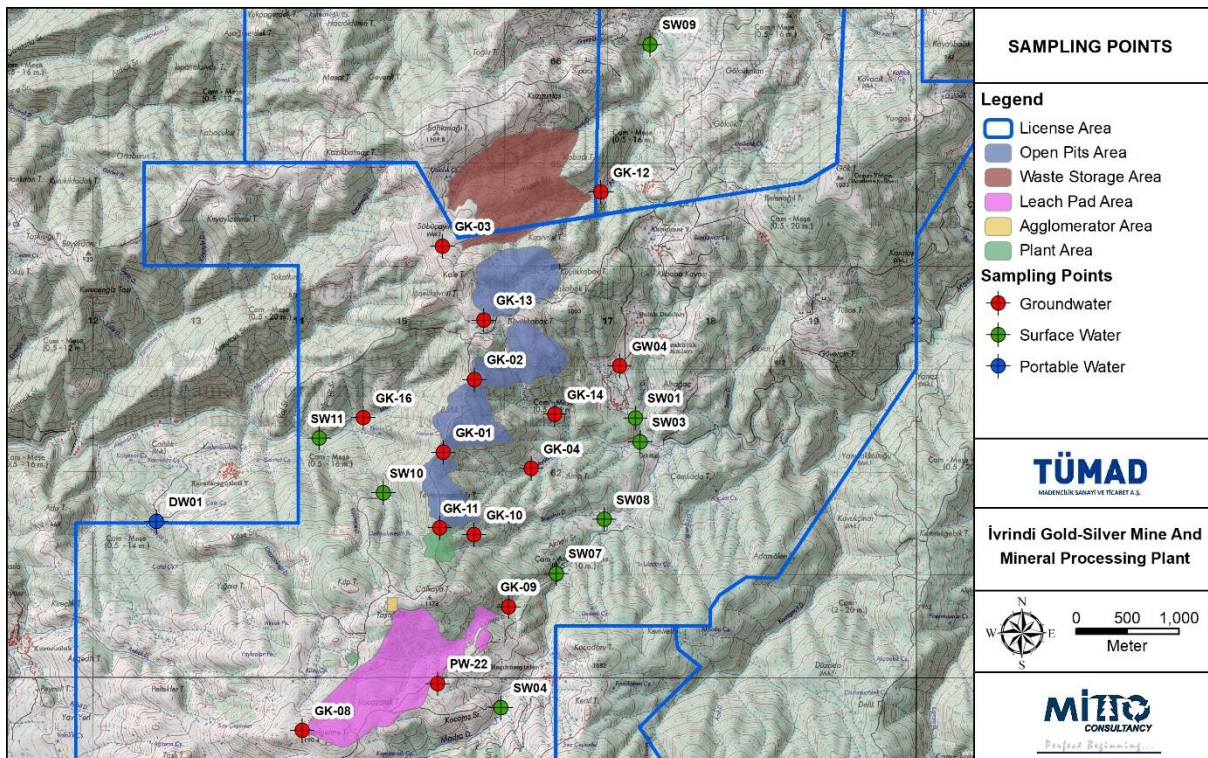


Figure 25: Surface and groundwater sampling locations

8.1.1.5 Hydrogeology

3 hydrogeological units were identified in the project area according to the conveying and transmission properties of underground water. These units are highly permeable, permeable and impermeable units. Hydrogeological properties of the geological units in the region have been defined and a hydrogeology map has been prepared. Hydrostratigraphic definition of the study area and the geological units are grouped in terms of hydrostratigraphic similarities. During determination of the aquifer parameters, pump tests and lugen tests were performed in some observation wells.

8.1.1.5.1 Groundwater Wells

Several groundwater wells were drilled in the project site. The list of the wells are provided below. The wells will be used for monitoring purposes. Some of the wells will be used for process water supply. Long term pump tests will be conducted to better understand the safe yield of the wells and water use permits will be received from DSI. PW-33, GK-07, GK-10, GK-18, GK-19 and GK-05 will be used for process water supply. The impacts of groundwater abstraction is presented in impact assessment section.

Table 26: Observation Well Details

Code	X Coordinate	Y Coordinate	Depth (m)	Method	PVC Pipe Diameter	Date
GK-01	515391.97	4362197.46	211	HS	200 mm	July 2015
GK-02	515766.86	4362907.44	244	HS	175 mm	September 2015
GK-04	516254.89	4362036.73	84	HS	175 mm	Oktober 2015
GK-05	517124.85	4361680.88	50	HS	200 mm	August 2015



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GK-07	517300.90	4362260.59	50	HS	200 mm	August 2015
GK-08	514030.97	4359493.22	180	RS	200 mm	November 2015
GK-09	516045.53	4360649.75	88	HS	175 mm	Oktober 2015
GK-10	515689.73	4361397.75	79	HS	200 mm	August 2015
GK-11	515351.72	4361460.60	137	HS	200 mm	September 2015
GK-12	516918.68	4364720.72	55	HS	175mm	Oktober 2015
GK-13	515825.36	4363470.59	227	RS	175 mm	November 2015
GK-14	516502.73	4362532.05	75	HS	200 mm	November 2015
GK-16	514618.12	4362522.11	44	HS	200 mm	August 2015
GK-18	514590.4	4360208.72	168	RS	200 mm	Oktober 2015
GK-19	515393.08	4360027.19	58	HS	200 mm	August 2015
PW-33	517513.40	4362115.2	65	HS	200 mm	August 2015

8.1.1.5.2 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 Figure 26 and further details are provided in figure below.

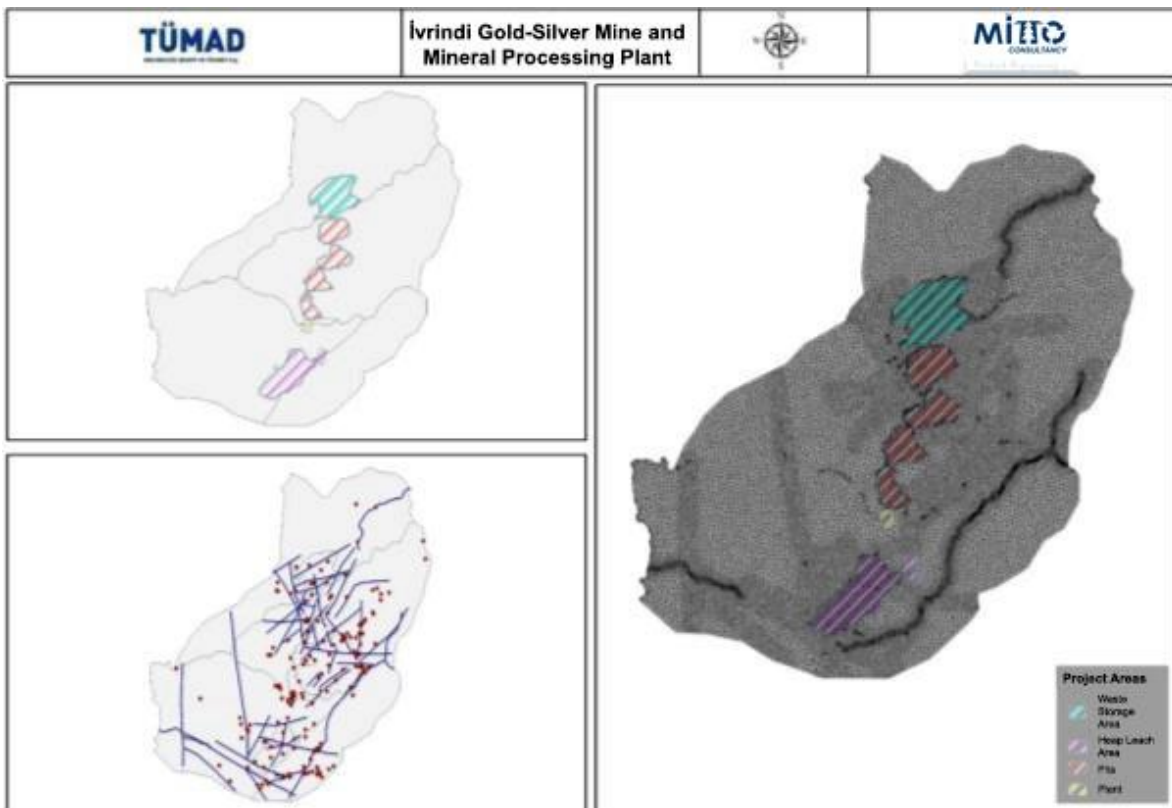


Figure 26: Groundwater Model Boundary



8.1.1.6 Geochemistry – Acid Rock Drainage

The qualities of the waters that will infiltrated through the pit walls and collected at the bottom of the pit and waters that will infiltrated from leach and mine waste areas were estimated with the help of the PHREEQC model. According to this, the quality of water to be accumulated in the quarry bottom and the quality of water from the waste area and leach area were compared with the project discharge standards (Table 27).

The risk of contaminant production potential is low in the heap leaching area and all the pits except Kabaktepe pit according to the PHREEQC model results. However, if it is necessary to discharge water to the receiving environment, the high Selenium concentrations emerging from Kabaktepe pit must be reduced. In addition, the pH value should be increased to project standards for all the pits and mine waste area. In order to reduce the pollutant load in the pit waters and to ameliorate the water quality to comply with the effluent water standards it is planned that the water from the dewatering activities carried out in the pits will be collected together to the settling basin. So that, the average ion concentration values to be monitored in the settling basins will be reduced to the discharge standards as given in the waters collected from the Kabaktepe pit will be sent directly to the plant without mixing it in the settling basin in all conditions and used as process water. The project will use contact water as possible in the process in order to reduce the groundwater abstraction from the wells. The water quality estimate indicate that high Se concentration is mainly expected in the Kabaktepe Pit contact water. Kabaktepe pit mine life is 5.5 years and the pit will be backfilled ater the ceassation of mining activities. Third party water users will not be negatively impacted in terms of quantity and quality, the situation will be monitored and mitigation measures will be implemented if required.

Table 27: Comparison of water chemistry values expected to occur according to the geochemical model results in the pits, leach and mine waste areas and the project standards

Parameter	Unit	Project Discharge Water Standards	Güney Zon	Kabaktepe	Karteldere	Ballıktepe	Mine waste	Leach
pH		6 – 9	5.20	4.02	5.00	5.70	5.70	6.99
Aluminum (Al)	mg/l		2.99E-02	1.70E-01	6.01E-07	9.97E-01	1.00E-04	1.26E-04
Antimony (Sb)	mg/l		2.76E+00	3.53E-03	3.53E-03	3.54E-03	1.70E-04	1.70E-04
Arsenic (As)	mg/l	0.1	7.49E-04	1.26E-03	1.00E-08	1.54E-02	1.00E-04	1.00E-04
Barium (Ba)	mg/l		1.69E-03	3.72E-02	3.20E-08	2.10E-02	1.00E-04	1.00E-04
Boron (B)	mg/l		6.13E-03	4.53E-02	5.99E-07	4.35E-01	1.00E-04	1.01E-04
Cadmium (Cd)	mg/l	0.1	1.12E-03	7.11E-03	1.29E-08	1.12E-03	1.00E-04	1.00E-04
Chlorine (Cl)	mg/l		1.01E+01	4.08E+03	6.06E-03	3.34E+00	1.35E-03	2.30E-02
Chromium (Cr)	mg/l	0.1	5.20E-04	5.91E-04	1.00E-08	5.20E-04	1.00E-04	1.00E-04
Copper (Cu)	mg/l	0.3	6.36E-04	1.87E-01	2.21E-07	6.35E-04	1.00E-04	4.09E-05
Fluoride iodine (F=)	mg/l	20	1.50E-02	8.40E-02	8.48E-07	4.89E-01	1.00E-04	2.30E-04
Iron (Fe)	mg/l	3	7.42E-06	1.58E-04	6.65E-06	2.36E-06	1.27E-08	2.96E-11
Lead (Pb)	mg/l	0.5	4.63E-05	1.96E-02	8.02E-07	4.64E-05	1.49E-05	1.49E-05
Magnesium iodine (Mg2+)	mg/l		1.14E-01	1.65E-02	2.37E-07	2.76E-01	2.86E-05	2.97E-04
Mangan (Mn)	mg/l		9.62E-07	1.08E-04	4.51E-08	1.14E-03	6.77E-08	4.42E-05
Mercury (Hg)	mg/l	0.05	2.01E-03	2.01E-03	1.00E-10	2.01E-03	1.00E-04	1.00E-04
Molibdenim (Mo)	mg/l		2.51E-03	8.19E-01	4.67E-06	5.83E-03	5.73E-05	5.73E-05



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Nickel (Ni)	mg/l	0.002	4.32E-04	9.16E-03	7.64E-08	6.30E-04	3.92E-05	3.92E-05
Phosphate iodine (PO42+)	mg/l		1.35E-01	1.11E-03	1.90E-08	1.27E+00	1.89E-04	1.89E-04
Selenium (Se)	mg/l	0.5	1.88E-03	1.39E+01	1.57E-05	1.88E-03	1.54E-04	1.07E-04
Silver (Ag)	mg/l	0.1	1.08E-03	1.08E-03	1.00E-08	1.08E-03	1.00E-04	1.61E-05
Sodium (Na)	mg/l		3.60E+01	1.71E+01	9.58E-08	1.91E+02	4.17E-04	2.96E-02
Sulphate iodine (SO42+)	mg/l		6.22E+00	7.64E+00	8.92E-06	3.34E+00	1.03E-04	1.45E-03
Strontium (Sr)	mg/l		4.59E-03	1.61E-03	1.36E-08	8.18E-02	1.35E-04	1.35E-04
Uranium (U)	mg/l		3.23E-04	5.82E-04	3.68E-09	3.23E-04	3.68E-05	3.68E-05
Zinc (Zn)	mg/l	0.5	7.38E-04	3.97E-04	7.79E-09	1.66E-03	7.79E-05	7.79E-05

Note: The parameters shown in orange on this table indicate the water levels exceeding discharge water quality limits.

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 streams 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 28: Standards for Discharge of Waste Water to Receiving Environment

Parameter	Units	SKKY 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



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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

RWQC Table 7.1 Regulation on Water Quality Control 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

Trigger levels presented below are determined based on the expected contact water quality, Turkish Water Pollution Control Regulation water quality classification as well as the baseline data from the streams are shown in 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. The trigger limit will be set at the upper limit of Class I parameters in the downstream of the Madra and Sipacı Streams. 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 29: Sipacı and Madra Stream baseline parameters, expected contact water quality at the main settling pond and the trigger limits

	Water Quality Classification				BASELINE			Expected Contact Water Quality - Settling Pond	Trigger Limit for Sipacı Stream
Water Quality Parameters	I	II	III	IV	Sipacı Stream				
General					Summer 2015	Fall 2015	Spring 2017		
pH	6.5-8.5	6.5-8.5	6.0-9.0	Outside of 6,0-9,0	8.49	8.8	8.44	5.62	6.5-8.5
Arsenic (µg As/L)	≤20	20-50	100	> 100	UDL	UDL	UDL	1.5898	20
Cadmium (µg Cd/L)	≤ 2	2.0-5.0	5.0-7.0	> 7	0.4	0.4	UDL	0.2276	2
Chromium (total) (µg Cr/L)	≤20	20-50	50-200	> 200	UDL	UDL	UDL	0.1525	20
Copper (µg Cu/L)	≤20	20-50	50-200	> 200	1.2	UDL	UDL	0.1670	20
Iron (µg Fe/L)	≤300	300-1000	1000-5000	> 5000	UDL	14.1	UDL	0.0005	300
Lead (µg Pb/L)	≤10	10.0-20	20-50	> 50	UDL	UDL	UDL	0.0188	10
Manganese (µg Mn/L)	≤100	100-500	500-3000	> 3000	0.55	5.33	UDL	0.1097	100



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Mercury (µg Hg/L)	<0.1	0.1-0.5	0.5-2	> 2	UDL	UDL	UDL	0.3389	0.1
Nickel (µg Ni/L)	≤20	20-50	50-200	> 200	UDL	UDL	UDL	0.1074	20
Selenium (µg Se/L)	≤10	≤10	10-20	> 20	UDL	UDL	UDL	0.3699	10
Sulfate (mg SO ₄ /L)	<200	<200	200-400	> 400	16.6	14.1	14.6	0.5012	200
Zinc (µg Zn/L)	≤200	200-500	500-2000	> 2000	UDL	UDL	2.2	0.2491	200
Cyanide (total) (µg Cr/L)	≤10	50	100	> 100	UDL	UDL	UDL	n.a.	<10

	Water Quality Classification				BASELINE			Expected Contact Water Quality - Settling Pond	Trigger Limit for Madra Stream
Water Quality Parameters	I	II	III	IV	Madra Stream				
General					Summer 2015	Fall 2015	Spring 2017		
pH	6.5-8.5	6.5-8.5	6.0-9.0	Outside of 6,0-9,0	8.19	8.02	7.3	5.62	6.5-8.5
Arsenic (µg As/L)	≤20	20-50	100	> 100	UDL	UDL	UDL	1.5898	20
Cadmium (µg Cd/L)	≤ 2	2.0-5.0	5.0-7.0	> 7	0.4	0.4	UDL	0.2276	2
Chromium (total) (µg Cr/L)	≤20	20-50	50-200	> 200	UDL	UDL	UDL	0.1525	20
Copper (µg Cu/L)	≤20	20-50	50-200	> 200	1.3	UDL	UDL	0.1670	20
Iron (µg Fe/L)	≤300	300-1000	1000-5000	> 5000	UDL	16	UDL	0.0005	300
Lead (µg Pb/L)	≤10	10.0-20	20-50	> 50	UDL	UDL	UDL	0.0188	10
Manganese (µg Mn/L)	≤100	100-500	500-3000	> 3000	UDL	1.15	UDL	0.1097	100
Mercury (µg Hg/L)	<0.1	0.1-0.5	0.5-2	> 2	UDL	UDL	UDL	0.3389	0.1
Nickel (µg Ni/L)	≤20	20-50	50-200	> 200	UDL	UDL	UDL	0.1074	20
Selenium (µg Se/L)	≤10	≤10	10-20	> 20	UDL	UDL	UDL	0.3699	10



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Sulfate (mg SO ₄ /L)	<200	<200	200-400	> 400	UDL	5.38	5.1	0.5012	200
Zinc (µg Zn/L)	≤200	200-500	500-2000	> 2000	UDL	UDL	UDL	0.2491	200
Cyanide (total) (µg Cr/L)	≤10	50	100	> 100	UDL	UDL	UDL	n.a.	<10

*UDL: Under detection limit

8.1.1.7 Traffic

Within the scope of project, vehicles that will carry machinery and equipment to the Project 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.

For ivrindi Project a new road connection was built to connect Edremit-Balikesir Public Road to the Mine site. The existing traffic load is currently zero at this road.

The public authority data obtained from General Directorate of Highways on the traffic load on the section of the Edremit to Havran is 8746 as seen in the following Figure.



Figure 27: Existing Traffic Load on Edremit - Havran

8.1.1.8 Conclusion

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

Table 30: 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>Land uses are defined as pasture areas and forests are defined as VII class and very small area (1.6%) of VI class</p> <p>The EIA permit Area and the Logistics and Supply corridor is in 1st degree earthquake zone.</p>	Overall, soils within the study area and surrounds were concluded to have a medium level of sensitivity.



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Component	Characterisation	Sensitivity Category
	<p>EIA permit area where the project facilities will be located is subject to severe erosion</p> <p>The land along the power line corridor is composed of pasture and dry agricultural land.</p>	
Air Quality, Noise and Vibration	The study area exhibits the characteristics of clean, rural air.	The sensitivity is considered to be medium .
Traffic	<p>The study area exhibits the characteristics of rural low-medium density traffic.</p> <p>Road safety risk associated with increased traffic is valid.</p>	The sensitivity is considered to be medium .
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 (Section 2, 3 and 5)

The impacts of the power transmission line for the land acquisition considering the possible harm to the products and yields during maintenance of the lines is considered to be low during construction period and neutral during the operation period. Further information is provided in Section 8.3.2 Social Impact Assessment Findings.

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; dismantling, loading of excavation materials, evacuation of materials, vehicle movements on dirt roads, blasting activities and dust emissions from crushers to be used.

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 and it was examined how the dust spreads. The output of the model is presented in the following tables and the diffusion graphs for different scenarios are presented in section 5 of the EIA report.

**Table 31: Highest PM10 Concentrations Expected in Settlements as the Result of Modelling**

Settlement Unit	Result of Modelling (µg/m ³)	Result of Modelling (µg/m ³)
	24 hours PM ₁₀ Concentration (%90.41)	24 hours PM ₁₀ Concentration (%90.41)
Karadere Quarter	2.47 µg/m ³	1.06 µg/m ³
Küçükılıca Quarter	0.24 µg/m ³	0.13 µg/m ³
Değirmenbaşı Quarter	0.10 µg/m ³	0.07 µg/m ³
Directive Value	24 hours PM₁₀ Concentration (not exceed more than 35 times in 1 year)	Annual
Industrial Air Pollution Control Regulation* (µg/m ³)	50 µg/m ³	40 µg/m ³

* 2024 year limit values

Table 32: Highest Settled Dust Values Expected in Settlements as the Result of Modelling

Settlement Unit	Result of Modelling (µg/m ³)	Result of Modelling (µg/m ³)
	24 hours PM ₁₀ Concentration (%90.41)	24 hours PM ₁₀ Concentration (%90.41)
Karadere Quarter	0.303 mg/m ² day	0.165 mg/ m ² day
Küçükılıca Quarter	0.180 mg/ m ² day	0.071 mg/ m ² day
Değirmenbaşı Quarter	0.040 mg/ m ² day	0.017 mg/ m ² day
Directive Value	Short term limit value	Long term limit value
Industrial Air Pollution Control Regulation* (mg/ m ² day)	390 mg/ m ² day	210 mg/ m ² day

* 2024 year limit values

Considering all these information and examined model results, it is clear that the PM10 concentrations shall be below the limit values in the vicinity of the project area in the period when the maximum dust formation is expected in the project. The results obtained by the modelling project are the worst and the mine is based on the year of the most intensive production. In the following years, emissions due to mining activities shall be reduced at significant levels. For this reason, it is expected that the concentrations of PM10 in residential areas around the project area shall be well below the legislative limits during the project.

Project area and vicinity generally consists of forest areas. The closest settlement to the project area is Küçükılıca Village, 4 km from the northeast. There are no air pollution sources in the vicinity that may contribute to air pollution. In this framework, the facility in the project area and other facilities planned to be installed are considered in the cumulative modelling study. In the cumulative effect evaluation study carried out within the scope of İvrindi Project, the projects that were or are planned to be realized within an area of about 10 km in radius with the İvrindi Project were taken into consideration. Construction and operating calendars of projects remaining in the project impact area were examined within scope of cumulative impact assessment and periods with highest dust emissions arising from all projects are taken as basis during operation of the İvrindi Project. Result of the model study, the daily and annual maximum PM¹⁰ concentration values and dry sedimentation values, which are expected to occur in the settlements around the project area, are determined and given in table below. According to the study, the highest expected concentration and sedimentation values



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in the settlements around the project site provide the relevant limit values defined for the year 2024 in Industrial Air Pollution Control Regulation.

Table 33: Highest Concentration and Sedimentation Values Expected in Settlements As the result of Cumulative Impact Assessment

Settlement Unit	Modelling Result		Directive Value	
			Industrial Air Pollution Control Regulation (2024)	
Karadere				
Daily PM ₁₀ Concentration	2.7497 µg/m³		50 µg/m³	
Annual PM ₁₀ Concentration	1.1788 µg/m³		40 µg/m³	
Short Term Dry Sedimentation Value	0.3433 mg/m²day		390 mg/m²day	
Long Term Dry Sedimentation Value	0.1841 mg/m²day		210 mg/m²day	
Küçükılca				
Daily PM ₁₀ Concentration	0.5877 µg/m³		50µg/m³	
Annual PM ₁₀ Concentration	0.2950 µg/m³		40 µg/m³	
Short Term Dry Sedimentation Value	0.4633 mg/m²day		390 mg/m²day	
Long Term Dry Sedimentation Value	0.1777 mg/m²day		210 mg/m²day	
Değirmenbaşı				
Daily PM ₁₀ Concentration	0.1198 µg/m³		50 µg/m³	
Annual PM ₁₀ Concentration	0.0923 µg/m³		40 µg/m³	
Short Term Dry Sedimentation Value	0.0899 mg/m²day		390 mg/m²day	
Long Term Dry Sedimentation Value	0.0333 mg/m²day		210 mg/m²day	
Standards (Turkish Regulation on the Control of Industrial Air Pollution)	Settled Dust (mg/m2.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/m3)	50 (24 hr)		50 (24 hr)

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, therefore no model was carried out.

The standard mitigation measures for dust and emission control will be applied complying with the provisions of the legal requirements in the Project.

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*

Excavation, filling, loading and similar activities carried out by use of machinery and equipment at the site during the construction phase will generate noise.

During the operation phase, any activity carried out in facilities and units located at the project site, mainly mining activities carried out at open pit sites, will generate noise. In the scope of this worst case scenario approach, machinery and equipment that were presumed to be operating in a location closest Küçükılca Village, which is the closest to the EIA area.

The results show that the impact of activities carried out at the site during the operation phase of the project on Küçük İlca Neighbourhood (54.4 dBA) will, even in the worst case scenario, be at an insignificant level based on limit values stated in the bylaw. Activities in the scope of the Project which may generate noise will have no project-based impact on Değirmenbaşı and Karadere Villages, as they are located at a distance greater than that of Küçükılca Village.

The closest settlement to the open pit area is Küçükılca Village at a distance of 6 km. According to calculations, the expected vibration velocity at Küçükılca Village is 0.017 mm/s, which is well below the regulation limit value. Therefore, it is not expected that the vibrations that will occur due to blasting processes to be carried out in the open pits will have a negative effect on the settlement units located around the project area. Therefore, it is not expected that the vibrations that will occur due to blasting processes to be carried out during extraction process will have a negative effect on the settlement units located around the project area.

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 34 Traffic Count (Current and Estimated) for İvrindi Project**

Vehicle	Trailer	Truck	Bus	Minibus	Car	Motor Cycle	Tractor	Other	Total
Current Traffic Load									8746*
Operational Traffic Load	1	18	20	14	10			10	73
Traffic Load Increase									0.008

* Public authority data obtained from General Directorate of Highways

Assuming that all of the vehicles to be used within the project are actively in traffic and passing through the Edremit-Havran section, the expected traffic load increase is 0.008% during operation. The traffic load during construction will be similar to this figure.

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 (Traffic Management Plan (TMD_ISG_PLN_005), accident prevention and defensive driving. 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 (TMD_IVR_EYS_PLN_001). A Cyanide Management Plan (TMD_CEV_PLN_008) aligned with the Cyanide Management Code (refer to section on management of cyanide use during operation phase)

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.

Additionally, standard mitigation measures for traffic management will be applied as discussed in 8.1.3.

8.1.2.6 Water Resources

The Project impacts on water resources are assessed considering the conditions and the sensitivity of the hydrology, hydrogeology and geochemistry components together.

8.1.2.6.1 Power Line Route

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

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.

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
- Re-use contact water in the process as much as possible
- Collect open pit runoff water to ponds and collection sumps
- Collect WRD runoff and seepage water to contact water ponds
- 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:

- Dūdūklū Spring providing drinking water to town of Burhaniye
- Fountains (developed springs) providing drinking water to the Değirmenbaşı Village
- Değirmenbaşı water transmission line
- Groundwater aquifer of the region
- Streams draining the Project Site
- Springs that support surface water flow and ecology
- Groundwater aquifer of the Project site



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Table 35: Water resource sensitive receptors

Receptor Sensitivity	Receptor Name	Receptor Sensitivity
Very High	Düdüklü Spring	Sensitive area or receptor with little resilience to imposed stresses.
High	Değirmenbaşı Water Supply Springs	
Medium	Project area aquifers/ground water Local fountains used by the villagers Project area & local ephemeral creeks/streams receptors	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.

8.1.2.6.2.1 Impact Factors

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 and resulting impact factors.

The impact factors include:

- Heap Leaching and cyanide usage
- 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
- Dumping of waste rock (dust, seepage water quality)
- Water quality changes in receiving streams and aquifers (leachate from the pits, waste rock dump and Heap Leach 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 Impact Assessment Findings

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. Interception 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. Non-contact water will be captured and released no natural water courses to reduce the hydrological impacts. Weirs will be constructed on Sipacı and Madra Streams to monitor the flow continuously. Water quality trigger levels have been set for the Madra and Sipacı Streams. The monitoring results will be compared with the existing reference baseline 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.



8.1.2.6.3.2 Reduction of groundwater quality and quantity

Dewatering and Groundwater Abstraction Impacts

As a result of the feasibility studies performed, it has been determined that a water source with a peak flow of about 58 l/s will be required to meet the operational water need. It is planned to supply required water for the plant partly from the dewatering activities in the Kabaktepe and Karteldere pits and mine waste area the remaining part from the 6 groundwater wells in the region in case of need. In the calculations made assuming that the average annual climatic conditions will remain constant, the quantities of water to be supplied from the pits and the mine waste area and the quantities of water to be obtained by wells are given in Table 36 on an annual basis. The table indicates that an average of 40 l/s groundwater will be abstracted for project water supply.

Table 36: Amounts of Water to be Supplied from Pit Areas and Wells for Use in the Plant (l/s)

Year	Kabaktepe Pit	Karteldere Pit	Güney Zon Pit	Ballıktepe Pit	Mine waste	Total	Total need of water met by wells
1	0.95	1.08	-	-	14.42	16.45	41.25
2	1.42	1.62	-	-	14.42	17.46	40.24
3	2.46	2.16	-	-	14.42	19.05	38.65
4	4.46	2.70	-	-	14.42	21.59	36.11
5	4.73	2.70	-	-	14.42	21.85	35.85
6	4.58	2.71	0.28	0.92	14.42	22.91	34.79
7	-	-	0.42	1.39	14.42	16.22	41.48
8	-	-	0.56	1.85	14.42	16.82	40.88
9	-	-	0.70	2.31	14.42	17.43	40.27
10	-	-	0.70	2.31	14.42	17.43	40.27

A numerical model of groundwater was used to calculate the dewatering impact. The model was run for the combination of water extraction from wells and pit dewatering works to supply water for peak requirement of the plant and the changes of the impact of the cone of depression that will be formed by dewatering and water extraction from the wells at the end of the operation is provided in Figure 28 below.



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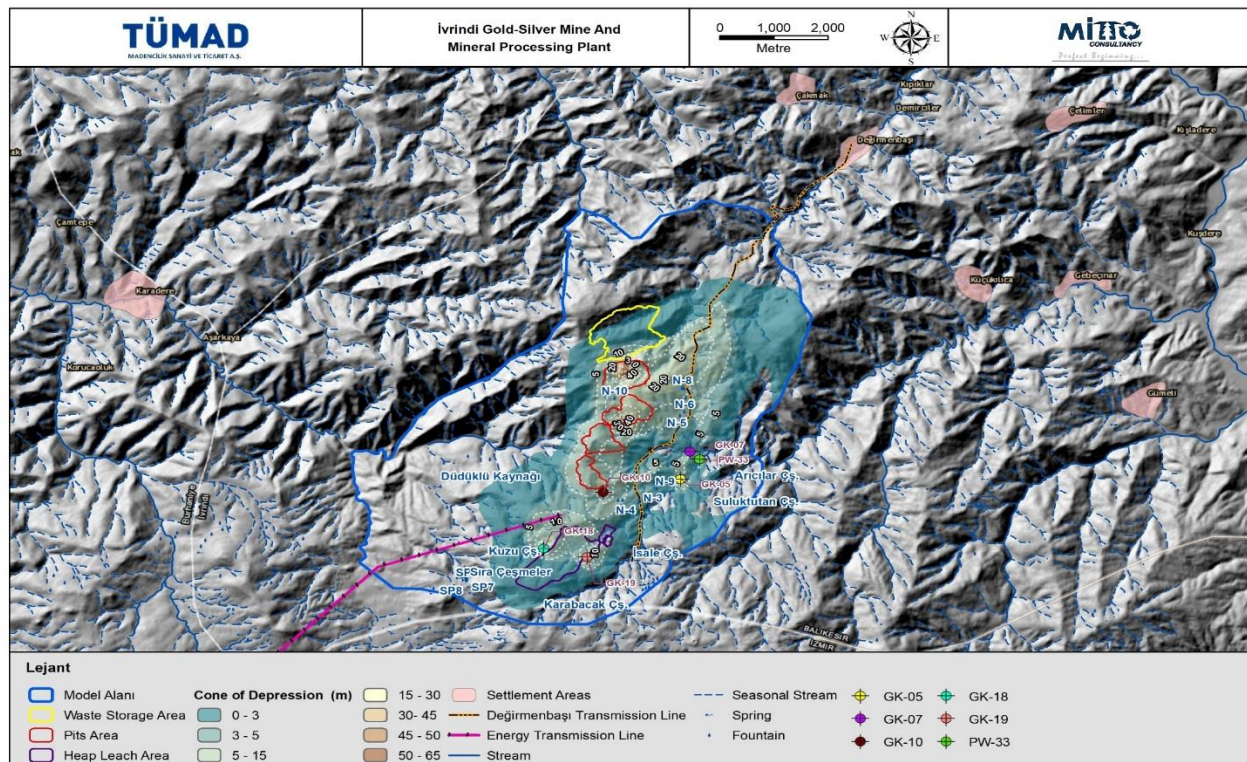


Figure 28: Locations of the Resources and Fountains Determined in the Hydro Census Studies and Where Physical Parameters were Measured and Spread of Cone of Depression in the Seventh Year of the Operation in Which the Maximum Drawdowns Caused by the Operation have Occurred

The cone of depression with sizes of about 2.5 km and 7.5 km occurs in the northeast-southwest direction in the 3rd year of the operation. Especially, while the drawdowns in the vicinity of the wells located in the south reach 25-30 m, the drawdowns reaching 18 m are observed in the north-west of the region. In the 7th year of the operation, the drawdowns in the model area reach to the highest level. In particular, with the deepening of the Karteldere and Kabaktepe pits, the drawdowns of groundwater in the regions where these pits are located are decreasing to 50 - 60 m. While the drawdowns formed by the wells located in the south of the region remain at similar values from the beginning of the operation, the spread of the drawdowns continues to expand within the model area. When the operation reached the 8th year, since backfilling was performed in the Kabaktepe and Karteldere pits located in the north of the project area, groundwater drawdowns formed in these pit areas began to be increase. On 10th year, the drawdowns formed while the spread of the cone of depression formed during the operation reaches its highest level are formed only from the wells located to the south of the plant. It was determined that the spread of the cone of depression in this last year of the operation will reach a spread of approximately 9.5 km in the northeast - southwest direction and a spread of approximately 4.0 km in the northwest - southeast direction. Dewatering activities will be performed during the operation stage of the project.

Groundwater extraction performed from the production wells have reduced the amount of groundwater input that may discharge to the pit areas due to the fact that the water table will be depleted. On the other hand, groundwater extraction from these wells increases the spread of the cone of depression and the amount of drawdown. Dödüklü springs that are located approximately 2.5 km west of the EIA area, are the most important drinking water resource of the region. As a result of the modeling studies, it is determined that the mentioned spring will not be affected by the mining activities during the course of the operation. Table 37 shows that the springs and fountains along with their users and purpose of uses as well as projected impact of the mining activities and proposed discharge compensation in the project area. Monitoring activities will continue in the springs / fountains along with the wells and streams presented in Table 37.



Table 37: Details of Springs and Fountains and Projected Impacts from Mining Activities and Monitoring Frequencies

Spring / Fountain Name	Discharge (l/s)	Type	Main population benefits from	Purpose of water usage	Predicted effect of mining activities	Monitoring frequency during the operation	Compensation Discharge (l/s)
Düdüklü Spring (DW-1)	~15.00	Spring	Street fountains open to public in Burhaniye	Potable water	Not effected	Monthly monitoring of discharges, physical parameters and chemical parameters	In case of any reduction either in quantity or quality detected, water will be provided from GK-18
Kuzu Fountain	1,00	Fountain	Livestock animals	Animal husbandry	Effected	Monthly monitoring discharges and physical parameters	In case of any reduction either in quantity or quality detected, water will be provided from GK-18
Karabacak Fountain		Fountain	Livestock animals	Animal husbandry	Not effected	Monthly monitoring discharges and physical parameters	In case of any reduction either in quantity or quality detected, water will be provided from GK-19
İsale Fountain		Fountain	Değirmenbaşı Village through a transmission line	Potable water	Not effected	Monthly monitoring of discharges, physical parameters and chemical parameters	In case of any reduction either in quantity or quality detected, water will be provided from GK-19
Arcılar Fountain		Fountain	Livestock animals	Animal husbandry	Not effected	Monthly monitoring discharges and physical parameters	In case of any reduction either in quantity or quality detected, water will be provided from PW-33
Suluktutan Fountain		Fountain	Livestock animals	Animal husbandry	Not effected	Monthly monitoring discharges and physical parameters	In case of any reduction either in quantity or quality detected, water will be provided from GK-05
Sıra Fountain	0.56	Fountain	Korucuoluk plateau residents and livestock animals	Animal husbandry and rarely drinking	Not effected	Monthly monitoring discharges and physical parameters	In case of any reduction either in quantity or quality detected, water will be provided from GK-18
SP8	0.48	Spring	Livestock animals	Animal husbandry	Not effected	Monthly monitoring discharges and physical parameters	In case of any reduction either in quantity or quality
SP11	0.79	Spring					



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SP7	0.39	Spring					detected, water will be provided from GK-18
N-1	0.71	Fountain	Livestock animals	Animal husbandry	Effectuated (especially after 6th year of operation)	Monthly monitoring discharges and physical parameters	In case of any reduction either in quantity or quality detected, water will be provided from GK-07 and/or GK-10 based on the proximity and elevation
N-2	0.9	Fountain					
N-3	0.17	Spring					
N-4	0.94	Surface Water					
N-5	0.83	Fountain					
N-6	0.14	Fountain					
N-7	0.42	Fountain					
N-8	0.36	Fountain					
N-9	0.28	Fountain					
N-10	0.6	Fountain					
N-11	0.25	Fountain					
N-12	0.24	Fountain					
N-13	0.17	Fountain					
N-14	0.4	Fountain					
N-15	0.96	Fountain					
GW-4		Groundwater				Monthly monitoring of discharges, physical parameters and chemical parameters	N/A
SW01		Surface Water					
SW03		Surface Water					
SW04		Surface Water					
SW07		Surface Water					
SW08		Surface Water					
SW09		Surface Water					
SW10		Surface Water					



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SW11		Surface Water				
GK04		Groundwater	Obsevation purposes		Monthly monitoring of GW level measurements, physical parameters and chemical parameters	
GK08		Groundwater				
GK09		Groundwater				
GK10		Groundwater				
GK11		Groundwater				
GK12		Groundwater				
GK14		Groundwater				
GK16		Groundwater				
PW-22		Groundwater				
GK13		Groundwater				
GK01		Groundwater				
GK02		Groundwater				
GK03		Groundwater				

There are other small surface springs and fountains in addition to the D      spring in the region. Some important springs and fountains could be listed as Sıra fountains, Kuzu fountain, Karabacak, İsale (the fountain from where water is supplied to the Değirmenbaşı village via a distribution line), Arıcılar and Sululuktan fountains.

Among these important springs, Sıra, Suluktutan, Arıcılar, İsale, and Karabacak fountains will not be affected from drawdowns caused by mining activities during the operation period like D      spring. Kuzu fountain, which is among these important springs within the model area, will potentially be affected from cones of depression to be caused by water extraction from two production wells (GK-18 and GK-19 located in the south of the project area) planned to be used for water supply activities. In the 7th year when the drawdowns formed in the operation are maximum, the groundwater drawdowns around Kuzu fountain reach its highest level with a drawdown of 1.50 m. However, the estimated static groundwater depth is around 30 m on the area where the Kuzu fountain is located. Since Kuzu fountain discharges as leakage through a local shallow aquifer or the weathered soils on surface but not resulted from the intersection point of the groundwater level and the surface, the probability of affecting of it directly from the drawdowns formed by the operation is relatively low. However, flow rates of this and similar springs will be monitored periodically during the operation and in case of observing any potential impact, water from the GK-19 well will be transmitted to the Karadere neighborhood, where water from the Kuzu fountain is used.

During the hydrological studies carried out in the region in 2013 and 2015, the springs and fountains in the region were visited and in-situ measurements of the physical parameters were collected. Measurements were taken in May and August. It is expected that the flow rates of the resources discharged in May with a relatively high flow rate due to melting of snow will be measured lower in the summer months. In this context the measurements were taken from 19 fountains with flow rates ranging from 0.56 l/s to 0.01 l/s.



It is expected that the N-10 fountain located between Karteldere and Kabaktepe pits and the N-5, 6, 7, 8, 14, and 15 fountains (with flow rates of 0.83; 0.14; 0.42; 0.36; 0.4 and 0.96 l/s. respectively) which are arranged along the north-south direction in a small area to the east of these pits will be affected by the drawdowns to be resulted by the operation during and after the operation. All of these fountains are shepherd fountains having low flow rates they are not used very often. They are used in livestock activities in the region. Especially, it is predicted that they will be affected as from the 3rd year of the project. In dry periods and particularly after the 6th year of the project, in case of reduction of their discharge or drying out of flow rates of these the fountains due to the increase of the cone of depression, additional water will be transmitted from the GK-07 well with a flow rate of proximately 3 l/s, which is the sum of the existing springs and fountains discharges in their natural conditions in order to maintain livestock activities in the region.

In the 10th year, where the spread of the cone of depression is maximum, groundwater drawdown occurred in Sıra fountain was calculated to be approximately 0.5 m from the model studies. In May 2015, the flow rate of the Sıra fountain was measured as 0.56 l/s. According to the results of the model prepared according to the scenario of continuous supply of water with peak flow rate to the operation for 10 years, it is expected that the drawdowns occurred due to the operation will decrease the flow rate of this fountain in a certain amount. Although there is no settlement around this fountain, scattered mountain houses in Korucuoluk plateau are used by residents and in animal husbandry activities. It will be followed by continuous monitoring whether the decline in the flow rate of the Sıra fountain will occur. In particular, as from the 6th year of the operation, the monitoring periods will be shortened and in case of a decrease in the flow rate, the amount decrease will be compensated by supplying water with a flow rate of 0.5 l/s from the GK-18 well to the region.

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 mentioned fountains, In case of water flow or quality reductions, Tümad will provide alternative water sources to replace the impacted receptors.

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

Pit Lake Development

According to the groundwater model results, after about 20 years, the drawdown formed during operation in the southern part of the pit area completely returns to its natural situation. Within 100 years, except for the regions where Kabaktepe and Karteldere pit areas are located, the groundwater levels in entire EIA area return to their natural situations. In regions where the pit areas are located, it is predicted that, 80 years later, the difference between the natural conditions will be maximum 1 m at the point where the drawdowns in groundwater level have been observed mostly. Spreads of cone of depression formed by the pit areas since the end of the operation are given for the 10th and 20th years are presented in Figure 29.

Excavation will be carried out in the Karteldere and Kabaktepe pits for the first six years and then backfilling will be carried out in these pits by using the materials excavated from the Ballıktepe and Güneyzon pits. Therefore, since back filling will be carried out following the dewatering activities in the Karteldere and Kabaktepe pits, a pit lake will not develop. The base elevations of the Güney Zon and Ballıktepe pits remain above the groundwater level and it is foreseen that any serious ponding will not be observed in these pits due to high transmission shown by the semi-permeable Miocene aged sub-volcanites where pits are opened, especially along the discontinuity zones.



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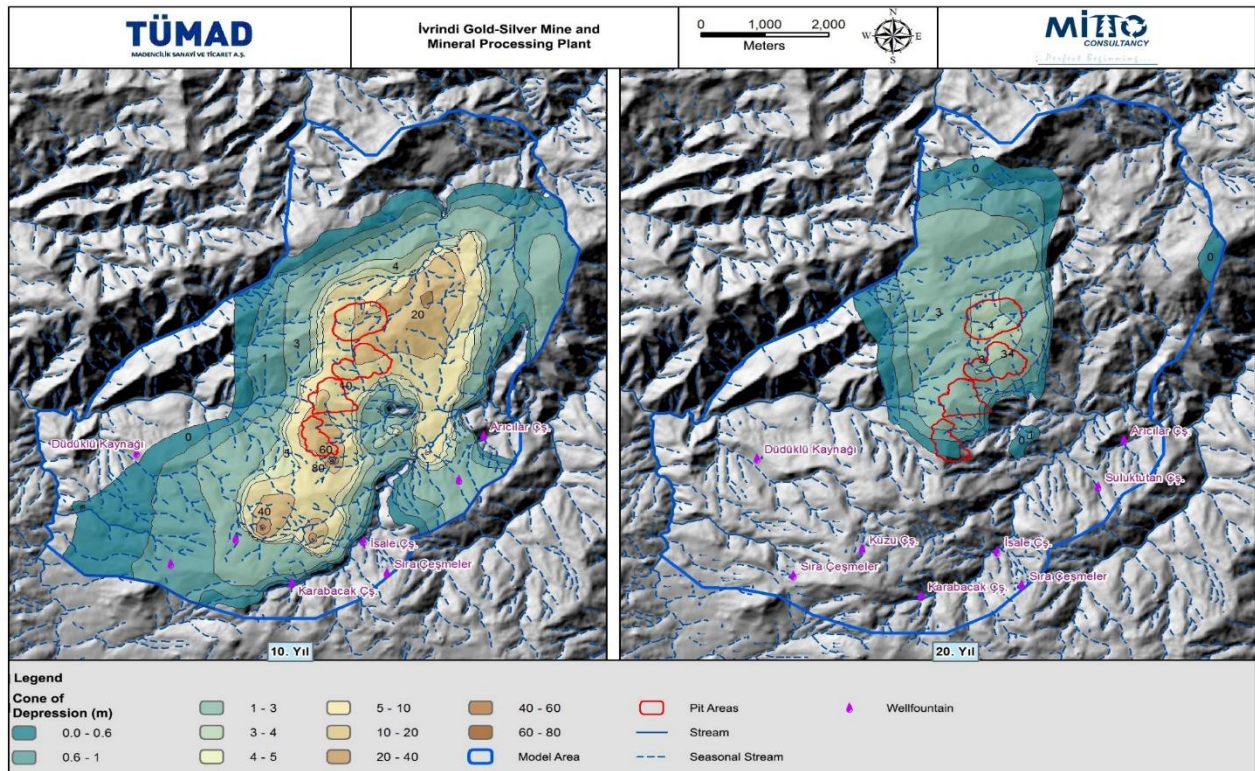


Figure 29: Spreads of Cone of Depression Formed by the Pit Areas for the 10th year and the 20th year after the end of the operation

Contaminant Transport

Within the scope of the İvrindi Project Impact Assessment Report on Water Resources, scenarios of pollutant infiltration into the groundwater from the heap leach area and mine waste storage area were investigated as a worst-case scenario. The groundwater flow model for understanding the duration of pollutant discharges to receiving atmosphere has been rebuilt and impacts of virtual pollutants on the hydrogeological system have been investigated.

Model was established with the assumption that any pollutant of 100 units for the leach area was continuously released for 10 years during which the mining activities continued, and at the end of 10 years (when the project is completed) the release stopped considering the facility will not be operational and will be capped with low permeable cover systems. For the mine waste storage area, the scenario in which a pollutant of 100 units is released continuously under the entire area following commencement of the operations was modeled.

In case of existence of a potential pollution that may spread from the mine waste area, it is seen that the pollution will spread in a southerly direction. In the 20th year of the closing of the operation, the amount of pollutants in the mine waste area decreases to 50% and to 20% in the 50th year. 100 years after the closing of the operation, the concentration of the pollutant in the whole area decreases to below 10% of the initial concentration. It is understood that 80% - 90% of the initial pollutant concentration of 100 units defined to the model will decrease and became ineffective within the first 50 years and it will be removed to a large extent at the end of the 100th year.

In case of possible pollution spreading on the base of the mine waste area, the pollutant cloud will spread with the Akpınar creek (a lower drainage of the Karadere catchment basin) in the south direction along the boundary of the Ballık and Kabaktepe micro basin (a lower drainage of the Madra Creek catchment basin) and reach the bases of the seasonal creeks providing water to the with the Karadere and Madra Creek approximately 50 years later. However, a concentration of less than 5% of this spread pollutant can only reach the mentioned creek bases and spread through the creek bases by diluting over time. The baseflow contribution of small amount of contamination could be expected in these creeks. However, such contaminant contribution is very unlikely from modeling results, the streams will be periodically monitored to during and after the operation. On



the other hand, no pollutant transport is observed to Sipacı stream bed to the northward along the mine waste area. Even though, mining activities have low risk of posing any danger to the streams, they will be monitored regularly in case of any unpredicted problem occurs. Monitoring schedule of the streams during the operation is monthly. 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.

As a result of modeling, it is seen that a point pollutant source that may spread from the leach area will show a approximate circular spread and then, within 20 years, maximum 20% of the initial pollutant may be remained in a small area at the center point of the pollutant cloud and the pollutant will decrease and be removed almost completely within 40 years. The heap leach site will be monitored by groundwater monitoring wells and as an early warning measure a leak detection system will be constructed to identify any leakage before it seeps into the groundwater. It is expected that the water qualities will not be adversely impacted by applying the identified mitigation measures and the heap leach will not seriously impact the water resources in the vicinity.

Groundwater quality will be monitored by monitoring wells located around and downstream of the project facilities in order to identify the seepage and movement of any leachate within groundwater. If such contamination were to be detected, Tümad would undertake remedial action to address the source and migration of leachate, preventing it from migrating out of the EIA Permitted Area.

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 and resulting impact factors.

The impact factors include:

- Heap Leaching and cyanide usage
- 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
- Dumping of waste rock (dust, seepage water quality)
- Water quality changes in receiving streams and aquifers (leachate from the pits, waste rock dump and Heap Leach facilities),
- Pit lake development

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

8.1.2.7 Mine Closure Management

A mine closure management plan was drawn up by TÜMAD 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 below.



Table 38 Mine Closure Objectives and Key Approaches

Objective	Key Approaches
Return as much land as possible back to its original state and usage	<p>Clean up of mine areas, re-contouring to match the surrounding topography</p> <p>Rehabilitating disturbed areas with the aim to return land to conditions similar prior to construction</p> <p>Replanting and reseedling disturbed areas as outlined in the Framework Biodiversity Action Plan</p> <p>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</p>
Minimise risks to the environment	<p>Capping the WRD to minimize ARD generation</p> <p>Washing the HLF as part of the closure process to remove reagents and potential contaminants</p> <p>Capping the HLF to minimize ARD generation</p>
Minimising safety risks to local communities	<p>Removal and appropriate disposal of all wastes, chemicals, reagents and materials from the EIA Permitted Area</p> <p>Demolition and removal of surface infrastructure</p> <p>Disposal of all inert demolition materials and wastes</p> <p>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</p>
Minimising economic disruption to the workforce and local communities	<p>Demobilisation of the workforce and provision of support to employees in finding suitable new employment</p> <p>Develop a long-term community development strategy focused on closure from the outset. The objective will be to ensure that</p>

The impacts and planned mitigation and monitoring strategies have been concisely summarized in . 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.



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Table 39: Commitments within the Turkish EIA

Reference	EIA Commitment
Land Use Ivrandi Chapter (6) Chapter (9)	<p>Ivrandi Project- Impact regarding land use: Land use of more extensive in a mine operated by opencast mining. Another factor in terms of land use is the fact that opencast mining produces more GR compared to underground and therefore requires more storage area aboveground. Thus, taking measures in order to control visual impact and potential impact on the habitat due to reduction in vegetation is particularly important in the case of opencast mining. For these reasons, rehabilitation (restoring the nature) following site operations is a crucial necessity in terms of minimizing the impact of opencast mining. Rehabilitation activities must be carried out in a greater area and based on a good plan as GR storage area created due to high ratio of land use requires quite an amount of land. This may increase rehabilitation costs.(Chap 6)</p> <p>Topsoil, that is ensured to be stored under suitable conditions without loss of land preparation and construction stage and loss of productivity during the operation phase in the project area, shall be reused within the scope of rehabilitation works to be carried out in parallel with closing studies. In this regard, the project area shall be contributed to the rapid recovery of a landscape identity in the post-operation period, in accordance with the ecological balance of the project and other uses in the environment. The top soil shall be prevented from coming into contact with any contaminants while being transported to and from the rehabilitation areas. During the rehearsing of the upper soil during the rehabilitation work, a slightly rough and loose texture shall be formed on the surface and a suitable environment for planting studies shall be prepared. Following the laying process, the soil shall be buried with the aim of preventing the top soil from being trapped by human and vehicle traffic.(Chap9)</p>
Ivrandi Top Soil Stripping and Storage (Chapter2.1)	<p>The purpose of the construction activities is to prevent any lasting effect on the top soil existing in the project area and to save the upper soil to the rehabilitation works to be carried out in the progressive stages of the project, the top soil in the areas where the project units shall be constructed shall be stripped away.</p> <p>The aim of reducing the amount of land to be squeezed and contaminated by heavy machinery, construction equipment and personnel on the field shall be limited only by working areas and on-site service roads, and shall not go beyond these areas.</p> <p>Temporary and permanent erosion control methods shall be applied against erosion risks on construction sites. In this context, embankment and drainage channels, cutting structures and slope breakers shall be created for the control of surface flow, and mulch application shall be made. Where necessary, the channels shall be covered with riprap and mortar riprap and the risk of wear and erosion shall be minimized.</p> <p>Uncontaminated waters collected with ventilation channels shall be discharged to the receiving center. If necessary, it shall be collected in the water collecting pools to be constructed within the scope of the project and used in the system.</p>
Heap Leach Facility	HLF will have a composite liner foundation composed of 50cm of $k < 10^{-9}$ m/s clay and 2mm HDPE Geomembrane liner.
Ivrandi Waste Rock Storage Area (Section 2.1)	<p>Soil pollution that may occur in case of contact with contaminated surface waters coming into contact with the soil environment due to contact with contaminated surfaces in the pit , Waste Rock storage area, heap leaching area and other facilities;</p> <p>Pollutant effects that can form on the soil environment as a result of dusting from open pit area, Waste Rock Storage area, crushing plant;</p>



IVRINDI- SIP

Reference	EIA Commitment
	<p>The Waste Rock to reveal within scope of the project shall be stored at approximately 100 hectares Waste Rock storage area. Waste Rock, which shall be produced from Kartel and Kabak quarries which shall be produced in the first 6 years of the project, shall be stored in the storage area while some of the Waste Rock shall be stored in South and Ballık quarries in the next stage of the operation and some of them shall be used in rehabilitation of Kartel and Kabak pits.</p> <p>Covering Waste Rock storage and heap leaching areas with cover systems and regeneration of vegetation cover over the areas shall have the least impact on the risk of erosion and sediment transport and soil resources that may arise from these areas. However, the cover closing process shall minimize the risk of ARD formation and metal release by reducing water contact and oxygen content in the units that are shut down after operation.</p>
Ivrindi Open Pit Areas (Section 2.1)	<p>Following completion of operation activities at open mine sites, partial backfill shall be applied with Waste Rock. Therefore, both considerable amount of materials shall be recycled to the site and water accumulation shall be prevented on the mine ground. However, the potholes that are filled back shall be protected against the effect of air and precipitation, which shall reduce the risk of erosion and ARD formation.</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 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 waters falling on the waste rock and passing to the surface flow with the waste rock.</p> <p>During the operation and until the end of the rehabilitation, surface waters will be transmitted through the interception channels to the natural drainage in the downstream without contacting the waste rock. In order to prevent erosion and sediment transport, measures such as plantation and/or use of rip-rap, etc. will be taken, stability of outlet structures of will be ensured, and additional structures for sediment retaining will be built at the outlets if necessary.</p>
Heap Leach (Ivrindi)	<p>Sampling and analysis will be carried out regularly in accordance with the underground water observation and monitoring program on the observation wells in the upstream and downstream areas of the heap leach. Water quality monitoring will be carried out in the heap leaching area including the operation and post-closure period. Regular monitoring will be performed in the lower drainage collection system to understand the presence of leaks in the bulk leachate material.</p> <p>The heap leach will be rinsed (rinse using recycled water) during the closure period. After completion of the operation and rinsing of the heap leach facility a suitable cover layer will be created to meet the specifications for a top cover required Class I landfills as set out in the ADDDY regulation or the mine waste regulation. Further studies will be conducted to develop the water balance of the heap leach facility and for the management of rinsing water during closure including treatment of the rinsing water or installation of evaporators, or partially covering the Heap Leach Pad during operation etc.</p> <p>With the monitoring program to be carried out during the construction, operation and post-closure periods, monitoring works will be carried out regularly in the observation wells and sub-lining drainage system at the heap leaching site, and in addition to this, an environmental monitoring program will be carried out after the closure. [monitoring will be conducted during operations and during the post-closure phase]</p> <p>Heap Leach facility will be capped with a low permeable cover during the closure. Since the top cover to be formed with mineral material on the heap after the washing will prevent contamination of precipitation waters falling onto the heap and then passing to the surface flow, no impact on the surface waters due to surface flows will occur. [the top cover will prevent leachate from impacting water quality]</p>



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:

- Land Use
- Soil;
- Water Resources;
- Geology
- Air
- Noise
- Flora
- Fauna
- Socio-economic conditions
- Cultural Heritage

The detailed individual results the Cumulative Impact Assessment for each factor can be found in Appendix 5 of the EIA. Ultimately, it was determined that the implementation of the existing and planned projects together with Ivringi Project will not change defined level of impacts compared to the case where only Ivringi Project is implemented.

8.1.2.9 Conclusions

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



Table 40: 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 addressed below.

There is an ESMS Framework (TMD_EYS_PLN.004) document 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.



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- 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 Ivirindi 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
- Water Resources 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 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.
- 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 and Safety, Security Management Plan

A list of 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.
- There will be a road safety awareness training for the local community members particularly 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 and Safety, Security 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 CYNIDE Code which would be 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.



IVRINDI- SIP

- 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 Action 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 Action Plan
- Explosives and Hazardous Materials Management Plan

A list of mitigation measures defined for management of **impacts on water resources** are presented in Hydrogeological Impact Assessment Report.and in the following Table.



Table 41: Water Resources Construction Phase Impacts and Mitigation Measures

Impact	Receptor	Receptor Sensitivity	Impact Categorisation	Magnitude of Impact	Potential Effect Significance	Design and Mitigation Measures	Management Plans, Policies and Procedures	Residual Effect Significance
Reduction of surface water quantity and loss of surface water features under permanent mine facilities.	Surface water receptors (ephemeral creeks/springs) including Sipacı Stream, Madra Stream and Mal Creek	Medium	Type Direct Duration Long-term Coverage Local Likelihood Certain	Medium	Adverse medium	When the construction phase is started, interception channels will be constructed. Through these channels, non-contact water will be discharged back into their natural drainage. The reduction in surface water quantity will be limited during the construction stage.	Water Resources Management Plan	Low
Deterioration of surface water quality – Contamination from sedimentation	Surface water receptors including Sipacı Stream, Madra Stream and Mal Creek	Medium	Type Direct Duration Long-term Coverage	Low	Adverse minor	The water at the project site will be classified into non-contact and contact water. Diversion channels will discharge non-contact water back into the natural drainage. Work areas will be equipped with appropriate drainage systems to minimize the amount of surface flow and contact water development. Temporary settling ponds will also be installed downstream of work areas to capture surface water run-off and allow	Water Resources Management Plan	Negligible



IVRINDI- SIP

Impact	Receptor	Receptor Sensitivity	Impact Categorisation	Magnitude of Impact	Potential Effect Significance	Design and Mitigation Measures	Management Plans, Policies and Procedures	Residual Effect Significance
			Local Likelihood Likely			sedimentation to settle-out prior to being released into the environment or the contact water will be re-used for dust suppression. Construction wastes will not be poured into streams.		
Deterioration of surface water quality - Contamination caused by accidental spills	Surface water receptors (ephemeral creeks and local streams) including Çalkaya, Ayvacık,, Andız, Kabarlı, Madra creeks	Medium	Type Direct Duration Long-term Coverage Local Likelihood Unlikely	Low	Adverse minor	Implementation of pollution prevention and control measures will mitigate impacts on surface and groundwater quality in relation to contamination from accidental spills. Immediate remedial action in the event that there is a spill will prevent the contaminants from entering watercourses and seeping into the groundwater. Such potential issue is included in the Hazardous Substances Management Plan and the Emergency Response Plan.	Water Resources Management Plan Hazardous Materials Management Plan	Negligible
Reduction of ground water quantity and loss of drinking water features under permanent mine facilities.	Springs and fountains used for drinking purposes including Düdüklü, İsale, and Sıra Fountains	High	Type Direct Duration Long-term	Medium	Adverse minor	Since groundwater extraction will be limited during the construction period, no impact is expected on the surrounding resources. Continuous water level monitoring will be carried out from the wells and the	Water Resources Management Plan	Negligible



IVRINDI- SIP

Impact	Receptor	Receptor Sensitivity	Impact Categorisation	Magnitude of Impact	Potential Effect Significance	Design and Mitigation Measures	Management Plans, Policies and Procedures	Residual Effect Significance
			Coverage Local Likelihood Definite			groundwater level changes will be checked. If the observed groundwater drawdowns are more than the expected drawdowns. the pumps will be deepened or new wells will be opened.		
Deterioration of groundwater quality due to spills	Project site unsaturated zone (groundwater receiving environments)	Medium	Type Direct Duration Short-term Coverage Local Likelihood Highly Unlikely	Low	Adverse moderate	Best Management Practices will be implemented for the storage and use of hazardous materials, oils, lubricants, chemicals and fuel. Immediate remedial action if there is a spill will prevent the contaminants from entering watercourses and seeping into the groundwater. This issue is included in the Hazardous Substances Management Plan and the Emergency Response Plan.	Water Resources Management Plan Hazardous Materials Management Plan	Negligible

Table- 42. Impacts of Operation Phase and Impact Mitigation Measures



IVRINDI- SIP

Impact	Receptor	Receptor Sensitivity	Impact Categorization	Magnitude of Impact	Potential Effect Significance	Design and Mitigation Measures	Management Plans	Residual Effects
Reduction of surface water quantity	Surface water receptors (ephemeral creeks/springs) including Sipaci Stream, Madra Stream and Mal Creek	Medium	Type Direct Duration Long-term Coverage Local Likelihood Certain	Medium	Adverse Moderate	Diversion and drainage channels were designed to pass non-contact water to the surrounding rivers. Collected contact water will generally be pumped back to the Processing facility for re-use to reduce additional water needs of the facility.	Water Resources Management Plan	Minor
Deterioration of surface water quality	Surface water receptors (ephemeral creeks/springs) including Sipaci Stream, Madra Stream and Mal Creek	Medium	Type Direct Duration Long-term Coverage Local	Medium	Adverse Moderate	Limit non-contact water coming into contact with the waste storage, leach area and pits by diversion channels. Collect run-off water from the project areas by interception channels and collect in the contact water ponds lined with geomembrane. Direct precipitation runoff from pit walls will report to a collection sump and returned for re-use in the operation. Periodic water quality monitoring at the downstream of the streams and the receptors. If significant changes to water chemistry are identified, investigate appropriate mitigations. Including construction of a treatment facility if necessary.	Water Resources Management Plan	Minor



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Impact	Receptor	Receptor Sensitivity	Impact Categorization	Magnitude of Impact	Potential Effect Significance	Design and Mitigation Measures	Management Plans	Residual Effects
			Likelihood Certain			<p>The Monitoring plan is presented in the water resources management plan.</p> <p>Groundwater model and the geochemical models-water quality estimates will be reviewed and updated annually and will be compared with the monitoring results.</p>		
Aquifer drawdown due dewatering Reduction of ground water quantity and loss of drinking water features	Project area groundwater receptors, Yahu, Madra and Karadere Catchments	High	Type Direct Duration Long-term Coverage Local Likelihood Certain	High	Adverse Major	<p>Continuous water level monitoring will be carried out from the wells and the groundwater level changes will be checked.</p> <p>During operation period permitted water removal rates were limited to ensure the sustainability of existing aquifer and to avoid significant adverse impacts on other water users. Water requirement of the plant has been provided from the dewatering activities as much as possible and thus. groundwater drafting has been minimized.</p> <p>If the observed groundwater drawdowns are more than the expected drawdowns. the pumps will be deepened or new wells will be opened.</p> <p>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.</p> <p>The fountains found in the vicinity of the project area will be monitored periodically. In case of any impact is detected alternative water sources will be provided to replace the impacted ones.</p>	Water Resources Management Plan	Minor
Aquifer drawdown	Project area groundwater	Medium to High	Type	Medium	Adverse Moderate	Continuous water level monitoring program at the observation wells to monitor the progress of the cone of depression.	Water Resources	Minor



IVRINDI- SIP

Impact	Receptor	Receptor Sensitivity	Impact Categorization	Magnitude of Impact	Potential Effect Significance	Design and Mitigation Measures	Management Plans	Residual Effects
due dewatering	aquifer and receptors		Direct Duration Long-term Coverage Local Likelihood Certain			Continuous monitoring of the water resources will be done to verify the validity of the model and the model will be updated in annual basis using the data collected from the project site. Monthly flow monitoring program at the fountains and springs. Provide alternative water sources to replace the impacted ones.	Management Plan	
Deterioration of groundwater quality	Project area unsaturated zone (groundwater receptors) Yahu, Madra and Karadere Catchments	High	Type Direct Duration Long-term Coverage Local Likelihood	Medium	Adverse Moderate	Limit non-contact water by diversion channels. The Heap Leaching Facility will be completely lined with geo-membrane. Construct underdrains beneath the waste storage area to collect the seepage. Direct precipitation runoff from Pit walls will report to a collection sump. Contact water will be returned for re-use in the operation as much as possible. Water sent to the facility for re-use purpose will be monitored to make sure its water quality complies with the process water standards. Periodic water quality monitoring at the observation wells and the receptors. If significant changes to water chemistry are identified,	Water Resources Management Plan	Minor



IVRINDI- SIP

Impact	Receptor	Receptor Sensitivity	Impact Categorization	Magnitude of Impact	Potential Effect Significance	Design and Mitigation Measures	Management Plans	Residual Effects
			Likely			investigate appropriate mitigations including construction of a treatment facility if necessary		
Deterioration of groundwater or surface water quality due to spillages	Project area aquifer and groundwater receptors, Yahu, Madra and Karadere Catchments, and springs and fountains	High	Type Direct Duration Long-term Coverage Local Likelihood Likely	Medium	Adverse Moderate	Best Management Practices will be implemented for the storage and use of hazardous materials, oils, lubricants, chemicals and fuel. Immediate remedial action in the event that there is a spill will prevent the contaminants from entering watercourses and seeping into the groundwater.	Water Resources Management Plan Hazardous Materials Management Plan Emergency Response Plan.	Negligible



Table 43: Impacts of Closure Phase and Impact Mitigation Measures

Impact	Receptor	Receptor Sensitivity	Impact Categorisation	Magnitude of Impact	Potential Effect Significance	Design and Mitigation Measures	Management Plans, Policies and Procedures	Residual Effect Significance
Deterioration of surface water quality	Surface water receptors (ephemeral creeks and local streams)	Medium	Type Direct Duration Long-term Coverage Local Likelihood Likely	Medium	Adverse Minor	Limit contact water generation by capping the waste storage area. Retain surface water diversion channels. Develop detailed closure plan	Closure Plan	Negligible
Reduction of surface water quantity	Surface water receptors (ephemeral creeks and local streams)	Medium	Type Direct Duration Long-term Coverage Local	Medium	Adverse Moderate	Develop detailed closure plan and maintain the surface flow as much as possible	Closure Plan	Adverse Minor



IVRINDI- SIP

Impact	Receptor	Receptor Sensitivity	Impact Categorisation	Magnitude of Impact	Potential Effect Significance	Design and Mitigation Measures	Management Plans, Policies and Procedures	Residual Effect Significance
			Likelihood Likely					
Reduction of groundwater quantity	Project area groundwater aquifer	High	Type Direct Duration Long-term Coverage Local Likelihood Likely	Medium	Adverse Moderate	Develop detailed closure plan and stop dewatering after the cessation of mining. Aquifer will recover in time.	Closure Plan	Negligible
Deterioration of groundwater quality	Karteldere and Kabaktepe pits and Receiving groundwater aquifer	High	Type Direct Duration Long-term	Medium	Adverse Moderate	Kabaktepe and Karteldere pits will be backfilled by the material obtained from Ballıktepe and Güneyzon pits excavation. Develop detailed closure plan.	Closure Plan	Negligible



IVRINDI- SIP

Impact	Receptor	Receptor Sensitivity	Impact Categorisation	Magnitude of Impact	Potential Effect Significance	Design and Mitigation Measures	Management Plans, Policies and Procedures	Residual Effect Significance
			Coverage Local Likelihood Likely					
Deterioration of groundwater quality	Ballıktepe and Güneyzon pits, and receiving vadoze zone and groundwater aquifer	High	Type Direct Duration Long-term Coverage Local Likelihood Likely	Medium	Adverse Moderate	Partial backfill of the pits, cover the PAG rock on the pit walls by NAG material. Develop detailed closure plan.		



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

A summary of the baseline results and of the impact assessment is given in the sections below. The full document “Priority biodiversity Features and Critical Habitat Assessment” is available in Critical Habitat Assessment Report.

8.2.1 Baseline Studies

The Project is situated in the “Anatolian Conifer And Deciduous Mixed Forests” ecoregion (PA1202)³ which is considered part of the broader category “Mediterranean Forests, Woodlands and Scrub”. This mountainous ecoregion lies forms a transitional zone among Mediterranean, Euro-Siberian and Irano-Turanian vegetation types. Dominant vegetation includes pure pine forests and mixed pine and oak woodlands and shrublands.

The **flora** present in the LSA is dominated by elements typical of the Mediterranean phytogeographic region.

In the field surveys, carried out between 2013 and 2016 in the LSA, 206 taxa belonging to 49 families, 170 genus and 182 species were determined. Out of these species, 4 are endemic of Turkey, and in particular:

- one is a widespread endemic species:
 - *Campanula lyrata* subsp. *lyrata*, LC;
- two are regional endemic (e.g. limited to the Mediterranean region):
 - *Crocus biflorus* subsp. *nubigena*, LC;
 - *Verbascum parviflorum*, LC; and
 - *Minuartia juressi* subsp. *asiatica* LC.

One species, *Cyclamen hederifolium*, is considered a vulnerable (VU) in Turkey and therefore triggers the definition of Priority biodiversity Features (PBF).

The **fauna** present in the LSA was determined by local experts, based on field surveys carried out between 2013 and 2016 and literature review. As result, 7 amphibian, 19 reptile, 65 bird and 22 mammal species were identified. None of these species is endemic, but 6 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).

³ According to Terrestrial ecoregions identified by WWF (<http://www.worldwildlife.org/biomes>)



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 Priority Biodiversity Features and Critical Habitat Assessment. The majority of the LSA (86%) is occupied by natural habitats and in particular woodlands defined according to the EUNIS system as “[Pinus nigra] woodland” (36%) and “G3.7 Lowland to montane mediterranean [Pinus] woodland (excluding [Pinus nigra])” (19%). E1.2 Perennial calcareous grassland and basic steppes” are also present at higher elevations (20% of the LSA). Modified habitats cover only 14% of the LSA. Permanent rivers (C2.2 Permanent, fast, turbulent watercourses) with a highly seasonal flow are present around the Project area.

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.

No Critically Habitat was observed within the LSA.

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 about 30 km from the LSA. The park is included in a wider Key Biodiversity Area (KBA), which also corresponds to an Important Bird Area (IBA), both named “Kaz Mountain” and situated about 10 km away from the LSA. The boundaries of the Important Plant Area (IPA) “Kaz Dagi” are situated at about 20 km from the LSA.

Table 44: EUNIS habitat types present in the EIA area and in the LSA

Habitat Type	Total LSA	
	ha	%
<u>Modified habitats</u>		
I1.2 Mixed crops of market gardens and horticulture	2403,24	14
J1.2 Residential buildings of villages and urban peripheries	41,23	<1
<i>Subtotal modified habitats</i>	<i>2444,47</i>	<i>14</i>
<u>Natural habitats</u>		
C2.2 Permanent, fast, turbulent watercourses	111,51	<1
E1.2 Perennial calcareous grassland and basic steppes	3418,37	20
G1.7 Thermophilous deciduous woodland	1847,22	11
G3.5 [Pinus nigra] woodland	6208,54	36
G3.7 Lowland to montane mediterranean [Pinus] woodland (excluding [Pinus nigra])	3339,17	19
<i>Subtotal natural habitats</i>	<i>14924,81</i>	<i>86</i>
Total (ha)	17369,28	100



8.2.2 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.

8.2.2.1 Construction Phase

The potential impacts that could affect natural habitats and Priority Biodiversity Features 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 [Pinus nigra] woodland (G3.5, 4% of the total habitat present in the LSA) and perennial calcareous grassland (E1.2, 4% of the total habitat present in the LSA). Thermophilous deciduous woodland (G1.7), mediterranean [Pinus] woodland (G3.7) 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 affect a total of 7% of the LSA. Indirect impacts in the 100 m buffer will be mainly on semi-natural habitats [Pinus nigra] woodland



(G3.5, 9% of the total habitat present in the LSA) and perennial calcareous grassland (E1.2, 8% of the total habitat present in the LSA) and mediterranean [Pinus] woodland (G3.7, 3% of the total habitat present in the LSA).

Indirect impacts in the 300 m buffer deriving from noise and vibration could affect a total of 17% of the LSA. Indirect impacts within the 300 m buffer will be mostly on semi-natural habitats [Pinus nigra] woodland (G3.5, 22% of the total habitat present in the LSA) and perennial calcareous grassland (E1.2, 18% of the total habitat present in the LSA) and mediterranean [Pinus] woodland (G3.7, 10% of the total habitat present in the LSA).

The overall impacts value for the PBFs are summarized in the table below, considering mitigation measures presented in section 8.2.3.

Additional studies on vulnerable flora and 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.

Table 45: Overall residual impacts on PBFs during construction

Receptor	PBF/CH	Receptor sensitivity (S)	Mitigation Measure (M)	Overall Impact value
<i>Cyclamen hederifolium</i>	PBF	Medium	Low	Low
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

8.2.2.2 Operation Phase

The potential impacts that could affect natural habitats and Priority Biodiversity Features 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 habitat loss will affect 2% of the total LSA. Most of the direct impacts will be on natural habitats and, in particular, on [Pinus nigra] woodland (G3.5, 4% of the total habitat present in the LSA) and perennial calcareous grassland (E1.2, 4% of the total habitat present in the LSA). Thermophilous deciduous woodland (G1.7), mediterranean [Pinus] woodland (G3.7) 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 contamination of soil and surface water could affect a total of 4% of the LSA. Indirect impacts in the 100 m buffer will be mainly on semi-natural habitats [Pinus nigra] woodland (G3.5, 7% of the total habitat present in the LSA) and perennial calcareous grassland (E1.2, 4% of the total habitat present in the LSA) and mediterranean [Pinus] woodland (G3.7, 3% of the total habitat present in the LSA)

Indirect impacts in the 300 m buffer deriving from noise and vibration could affect a total of 10% of the LSA. Indirect impacts within the 300 m buffer will be mostly on semi-natural habitats [Pinus nigra] woodland (G3.5, 15% of the total habitat present in the LSA) mediterranean [Pinus] woodland (G3.7, 10% of the total habitat present in the LSA) and perennial calcareous grassland (E1.2, 9% of the total habitat present in the LSA).



The overall residual impacts for the PBFs are summarized in the table below, considering mitigation measures presented in section 8.2.3.

Additional studies on vulnerable flora and 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.

Table 46: Overall residual impacts on PBFs during operation

Receptor	PBF/CH	Receptor sensitivity (S)	Mitigation Measure (M)	Overall Residual Impact value
<i>Cyclamen hederifolium</i>	PBF	Medium	Low	Low
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

8.2.2.3 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 PBFs 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 PBFs are described in Critical Habitat Impact Assessment Report. The potential impacts deriving from the above impact factors that could affect PBFs 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).

During the decommissioning phase, indirect negative impacts deriving from reclamation activities, such as increased exposure to atmospheric pollutants, increased exposure to contamination of soil and surface water, behavioural changes due to noise and vibration and spreading of alien species, could have a negative effect on biodiversity. Positive impacts on biodiversity are expected from the recreation of morphology and hydrology and recreation of morphology and hydrology. Moreover, the Decommissioning and Closure Plan will include mitigation and monitoring activities to avoid or limit any potential negative impact.

The restoration of the disturbed areas will allow to reclaim part of the mine site with a positive effect on biodiversity. However, it is expected that some areas will not be returned to their natural state during the closure and post closure period.



The slopes of the open pits will be excavated in order to be more in line with natural morphology. Moreover, waste rock dump and the heap leach will be sealed with a cover layer that may comprise an upper layer of soil to allow partial reclamation and planting. However, it is unlikely that these areas will have an ecological function similar to their original at the end of this phase, therefore areas are considered as partially reclaimed at closure.

The areas that are expected to be fully reclaimed at closure are 18% of the area directly impacted by the Project for a total of 64,53 ha. While the remaining 82% (293,35 ha) of the area directly impacted by the Project is expected to be only partially reclaimed at closure

A few general considerations are given below for PBFs in absence of a Decommissioning and Closure Plan.

- this phase of the project is not expected to have any additional negative impact on *Cyclamen hederifolium*, provided that appropriate mitigation rehabilitation measures are put in place.
- partially reclaimed areas are expected to have a habitat suitability similar or even higher than pre-construction conditions for vulnerable fauna species, provided that appropriate decommissioning and rehabilitation actions are put in place

8.2.3 Mitigation measures

8.2.3.1 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:
 - 1) 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.
 - 2) 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 vulnerable and endemic species will be collected follow the best practice indicated by the Millennium Seed Bank. and donated to the Ankara Seed Bank⁴. If needed depending on seed availability, seed collections will be repeated on multiple years within the LSA;
 - individuals of *J Cyclamen hederifolium* 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.
- 3) 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.
- 4) 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.
- 5) 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).
- 6) 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:

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

⁴ (<http://www.kew.org/kew-science/people-and-data/resources-and-databases/millennium-seed-bank-resources>).



8.2.3.2 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 *Cyclamen hederifolium* 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, 1999⁵).
- 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 Bank⁶. 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
 - 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;

⁵ Bayle, P. 1999. Preventing birds of prey problems at transmission lines in Western Europe. Journal of Raptor Research 33:43–48

⁶ (<http://www.kew.org/kew-science/people-and-data/resources-and-databases/millennium-seed-bank-resources>).



- 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.

8.2.4 Monitoring actions

8.2.4.1 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 PBF 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.

8.2.4.2 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 PBF 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.

8.2.5 ESAP items

The following items are to be included in the Environmental and Social Action plan with the due dates and designated responsible parties for completion:

- 1) Implementation of all Environmental, Social, Health and Safety Management System together the issued management plans and procedures.
- 2) Preparation of a Biodiversity Action Plan in line with Biodiversity Action Plan Framework that has already been issued.

8.3 Social Impact Assessment Findings

A complete social impact assessment for the Project has been completed and presented in 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 Aol has been defined through desktop studies and the site data collection campaigns. Küçükılca, Değirmenbaşı and Karadere Villages located around the Project area. The İvrindi Project Area is located approximately 4 km from the Village of Küçükılca, 4.8 km from the Village of Değirmenbaşı and approximately 8 km away from the Village of Karadere. Although Karadere Village is 8 km away from the Project Site, it is involved in the Aol as it is affected by the forest land acquisition.

Following information include the desktop studies conducted by Mitto and the field studies conducted by SRM and Golder between 25-27 January 2017. Main features of the socioeconomic conditions are:

Table 47: Summary of Socioeconomic baseline findings focusing on directly impacted settlements

Component	Characterisation
Demography	<p>According to statistics between 2013-2016, population tends to stay constant in Villages of Değirmenbaşı and Karadere and the population decreased in Küçükılca Village.</p> <p>There is no seasonal changes in the number of population these villages.</p> <p>The average age of the population in Küçükılca is young and The average age of the population in Değirmenbaşı is younger than Küçükılca.</p>
Land use and land ownership	<p>Land acquisition will be done for the Project Site and the powerline route.</p> <p>The EIA area determined within the scope of İvrindi Project is 836 hectares in total. The area of physical EIA is 238 hectares and 4 hectares of this area is pasture and 234 hectares is forest land.</p>



Component	Characterisation
	<p>For the powerline route, it is not known whether these parcels are private land or not since the expropriation process is executed by Turkish Electricity Transmission Authority. Construction will be started on 102 hectares of land which is currently approved for use, and the remaining 147 hectares of land will be acquired during the construction and operation period.</p>
Economy	<p>The economy of the district mainly depends on agriculture. The economic activity of Değirmenbaşı, Küçükılıca and Karadere Villages are husbandry and agriculture. Majority of consulted people at Değirmenbaşı and Küçükılıca villages has a perception of livelihood resource availability to be difficult. There is a high employment expectation by TUMAD among the attendees at the focus group meetings.</p>
Infrastructure	<p>Karadere is the best village considering the roads connecting the neighbours to each other, which is pavement. However, transportation infrastructure of Değirmenbaşı and Küçükılıca Villages are not.</p> <p>Current powerline are used for electricity demand. However, there is no electricity service in Değirmenbaşı highlands in the spring.</p> <p>All settlements have sewer network.</p> <p>All settlements have drinking water reservoirs; 80 tons in Küçükılıca, 2X50 tons in Karadere. Drinking water infrastructure is sufficient and the water quality is good in both settlements. However, the mukhtar of Değirmenbaşı states that the water reservoir in the settlement is very old, not sufficient and the water quality is poor.</p> <p>Inadequate drinking water infrastructure is in the seventh place in Degirmenbaşı, while this issue is not included in the top ten problems in Küçükılıca.</p> <p>For emergency situation and other health problems, İvrindi State Hospital is preferred by the residents of Değirmenbaşı and Küçükılıca Villages ; and Burhaniye State Hospital is used by the residents of Karadere residents.</p> <p>Among the most important problems of the villages interviewed, education services is placed in the fourth order in Değirmenbaşı, the sixth order in Küçükılıca.</p>
Community health	<p>According to the mukhtar of the villages interviewed, there are no endemic diseases which are frequently seen in all three villages.</p> <p>During interviews, no epidemic disease was observed.</p> <p>In Değirmenbaşı, out of 18 people who died in the last five years, 3 died from kidney failure, 7 from old age, 3 from birth and after birth, 1 from cancer, 1 from traffic accident and 6 from other reasons.</p> <p>Inadequate health care is an important issue in the settlements.</p>
Cultural heritage	<p>As stated in the EIA there is no tangible cultural site at the mine EIA Permit Area.</p>
Vulnerable groups	<p>The number of women who would fall under vulnerable criteria is 705 as a total at villages (Karadere, Değirmenbaşı and Küçükılıca).</p> <p>Only in Küçükılıca, there is household without a land.</p>



Component	Characterisation
	<p>There are 14 people in Küçükılıca, 40 people in Karadere and 80 people in Değirmenbaşı Villages over 65 years and need livelihood support.</p> <p>The total number of handicaps is 29 at the settlements.</p> <p>The number of very poor household are 15 people in Küçükılıca, 30 people in Karadere and 100 people in Değirmenbaşı Villages.</p> <p>The number of children (0-16 ages) is 75 at Karadere, 200 at Değirmenbaşı and no information was obtained for Küçükılıca.</p>
Cumulative	The number of projects currently existing is 5, and the number of projects planned to be implemented in medium and long term is 2.

8.3.2 Impact assessment findings

The summary of impact assessment findings are presented in the following section below. The details are presented in Social Impact Assessment Report.

Baseline, Impacts and Mitigation Measures

Population

When the change in yearly population between the years of 2012 and 2016 are analysed, it is concluded that the populations of Burhaniye District and Balıkesir Province have both increased and that the population of İvrindi District has decreased (5% and between 2012 and 2016). It can be stated that the populations of Değirmenbaşı and Karadere have tended to be stable and that the population of Küçükılıca has decreased by %7.

The construction phase will start October in 2017 and will last for one year. The operational phase has been planned to start 2018 last for 10 years... Therefore **local** employment opportunities during the construction (as estimated to be 400 workers out of 4 total 500 workers) and operation (as estimated to be 160 people out of total 200 workers) phases will contribute to stabilizing the population in the settlements that are within the Area of Impact. However, because the construction phase will last only one year, the impact in this regard will also be limited to this period. During the operational phase of the Project, there will be a decrease in local employment when compared with the construction phase. Nevertheless, since the operation phase will last 10 years, it is anticipated that its ability to provide local employment will be more effective than the construction phase.

Land Acquisition

The EIA area for the İvrindi Project is composed of **836 ha of forest land 30 ha of pasture land**. According to the information obtained from Directorate of Land Registry of İvrindi, there is no agricultural area within the EIA area. .

The area that will acquired for the Project is 238 hectares, out of which 4 ha is pastureland and 234 ha is forestland. The acquisition of the land will be performed in stages; rehabilitation of the completed pits will be carried out and delivered to the related administration unit. **Of the 238 hectares, 102 hectares of land has already been acquisitioned.** Currently, 4ha of pasture land and 98 ha of forest land has been acquired. The current mine plans do not foresee further acquisition of pasture lands while 136 ha of forest land is still be acquired.

The acquisition of the remaining land will be carried out in accordance with the following time line:

- During the pre-production period- 43.7 ha of Kartaldere pit,



- During the third year- 36.6 ha of Kabak Tepe pit and During the fifth year- 53.9 ha of Ballık and Güney pit

Acquisition of pasture land: There will be decrease in the pasture lands of Değirmenbaşı. The houses and highlanders using the Suluk, Belenağıl, Çürük and Yaylacık highlands as pastures will be affected negatively by this issue... Project records show that there are no houses in the Project EIA permit area however there are houses in the close proximity to the open pits. Community Health measures are described below for these houses.

Acquisition of forest land: The current and future land acquisition of forest land will negatively affect the livestock activities that the highlanders carry out there, and therefore their sources of income. This impact is limited to the households that use forest land in Değirmenbaşı and Karadere where forest land has been affected. A decrease in the pasture land and forest land that the households are using will continue to occur during the operational phase.

Three percent (3%) of the pit areas in forest land belongs to Karadere Village, the remaining forest area (97%) belongs to Değirmenbaşı. Furthermore, the pasture lands are in the administrative boundaries of Değirmenbaşı.

No private or agricultural land will be acquired.

The acquired forest land corresponds to 0.24% of the total forest land in İvrindi District. The acquired pasture land corresponds to 0.15% of the total pasture land in İvrindi District. Also the acquired pasturelands corresponds to 6.99% of the total pastureland of Değirmenbaşı village.

Forestlands, where the activities will be carried out, have been acquired from the corresponding forest administration to enable the Project to commence operation. Permits for the remaining forestlands will be obtained stage wise as previously outlined.

The facilities and auxiliary facilities will be used during the entire life of mine as production continues. Forest permits are granted for 10 years, but before the permit period expires, the rehabilitation of the areas where operations have been completed will be carried out and delivered to the related administration unit accordingly.

It is anticipated that the energy overhead transmission line (OTL) will be completed during the construction phase. The performed land acquisition is permanent, however, the pole location areas are small. Households will be able to use the areas for which the right of easement is obtained. Within the scope of the OTL construction, land acquisition is only being performed for pole locations, which are very small

The OTL will be 7.5 km long. Expropriation of the route of the overhead power transmission line (OTL) is being performed by TEİAŞ, and the easement area is estimated to be around 37 ha. There will be 19 poles erected for the OTL which will equate to an approximate of 5.7 ha of land being acquired. By September 2017, consent have been obtained for four private parcel and the land acquisition works are ongoing.

Potential health and safety impacts of the OTL are referred 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.

A Land Acquisition Plan will be prepared for the acquisition of the remaining land acquisition requirements. This plan will include the total amount of land will be acquired in each year and the timeline of construction of the facilities and timeline for the use of these lands by operations teams.

A Livelihood Restoration Plan (LRP) will be prepared prior to operations phase in Q1 of 2018 for the users of affected lands, with a specific focus on those involved in livestock breedings in the highlands of Degirmenbasi, The LRP will be based on the principles and approach defined in the Livelihood Restoration Framework which is disclosed as part of the Lenders Supplementary Information Package (SIP). While preparing the LRP, it will be determined whether there are any fixed assets such as buildings/ shelters etc. used by highlanders within the Area of Impact and if necessary mitigation measures will be developed. The nearest house identified is in 0,6km distance to the pits.



Local Economy, Livelihoods and Employment

The economy of the Balıkesir Province is generally based on agriculture. Agriculture and animal husbandry are important sources of income in the Districts of Burhaniye and İvrindi. According to the information provided by the village headmen, the economic activities of the settlements affected by the Project are also strongly based on agriculture and animal husbandry. Communications with the village headmen indicate that the main source of income is from animal husbandry.

The Küçükılca Village Headman stated that their pastures consist of 30 decares. The Headmen of Değirmenbaşı and Karadere Villages did not specify the size of their pastures. The Headman of Değirmenbaşı Village noted that there were highlands used as pastures in the project area. The headmen reported that there were not any other pasture areas in the surroundings that could be utilized. The forestlands are used for grazing in all settlements. The houses that carry out livestock activities in Değirmenbaşı, both in highlands and the village, conduct free grazing.

As the pasture and grazing areas will decrease during operations, the houses in Değirmenbaşı and its highlands have voiced their concerns regarding the fact that the livestock activities will be damaged. Baseline data shows that the presence of cattle and sheep in Değirmenbaşı and Karadere has increased from 2012 to 2017. The number of cattle has decreased while the number of sheep has increased in Küçükılca from 2012 to 2017.

Değirmenbaşı has four highlands. These are Belenağıl, Suluk, Çürük and Yaylacık. According to the focus group discussion, there are a **total of 47 households** that **permanently reside here** and dealing with livestock husbandry. These households have reported that they use forest land and pasture land for their basic means of livelihood. These households have reported that they use the forest land and pasture land for activities such as grazing, hay making, etc. for their sheep and cattle.

Furthermore, the pasture lands are in the administrative boundaries of Değirmenbaşı.

No private or agricultural land will be acquired.

According to the villages' headmen, that although there are houses in the settlements that carry out irrigated farm in Küçükılca, their numbers are relatively small (15 households). In Karadere, all the households carry out irrigated farming. Değirmenbaşı residents utilize surface waters (stream, spring, etc.) to irrigate

The land acquisition during the construction and operation phase of the project may adversely affect the livelihood of the households in Değirmenbaşı, especially the households in **Suluk and Belenağılı highlands** that make a living via livestock activities in the vicinity of the Project Area. Since the land acquisition from Karadere is very small and there is no land acquisition in Küçükılca, it is expected that Değirmenbaşı will be affected by the negative impacts on the means of livelihood.

The Project had a local employment impact during the drilling and initial construction phase. In this respect, TÜMAD on-site team adopted an approach to allow communities to select workers to be employed locally. The project has positively contributed to skill development in the region through on the job trainings during the drilling phase which will help them to be recruited as qualified staff during operations phase.

The operation phase of the project will last for 10 years beginning from 2018. Local and regional procurement will also continue throughout the lifetime of the mine. Local procurement will have positive contributions to the economy of the region.

Encouraging the continuation of agriculture and animal husbandry in the region is of critical importance as the income resulting from employment at the mine will end up after 10 years. In addition to purchasing goods and services within the region, TÜMAD will design and implement a Livelihood Restoration Plan to mitigate the impacts on livelihoods. Furthermore, TÜMAD will develop and implement community development projects (which is beyond the mitigation) to contribute to the mitigation measures and compensation mechanisms that will be specified in detail in the Livelihood Restoration Plan with an aim to enhance agriculture and animal husbandry as well as building the capacity and skills of affected people. This topic will be covered in detail in the Livelihood Restoration Framework and the subsequent Plan.



Infrastructure and Public Services

The mine site is 7.5 km off of the Değirmenbaşı Village exit from the Balıkesir-Edremit Road. This route was used for accessing the Project until July, 2017 during the drilling phase. A new alternative route was generated by expanding the existing forest road extending from the Havran exit on the Edremit- Balıkesir road so that the number of vehicles used for transportation to the facilities via Değirmenbaşı is reduced. The previously used road is the main access Değirmenbaşı Village and its highlands. Değirmenbaşı Village and the highlands were affected by road works and the temporary traffic increase when the only access to the mine site was through Değirmenbaşı Village.

The roads that are used in common during the construction phase will be kept open and accessible at all times. The quality of the Değirmenbaşı road will be improved via expansion and repairs. The new road and the repair works on the present roads will positively affect the houses in Değirmenbaşı and the highlands. By ensuring that the roads used in common are kept open during the operational phase and that road repairs will be made throughout that period, households will be impacted in a positive way.

As mentioned, it is anticipated that the overhead transmission line will be completed during the construction phase. The electricity work to be carried out will not affect the electricity infrastructure of the settlements.

Community health and safety measures will be taken to prevent drinking water resources from being damaged during the construction and operational phases and residents will be informed of the measures being taken. Groundwater and surface waters will be continuously monitored. Efforts will be made to procure new water resources (water well, etc.) for the houses if deemed necessary.

Education and health services and/ or institutions are not expected to be affected from the Project during the construction phase, because there are no education or health services/institutions that could be affected by the Project. There will be a health unit dedicated for the workforce including a doctor in the mine.

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.

Each of these issues/impacts are assessed and detailed mitigation measures are developed as part of the environmental and social management plans of TÜMAD.

Occupational Health and Safety (OHS)

A road has been constructed and repaired for the plant area during the Project drilling works in 2017

OHS measures will be determined and implemented during the construction and operational phases in compliance EBRD requirements and ESMS system. OHS data (accidents, near misses, work day losses, etc.) will be monitored on a monthly basis. The Emergency Action Plan will be updated during the operational phase



of the Project. During the construction and operational phases, there is a possibility that communicable diseases may be transmitted from workers coming from outside the region.

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 TÜMAD will ensure that it screens employees and contractor before they are employed and on a periodic basis throughout their employment or contract, and TÜMAD 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.

OHS measures will continue to be implemented during the operation period in compliance EBRD requirements and TÜMAD's ESMS system. Revisions to these measures will be made and new measures will be developed if deemed necessary according to the relevant plans and procedures.

Cyanide Use

During the SIA studies, it is identified that residents have serious concerns regarding the health and safety impacts of the mine on the communities. The households have serious concerns regarding the use of cyanide. These concerns may increase further during the construction phase. The residents' concerns will be eased through continuous dissemination of the information in order to build positive relationships with the neighbouring communities. The households will also be informed about grievance mechanism prior to the construction phase and refreshment trainings will take place during operations.

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, TÜMAD will apply to become a 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. TÜMAD has established a detailed **Cyanide Management Plan** including worker safety, emergency response and transportation.

In addition;

- An Emergency Action Plan has been prepared by TÜMAD 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 purpose⁷.
- 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.

Traffic

There are accident risks associated with the construction phase due to increased traffic density. TÜMAD tried to avoid traffic risks during the design by undertaking these two measures:

- The internal roads will be closed to the public use and will only be used by the Project, therefore they present no risk of accident to the settlements in the region.
- An alternative route is generated by expanding the existing forest road extending from the Havran exit on the Edremit- Balıkesir road so that the number of vehicles used for transportation to the facilities via Değirmenbaşı village road is reduced during construction phase.

Traffic during the operational phase will be significantly lower compared to the construction phase.

TÜMAD has developed a Traffic Management Plan to address community safety aspects related to the Project traffic. 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.
- 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.
- 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 TÜMAD and contractor drivers. The chemical suppliers will provide evidence that their drivers have completed such trainings.

⁷The details of the Community Advisory Board are indicated in the social disputes section.



- 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.

Water

A detailed hydrogeological assessment has been carried out within the scope of environmental impact assessment studies during the planning phase of the Project. Thus forming a water management plan for the future water demand. The reduction of water resources is not an expected impact during the construction period, because the actual use of water resources will be in the operational phase. The Project's planned pit areas are generally located at relatively high elevations at the intersections of the drainage area limits of the basins. Therefore, the surface water collection drainage areas of the pits are very limited. Generally, water drainage basin areas and pit excavation areas are very close to each other. Nonetheless, in order to be able to carry out mining activities in a safe manner and in order to protect the quality of the waters entering the pit area from being affected, peripheral interception channels have been designed upstream of the Project units. Groundwater and surface water resources will be continuously monitored as per the water resources monitoring program.

The water that contacts the Project units will be collected in settling ponds. In addition, flood ponds have been designed. As mentioned, interception channels will also be employed to collect the precipitation received upstream of the Project units, before the surface runoff reaches the facilities.

Dust

During the construction phase dust emissions will be produced from the construction works. The distances of the settlements from the Project Area render the negative impacts that the dust will have on ambient air quality essentially negligible.

The dust emissions to be generated by the construction and operational phase transportation activities in Değirmenbaşı would have adversely impacted the residences in this settlement in the case of use of Village roads of Değirmenbaşı as they were used during drilling works. The road extension from Havran on Balıkesir-Edremit road has been completed and the main access to the site will be from this road. Hence, the traffic induce dust impacts on Değirmenbaşı will be minimal. In addition to the regular measurements to be carried out within the Project area during the construction and operational phases, particle and settled dust measurements will also be carried out in the Villages of Değirmenbaşı and Küçükılca which are the closest settlements. Mitigation measures will also be taken for said dust emissions.

An air quality modelling study has been performed for the project as stipulated in the EIA. The model output indicates the diffusion of dust towards east-southeast direction. Değirmenbaşı highlands are at the north of the mine site therefore no significant impact is foreseen on the highland of Değirmenbaşı where villagers may have permanent residents

Monitoring results will be reported quarterly every two months in the format reportable under ministry commitments 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.

Noise and Vibration

No blasting will take place during the construction phase; however, it is possible that the houses in nearby settlements may be disturbed by the noise of the vehicles involved with construction. TUMAD will ensure al



mitigation measures specified under Traffic management plan is followed by its own personnel by the contractors.

Küçükılca Village and Değirmenbaşı Neighbourhood are located 4 km and 4.8 km, respectively, from the Project Site. Karadere is located 8 km away from the mine site. Also the closest house to the EIA boundary at the highlands of Degirmanbasi village 0.6 km to the pits.

The modelling study presented in the EIA report indicates that the noise emission values from the Project activities decrease to the Project standard (for day time) in 380ms measured from the noise sources. Blasting will occur at regular times during the day time throughout the life of the mine operations. 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.

Noise measurements will be performed every month in the nearest sensitive receiving environments (Değirmenbaşı and Küçükılca) to determine whether the Project impacts ambient noise levels during the construction and operation phase. Particular attention will be given to those houses in the Suluk, Belenağıl, Çürük and Yaylacık highlands.

Mitigation measures to avoid adverse impacts of blasting on community health and safety TUMAD are explained in Community Health Safety and Security Management Plan. In parallel to the findings of the census as part of the LRF/LRP the noise and vibration management plan will be updated to include any identified resident houses in the highlands where the noise and vibration will be measured during operations specifically during blasting. If any vibration impact exceeding project standards are observed, the blasting patterns will be modified to reduce the impact and the noise and vibration management plan will be revised accordingly.

Also TUMAD and its contractors have committed to keep their machinery in good condition, monitor noise levels and respond to any complaints received.

Security

TUMAD commits that the management of security personnel will be compatible with the Voluntary Principles for Security and Human Rights.

During the construction and operational phases, importance will be given to hiring locals as employees; this is especially true for security guards. When security personnel are not locally employed, in the case of conflict between households and security personnel a negative impact occurs; but when the security personnel are employed from the local population, communication with said households is handled properly and this results in a positive impact.

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. All security staff will be unarmed. 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 Disputes

During the field studies conducted, there were no social conflicts, protests or tensions encountered either in relation to the TUMAD mining operations or between the communities. However unmet expectations of communities with regards to local employment or failure in management of mitigations on environment, social and health and safety can lead to social conflicts between the communities and the project.



Also 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. There are local NGOs known to be potentially showing negative reaction to İvrindi Project. This issue is assessed as a potential source for conflict and TUMAD has developed a detailed Stakeholder Engagement Plan to consult and engage all stakeholders throughout the lifetime of the project in a constructive manner.

TUMAD will closely monitor potential sources of conflict and undertake necessary measures through its Community relations department.

Cultural Heritage

Detailed archaeological surveys were undertaken in the local area 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.

During construction and 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.

Also Cultural Heritage Management Plan and Community Development Framework specifies some detailed measures to support intangible cultural heritage such as traditional festivals in the project area.

Vulnerable Groups

The data collected for this Social Impact Assessment indicates the following group of vulnerable people in the context of the Project;

- Elderly that require help: The number of people over 65 years of age that require care is 14 in Küçükılıca, 40 in Karadere and 80 in Değirmenbaşı.
- Physically and mentally disabled people; the total number of physically and mentally disabled people is 29 in all the settlements.
- Poverty; The number of households that can be classified as being in extreme poverty very poor is 15 in Küçükılıca, 30 in Karadere and 100 in Değirmenbaşı.
- Social Support ; The number of houses that receive support from the Social Assistance and Solidarity Foundation (SASF) (fuel, aid in kind and in cash) is 5 in Küçükılıca, 45 in Karadere and 50 in Değirmenbaşı.

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 there will be a decrease in the grazing areas of the households due to land acquisition particularly during operations phase. Since the reduction of these grazing areas will affect the livestock activities of the households, it is expected to have an adverse impact on their livelihoods. For this reason, a Livelihood Restoration Plan that will also cover the sensitive groups will be prepared for İvrindi Mine. 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 in 2018.

In particular, the households using the pastures in the highlands of Degirmendere village (Suluk, Belenağıl, Çürük and Yaylacık highlands) will be surveyed in detail to understand the scale of impact on their livelihoods and assets and special measures will be developed for those who are in need of extra care from the project such as elderly people, single headed women households, disabled people etc.

Specific measures will be implemented to protect the animals (due to free grazing practices) and children from mine activities at the highlands of Degirmenbasi. These measures will be:

- Mine facilities are fenced to prevent the access by kids, animals and other unauthorised access.



- Close communication with the livestock owners and villagers to mitigate unauthorised access through stakeholder engagement plan.

TÜMAD also committed to implement various stakeholder engagement activities in close coordination with the affected households (land users and owners) and other relevant parties to ensure that their livelihoods are not adversely impacted by the operations as part of Stakeholder Engagement Plan.

Cumulative Impacts

When the existing projects are evaluated together with the İvrindi Project, the Project will have adverse cumulative impacts. Currently there are five projects in existence that can contribute to cumulative impacts. Two more projects, one of medium length and the other long term, are also planned.

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

Therefore TÜMAD 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. TÜMAD is open to cooperation with other players to set up a regional industrial network to discuss cumulative OHS and socio-economic issues and opportunities for the region with the aim of setting up OHSS 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 Workforce:

Industry experience in Turkey proves that construction and operation of the mine projects can cause significant impacts on the direct and contracted workforce in case of failure in development and implementation of strong mitigation measures.

In order to ensure there is no harm to people, TÜMAD 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 and construction activities and more detailed management systems and operating procedures are under development for operations.

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

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



TÜMAD has developed an Emergency Response Plan, which provides the process and procedures that TÜMAD 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

TÜMAD has a suite of Environmental and Social Management Plans which form part of its Environmental and Social Management System. The Management Plans describe how TÜMAD 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.

TÜMAD 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.

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

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

Perception of the Project by the local people

The negative impacts of the Project listed by households in Değirmenbaşı are; the negative impacts on the health of people, society and animals, damage to livestock activities, damage to/decrease in the pastures/fields, dust, negative impact on highland activities, noise, damage to the lands, crops and trees, damage to the lands/lands becoming unusable, damage to the roads and negative impact on the means of livelihood.

The negative impacts of the Project listed by households in Küçükılca are; the negative impacts on the health of people, society and animals, damage to livestock activities, damage to/decrease in the pastures/fields, negative impact on highland activities, noise, damage to the lands/lands becoming unusable and dust.

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 negative impacts are as follows;

- Project's impact on livelihoods due to land acquisition and risk of decrease in grazing and pasture lands in Değirmenbaşı and Karadere villages
- Impact of dust, noise and other operation related works such as blasting on people living in Değirmenbaşı and Küçükılca village , and on agriculture and livestock activities in Suluk, Belenağıl, Çürük and Yaylacık highlands of Degirmenbasi
- 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 , cyanide use 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 TÜMAD, governmental bodies and community representatives.

Key benefits of the Project include:

- Creation of direct and indirect employment opportunities for the life of the mine; the peak number of workers during construction is 500 people and 350 during operations (including contractors). 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. Regarding the latest employment forecasts of the mine;
- **Out of 500 workers:**
 - Number of staff to be employed directly by TÜMAD in the construction will be 200 and during the operation phase is 350 in total. Number of labour force foreseen to be supplied from the region is 160 people by TÜMAD and number of labour force foreseen to be employed from outside the region is 40 people for construction by TÜMAD. These number will increase for the operation phase as direct employers of TÜMAD.
 - Number of contractor employee is foreseen to be 300 at peak time for construction .These numbers may change as the project progresses however the ratio of local to regional will stay at the same level.
- 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 construction and 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 influence on the demographics of the region due to job opportunities; and
- Sustainable community development initiatives implemented in partnership between the Project and key stakeholders.

8.3.3 Monitoring actions

The monitoring programme is provided in Appendix A.

8.3.4 ESAP items

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



Report Signature Page

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APPENDIX A

Environmental and Social Monitoring



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ENVIRONMENTAL PLANS				
AIR QUALITY MANAGEMENT PLAN				
No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
AQM-IVR-03	PM ₁₀ 4 different points	Period: 24 hours Frequency: 6 Monthly	Environmental Department	Değirmenbaşı, Küçükılica and Karadere Villages and one in the plant area. 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-IVR-04	PM _{2.5} 4 different points	Period: 24 hours Frequency: 6 Monthly	Environmental Department	Değirmenbaşı, Küçükılica and Karadere Villages and one in the plant area. 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-IVR-05	Heavy metal in Particulate matter 4 different points	Period: 24 hours Frequency: 6 Monthly	Environmental Department	Değirmenbaşı, Küçükılica and Karadere Villages and one in the plant area. 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-IVR-06	SO _x and NO _x 6 different points	Period: 2 Months Frequency: 6 Monthly	Environmental Department	Değirmenbaşı and Küçükılica Villages and four in the plant area. The locations are including the sensitive receptors and potential areas to be impacted by the mining



IVRINDI- SIP

				operations.
AQM-IVR-07	PM ₁₀ 2 points	Period: Continuous Frequency: Continuous	Environmental Department	Not decided yet
AQM-IVR-08	HCN 3 points	Period: Continuous Frequency: Continuous	Environmental Department	Not decided yet
NOISE AND VIBRATION MANAGEMENT PLAN				
No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
NVM-01	Noise Level	Monthly, including daytime, evening and night readings Instant during blasting	Environmental Department	Küçükkılıca, Karadere and Değirmenbaşı Villages for İvrindi These locations correspond to the baseline measurement locations in the EIA. According to the local grievance additional measurement locations will be located
NVM-02	Noise Spectrum	Monthly, including Daytime, Evening and Night readings	Environmental Department	Küçükkılıca, Karadere and Değirmenbaşı Villages for İvrindi These locations correspond to the baseline measurement locations in the EIA. According to the local grievance additional measurement locations will be located
NVM-03	Blasting Noise and Vibration	Instant during blasting	Environmental Department	Küçükkılıca, Karadere and Değirmenbaşı Villages for İvrindi These locations correspond to the baseline measurement locations in the EIA. According to the local grievance additional measurement locations will be located
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/m ³ Drager Multi Warn II Gas Measurement Device Instruction



IVRINDI- SIP

				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 Water Resources Management Plan for Ivrindi 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/Nm3 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	-



IVRINDI- SIP

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	-
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 for İVRİNDİ MINE

No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
WRM-IVR-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- IVR-02	Groundwater Quality	Monthly	Undertaking Requirement & By-law on Protection of Groundwaters against Pollution and Deterioration	Observation wells dug at the plant and within the area of impact
WRM- IVR-03	Water Level Measurements in Observation Wells	Weekly	Internal Monitoring	Observation wells dug at the plant and within the area of impact
WRM- IVR-04	Spring and Fountain Water Quality	Monthly	Undertaking Requirement & By-law on Protection of Groundwaters against Pollution and Deterioration	Drinking water sources of settlements nearby the area of impact of the plant



IVRINDI- SIP

WRM- IVR-05		Discharge Water Quality	Prior to Discharge	Undertaking Requirement & By-law on Control of Water Pollution	In biological treatment system and settling basins		
WRM- IVR-06		Leachate Quality	Monthly	Undertaking Requirement & By-law on Control of Water Pollution	Field Kinetic Tests Barrels (ARD Monitoring)		
WRM- IVR-07		Drainage Basin Quality	Monthly	Undertaking Requirement & Regulation on Surface Water Quality Management	at settling basins		
Frequency and Parameters to be Monitored during Operation of İvrindi							
Measurement Point Type	Measurement Point	Parameter	Construction Phase	Operation Phase	Closure Phase		
					1. Period*	2. Period*	3. Period*
Weir Point	Madra Dere Weir (İMSV)	Flow	Continuous	Continuous	Continuous	Continuous	Yearly
	Sipacı Dere Weir	Field parameters (T, pH, EC)	Monthly	Monthly	Quarterly	Every sixth month	Yearly
Surface Waters	SW01, SW03, SW04, SW07, SW08, SW09, SW10, SW11	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	GK01, GK02, GK03, GK04, GK08, GK09, GK10, GK11, GK12, GK13, GK14, GK16, GK20, GK21, PW-22	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



IVRINDI- SIP

Source and Fountains	Kuzu Çeşme, Karabacak Çeşme, Arıcılar Çeşme, Suluktutan Çeşme, Sıra Çeşme, SP8, SP11, SP7	Flow	Monthly	Monthly	Quarterly	every sixth month	Yearly
		Field parameters (T, pH, EC)	Monthly	Monthly	Quarterly	every sixth month	Yearly
Important Sources and Fountains	Düdüklü Kaynağı, İsale Çeşme, Değirmenbaşı Village Depot	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
Collection Pools	Lower and upper drainage pools at the exit of the Waste Area, settlement pools	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
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 İvrindi							
Stage of the Project	Component	Monitoring Spot		Monitoring Method		Parameter	
Before the construction period	Land-scale kinetic test canister	Leachate samples		Kinetic Test Analysis in Samples		pH, Alkalinity, Acidity, Conductivity, Metals, Anions	



IVRINDI- SIP

Operation period	Open-pit geologic/block model	Waste rock lithology and open-pit surface lithology	Evaluation of updated geologic model	Monitoring of amounts and rates of mine lithology
Construction and operation period	Waste rock and open-pit surface lithology	Selected rock samples	Static analyses	Acid generation and neutralization potentials, state of metal leachate generation
Construction and operation period	Waste rock and open-pit surface lithology	Selected rock samples and/or existing kinetic analysis samples	Evaluation of updated results of on-going kinetic analyses	Evaluation of the data of acid generation speed, metal leachate generation rate obtained over the longer period
Operation period	Waste Rock	Continuous Sampling during operation	Conduct tests on rock samples during mining, blasting etc	Sulfur Content
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

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)



IVRINDI- SIP

TMP-03	Driver Competency and Training	Records maintained and up to date	Head of OHS Department	All TÜMAD and contractor drivers will comply with the minimum driver training requirements defined by TÜMAD. All drivers will be required to 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	TUMAD will establish an inspection and audit programme to assess contractors' performance with respect to Transport Management Plan, including: - 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.



IVRINDI- 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.



IVRINDI- SIP

EHM-02	<p>Daily check of storage areas</p> <ul style="list-style-type: none"> • Evidences of past/current spills (major staining, sign of stressed vegetation, pool of 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. <p>Condition of the secondary containments.</p>	Daily	Appointed personnel from Environmental/OHS Department	Target: No spills, all conditions are met
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, subcontractors and community members regarding the	Continuously	Head of Environment Head of OHS Head of Community Relations	Target: Minimize with a target zero per year



IVRINDI- SIP

	management of explosives and hazardous materials			
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 Number of grievances regarding noise.	Continuous	OHS Manager, Community Relations Manager	-
CHSS-07	Vibration Number of grievances regarding vibration	Continuous	OHS Manager, Community Relations Manager	-
CHSS-08	Security Personnel	Continuous	OHS Manager, Community Relations	-



IVRINDI- SIP

	Number of recorded security incidents involving TUMAD workers and members of the local population. Number of grievances regarding security personnel.		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 Contracts including risk assessment and H&S Management Plan, Contractors Handbook	Every 3 month	Head of Purchasing Department Operations Manager	-
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	-



IVRINDI- SIP

CM-03	Work Management TÜMAD'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	
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	-



IVRINDI- SIP

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-country, Project Regions and Project affected villages.	Every 3 month	Head of Purchasing Department	
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 - for IVRINDI MINE				
No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
SEP-IVR-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



IVRINDI- SIP

				<p>month and evolution since Project start (graphic presentation);</p> <ul style="list-style-type: none"> • number of complaints grievances closed in the month; and • type of grievance. <p>The TÜMAD 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> <p>An annual audit will be conducted of the Grievance Procedure.</p> <p>The Mediation Committee will be used to facilitate the implementation and monitoring of the Grievance Procedure.</p>
SEP-IVR-02	Visitors to TÜMAD Balıkesir 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-IVR-03	Community engagement activities	Quarterly	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.
SEP-IVR-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



IVRINDI- SIP

				per period.
SEP-IVR-05	Feedback to local communities	Quarterly	Head of CR Department	The TUMAD Community Relations team will monitor feedback to local communities by developing and implementing a Community Messaging System and Community Diaries.
LIVELIHOOD RESTORATION FRAMEWORK for İVRİNDİ MINE				
No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
LRF-IVR-01	Internal monitoring.	Quarterly during the implementation of the LRP and every six months thereafter	Land Acuisiton Manager	Land Acuisiton Manager will evaluate the repotrs
LRF-IVR-02	External Monitoring	occur every six months	Land Acuisiton Manager	will be based on both the reports from the internal monitoring and primary research/ consultation with PAPs
LRF-IVR-03	Completion Audit	After two years, or when the external monitors agree that livelihoods have been restored	Land Acuisiton Manager	The methodology for the Completion Audit will be agreed between the TUMAD and EBRD (see below) the section on Completion Audit.
LRF-IVR-04	<p>Users who have been and will be identified as using pasture and forest land within and surrounding the EIA Permitted Area will be subject to periodic consultation to identify and monitor:</p> <ul style="list-style-type: none"> 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 	Peiodically as per Livelihood Restoration Plan As per Stakeholder Engagement Plan	Land Acuisiton Manager	For Forest and pasture land users displaced from the EIA Permitted Area



IVRINDI- SIP

	annual basis, during the summer grazing season.			
LRF-IVR-05	<p>Monitoring of the powerline will require special care and attention.</p> <p>Land owners along the powerline will be subject to monitoring by TÜMAD 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.</p> <p>With the completion of construction, TÜMAD 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>	Peiodically as per Livelihood Restoration Plan As per Stakeholder Engagement Plan	Land Acuisiton Manager	Powerline
LRF-IVR-06	Livelihood impacts that will occur through processes other than land acquisition will also	Peiodically as per Livelihood Restoration Plan As per Stakeholder Engagement Plan	Land Acuisiton Manager	Dust Impacts on Adjacent Crops



IVRINDI- SIP

	<p>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.</p> <p>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>			
LRF-IVR-07	<p>Users who have been and will be identified as using forest land within and surrounding Road extension corridor will be subject to periodic consultation to identify and monitor:</p> <ul style="list-style-type: none"> Alternative areas being used for animal grazing 	<p>Periodically as per Livelihood Restoration Plan As per Stakeholder Engagement Plan</p>	Land Acquisition Manager	Road



IVRINDI- SIP

	<p>and forest product collection;</p> <ul style="list-style-type: none"> Any issues with over-grazing or conflict with other affected users over alternative lands; <p>Affected land users will be consulted on at least an annual basis, during the summer grazing season.</p>			
CULTURAL HERITAGE MANAGEMENT PLAN				
No	Monitoring Field	Period/ Frequency	Responsibility	Remarks
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	<p>Number of events reported in each monitoring period.</p> <p>All event investigations and attached mitigation measures when necessary and their completion</p> <p>Physical copies of the event reports shall be filed</p>

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 Plans,
- Offset Strategy Plan, and
- Conceptual Mine Closure Framework.



Monitoring Measures from Health and Safety Management Plan

No	Monitoring Field	Monitoring Method	Frequency/Timeline	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
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



IVRINDI- SIP

No	Monitoring Field	Monitoring Method	Frequency/Timeline	Purpose	Responsibility
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: Dust exposure Noise and vibration Chemical exposure Illumination	Lighting, Noise, Dust, and Vibration Record and Assessment Forms	Frequency and timeline to be decided according to the risk assessments during whole life cycle of the Projects	To ensure personal exposures meet the legal standards. Ensuring necessary measures are taken including engineering and administrative measures.	OHS Department Contractors accredited institutions
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



IVRINDI- SIP

No	Monitoring Field	Monitoring Method	Frequency/Timeline	Purpose	Responsibility
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
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 from workers, Contractors, community members are recorded and actions are taken to close out the grievances.	OHS Department Community Relations Department



IVRINDI- SIP

Monitoring Measures from Biodiversity Action Plan

Biodiversity Action Plan for İVRİNDİ MİNE							
Item	Phase	Measurement/Activity	Relevant Standard	Resources	Timeline and frequency	Compliance Indicator	Status
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
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	TUMAD 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 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	PR6 par. 7-11-13-16	TUMAD 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



IVRINDI- SIP

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	TUMAD 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	TUMAD 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 speices 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	TUMAD 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
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	TUMAD internal resources	Monthly during the rainy season (October to April)	Record of monitoring - Annual Biodiversity report	Not started



IVRINDI- SIP

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 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	PR6 par. 7-11-13-16	TUMAD 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	TUMAD internal resources	During operation	Record of monitoring - Annual Biodiversity report	Not started



KEY PERFORMANCE INDICATORS

ENVIRONMENTAL PLANS			
AIR QUALITY MANAGEMENT PLAN			
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.



IVRINDI- SIP

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
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- İVRİNDİ			



IVRINDI- SIP

No	Key Performance Indicator	Target	Monitoring and Measurement
WRM-IVR-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-IVR-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-IVR-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.
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			



IVRINDI- SIP

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
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



IVRINDI- SIP

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 for IVRINDI MINE			
No	Key Performance Indicator	Target	Monitoring and Measurement
EAP-IVR-KPI-01	Number of non-compliances	Zero per year	Audit and inspection records Records of emergency drills
EAP-IVR-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



IVRINDI- SIP

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 TÜMAD 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

No	Key Performance Indicator	Target	Monitoring and Measurement
LM-KPI-02	Percent of Local People at the İvrindi mine operations	<p>Construction: Affected Settlements (Değirmenbaşı, Küçükılıca, Karadere; Un-skilled: 100% Semi-skilled: 70% Skilled: 60% Province Sub Province (İvrindi, Burhaniye-Balıkesir) Un-skilled: - Semi-skilled: 30% Skilled: 30% Operation: Affected Settlements (Değirmenbaşı, Küçükılıca, Karadere; Un-skilled: 100% Semi-skilled: 70% Skilled: 5% Province Sub Province (İvrindi, Burhaniye-Balıkesir) Un-skilled: -</p>	Employment Records



IVRINDI- SIP

		Semi-skilled: 30% Skilled: 50%	
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. 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%. Operation: Disabled Personnel percent shall be 3%.	Employment Records
LM-KPI-05	Percent of women in the labour force.	Construction: 5% for both mines Project Operation: %7 for both mines	Employment Records
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	Grievances Records



IVRINDI- SIP

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) 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
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



IVRINDI- SIP

STAKEHOLDER ENGAGEMENT PLAN for İVRİNDİ MİNE			
No	Key Performance Indicator	Target	Monitoring and Measurement
SEP-IVR-KPI-01	Number of community complaints or grievances	Total number reduced year on year	Complaints Log/ Database
SEP-IVR-KPI-02	Number complaints resolved within one month	Target of 100%	Complaints Log/ Database
SEP-IVR-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
SEP-IVR-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.	-



IVRINDI- SIP

CH-KPI-02	The number of grievances regarding the cultural heritage and the sites sacredly important for communities resolved within the target time frame.	<p>Researching the grievances regarding the cultural heritage (disrespect, destruction, removal, sale of the pieces) and carrying out regarding actions.</p> <p>Rapid response to complaints from local communities regarding inappropriate behavior 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.</p> <p>Target of 100%</p>	-
COMMUNITY DEVELOPMENT FRAMEWORK			
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	-
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 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	-



IVRINDI- SIP

		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	-
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 IVRINDI MINE			
No	Key Performance Indicator	Target	Monitoring and Measurement
LRF-IVR-KPI-01	Agreements with land users in Karadere, Küçükılca and Değirmenbaşı, and other identified and affected land users affected by associated facilities, 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 muhtars
LRF-IVR-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-IVR-KPI-03	Number of users of the lands in the affected communities.	All displaced households included in the Livelihoods Restoration Plan	Quarterly monitoring and reporting to displaced householders and their neighbourhood muhtars
LRF-IVR-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 muhtars



IVRINDI- SIP

LRF-IVR-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
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APPENDIX B

COMMITMENT REGISTER

Document	Obligation/Condition	Condition	Action Type	Action/Condition Description	Rank	Project Phase	Responsible	Responsible Person	Resolution	Status	Comments	Project Evidence
Entity	Number	Description/					Company		Date			Reference Number
MoEU	EIA	Page 1.1	Production Method and Location	The project will be executed in the Neighbourhoods of Değirmenbaşı and Küçük İlca in the District of İvrindi in the Province of Balıkesir. The ore that will be extracted by open pit mining method will be processed by way of heap leaching and thus gold and silver will be produced.		Construction, Operation						
MoEU	EIA	Page 1.1	Permitting	Therefore, it's obligatory to prepare an EIA Report for the İvrindi Gold & Silver Mine and Enrichment Project pursuant to Article 7 of the EIA Regulation.		Pre-construction						
MoEU	EIA	Page 1.1	Permitting	Also, all of the activities planned under the project will be carried out in compliance with the provisions of the Mining Law No. 3213 (last amended on 11/09/2014), which came into force upon its publication in the Official Gazette No. 18785 dated 15/06/1985 and of the Implementing Regulation on Mining Operations, which came into force upon its publication in the Official Gazette No. 27751 dated 06/11/2010.		Construction, Operation						
MoEU	EIA	Page 1.2	Project Size	The total area of the properties İ.R. 83480 (3,851.08 ha), A.R. 201400088 (1,553.37 ha) and A.R. 201500273 (1,201.92 ha), where the project site is situated, is 6,606.37 ha. The EIA area of the project spans an area of around 835.53 ha.		Construction, Operation						
MoEU	EIA	Page 1.2	Production Method	The ore to be extracted by open pit mining from the mine property of the project will be enriched within the project site and dore gold and silver will be produced as the final product and gained to the national economy. Project Activities: -Extraction of raw ore from open pits. - Laying of non-economically valuable rock in the designated dump site. -Crushing of raw ore to the size to be fit for heap leaching process. -Making the soil fully impervious with the lining system in the area of leaching bed where ore dressing takes place and the material and the alkali diluted cyanide solution encounter. -Laying of the ore brought to the appropriate size on heap leaching bed via the surface conveyor system. -Application of alkali diluted cyanide solution to the ore laid on the heap leaching area by dripping or spraying and the extraction of precious metal content of ore into the solution in ion form. -Collection of the solution infiltrating out of the ore in the heap leaching area as filled with precious metals in the pregnant solution tank by means of the lining (geomembrane) laid on the bed and drain pipes. -Directing the pregnant solution through carbon columns of adsorption, desorption and regeneration (ADR) unit and making the precious metals in the solution adsorbed onto active carbon. -Collection of the solution coming out of carbon columns and not filled any more in the barren solution tank. -Extraction of precious metals from active carbon into the solution at certain temperature and under certain pressure through desorption, which is also referred to as the stripping, and the recovery of the precious metals from the solution through electrolysis and the preparation of gold cake for casting. -Casting of dore slugs containing gold and silver by melting. -Sending of dore slugs to the refineries out of the site for refining		Operation						
MoEU	EIA	1,3	Project Size	Open pit areas comprise four pits (Karteldere Open Pit, Kabaktepe Open Pit, Ballıktepe Open Pit, Güney-Boyun Open Pit).		Construction, Operation						
MoEU	EIA	1,4	Permitting	Exploration borings and surface studies have been performed within the properties with licences A.R. 201400088 (1,553.37 ha) and A.R. 201500273 (1,201.92 ha), where the project site is situated, and no ore has been encountered, yet. In these properties, exploration activities will continue during the period of licence, as it is prescribed by the relevant law. If a new reserve is found as a result of the exploration activities carried out, a revised design will be prepared and submitted to the General Directorate of Mining Affairs (MİGEM).		Pre-construction						
MoEU	EIA	1,5	Scoping	The basic studies under the project have been conducted by DAMA Mühendislik Proje ve Maden San. Tic. A.Ş since 2013. Scoping was completed in August 2015 with the joint work of Kappes, Cassiday&Associates (U.S.) and DAMA Mühendislik Proje ve Maden San. Tic. A.Ş. (Turkey). In this respect, the annual ore dressing capacity has been determined as 7,760,000 t/year. It's planned that 75.3 million tonnes of mineral reserve and 157.2 million tonnes of non-economically valuable rock will be extracted from the four open pits to be cut in the scope of the project during the economical life of the mine.		Operation						
MoEU	EIA	1,5	EIA Baseline Works	ENCON Çevre Danışmanlık Ltd. Şti. performed the environmental and social database collection works forming the basis of the EIA Report in question between 2013-2015. These works are summarised below: -Measurement of air quality; - Measurement of groundwater and surface water quality; - Study for flora and fauna (with consultancy provided by academicians from Hacettepe University and Gazi University); -Noise measurements; - Soil quality sampling; -Determination of socio-economical characteristics.		Construction, Operation						
MoEU	EIA	Section 1.2, "1.14"	Permitting and Zoning	The "Balıkesir-Çanakkale Planning Zone 1:100,000 Scale Landscaping Plan" covering Çanakkale Province, where the project is located, was approved in June 2015 pursuant to Article 7 of the Decree concerning the Organisation and Functions of the Ministry of Environment and Urbanisation The project site is on sheet J18 within the borders of the Balıkesir-Çanakkale Planning Zone 1:100,000 Scale Landscaping Plan. Figure 1.4 shows the Landscaping Plan where the coordinates of the project EIA site and properties are inserted. In this respect, the provisions set out in "8.30. Mine Sites Operation Facilities, Temporary Facilities and Plants" of 1:100,000 Scale Balıkesir-Çanakkale Area Landscaping Plan in force, as well as in the legislation in force will be complied with. The opinion of the Regional Directorate of Forestry in Balıkesir, the relevant authority in respect of area use, by which it approves the execution of the project in forest areas, provided that permit is obtained as per the Forestry Law No. 6831, is provided in the EIA Review and Evaluation Form.		Construction						
MoEU	EIA	1,32	Permitting	In the project site and its vicinity, operation licence İ.R. 83480 and exploration licences A.R. 201400088 and A.R. 201500273 of TUMAD Mining which are adjacent to each other have been obtained upon the application filed with the Republic of Turkey, Ministry of Energy and Natural Resources, General Directorate of Mining Affairs. -İ.R. 83480: Licence Stage: Operation; Area of Property: 3,851.08 ha; Effective Date: 21/01/2014; Expiry Date of Licence: 21/01/2044 A.R. 201400088: Licence Stage: Preliminary Exploration Period (1 year) + General Exploration Period (2 years) + Detailed Exploration Period (4 years); Area of Property: 1,553.37 ha; Effective Date: 08/05/2014; Expiry Date of Licence: 08/05/2021 A.R. 201500273: Licence Stage: Preliminary Exploration Period (1 year) + General Exploration Period (2 years) + Detailed Exploration Period (4 years); Area of Property: 1,201.92 ha; Effective Date: 27/04/2015; Expiry Date of Licence: 27/05/2022		Construction, Operation						
MoEU	EIA	1,34	Permitting	TUMAD Madencilik San. ve Tic. A.Ş. obtained the first licence for the site where the project will be executed from the General Directorate of Mining Affairs (MİGEM). An application was filed with MİGEM in line with the planning made with respect to the activities to be carried out in the mine site during the development stage of the project pursuant to the related legislation and appropriate licence merging process was completed for the properties situated within that property and operation licence no. İ.R. 83480 was issued. A large part of the EIA area designated for the activity dealt with in this EIA Report remains within that property.		Construction, Operation						
MoEU	EIA	1,36	Permitting	The necessary operation permits for gold, silver and quartz have been obtained for the properties where the project site is situated in compliance with the Mining Law No. 3213. The area of the operation permit site for gold and silver is 1674.9 ha and of the operation permit sites for quartz is totally 712.77 ha (being 370.12 ha and 342.65 ha). There is one gold and silver operation permit site in addition to two different quartz operation permit sites.		Operation						
MoEU	EIA	1,36	Permitting	A necessity has arisen to expand the operation permit sites when the layout of the project facilities and units is made in terms of both topography and mineralization. For this reason, the project owner has filed the relevant applications with the General Directorate of Mining Affairs for the growth demand of operation permit sites and approval has been obtained. The operation permit sites have seen 144.86 ha growth upon the acceptance of the demand.		Operation						
MoEU	EIA	1,37	Permitting	An "EIA Not Required" Decision has been obtained from the Governorship of Balıkesir, Provincial Directorate of Environment and Urbanisation for the mineral exploration boring works to be performed in the property with the operation licence no. İ.R. 83480 and in the properties with the exploration licence no. A.R. 201400088. The decisions in question are given in Appendix-5 to the EIA Report (Appendix-5.1 for property İ.R. 83480 and Appendix-5.2 property A.R. 201400088).		Operation						
MoEU	EIA	1,38	Permitting	Preliminary mining studies have been conducted in properties 201101026, 201200371, 201200372, 201201344 and 201201348 within the project site. The relevant applications have been filed with the Ministry of Environment and Urbanisation, General Directorate of EIA Permit and Supervision for each property and the letters given in response to the issue and the "EIA Not Required" Decisions are provided.		Construction, Operation					Geotechnical works	
MoEU	EIA	1,38	Permitting	The projects which have been granted an "EIA Not Required" Decision are not projected to be implemented upon the commissioning of the İvrindi Gold & Silver Mine and Enrichment Project.		Construction, Operation						
MoEU	EIA	Section 1.3 & 1.4 1.35-1.36	Production Method	The mineralogical structure and condition of grade of the ore, the most important on among the aforesaid factors, determines which of the applications of "heap leaching" and "tank leaching" of the cyanide leaching method will be preferred. It's been decided that the most appropriate ore enrichment method for gold extraction is the heap leaching method as a result of the field studies, metallurgical studies and geotechnical studies conducted for the İvrindi Project.		Operation						
MoEU	EIA	Section 1.3 & 1.4 1.36	Production Method and Decommissioning Process	There are four open pits that will be used in the scope of the project. The open pits will be cut and used in dual order during the economical life of the mine. Kartaldere and Kabaktepe open pits will be cut firstly and their operation will last approximately 5.5 years. Later, operation will start in Ballıktepe and Güney Boyun open pits and they will be operated for a period of approximately 4.5 years. During the decommissioning, it's intended to backfill partially, rather than leaving as open, the two of the open pits (Kartaldere and Kabaktepe open pits) to be constructed during the operation stage of the mine. The material to be needed for backfilling will be produced through EOK from Ballıktepe and Güney Boyun open pits during the second stage of mine life (in the last 4-year period). What is aimed with backfilling is to avoid the accumulation of water in these pits. So, the most appropriate method will be applied from environmental and economical aspects.		Operation and Decommissioning						
MoEU	EIA	Section 1.3 & 1.4 1.36	Decommission and Pollution Prevention	During the decommissioning stage of the project, the cyanide to remain inside the heap in the heap leaching site will possible have continued impacts in the post-operation period. The cyanide left inside the heap will be deformed by way of washing to eliminate such impacts. In addition, the facilities used during the operation lifetime of the project will be removed and taken away from the site at the end of the operation stage.		Decomissioning						
MoEU	EIA	Section 1.3 & 1.4 1.37	Decommission and Pollution Prevention?	It's been decided that a part of topsoil and EOK (Waste Rock) dump site should be established on a common area, taking account of the topographical conditions in the site. The topsoil layer that will be stripped and dumped during the land preparation stage of the project will be dumped into EOK dump site and when the set height is reached during EOK (Waste Rock) piling, rehabilitation operations will be carried out with topsoil simultaneously. Using the land in this way, it will be ensured that land use is achieved in the most efficient manner according to the topography,		Decomissioning						
MoEU	EIA	Section 1.3 & 1.4 1.37	Land Use	The data about the project site and its vicinity that has been obtained from the maps (of the year 1999) of Abrogated General Directorate of Rural Affairs (KHGM) and the Office of Title Deed in İvrindi has been queried via the Geographical Information Systems (GIS). Based on this data, the project site comprises forests and meadows. In the project site, land use capability class (LUCC) is merely Class VII.		Construction						
MoEU	EIA	2,107	Permitting	The provisions of the Regulation on the Protection of Water Basins and the Preparation of Management Plans No. 28444 of 17/10/2012 will be complied with during the construction and operation stages of the project.		Construction, Operation						
MoEU	EIA	2,117	Permitting	The relevant provisions of the Regulation on Surface Water Quality No. 28483 of 30/11/2012 will be complied with in respect of possible impacts on water sources during the construction and operation stages of the project and in the post-operation period.		Construction, Operation, Decommissioning						
MoEU	EIA	2,13	Permitting	It's seen that in January 2014, TS-7 and TS-8 sampling points are Class IV and the remaining points are Class III, and that in April 2014, TS-5, TS-6 and TS-7 sampling points are Class IV and the remaining points are Class III, and that in November 2015, TS-5, TS-6, TS-7, TS-8 sampling points are Class IV, T-52 sampling point is Class II and the remaining points are Class III.		Construction, Operation, Decommissioning						
MoEU	EIA	2,145	Permitting	It's seen that all the sampling points are Class II in September 2015, and that SW01, SW05, SW07, SW09 and SW10 sampling points are Class III in November 2015 and the other points are Class II.		Construction, Operation, Decommissioning						
MoEU	EIA	2,15	Supporting Facilities-Water	TUMAD Madencilik Sanayi ve Ticaret A.Ş. performed boring works in the area around the Project site to determine the sources where the process water to be needed in the scope of the project as well as the drinking water and service water of personnel. As a result of the boring works, it was understood that an important part of the water to be needed in the scope of the Project would be supplied from groundwater wells. If the amount and quality of water is adversely affected due to any use of water for the operation, any water demand of settlements will be met.		Construction, Operation, Decommissioning						
MoEU	EIA	2.150-2.151	Permitting	The requirements for the protection of inland surface waters supplying drinking water and service water are set out in Article 16, Article 17 (Strictly Protected Area), Article 18 (Short-distance Protected Area), Article 19 (Medium-distance Protected Area) and Article 20 (Long-distance Protected Area) in the Regulation on the Control of Water Pollution. With regard to the long-distance protected areas, Article 20 of the Regulation on the Control of Water Pollution describes the long-distance protected area as the whole of the catchment basin out of the drinking water and service water reservoir and strictly short and medium-distance protected areas. The Project site is out of the strictly and short and medium-distance protected areas of all the dams and lagoons either already constructed/ to be constructed for use for drinking water and service water in Balıkesir Province. Therefore the Project must adhere to the legislation pertaining to the "long distance" protected areas.		Construction, Operation, Decommissioning						
MoEU	EIA	2,151	Wastewater and Permitting	Maximum 150-200 people will be employed during the land preparation and construction stages in the scope of the project. The personnel so employed will need drinking water and service water. Assuming that 0.15 litre of water is to be consumed per capita per day, maximum domestic water consumption is calculated as 30 m3. Assuming that the whole of the domestic water consumed is to yield domestic wastewater, it can be said that 45 m3 of wastewater will be generated per day. A package domestic wastewater treatment plant with sufficient capacity will be established on the site to treat the wastewater. The wastewater will be treated in compliance with the discharge standards set out in Article 21 of the Regulation on the Control of Water Pollution. Then it will be discharged into the receiving body in accordance with the provisions of the cited Regulation. In this respect, the related discharge permit will be obtained for the package domestic wastewater treatment plant in accordance with the Regulation on the Environmental Permit and Licence and in addition to this, design approval will be obtained in the scope of Circular 2014/7 on Design Approval for Wastewater Treatment/Deep Sea Discharge Plant and no construction will commence without obtaining design approval.		Construction						
MoEU	EIA	2,151	Wastewater and Permitting	With regard to the generation of the domestic wastewater deriving from personnel before the establishment of the package domestic wastewater treatment plant during the land preparation and operation stages of the project, the wastewater to be generated will be discharged into the cesspit designed within the frame of the provisions of the Regulation on the Pits that will be Constructed in the Areas where Sewer Conduits and their Construction are not Practical", which came into force upon its publication in the Official Gazette No. 13783 dated 19/03/1971, and when the cesspit is full, it will be emptied by the vacuum trucks that are granted Vacuum Truck Operation Permit in accordance with the Regulation on the Discharge of Wastewaters into Sewer Network issued by the General Directorate of Balıkesir Wastewater and Sewerage Administration (BASKİ) and discharged into the Wastewater Treatment Plants of BASKİ.		Construction						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	2,152	Pollution Prevention		After wastewaters, contact waters and non-contact waters are collected as separate waters from each other, water and wastewater management will be made. In this respect, the amount of runoff water that will enter the mine site and contact with the polluted surfaces (e.g. heap leaching site, EOK dump site, crusher, open pit site, service roads, etc.) and as a result, will be contaminated will be minimised and intercepting ditches will be constructed for this purpose. Thanks to this, the amount of water to be managed within the facility as well as the risk of sediment flow will be minimised and it will be ensured that the waters of proper quality that will be collected within the mine can be used as the additional water for process, dust suppression and similar requirements as much as possible.		Operation						
MoEU	EIA	2,152	Pollution Prevention		Intercepting ditches have been designed to be parallel to in-facility roads and natural drainage ways remaining within the site as much as possible, taking into consideration the topographical conditions and the natural drainage structure in the site. This will reduce the area of land that will be deformed and construction costs during the construction of these structures.The intercepting system will be developed gradually in a way to meet the mine production plan and storage requirements to arise in parallel with this. The system will allow contact waters and non-contact waters to be collected completely separately from each other. Figure 2.56 shows the intercepting ditches on layout plan.		Construction, Operation						
MoEU	EIA	2,152	Wastewater		The waters to be carried via intercepting ditches will be discharged into the receiving body in case there is no need for them, but they will be collected in the water collection tanks which might be constructed depending on the need if need arises and pumped into ADR tanks. The contact waters to be generated within the pit site and infiltrated from underground will be collected via the drainage conduits to be laid on service roads within the pit site and on pit bottom and accumulated in sedimentation tanks. The waters to be accumulated in these areas will be conveyed to ADR Tanks. Also, laboratory analyses will be made in the waters collected in tanks. In case the waters in the tanks reach high amounts, discharge criteria will be examined and if they meet discharge criteria, it will be ensured that they are discharged into the receiving body.		Construction, Operation						
MoEU	EIA	2,153	Pollution Prevention and Production Method		The process to be applied in the project site will be operated with zero discharge principle thanks to the lining system to be established on the bottom of heap leaching site. In this respect, the solution that will be collected via drain pipes over the lining system to be established on the bottom of heap leach site and conveyed to pregnant solution tank (cyanide solution filled with gold and silver) will be freed of its gold and silver content, being subject to ADR process, and then directed to barren solution tank. Barren solution will be fed back to the system being pumped again on the ore spread in the heap leaching facility after the necessary cyanide solution and antiscalant have been added to it and thanks to this, the system will be operated in closed loop and the principle of zero discharge will be applied.		Operation						
MoEU	EIA	2,153	Water Consumption		For project use, water consumption will be at 0.04 m3/s level. As it's described in sub-heading 2.5.3 "Flow Rates", the monthly average flow rate of the Madra Creek is 2.731 m3/s and of the Kisludere Creek is 0.441 m3/s and water consumption in the Project corresponds to approximately 1.5% and 10% of these flow rates, respectively. In this case, no impact is expected on the flow rates of creeks depending on water use. Thus, no significant impacts are expected both in the vicinity of the project and downstream the project		Operation						
MoEU	EIA	2,153	Pollution Prevention		In addition, the following measures will be taken to protect the quality of surface water sources in the project site and its vicinity. Groundwater and surface water quality will continuously be monitored at the monitoring stations designated in advance to detect as quick as possible any contamination that might be caused by infiltrations that might be derived from mine construction and operation as well as non-economically important rock site and heap leaching site. The parameters monitored will be the same as those used for determining the current water quality. Groundwater monitoring will continue during the operation period and after decommissioning. The outlet structures of intercepting ditches will be stabilised in a way to prevent erosion. Standard dust control activities will constitute the mitigating actions to be taken to prevent sediment flow in surface water sources and reduce sediment load in surface waters. Strict erosion control measures like building intercepting ditches, temporary and continuous seeding, etc. will be taken throughout the operation period. The worksites where the wind and water erosion is expected to be the most apparent will be replanted and they will be immediately rehabilitated following construction. Where it is not practical to do rehabilitation immediately, irrigation will be performed to minimise dust emission. The service roads both outside and inside the site will be improved and road surfaces will be kept wet during arid seasons to minimise dust emission and sediment flow.		Construction, Operation						
MoEU	EIA	2.153-2.154	Pollution Prevention		Also, moving equipment will be made subject to maintenance and repair regularly and it will be compulsory to follow the speed limit both inside and outside the project site during the transportation to prevent any possible spills and leakages. Care will be taken to select the alternatives to prevent the environmental pollution that might be caused by leakages and spills during the design of process facilities, the facility site, fuel and chemical depots, moving equipment, fuel stations and maintenance & repair areas. Chemicals, fuels and oil or hazardous materials will be stored and transported in full compliance with the operating methods designed for safety and the environmental protection. In addition, surfaces with low permeability will be provided in all the areas where fuels, oil and chemicals are held and used and structures that will constrain the spill will be made available in those areas. Fuels will be stored in surface and underground stabilised tanks and oil/grease traps will be installed at vehicle washing stations. Also, uncontrolled discharge of domestic or industrial wastewaters or solid wastes will not be allowed in the project site.		Construction, Operation						
MoEU	EIA	2.153-2.154	Permitting		Hazardous wastes and domestic wastes will be stored and disposed of separately in accordance with the Regulation on the Control of Solid Wastes and the Regulation on the Control of Hazardous Wastes.		Construction, Operation						
MoEU	EIA	2,154	Permitting		The Regulation on Surface Water Quality No. 28483 of 30/11/2012 will be considered with respect to the possible impacts on water sources during the construction and operation stages and in the post-operation period of the project and the requirements of the provisions of the cited Regulation and in addition to them, of the Regulation on the Quality of Surface Waters from which Drinking Water is Supplied or Planned to be Supplied, which came into force upon its publication in the Official Gazette no. 28338 dated 29/06/2012.		Construction, Operation, Decomissioning						
MoEU	EIA	2,154	Potential Permitting		The provisions of the Prime Ministry Circular on Creek Beds and Floods, which came into force upon its publication in the Official Gazette No. 26284 dated 09/09/2006, and the Prime Ministry Circular on the Rehabilitation of Stream and Creek Beds, which came into force upon its publication in the Official Gazette No. 27499 dated 20/02/2010 will be complied with for the creeks in the Project site and its vicinity, and no action will be taken to narrow the sections of bed and disrupt flow regime and during the construction, excavation wastes will not be dumped on the creek bed, the thalweg level of creek will not be exceeded down, the owner will take the necessary measures against possible inundation and if it is required to construct an engineering work to provide access across the creeks during the construction and maintenance of access roads, a separate permit will be obtained.		Construction, Operation						
MoEU	EIA	2,224	Conventions/ Permitting		The internationally recognized hazard-protection status of the flora and fauna species identified in the area have been determined according to the IUCN (International Union for Conservation of Nature), CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) and Bern Convention lists.		Construction, Operation, Decomissioning						
MoEU	EIA	2,226	Conventions/ Permitting		The national scale hazard-conservation statuses and endemism status of the flora and fauna species determined in the project area were also evaluated. The national status, which are particularly important for endemic flora species, were determined by using the Red Data Book of Turkish Plants (TBKK) based on the IUCN criteria of 1994 (ver. 2.3) (Ekim et al., 2000). The hazard status of birds was determined by Kızıroğlu (2009) according to the categories determined in the Pocket Book for Birds of Turkey.		Construction, Operation, Decomissioning						
MoEU	EIA	2,226	Conventions/ Permitting		In addition, hunting restrictions for all fauna elements have been assessed in accordance with the 2015 2016 Decisions of the Central Hunt Commission (MAK) 20152016 of the General Directorate of Nature Conservation and National Parks, Department of Hunting and Wildlife Central Hunt Commission (MAK).		Construction, Operation, Decomissioning						
MoEU	EIA	2,227	Conventions/ Permitting		During the determination of endemic plants, Turkish Plants Data Service (TÜBİVES) was used and while determining the hazard categories, the work " Red Data Book of Turkish Plants " prepared by Prof. Dr. Tuna Ekim et al. was used as the main reference work. In addition, these hazard categories have been reinterpreted taking into account the population and threat factors of the endemic species identified within the area according to the IUCN 2001 criteria.		Construction, Operation, Decomissioning						
MoEU	EIA	2,251	Mitigation Measures		A number of measures have been identified to prevent and / or minimize these effects that will probably occur on the floristic structure in the mine site and its surrounding. The first of these measures is determination of the definite working area in the areas where construction activities will be carried out, in the areas where permanent structures will be installed and in access roads before vegetation is stripped. Thus, the flora elements outside the construction site will be prevented from being damaged. In addition, the Project construction site and the access roads will be separated from other areas by using appropriate signboards, signs and wires. As a result, staff and vehicle access to the construction site will be restricted.		Construction						
MoEU	EIA	2,251	Mitigation Measures		Vegetable soil will be stripped and stored before construction activities begin. After the completion of the construction activities, the vegetable soil will be used for covering the landscape areas and the natural plant species will be allowed to grow again in the area.		Construction, Decomissioning						
MoEU	EIA	2,251	Mitigation Measures		Vegetation clearing operations will be carried out gradually. Thus, the fauna elements will be given the necessary time to leave the area. In addition, suitable equipment will be selected so that plant roots will not be damaged when the vegetation is stripped.		Construction						
MoEU	EIA	2,251	Mitigation Measures		Invasive flora species will be prevented from entering the project area and its surrounding. For this purpose, the tools used during vegetation stripping and / or plant transfer operations will be checked previously.		Construction						
MoEU	EIA	2,253	Mitigation Measures		In order to protect the species populations, biological restoration works will be carried out upon the closure of mine sites. In order to carry out the biological restoration works efficiently, various species as well as the seeds of endemic species will be collected and planted in the appropriate areas. The species to be used in the rehabilitation works are given in the Nature Rehabilitation Plan presented in Appendix 7. In this context, seed collection studies will be carried out at suitable periods for the determined species		Decomissioning						
MoEU	EIA	2,254	Mitigation Measures		1. Construction activities must be carried out gradually, taking into account the breeding periods of the animal species, in order to prevent disappearance of the animals breeding in the sites, where the mining activities will be carried out and administrative and technical units will be installed, and their offspring and to provide time and energy to allow escape of the fauna species to the alternative areas. 2. Where it is necessary to prevent animals from entering the project area (as specified in the legislation), the project area must be surrounded by solid wire mesh / fencing and supported with barriers, where necessary. 3. Noise and dust that will occur due to mining activities and vehicle traffic will be minimized. The measures to be taken on dust and noise (such as watering) will be implemented and regularly controlled. 4. If the animals which have limited mobility and will not be able to leave the project area (such as hedgehogs, turtles, etc.), the individuals will be collected by appropriate methods and transferred to the suitable alternative areas outside the project area. 5. The necessary measures will be taken to prevent animals from being destroyed by crushing in the project area and on the access roads to the site, and any road other than the existing and pre-determined roads will not be constructed. 6. The site personnel will be informed about the animal species and the said practices to prevent impacts of the project activities on the fauna species.		Construction, Operation						
MoEU	EIA	2,254	Mitigation Measures		In addition to the measures mentioned above, construction and vegetation stripping operations during breeding periods of the fauna species will be restricted and solid wastes from the project activities will be stored in the predetermined solid waste storage areas and disposed. Delivery of the solid wastes to the natural habitats of the fauna species will be prevented. Replacement of the natural flora elements (rehabilitation works) to be performed in the area will provide an appropriate environment for return of some fauna elements to the project area and its surrounding after the end of the project activities.		Construction, Operation						
MoEU	EIA	2,255	Mitigation Measures		The impact measure matrix prepared regarding the possible impacts on terrestrial fauna in the project area (assessment was made separately for each species), the measures to be taken to eliminate and / or reduce these impacts is presented in Table 2.115. These measures include: A. Not starting construction in breeding period. B. Surrounding with fencing. C. Prevention of dust-noise formation. D. Collection and transfer to alternative area E. Vehicle traffic control Personnel training-awareness raising	F.	Construction, Operation						
MoEU	EIA	2,257	Monitoring Measures		It will be useful to monitor especially larch and deciduous forest habitats. Because, dust rising at the atmosphere during activity may sometimes lead to unexpected drying when it comes on trees. For this reason, habitat monitoring studies will be carried out.		Construction, Operation						
MoEU	EIA	2,257	Monitoring Measures		A. In the pre-construction period, nests and offspring of the critical / key species will be controlled, the protection measures taken will be followed and the availability of these species will be monitored in the nearby areas out of the activity. B. The protection measures taken under the project during the construction period (May or June and September) will be checked and these species will be monitored in the nearby areas out of the activity. C. The protection measures taken under the project during the operation period (at least for two years in May or June and September) will be checked and these species will be monitored in the nearby areas out of the activity. Monitoring activities will be carried out by an expert zoologist and botanist in the above mentioned periods and in accordance with the principles. The Monitoring Reports will be prepared separately for May or June and September and will be submitted to those concerned.		Construction, Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	2,258	Monitoring Measures		"Critical-Key Species" Suggested for Monitoring Works for Terrestrial Fauna Species: REPTILES Testudo graeca Lacerta trilineata Ophisops elegans Ablepharus kitaibeli Dolichopsis caspius Platyceps najadum Eirenis modestus BIRDS Circaetus gallicus Buteo rufinus Asio otus Upupa epops Lanius collurio Emberiza cirius MAMMALS Erinaceus concolor Canis aureus Vulpes vulpes Martes foina Capreolus capreolus		Construction, Operation						
MoEU	EIA	2,258	Remediation Measures		The most important one of the studies to be carried out after the operation period will be the rehabilitation work. The topsoil layer, which is stripped and stored before the starting construction of the project and rich in organic matter, will be used during the rehabilitation phase. These works will be carefully planned to ensure the integrity of the forest vegetation that shows distribution in the region. In the rehabilitation works, topsoil with rich organic content, which also shows the seed bank feature, and the seeds of the endemic species and / or the species capable to form cover in a short term are also used during these works.		Decomissioning						
MoEU	EIA	2,258	Remediation Measures		The implementation of the rehabilitation plan during the operation period is important in terms of seeing the difficulties or failures that may be encountered in the process and regulation of the applications before final closing. The Rehabilitation Plan prepared for the İvrindi Gold and Silver Mine and Mineral Processing Project is presented in Appendix 7.		Decomissioning						
MoEU	EIA	3,9	HSE Measures		1. Project activities will be carried out in accordance with work planned created by the project owner especially for the project and current best practices. 2. Employees will be informed of dangers involved with their work, thereby providing a safer working environment. Detailed information about the training provided to project employees can be found under the title "Training Program" below. 3. The personnel will be provided personal protective equipment against risks that cannot be prevented by other technical and administrative precautions taken. Detailed information about personnel protective equipment can be found under the title "How to Use Personal Protective Equipment" below.		Construction, Operation						
MoEU	EIA	3,1	HSE Measures		4. Personnel working within the project site will be supervised by fences in order to control access of local residents into work sites. Entrance of the personnel and third persons into the plant will be controlled by gates that are equipped by authorized security personnel. 5. Health protection band that will be formed around the plant will allow creation of a buffer zone between activities around the project site and project units. See Section 4.2.7 for detailed information on the health protection band. 6. Briefings on current best practices of the mining sector and activities planned in the scope of the project will be provided in order to ensure that works at work sites are carried out in a safe manner. 7. The project owner will place warning labels around work sites that provide information on nature of the work and possible risks in accordance with administration procedures. 8. Regarding use and maintenance of machinery, equipment and tools within the activities, procedures and technical specifications which have been provided by suppliers and approved by the project owner will be implemented. 9. Moving parts of machinery and equipment will include protective systems (for example metal guards) in order to minimize the risk of these machinery and equipment harming their operators. 10. Visibility of machinery and equipment and the personnel in the mining site will be increased by using proper methods (for example color selection, preferring machinery and equipment with advanced line of vision, designing clothing with higher visibility, proper lighting etc.). 11. Personal protective equipment that is suitable for the work and, in this context, necessary training will be provided to project employees in accordance with health and safety policy of the project owner. 12. Personnel assignments (including contractors) will take physical strength and health requirements of the works, administrative procedures of the project owner and best practices of the industry into consideration. 13. The project site will include an infirmary that is able to provide first aid to project employees where necessary and an ambulance that allows transportation of employees to nearby health facilities when necessary. 14. Project activities will be monitored by relevant experts in order to prevent any possible muscle tensions or musco-skeletal problems any personnel working for long periods of time may experience. 15. Food courts and recreation areas within the work site which have been designed as suitable for mining sites will be provided to project employees. 16. Personal factors that may pose a risk during activities and can be controlled (for example long hair, using jewelry and accessories, clothing etc.) will be removed by regulations. Project employees will be informed of said regulations in the scope of the training program.		Construction, Operation						
MoEU	EIA	3,11	HSE Measures		17. Water that will enter the mining site during ore mining activities, surface water that accumulate on mine walls and mine surface will be removed from the mine using water pumps and managed using the water management plan described in Chapter 2. This will allow protection of the personnel working in this area against any health or safety risk caused by water accumulated in the mine. 18. Nobody except for authorized personnel will be allowed to enter excavation areas. Loading and unloading activities will be carried out by personnel who are escorting the personnel who are carrying out the activities. 19. A "Work Permit" procedure will be designed for activities with high risk factors. In this context, personnel tasked with works that may cause fire, works carried out indoors or at high elevation etc. will acquire work permits from relevant department managers. This permit will describe possible risks and hazards involved in the work and the personnel assigned to said works. Said works will only be carried out by personnel who have the work permit and have received necessary training. Health condition of the employee carrying out the works will be monitored after the work is completed in order to make sure that employee does not pose any health risk due to the work that is subject to the work permit. 20. Authorized persons and/or organizations will be assigned to ensure security at the project site (for example expert security personnel, an expert security company). These persons and/or organizations will monitor the plant and its surrounding constantly. 21. An emergency plan that will be used at the site will always be ready throughout all stages of the project. Appendix 15 shows the emergency action plan that has been created in the scope of the Environmental Impact Assessment and will be updated and developed during all stages of the project in accordance with the stages of the project.		Construction, Operation						
MoEU	EIA	3.11-3.12	HSE Measures		Occupational health and safety training will be provided by OHS authorities in the scope of a program that will be created alongside with relevant teams. Below are the main subjects of said training program: A. Environmental (for example waste management), health and safety policies and undertakings of the project owner, B. Basic field rules, C. Creating danger awareness, D. Risks and hazards specific to the field, E. Providing a safe work environment (for example personal responsibilities, behavior to avoid etc.), F. Possible health problems, G. Using protective equipment. H. Procedures (for example persons, departments or documents to consult) on any issue that may pose a question, ambiguity or risk regarding health and safety rules (for example machinery or equipment malfunctioning or being damages or being used by unauthorized personnel), I. Emergency procedures on evacuation, fire, earthquake and other natural disasters, J. Accident or incident notification/reporting procedures. K. Lock Out Tag Out procedures		Construction, Operation						
MoEU	EIA	3,12	HSE Measures		According to article 12 of Regulations on Occupational Health and Safety (Official Gazette date: December 9th 2003, no. 253111), occupational health and safety training will be provided especially under the circumstances below: A. Before starting work, B. After changes in position or work, C. In case of a change in work equipment, D. In case of use of new technology.		Construction, Operation						
MoEU	EIA	3.12-3.13	HSE Measures		In this context, a separate visitor orientation and control program will be created in order to prevent visitors from interacting with activities and sites that pose hazards and risks. Basic occupational health and safety training that will be provided to contractor personnel and visitors on relevant issues will cover the issues below: A. Environmental (for example waste management), health and safety policies and undertakings and responsibilities of contractor personnel and visitors on this issue, B. Order, proper cleaning and maintenance requirements of the plant, machinery, equipment and the materials used, C. Information on known dangers regarding the plant and how they are managed, D. Using protective equipment, E. Possible health problems and hygiene requirements, F. Precautions against any danger, G. Emergency procedures and assembly locations, evacuation paths, emergency exits etc.		Construction, Operation						
MoEU	EIA	3,13	HSE Measures		. Personal protective equipment will be provided to all project personnel as required and free of charge along with training on how to use such equipment. Attendance to training on use of protective equipment will be mandatory for all relevant personnel. All work sites (to be used in each of the work sites stated below): Protective boots; Protective reflective vest or clothing; Safety goggles and Hard hat. Mine site: Hard hat; Dust mask; Hearing protection and Safety goggles. Unit where blasting is performed: Electricity-proof boots; Hard hat; Dust mask;Hearing protection; Safety Gloves; Relevant protection against the effects of blasts and Safety goggles. Sites in which excavation is conducted, drilling sites, crushing plant area, ADR plant, open areas, maintenance sites, construction sites: Hard hat; Dust mask; Hearing protection; Safety Gloves and Safety goggles. Laboratory: Dust mask; Hearing protection; Safety Gloves and Safety goggles.		Construction, Operation						
MoEU	EIA	3,14	HSE Measures		Ensuring use of personal protective equipment by all personnel in locations within the plant where necessary will be the responsibility of OHS authorities in general and managers/supervisors assigned to each work site within the mining field for the work site in particular. Managers/supervisors assigned to this task will make sure that employees use personal protective equipment properly during work hours (shifts). Equipment that has lost its protective features due to cracking, loosening, malfunctioning or any other reason will be replaced with equipment that retains such features.		Construction, Operation						
MoEU	EIA	3,14	HSE Measures		Specific Personal Protective Equipment Planned to be used based on Types of Activity: Activities at high elevation: Body harness; Life line/life jacket and Safety harness. Hot works (for example welding): Cutting/welding mask; Transparent hand held mask (if welding goggles are used); Cutting/welding gloves; Respiration device; Welding mask; Protective gaiter; Apron and Full face mask. Indoor activities: Safety goggles/mask (based on type of risk); Body/safety harness; Life line/life jacket (based on type of risk); Walkie talkie and Other specific protective equipment (based on type of risk). Electric works: Electricity-proof hard hat (from non-conductive material); Occupational safety boots suitable for electric works (non-metal) and Electricity-proof gloves. Activities at the Leach site: Occupational safety boots; Rubber gloves; Water-proof protective clothing; Safety goggles; Protective reflective vest or clothing; Boots and Portable Sensor. Activities involved with casting: Face shield; Fire resistant apron; Aluminum fire-proof clothing; Heat shield; Work gloves (heat-proof and fire resistant) and Safety goggles. Cyanide preparation activities: Face shield with filter; Full face mask and work gloves; Occupational safety boots; Cyanide gas detector and Disposable jump suits for chemical activities.		Construction, Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	3,15	HSE Measures		<p>Precautions that must be taken in order to ensure health and safety of project employees and local residents are as below:</p> <ol style="list-style-type: none">1. The project owner will conduct analyses in order to determine dangers that may arise from the materials being used,2. Training will be provided to employees on emergency intervention management regarding storage, transportation, use and disposal of hazardous materials,3. Employees will be provided personal protective equipment regarding use of hazardous materials and their proper use of such equipment will be monitored vi necessary monitoring methods,4. Sodium cyanide will be stored in a location that is far away from corrosive, acidic and explosive substances and has been intentionally separated from the service area. Adequate ventilation will be provided inside the warehouse, which will be restricted to unauthorized persons. Sodium cyanide will not be stored outside the site,5. Tanks in which diesel fuel and other hazardous liquids that will be used within the scope of the project will be stored will be placed inside container pools (lockage) with a volume that is sufficient to hold 110% of the tank volume in order to ensure controlling any leaks. Relevant provisions of the Regulation on Protecting Buildings Against Fire (Official Gazette date: December 19th 2007, no: 26735) will apply during storage of fuel in tanks or aboveground storage,6. Fixed hydrogen cyanide gas detectors and alarms will be placed on certain locations at the site (for example the ADR plant); also mobile detectors will be at the ready. Processes that include use of cyanide will be carried out in accordance with the Cyanide Management Plan which can be found in Appendix 19,7. Locations on which chemicals other than sodium cyanide will be stored will have adequate ventilation. These materials will be stored in the most suitable location and manner based on process practices,8. Locations in the project site that pose a risk and on which hazardous materials are stored will be marked on the settlement map and these maps will be filed in relevant project facilities. Said maps will be designed in a manner that is easily understood by project employees, visitors, and the local community.		Construction, Operation						
MoEU	EIA	3.16- 3.17	HSE Measures		<p>The precautions described below will be taken in order to prevent such an incident and conduct blasting activities in a controlled manner that doesn't pose any risks in terms of safety: daily.</p> <ol style="list-style-type: none">1. Explosive substances that will be used during mining activities will be supplied daily.2. Transportation of explosive substances will be carried out in accordance with relevant provisions of the Regulation on Unmonopolized Explosive Substances and Hunting Equipment and Similar Items (Official Gazette date: September 29th 1987, no: 19589),3. Processes that involve blasting (for example transportation, preparation, use, disposal of excess or unexploded substances etc.) will be carried out by expert persons and teams (for example persons with ignition license, technical supervisor). Gendarmerie will be informed of any blasting process,4. Only persons who are authorized a trained in best practices in mining sites and administrative procedures of the project owner will have access to excavation and blasting sites. Preparation, loading, filling, firing and other activities related to explosive substances will be carried out in a controlled manner in accordance with the training,5. Modern blasting techniques will be employed in order to minimize the impact of vibration on surrounding settlements. In this context, holes in the blasting system will be blasted one by one in order to have a delay between holes with millisecond blasts,6. Necessary warning systems (for example warning signs, signal whistles, flashers etc.) will be placed around the blast site in order to inform project employees and third persons (for example visitors, local residents) about blasting processes. Unauthorized access to the blasting site will be prevented. Relevant authorities will be contacted where necessary in order to ensure management of traffic on surrounding rural roads during blasting activities,7. Blasting activities will be carried out during noon (between 8:00-18:00, except for winter) and local residents will be informed. Blasting activities will not carry out during Sundays and other holidays, if possible. The program established for blasting activities in this context will be adhered to and the blasting program will not be changed unless required,8. Blasting sites will be checked by expert personnel after blasting activities in order to detect any errors that might have occurred during blasting process and remove any explosive substance that have not detonated. This will ensure safety in basting processes and ordinary administrative activities and against fire.9. Special internal auditing procedures will be developed in order to control all processes which involve explosive substances (transportation, use, loading and blasting activities of explosive substances, disposal of unused substances etc.).		Construction, Operation						
MoEU	EIA	3.17-3.18	HSE Measures		<p>The precautions described below will be taken in order to minimize any danger (for example falling) risk that may arise due to working at high elevation (at an elevation of 1.6 meters and above) or may require use of ladders and scaffolds: @ Elevators, platforms, scaffolds and any similar system that prevents falling will be used as much as possible while working at high elevations. These systems will be inspected to ensure that they will protect employees in a safe manner and will be intact throughout the works,</p> <ol style="list-style-type: none">1. Body harnesses, life lines, safety harnesses and similar protective equipment will be used in cases where use of systems that prevent falling is not possible,2. Effectiveness of falling prevention systems or protective equipment will be tested prior to their use. Equipment with suspicious effectiveness will be immediately sent to repairs/maintenance or replaced by equipment that is known to be effective. Equipment of which repairs s impossible will not be used for protection purposes whatsoever,3. During their use, life lines will be fixed at a location that's above head level or, if no suitable location can be found, at a suitable location at body level.4. Maximum rope lengths and minimum load bearing capacities of protective equipment will be stated specifically. Unsafe practices such as tying a knot will not be used when adjusting protective equipment length,5. Falling prevention systems and equipment will be regularly inspected by an expert appointed by OHS authorities and their inspection findings will be recorded,6. Any openings/cracks on the floor will be filled so as to be able to carry the load on them and region on which said process is conducted will be fence and protected before starting any work at high elevation,7. Employees who will be working at high elevation will be subjected to basic training and refresher trainings in regular intervals. Relevant unit managers will issue a work permit for works that will be carried out at higher elevation,8. Ladders will only use by authorized personnel and in order to reach work areas at higher elevation. Ladders will not be used for any other purpose such as supporting a scaffold or reinforcing any structure,9. Multiple persons will not be allowed to use the same ladder at the same time,10. Employees will be briefed on the safest angle to use a ladder (the angle between ladder's bottom and its fulcrum),11. Any person using a ladder will be warned to face the ladder, climb its steps one at a time and not to use the uppermost step. Care will be taken to use a ladder with sufficient height to reach the target height,12. Upper section of the ladder will be fixed on a stable surface and lower section of the ladder will be held stable by an assisting employee,13. If the vehicle on which the ladder will be used is on an open area, necessary warning signs will be placed in order to isolate the vehicle and draw drivers' attention,14. No items will be left on ladder stairs,15. Ladder or scaffold locations will not be changed if they are occupied by an employee,16. Work site will be cleared for safety purposes when installing a scaffold that is above a certain height (for example 15 meters and above),17. Scaffolds will be reinforced with supports at a number that is sufficient for its height and sections or fixed on a safe surface,18. Areas on which higher elevation works are being carried out (ladders, scaffolds etc.) will have warning signs beneath them in order to restrict pedestrian traffic on them.		Construction, Operation						
MoEU	EIA	3.18-3.19	HSE Measures		<p>Precautions taken in order to prevent risky and dangerous situations from occurring during electric works are described below:</p> <ol style="list-style-type: none">1. Electric personnel will receive legal training and certificates at the start of the work or as soon as possible.2. Regulations on electrical installations, electricity connection of high voltage equipment and equipment used in hot works will only be used by authorized personnel. Maintenance works regarding those equipment will also be carried out by authorized personnel.3. Any temporary or permanent modifications on electrical installation will be done by using safety tools and protective equipment.4. A grounding system will be installed on locations in which flammable materials are stored or used.5. The system will use cables that would prevent short circuits and provide a complete isolation.6. Electrical tools will not be used at the work site if water is present in the area.7. Extension cords will be kept away from hazardous materials, sharp objects and surfaces with high temperature.8. Lock out and tag out procedures will be carried out in accordance with administrative procedures of the project owner and good industry practices.		Construction, Operation						
MoEU	EIA	3,19	HSE Measures		<p>Precautions taken in order to prevent risky and dangerous situations from occurring during welding works are described below:</p> <ol style="list-style-type: none">1. The personnel assigned to welding works will be responsible for ensuring that cables of tools and machinery are undamaged and plugged into proper and safe sockets. Care will be taken to ensure that cables don't block corridors or pathways.2. The personnel assigned to welding works will inform managers of units near the work site regarding the work that will be carried out, foreseen starting and finishing dates and factors that may pose a risk. If the work site is at higher elevation, necessary precautions will be taken and employees will be informed in order to prevent any risk or hazard to be imposed on persons working at higher elevation,3. Preliminary research required to prevent damaging any cables, pipes etc. that are being used at the site by other personnel during welding or cutting processes will be conducted.4. Fire extinguishers will be at the ready during necessary welding works carried out in locations with fire hazard. In such cases, the expert carrying out welding works will be escorted by one or more assistants who will intervene in case of an emergency,5. Relevant machinery will be shut down immediately after welding or cutting works are completed. Machinery will not be left in operating condition during lunch, rest or any other break.		Construction, Operation						
MoEU	EIA	3.19-3.20	HSE Measures		<p>The precautions described below will be taken during activities that are being carried out indoors subject to special work permits:</p> <ol style="list-style-type: none">1. Necessary warning signs and barriers will be placed around the indoor location in which the works will be carried out in order to manage vehicle and pedestrian traffic at the site,2. Prior to the e works, the indoor location will be inspected for any source (for example air, water, hazardous material, moving parts etc.) that may create a risky working condition. If necessary, the indoor location will be cleaned beforehand in order to remove risk sources from the premises,3. Moving materials or equipment present in the indoor area will be removed from the site prior to the works,4. Persons entering the indoor location will be using protective equipment that are suitable for present risk factors (for example protective clothing, oxygen mask),5. Explosion resistant lamps will be used in indoor locations that need lighting and may contain explosive gas,6. Suitable extension cords will be used when entering indoor locations made of metal which have no fixed lighting ,7. If necessary, the indoor location will be ventilated for a sufficient period of time before starting the works. Safety of the area in terms of respiration will be checked via necessary analyses and measurements before relevant personnel enters the indoors location,8. In all cases where works will be carried out indoors, assistant personnel with the capacity to apply relevant procedures along with emergency warning will be escorting the works from outside the area.		Construction, Operation						
MoEU	EIA	3.20-3.21	HSE Measures		<p>Traffic based risks and dangers that may create negative conditions for local residents and project employees will be minimized throughout the project by taking the precautions below:</p> <ol style="list-style-type: none">1. Personnel assigned to vehicle use will have necessary driving permits and will be subject to specially designed training (for example safe parking spots, horn use for warning purposes, traffic direction, right of way, speed limits, rules regarding transportation of additional persons, parts that are required to be carried in vehicles and safety equipment etc.). In this context, drivers and operators will receive training on traffic rules and vehicle and equipment supervision. These trainings will have the purpose of briefing and creating awareness on issues such as traffic load, accidents, conditions due to weather conditions which may endanger driver safety, blind spots, pedestrian roads, and pathways that are used by animals,2. Precautions necessary to ensure that the personnel who will be working in the mining site work safely around trucks and similar moving vehicles will be taken, pedestrian and vehicle roads will be separated using proper technical practices, thereby keeping vehicles away from working personnel,3. Suitable signs and signboards will be placed to indicate road constructions. Reflectors and/or flashing signals will be used to provide visibility at night,4. Necessary traffic signs will be placed in and around the project site. Field operators and other employees will be briefed and warned about said signs,5. During their training, drivers will be warned not to create unnecessary noise (for example blowing horn).6. All vehicles and work machinery will be subject to regular maintenance in order to maintain their noise, dust and gas emission levels under control.7. Traffic direction will be established in a safe manner. Traffic cones with warning signs will be placed in addition to relevant adjustments in cases where traffic has to be kept away from work sites,8. Drivers will be briefed on (legal) speed limits both inside and outside the site,9. A map that shows all access and service roads inside the site will be prepared and distributed to drivers. Project personnel will not be allowed to use roads other than transportation and service roads that have been approved in the scope of the project,10. Transportation and service roads will always be kept clean, with all necessary maintenance done.		Construction, Operation						
MoEU	EIA	3,21	HSE Measures		<p>Precautions against Geotechnical Risks and Landslide, Rock fall etc.</p> <ol style="list-style-type: none">1. Starting from the construction stage of the project, facilities such as opencast, EOK storage area, heap leach area and solution collection pools will be managed effectively both during and after all mining activities in order to remove any possible geotechnical risks arising from the project. In this context, Section 2.4 contains all precautions against geotechnical risks,2. Work sites will be constantly monitored for any geotechnical risk and precautions will be taken against any issue that poses a danger.3. Work sites will be assessed in terms of landslides, rock falls and seismic activity. Protective banks will be constructed against possible risks, these risks will be minimized by sloping activities,4. Personnel access will be restricted for areas involving risks such as sliding or crashing on unstable slopes. In particular, precautions will be taken against risks and dangers the personnel who have to work on foot while work machinery are being operated,5. Geotechnical stability of the opencast, EOK storage area and heap leach area will be monitored using proper monitoring techniques during operation and closing stages of the project.		Construction, Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	3,22	HSE Measures		Precautions taken and planned general intervention practices in this scope are listed below. except for areas which have been established based on hazard analysis. Necessary warnings and penalties will be used to prevent cigarette butt littering. 2. Firefighting equipment at sufficient number will be place in necessary locations (for example closed buildings, places where flammable or combustible substances are stored, work areas with high temperature etc.). The front of firefighting equipment will never be blocked, 3. Teams which have been trained at sufficient level to use firefighting equipment effectively will always be present at the site, 4. Operability of firefighting equipment will be inspected regularly, 5. There will never be blockage in front of emergency exits, regular exits and corridors, 6. Thinned paint, benzene, alcohol and similar flammable and/or explosive substances will not be used during cleaning. Flammable liquids (for example solutions) that will be used during activities will be discharged into sinks or water outlets, 7. Dry firefighting equipment will be used for extinguishing flames due to electrical currents rather than water. Electricity will be cut off before any intervention when necessary.		1. Smoking in the plant will not be allowed				Construction, Operation		
MoEU	EIA	3,26	Employment Policy and Living Arrangements		Local residents will have the priority in hiring the personnel who will be employed in the scope of the project. These personnel are expected to continue living in their current housings. On the other hand, foreign work force (work force from outside the region, from other provinces) will be considered in order to meet the need for qualified personnel. Qualified personnel who will be involved in the project in this context will be accommodated in prefabricated housings during the construction stage or at the site or the nearest city center. During the operation stage of the project, personnel hired from outside the region will be accommodated in the province of Balikesir of Burhaniye district center, no lodging or housing will be present at the site.						Construction, Operation		
MoEU	EIA	3,26	Camp Site Conditions		The service area that will be assigned to the management staff and other relevant personnel who will be working at the mining site (for example engineers, drilling teams etc.) will include offices and service buildings. This area will also include a training room. The service area will include an infirmary with sufficient capacity. Also, there will also have an ambulance that will allow transferring of personnel to nearby health institutes in case of emergency at the site. A changing room will be provided to the personnel who will be working at the mining site in the service area region. This room will include locker rooms that will allow the personnel to store their personal belongings and casual clothes in a clean environment during their shift in addition to showers, toilets and similar facilities. There will be a separate changing room for female personnel. The dining hall that will serve the mining personnel will also be in this region.						Construction, Operation		
MoEU	EIA	3,26	Camp Conditions		The ADR plant in which mineral processing process in the scope of mining activities will be performed will include a recreation room that is reserved for the process personnel. Also, there will be a mining workshop at a location that is closer to the mine site. This building will include offices and recreation rooms						Construction, Operation		
MoEU	EIA	3,26	Domestic Wastewater		Domestic waste water created by the personnel who will be employed for the project will be disposed of in domestic waste water treatment plant which will be constructed at the site.						Construction, Operation		
MoEU	EIA	3,26	Solid Waste		Similarly, any solid waste (domestic, recyclable, hazardous, or special waste) that will be generated in the scope of the project will be collected inside the site regularly and temporarily stored in bins, barrels etc. structures or areas of proper qualities and at sufficient amounts. Therefore, solid or liquid waste generated at the site will not pose any health or safety risk for the project personnel.						Construction, Operation		
MoEU	EIA	3.27-3.28	Project Time Table		The goal is to start construction activities in the scope of the project in the second quarter of 2016, enter the pre-commissioning stage in the first quarter of 2017 and enter commissioning stage again in the first quarter of 2017. The estimated project life is 10 years following a year of pre-stripping, after which an environmental restoration/rehabilitation and closing activities which will last for a year are planned. Accordingly, production activities are estimated to be completed during the year 2027. Closing activities will be carried out in parallel with production throughout final years. Environmental monitoring activities in the scope of the project will start during construction stage of the project and continue for a period of time following closing and post-commissioning stages at the end of the mine's life.						Construction, Operation, Decomissioning		
MoEU	EIA	3,29	Stakeholder Engagement		TÜMAD will establish its own Public Relations Department in parallel with public progress within itself and deliver suggestions, opinions and expectations of residents living in nearby settlements and other relevant stakeholders to the Project Owner via this department for the purpose of minimizing the social impacts stated above and strengthening positive impacts in the scope of the İvrindi Gold and Silver Mine and Mineral Processing Project. For detailed information on relevant participation activities, see Stakeholder Participation Plan in Appendix 21.						Construction, Operation		
MoEU	EIA	3,29	Stakeholder Engagement and Mitigation Measures		<ul style="list-style-type: none">• Preparation of a transparent and functioning Employment Plan and providing employment opportunities throughout the region as much as possible• Identifying stakeholders that are uninformed about the project• Precautions Taken against Possible Social Impacts are uninformed or have incorrect information about the project• Organizing contact meetings in nearby settlements regularly• Distributing brochures and publicity bulletins (see Appendix 21 Stakeholder Participation Plan)• Taking any precaution necessary to prevent damaging farmlands and grazing fields in the region during the construction stage• Recording all complaints from people living in the region and responding to them as soon as possible via the complaint mechanism that will be created in the scope of the project.• Compensating any person of whom farmlands or grazing fields have been damaged.• Placing traffic signs on the roads that are being used for access to the project site (for example speed limit, road bend signs)• Briefing vehicle users on speed limits and critical points on access the roads where necessary• Watering access roads in certain seasons and where necessary in order to prevent dust formation• Creation of a Public Relations Department based on corporate operations in the scope of the project and creating an effective complaint mechanism within this department (see Appendix 21 Stakeholder Participation Plan)• Regularly informing nearby residents on environmental monitoring activities in the scope of the project• Preparing instructions on operation of Social Responsibility Activities in parallel with corporate operations• Designing projects in a manner in which projects carried out in the region will promote sustainable local and regional development• Continuing monitoring activities in the scope of an effective Stakeholder Participation Plan and monitoring Key Performance Indicators (see Appendix 21 Stakeholder Participation Plan)		• Providing correct information to people who		Construction, Operation				
MoEU	EIA	4,1	Process Description and Auxiliary Facilities/ Units		The project site (EIA Site) situated within the 6,606.37 hectare licensed areas in which the EIA studies will be conducted is an approximately 835.53 hectare land. The project is based on enrichment of ore mined using opencast mining methods via heap leach and ADR processes. Main and auxiliary facilities and units which will be needed and constructed in the EIA site for gold and silver production are as below: 1. Opencast mining sites, 2. Gangue mineral (GM) storage area, 3. Leap heap site, 4. Vegetable (top) soil storage areas, 5. Aboveground conveyor, 6. Agglomeration unit, 7. Crushing-sieving plant, 8. Coarse ore stock yard, 9. Emergency and pregnant solution basins and non-pregnant solution tank, 10. ADR Plant, 11. Drainage canals, 12. Service roads, 13. Administrative offices, technical offices and other auxiliary plants and units.						Construction, Operation		
MoEU	EIA	4,4	Project Location		The method that will be used to extract ore present in the İvrindi Gold and Silver Mine is opencast mining. The four open mining sites in which mining activities in this context will be carried out are "Karteldere", "Kabaktepe", "Balıktepe", and "Güney-Boyun". Surface area of these open mining sites are 43.73 ha, 36.65 ha, 30.67 ha and 23.16 ha, respectively, for a total of 143.21 ha.						Construction, Operation		
MoEU	EIA	4,5	Project Design-Slope Stability		Slope stability in open pits is based on many variables such as geological structural features (stability of rocks, whether they are cracked, whether they have pores etc.), slope geometry, status of underground waters, mineral properties and the excavation technique employed (excavation via blasting, excavation with machinery). Bench slope (mirror) angle will be 75°, and benches will be 12 meters high and minimum 8 meters wide according to geotechnical studies and stability analysis conducted in the area.								
MoEU	EIA	4,5	Project Design-Logistics		Benches are designed by taking 4 m3 excavators and 50 ton trucks that will be used in the scope of the project into consideration. Minimum mine width for the open pit floor is established as 45 meters. Access ramps of each mining site will be structured according to truck loads and planned so as to create a safe mining traffic. Construction of transportation road ramps is required to reach the benches below in the scope of the project. In-pit service (transportation) roads will be constructed as a two way road with a width of 15 meters by taking maximum 8% incline into consideration. This width has been determined by taking 50 ton trucks that will be used in material transportation into consideration. After taking the maximum 10% incline into consideration, transportation roads outside the pits are planned to be one way roads with a width of 8 meters or two way roads with a width of 15 meters. Table 4.3 shows design parameters of open pits.						Construction, Operation		
MoEU	EIA	4,12	Rock Processing		Mineralized rocks with cut-off grades of higher than 0.3 grams/ton will be transported to the primary crusher and/or ore stock yard which lie south of Güney Boyun Open Pit via trucks. Gangue which will be extracted from Karteldere and Kabaktepe open pits will be transported to GR storage area, whereas gangue extracted from Balıktepe and Güney Boyun open pits will be stored in Karteldere and Kabaktepe open pits which have been operated through the first 5 years.						Construction, Operation		
MoEU	EIA	4,12	Dewatering Management		Dewatering will be carried out only within the open pit site, not other dewatering activity is planned outside the open pit site. Water on pit floors must be evacuated in order to provide a safe work environment and operate pit sites in an efficient manner. For this purpose, dewatering basins are designed for floor sections on which open pits are located. These basins will be reopened with each pit elevation drilled and continue downwards the open pit elevation. Thus, water that is expected to leak into the pit will be collected in the basin prepared in the pit floor and evacuated from the pit using dewatering pumps in the scope of the water management plan (for example reusing in the process)						Construction, Operation		
MoEU	EIA	4,14	Crushing-Sieving Plant		Suitable dust suppression methods will be employed in order to keep dust that may accumulate in certain locations during this process under control. Figure 4.8 contains photographic examples that depict the transportation process in the scope of the ore crushing process and a crushing plant example.						Construction, Operation		
MoEU	EIA	4,14	Heap Leach Site Location and Size		The heap leach site will be located south of open pit at the foothills of Kızılgirme and Kocayatak hills at an elevation between 1,200 1,029. Design capacity of the heap leach bed site will be approximately 75 million tons, and its economic life will be 10 years. Construction of the leach bed will be carried out in two stages. The first stage of the leach site will have a projection of approximately 53 ha, whereas the second stage will have an area of 31 ha. Design capacity of the heap leach site has been planned in a manner to allow processing of ore of this volume. Final height of the heap leach site will be 80 140, which has been designed so as to be compatible with topography of the area, and each layer of the leach site will be 10 meters high. Benches of the site will be 12.5 meters wide. Layer of the heap leach site will have a suitable incline and the leach site will be stabilized during and after operation.						Construction, Operation		
MoEU	EIA	4,15	Leach Process		The leach process will be carried out by using an alkali, diluted cyanide solution. The solution prepared will be fed to the active layer of the heap site that will be leached for a period of 175 days via a trickling and spraying system with a speed of 10 liters/hour per meter square.						Operation		
MoEU	EIA	4.16-4.17	Heap Leach Site Design and Management		The heap leach site will be constructed in two stages and with a capacity of 7.3 million tons. The area that will be constructed during the first stage will have the capacity to hold ore production during the first 5 years. The second stage will hold ore production during the second five year period. The floor of the heap leach site has been designed in accordance with international standards and based on the zero discharge principle. Proper leveling procedures will be applied on the heap leach site floor in order to make it suitable for application of the primer system. First, an impermeable layer will be formed on the prepared floor. This process involves formation of a clay layer with permeability not higher than 10-9m/seconds and which has been compressed to a thickness of 500 millimeters. Afterwards, this impermeable layer will be covered with a high density polyethylene (HDPE) geomembrane composite primer system with a thickness of 2 millimeters. The uppermost layer of the primer system will include a drainage layer which will be comprised of crushed ore, gangue rocks or pebbles. The drainage layer will be filled by a material which allows accumulation of pregnant solution that flows through the leach site on the HDPE geomembrane primer. The primer system described will prevent discharge of process based solutions to a receiving environment. The impermeable substance that will be used in the heap leach site and basin floors will be provided from the cover coat present at the project site or any other substance with sufficient properties and is present in the project site. During the process of compressing the substance, the substance will be properly heated and compressed using cylinders.						Operation		
MoEU	EIA	4,17	Waste/Hazardous Waste		In the waste list which can be found in Regulation on Waste Management Appendix-IV, heap leach process based plant waste can be found as "Probably Hazardous Waste" as the code M as "Other waste which contain hazardous substances and are caused by physical or chemical processing of metallic minerals" under the sub header "Waste Caused by Physical or Chemical Processing of Metallic Minerals" (01.03.07) under the header "Waste Resulting from Mine Prospecting, Extraction, Processing, Subjecting to Physical and Chemical Processes" (01.03) with the code (01). In this context, it should be determined whether said (M) code waste are hazardous based on threshold concentration values provided in Appendix-3 section B of the same regulation. For this purpose, TÜMAD Madencilik Sanayi ve Ticaret A.Ş. has provided a waste sample to TÜBİTAK MAM Institute of Environment and Clean Production. According to the report prepared by the institute on 22.12.2015, the sample was declared as "non-hazardous waste" (see Appendix 22 Plant Waste Sample Test and Analysis Report). In addition, the project owner will prepare a "Waste Management Plan" in following stages regarding management of mineral waste.						Construction, Operation		
MoEU	EIA	4,18	Solution Collection System		The pregnant solution that flows through the ore heap will be collected on the geomembrane primer via a drainage system that is comprised of holey pipes that are located on drainage layer. The solution collected will be transferred to the pregnant solution basin to be subjected to enrichment.						Operation		

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	4,18	Closing and Washing Process		After the mine's life is over, the leach process carried out in the heap leach site will be over as ore production targeted in the open pit has been completed. Following this, solution left inside the ore heap after past operations will continue to be drained from the heap leach site for a period of time although no new solution enters the system. After final gold and silver metals remaining in the heap is collected with this drainage, the site will be subjected to washing in order to clean the system of cyanide, metals and other pollutants. When the chemical concentration of the washing water reaches a suitable level according to relevant regulation it will be clean of its toxic properties and discharged by evaporating using evaporators. Scenarios such as leaving the area as a wet area or obtaining relevant permits for discharge will be evaluated in the following stages of the mine.		Decomissioning						
MoEU	EIA	4,19	Runoff Infrastructure and Mitigation Measures		Process based liquids and runoff based waters will be managed via basins and tanks constructed at the project site during the operation stage of the project. Below is the list of basins and tanks that will be constructed in this context: 1. Water collecting, settling and flood basins 2. Pregnant solution basin 3. Non-pregnant solution tank 4. Emergency basin (flood basin) Management of process and runoff based waters via the structure listed above will be carried out in accordance with the "Plant Water Management Plan."								
MoEU	EIA	4,19	Water Collection Basins/ Permitting		Water collection basins, which will be constructed if required in the scope of the project, will be used to collect rainfall and runoff water before they are transferred to ADR basins if water coming from interception channels will not be discharged directly to the receiving environment. Final design for construction of said basins can be updated in the scope of the "Interception Channel Planning Report" which will be submitted to Regional Directorate of State Hydraulic Works.		Construction, Operation						
MoEU	EIA	4,2	Settling Basins/ Permitting		Water collected in these areas will be transferred to ADR Basins. Also, laboratory analyses will be conducted on water collected in these basins. Discharging criteria will be considered if water in the basins rise too high, this water will be discharged to the receiving environment if discharging criteria are met. An industrial waste water treatment plant can be constructed in cases where necessary and where discharge criteria are not met. Regarding settling basins, project approval will be taken in the scope of the "Memorandum on Waste Water Treatment/Deep See Discharge Plant Project Approval no. 2014/7" and construction will not begin unless this approval is granted.		Construction, Operation						
MoEU	EIA	4.20-4.21	Flood Basins/ Permitting		Flood basins have been designed downstream of and at the same volume as settling basins as a safety measure. The purpose of flood basins is to prevent flooding of water with a volume of twice of the water that may be collected in settling basins which may be contaminated into the receiving environment when water volume collected in settling basins. Basins mentioned in the report will be constructed if necessary and the final design in this regard will be carried out as approved by the Regional Directorate of State Hydraulic Works.		Construction, Operation						
MoEU	EIA	4,21	Design Mitigation Measures		Pregnant solution and emergency basins are designed to be impermeable. The pregnant solution basin has a volume of 93.000 m3 and it will have a solution volume of 24 hours. The emergency basin will have a volume of 412.000 m3. Floor of the pregnant solution basin will be coated with a double layer primer system. Basin floor will be coated with 300 mm thick impermeable substance, two layers of high density polyethylene (HDPE) geomembrane primer with a thickness of 1.5 m each. There will be a geonet leak detection layer between two HDPE geomembrane layers. In addition, there will be a second leak detection layer between the impermeable substance and the HDPE layer. This primer will be placed on basin floor in order to provide high grade safety level in terms of leak control. The emergency basin will have a single layer primer system.		Construction, Operation						
MoEU	EIA	4,24	Topsoil- Mitigation Measures		Construction of an approximately 15 ha area north-east of the project site is planned for the purpose of storing vegetable soil stripped from the project site during the preparation stage. Vegetable soil layer that will be stored will be vegetated temporarily in order to protect it from wind and water erosion. Stored top soil layer will be used in rehabilitation works after the operation activities of the project.		Construction						
MoEU	EIA	4,25	Mitigation Measures		Ore stock yards and crushers will be connected to each other via conveyor belts. The system will contain dust removal system in necessary locations.		Operation						
MoEU	EIA	4,26	Mitigation Measures		A land with an incline that will not cause any erosion or landslide has been chosen while planning the GR area. In addition, measures required preventing contamination of river, dam and Puddle Lake waters will be taken and said gangue rock will not be dumped into any land or forest without permit.		Construction, Operation						
MoEU	EIA	4,29	Road Construction and Mitigation Measrues		Plant roads (service roads at the site) will be constructed for the purposes of transportation of materials extracted to crusher, GR storage area, heap leach or any other site and transportation operations between the mine site and the process site. These roads will be 8 meters wide and have as minimal incline as possible. In this context, construction of a plant road that will be approximately 3,890 meters long is stipulated.		Construction, Operation						
MoEU	EIA	4,31	Hazardous Chemicals		Transportation and use of chemicals will be carried out in accordance with relevant regulations and as stated in Substance Safety Information Sheets (SSIS) prepared by manufacturing companies.		Construction, Operation						
MoEU	EIA	4,31	Sodium Cyanide		Procurement, transportation, storage and similar processes regarding cyanide that will be used in the process will be carried out in accordance with the Cyanide Management Plant (see Appendix 19). In this context, sodium cyanide will be prepared in the cyanide system which will be installed and operated in accordance with the International Cyanide Management Code and Turkish legislation in effect.		Operation						
MoEU	EIA	4,33	Explosive Materials		The explosive materials to be used during mining activities within the scope of the project will be supplied by means of daily transportation. Transportation of explosive substances which will be used at the project site will be carried out in accordance with relevant provisions of Rules and Procedures for Production, Import, Transport, Storage, Sales, Use, Disposal, Inspection of Unmonopolized Explosives, Hunting Materials and Similar no. 19589 dated September 29th, 1987.		Operation						
MoEU	EIA	4,34	Water Managment Plan		Contaminated surface flow waters which couldn't be prevented from leaking into the plant and contacts contaminated surfaces will be drained via drainage channels and used in accordance with the water management plan.		Construction, Operation						
MoEU	EIA	4,41	Temporary Waste Collection Area (Compliance)		hazardous and non-hazardous solid waste generated in the scope of the project (for example construction and demolishing waste, non-hazardous waste generated during repairs and maintenance activities etc.) will be collected in a temporary waste collection area which will be built around the service area.		Construction, Operation						
MoEU	EIA	4,41	Wastewater Treatment Plant (Mitigation Measures)		Domestic waste generated by the personnel during construction and operation stages of the project will be treated in package domestic wastewater treatment plant which will be built within the project area at sufficient capacity. The package domestic wastewater treatment plant will be constructed on the most suitable location based on environmental and topographical conditions. Package domestic wastewater treatment plant output will be discharged to the nearest stream bed based on the location of the plant.		Construction, Operation						
MoEU	EIA	4.41-4.42	HSE Measures		Relevant units within project area will be surrounded by wire fences. In addition, open pits will be surrounded by fences of suitable type. In addition, plant entrance will be restricted at the entrance gate with the security cabin. The entrance gate will be occupied by personnel in order to ensure safety of the plant and workers.		Construction, Operation						
MoEU	EIA	4,42	Drilling/ Blasting		The projected amount of explosives per hole is 33.6 kilograms. In the blasting system used, all holes will be blasted one by one with a certain delay between holes (using a suitable delayed capsule inspected and in accordance with TSE standards) with low charge millisecond blasts. The maximum number of holes that will be blasted at once will be 230.		Construction, Operation						
MoEU	EIA	4,5	Permitting		Revised operating project will be submitted to General Directorate of Mining Affairs if operating process submitted to the General Directorate of Mining Affairs and operating projects on prospecting licenses that will be submitted states production amounts.		Construction, Operation						
MoEU	EIA	4,6	Mitigation Measures		Dust suppression process will be applied at other locations in which materials are distributed among units at primary crusher exit. Secondary Crusher: Dust suppression methods will be employed in certain locations throughout the process in order to prevent any possible dust.		Operation						
MoEU	EIA	4,61	Mitigation Measures		Ore that has been subjected to agglomeration will transfer to the heap leach system at the unit exit via conveyor belts. It has been projected to coat the agglomeration unit and aboveground conveyor belt base area with an impermeable material (concrete or plastic) in case of process water spilling to the ground. This will not be necessary in cases where process water is being used. The issue will be finalized during test studies at the feasibility stage.		Operation						
MoEU	EIA	4,62	Mitigation Measures		Solution collected in the pregnant solution basin will be pumped into the carbon adsorption unit, and non-pregnant solution that exits this unit will be transferred to the non-pregnant solution basing by gravity and sent back to the leach area after chemicals at suitable amounts are added to it. An emergency basin will be constructed in order to prevent any negative impact that may arise due to heavy rainfall or any malfunction during the process. This basin will be either empty or will contain solution at low levels during normal operating conditions.		Operation						
MoEU	EIA	4,65	Mercury HSE		Mercury at an amount that would jeopardize occupational health and safety has not been found in the ore during the scoping studies. Test measurements and assessments will be repeated during detailed feasibility studies and a mercury retort system will be installed in the furnace area to cleanse the material of all mercury if necessary.		Operation						
MoEU	EIA	4,65	Compliance		Chemical substances required during the process is projected to be supplied either domestically or from overseas and transported to the mining site in accordance with procedures stated in material safety data sheets. Provisions of the Regulation on Transportation of Hazardous Wastes by Road no. 28801 entered into force on October 24th 2013 will apply to transportation of hazardous substances on highways.		Operation						
MoEU	EIA	4,66	Cyanide		Daily use will be approximately 15 tons. Procurement, transportation, storage and similar processes regarding cyanide that will be used in the process will be carried out in accordance with the Cyanide Management Plant (see Appendix 19). In this context, sodium cyanide will be prepared in the cyanide system which will be installed and operated in accordance with the International Cyanide Management Code and Turkish legislation in effect.		Operation						
MoEU	EIA	4,7	Explosion Mitigation Measures		Blasting activities will be carried out during ore extraction operations at the project mining area. ANFO and emulsion will be used as explosives in the scope of these activities. Daily transportation and procurement of explosive materials is projected. Transportation of explosive substances which will be used at the project site will be carried out in accordance with relevant provisions of Rules and Procedures for Production, Import, Transport, Storage, Sales, Use, Disposal, Inspection of Unmonopolized Explosives, Hunting Materials and Similar no. 19589 dated September 29th, 1987.		Construction, Operation						
MoEU	EIA	4,71	Roads- Permitting		Two types of roads, namely mine roads and plant roads will be constructed in the scope of Project works. However, no roads will be constructed to provide access to the site; rather existing roads will be used. Safety precautions required in terms of traffic and road safety will be taken for roads that will be used to access the work area or for transportation. Regarding other issues, regulations related to "Highway Traffic Law" no. 2918 will be adhered to, a "Passageway License" will be obtained by applying to the Department of Transportation Planning and Rail Systems before the plant is operational, and provisions stated under the title "8.30 Mining Areas (Administrative Facilities, Temporary Facilities and Furnaces" of 1/100,000 scale Balıkesir Çanakkale Environmental Plan approved by the Ministry of Environment and Urbanization on June 5th 2015 will apply. In addition, no permanent damage will be caused on roads under duties, authorities and responsibilities of the Metropolitan Municipality during construction and operation stages and the project owner will cover any damage caused on neighborhood roads in order to preserve transportation safety standards and relevant departments will be contacted in order to obtain necessary licenses and permits in case of an excavation on the same roads in accordance with the 1/5,000 scale Master Development Plan and the 1/1,000 scale Implementary Additional Development Plan.		Construction, Operation						
MoEU	EIA	4,76	Health Strips Permitting		"Enterprises which cause any amount biological, chemical, physical spiritual or social harm or has the potential to do so, pollute natural resources and must definitely kept away from settlements" are defined as first class non-sanitary enterprises in the scope of Regulation on Business and Operation Licenses (Official Gazette no. 25902, date 10.08.2005). With the sentence "It is mandatory to create a health protection strip surrounding industrial estates, organized industrial estates and industrial districts along with first class non-sanitary enterprises built outside these zones," Article 16 of the same regulation regulates issues regarding creation of a health protection strip surrounding such plants The İvrindi Gold and Silver Mine and Mineral Processing Project is classified as industrial mining activities (Article 3.7: open enterprises built on lands of 25 hectares or more (including excavation and casting sites)) as defined in Appendix-2 of said regulation. The same article of the regulation includes the provision "Health protection strips shall not be outside property borders and no housing towards settlements or human housing shall be allowed within this zone." Also regarding establishing health protection strip distances, the same article states that "Health protection strips are established by a commission after taking harmful effects and pollutant factors of plants on the environment and public health into consideration. Health protection strips are established by taking industrial estate borders as the basis. Regarding plants that require preparation of an EIA report, distances stated in this report shall be taken as the basis."		Construction, Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	4,76	Mining Production Activities Permitting		<p>Regarding mine production activities, article 17 of the same regulation includes the provision "Business licenses for mining production activities and temporary facilities within the license area due to these activities are obtained from special provincial administrations." On the same issue, additional paragraph of article 5 of the same regulation states that, in the scope of conditions a plant must meet in order to obtain a business license, (as prepared with the decision no. 2011/1900 dated 23.05.2011) "Provisions of article 7 of the Mining Law no. 3213 entered into effect in 4/6/1985 will apply regarding application of this Regulation on mine production activities and temporary facilities based on these activities." Relevant additional paragraph of article 7 of the Mining Law no. 3213 as amended by the Law no. 5995 states that "Business licenses for mining production activities and temporary facilities within the license area due to these activities are obtained from special provincial administrations."</p> <p>However, as stated in item 5 of article 1 of the Law on Establishing Metropolitan Municipalities in Fourteen Provinces and Founding of Twenty Seven Provinces Making Changes on Certain Laws and Statutory Decrees, legal personality of special provincial administrations have been disbanded for provinces listed in items 1, 2 and 4 of the same article. The province of Balıkesir, in which the project is located, is among the provinces listed in item 1 of this article. Again, item 7 of article 3 of the Law no. 6360 states that governorates have the duty and authority regarding business licenses for mining production activities and temporary facilities within the license area due to these activities in provinces in which special provincial administrations are disbanded.</p>		Construction, Operation						
MoEU	EIA	4,77	Business License- Permitting		As described above in great detail, Business License for the İvrindi Gold and Silver Mine and Mineral Processing Project will be obtained from Directorate of Natural Resources, Licenses and Cultural Assets under the Governorate of Balıkesir Department of Investment Monitoring and Coordination. Thus, Business License application will be made to this department after completing the licensing processes required in the scope of the Project and before starting construction activities for the units mentioned in the EIA Report. This department will have to establish the health protection strip distance based on regulatory requirements stated above. A health protection strip has been suggested in the scope of this EIA Report and in light of assessments made in order to serve as a basis.		Construction, Operation						
MoEU	EIA	4,77	Health Strips HSE		The proposed health protection strip areas related to the mining area will be surrounded by fences in order to prevent unrestricted access of any living being including humans and wild animals. Following completion of rehabilitation works, fences in some regions will be adjusted while final fences surrounding open pits will remain.		Construction, Operation						
MoEU	EIA	4,77	Health Strips Permitting		The Health Protection Strip Distances suggested in accordance with the Directive on Establishing Distances of Health Protection Strips Left Around Non-Sanitary Enterprises which may have a Negative Impact on the Environment and Human Health" no. 6359 entered into effect in 17.02.2011, the Final Health Protection Strip established by relevant authority will be complied with.		Construction, Operation						
MoEU	EIA	5,29	Compliance		The requirements of the Regulation on Water Intended for Human Consumption entered into force through publication in the Official Gazette dated 02.17.2005 and numbered 25730, will be fulfilled during meeting of the drinking water and domestic water requirement of the personnel.		Construction, Operation						
MoEU	EIA	5,29	Permitting		The packaged domestic wastewater treatment plant will treat domestic wastewater in accordance with the discharge standards defined in Table 21 of the Water Pollution Control Regulation.		Construction, Operation						
MoEU	EIA	5,3	Permitting		Before the installation of the packaged treatment plant, project approval will be received under the "Wastewater Treatment / Deep Sea Discharge Plant Project Approval Circular" with no. 2014/7" and then application will be made to T.R. Ministry of Environment and Urban Planning for environmental (discharge) permits in accordance with the "Regulation on Environmental Permit and License".		Construction, Operation						
MoEU	EIA	5,3	Mitigation Measures		A. Collection and management of contact waters and non-contact waters separately from each other; B. Minimizing the amount of runoff water that will enter into the plant and will be contaminated by contacting with the contaminated surfaces (e.g., heap leach area, the GR storage area, the crushing plant, open pit area, service roads, etc.); C. Thus, minimizing the amount of water to be managed within the plant; D. Minimizing the risk of sediment transport by ensuring control of runoff waters; E. Use of waters to be collected in the plant and having appropriate quality as much as possible for process make up water, dust suppression and similar water requirements; and construction of the necessary basin structures;		Construction, Operation						
MoEU	EIA	5,3	Non-Contact Waters Management		Mine site will be surrounded by interception channels in order to prevent entering of runoff waters into the mine site and contact of them with a contaminated surface (e.g., open pit area, GR storage area, crushing plant, heap leach area, etc.). As the subject waters do not suffer any contamination, they will be discharged directly to the receiving environment, if necessary, they will be collected in the water collection basins to be constructed and then they will be pumped to the ADR basins.		Construction, Operation						
MoEU	EIA	5,31	Contact Waters Management and Permitting		Contact waters will be collected in settling basins by means of drainage systems and then transferred to the ADR basins. In the case of excessive water in the basins, they will be discharged to the receiving environment in accordance with the discharge standards defined in the By-law on Water Pollution Control, Table 7.1. Before discharge, application will made to the T.R. Ministry of Environment and Urban Planning for discharge permit in accordance with the "Regulation on Environmental Permit and License". The discharge point will be detailed by necessary project designs before commissioning of the plant.		Construction, Operation						
MoEU	EIA	5,36	Domestic Wastewate		Domestic wastewater to be generated as a result of the daily use of the operation personnel to be employed in the project site will be treated in the domestic wastewater treatment plant to be installed on site during construction phase.		Construction, Operation						
MoEU	EIA	5,37	Emergency Policy and Action Plan		In spite of taking the specified measures, events such as spillage or leakages which may occur in the project site will be treated as an emergency and the related action plans will be implemented in order to prevent reaching of the chemical substance, wastewater and similar contaminants to the receiving water environments (ground water, surface water). The Emergency Policy and Action Plan, which had been prepared specifically for the project by the project owner and will be developed at the later stages of the project, are presented in Appendix -15.		Construction, Operation, Decomissioning						
MoEU	EIA	5,38	Leaching Closure		At the later stages of the mine, an assessment will be made in accordance with the scenarios of leaving the area as a wet area or discharging by taking the relevant permits.		Decomissioning						
MoEU	EIA	8,2	Comittments to Stakeholders		The Project Owner will continue such technical field trips if deemed necessary in later stages of the project and is requested by residents.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	8,4	Comittments to Stakeholders		Informal meetings stated above will continue throughout the project's life. In particular, the Project Owner will always offer the establishment's amenities accessible where needed for the needs of neighborhoods in order to preserve the relationship of mutual transparency and trust formed with neighborhood mukhtars.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	8,13	Water Managment Plan		Indeed, it has been stated that quality and volume of underground and aboveground water sources have been established in detail thanks to studies conducted and proper monitoring will be maintained and a "Water Management Plan" will be prepared at construction and operation stages of the project in light of this information.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	8,13	Commitments to Stakeholders		Hasan Yücel, the TÜMAD Madencilik representative, responded to socio-economic concerns of the participants. Stating that vast majority (approximately 80%) of employment in the scope of project activities carried out until that date was met from nearby settlements, Hasan Yücel emphasized on the fact that local residents will also be prioritized in employment in later stages. He continued benefits of the project will not limited to employment opportunities and local units will be prioritized during the supply process if locals can create cooperation organizations such as cooperatives.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	8,15	Stakeholders-Compliance		Adherence to the special format of hereby EIA Report which has been prepared in light of suggestions from EIA Investigation and Assessment Commission and according to the special format created by the Ministry of Environment and Urbanization and submitted to the Ministry of Environment and Urbanization will be evaluated and assessed by experts from the Ministry of Environment and Urbanization. After adherence of the report to the special format has been validated, the Ministry of Environment and Urbanization, Balıkesir Governorate and Provincial Directorate of Environment and Urbanization will announce to the public that investigation and assessment process for the project has started and the EIA Report is submitted to public opinion According to article 11 of the EIA Regulation, public residents and relevant stakeholders can inspect the EIA Report that has been prepared and submitted to the Ministry of Environment and Urbanization and express their opinions to the Ministry or Balıkesir Governorate. These opinions will be taken into consideration by the commission which will inspect and assess the EIA report and according to article 14 of the same regulation the EIA report finalized by said commission will be open to public opinion and suggestions again for a period of ten business days, which will be taken into consideration in the EIA Report ad during the decision making process of the Ministry. Therefore, participation of local residents and other relevant stakeholders in various stages of the EIA process will be ensured.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	2.18-2.19	Heavy Metals in the Soil Compliance and Monitoring Requirements		TKNKKS Directive does not make a limit value definition for heavy metal contamination in the soil, only defines contamination indicator parameters special for the activity type. The "List of Generic Pollutant Limit Values" in Annex-1 of the Regulation defines limit values in terms of situations such as ingestion of soil and absorption through skin contact, volatiles and the leakage of fugitive dust in the outside environment. Therefore, the results of the analysis obtained in the context of environmental database studies constitute a reference to the existing qualities of the project area and the surrounding land; But does not provide information on the detection of metal pollution in the soil. Whether or not there is a project-induced pollution effect on the existing soil quality shall be determined on the basis of comparison of the results of the visual inspection and sampling / analysis works to be carried out during the construction, operation, closing and post-operation phases of the project against the current status data.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	2,19	Soil Contamination Compliance		Provisions of Directive on Soil Contamination Control and Point Sourced Contaminated Sites published in 8th June 2010 dated and 27605 numbered Official Gazette shall be applied in activities to be realized within scope of the project.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	2,29	Topsoil- Mitigation Measures		As regards the top soil depths in the project area; An average of 10 centimeters of the soil (fertile top soil) present in the project area shall be wiped off and stored in the vegetal (top) soil storage area separated from other soil material (sub soil) separately. If the total area covered by the project units (approximately 356 hectares, excluding the vegetative soil storage area) is taken into account, the amount of topsoil to be stripped is estimated to be around 356 thousand m3. Information on the management of superficial topsoil is provided later in this chapter (see "Storage of Topsoil").		Preconstruction, Decomissioning						
MoEU	EIA	2,29	Heap Leaching HSE		During the land preparation phase of the project, the floor of the heap leaching area shall be leveled in accordance with the safety factor to ensure minimum slope stability. At the same time, this process shall also create the attraction conditions necessary for the solution collection system to be placed on the lining system of the heap leaching area. Required slope grade shall be caught on the heap leach area ground by doing the necessary excavation and filling operations. At the same time, the grouting process shall include the general smoothing of the leaching area and the formation of an irregular surface. This shall provide the surface conditions necessary for laying the primer system.		Preconstruction, Construction, Operation						
MoEU	EIA	2,3	Mitigation Measures regarding Stripping of the Topsoil		<p>*Topsoil shall be stripped at a depth allowing separation from the lower soil and rough material (e.g. rocks). This depth may change depending on land conditions, and shall be approximately 10 cm.</p> <p>*Stripping operation shall not be performed when the soil humidity is more than required.</p> <p>*Seeds, tubers, rhizom, etc., which are on the top soil and which can be reused in rehabilitation works, shall be collected and stored separately.</p>		Preconstruction, Decomissioning						

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MoEU	EIA	2.30-2.31	Mitigation Measures Regarding Storing the Topsoil		<p>*Project units shall be stored in small stacks in specially designated topsoil storage areas in the field, independent of the topsoil, bottom soil and rock masses that shall be covered by the areas covered by the project. In the project area, about 14 hectares of storage area shall be established in the northeast of the field with the aim of storing the vegetable soil to be stripped during the land preparation phase.</p> <p>* Lateral slopes of leaches shall not exceed 45 degrees.</p> <p>* Topsoil storage areas are selected at places relatively not having any slope. Thus, the risk shall be minimized for exposing organic and inorganic contents in the soil to precipitation and water erosion. Selected areas shall provide conditions which the soil shall not be exposed to contamination.</p> <p>* Drainage of storage areas shall be maintained with open channels. Upper parts of soil leaches shall be slightly compressed in order to minimize the rain water amount that may penetrate into the upper soil leach. As excessive compression may cause an anaerobic environment within the soil leach, compression work shall be performed at a suitable level.</p> <p>* Leaches shall be sheltered against possible floods by creating sets at adequate height around storage areas and piles where necessary.</p> <p>* In case the topsoil is stored for a long period, compression may occur in the soil and organic content of the soil decreases. In this context, if storage lasts for three months, the upper part of the fertile soil shall be temporarily planted so that it can maintain its organic content. In the planting process, legumes and grains shall be used. Informes Y. Proyectos S.A. (INYPESA, 1990), the appropriate seed mixture ratio was suggested as 40% cereal 60% legumes. The seed mixture to be used in this direction shall be shaped to be 2/3 of the wheat / legume ratio.</p> <p>* If an improvement is required for quality of the stored soil, fertiliser and similar substances may be used.</p>							Preconstruction, Construction, Operation, Decomissioning	
MoEU	EIA	2.31-2.32	Other Mitigation Measures regarding Topsoil		<p>* Planned roads shall be constructed with excavator not to allow soil slide down from slopes.</p> <p>* The aim of reducing the amount of land to be squeezed and contaminated by heavy machinery, construction equipment and personnel on the field shall be limited only by working areas and on-site service roads, and shall not go beyond these areas.</p> <p>* Temporary and permanent erosion control methods shall be applied against erosion risks on construction sites. In this context, embankment and drainage channels, cutting structures and slope breakers shall be created for the control of surface flow, and mulch application shall be made. Where necessary, the channels shall be covered with riprap and mortar riprap and the risk of wear and erosion shall be minimized.</p> <p>* Uncontaminated waters collected with ventilation channels shall be discharged to the receiving center. If necessary, it shall be collected in the water collecting pools to be constructed within the scope of the project and used in the system.</p> <p>* Waste and wastewater to be generated in the land preparation and construction phases of the project shall be stored and disposed in a controlled manner in accordance with the relevant regulations and in line with the management practices described in this EIA Report. In this way, it shall not be the case that the waste and wastewater to be formed within the scope of the project shall interact with the soil environment and cause any effect. Applications related to wastewater and water management under the project are given in Section 5.2, and waste management related practices are presented in Section 5.3.</p> <p>* Planting stripping operations on the slopes against the risk of landslides that may occur locally on the slopes where the plant cover is peeled and / or excavation is performed and on the blasting areas shall be kept at the lowest possible level. In addition, the surface water currents shall be reduced to the lowest with the soil that is present on the slopes, through the containment and drainage channels. The material shall not accumulate to the tops of the steep slopes as much as possible, and when this is unavoidable, the soil material shall be stabilized by specially designed structures.</p> <p>* Fuel and chemical substances to be used within scope of land preparation and construction activities shall be stored in tanks with suitable impermeability.</p> <p>* Related provisions of Directive on Control of Excavation Soil, Consatruction and Destruction Wastes (18/03/2004 dated and 25406 numbered Official Gazette) shall be applied for stripping, storing the topsoil and then using in rehabilitation works and management of other excavation waste materials to be revealed.</p> <p>* Quality of the soil available at the project area shall be regularly monitored according to environmental monitoring program provided in Part 7 of this EIA report at construction stage of the project.</p>							Preconstruction, Construction, Operation, Decomissioning	
MoEU	EIA	2,32	Mitigation Measures/ Pollution Prevention during Operation		<p>* Leakage and associated soil pollution in case of tearing and / or puncturing in the lining system of the pile leaching area, solution ponds and bases of emergency ponds, which may result from misapplication;</p> <p>* Soil pollution that may occur in case of contact with contaminated surface waters coming into contact with the soil environment due to contact with contaminated surfaces in the quarry, EOK storage area, heap leaching area and other facilities;</p> <p>* Pollutant effects that can form on the soil environment as a result of dusting from open pit area, EOK storage area, crushing plant;</p> <p>* The risk of erosion, especially in sloping areas, where the plant has been removed from the plant construction and construction phase and has not been re-planted;</p> <p>* The risk of possible soil transport, especially during rainy periods, and consequently the loss of land available in the area;</p> <p>* Contamination of the soil environment as a result of leakage or spillage of oil, fuels and / or chemical substances which may result from accidents or unexpected events from the storage tanks or transport equipment of the materials to be used during the operation phase;</p> <p>* Soil pollution that may occur in the event of uncontrolled storage or disposal of solid and / or liquid wastes during operation;</p> <p>*Soil contamination of vehicles whose tires are contaminated with particulate matter, oil or chemicals, which may result in the transport of pollutants outside the site.</p>							Operation	
MoEU	EIA	2,33	Soil Environment Pollution Prevention-Composite Linear System (Heap Leach Facilities)		<p>Ground design of the heap leach area is performed according to international standards and designed according to zero discharge principle. Ground of the heap leach area shall be ready for application of liner system as the result of required levelling works. Initially, an impermeable layer shall be created on the prepared ground. This operation shall be made by creating 500 mm thick compressed clay with permeability not larger than 10-9 m/second. Then, this impermeable layer shall be coated with 2 mm thick, high density polyethylene geomembrane composite liner system.</p> <p>On the top floor of the lining system, there shall be a drainage layer to be formed using broken ore, uneconomic rock or gravel. The drainage layer shall be filled with material with a permeability that allows the loaded solution drained from the leaching area to be collected on the YYPE geomembrane liner.</p> <p>The impermeable material to be used at heap leach area and ground of pools shall be made of materials having adequate characteristics determined as available in the project area or the upper cover available on the project material. Compression of impermeable material shall be performed by suitably wetting and compressing the material with cylinder.</p>							Operation	
MoEU	EIA	2,36	Soil Environment Pollution Prevention-Other		<p>* Crushing plant, in-field roads, office buildings, etc. Surface waters contaminated with particulate matter collected from the surrounding area shall be collected by drainage channels and rested in the water collection basins to be constructed if needed.</p> <p>* Vegetable soil, which is temporarily stored in the upper land storage areas, shall be kept under observation during the operation phase and the fertilizer and seed shall be added if necessary in order not to lose its productivity. Operations such as mining operations, chemical use, EOK storage, etc. shall be ensured not to have any contaminating effect on the top soil which shall be reused during rehabilitation operations.</p> <p>* Temporary and permanent erosion control methods initiated during the construction phase shall continue to be applied against the risk of erosion that may occur on the naked surfaces in the field during operation. In this context, the control of surface flow shall be ensured by the containment and drainage channels established during construction and covered with riprap where necessary. In addition, slope breakers shall be created in areas likely to be exposed to erosion and seeding and planting studies shall be carried out.</p> <p>* If tyres of vehicles to leave the mine site are contaminated with particle substance, oil or chemicals, vehicle tyres shall be washed before leaving the facility.</p> <p>* Thanks to the dust suppression systems to be installed in the powder source units (crushing plant, etc.), dust generation and the amount of dust to be crushed on the soil environment shall be minimized. Measures for the control of dust in the operation phase are described in Chapter 5.1.</p> <p>* Wastes and wastewater to be generated during the operational phase of the project shall be stored and disposed in a controlled manner in accordance with the relevant regulations and in accordance with the management practices described in Sections 5.2 and 5.3. In this way, it shall not be the case that the waste and wastewater to be formed within the scope of the project shall interact with the soil environment and cause any effect.</p> <p>* Fuel and chemical substances to be used at operating stage shall be stored in tanks with suitable impermeability similar with the construction stage.Tanks in which fuels are stored shall be placed in reservoirs with a volume that shall maintain liquid at 110% of tank volume for the purpose of controlling a possible leakage.</p> <p>* During the project operation stage, quality of the soil available on the project area shall be regularly monitored according to the environmental monitoring program provided in Section 7 of this EIA Report.</p>							Operation	
MoEU	EIA	2,38	Soil Environment Pollution Prevention-Backfill		<p>Backfill</p> <p>Following completion of operation activities at open mine sites, partial backfill shall be applied with EOK. Therefore, both considerable amount of materials shall be recycled to the site and water accumulation shall be prevented on the mine ground. However, the potholes that are filled back shall be protected against the effect of air and precipitation, which shall reduce the risk of erosion and AKD formation which may occur in the hearth.</p>							Operation and Decommissioning	

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MoEU	EIA	2,39	Soil Environment Pollution Prevention- Upper Cover System and Topsoil Management		Facilitating Upper Cover System and Topsoil Management Following completion of operation activities, EOK storage area and heap leach areas shall be closed with suitable cover systems. Covering operations for the EOK storage area shall be carried out gradually in the areas where the operation of the units has been completed and shall be carried out entirely after completion of the heap leaching area ore washing and subsequent washing operations. In this context, the design of the cover system to be used on the facilities is shown in Figure 2.12. According to this design, the areas to be covered shall be overlaid with rocks with potential to generate acid first. After this layer, which is called the buffer layer, the impermeability layer shall be found. On the impermeability layer, there shall be a drainage layer that shall be installed from natural or synthetic material in appropriate thickness and characteristics. The top layer shall consist of vegetal soil. The thickness of this layer shall be averaged to be as much as the vegetation soil thickness that has been stripped from the area before the activity. Depending on the topography, the vegetable soil thickness shall vary by an average of 10 cm. Covering operations shall cover the organic matter content and productivity before the topsoil, which is kept in storage areas during construction and operation phases, is transported to rehabilitation areas. If necessary, interventions shall be made to ensure that the soil is in compliance with the climatic conditions of the region and that it provides favorable conditions for plant growth.		Operation and Decommissioning						
MoEU	EIA	2,4	Soil Environment Pollution Prevention- Topsoil Rehabilitation Measures		Topsoil, that is ensured to be stored under suitable conditions without loss of land preparation and construction stage and loss of productivity during the operation phase in the project area, shall be reused within the scope of rehabilitation works to be carried out in parallel with closing studies. In this regard, the project area shall be contributed to the rapid recovery of a landscape identity in the post-operation period, in accordance with the ecological balance of the project and other uses in the environment. The top soil shall be prevented from coming into contact with any contaminants while being transported to and from the rehabilitation areas. During the rehearsing of the upper soil during the rehabilitation work, a slightly rough and loose texture shall be formed on the surface and a suitable environment for planting studies shall be prepared. Following the laying process, the soil shall be buried with the aim of preventing the top soil from being trapped by human and vehicle traffic. The vegetable soil stripping process shall be done in 10 cm thickness in the area of the project unit trace as described and the plant area shall be less than the size of the stripping area at the end of the operation (e.g. open pit area, roads, channels, etc.). The process of the roads shall be done according to the opinion of the authorized institutions and the roads shall be left for the post-operation phase without any closing process. In such a case, the plant soil to be towed away from the roads and the projection of the units to be protected at the closing can be transferred to the closing process of the units such as EOK storage area, heap leaching area. In this direction, it is envisaged that the vegetable soil scraped off during the preparation phase of the land shall be sufficient for the fields covered with vegetal soil in the closing phase. If additional plant soil is needed, the alternative shall be assessed according to the information, guidance and permission of the relevant administrations provided that the subject matter is obtained from the soil available in the licensed area. Covering EOK storage and heap leaching areas with cover systems and regeneration of vegetation cover over the areas shall have the least impact on the risk of erosion and sediment transport and soil resources that may arise from these areas. However, the cover closing process shall minimize the risk of AKD formation and metal release by reducing water contact and oxygen content in the units that are shut down after operation.		Operation and Decommissioning						
MoEU	EIA	2.40-2.41	Soil Environment Pollution Prevention- Vegetation		In this context, soil laid to the rehabilitated area shall be treated first with commercial seeds (especially legumes and buckwheat species), defined as pre-planting, in order to stabilize the soil and enrich the nutrient content. Use of commercial seeds shall aim to improve soil conditions, especially rapid growing, frequent rootstocks, easy breeding and spreading characteristics, extreme conditions resistant species shall be preferred. In this way, the soil shall be covered in a short time, the soil surface shall be protected from water and wind erosion, suitable conditions for plant development (water retention, prevention of evaporation, soil enrichment in terms of nutrient content etc.) shall be established and these plants shall be able to minimize soil flow . During initial vegetation works, choice of commercial species instead of natural herbaceous species shall eliminate the factors that could be compelling or negative in terms of the process such as seed collection, lack of coverage or lack of vegetation cover. Commercial species shall provide ease of maintenance, such as catching a good coverage rate in a short time, providing seeds in large quantities needed for large areas, and ensuring that seeds are available whenever they are needed. However, if appropriate, it may be possible to use natural herbaceous species for pre-planting studies. Pre-planting operations shall continue for 1-2 vegetation periods. Suitable sunbathing, direction and height etc. are obtained in areas that receive a stable structure with pre-planting studies, and it shall be possible to work on vegetation with species found among the natural species of the region. In this context, endemic species and species with hazardous status shall be used primarily to prevent activity-related populations and habitat losses. Seeds / tubers of the species in question shall be collected and preserved in the pre-operative area, and results shall be permanently planted, taking into account the success of trial parcels (see Natural Rehabilitation Plan).		Operation and Decommissioning						
MoEU	EIA	2,42	Soil Environment Pollution Prevention- Plant Species Selection		Plant species used in the reconstructed topographic forms in the project area and the plant types used in the general usage areas after the re-arrangement shall be different. Longer-rooted species, particularly those with upright stem growth, which may affect physical and chemical stability in areas such as the EOK storage area and heap leach area, shall not be preferred. For this reason, species such as trees and shrubs, where the root structure can be digested, shall be evaluated in general usage areas (roads, open pit areas with ponds, etc.).		Operation and Decommissioning						
MoEU	EIA	2.42-2.43	Soil Environment Pollution Prevention- Other Precautions		Other Precautions * Following completion of the project, all degraded areas of the project shall be left on an appropriate slope in physically and chemically stable conditions. All infrastructure units planned (eg roads, conveyors, etc.), open quarries and heap leaching area shall be projected considering the closing studies after operation phase. The site shall be in a stagnant structure against the seismic movements predicted also after the operation. The open mine area and the EOK storage area shall be designed to maintain stability even after operation. Side slopes of bulk leeches and EOK storage areas shall be consolidated during rehabilitation activities. * Open mine area shall be fenced after operation to prevent unauthorized access to the area. * Formation of lakes in the area is not expected due to the partial backfilling operations to be carried out in certain sections of the open mine area. In this context, any necessary measures shall be taken. * Ventilation ducts and drainage systems, which are installed during the construction phase of the building and maintain their functionality throughout the operation phase, shall prevent the entry of surface runoff into the quarry during the closing phase and after operation. On the slopes of the storage areas in the closing phase, additional temporary (up to a continuous vegetation re-formation) drainage ducts can be created, perpendicular to the slope direction. At this point, tilt breaking obstacles shall be created in front of the surface waters that shall descend from the tops of the storage areas, and these structures shall prevent the abrasive and carrier effect of surface flows in the bare areas where vegetation has not yet formed. Drainage channels shall be removed from the site without operating following the formation of a continuous vegetation cover. Functionality and efficiency of drainage ducts shall be checked and, during the operating period, especially after every heavy rainfall, if necessary, cleaned and repaired. Technical information on the characteristics of drainage ducts is provided in Section 4.1.11. * Environmental monitoring program set out in the EIA Report and presented in Chapter 7 also includes the closing phase and the end. In this respect, the environmental effects (e.g. pollution, erosion, soil transport, etc.) and the environments in which these effects can be seen (e.g. surface and underground water resources, vegetation cover, flora and fauna, etc.)) Shall continue to be monitored for a certain period of time under the environmental monitoring program. Thus, effectiveness of rehabilitation work shall be monitored and its performance shall be measured. Corrective measures shall be developed and implemented to address such inconsistencies, provided that there is a deviation from the performance indicators that shall indicate the effectiveness of the measures within monitoring activities. * Project owner had İvrindi Gold & Silver Mine and Mineral Processing Plan Gradual Enclosure Plan Guarantee Report prepared by MITTO Consultancy and this report is provided in Annex-8 of this EIA report. Closing activities shall be performed according to provisions of Directive on Recovering Lands Distorted Following Mining Activities (Official Gazette date: 23/01/2010; number 27471). Nature Recovery Plan prepared within scope of EIA activities is presented in Annex-7. * Provisions of Directive on Soil Contamination Control and Point Sourced Contaminated Sites published in 08/06/2010 dated and 27605 numbered Official Gazette shall be applied in activities to be performed within scope of the project.		Operation and Decommissioning						
MoEU	EIA	2,44	Tree Clearance Compliance		General Directorate of Forestry, Balıkesir Regional Directorate of Forestry is responsible for the determination of the trees to be cut at the project site; It was calculated that a total of 22,836 trees would be cut, 18,194 in the borders of the Balıkesir Forestry Directorate and 4,642 in the borders of the Edremit Forestry Directorate. These trees shall be cut gradually during 10 years of operation. cut within the scope of the project, 5 folds of the number of trees cut shall be added to the areas indicated by the General Directorate of Forestry and Regional Directorate of Forestry.		Preconstruction, Construction, Operation						
MoEU	EIA	2,45	Forestland Expropriation Compliance		Although expropriation is not a matter of expropriation for forest areas, all permits shall be taken in accordance with the Implementing Regulation of Article 16 of Forest Law No. 6831 for all activities to be carried out in these areas.		Preconstruction, Construction, Operation						
MoEU	EIA	2,49	Fire Forest Prevention Measures		* Interventions on forest areas shall be limited to areas that are compulsory, such as equivalent areas of units, and unnecessary interventions shall be avoided. * Employees working in forest areas shall be aware of risks and shall be prepared especially for fire risk. * Regarding works to be carried out in and near forest areas, necessary equipment shall be kept against the risk of fire, and also employees who are educated on the use of equipment and fire intervention shall be on the field of activity. * In case of any natural or artificial fire, initially the fire notification shall be made and the fire shall be intervened before it grows. * During activities, warnings and sanctions shall be required to ensure the placement of cigarette butts, especially if there is a large risk of forest fire from uncontrolled throwing of vehicles in motion, awareness shall be given to drivers or other personnel to use the vehicle.		Preconstruction- Construction						
MoEU	EIA	2.49-2.50	Fire Forest Prevention Measures		* Smoking is only allowed at areas defined by making danger analysis in the facility. It shall be prohibited to throw butts on grounds with required warning and sanctions. * Waste oils and other parts of the construction machinery shall not be poured into forest areas. * Sufficient quantity and amount of fire intervention equipment (eg fire extinguishers, fire hydrants, etc.) shall be installed at required locations (eg indoor premises, places with flammable and combustible materials, working places with high temperature, etc.). Front of fire-fighting equipment shall be kept open all the time. * The site shall have every level of well-trained teams available to effectively use fire-fighting equipment. * The operation of fire-fighting equipment shall be checked at regular intervals. * Emergency exits, normal exit doors and corridors shall be kept open at all times to prevent passage. * No flammable and / or explosive materials such as thinner paint, gasoline, alcohol etc. shall be used for cleaning work. It shall be ensured that flammable liquids (e.g. solution) to be used in activities are not poured into sinks or water spills. * An electric current source shall not be intervened with water, but dry type extinguishers shall be used instead. If necessary, electricity shall be cut off before intervention.		Operation						
MoEU	EIA	2,78	Earthquake Preparedness Compliance		According to this map, the Balıkesir province, in which the project area is located, is located entirely in the 1st degree earthquake zone except for a very small section. The accelerations to be expected in this case is above 0.40 g and this acceleration will be used basing on the design principals given in annex to the Regulation on Buildings to be Constructed in Earthquake Regions (Official Gazette date: 03.06.2007; Number: 26454).		Preconstruction, Construction, Operation, Decommissioning						

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MoEU	EIA	2,9	Earthquake Preparedness Measures		The project area and its surroundings, especially the working areas, will be continuously assessed against rockfall, landslide and similar potential events. In particular, the risks that might develop on site after heavy precipitations, seismic events and blasting activities will be assessed and precautions will be taken to eliminate the identified risks.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	2,9	Earthquake Preparedness Compliance		<p>* The Law on Measures to be Taken and Aids to be Provided due to Disasters Affecting Public Life (Law No: 7269; Official Gazette date: 05.25.1959; Number: 10213) will be fulfilled against the natural disasters such as settlement, landslide, avalanche, flood and so on that may occur in the project area and its surrounding.</p> <p>* The provisions of the "Regulation on Buildings to be Constructed in Disaster Regions" (Official Gazette date: 07.14.2007; Number: 26582) and the "Regulation on Buildings to be Constructed in Earthquake Regions" (Official Gazette date: 03.06.2007; Number: 26454) will be fulfilled for construction of the buildings that may be required.</p> <p>* As stipulated in the "Minimum Special Provisions to be Implemented in Open Pit Mines" given in Annex-2 of the "Occupational Health and Safety in Mines" (Official Gazette date: 09.19.2013; Number: 28770), Works are Performed", a directive containing various details such as the geological and tectonic characteristics of the workplace, the bench widths and heights in the work areas and the measures related to explosive use will be prepared in accordance with the other relevant legislation within the scope of the project.</p>		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	2,18	Groundwater Quality Monitoring Measures		Coliform bacteria are constantly present in surface waters and coliform bacteria are found at high rates in underground waters, which can indicate continuous or sudden surface water entry into wells. Especially for the WM-7 well, the total coliform parameter should be monitored during future monitoring periods to determine whether this increase is temporary.		Operation, Decomissioning						
MoEU	EIA	2,18	Groundwater Quality Monitoring Measures- Compliance		Provisions of Directive on Monitoring Surface Waters and Ground Waters (Official Gazette Date: 11.02.2014, Issue: 28910), Article 17, Bent 2; (Annex 5 of the Official Gazette dated 07.04.2012, number 28257) for parameters to be monitored in the groundwater and frequency of measurement for protection of groundwater from pollution and deterioration shall be implemented. According to Annex-5 of this regulation, the main parameters of oxygen content, pH value, conductivity, nitrate and ammonium should be monitored for general purpose monitoring. If the underground water resources are considered to be at risk, various parameters may be included in these main parameters in future monitoring periods. The scope of this regulation is to monitor the trend between the current situation of the water and the future situation and it is aimed that the current status before the mining activity is a reference. In this context, comparisons to be made for groundwater shall be made according to the rising or falling trends of the parameters, not the determined boundary values.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	2,195	Groundwater Quality Pollution Prevention Measures and Compliance		Against effects those may be on groundwater in the course of site preparation and construction; waste and wastewater to be generated in the land preparation and construction phases of the project shall be stored and disposed in a controlled manner in accordance with management practices described in this EIA Report and relevant regulations. In this respect, there shall be no question that the waste and wastewater to be generated within the project shall interact with the ground waters and cause any effect. Amendment to the Regulation on the Protection of the Underground Waters against Pollution and Degradation which was published in the Official Gazette dated April 7, 2012 and numbered 28257 in the project activities and the Regulation on the Protection of the Underground Waters against Pollution and Degradation which was published in the 22.05.2015 dated and 29363 numbered Official Gazette shall be complied with in the Regulations.		Preconstruction, Construction						
MoEU	EIA	2,195	Groundwater Quality Pollution Prevention Measures		Fuel and chemical substances to be used in land preparation and construction activities shall be stored in tanks provided with suitable impermeability. Above mentioned tanks shall be placed in storage ponds with a volume that shall retain more fluid than the tank volume in order to provide control of a possible leak. At this point, it is ensured that the fuel is controlled in the storage pools during a possible leak or spill. Storage tanks shall be subject to regular visual monitoring in exchange for the risk of such leakage or spillage. The procedures to be applied to the interception of spills and leaks are described in the Emergency Plan and Emergency Response Action Plan presented in Annex-15.		Preconstruction, Construction						
MoEU	EIA	2,195	Groundwater Quality Pollution Prevention Measures		Prior to commencement of mining activities (during the construction phase), current status of wells and similar structures in the vicinity of the project area and their susceptibility to any possible vibration effects shall be determined by the project team.		Construction						
MoEU	EIA	2,195	Groundwater Quality Pollution Prevention Measures and Compliance		Observations of the opened observation wells shall be sent to the DSİ 25th Regional Directorate after receiving the EIA Positive Decision for the project and chemical analysis results and drilling well logs to be made in accordance with the Water Pollution Control Regulations within 3-month intervals.		Preconstruction, Construction, Operation						
MoEU	EIA	2,196	Groundwater Quality Pollution Prevention Measures		<p>Waste and wastewater generated during the operation phase shall be stored and disposed in a controlled manner in accordance with the relevant regulations and in accordance with the management practices described in Sections 5.2 and 5.3. Thus, there is no question that the waste and wastewater to be generated within the scope of the project shall interact with groundwater and cause any effect.</p> <p>• Fuel and chemical substances to be used during the operation phase shall be stored in tanks provided with impermeability in a similar manner to the construction stage. Tanks in which the fuels are to be stored shall be placed in storage ponds with a volume that shall maintain more fluid than the volume of the tank in order to provide control of a possible leak. This shall ensure that the leakage is controlled within the storage pools during a possible leak or spill. Items leaked or spilled into storage ponds shall be immediately cleaned and removed from the environment. Storage tanks shall be subject to regular visual monitoring during the operation phase against the risk of such leakage or spillage. The procedures to be applied to the interception of spills and leaks are described in the Emergency Plan and Emergency Response Action Plan presented in Annex-15.</p> <p>• Prior to blasting activities, the risks to which the nearby wells and resources may be exposed shall be assessed separately and the explosive quantities that can be exploded safely by considering the relevant distances shall be optimized in the direction of these evaluations. Performing the blasting operations in accordance with the calculations made shall be ensured by the necessary recording and monitoring methods. Blasting procedures and related measures are provided in Section 5.5 of this EIA Report.</p> <p>• Regardless there is any damage due to blasting activities around the project area shall be checked regularly with monitoring activities to be carried out in accordance with the environmental monitoring program presented in Chapter 7 at the operational stage of the project.</p> <p>• The environmental monitoring program set out in the EIA Report and presented in Chapter 7 contains preparation and construction phases, operation phase, closure phase and post-operation phase. In this regard, remaining environmental impacts (eg pollution, erosion, etc.) from measures taken during the project period and environments where these effects can be seen (eg groundwater resources etc.) shall continue to be monitored for a certain period of time under the environmental monitoring program. In this way, the effectiveness of rehabilitation activities shall be monitored and their performance measured. Corrective measures shall be developed and implemented to address such inconsistencies, provided that there is a deviation from the performance indicators that shall indicate the effectiveness of the measures within monitoring activities.</p>		Operation and Decomissioning						
MoEU	EIA	2.196-1.97	Groundwater Quality Pollution Prevention Measures		<p>Design-based mitigation measures are summarized below:</p> <p>• A composite lining system with sufficient impermeability to a pollutant leach which may be contacted with the soil environment and formed may be used in the heap leach area. Details of the relevant system are presented in Section 4.1 of this EIA Report.</p> <p>• Grounds of charged solution pool and emergency pool shall be covered with liner systems having adequate impermeability similar with heap leach area. This lining system shall also be equipped with leak detection equipment, at which a possible leak shall be controlled. Details of the relevant system are presented in Section 4.1 of this EIA Report.</p> <p>• Charged solution flowing through the ore pile shall be collected on the geomembrane liner by means of a drainage system consisting of perforated pipes to be placed in the drainage layer. The collected solution shall be sent to the pool of charged solution to be introduced into the enrichment process. An impermeable layer shall also be formed on the bottom of the solution collection pipeline to prevent any possible leakage.</p> <p>• EOK, which is greater than 0.3% (3 g of sulphide sulphide / 1.000 gr rock) of the sulphide sulphur limit ratio from non-economical rocks to be produced during mining operations, shall be referred to as material with acid-producing potential (potential acidic material or "PAM"). Rocks with acidogenic potential shall be encased in cells with suitable top coverings and bottom linings (encapsulation) and protected against water and air and the basement. Detailed calculations of acid rock drainage (ACD) potential and related measures are described in Section 5.6 of this EIA Report.</p> <p>• Design measures such as surface water and, therefore, containment channels to protect groundwater are described in Section 4.1.</p> <p>• The proposed measures for the protection of the soil environment and therefore groundwater are presented in Section 2.2.</p>		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	2,255	Protected Areas Compliance		In this context, necessary areas to be protected in accordance with our country legislation are national parks, nature parks, nature monuments, nature conservation areas, wildlife conservation areas and wildlife breeding areas, cultural assets, natural assets, sites and protected areas, Production and reproduction areas, areas defined in SKKY, sensitive pollution zones, special environmental protection zones, protected areas according to the Bosphorus Law, places considered as forest areas, areas subject to building prohibition in accordance with the Coastal Law, Law on Breeding of Wildlife and Immunization of Wildlife Undated areas, areas specified in the Pasture Law, and areas specified in the Wetland Protection Regulation. Areas and other areas required to be protected according to international agreements which our country is a party (e.g. agricultural lands, wet lands, lakes, rivers, underground water operating sites and areas having importance regarding biological environments and wild life, etc.) are also defined in Annex-V of the EIA Regulation.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	2,255	Protected Areas Compliance		A map showing the protected areas identified within the assessment area is presented in Figure 2.116.		Preconstruction, Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	2.257-2.258	Protected Areas Compliance		Areas required to be protected defined by Turkish Directives and areas protected in the Balıkesir Province are listed below: * "National Parks", "Natural Parks", "Natural Monuments" and "Nature Protection Areas" defined in Article 2 of the National Parks Law and determined in accordance with Article 3 of this Law, * "Wildlife Preservation Areas, Wildlife Promotion Areas and Wild Animal Settlement Areas" determined in accordance with the Land Hunting Law, * Areas defined as "Culture Assets", "Natural Assets", "Archaeological Site" and "Protection Area" in 1st, 2nd, 3rd and 5th sub-paragraphs of "Definitions" titled (a) sentence of first paragraph of 3rd clause of Law on Protection of Culture and Natural Assets and areas determined and registered according to related clauses of 17/06/1987 dated and 3386 numbered Law (2863 numbered Law on Amending and Adding Various Clauses to Culture and Natural Assets Protection Law), * Aquaculture Production and Breeding Fields, which are within the scope of the Aquaculture Law, * Areas defined in 17th, 18th, 19th and 20th clauses of Water Pollution Control Directive, * Areas defined in the Air Quality Assessment and Management Regulation, * Areas determined and declared as "Special Environmental Protection Zones" by the Council of Ministers in accordance with Article 9 of the Environment Law, * Areas protected under the Bosphorus Law, * Places that are considered as forest area according to the Forest Law, * Areas subject to building prohibition in accordance with the Coastal Law, * Areas indicated in the Law on Breeding of Olives and Immunization of Wildlife, * Areas specified in the Pasture Law, * Areas specified in the Wetland Conservation Regulation.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,258	Protected Area		The nearest natural park to the activity area is Kaz Mountain National Park located at nearly 29,7 km northeast of the activity area.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,258	Protected Area		Manyas National Park: Bandırma and Manyas Districts of Balıkesir are situated within the borders and the project area is approximately 115 kilometres away.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,259	Protected Area		Değirmenboğazi Natural Park located at city centre of Balıkesir-Bursa highway is located at 10 km distance from Balıkesir city centre, 70,8 kilometre from the project area.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,259	Protected Area		Sarımsaklı Natural Park: It is located at 9 km distance from Ayvalık district centre and its area is 15,81hectare (Balıkesir Environment and Urbanism Provincial Directorate, 2015). Distance of Sarımsaklı Park to the project area is 46,3 km.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,259	Protected Area		Darıdere Natural Park: It is located at 50 km distance from Edremit district centre, and the site, with 10 hectare size, has been registered as B Type Recreation Post in 2004, changed as A Type on 30/06/2005, and announced as Natural Park on 2011. The distance to the project area of Daridere Nature Park is 47.7 km.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,259	Protected Area		Ayvalık Islands Natural Park: Announced as Natural Park upon publishing in 21st April 1995 dated and 22265 numbered Official Gazette upon decision of Council of Ministers. In order to determine activities those may be performed on the site according to 2873 numbered law, Long Term Development Plan is prepared and entered into force on 12/02/2004. Distance of Ayvalık Islands Natural Park to the project area is 37 kilometer.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,259	Protected Area		The distance to the project area of the Kazdağı Fir Nature Conservation Area is 40.7 km.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,26	Pastureland Compliance		It is an obligation for the state, as stated in Article 1 of the Pasture Law No. 4342, to ensure that the residents of the villages have adequate hold of their animal assets and adequate pasture for them. For this reason, it is necessary to protect pasture, spring, pasture, grassland and meadows, which are the most important problems of our livestock and which can be obtained cheapest (Balıkesir Provincial Directorate of Environment and Urban Planning, 2015).		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,26	Compliance		Within boundaries of the project area, natural monument of Balıkesir province, wildlife protection area, aquaculture production and reproduction area, special environmental protection zone, protected area according to the Bosphorus Law, area where construction prohibition is made in accordance with the Coastal Law and " There are no areas mentioned in the Law on the Vaccination of Wildlife.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,26	Compliance		According to the Balıkesir Provincial Environmental Status Report for 2014, there are no special environmental protection areas or sensitive pollution zones within the Balıkesir province borders or in the vicinity of the activity area.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,26	Compliance		According to the Communiqué No: 3/1 on Commercial Fishing Aquaculture (Communiqué No: 2012/65) prepared on the basis of the Fisheries Law and Aquaculture Regulation, in Ayvalık Port, where artificial reef blocks are located in the province of Balıkesir and in Edremit Province; The commercial area of aquatic products is prohibited in the vicinity of İmralı Island, east of Çınar Port, in Erdek District, east of Çınar Limanı, within 3 miles of the coast between the mouth of Gönen River and Denizkent, on the eastern side of the line connecting the first two passage lights from the passageway of Dalıyan Strait. Altıeylül, Çaparı, Çarkacı, Patlak (Yeşilköy) ponds belonging to Balıkesir province İvrindi county, Hazelnut Creek and its side branches on the borders of Edremit county, according to the Communiqué on Amateur Purpose Water Products Hunting No. 3/2 (Communiqué No: 2012/66) It is forbidden to hunt at Karakutuk Stream and its side branches, Kızılköçeli Creek and its side branches, Köprüdere and its side branches, Şahin Stream and its side branches, Zeytinli Creek and its side arms. Manyas Kuşgölü, which is located on the borders of Bandırma and Manyas, has been designated as a production area for aquaculture products and has started to be controlled by a circular issued under the Aquaculture Law. (Balıkesir Provincial Directorate of Environment and Urban Planning, 2015). There are no remaining activities in these areas.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,261	Compliance Completed		The activity area is within the jurisdiction of Balıkesir and Edremit Forest Management Departments under Balıkesir Forest Management Directorate affiliated to Balıkesir Forest District Directorate. According to the EIA Review and Evaluation Form (see Annex 2.1) taken from the Balıkesir Regional Directorate of Forestry within the scope of the EIA process, the field of activity is not in owned forests, regulated areas, landscaped or forested lands or dam reservoirs. Furthermore, a research project whose scope of activity is ongoing is not within the boundaries or domain of the study area, research or education centre area. Similarly, in the EIA Review and Evaluation Form the area of activity includes conservation forests, gene conservation areas, research forests dedicated to scientific studies, research stations, research project trial sites, urban forests, endemic and rare ecosystem sites to be protected, seed stands and other protected areas It is stated that it does not exist. The form also states that there is no restriction due to the function of the field forest where the proposed project is located in the planning plan.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,261	Compliance Completed		"Balıkesir Province Hunting Areas Map" published by T.R. Ministry of Forest and Water Affairs, Nature Conservation and National Parks General Directorate for 2014-2015 hunting period is given in Image 2.117. According to this map, the project area is not located in a site announced with hunting ban.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,263	International Compliance		A list of areas required to be protected under agreements signed by our country is given below: * I and II Conservation Zones, "Mediterranean Focal Survival and Reproduction Areas" specified in the "Important Sea Turtle Reproduction Areas" from protected areas in accordance with the "Convention for the Protection of the Wildlife and Habitats of Europe" (BERN Convention). * Areas protected under the "Convention on the Protection of the Mediterranean from Pollution" (Barcelona Convention). * Areas designated as "Special Protection Area" in our country in accordance with the "Protocol on the Protection of Special Protection Areas in the Mediterranean" * Areas listed on the list of "100 Coastal Historic Sites with Joint Prevention in the Mediterranean" published by the United Nations Environment Program, selected by the Geneva Declaration, * Coastal areas that are the living and feeding environment of the "Marine Species of Hazardous Endangered Species to the Mediterranean" in the 17th article of the Geneva Declaration. * Cultural, historical and natural areas given the status of "Cultural Heritage" and "Natural Heritage" protected by the Ministry of Culture in accordance with the 1st and 2nd articles of the "Convention for the Protection of World Cultural and Natural Heritage" * Areas protected under the Convention for the Protection of Wetlands with International Presence as Particularly Water Birds Living Environment (RAMSAR Convention) * European Landscape Convention.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,263	Area Wetland-Potential Compliance		Manyas Lake is fed by Koca brook, Siğirci Stream, Mürüvvetler Stream, Dutlu Stream and underground waters. Exit of the lake is with the Karadere in the south-east. Lake shores are made up of reeds and meadows in places. There are willow communities and reeds in the places where Manyas Creek and Siğirci Stream are mixed with the lake.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,264	National Compliance		EIA Directive Annex-V Sensitive Areas List defines areas required to be protected as given below: * In the approved Environmental Plan, areas where the existing characteristics are determined as protected area and prohibited from building (Nature protected area, biogenetic reserve areas, geothermal areas and the like) * Agricultural areas: Areas of agricultural development, irrigated, irrigable and land use capability classes I, II, III and IV, I and II classes used for rain-related agriculture, all of the special crop plantation areas, * Wetlands: All waters that are important for the environment of living beings, especially water birds, including natural or artificial, permanent or transient, slow or slow water, sweet, bitter or salty, depths not exceeding 6 meters in the withdrawal cycle of the sea tide, Marsh reeds and turbines and places that are ecologically wetlands towards the land side from the shoreline of these areas, * Lakes, rivers, underground water operating areas, * Areas those are important for scientific research and / or which are endangered or endangered by endangered species or species endemic to our country, biosphere reserves, biotopes, areas of biogenetic reserves, geological and geomorphologic occurrences in unique features.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,264	Area Wetland-Potential Compliance		Findings from table-top studies include; Chestnut and larch seedling stands were found in the vicinity of the project area. While the chestnut tree seed stand is adjacent to the project license area border (1.6 kilometers to the EIA area), the distance to the EIA area of the larch seed stand area is 6.6 km.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,265	Compliance		There is no biogenetic reserve area, biosphere reserve area or geologic reserve area within the boundaries of provinces which are defined as sensitive area according to Annex V of EIA Regulation within this scope.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,265	Compliance		Expert group formed by the Ministry of Culture and Tourism and the Regional Directorate for the Protection of Bursa Cultural Assets has determined that there are no immovable cultural assets and protected areas or urban and archaeological protected areas that have been previously registered and protected in the areas of registration specified in the archive works carried out within the licensed areas planned for the mining activity		Preconstruction, Construction, Operation, Decommissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	2,265	Compliance		Cultural, and natural heritage, which is protected by the Ministry of Culture and Tourism in accordance with Articles 1 and 2 of the "Convention for the Protection of the World's Cultural and Natural Heritage" published in the Official Gazette dated February 14, 1983 and numbered 17959, Historical and natural areas; General Directorate of Cultural Assets and Museums is determined for the province and district where the project area is located using the information in the database. As a result of analyzing the information obtained from the database, immovable cultural assets in Balıkesir province; "Religious", "cultural", "archaeological site", "civil architecture example", "natural asset", "natural site", "graves", "historical site", "administrative", "military" .		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2.265-2.266	Compliance		There are no natural monuments within the Balıkesir province borders. The registered immovable property located in the İvrindi district of the project area is listed below: *Old Mosque (Religious Cultural Structure), * Höyük Archaeological Site, * Gazi Evrence (Evrano) Elementary School (Administrative), * Government House (Administrative), * Gömeniç Castle (Military), * Karacepis Village Cemetery, * Madra Mountain Fortress (Military).		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,266	Compliance		As can be seen in assessments presented in Section 2.9.1, no area of protection has been identified within the activity area during desk-based investigations and institutional interviews. The area closest to the project area is Sahinler General Hunting Site which is located about 10.5 km west of the project area. In the light of these considerations, it is not possible for the project activities to have a direct physical impact on the protected areas in the region, together with the measures identified for the different sources under the mentioned EIA Report		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,266	Compliance		Additionally, it is determined that no previously registered immovable culture assets required to be protected and protection area or urban and archaeological sites are available on license sites given in archive work performed by Bursa Culture Assets Protection Regional Directorate. In the light of this assessment, project activities shall not have any impact on culture assets. All protected areas assessed within scope of EIA studies are results of being located at a considerable distance from the project area, considering the potential physical effects of the project.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,267	Compliance		In the EIA Review and Evaluation Form (see Annex 2.1) issued by the Ministry of Forestry and Water Affairs, General Directorate of Forestry, it is stated that the project area does not overlap with any military forbidden regions. There is no "restricted area" in the area of activity, which is allocated for specific purposes to any military forbidden zone, public institutions and organizations under the provisions of the competent organs of the state, with the 7/16349 numbered decision of the Council of Ministers. According to 7th clause of 644 numbered Delegated Legislation Regarding Organization and Duties of Ministry of Environment and Urbanism, and as can be seen in Balıkesir – Çanakkale Planning Zone 1/100,000 scaled Environment Order Plan (J18 Plot) approved with 20 August 2014 dated and 13549 numbered Approval of Ministry, the project area does not contain any area authority and saving of state authorities or "a restricted area" with 7/16349 numbered decision of Council of Ministers.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,267	Compliance		According to 6831 numbered Forest Law, necessary permits will also be taken for the forest area which covers the largest area in the project area according to the cadastre records. 5403 numbered Land Cover and Land Use Law (Official Gazette Date: July 19, 2005; Issue No. 25880) and 4342 numbered Pasture Law for pasture lands (for the agricultural areas that cover a much more restricted area within the project area) Number: 23272) will be followed.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,271	Compliance		The "Surface Water Quality Management Regulation" which was published in the Official Gazette dated November 30, 2012 and numbered 28483 dated November 30, 2012 in the measurement and sampling studies carried out in January and April 2014 of Annex 5 (Environmental Quality Standards and Usage for Some Parameters in Surface Water Masses) (Quality Criteria According to Classes of Surface Water Resources on Continents) in Table 5 are aimed to determine their qualities. However, the name of the Regulation on the Management of Surface Water Quality has become the Regulation on the Superior Water Quality under the Regulation on the Amendment of the Regulation on the Superior Water Quality Management Regulation, which was published in the Official Gazette dated April 15, 2015 and numbered 29327. In addition, new parameters have been added in addition to the parameters in Table 5 of Annex 5 of the Regulation. For this reason, the analyzes carried out in November 2015 were carried out according to the updated parameters in Table 5 of Annex 5.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,271	Compliance		Temperature, pH and dissolved oxygen parameters were measured on site for surface water sources during site works. Samples to be analyzed are taken, stored according to "SKKY Sampling and Analysis Methods Directive"		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,271	Compliance		According to YSKY, all parameter values must be consistent with the parameter values given for that class so that a water source can be included in any of the water quality classes. Accordingly, the lowest water quality class observed for any parameter, while the other parameters point to a higher class, determines the class of that water (class IV being of the lowest quality).		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,272	Compliance		Samples taken shall comply with the Regulation on Superior Water Quality in the Regulation on the Amendment of the Regulation on the Supervision of the Superior Water Quality Management Regulation published in the Official Gazette dated April 15, 2015 and numbered 29327, In addition to adding the new parameters, Annex-5 Table-5 "Quality Criteria According to Classes of Surface Water Resources in Continents" has been evaluated according to the new parameters with the added parameters.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	2,275	Compliance		Potential Soil Pollutant Activities and Pollution Indication Parameters Special for Activity" defined for mining activities defined in "Pollution Indicator Parameters List" in Annex 2 of Directive on Soil Pollution Control and Point Based Polluted Sites (8th June 2010 dated 27605 numbered Official Gazette). defines pollution indicator parameters special for the activity type. Limit values are defined in the "Generic Pollutant Limit Values List" given in Annex-1 of the Directive in question in terms of situations such as soil absorption through skin contact, external respiration of volatile substances and missing dusts.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	5,3	Compliance		Air Quality Assessment and Management Directive have entered into force after being published in 06/06/2008 dated and 26898 numbered Official Gazette. Air Quality Protection Directive was abolished with this Directive. Long and short term limit values were re-defined for adapting the Directive in terms of environment in the European Union accession period. However, a transition period was envisaged for implementing these defined limit values.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	5,3	Compliance		Directive on the Control of Industrial Wasted Air Pollution (SKHKKY), published in the Official Gazette dated July 3, 2009 and numbered 27277, aims to control the emissions of smoke, dust, gas, steam and aerosol in the atmosphere as a result of activities of industrial and energy production facilities, And to protect the environment from the hazards arising from pollution in the air-borne environment, to avoid adverse effects that cause significant harm to the environment and neighbourliness of the environment caused by air pollution, and to prevent these effects from appearing. According to the Directive, limit values are given which require calculation of contribution values to air pollution caused by places inside and outside the chimney.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	5.11 and 5.15 (again) and 5.19 (again)	Compliance-Air Emissions		According to the provisions of SKHKKY, the air quality limit values in the plant area must not be exceeded more than 35 times per year for PM10. Accordingly, when the 24-hour PM10 concentration values are ranked in order of magnitude, the 90,41% slice corresponds to 331 days, which provides that the limit value can be allowed to exceed 35 times a year in accordance with the provisions of SKHKKY. According to SKHKKY, 24 hours limit value for 2024 year is 50 µg/m3 for PM10 .		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	5,24	Compliance-HCN Liimits		The maximum HCN Concentration allowed to be present in the workplace is defined as 11 mg / m3 in the Regulation on Measures to be taken in Workplaces and Workplaces Employing Absolute Flammable, Explosive, Dangerous and Harmful Items.		Operation						
MoEU	EIA	5,24	Compliance-HCN Liimits		Limit value for Hydrogen Cyanide (HCN) is 5 mg / Nm3 for emissions above 50 g / h in the Regulation on the Control of Industrial Waste Air Pollution (SKHKKY), which was published in the Official Gazette dated July 3, 2009 and numbered 27277. There is no limit to the emissions under this value. In addition, a limit value for HCN emissions is not specified in SKHKKY.		Operation						
MoEU	EIA	5,25	Mitigation Measures-HCN		<ul style="list-style-type: none">• Decrease of the pH level in the heap leaching process below 9.5 shall create supportive conditions for HCN gas formation. For this reason, by adding cement / lime during the process agglomeration, pH value of leaching process can be kept within the range of 10-12 and the formation of HCN gas shall be controlled.• pH value of the process shall be continuously controlled via automatic sensors. However, pH value shall be regularly measured with samples taken. The control system to be established in the plant shall enable immediate intervention on any reduction of pH values, and operators may make manual interventions when require.• Fixed HCN detectors and alarms shall be placed at required places in the site and HCN level shall be continuously kept under control. These devices shall be adjusted to limit values defined as 5 ppm and audio / light alarm systems shall be activated when the HCN level exceeds limit values and required interventions shall be made automatically and manually.• Alarm systems to be established in the plant for HCN gas detection shall have ADR building and electronic connections in order to enable automatic interventions on the system when required (adding lime or terminating certain flows, etc.).• Portable HCN gas detectors shall be available in the plant to be used by the personnel if required during regular measurements and other emergency situations and trainings regarding use of these devices shall be given to the related personnel (places and situations requiring detector use as a preliminary precaution, type of use, etc.).• Applied and emergency procedures described for the control of HCN gas in the Cyanide Management Plan prepared in the scope of the project and presented in Annex-19 shall be applied in all project activities.• Prior to commissioning of the project, background HCN levels shall be measured within the plant and in the nearest settlement.• When an emergency situation occurs which results in exceeding the limit values in the facility, it shall be determined whether there is any threat to the public health by measuring the HCN levels near the project area and the possible settlement areas. In this context, compliance with the hourly average HCN level (340 µg / m3) and Annual average HCN level (9 µg / m3) determined by the OECD shall be checked.• If any impact on the formation of HCN gas is detected, all necessary measures shall be taken by the project owner under the Cyanide Management Plan presented in Annex-19 and the Emergency Plan and Emergency Response Plan presented in Annex-15.		Operation						
MoEU	EIA	5,26	Compliance-Air Emissions		As a result of the modelling work performed, all values determined in the plant domain are below limit values defined in SKHKKY.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	5,26	Air Emissions Control & Mitigation Measure		In order to keep dust emissions under control within the scope of the project, irrigation shall be performed, speed limits shall be applied to vehicles and new and well maintained vehicles shall be used whenever possible. In this way, dust generation shall be minimized during transportation of the material. Blasting operations carried out in open space and forming dust shall be carried out in accordance with regulations and rules. In addition, the following measures shall be taken in Annex 1 of Regulation on the Control of Airborne Pollution from Industry when it is necessary for air quality standards to be met during storage of the material outdoors. * Loading and unloading shall be performed without flourishing. * Upper layers shall be kept under 10% humidity and required equipments shall be installed for maintaining this situation.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	5,26	Air Emissions Control & Mitigation Measure		Provisions of Air Quality Assessment and Management Directive entered into force upon published in 06/06/2008 dated and 26898 numbered Official Gazette and Directive on Control of Industrial Sourced Air Pollution entered into force upon published in 3rd July 2009 dated and 27277 numbered Official Gazette shall be applied for reducing emission amounts arising from work machines and trucks and not exceeding given limit values.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	5,4	Compliance-Waste		According to Waste Management Directive, hazardous wastes cover wastes having star (*) mark besides the six digits waste code in ANNEX-4 of the Directive and bearing one or more hazardous characteristics given in Annex-3A of the Directive in question.		Preconstruction, Construction, Operation, Decommissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	5,41	Compliance-Treatment Sludge		The treatment sludge that shall be generated as the result of operation to be performed in package domestic waste water treatment plant to be installed on the site for treatment of domestic waste waters shall be non-hazardous. Treatment sludge to be formed in this context shall be stored in a licensed solid waste storage facility together with other domestic solid wastes (which cannot be reused or recycled) to be disposed of in accordance with the Waste Management Regulation. In addition, possibility of using the treatment sludge as a fertilizer in rehabilitation activities after dewatering shall also be assessed.		Land Preparation, Construction, Operation, Decomissioning						
MoEU	EIA	5,43	Compliance-Treatment Pit		The treatment slurry to be generated from the package domestic wastewater treatment plant to be installed in the construction phase of the project and which shall be used to treat the domestic wastewater that shall be formed in the operation phase together with the other domestic solid wastes to be established (such as not being reused or recycled) shall be stored in the storage facility and disposed of in accordance with the Waste Management Regulation. Likewise in the construction phase, the possibility of using the treatment mud as a fertilizer in rehabilitation activities after dewatering shall also be assessed.		Construction, Operation, Decomissioning						
MoEU	EIA	5.43-5.44	Waste Minimization and Mitigation Measures		Wastes to be generated within scope of the Project shall be collected, stored, transported and disposed of according to related Turkish Directives Also, international good practices specific to the mining sector shall be the basis for the management of the waste to be generated within the scope of the project. The project owner shall adopt the following principles in the management of waste to be generated within the scope of the project. *Wastes shall be prevented in the source, where it is not possible to minimize waste generation. In this context, the waste generation potential of the equipment or materials to be purchased (e.g. packaging waste) shall be taken into account. * Hazardous wastes shall be collected separately from non-hazardous wastes, thus hazardous waste generation shall be minimized. * Wastes or waste materials generated on the site shall be reused as much as possible. Recycling opportunities outside the site shall be assessed for waste types that cannot be reused in the site. * Wastes shall only be disposed of when reuse is not possible. Non-hazardous materials shall be selected as long as possible for selection of materials to be used in the facility. * In the scope of maintenance and repair activities, chlorine free solvents shall be used. * Latex paints, which can be cleaned with water and soap, shall be used instead of varnish, which requires the use of thinner. * Chemicals shall be supplied in large volume containers for as long as possible to minimize the amount of containers and packages contaminated with chemicals. * A list of chemicals allowed to be used in the facility shall be available and entrance of chemicals not given in this list shall be kept under control. This application shall be valid for contractors. * Oils containing polychlorinated biphenyl (PCB) shall not be used.		Construction, Operation, Decomissioning						
MoEU	EIA	5,44	Waste Minimization and Mitigation Measures		Wastes shall be accumulated on the temporary waste storage site to be built in the plant before the final disposal. The wastes to be generated within the facility shall be collected and stored in closed containers suitable for the type of waste to be collected and stored regularly. At this point, wastes shall be protected from external conditions (e.g. wind, rain, heat, etc.). The containers shall be labelled appropriately for storage purposes.		Construction, Operation, Decomissioning						
MoEU	EIA	5,44	Waste Minimization and Mitigation Measures		The general principles to be taken as basis in the management of the wastes to be formed within the facility are summarized below: * Wastes shall only be stored temporarily on site, and final disposal shall occur outside the facility. * Recycling, transport and disposal of wastes shall be carried out by licensed companies or, where appropriate, by relevant municipalities. * No incineration or burial of any kind shall occur in the site, and no wastes shall be thrown into nearby roads or water sources. * All activities related to collection, temporary storage, transport and disposal of wastes during the project shall be avoided from any application that would cause personnel or public health risks. * Wastes to be temporarily stored on the shelf shall be delivered to suitable transport vehicles of the type of waste and licensed to be removed from the scene. The information about operations in this scope shall be recorded and records shall be kept in the site. * As part of the final design work of the project, a special Waste Management Plan shall be prepared for the site and this plan shall be implemented by both the project staff and contractors within scope of the project.		Construction, Operation, Decomissioning						
MoEU	EIA	5.44-5.45	Compliance-Waste Legislation		Local legislation to be followed in the management of wastes to be generated during the construction, operation and closure phases of the project is given below; *Packing Wastes Control Directive * Regulation on Control of Waste Batteries and Accumulators * Regulation on Control of Waste Oils * Waste Management Regulation * Regulation on the Control of Vegetable Waste Oils * Regulation on Control of Excavation Soil, Construction and Demolition Wastes * Regulation on Control of End-of-Life Tires * Regulation on the Control of Hazardous Wastes (up to the date of abolition according to the Waste Management Regulation published in the Official Gazette dated 02.04.2015 and numbered 29314) * Regulation on Control of Medical Wastes		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	5,45	Management and Compliance of Excavation Waste Materials, Construction and Destruction Wastes		Excavation materials to be generated during land preparation phase of the project shall be temporarily stored in areas specially designated in the field so as not to be mixed with other types of wastes and reused as fill material as long as allowed by characteristics. Materials which are not suitable to be used as filling material or which are in excess shall be disposed of in the area indicated by the relevant municipality in accordance with the provisions of Excavation Soil, Construction and Demolition Waste Control Regulation. Construction waste that has not been contaminated with hazardous substances and has potential of being reusable or recyclable shall be temporarily stored in the field. Scrap metals (which can be produced at construction and closing stages) shall be collected separately from other waste in special containers to be placed on the site. These wastes shall be removed from the scene by recycling companies licensed by the Ministry of Environment and Urban Planning.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	5.45-5.46	Management and Compliance of Domestic Solid Wastes		Domestic solid wastes to be generated during construction and operation phases of the project shall be initially placed in garbage bags where they are generated and then temporarily stored in the covered garbage containers to be placed in sufficient number of places in the site. Lids of containers shall prevent spread of wastes by the wind effect, contact with rain water and odour spread which can disturb the environment. Temporary stored domestic wastes shall be removed from the site with the garbage collection trucks belonging to the authorized firm / municipality and disposed of in appropriate storage areas. Municipalities or private firms shall discuss the disposal of domestic solid wastes to be generated during the construction and operation phases of the project and possibilities for disposal in accordance with the regulations shall be assessed. Non-hazardous packing wastes generated during the project shall be collected by entities having the authority of the Ministry of Environment and Urbanization to collect / separate these wastes and shall be evaluated in accordance with provisions of the Packaging Waste Control Regulation.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	5,46	Management and Compliance of Hazardous and Special Wastes		Hazardous wastes to be generated within scope of the project shall be temporarily stored in containers separated from hazardous wastes in areas reserved for this work. This area shall have an impermeable base and shall be protected against surface runoff and rain.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	5,46	Management and Compliance of Hazardous Wastes		Relevant provisions of current regulation on management of hazardous wastes (TAKY / Waste Management Regulation) shall be complied with for temporary storage of hazardous wastes, transport to disposal facilities and final disposal. At this point it should be reminded that; Waste Management Regulation has been published in the Official Gazette dated April 2, 2015 and numbered 29314 and Regulation on Control of Hazardous Wastes shall be abolished one year after publication date of this regulation. Hazardous wastes shall be transported by persons or entities licensed under relevant provisions of the current directive on the management of hazardous wastes (TAKY / Waste Management Regulation). Recycling and disposal of wastes shall also be carried out at facilities licensed by the Ministry of Environment and Urbanization. Records of the transport of the hazardous waste and the return to the recovery or disposal facilities through licensed companies shall be kept on the site.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	5,46	Management and Compliance of Hazardous and Special Wastes-End of Life Tires		End-of-Life Tires to be generated at construction and operation stages shall be temporarily stored in a specially allocated area within the project area and delivered to the carrier authorized by the Ministry of Environment and Urbanization to be disposed of in accordance with the Lifetime Completed Tire Control Regulation. Such wastes shall not be buried, burnt or stored for storage in the site.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	5,46	Management and Compliance of Hazardous and Special Wastes-Waste Oils		Waste oils (e.g., vegetable oil, margarine, etc.) to be generated in the dining hall that shall serve the staff throughout the project shall be collected in containers to be allocated for storage of such wastes and disposed of in accordance with provisions of Regulation on Control of Vegetable Waste Oils. Waste batteries and accumulators to be formed within the scope of the project shall be collected separately from other wastes in the area and waste accumulators shall be temporarily stored on a leak proof floor. Temporarily stored waste batteries and accumulators shall be removed from the site and disposed of in licensed premises by means of vehicles licensed to transport in accordance with type of waste based on provisions of the Regulation on Control of Waste Batteries and Accumulators. Waste oils are classified under three different categories according to the Control of Waste Oils based on contaminants such as arsenic, cadmium, chromium, chloride, lead, total halogens and PCB which they contain and flash points. Accordingly, waste oils to be generated in the laboratory shall be analyzed in authorized laboratories and classified according to their categories. In this respect, waste oils in different categories shall be stored separately from each other in tank, container, or similar structures placed on impervious ground in accordance with technical specifications specified in regulations. Temporarily stored waste oils shall be disposed of by licensed waste oil transport vehicles to be sent to related recovery or disposal facilities based on their categories in accordance with provisions of the Waste Oil Control Regulation.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	5.46-5.47	Management and Compliance of Hazardous and Special Wastes-Medical Wastes		Medical wastes those may be generated in the infirmary that shall serve within the facility area shall be stored separately from other wastes within the scope of the project. Special storage bags and boxes shall be kept for separate storage of medical wastes. Temporary tanks to be used in this context shall be closed for access by unauthorized persons. Medical wastes other than non-cutting or non-penetrating wastes shall be temporarily stored in the site before final disposal by specially designed and collected in red plastic bags carrying the "International Biohazard" emblem on both sides and "CAUTION MEDICAL WASTE" letters. Wastes with cutting or penetrating properties shall be collected in boxes or containers in accordance with technical criteria specified in the relevant regulation (not punctured, torn, ruptured and explosion proof, impermeable and impermeable, opened and mixed) separately from other medical wastes. These box or containers should be marked with the "International Biohazard" emblem and "CAUTION! PENETRATING AND SHARP MEDICAL WASTES "shall be available. Medical wastes temporarily stored in the site shall be handed over to licensed medical waste transport vehicles in accordance with provisions of the Medical Waste Control Regulation and shall be removed from the site.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	5,47	Noise Compliance		By-law on Assessment and Management of Environmental Noise published in the official Gazette no. 27601 on June 4th 2010. Taking day environmental noise limit value (65 dBA) defined in the By-law on Assessment and Management of Environmental Noise for commercial structures around industrial facilities and dense settlement areas into consideration, the measurement results show that background noise in each settlement is at an acceptable level for a rural environment. Taking noise limit values for evening and night (60 dBA and 55 dBA) into consideration, again we see that settlements in which measurements are made are below relevant limit value.		Preconstruction, Construction, Operation, Decomissioning						

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MoEU	EIA	5,49	Noise Compliance		Noise generated by machinery and equipment used in the scope of the Project has been measured according to volume levels stated in article 5 of the Regulation on Noise Emission in the Environment by Equipment for Use Outdoors (Official Gazette no. 26392 dated December 30th, 2006).		Operation						
MoEU	EIA	5,52	Noise Monitoring and Mitigation Measures		Although estimated to be insignificant, the noise impact caused by the project on settlements close to the project site will be monitored throughout the operation phase of the project by noise monitoring activities in accordance with the environmental monitoring program described in Section 7. In case monitoring activities detect an excess in terms of bylaw's limit values, corrective measures aiming at eliminating this excess will be taken in addition to care taken against any potential noise impact of the project. See the section titled "Blast Calculations and Vibration" for any air shock based instantaneous noise generation caused by failure to take necessary precautions during blasting activities.		Operation						
MoEU	EIA	5,55	Compliance Blasting		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 are defined in the By-law on Assessment and Management of Environmental Noise. The subject limit values are presented in Table 5.24.		Construction, Operation						
MoEU	EIA	5,55	Vibrations Compliance		33.6 kilogram explosives per hole will be used during extraction of the ore. The vibration velocity calculated by the formula drops below 5 mm/s specified in the regulation after about 173 m from the source. According to calculations, the expected vibration velocity at Küçük İlca Neighborhood is 0.017 mm/s, which is well below the regulation limit value. Therefore, it is not expected that the vibrations that will occur due to blasting processes to be carried out in the open pits will have a negative effect on the settlement units located around the project area.		Construction, Operation						
MoEU	EIA	5,56	Vibrations Compliance		It is planned to carry out blasting during the extraction of GR within the scope of the project . At this stage, 73 kilograms of explosive material per hole will be used. The vibration velocity calculated by the formula drops below 5 mm/s specified in the regulation after about 173 m from the source. The closest settlement to the open pit area is Küçük İlca Neighborhood at a distance of 6 km. According to calculations, the expected vibration velocity at Küçük İlca Neighborhood is 0.017 mm/s, which is well below the regulation limit value. Therefore, it is not expected that the vibrations that will occur due to blasting processes to be carried out during extraction of GR will have a negative effect on the settlement units located around the project area.		Construction, Operation						
MoEU	EIA	5,57	Flyrock Calculations and Safety		According to the calculations performed, the maximum flyrock distance for a 102 millimeter hole has been calculated to be 657.3 meters in order to extract the ore in the mine area. There is no settlement located at a distance from the open pits that is less than this distance. According to the settlement units and distances given in Table 5.25, the closest settlement to the open pit areas is Küçük İlca Neighborhood at a distance of 6 km. According to this assessment, a possible flyrock event that may occur due to project will not directly affect the buildings located in the settlements in the vicinity. The employees in the plant are within the flyrock impact area and it is important to take necessary occupational health and safety precautions. The hole diameter to be used in the blasting process to be carried out during extraction of GR has been determined to be 152 mm (5.98 inches), and as a result of calculations performed, the maximum flyrock distance has been determined to be 856.6 meters. There is no settlement located at a distance smaller than this distance to the open pits and it is not possible that the impact of a flyrock resulting from the blasting activities to be carried out in the 152 mm holes will directly affect the buildings located in the settlements in the vicinity of the project area.		Construction, Operation						
MoEU	EIA	5,59	Compliance		As a result of the calculation made by selecting the K value suitable for the İvrindi Gold and Silver Mine and Mineral Processing Project, in the Küçük İlca Neighborhood located about 6 km away from the open pit area, the maximum amplitude of the vibrations that will occur due to blasting to be carried out within the scope of the project is 0.0011 millimeters. It is known that there is no damage to the buildings when the amplitude is below 0.05 mm (Değerli E.) Therefore, according to the above mentioned evaluation, the vibration amplitude that will occur as a result of blasting in the project will be at a level that will not cause any damage to the buildings.		Construction, Operation						
MoEU	EIA	5,6	Blasting Mitigation Measures		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 given in the By-law on Assessment and Management of Environmental Noise will not be exceeded during the blasting activities to be carried out within the scope of the project (See Table 5.24). During the blasting activities, vibration measurement records will be kept regularly (using seismograph), and compliance with the mentioned limit values will be continuously followed. This will ensure that the people living in the settlements around the project area will not be disturbed by the impacts of project-induced vibration.		Construction, Operation						
MoEU	EIA	5,6	Blasting Compliance		Within the scope of the 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" (Official Gazette date: 09.29.1987 and Official Gazette no.: 19589) will be complied with.		Construction, Operation						
MoEU	EIA	5,6	Blasting Mitigation Measures		Prior to the start of mining activities within the scope of the project, the existing situations (building material, existing damage, foundation strength, etc.) of the structures in the project area and surrounding settlements and their sensitivity to possible vibration impacts will be determined by a specialist team to be established by the project owner. In this context, an existing status report will be prepared and submitted to the T.R. Balıkesir Governorship Provincial Directorate of Environment and Urbanization.		Construction, Operation						
MoEU	EIA	5,6	Blasting Mitigation Measures		Prior to blasting activities, sensitivity of the surrounding settlement units to noise and vibration impacts and the risks to which they may be exposed will be assessed separately and the explosive quantities that can be exploded safely will be optimized by considering the relevant distances in line with these assessments. Performance of the blasting operations in accordance with the calculations made will be ensured by the necessary recording and monitoring methods.		Construction, Operation						
MoEU	EIA	5,6	Blasting Mitigation Measures		Blasting activities planned within the scope of the project will only be performed between 8:00-18:00 and will not be performed on Sundays and other holidays as much as possible. For the blasting activities, the program to be determined within this scope will be complied with and the blasting program determined will not be changed unless it is compulsory.		Construction, Operation						
MoEU	EIA	5,6	Blasting Mitigation Measures		Before the blasting activities, the hole locations will be determined by measuring and marked so that they can be easily seen. Due to this marking, the operation will be performed precisely and it will be ensured that all regions will be affected by the blasting energy in a balanced manner.		Construction, Operation						
MoEU	EIA	5,6	Blasting Mitigation Measures		Blasting activities will be carried out by experts according to the nature of the formation. The processes related to blasting (transport, storage, preparation, use, excess surplus or non-explosive material disposal, etc.) will be carried out by the expert persons and teams (e.g., persons with igniting capability, technical supervisor).		Construction, Operation						
MoEU	EIA	5,6	Blasting Compliance		Blasting will be carried out within the knowledge of the gendarmerie.		Construction, Operation						
MoEU	EIA	5.60-5.61	Blasting Mitigation Measures		During the blasting operations, all the holes will be detonated one by one in the blasting system to be used, delays will be given between the holes, low charge and millisecond blasting will be carried out in order to separate seismic waves from each other and prevent overlapping of them. The delay interval to be given in this context will be determined to ensure keeping the mechanical oscillation movements caused by the blasting under control and minimizing flyrocks and in accordance with the rock characteristics and density.		Construction, Operation						
MoEU	EIA	5,61	Blasting Mitigation Measures		Modern blasting techniques will be used. Thus, impacts of the blasting-induced vibrations, flyrock and airblast on the surrounding settlements will be minimized. In this direction, blasting activities will be carried out by using the appropriate ignition system in order to minimize the airblast impact		Construction, Operation						
MoEU	EIA	5,61	Blasting Mitigation Measures		In order to prevent any adverse impact of flyrocks that may occur during blasting activities on the persons and groups on the roads within the site, in case of necessity, the traffic flows on these roads will be controlled during blasting activities.		Construction, Operation						
MoEU	EIA	5,61	Blasting Mitigation Measures		It will be checked whether any damage caused by blasting activities has occurred in the settlements located in the immediate vicinity of the project area (Küçük İlca, Karadere and Değirmenbaşı Neighborhoods) on a regular basis with the monitoring activities to be carried out in accordance with the environmental monitoring program presented in Chapter 7.		Construction, Operation						
MoEU	EIA	5,82	Water Quality Compliance		For short-term extractability analyzes, classification has been made according to the By-law on Water Pollution Control, Table-1 Quality Values According to the Classes of Continental Water Resources, 1st Class Water Quality. For the rocks to be piled in the GR storage area and ore material that will form heap leach, it shows that Al element among the potential problematic elements (PPE) could be existing in the material to be excavated in the Güney zone. However, there is no Al activity except low pH value in the atmospheric environment. According to the test results, the Al element causes, as an average, the 2nd Class water quality in the Güney zone and the 1st Class water quality in other zones. Any situation that may cause a problem in leachate and surface waters in the pit areas where excavation will be performed is not expected.		Construction, Operation, Decommissioning						
MoEU	EIA	5,83	Water Quality Compliance		Leachate and metal mobilities within the scope of the project are very low and there is no element having problem of metal leaching potential. Except for the local high values, when the release rate graphs of the values in the second grade water quality class are examined in the short term extractability analyzes, Al in the Güney zone area and As in the Karteldere zone area are considered as potential problematic elements in leachate waters, but these elements are below the limit values. Considering all release rates, it is observed that rocks usually have minimal release rates and there is no problematic element having potential for metal leaching.		Construction, Operation, Decommissioning						
MoEU	EIA	5,86	GR Management Plan		The lithology described by KDHCT-01 is likely to produce ARD/ML after 266 years of unstable storage on site, but occurrence of this situation is not possible since the encapsulation processes will be implemented under the GR management plan within the scope of the project.		Construction, Operation, Decommissioning						
MoEU	EIA	5,89	Monitoring Measures		Field-scale kinetic tests were started in November 2015 for the ARD/ML monitoring until the operation period. Until the beginning of the operation period, samples will be taken from the barrels when 20 liters of leachate occurred and they will be compared with laboratory scale kinetic tests. During the operation period, samples will be taken systematically from the GR samples for ARD/ML management.		Construction, Operation, Decommissioning						
MoEU	EIA	5,9	GR Management Plan		According to the GR management plan, there is no risk of acid rock drainage and metal leach formation in the GR area after the encapsulation processes to be formed as a result of piling to be carried out by years and as a result of the monitoring activities to be performed.		Construction, Operation, Decommissioning						
MoEU	EIA	5,91	GR Management Plan		According to these results, there is no potential for acid generation in the heap leach and GR storage areas during the project life. As a result of the static tests, the buffering capacities and acid forming potentials of the lithology samples to be excavated from the open pit and piled in the GR storage area have been determined. It has been determined that the oxidized units to be discharged into the GR area are more than 76% in total. The sum of the units likely to form ARD/ML corresponds to 1.48% of the GR storage area. In the storage stage of said rocks, it will be ensured that the mentioned rocks will be stored by encapsulating them to isolate from the neutralizing rocks with high buffering capacity during storage stage. Therefore, formation of metal and acidic leachate will be prevented.		Construction, Operation, Decommissioning						
MoEU	EIA	5,92	GR Management Plan		Under the GR management plan, encapsulation processes and plans to prevent acid rock drainage and metal leaching situations in a controlled manner will be monitored on the basis of the immediate follow-up of the materials to be extracted from open pit each year. Studies will be performed to determine the most effective and efficient methods for the control of ARD during operation. Based on the monitoring data obtained during the operation, it will be ensured that and ARD database will be established for use in the closure phase of the mine.		Construction, Operation, Decommissioning						
MoEU	EIA	5,92	ARD Control		For ARD control, effective and efficient studies that can ensure long-term environmental management stability will be performed by the most advanced methods according to the existing technology during operation. Based on the monitoring data obtained during the operation, it will be ensured that the ARD/ML management database will be established for use in the closure phase of the mine.		Operation, Decommissioning						
MoEU	EIA	5,92	Surface Water Pollution Prevention Measures		Possible contamination of the surface waters will be prevented and the surface waters shall be removed from the site with the interception channels to be constructed during operation.		Operation						
MoEU	EIA	5,92	Monitoring Measures- Compliance		The results of the monitoring activities to be carried out by TUMAD Mining Company during the operating period will be sent to the Ministry of Environment and Urban Planning and the Provincial Directorate of Environment and Urban Planning in the form of monitoring reports to be prepared every six months. As a result of these monitoring activities, additional measures will be introduced, if necessary. Since the amount of sulfite mineral containing rocks is small and the rocks containing buffering minerals have high prevalence, the ARD/ML precautions to be taken will prevent the potential environmental impacts. In addition to the tests carried out, monitoring will be performed with the new ARD/ML samples to be taken during operation activities, mine closure and after and ARD/ML formation will be avoided after closure of the mine.		Operation, Decommissioning						
MoEU	EIA	5,93	Groundwater Management- Compliance		According to the "Regulation on the Protection of Ground Waters against Pollution and Deterioration", trend analysis is carried out in underground waters. In the analyzes performed, the relations between the parameter values measured in each period, but not the limit values, are analyzed and the graphs of the trend analysis showing this relationship are drawn. Thus, it will be determined easily whether or not the groundwater will be affected during and after the future activities. In the trend analyses performed according to the parameters included in the "Regulation on the Protection of Ground Waters against Pollution and Deterioration", Appendix-2 and Appendix-9, there is no problematic elements.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	5,93	Surface Water Management- Compliance		As a result of the assessment made in according to the "Surface Water Quality Management Regulation" Annex-5, "Environmental Quality Standards for Some Parameters in Surface Water Masses and Usage Intentions" Table-5 and "Quality Criteria According to Classes of Inland Surface Water Resources", surface waters are 2nd class quality and 3rd class quality. The parameters that cause the second and third classes of quality are physical parameters such as nutrient elements, bacteriological parameters and pH.		Preconstruction, Construction, Operation, Decommissioning						

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MoEU	EIA	5,93	Rain Water Open Pit Management		<p>Rain waters that will come by infiltration through the Ballıktepe and Güney Zones open pit walls, rain waters in the Karteldere, Kabaktepe pits and underground waters are the water resources to be collected in the excavation areas. In Karteldere and Kabaktepe open pits, excavation activities will be carried out under the groundwater and at this stage dewatering activities will be carried out in the open pits. Karteldere and Kabak open pits will be partially backfilled with mine waste material to be extracted from the Güney Zone and Ballıktepe open pits and will be made compatible with the topography.</p> <p>The water quality model study has been performed for the water quality in the open pit to be formed due to the mentioned water sources. Güney Zone and Ballıktepe open pit excavations will not be under the groundwater level and Karteldere and Kabaktepe open pits will be backfilled, therefore, there will be no open pit lake formation in all existing pits.</p>		Operation, Decommissioning						
MoEU	EIA	5.93-5.94	ARD Water Compliance		It has been calculated that the equilibrium conditions in general content will not form ARD in the short and long term a situation exceeding the legal limits of the By-law on Water Pollution Control will not be encountered.		Operation, Decommissioning						
MoEU	EIA	5,96	Water Management and Monitoring- Open Pits		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 waste materials extracted from excavation areas during the operation period.		Operation, Decommissioning						
MoEU	EIA	5,97	Management and Monitoring of Open Pits		<p>According to the risk assessment, there is no excavation in all the quarries. Partial backfilling will be carried out in Karteldere and Kabaktepe mines in accordance with the topography. According to water quality prediction model results, the effects on regional water quality have low risk. Since backfilling process will be performed in Karteldere and Kabaktepe open pits and the ARD formation potential under these conditions is low as a result of the laboratory-scale tests and modelings performed, this situation will considerably reduce the environmental risks in the area and will facilitate the closure and long term management of the site.</p> <p>When the open-pit mine production activity is completed, the rehabilitation of the mine slopes will be started and the mine walls 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 PA 5 and MET 5 zone rocks are exposed. Soil loss and erosion effects will be prevented by observing the mine slopes. 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 pits, including the operating period and the post-operating period.</p>		Operation, Decommissioning						
MoEU	EIA	5,98	GR Storage Areas Precautions		If there is ARD/ML potential when piling is performed in a chemically unstable way in the GR Storage Area, there is a risk of deterioration of the drainage water quality in the region according to the precipitation that will fall on the GR during the closure phase. For this reason, within the scope of the closing works, bench angles suitable for the GR management plan and the technical specifications of GR material will be established and rehabilitation procedures will be performed concurrently with the operation in accordance with the purpose of land use.		Operation, Decommissioning						
MoEU	EIA	5,98	GR Storage Areas Precautions		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 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 inclination. Storage in the GR storage area will be started after the drainage system is established.		Operation, Decommissioning						
MoEU	EIA	5.98-5.99	GR Storage Areas Precautions		In GR management design, it will be prevented to have the sulfur-containing material as the first and the last mineral of the possible storm water flow path and its atmospheric contact will also be prevented. According to the results obtained in the laboratory tests on site, the storage design will be updated by repeating the acid and neutralization contents of mine waste material by the site and laboratory tests at necessary points. The geochemical characterization works will be continued at the later stages of the project, and, in case of increase in the amount of acid-forming GR material and/or determination of impossibility of concurrent storage, a temporary storage area will be design and installed by providing the suitable storage conditions for such GR material.		Operation, Decommissioning						
MoEU	EIA	5,1	GR Storage Areas Precautions		For the collection of leachate, a settling basin with leak-proof based geomembrane will be installed downstream of the GR storage area. It will be ensured that surface and underground waters in the downstream will be monitored regularly to protect the leachate quality 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.		Operation, Decommissioning						
MoEU	EIA	5,1	GR Storage Areas Precautions		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 GR storage 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, Decommissioning						
MoEU	EIA	5,1	GR Storage Areas Precautions		In order to establish the final closing plan, ABA and Short Term Extractability Analysis will be carried out by taking samples from the GR storage area and heap leach 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, Decommissioning						
MoEU	EIA	5.100-5.101	Heap Leach Areas Precautions		In the closure plan, impermeability will be ensured in accordance with the relevant regulation in order to provide impermeability on the ore pile. The drainage layer will be laid on the impermeability layer and the vegetable soil will be laid on top. As a result of the PHREEQC model, which is based on the formation of this top cover for the leachate closure, it is expected that the leachate content will have neutral pH value and show slight alkalinity.		Operation, Decommissioning						
MoEU	EIA	5,102	Heap Leach Area Mitigation Measures		<p>The heap leach system will be operated with zero discharge principle during operation and closure period.</p> <p>pipes will be placed between the clay lining and the geomembrane and it will be checked whether there is leakage. The parts of the heap area with pH value of 9.5-10 washed with clean water will be monitored to review the changes in its chemical characteristics. In order to prevent ARD formation, the pH value, WAD cyanide, metals and their components will be monitored in the direction of zero discharge principle.</p> <p>In order to prevent ARD formation, a drip system will be installed and cleaned with clean water will be carried out to reduce the level of cyanide and other components in the heap with a pH of 9.5-10. The WAD cyanide levels of the washed heap will be reduced to 10 mg/l specified in the European Union directive 2006/21/EC or lower levels.</p> <p>In the closure phase, the side slopes of the pile will be beveled and shaped again. The top cover, which will be used to provide impermeability on the heap, will consist of a buffer layer with a total thickness of 1 m and clay group minerals. The drainage layer will be laid on the impermeability layer and the vegetable soil will be laid on top. After the formation of the top cover, planting will be carried out to enable the cultivation of plant species unique to the region.</p> <p>Sampling and analysis processes will be carried out regularly according to the underground water monitoring program from the observation wells opened upstream and downstream regions opened in heap leach. Water quality monitoring will be carried out in the heap leach area including the operation and post-closure period. Regular monitoring will be carried out from the lower drainage collection system in order to understand the presence of leaks through the heap leach lining material.</p>	In order to test and determine the impermeability of the heap leach lining system, perforated pipes will be monitored to review the changes in its chemical characteristics. In order to prevent ARD	Operation, Decommissioning						
MoEU	EIA	5,102	ARD Mitigation and Monitoring Measures		The ARD monitoring work has been planned to include the operation period and the post-operation period of the project. Within the scope of the heap leach area and GR storage area monitoring works, the stability of the slopes, dewatering and compaction rates of the ore waste, the placement of oxide and sulfite containing materials to be stored in the GR storage area, structural deterioration such as settling and the enlargement and rising rates of annual heaps will be recorded and database will be established. Mass ratios on open pit surfaces and mine waste materials will be continuously monitored and the ARD database established during the closure planning phase will be utilized. Studies will be performed to determine the most effective and efficient methods for the control of ARD during operation. Based on the monitoring data obtained during the operation, it will be ensured that the ARD/ML database will be established for use in the closure phase of the mine.		Operation, Decommissioning						
MoEU	EIA	5,97	Compliance		<p>By-law on Rehabilitation of Land Disrupted after Mining Activities entered into force on 23.01.2010 after being published in the Official Gazette no. 27471. After this by-law was published the previous by-law with the same name that was published in the Official Gazette no. 26730 on 14.12.2007 was repealed.</p> <p>The purpose of the by-law in effect is to establish procedures and principles regarding rehabilitation of the nature disrupted by mining activities, excavations carried out at the site for material and soil provision, casts and waste discharged into the environment. This by-law requires that works regarding rehabilitation of the environment which has been disrupted due to activities, restoring environmental balance, rehabilitation of the environment to transform the site so as to allow humans and other creatures can safely benefit from it are evaluated and finalized as a whole during the EIA process of the project.</p> <p>The Environmental Rehabilitation Plan which has been prepared as a part of this EIA Report and describes rehabilitation works of the İvrindi Gold and Silver Mine and Mineral Processing Project.</p>		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	5,97	Rehabilitation Measures		Vegetation (top) soil which will be used during environmental rehabilitation works will be stripped off the land during the land preparation phase of the project before any physical impact occurs and transferred to the top soil storage area in which it will be stored under suitable conditions that will preserve its fertility until the shutdown phase. Fertilization, seeding and irrigation works that are required will continue until the laying activities during the shutdown phase.		Preconstruction, Decommissioning						
MoEU	EIA	5,97	Rehabilitation Measures		<p>Active environmental rehabilitation works at the site will start during the last two years of the operation phase and continue throughout the shutdown phase. In this context, decommissioning and rehabilitation works will be carried out in the main project units listed below:</p> <p>* GR Storage Area * Opencast mining sites * Leap heap site * Other units, facilities and buildings</p>		Operation, Decommissioning						
MoEU	EIA	5,97	Rehabilitation Measures		Shutdown activities that will be carried out at the GR storage area, open pits and the heap leach site are, in general, using proper materials to surround the area on which rehabilitation works will be carried out, placing information signposts, ensuring training and stability at sites, collecting commercial seeds for preliminary vegetation works, laying vegetation soil, collecting seeds of final species, and planting suitable plants to the site as final species. On the other hand, backfilling activities which will be carried out at pit sites and washing works which will be carried out at that heap leach site will be rehabilitation works that are specific to said sites. Other than that; decommissioning, dismantling and removal from the site of building, facilities and units constructed at the project site will be a part of rehabilitation works.		Operation, Decommissioning						
MoEU	EIA	5,971	Rehabilitation Plan		<p>ERP prepared in the scope of the EIA Report has been developed by taking conditions of that period and planning into consideration. It will be possible to develop and update the Rehabilitation Plan in later stages of the project by assessing potential changes in planning details and current conditions. Thus, the ERP provided in Appendix-7 of the EIA Report should be considered as a living document. After completion of environmental rehabilitation works, environmental monitoring works will continue in the scope of the monitoring program provided in Chapter 7.</p> <p>ERP describes outlines of planning regarding the shutdown phase of the project. The project owner has prepared a Shutdown Plan specific to the project based on the frame that defines the outline of the EIA process (see Appendix 8). During the phase following operation; ensuring health and safety of the public, preventing any ongoing impact due to mining activities and transforming the area to a ready-for-use condition will be the target in the scope of this plan and any environmental, health and safety practice required in this manner will be put into practice.</p> <p>See Appendix-7 for the ERB (or the Environmental Rehabilitation Plan) briefly described above and prepared in accordance with the By-law on Rehabilitation of Land Disrupted after Mining Activities.</p>		Operation, Decommissioning						
MoEU	EIA	6,9	Dismantling Mitigation Measures		<p>Cyanide management plants, the ADR building, crushing plant units, conveyors, truck maintenance workshop, explosive substance storage, pumps, pipes, electricity distribution lines and similar facilities which have been used throughout the operation life of the project will be retired after the operation phase is complete. A regular management will be necessary after the operation phase if these facilities are not removed from the site, therefore dismantling these facilities at the start of the phase following the operation phase has been found to be the best alternative in terms of the environment. In this context, facilities and facility elements such as solution pipes and pumps which have been used in the scope of cyanide management will be dismantled following a washing process which will be carried out at the heap leach area. Afterwards, relevant dismantled equipment will be washed using a hydrogen peroxide solution to remove all hazardous materials and removed from the site after this process is complete. When the chemical concentration of the washing water reaches a suitable level according to relevant regulation it will be clean of its toxic properties and discharged by evaporating using evaporators. Scenarios such as leaving the area as a wet area or obtaining relevant permits for discharge will be evaluated in the following phases of the mine. In addition, solution basins and related pumps and pipes will be left at the site during the phase following the operation phase. The purpose here is to collect potential leaks resulting from the heap leach area and minimize the need for water management during the phase following the operation phase.</p> <p>Throughout the operation phase, drainage channels and basins used for collecting surface flow waters at the site will gradually be dismantled from areas in which mining activities are complete.</p>		Operation, Decommissioning						
MoEU	EIA	6,14	Compliance and Best Practices		The project is secured by environmental and social responsibilities of TÜMAD Madencilik and will be realized in accordance with legislations, by taking all measures detailed in relevant sections of this EIA Report, by conducting extended environmental monitoring studies, and in accordance with international good mining practices. In other words, the project will be operated in manner that gives importance to the environment and public health in order to minimize or eliminate the effects projected in the scope of the Project.		Preconstruction, Construction, Operation, Decommissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	7,1	Monitoring		Being one of said elements, subject of monitoring is comprised of the groups below: * Water Sources (Quality and Flow Rate), * Air Quality, * Soil Quality, * Noise and Vibration, * Waste Management, * Flora and Fauna, * Geology, * Environmental Rehabilitation * Occupational Health and Safety, * Emergencies, * Socio-economy, * Cultural Property.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	7,2	Monitoring- Water Sources and Quality		During the water source monitoring studies planned in the scope of monitoring quality an flow rates of surface and underground waters, monitoring locations will be observation wells which will be dug in order to monitor surface and underground water sources and underground waters found during the database studies conducted at the project site and its surrounding. Quality and flow rate of surface water sources will be monitored by in-situ measurement, sampling and afterwards analyses conducted regularly (in frequencies stated in the environmental monitoring program) by accredited laboratories regularly (carried out after taking the fact that sources may not contain any water due to seasonal conditions into consideration) and relevant authorities may participate in said sampling studies if deemed necessary. Laboratory analysis results obtained in the scope of monitoring will be regularly submitted to Balıkesir Provincial Directorate of Environment and Urbanization. Quality and volume of underground water sources will be, similar to surface water sources, monitored by stations comprised of observation wells determined in the scope of database studies.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	7,2	Monitoring and Compliance- Domestic WWTP Effluent		In addition to surface and underground waters, output water of the package domestic waste water treatment plant which will be used in all phases of the project for treatment of personnel based domestic wastewater will be monitored with regular measurements in order to ensure its compliance to relevant discharge standards of the Water Pollution Control Regulations. Field personnel with necessary qualities will be assigned by the project owner to weekly measurements of parameters that can be measured in-situ. Also, authorized independent agencies and institutes will provide laboratory assistance regarding laboratory analyses. Regular laboratory analyses and weekly in-situ measurements made be authorized field personnel will ensure compliance with By-law on Water Pollution Control discharge standards. All in-situ measurement, sampling and laboratory analysis results will be recorded.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	7,3	Monitoring- Water Sources and Quality		General Directorate of Environment Management, Department of Water and Soil Management, below is the "List of Parameters to be Monitored for Underground Water Monitoring Wells of Mining Activities" in the scope of the monitoring program of the project • Suspended Solids (mg/L) • Chemical Oxygen Need (mg/L) • pH • Conductivity (µS/cm) • Sulfate Ion (SO4-2) (mg/L) • Sulfur (S-2) (mg/L) • Arsenic (mg/L) • Cadmium (mg/L) • Lead (mg/L) • Mercury (mg/L) • Copper (mg/L) • Nickel (mg/L) • Brass (mg/L) • Chromium (total) (mg/L) The parameter measured based on chemicals used during activities; • Cyanide etc. Parameters which have been determined by elemental analysis on extracted mine ore and wall rocks an must be monitored in waters; • Aluminum • Boron • Iron • Antimony etc.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	7,3	Monitoring and Compliance- Surface Water		In addition to parameters listed above, parameters listed in Regulation on Surface Water Quality, Appendix-5 Table-5 will be monitored in surface and underground waters. As stated in Table 7.2 7.4, monitoring frequency will be 4 times per year during land preparation and construction phases and 1 per year during the operation phase, although Provincial Directorate may increase this frequency due to regional sensitivities. Water source monitoring after shutdown will cover a period of at least 25 years according to the monitoring program developed after shutdown.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	7,3	Monitoring and Compliance- Contact Water		Another water source included in the scope of the monitoring program is contact water. Contact water that accumulates at the site during the operation phase of the project will be collected in settling basins and afterwards transferred to the ADR plant. In cases where the volume of water is too much to be transferred to the ADR plant; it will be discharged to receiving environment in accordance with standards listed in Table 7.1 of By-law on Water Pollution Control.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	7.3-7.4	Monitoring and Compliance- ARD/ML		In addition to the monitoring plan summarized above; underground water, surface water, ARD/ML characterization studies will continue throughout operation. During the final shutdown process; open pits water quality, GR storage area leakage water quality, project site underground water quality and results of water quality prediction models will be compared in order to prepare an evaluation report which includes predictions and effectiveness of current assessment and measures (Integrated Water Management Report) and submit it to General Directorate of State Hydraulic Works, one during the fifth year along with shutdown plan of the project and another before the shutdown phase.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	7,5	Monitoring-Air Quality		Karadere, Küçük Ilıca and Değirmenbaşı Neighborhoods are settlements which can be affected from dust emission resulting from the project. Therefore, measurements will be made in said neighborhoods during land preparation, construction, operation and shutdown phases (see Figure 7.1.). Also, settled dust will be measured around the open pit areas regularly. Measurements made in Karadere, Küçük Ilıca and Değirmenbaşı Neighborhoods during the construction phase of the project will be used to measure current hydrogen cyanide (HCN) concentrations in order to monitor HCN gas emissions that might occur during the operation phase of the project. Also, fixed detectors and mobile detector will measure HCN gas in locations with HCN emission potential throughout the operation phase such as the ADR Plant. In cases HCN limit values have been exceeded in any part of the plant, HCN levels of nearby settlements will also be measured.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	7,5	Monitoring- Soil Medium, Vegetation Stripping		DYKP which can be found in Appendix-7 of this CED Report describes the methods that will be used to strip vegetation top soil from the construction sites and transportation of top soil to storage areas, storage under conditions that will preserve its fertility and its reuse during rehabilitation activities of the shutdown phase. The monitoring program will monitor whether said activities are carried out in accordance with DYKP in the scope of environmental monitoring. Similarly, potential erosion issues within the project site will be monitored in the same manner.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	7,5	Noise Monitoring		During the construction phase of the project, experts in the field will conduct in-situ assessments and visual inspections to determine current status of structures in Küçük Ilıca, Değirmenbaşı and Karadere neighborhoods, which are the closest settlements to the project site (for example present damages, foundation soundness, vibration sensitivity etc.) in order to determine whether any structural damage has been during blasting activities during the operation phase. Blast based vibration measurements will be recorded for each blasting. Any structural damage sustained in Küçük Ilıca Neighborhood will similarly be recorded during in-situ inspections. In addition, during lad preparation, construction, operation and shutdown phases of the project, the environmental noise level in Küçük Ilıca Neighborhood, which is the closest settlement to noise source activities, will be recorded regularly. Also, environmental noise measurements will be made in relevant settlements in case of a noise complaint.		Preconstruction, Construction, Operation						
MoEU	EIA	7,5	Waste Management Monitoring		Compliance of management of waste generated at the project site and relevant practices with relevant legislation and the project owner's compliance with the environment policy will be constantly monitored by authorized manager and personnel and any act of non-compliance will be recorded to be used in development of corrective actions.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	7,5	Flora and Fauna Monitoring		Endemic flora and indicator fauna species have been located in certain locations (the project site and its surrounding) during environmental database studies. Relevant experts will be monitoring said species during the land preparation phase of the project in order to protect such species against construction and operation activities. This will make sure that members of such species are removed from the site prior to intense construction and operation activities.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	7,6	Geology Monitoring		Geotechnical stability of critical project units (for example open pit, GR storage area, heap leach area) under static conditions will be monitored by the project owner through proper techniques.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	7,6	Environmental Rehabilitation		Environmental rehabilitation activities will be determined after being monitoring vegetation growth, temperature and moisture, ratio of success in habitat building, landscaping considerations and environmental land use at the site during shutdown and after shutdown phases.		Operation, Decommissioning						
MoEU	EIA	7,6	Occupational Health and Safety Monitoring and Mitigation Measures		Presence of personal protective equipment at the site, numbers and locations of warning signs and signposts, relevant training records, repairs-maintenance records of machinery and equipment and similar issues will constantly monitored by relevant managers at the work sites with potential non-compliances recorded throughout the project's life in order to ensure that corrective actions are developed and required sanctions are applied in a proper manner. Also, monitoring employees' health status for control purposes is also included in the environmental monitoring program. Particularly personnel employed in works that require particular health condition such as physical strength and visibility and employees who may be under health risks due to their work will be subjected to required health check-ups once every year, with the project owner keeping records of these check-ups at the site.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	7,6	Emergency Action Plan Monitoring		The project owner will regularly monitor presence of an updated Emergency Action Plan for the project and presence and sufficiency (for example amount, condition etc.) of emergency intervention equipment in the scope of the environmental monitoring program.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	7,6	Socio- economic Monitoring		The project owner will keep and inspect updated employment records (for example the number of employees, ratio of local employment). Also, social projects realized in settlements within the social area of influence of the project and socio-economic conditions of the region will be monitored by social studies conducted during construction, operation and shutdown phases as parameters of social monitoring of the project.		Preconstruction, Construction, Operation, Decommissioning						

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MoEU	EIA	7,6	Cultural Property Monitoring		Immovable cultural property in stated license areas which need protection or any protection environment or any urban or archaeological protected area couldn't be located during environmental database studies and corporate discussions. On the other hand, in the scope of the environmental monitoring studies, relevant manager and personnel will regularly monitor whether any of them has been found at work sites during land preparation, construction, operation and shutdown phases.		Preconstruction, Construction, Operation						
MoEU	EIA	7.6-7.23	Monitoring Program		Table 7.2, Table 7.3 and Table 7.4 describes monitoring parameters, methods that will be employed, monitoring frequency and their reasons measured separately for each group in detail.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	7,26	Environmental Management Plan		As mentioned before, environmental monitoring studies involve land preparation, construction, operation and the shutdown phases during which active rehabilitation works re carried out. Effectiveness of rehabilitation works will be measured in order to confirm that precautions taken has prevented any impact from being effective after shutdown, thanks to studies which will continue for a period of three years following completion of shutdown activities (the passive period). During said three year passive period, corrective action will be developed and applied in the scope of the Environmental Management Plan and the environmental monitoring program will be extended to after shutdown in the scope of the Environmental Management Plan if it has been determined that rehabilitation works is not being carried out effectively or environmental impact of the project continues despite precautions. The Environmental Management Plan will be a document prepared for the purpose putting potential developments in technical and economic plan and designs of the project into practice following completion of the EIA process. As is known, potential environmental impacts of the project are evaluated during the EIA process. The Environmental Management Plan will, first of all, include reviewing and updating said evaluations in parallel with advancements and practices regarding project planning (in case of legal changes, technological or organizational developments etc.). Also, the Environmental Management Plan will ensure updating environmental and social standards established by the EIA Report in the scope of legislation, sector practices and/or project policies.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	7,26	Environmental Management Plan		Said list can be modified in parallel with development of the project: * Developing performance indicators in order to determine whether impact eliminating and/or reducing precautions and environmental standards suggested in the EIA report are being applied in a proper, effective and efficient manner and updating the precautions based on conditions that are expected to change or develop; * Planning corrective actions and describing application schedule and monitoring methods of these actions in cases where environmental standards cannot be met; * Updating the environmental monitoring program proposed in the EIA Report in parallel with project development; * Updating current management plans (for example rehabilitation plan, cyanide management pan, water management plan, emergency action plan, cumulative impact assessment etc.) and developing sub-environmental management plans of evaluation reports specific to issues that are crucial in terms of managing environmental impact. * Preparation of a separate report which establishes a connection between forests and natural life and which describes potential negative consequences of destroying the forest and how to eliminate these consequences.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	7,27	Environmental Management Plan		TÜMAD Madencilik, the project owner, is responsible for executing the environmental monitoring program. The project owner will manage this process in cooperation with local administrations and record environmental monitoring program results as reports that will be shared by these administrations where necessary. These reports will be submitted to relevant local and central units of the Ministry of Environment and Urbanization in a frequency determined by that Ministry.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	7,27	Environmental Management Plan		In addition to responsibilities of the project owner in the scope of the environmental monitoring program, a monitoring-supervision commission comprised of representatives from relevant provincial directorates of Balıkesir Special Provincial Administration, regional directorates of municipalities and institutions, and non-governmental organizations and local folk where necessary if they show interest in the project (for example muhtars), this commission will be able to conduct external monitoring studies regarding environmental impacts.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	7,27	Compliance		If the project receives a "Positive EIA Decision," Section 7.2 describes responsibilities in the scope of activities carried out based on the program presented in this chapter and in accordance with provisions of Communiqué on Certificate of Competency.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	7,27	Emergency Intervention Plan		Basic elements of this document can be summarized as the items below: *Emergency policy of the project owner regarding the project (for example main principles and goals, administrative regulations, emergency management organization and responsibilities); * Planning and coordination, relevant training, sources to be utilized regarding being prepared for emergencies; * Emergency management practices (for example intervention strategies; environment, health and safety practices; communication methods, what to do in case of an emergency etc.).		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	7,28	Compliance		Monitoring supervision activities conducted after the project has obtained a "Positive EIA Decision" have been described in the Communiqué on Certificate of Competency under the title "Responsibilities of Agencies/Institutions with Certificate of Competency" (Article 9) as below: "The project owner of projects which have obtained a Positive EIA Decision shall be responsible for having any agency/institution authorized in the scope of this Communiqué visit the project site before the investment transitions into operation and conduct in-situ monitoring controls in order to determine whether commitments made during starting and construction periods of investment have been delivered. Relevant EIA Departments will inform the Department regarding such authorized agency/institution by using the form attached to the Communiqué in Appendix-4. Any agency/institution authorized by project owner shall be responsible for filling out the Monitoring/Supervision Form for the Construction Period of the Investment that is Subject to Commitments Made in the EIA Report attached to this notice in Appendix-4 and submit it to the Ministry in twenty business days following end of monitoring-supervision periods stated in the EIA Report. In case certificate of competency of such agency/institution is canceled or the institution is wound up, the project owner will sign a contract with another agency/institution with a certificate of competency and inform the Ministry during the first month following informing the project owner regarding this situation, whereas relevant agency/institution shall be responsible for filling out the Monitoring/Supervision Form for the Construction Period of the Investment that is Subject to Commitments Made in the EIA Report attached to this notice in Appendix-4 and submit it to the Ministry in twenty days following the end of said monitoring-supervision period." In this context, in case the İvrindi Gold and Silver Mine and Mineral Processing Project receives a "Positive EIA Decision" from the Ministry of Environment and Urbanization, it will be mandatory to fulfill all obligations described in the article above. In this context, TÜMAD Madencilik San. Tic. A.Ş. will authorize an agency or institution with a certificate of conformity to conduct monitoring controls of the project according to the notice and as described in this section. the construction period after investment will be realized in accordance with the monitoring-supervision control form in Appendix-14 of Communiqué on Certificate of Competency and monitoring report forms on construction and start-up periods of investment will be submitted to the Ministry of Environment and Urbanization in frequency established by Inspection Evaluation Commission.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,1	Compliance		Also, all of the activities planned under the project will be carried out in compliance with the provisions of the Mining Law No. 3213 (last amended on 11/09/2014), which came into force upon its publication in the Official Gazette No. 18785 dated 15/06/1985 and of the Implementing Regulation on Mining Operations, which came into force upon its publication in the Official Gazette No. 27751 dated 06/11/2010. In addition, activities relating to the design, construction, operation, and decommissioning of the project and post-operation period will be carried out, considering the current best practices in the mining sector.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,2	Compliance		The project lies within the scope of "Mining Projects" included in article 27 of Appendix-I list of the By-law on Environmental Impact Assessment (EIA) published in the Official Gazette no. 29186 date November 24th, 2014. Therefore, it's obligatory to prepare an EIA Report for the İvrindi Gold & Silver Mine and Enrichment Project pursuant to Article 7 of the EIA Regulation. The EIA process has started with submission of the EIA Application File to the Ministry of Environment and Urbanization (MoEU).		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,6	Heap Leach Site Management		The floor of the heap leach site has been designed in accordance with international standards and based on the zero discharge principle. Proper leveling procedures will be applied on the heap leach site floor in order to make it suitable for application of the primer system. First, an impermeable layer will be formed on the prepared floor. This process involves formation of a clay layer with permeability not higher than 10-9m/seconds and which has been compressed to a thickness of 500 millimeters. Afterwards, this impermeable layer will be covered with a high density polyethylene (HDPE) geomembrane composite primer system with a thickness of 2 millimeters. After the mine's life is over, the leach process carried out in the heap leach site will be over as ore production targeted in the open pit has been completed. Following this, solution left inside the ore heap after past operations will continue to be drained from the heap leach site for a period of time although no new solution enters the system. After final gold and silver metals remaining in the heap is collected with this drainage, the site will be subjected to washing in order to clean the system of cyanide, metals and other contaminants. Rehabilitation works will be carried out at the location as soon as chemical concentrations of the washing water are brought to suitable levels.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9.6-9.7	Water Managment		Water collecting, Settling and Flood Basins Runoff water (contact water) that has been contaminated after contacting contaminated surface within the mine site will be managed differently compared to water with no contact. In this context, water collected from the crushing plant, plant roads, office buildings, the pit area and GR storage area will be considered as contact water. Different basins have been designed in the scope of the project for the purpose of management of contact water and water with no contact. Water Collection Basins Water collection basins, which will be constructed if required in the scope of the project, will be used to collect rainfall and runoff water before they are transferred to ADR basins if water coming from interception channels will not be discharged directly to the receiving environment. Settling Basins Location downstream the mine waste area, settling basins are basins in which contaminated waters which may start flowing along with rainfall on the mine waste area and waters collected by the bottom drainage system will be collected. Water collected in these areas will be transferred to ADR Basins. Also, laboratory analyses will be conducted on water collected in these basins. Discharging criteria will be considered if water in the basins rise too high, this water will be discharged to the receiving environment if discharging criteria are met. Flood Basins Located downstream of settling basins, flood basins are basins that constructed at the same volume as settling based and are used for safety purposes. Flood discharge canals are canals that enable discharging all basins to the receiving environment and they will ensure that water to be discharged from basins is transferred to the nearest drainage line with a suitable slope. Also, these canals will be used to discharge surplus water directly for safety purposes in case of an emergency flood.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,8	Emergency Basin		An emergency basin with a capacity sufficient for management of large bodies of liquid in cases of extraordinary circumstances such as heavy rainfall, long term electricity shortages or equipment (for example pump) malfunctions will be constructed alongside the pregnant solution basin. This basin will also provide an additional storage volume in cases where the pregnant solution basin or the non-pregnant solution tank capacities are insufficient in cases of extraordinary operation (for example electricity shortages, extremely heavy rain). The emergency basin has been designed to serve only under the conditions stated above and will not be used as a regular storage unit. Therefore, the emergency pool will be empty under normal operating conditions. It will be technically possible to transfer the solution collected in this basin into the non-pregnant solution tank and the heap leach site.		Preconstruction, Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	9,8	HSE Pregnant Soluton Basin		Floor of the pregnant solution basin will be coated with a double layer primer system. Basin floor will be coated with 300 mm thick impermeable substance, two layers of high density polyethylene (HDPE) geomembrane primer with a thickness of 1.5 m each. There will be a geonet leak detection layer between two HDPE geomembrane layers. In addition, there will be a second leak detection layer between the impermeable substance and the HDPE layer. This primer will be placed on basin floor in order to provide high grade safety level in terms of leak control. The emergency basin will have a single layer primer system.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,8	Drainage Channels		The open pit area, GR storage area and heap leach area will be surrounded by interception channels in order to prevent surface flow waters formed by rainfall from contacting any contaminated surface (for example open pit area, GR storage area, heap leach area etc.) Also, interception channels will be built throughout site service roads. Contaminated surface flow waters which couldn't be prevented from leaking into the plant and contacts contaminated surfaces will be drained via drainage channels and used in accordance with the water management plan.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,1	Package Domestic Waste Treatment Plant		Domestic waste generated by the personnel during construction and operation stages of the project will be treated in package domestic wastewater treatment plant which will be built within the project area at sufficient capacity. The package domestic wastewater treatment plant will be constructed on the most suitable location based on environmental and topographical conditions.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,1	Compliance		Also, all of the activities planned under the project will be carried out in compliance with the provisions of the Mining Law No. 3213 (last amended on 11/09/2014), which came into force upon its publication in the Official Gazette No. 18785 dated 15/06/1985 and of the Implementing Regulation on Mining Operations, which came into force upon its publication in the Official Gazette No. 27751 dated 06/11/2010. In addition, activities relating to the design, construction, operation, and decommissioning of the project and post-operation period will be carried out, considering the current best practices in the mining sector.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,14	Chemical Management		Transportation, storage and use of chemicals will be carried out in accordance with relevant regulations and as stated in Substance Safety Information Sheets (SSIS) prepared by manufacturing companies.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,14	Cyanide Management		Among these chemicals, sodium cyanide management is crucial in terms of environmental sensitivity. Procurement, transportation, storage, preparation and similar processes regarding cyanide that will be used in the process will be carried out in accordance with the Cyanide Management Plant (see Appendix-19).		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,16	HSE Policy		Taking necessary technical and administrative precautions in order to conduct mining activities at locations on which human health and safety and the environment will not be put at risk and having the project owner to comply fully with environmental policies and health and safety policies will be the priority of the project.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,17	Emergency Plan		An emergency plan that will be used at the site will always be ready throughout all stages of the project. Appendix 15 shows the emergency action plan that has been created in the scope of the Environmental Impact Assessment and will be updated and developed during all stages of the project in accordance with the stages of the project.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,17	HSE Policy		Project senior management, senior managers in the field OHS authorities, relevant unit managers and all employees at lower levels will be responsible for application of the health and safety procedures that are described in this chapter and will be developed during the application stages of the project.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,18	HSE Policy		The region within the project site in which service and office buildings are located has an infirmary which can provide first aid to project personnel if necessary. The project site will also have an ambulance that will allow transferring of personnel to nearby health institutes in case of emergency.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,18	HSE Policy and Social Economic Promises		Local residents will have the priority in hiring the personnel who will be employed in the scope of the project. Therefore, significant increase due to the project in population in villages neighboring the project site is not expected. These personnel are expected to continue living in their current housings. On the other hand, foreign work force (work force from outside the region, from other provinces) will be considered in order to meet the need for qualified personnel. Qualified personnel who will be involved in the project in this context will be accommodated in prefabricated housings during the construction stage or at the site or the nearest city center. During the operation stage of the project, personnel hired from outside the region will be accommodated in the province of Balıkesir of Burhaniye district center, no lodging or housing will be present at the site.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,19	HSE Policy and Social Economic Promises		The service area that will be assigned to the management staff and other relevant personnel who will be working at the mining site (for example engineers, drilling teams etc.) will include offices and service buildings. This area will also include a training room. The service area will include an infirmary with sufficient capacity. Also, there will also have an ambulance that will allow transferring of personnel to nearby health institutes in case of emergency at the site. A changing room will be provided to the personnel who will be working at the mining site in the service area region. This room will include locker rooms that will allow the personnel to store their personal belongings and casual clothes in a clean environment during their shift in addition to showers, toilets and similar facilities. There will be a separate changing room for female personnel. The dining hall that will serve the mining personnel will also be in this region.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,2	Mitigation Measurese and Precautions		At this stage, which is expected to be completed within a period of approximately 1.5 years according to the project schedule, the areas to be realized shall be in the areas where forest permits are taken and in coordination of forest administrations. Another factor that may have an impact on forest areas outside the forest is fire risk. Operating stage shall commence following the land preparation and construction stage that shall last approximately 1.5 years. Under normal operating conditions no impact on forest areas is projected as a result of the project. However, the risk of fire that may arise in the event of an accident or negligence is not a special feature of the project, but it is a risk in every activity. For this reason, measures to be taken against fire risk within the area of operation shall be enough to prevent the effects of the project on forest areas during operation. Positive contributions shall be made to the plant cover in the region with the rehabilitation work to be carried out and completed after the operation. In the scope of rehabilitation activities, the topography of the area shall be as compatible as possible with the pre-activity situation and surroundings and the plants that shall be harmonious in terms of habitat and texture shall be used in planting studies. The Natural Rehabilitation Plan is presented in Annex-7. Although no direct impact on forest areas is expected in the post-operation period, measures should be taken against fire in such a way that during the rehabilitation work in the nature, the operation areas are in operation. This shall prevent the risk of fire on existing forest cover.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,21	Topsoil Mitigation Measures		An average of 10 centimeters of the soil (fertile top soil) present in the project area shall be stripped off and stored in one of two different top oil storage areas separated from other soil material (sub soil) separately. If the total area covered by the project units (approximately 356 hectares, excluding the vegetative soil storage area) is taken into account, the amount of topsoil to be stripped is estimated to be around 356 thousand m3.		Preconstruction, Decomissioning						
MoEU	EIA	9,21	Topsoil Mitigation Measures		In the field preparation phase of the project, the trees and shrubs that are primarily in the field shall be removed from the area, and the top (vegetative) soil present on the ground to be constructed afterwards shall be stripped off before construction activities. Top soil stripped in order to prevent any project-based impact on soil medium must be managed properly.		Preconstruction, Decomissioning						
MoEU	EIA	9,22	Heap Leach Site Floor Mitigation Measures		The floor of the heap leach site has been designed in accordance with international standards and based on the zero discharge principle. Proper leveling procedures will be applied on the heap leach site floor in order to make it suitable for application of the primer system.		Construction, Operation						
MoEU	EIA	9,22	Topsoil Mitigation Measures		Topsoil, that is ensured to be stored under suitable conditions without loss of land preparation and construction stage and loss of productivity during the operation phase in the project area, shall be reused within the scope of rehabilitation works to be carried out in parallel with closing studies. In this regard, the project area shall be contributed to the rapid recovery of a landscape identity in the post-operation period, in accordance with the ecological balance of the project and other uses in the environment. The top soil shall be prevented from coming into contact with any contaminants while being transported to and from the rehabilitation areas. During the rehearsing of the upper soil during the rehabilitation work, a slightly rough and loose texture shall be formed on the surface and a suitable environment for planting studies shall be prepared. Following the laying process, the soil shall be buried with the aim of preventing the top soil from being trapped by human and vehicle traffic.		Preconstruction, Decomissioning						
MoEU	EIA	9,22	Mitigation Measures		Covering EOK storage and heap leaching areas with cover systems and regeneration of vegetation cover over the areas shall have the least impact on the risk of erosion and sediment transport and soil resources that may arise from these areas. However, the cover closing process shall eliminate the risk of AKD formation and metal release by reducing water contact and oxygen content in the units that are shut down after operation. Following completion of operation activities at open mine sites, partial backfill shall be applied with EOK. Therefore, both considerable amounts of material shall be recycled to the site and water accumulation shall be prevented on the mine ground. However, the potholes that are filled back shall be protected against the effect of air and precipitation, which shall reduce the risk of erosion and AKD formation which may occur in the hearth.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,22	Remediation Measures		Rehabilitation works shall be main activities to be performed at closing stage. This activity shall be removed during the land preparation and construction phase, and the top soil, which is stored on the condition that it shall not lose its efficiency during the operation phase, shall be transported to the rehabilitation areas and reused, so that the effects that had previously occurred in the soil environment shall be removed and the soil shall be restored. In this context, the effects of the closing phase activities on the soil environment shall be positive in the long term.		Decomissioning						
MoEU	EIA	9,23	Monitoring		Whether the project had a polluting effect on current soil quality will be determined based on analysis results of sampling and analysis studies conducted in case of contamination (for example leaks, spills) and visual inspections conducted regularly in accordance with the environmental monitoring program described in Chapter 7 during construction, operation, shutdown and after operation phases of the project.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,23	Earthquake Design Compliance		The accelerations to be expected in this case is above 0.40 g and this acceleration will be used basing on the design principals given in annex to the Regulation on Buildings to be Constructed in Earthquake Regions (Official Gazette date: 03.06.2007; Number: 26454).		Preconstruction, Construction						
MoEU	EIA	9,24	Earthquake Readiness Measures		This situation, within the scope of the project, makes it obligatory to take precautions in order to ensure the soil stability, especially slope stability, in a comprehensive manner, with accurate calculations and with sufficient efficiency. In addition; the region of the project area (almost all of the Balıkesir province) is located in the 1st degree earthquake zone and there is a very active seismicity is observed due to the fact that both Aegean Region normal faults and NAFZ faults are active in the region. Taking measures to ensure safety and stability for mining activities to be carried out in these regions at the highest level has a particularly significant effect in terms of occupational health and safety and prevention of economic losses.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9,27	Domestic Wastewater Permits/ Compliance		A package domestic wastewater treatment plant with sufficient capacity will be built at the site for treatment of said waste water. Wastewater will be treated in accordance with discharge standards defined in Table 21 of the By-law on Water contamination Control. They will afterwards be discharged to the receiving environment in accordance with provisions of the By-law on Water contamination Control. In this context, discharge permit will be obtained for the domestic wastewater treatment plant.		Preconstruction, Construction, Operation, Decomissioning						
MoEU	EIA	9.27-9.28	Water Management		Waste water will be divided into contact water and non-contact water before water and waste water management. This will minimize the volume of surface water contacting contaminated surfaces (for example heap leach area, GR storage area, crushing plant, open pit site, service roads etc.) thereby becoming contaminated. In turn, the amount of water that will be managed within the plant will be minimized, risk of sediment transport will be minimized by having control over surface waters, and water collected from the mine will be used for certain needs such as process additional water or dust suppression as much as possible.		Preconstruction, Construction, Operation, Decomissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
MoEU	EIA	9,28	Monitoring Measures		<p>The precautions below will be taken for the purpose of preserving quality of surface water sources in and around the project site. Monitoring stations of which underground and surface water qualities have been determined will be monitored continuously in order to detect potential contamination due to mine construction or leakage in gangue rock and heap leach sites as quick as possible. Monitoring parameters will be the ones used in determining current water quality. Underground water monitoring will continue during the operation phase and after the plant is shut down. Exit structures of interception channels will be stabilized so as to prevent erosion. Standard dust management activities will include measures towards preventing sediment transport at surface water sources or preventing increase in sediment load of surface waters. Erosion management measures such as construction of interception channels and temporary and continuous seeding will be used throughout the operation phase. Work sites that are expected to have more wind and water erosion will be vegetated and rehabilitated right after construction. Areas in which instant rehabilitation is not possible will be irrigated in order to minimize dust emission. Service roads both inside and outside the site will be improved and road surfaces will be kept moist during dry spells in order to minimize dust generation and sediment transport.</p> <p>Mobile equipment will go through repairs and maintenance regularly and it will be mandatory to comply with the speed limit both inside and outside the project site during transportation in order to prevent potential spills and leaks. Care will be taken to select design alternatives that would ensure prevention of environmental contamination due to leaks and spills in process facilities, the plant site, fuel and chemical tanks, mobile equipment, and repairs and maintenance area.</p>		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	9.30-9.31	Biological Impact Prevention/ Mitigation Measures		<p>In order to protect the flora species' populations, biological restoration works will be carried out upon the closure of mine sites. In order to carry out the biological restoration works efficiently, various species as well as the seeds of endemic species will be collected and planted in the appropriate areas.</p> <p>The species to be used in the rehabilitation works are given in the Nature Rehabilitation Plan presented in Appendix7. In this context, seed collection studies will be carried out at suitable periods for the determined species.</p>		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	9,31	Biological Impact Prevention/ Mitigation Measures		<p>. Measures that should be taken against potential impact on terrestrial fauna species are summarized below.</p> <ul style="list-style-type: none">• Construction not started during the breeding season• Surrounding with fencing• Prevention of dust-noise formation• Collection and transfer to alternative area• Vehicle traffic control• Personnel training-awareness raising		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	9,31	Biological Impact Monitoring Measures		However, it will be useful to monitor especially larch and deciduous forest habitats because dust rising at the atmosphere during activity may sometimes lead to unexpected drying when it comes on trees. For this reason, habitat monitoring studies will be carried out.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	9,32	Compliance		The EIA Regulation defines the protected areas as the areas that are sensitive to the environmental impacts with their biological, physical, economic, social and cultural qualities or the regions where the existing contamination load has reached a level threatening the environment and public health and the areas that are required to be protected in accordance with the legislation of Turkey and the international conventions to which Turkey is a party and the areas included in Annex V of the Regulation. In this context, sensitive areas are divided into three groups as areas which should be conserved due to our country's legislation, areas which should be conserved due to international treaties signed by our country, and areas which should be conserved.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	9,32	Compliance		In this context, the areas that are required to be protected in accordance with Turkish legislation cover the national parks, natural parks, nature protection areas, wildlife protection areas and wild animal breeding areas, cultural assets, natural assets, archeological sites and protected areas, aquaculture production and reproduction areas defined and identified by the relevant legislation, areas defined in SKKY, sensitive contamination zones, special environmental protection zones, the areas protected according to the Bosphorus Law, the places considered as forest areas, the areas subject to building prohibition in accordance with the Coastal Law, the areas specified in the Law on Improvement of Olive Cultivation and Grafting of Wild Trees, the areas specified in the Pasture Law and the areas specified in the Wetland Protection Regulation. The areas that are required to be protected in accordance with the international conventions, to which Turkey is a party, as well as other areas that are required to be protected (e.g., agricultural areas, wetlands, lakes, rivers, underground water operating areas and the areas of importance in terms of biological environment and natural life, etc.) are also described in Annex V of the EIA Regulation.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	9,34	Dust / Air Emissions Compliance and Mitigation Measures		<p>Irrigation will be used, a speed limit will be determined for vehicles and new and well maintained vehicle will be preferred in order to keep dust emission in the scope of the Project under control. This will minimize dust emission during transportation of the material. Blasting activities that are conducted in open field and generate dust will be carried out in accordance with regulations and rules. Also, precautions stated in Appendix 1 of the By-law on Control of Industrial Air Pollution will be taken if required in order to meet air quality standards during open storage of the material.</p> <p>Provisions of the By-law on Air Quality Evaluation and Management published in the Official Gazette no. 26898 on 06.06.2008 and the By-law on Control of Industrial Air Pollution published in the Official Gazette no. 27277 on July 3rd, 2009 will be complied to for the purposes of reducing emission amounts resulting from work machinery and trucks and preventing any value from exceeding limit values. In addition, dust (particle substance) measurements will be made in and around the mine site in the scope of the monitoring plan. See Chapter 7 for discussions on the issue. See Appendix-11 for results of air quality monitoring studies.</p>		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	9,34	Water Sources and Uses		<p>Waters that will be used for construction, dust settlement, cleaning etc. purposes during land preparation and construction phases are projected to be supplied from underground waters by drilling wells. It will be possible to supply water with tankers where necessary (particularly for dust settling).</p> <p>The heap leach process, the ADR process and other process activities which will be carried out at the mine site during the operation phase of the project, in addition to dust settlement works at service roads and the crushing plant, will require water. During the operation phase, the activity that will require maximum amount of water will be the heap leaching process. Water demand during the operation phase will be supplied by surface (contact) water collected from the site using proper methods and underground water collected inside the mine, which will be supplemented by underground water when these waters cannot fulfill the need (for example during dry season).</p>		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	9,34	Construction Wastewater Production		During the construction phase of the project, water to be used for the construction of the heap leaching plant and other construction activities will be retained by the material or will evaporate. For this reason, water to be used within the construction activities will not lead to the generation of wastewater.		Construction, Operation						
MoEU	EIA	9,35	Water Management		In this context, the mining site will have interception channels in order to prevent surface waters from contacting a contaminating surface (for example open pit site, GR storage area, crushing plant, heap leach area etc.). Said waters will initially be discharged in the receiving environment as they have not been contaminated, then collected in water collection basins which will be constructed and pumped into ADR basins. Surface waters of which contact with a contaminated surface during the operation phase cannot be prevented (crushing plant, site roads, office buildings, pit sites, GR storage area etc.) will be considered as contact waters. Contact waters will be collected in sedimentation basins via drainage systems and then transferred to ADR basins. If the water is too much for basins, it will be discharged into the receiving environment in accordance with discharge standards defined in Table 7.1 of By-law on Water Pollution Control.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	9,35	Waste Management		Waste which will be generated at the site throughout the project's life will be separately collected, stored, transported and disposed of in accordance with international best practices specific to the Environment Policy of the project owner and the mining sector. In this context, prevention of waste generation will be the priority, which will be replaced by minimizing waste generation, collecting hazardous and non-hazardous waste separately, reusing and/or recycling of waste whenever possible, and waste disposal in cases where prevention is not possible. Prior to disposal, waste will be collected in temporary waste storage areas built within the plant. Waste generated inside the plant will be collected regularly and stored inside closed off containers suitable for that type of waste. Waste recycling, transportation and disposal will be carried out by licensed companies or relevant municipalities where appropriate. No waste will be burned or buried at the site, dumping waste to nearby roads of water sources will be out of question. Any practice that puts personnel or public health at risk during all activities related to waste collection, temporary storage, transportation and disposal will be avoided and waste will be managed according to relevant legislation. A Waste Management Plan specific to the site will be prepared in the scope of final design studies of the project and both project personnel and sub-contractors will comply with this plan in the scope of the Project.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	9,36	Noise Monitoring		On the other hand, noise monitoring activities will be conducted during construction, operation and shutdown phases of the project in accordance with the environmental monitoring program in order to regularly measure whether nearby settlements are affected from the noise. In case monitoring activities detect an excess in terms of bylaw's limit values, corrective measures aiming at eliminating this excess will be taken in addition to care taken against any potential noise impact of the project.		Construction, Operation, Decommissioning						
MoEU	EIA	9.36-9.37	Vibration Mitigation Measures and Compliance		<p>Ground vibration caused by blasting in the mine and quarries and similar areas outside the closest very sensitive an sensitive areas of use during blasting activities carried out in the scope of the Project will not exceed the highest values allowed by the By-law on Assessment and Management of Environmental Noise. Before starting mining activities in the scope of the Project, current status of buildings at the project site and nearby settlements (structural material, present damages, foundation soundness etc.) and their sensitivity to potential vibration will be investigated by a team of experts created by the project owner. In this context, a current status report will be prepared and submitted to Provincial Directorate of Environment and Urbanization in Balıkesir before activities. Drilling locations will be measured and marked in a clearly visible manner before blasting activities. A sensitive process carried out in accordance with this marking will allow the region to be affected from blast energy in a balanced manner.</p> <p>Blasting activities planned in the scope of the Project will only be carried out between 8:00-18:00 and will not be carried out during Sundays and other holidays, if possible. The program established for blasting activities in this context will be adhered to and the blasting program will not be changed unless required.</p>		Construction, Operation						
MoEU	EIA	9,37	Health Protection Strip Distance- Compliance		<p>Based on impact assessment studies in the EIA Report, it has been suggested that the health protection strip surrounding the EIA area must be 50 meters. Areas related to the mining area will be surrounded by fences in order to prevent unrestricted access of any living being including humans and wild animals. Following completion of rehabilitation works, fences in some regions will be adjusted while final fences surrounding open pits will remain.</p> <p>The Health Protection Strip Distances suggested in accordance with the Directive on Establishing Distances of Health Protection Strips Left Around Non-Sanitary Enterprises which may have a Negative Impact on the Environment and Human Health" no. 6359 entered into effect in 17.02.2011, the Final Health Protection Strip established by relevant authority will be complied with.</p>		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	9,37	Environmental Rehabilitation Plan		Environmental rehabilitation works conducted in the scope of the Project will continue partially in parallel with the operation phase of the project and complete during the after operation phase. An Environmental Rehabilitation Plan which describes environmental rehabilitation activities in this regard has been prepared in the scope of the EIA Report. (See Appendix-7). In addition to brief information on general features of the project current environmental conditions of the project site's surroundings, this plan summarizes all practices involved in top soil management in the scope of studies conducted during and after activities, vegetation and monitoring studies required to restore habitat lost during construction and operation phases of the project and ecological balance, types of seeds/vegetables used in this regard, impermeability structures which will be used in the primer system, stability measures which will be taken at project sites; water, wastewater and solution management plans in the scope of the Project, ARD based impacts, proposed monitoring studies etc. In addition, it proposes a work schedule for environmental rehabilitation activities that will be carried out during shutdown and after shutdown phases at the project site.		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	9,38	Shutdown Activities		<p>Shutdown activities that will be carried out at the GR storage area, open pits and the heap leach site are, in general, using proper materials to surround the area on which rehabilitation works will be carried out, placing information signposts, ensuring training and stability at sites, collecting commercial seeds for preliminary vegetation works, laying vegetation soil, collecting seeds of final species, and planting suitable plants to the site as final species. On the other hand, backfilling activities which will be carried out at pit sites and washing works which will be carried out at that heap leach site will be rehabilitation works that are specific to said sites. Other than that; decommissioning, dismantling and removal from the site of building, facilities and units constructed at the project site will be a part of rehabilitation works.</p> <p>Environmental rehabilitation works initiated during the last two years of the operation phase will be complete approximately within a year following completion of the process of washing the heap leach site. Environmental monitoring studies will continue for 3 years (the passive period) following completion of environmental rehabilitation works.</p>		Operation, Decommissioning						
MoEU	EIA	9,4	Monitoring		<p>The environmental monitoring program has been modified for land preparation and construction, operation, shutdown, and after shutdown phases separately by taking specific impact types into consideration. Monitoring subjects investigated in this context included underground and surface water sources (quality and flow rate), air quality, soil medium, flora and fauna (terrestrial and aquatic), noise and vibration, geology, waste management, occupational health and safety, socio-economy, cultural heritage, emergency situations, and environmental rehabilitation. Detailed monitoring tables indicate during which phases of the project each monitoring subject will be monitored, monitoring stations (for example settlements, project sites, individuals etc.), technical monitoring methods employed, frequency and rationale of monitoring, who will cover the cost of monitoring activities, and who bears corporate responsibility regarding realization of these activities. See Chapter 7 for said tables.</p> <p>Execution of the developed environmental monitoring program will primarily be the project owner's responsibility. The project owner will manage this process in cooperation with local administrations and authorized agencies, institutions and experts, and record environmental monitoring program results as reports that will be shared by these administrations where necessary. These reports will be submitted to relevant local and central units of the Ministry of Environment and Urbanization in a frequency determined by the Ministry.</p>		Preconstruction, Construction, Operation, Decommissioning						
MoEU	EIA	9.40-9.41	Community Interaction		<p>The goal of the project owner is to create communication channels that are based on mutual trust and transparency with relevant stakeholders of the project throughout its activity life. In this context, delivering current project information to stakeholders in a correct and reliable manner, creating mechanisms that would allow stakeholders to share their views, concerns, complaints and suggestions with the project owner directly, creating platforms that would allow the project owner to monitor developments in the region and environmental, social, financial and cultural sensitivities closely, and continuing these activities throughout the project life in continuity are among the most important issues regarding completing the project successfully.</p> <p>Relations with local residents will continue within the scope of a certain program based on the goals stated in the first paragraph, even after the EIA process.</p>		Preconstruction, Construction, Operation, Decommissioning						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Labour Management Plan	Page 14	Employment		TÜMAD will adopt a "tiered" approach to recruitment. Priority will be given to project affected settlements including Kocabaslar, Sahinli, Dumanli and Camyurt villages and Lapseki district for Lapseki mine and Değirmenbaşı and Küçükılca Villages and İvrindi District for İvrindi Mine . If the required skill is not found here then workers in other adjacent districts and then within Çanakkale and Balıkesir Province will be targeted. If the required skills are not found in any of these then TÜMAD will search nationally for suitably qualified and experienced staff. <u>The project is not considering to employ foreigners or migrant workers at both mines.</u>		All Phases						
	Air Quality Management Plan	Page 19-21	Monitoring Programme		The air quality monitoring programme for the Project (See Table 7) will be complied with.		All Phases						
	Cyanide Management Plan	Page 9	Legislative Compliance		Cyanide usage and commitment has been given in final EIA report in Section 6 and Annex 7 for İvrindi Project.		Operation						
	Stakeholder Engagement Plan	Page 7	Reviewing		This Management Plan will be reviewed at a minimum on an annual basis to ensure that it remains valid and meets the needs of TÜMAD, 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.		All phases						
	Stakeholder Engagement Plan	Page 7	Reviewing		The community stakeholder engagement will be developed further during the operations phase to take account of the needs of different groups in the community.		Operation						
	Stakeholder Engagement 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						
	Stakeholder Engagement Plan	Page 10	Legislative Compliance		All activities and implementations, within the scope of projects and operations, of TÜMAD shall comply with relevant standards. These are as follow; • 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 TÜMAD and Integrated Management Systems • ICMC International Cyanide Management Code		All phases						
	Stakeholder Engagement Plan	Page 11	Legislative Compliance		International standards to be observed by TÜMAD are ISO9001, ISO14001, OHSAS18001, ISO31000 and other similar ones.		All phases						
	Stakeholder Engagement Plan	Page 12	Legislative Compliance		In relation with stakeholder engagement, EBRD Performance requirement 10, IFC: Performance Standard 1 shall be complied with. • 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.		Basic requirements are as follow:						
	Stakeholder Engagement Plan	Page 12	EBRD Requirements		The key requirements related to stakeholder engagement from EBRD PR10 are summarized below; • 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 12	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.		All phases						
	Stakeholder Engagement Plan	Page 13-14	Roles and Responsibilitie s		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 19	Stakeholder Concerns		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 21	Future Stakeholder Engagement Programme		Stakeholder engagement is an ongoing activity throughout planning, construction, operations and closure. The following tables summaries key planned stakeholder engagement during these different phases. 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 six monthly during constructions and 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.		All phases						
	Stakeholder Engagement Plan	Page 21-34	Future Stakeholder Engagement Programme		Table 5 lists the external stakeholder engagement planned during the construction, commissioning and operation phases.		All phases						
	Stakeholder Engagement Plan	Page 35	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.		All phases						
	Stakeholder Engagement Plan	Page 35	Information Disclosure		TÜMAD will keep information on the Project updated on its website in Turkish and English.		All phases						
	Stakeholder Engagement Plan	Page 35	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 its relevant İvrindi office. And, their copies will be available at local Küçükılca, Değirmenbaşı and Karadere village tea houses and mukhtar offices.		All phases						
	Stakeholder Engagement Plan	Page 35	Information Disclosure		As is indicated in the Procedure for Grievances and Feedback (TMD_KTI_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. Both at community relations offices 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. 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. As long it is appropriate, relevant project information will be disclosed to the public.		All phases						
	Stakeholder Engagement Plan	Page 35	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.		All phases						
	Stakeholder Engagement Plan	Page 35	Information Disclosure		SIP and Environmental with 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 36	Information Disclosure		Disclosure and consultation on the SIP will be undertaken to ensure that the affected parties and all other stakeholders are fully aware of the environmental and social impacts that may affect them and TÜMAD's commitments towards minimising and managing such impacts. Disclosure and consultation also will allow other interested parties to see the SIP documentation and make comments on the content and receive feedback from TÜMAD in terms of comments received.		Pre-Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Stakeholder Engagement Plan	Page 37	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 http://tumad.com.trmade 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 : www.tumad.com.tr• TUMAD Head Quarter in Ankara/Turkey: Address: Tümad Madencilik A.Ş. General Directorate, Buğday Sokak No:9 Kavaklıdere Çankaya ANKARAEmail: info@tumad.com.trTelephone: 0 312 455 16 10Fax: 0 312 455 16 01 <p>TUMAD office in Ivrindi/Balıkesir: Address: İğdeburnu Mevkii Burhaniye Balıkesir Email: info@tumad.com.tr Telephone: 0312 505 00 06</p> <p>TUMAD office in Lapseki/Çanakkale: Address: Tümad Madencilik A.Ş. Lapseki Altın Madeni İşletmesi Beyçayırı Yolu 12.Km Lapseki / ÇANAKKALE Email: info@tumad.com.tr Telephone: 0312 505 00 06</p> <p>Nurol Holding/İstanbul: 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 37	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 37	Information Disclosure		Also hard copies of the full disclosure package will be available at: <ul style="list-style-type: none">- EBRD Resident Office in Ankara : Address: 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, Balıkesir)- at the office of the Ivrindi Municipality (Bedrettin Mahallesi, Hükümet cad. No:68, 10770 Ivrindi/Balıkesir)- at the office of the Balıkesir 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)		Pre-Operation						
	Stakeholder Engagement Plan	Page 37	Information Disclosure		Electronic copies will be sent to the 18 Mart University in Çanakkale and Balıkesir University in as well as key Governmental institutions including Ministry of Environment.		Pre-Operation						
	Stakeholder Engagement Plan	Page 37-38	Information Disclosure		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">• Küçükılca Village• Değirmenbaşı Village• Karadere Village 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						
	Stakeholder Engagement Plan	Page 38	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.		All phases						
	Stakeholder Engagement Plan	Page 38	Information Disclosure		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. 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.		All phases						
	Stakeholder Engagement Plan	Page 39	Monitoring		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).		All phases						
	Stakeholder Engagement Plan	Page 39	Monitoring		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 39	Monitoring		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 40	Monitoring		For an effective stakeholder engagement more than 40% of the stakeholders are expected to provide positive feedback to these enquiries.		All phases						
	Stakeholder Engagement Plan	Page 40	Key Monitoring Measures		The key monitoring measures to be employed during the Project are listed in Table 6.		All phases						
	Stakeholder Engagement Plan	Page 40-41	Key Performance Indicators		The key performance indicators to be employed during the Project are listed in Table 7.		All phases						
	Stakeholder Engagement Plan	Page 41	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 41	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 41	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 41	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 41	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 41	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 41-42	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						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	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, Decommissioning						
	Emergency Action Plan	Page 9	Project Standards		TUMAD will comply with: • 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, Decommissioning						
	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 will be identified and added to this Plan as an appendix when they are all set. Emergency contact numbers will be controlled and updated when there is a change in appointed personnel or their contact number.		Preconstruction, Construction, Operation, Decommissioning						
	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 Ivrindi 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, Decommissioning						
	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, Decommissioning						
	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, Decommissioning						
	Emergency Action Plan	Page 17	Law Enforcement Force		Ivrindi 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, Decommissioning						
	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, Decommissioning						
	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, Decommissioning						
	Emergency Action Plan	Page 22	Emergency Assembly Areas		The Emergency Assembly Areas will be defined in Ivrindi Mine Field. The layout showing the locations of the Emergency Assembly Areas will be prepared and presented as an Appendix of this Plan. The Emergency Assembly Areas will be 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.		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. The Emergency Response Map and Building Emergency Chats showing the location of emergency response equipment will be prepared and presented as an Appendix of this Plan.		Construction, Operation,						
	Emergency Action Plan	Page 23	Training		Department Managers of Ivrindi 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,						
	Emergency Action Plan	Page 24	Reporting		Head of Community Relations will ensure that the following authorities are informed as appropriately: • Governor • Gendarme • Police • Provincial Directorate of Environment and Urbanization (environmental incidents) TUMAD will inform Balikesir 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 TUMAD (TMD_EYS_PRD.004).		Construction, Operation,						
	Emergency Action Plan	Appendix 1 - 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 1 - 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: • 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 1 - 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 1 - 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; - 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						

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	Emergency Action Plan	Appendix 1 - 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 1 - 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 1 - Spill Clean Up Plan, Page 33-34	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 1 - Spill Clean Up Plan, Page 34	Reporting		When an accidental or deliberate disposal of wastes and similar incidents occur, TÜMAD will inform Balıkesir 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, Decommissioning						
	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, Decommissioning						
	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, Decommissioning						
	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, Decommissioning						
	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, Decommissioning						
	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						
	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, Decommissioning						
	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, DSTF and HLF will be retained on site and be discharged into the process water circuit or be put to other beneficial use.		Construction, Operation,						

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	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						
	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: • 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: 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 PETDER o 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 TÜMAD 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 TÜMAD 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 TÜMAD 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 TÜMAD 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 TÜMAD. 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 TÜMAD. Record Management Procedures (TMD_EYS_PRD.004).		Construction, Operation,						
	Water Resources Management Plan	Page 7	Contractors		The requirements set out in this Management Plan apply to all TÜMAD activities throughout the lifecycle of the İvrindi Gold Mine, including those carried out by contractors.		All phases						
	Water Resources Management Plan	Page 7	Liability Compliance		Any subsequent changes to the Environmental & Social Management System (ESMS) Framework may result in changes to this Management Plan.		All phases						
	Water Resources Management Plan	Page 8	Legislative Compliance		The standards applicable during all activities of TÜMAD are outlined below. • EIA Requirements • Legislation • Company Undertakings and Requirements of Undertakings • International Standards and Guides • TÜMAD policies, procedures and instructions (IMS Management System Documents).		All phases						
	Water Resources Management Plan	Page 9	Legislative Compliance		Activities will also be conducted by taking consideration of national laws and legislations.		All phases						
	Water Resources Management Plan	Page 9-10	Legislative Compliance		Activities will also be conducted by taking consideration of national laws and legislations. European Bank for Reconstruction and Development Performance Requirement (PR) 1, 3, 5, 6, and 10.		All phases						
	Water Resources Management Plan	Page 10-11	Legislative Compliance		These European Union Directives will be complied with.		All phases						
	Water Resources Management Plan	Page 11	Legislative Compliance		These international agreements/contracts will be complied with.		All phases						

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	Water Resources Management Plan	Page 11-12	Water Monitoring Standards		The water monitoring standards used in the scope of the Project have been listed in Table 1.		All phases						
	Water Resources Management Plan	Page 12-13	Drinking Water Standards		The drinking water standards used in the scope of the Project have been listed in Table 2.		All phases						
	Water Resources Management Plan	Page 13-14	Domestic WW Discharge Standards		The standards for discharge standards for domestic wastewater used in the scope of the Project have been listed in Table 3.		All phases						
	Water Resources Management Plan	Page 14-15	Turkish Water Quality Limits		The water quality limits according to the Turkish Water Pollution Control Regulation are listed in Table 5.		All phases						
	Water Resources Management Plan	Page 15	Turkish Water Quality Limits		The water quality limits according to the (new) Turkish Water Pollution Control Regulation are listed in Table 6.		All phases						
	Water Resources Management Plan	Page 17	Water Sources Management		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.		All phases						
	Water Resources Management Plan	Page 17	Water Sources Management		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).		Operation						
	Water Resources Management Plan	Page 17	Water Sources Management		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	Page 17	Water Sources Management		Water resources which will be periodically monitored for quality and quantity. 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 18	Policies and Procedures		Assistance from independent and accredited institutions will be received for monitoring monthly periods in order to record and report data according to the monitoring schedule identified in the scope of the monitoring program described in the procedure on Measuring and Monitoring Environmental Activities.		All phases						
	Water Resources Management Plan	Page 19	Roles and Responsibilities		Table 7 lists the roles and responsible parties.		All phases						
	Water Resources Management Plan	Page 20	Water Sources Management		The Water Sources Management Plan will be supported by Procedures and Instructions which contain all details regarding potential pollution effect of activities of TUMAD and monitoring of these effects. <ul style="list-style-type: none">• The Procedure on Measuring and Monitoring Environmental Activities, (TMD_LAP_CEV_PRD.006)• Environmental Monitoring and Measuring Plan• Water Quality Monitoring Table		All phases						
	Water Resources Management Plan	Page 20	Revision		Revisions, standard alterations etc. made on activity scopes in order to support the Water Sources Management Plan will be assessed and improved by Procedures and Instructions.		All phases						
	Water Resources Management Plan	Page 20-23	Water Sources Management		Management controls to be employed have been listed in Table 8.		All phases						
	Water Resources Management Plan	Page 23	Mitigation Measure		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. The Project discharge water limit values are going to be considered first in case of discharging water to the receiving environments. Contact water discharge will not deteriorate the quality of the receptors.		All phases						
	Water Resources Management Plan	Page 23	Water Demand		Employees at the plant and certain process units require approximately 8-10 m3/hour raw water, which will be provided from groundwater wells certified by State Hydraulic Works.		Construction, Operation						
	Water Resources Management Plan	Page 23-24	Mitigation Measure		Rainfall on open pit flows through pit walls to the lowest elevation and mix with waters flowing through the formation; water accumulated here is used for dust suppression and road spraying. Rainfall waters falling into the open pits and the groundwater inflow will be taken to settling ponds within the scope of interactive water management planning. It will be provided through transmission lines in order to reach the water demand of the plant from the settlement ponds. During rainy seasons, surface water inside the open pit accumulates inside basins built at the lowest elevation of the pit. This accumulated water is later used in dust suppression and road spraying.		All phases						
	Water Resources Management Plan	Page 24	Water Demand		Assuming that during the operation 0,213 m3/day per person of water will be used, a total of 42,6 m3/day of wastewater may be occurred meanwhile for 200 people with the assumption of 100% of the used water will be sent as wastewater.		Operation						
	Water Resources Management Plan	Page 24	Infrastructure Wastewater		Domestic waste water treatment plant is going to be built for the purpose of treatment of this wastewater. Domestic waste water is going to be treated in accordance with discharge standards defined Table-4 Standards for Discharge Standards for Domestic Wastewater It is going to be discharged to receiving environment in accordance with project standards afterwards. It is also used to prevent the dust and for road irrigation.		Construction, Operation						
	Water Resources Management Plan	Page 24	Groundwater Infrastructure		There are currently 6 certified and licensed groundwater production wells certified from DSI (General Directorate of State Hydraulic Works). These holes are going to provide the water demand of plant. Additional water demand is going to be provided by these wells after dewatering of the pits. The water with the flow of 39 l/sec is going to be used from 6 wells during operation of the mine within average climate conditions.		Construction, Operation						
	Water Resources Management Plan	Page 25	Revision		This management plan will monitor construction and operation phases of TUMAD in periods of six months in order to determine stability. In addition, legal responsibilities and changes in Instructions and Procedures of TUMAD 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 TUMAD employees and subcontractors.		Construction, Operation						
	Water Resources Management Plan	Page 27	Monitoring Parameters		The parameters and locations at which monitoring is to take place have been listed in Table 9.		All phases						
	Water Resources Management Plan	Page 28	Monitoring Frequency		Monitoring frequency of mine closure phase is going to be transformed as seasonal for the first 5 year, in every 6 months after 5 years and for the last 5 years once in a year. It is going to continue after 15 years of operations completed. The duration of the monitoring has been defined by DSI and the Ministry of Environment and Urbanization during the EIA process.		Decommissioning						
	Water Resources Management Plan	Page 28	Monitoring Infrastructure		A weir will be built in Madra Dere and Sipaci Dere (Yahu Creek) so that the streams can be continuously and more accurately monitored. The monitoring program of groundwater, surface water and important resources is given in Table 10. GK20 (below the WRD field stream) and GK21 (north of the heap leach area) wells will be added in the monitoring program from the groundwater sample points provided in the table.		All phases						
	Water Resources Management Plan	Page 28-29	Monitoring Program		The program for monitoring groundwater, surface water and resources has been listed in Table 10.		All phases						
	Water Resources Management Plan	Page 29	Water Analyses		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	Settling Basins and Outlets		Mine waste and SWS 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.		Operation						

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	Water Resources Management Plan	Page 30	Spring-Fountain Sampling Locations		Fountains, catchments and village reservoirs located in and around the project site have been the subject of monitoring studies since the year 2009. Said monitoring studies will continue throughout land preparation, construction, operation and post-operations phases of the project.		All phases						
	Water Resources Management Plan	Page 30	Water Collection Basins		Clean water collected by interception channels will be accumulated in water collection basins. Dust generated in nearby locations due to activities carried out within the scope of the Project may result in sedimentation in interception channels and water collection basins. Water collection basins will be monitored in the scope of regulations in order to monitor quality of this water with sedimentation.		All phases						
	Water Resources Management Plan	Page 30	Groundwater Sampling Locations		Sampling from wells which are being subjected to analyses sine 2009 will continue in the scope of this monitoring. In addition, wells downstream of springs at the mine waste area, downstream spring wells at the pit sites, SWS II area downstream spring wells and wells located at the plant site will be included in the monitoring program.		All phases						
	Water Resources Management Plan	Page 31	Surfacewater 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 Madra Stream to obtain continuous flow measurements to monitor flow changes. Water quality at open pits, leachate quality at mine waste and SWS areas, groundwater 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 prepared and submitted to General Directorate of State Hydraulic Works every 5 years and prior to the closure phase. Location of the sampling points from water resources (groundwater, surface water and drinking water) are shown in the map below (Figure- 3).		All phases						
	Water Resources Management Plan	Page 33	Acid Rock Drainage 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.		Operation, Decommissioning						
	Water Resources Management Plan	Page 33	Acid Rock Drainage Monitoring Program		The acid rock drainage monitoring program under the Ivrandi Project is included in Table 12.		Operation, Decommissioning						
	Water Resources Management Plan	Page 33	Key Performance Indicators		Table 13 shows the key performance indicators monitoring for Procedures and Instructions related to the Water Sources Management Plan.		All phases						
	Water Resources Management Plan	Page 34	Training		Site induction training, environmental awareness trainings and extensive health screening will be provided to all personnel and subcontractors workers at the site of TUMAD.		All phases						
	Water Resources Management Plan	Page 34	Training		Orientation training will be given at certain breaks under the supervision of Department Chiefs to all personnel starting to work at the site.		All phases						
	Water Resources Management Plan	Page 34	Training		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 34	Audit		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 TUMAD.		All phases						
	Water Resources Management Plan	Page 34	Audit		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 34	Reporting		Audits, incidents and nonconformities shall be documented and managed pursuant to instructions and procedures of TUMAD. All records shall be kept according to requirements of the Records Management Procedure (TMD_EYS_PRD.004)		All phases						
	Livelihood Restoration Framework	page 9	LAND ACCESS AND LIVELIHOOD RESTORATION PRINCIPLES		TUMAD has set the following Objectives for the land access and acquisition process ; • 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: (i) providing compensation for loss of assets at replacement cost; and (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. TUMAD recognizes that it may have land access and livelihoods impact across the Project footprint.		All Phases						
	Livelihood Restoration Framework	page 10	LAND ACCESS AND LIVELIHOOD RESTORATION PRINCIPLES		The key principles guiding land access and livelihood restoration for Ivrandi Project are as follows: • TUMAD will avoid physical resettlement (no physical resettlement is planned as part of the Project design). • TUMAD 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. • TUMAD will use Turkish legal processes for the acquisition of land and the temporary access to land for construction and operation purposes. • In addition to Turkish legal requirements for land acquisition, TUMAD 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. TUMAD 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. • TUMAD will take into account any individuals or groups that may be disadvantaged or vulnerable. In particular, TUMAD 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. 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. • 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.		All Phases						
	Livelihood Restoration Framework	Page 10	LAND ACCESS AND ACQUISITION REQUIREMENTS		All land acquisition has been and will be undertaken in conformance with Turkish property and expropriation laws and no land will be used • 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), TUMAD 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.		All Phases						
	Livelihood Restoration Framework	page 11	Project Land Requirements		Project land Requirements are presented in table 1		All Phases						
	Livelihood Restoration Framework	page 12	LRP		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, below. Responsibility for implementation of these steps lies with the TUMAD Community Relations Department.		All Phases						
	Livelihood Restoration Framework	page 12	Step 1: Identification of Affected Land-Owners and Land Users		Identification of Affected Land-Owners and Land Users: • Overall land suitable for animal grazing of the area (000ha); • Overall land suitable for forestry product collect of the area (000ha= • Surface area within the fence line (000 ha); • The percentage of used land by villagers affected by Project activities (temporarily and permanently); • Field surveys to determine seasonal use of the effected land within the fence line; • Water sources (location, size, and characteristics); • Assets on the land such as pathways, rest areas. • Any other issues that may be considered important by the project affected people (PAPs). • TEIAS will manage the process for Power line in close cooperation with TUMAD.		All Phases						
	Livelihood Restoration Framework	page 12	Step 2: Loss/Impact Quantification		Any private structures, immovable assets or standing crops present on these lands will be compensated to the owners who may be land users (non-documented users) or beneficiaries (unauthorized producers or croppers and grazers). Payments for trees, vineyards, etc. are made based on a calculation of the expected income from these for the rest of their lives; with the recent changes, Forestry and pasture land users- in order to ensure fair livelihood restoration assistance is provided to affected villagers, TUMAD will determine the area of land which will be fenced for the duration of the Project, while also working with the Authorities to determine typical and acceptable stocking density levels for the type of land suitable for animal grazing and forestry product collection located within the Project fence line. This information will be used to assess the overall impact on land availability for animal grazing and forestry product collection, to inform a reasonable estimate of compensation or loss of access to the area by the land users.		All Phases						

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	Livelihood Restoration Framework	page 13	Step 3: Consultation		TÜMAD will use a consultative process throughout the whole process of the livelihood restoration plan development. There are however specific points at which community involvement is key. The first is as stated above, the process of actually identifying users of these lands affected by the Project; a second key process is that of undertaking an asset survey/census of all identified users in relevant neighbourhoods (principally in Değirmenbaşı, Karadere and Küçükılca).		All Phases						
	Livelihood Restoration Framework	page 13	Step 3: Consultation		<p>The following activities will be undertaken to ensure all affected users are consulted during this process:</p> <ul style="list-style-type: none">• Post an announcement in the neighbourhood, which will be photographed as signed by the muhtar of the village.• Hold a meeting with land users to discuss:<ul style="list-style-type: none">o the process - including what will happen after the EIA approval and obtaining other land usage permits by TÜMAD;o alternative plans once the mine site is fenced;o the villagers' future plans.• Affected users will be contacted through the muhtars of the relevant neighbourhood (Şahinli and Kocabaşlar).• Muhtars will be notified of a cut-off date for when the census will be undertaken with all affected users.• During the survey, options for the livelihood restoration entitlements will be discussed including:<ul style="list-style-type: none">o relocation of water sources from inside the fence to outside the fence (if any);o relocation of animal pens from inside the fence to outside the fence (if any);o access to government-run animal husbandry courses or alternatives (as preferred);o group-level training;o livelihood support (purchase of agricultural materials such as seeds,, tools & equipment);o technical and financial support to capacity building activities for Community Based Organisations (CBOs) such as Cattle Breeders Union, Ship and Goat Breeders Union, Agricultural Development Cooperatives and beekeepers etc.;o measures as identified by land users and agreed as reasonable by TÜMAD (i.e. within a reasonable budget limit identified internally). <p>The census is a quantitative information gathering tool and this will be complemented by qualitative research in focus groups so that the Project can fully understand the livelihood structures of different groups in the community and also people's capacity and views on different strategies different strategies for livelihood restoration.</p> <p>This process will also be used to identify vulnerable people in the communities. The nature and extent of vulnerability is context specific and will be used to identify those people who would likely to be affected from project due to their current vulnerabilities and develop specific measures targeting vulnerable people to ensure the project does not contribute to their existing vulnerabilities.</p> <p>The baseline survey conducted for Social Impact Assessment included information on the various groups that was received in the interviews made from the village headmen. This information is not exact values but based on the information given by the village headmen;</p> <ul style="list-style-type: none">• Of all of the settlements there are houses without land only in Küçükılca.• The number of households that can be classified as being in extreme poverty very poor is 15 in Küçükılca, 30 in Karadere and 100 in Değirmenbaşı.• The number of houses that receive support from the Social Assistance and Solidarity Foundation (SASF) (fuel, aid in kind and in cash) is 5 in Küçükılca, 45 in Karadere and 50 in Değirmenbaşı.		All Phases						
	Livelihood Restoration Framework	page 15	Step 4: Agree Entitlements Framework		<p>Through consultation with affected land users and key stakeholders, TÜMAD will agree livelihood restoration assistance which will be applicable to all eligible affected land users. The livelihood restoration assistance will comprise, by agreement, measures that provide:</p> <ul style="list-style-type: none">• compensation for temporary loss of access to land and natural resources;• compensation for demonstrable loss of structures, assets, wages, rent, or sales earnings;• other support (such as technical assistance and vocational and skills training), access to available donor/government funds, design and implementation of income generation programmes, capacity building for farmers and their representative organisations).		All Phases						
	Livelihood Restoration Framework	page 15, Table 3	Step 4: Agree Entitlements Framework		<p>The entitlements framework will set out the eligibility of different land users to accessing the range of livelihood restoration assistance to be provided and facilitated by TÜMAD. Eligible land users are identified in the entitlements framework and for community-level impacts, entitlements and activities will also be at a corresponding community level.</p> <p>Based on consultation undertaken to date, the entitlements framework in Table 2, will be used. This is based on all property acquisition being undertaken in conformance with Turkish regulatory requirements and entitlements being focused on community-level support for community-level loss of/disruption to access to seasonal upland pastureland. A preliminary Entitlements Framework has been prepared (see below) based on preliminary findings. A detailed Entitlements Matrix will be prepared once all relevant information in land use and livelihoods has been collected. The final Entitlements Matrix will be included in the final Livelihoods Restoration Plan which will be disclosed by TÜMAD. The Project may consider the possibility to give PAPs third party assistance to understand the implications of the LRP for them and also to answer any queries or doubts that they might have.</p>		All Phases						
	Livelihood Restoration Framework	page 16	Implementation Schedule		An LRP will be prepared based on the requirements outlined in this Livelihood Restoration Framework and in accordance with the requirements of PR 5 by 1Q 2018.		All Phases						
	Livelihood Restoration Framework	page 16	Implementation Schedule		The Implementation Plan will be agreed with the Project and Lenders and PAPs and well publicised through different media TÜMAD website. The community will also be kept informed of any changes to the LRP Implementation Plan.		All Phases						
	Livelihood Restoration Framework	page 17	LRP		<p>The Livelihood Restoration Plan will be based on the standard TÜMAD document structure for management plans (such as this Livelihoods Restoration Framework) and will include the following key elements:</p> <ul style="list-style-type: none">• Regulatory review;• Land use census and household survey information (household-specific information to be confidential and not disclosed);• Eligibility criteria and entitlement matrix;• Procedures for property valuation (if required);• Consultation plan;• Implementation plan;• Monitoring, evaluation and reporting.		All Phases						
	Livelihood Restoration Framework	page 18	Monitoring		In the event that monitoring identifies a non-conformance with Project Standards, it will be investigated and appropriate corrective actions identified.		All Phases						
	Livelihood Restoration Framework	page 18	Progress Monitoring - water		Any water resources in the EIA Permitted Area especially key for animal grazing will be identified for replacement or to be moved outside the EIA area.		All Phases						
	Livelihood Restoration Framework	page 18	Progress Monitoring - Census		<p>Additional data will be gathered to support the completion of the Livelihoods Restoration Plan to ensure that appropriate socio-economic census data is available for all households identified as affected through loss of access to forest and pasture lands.</p> <p>The households having cultivated trees and other assets in the affected land will be identified. The type and number of such assets will be identified.</p>		All Phases						
	Livelihood Restoration Framework	page 18	Implementation Monitoring - displaced users (from EIA area)		<p>Users who have been and will be identified as using pasture and forest land within and surrounding the EIA Permitted Area will be subject to periodic consultation to identify and monitor:</p> <ul style="list-style-type: none">• 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; <p>Affected land users will be consulted on at least an annual basis, during the summer grazing season.</p>		All Phases						
	Livelihood Restoration Framework	page 18	Implementation Monitoring - Powerline		<p>Land owners along the powerline will be subject to monitoring by TÜMAD 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.</p> <p>With the completion of construction, TÜMAD will start undertaking walk-over inspections of the powerline alignment, consult with land owners and consult with muhtars 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>		All Phases						
	Livelihood Restoration Framework	page 18	Implementation Monitoring - Dust Impacts		<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.</p> <p>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>		All Phases						
	Livelihood Restoration Framework	page 19	Implementation Monitoring - Road		<p>Users who have been and will be identified as using forest land within and surrounding Road extension corridor will be subject to periodic consultation to identify and monitor:</p> <ul style="list-style-type: none">• 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; <p>Affected land users will be consulted on at least an annual basis, during the summer grazing season.</p>		All Phases						
	Livelihood Restoration Framework	page 18	Effectiveness Monitoring - Internal		Internal monitoring. Quarterly during the implementation of the LRP and every six months thereafter.		All Phases						
	Livelihood Restoration Framework	page 18	Effectiveness Monitoring - External		<ul style="list-style-type: none">• 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.		All Phases						
	Livelihood Restoration Framework	Page 20	KPIs		Key Performance Indicator are listed in Table 3 and will be reviewed an updated based on the final Entitlements Matrix and the requirements of the final Livelihoods Restoration Plan.		All Phases						
	Livelihood Restoration Framework	page 20	Completion Audit		<p>TÜMAD 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 operations completion of the LRP implementation commence to ensure compliance with livelihood restoration objectives and requirements. In the event that monitoring identifies non-conformance with Project Standards, these will be investigated and appropriate corrective actions identified. The key objectives of the completion audit are as follows:</p> <ul style="list-style-type: none">• To verify that all entitlements and commitments described in the Livelihoods Restoration Plan have been delivered;• To determine whether the Livelihoods Restoration Plan measures have been effective in restoring or enhancing affected peoples' livelihoods;• To check on any systematic grievances that may have been left outstanding;• To identify any corrective actions necessary to achieve completion of the Livelihood Restoration Plan commitments.		All Phases						
	Livelihood Restoration Framework	page 20	External Auditing		Conformance with this Framework (and subsequent Plan) will be subject to periodic assessment as part of the TÜMAD audit programme and separately by Project Lenders.		All Phases						

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	Livelihood Restoration Framework	page 21	Record keeping		Records of audits, inspections and incidents will be managed in accordance with TUMAD procedures.		All Phases						
	Livelihood Restoration Framework	page 21	Grievance		the owners and users of the affected lands and the vulnerable groups will be particularly informed through the special stakeholder engagement activities (as detailed in the SEP) on the following topics: <ul style="list-style-type: none">• Procedure for grievance and feedback• Training on grievances procedure• Process for Grievance Solution (including security and responses to problems of construction or mining contractors)• Accident grievance and expectation form,• Suggestions and complaints boxes, letters and telephone conversations		All Phases						
	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 TUMAD (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 TUMAD (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						
	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		TUMAD 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: <ul style="list-style-type: none">• 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						

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	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: <ul style="list-style-type: none">• 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: <ul style="list-style-type: none">• 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		TUMAD 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 TUMAD Reporting and Investigation Procedure and a corrective measures system will be put into practice according to TUMAD 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						
	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 TUMAD;• Social Policies and Management Plans of TUMAD.• Personnel and Contractor Behaviour of TUMAD.• 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 TUMAD 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 TUMAD employees and contractors working at TUMAD 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 TUMAD for qualification verification		All Phases						
	Contractor Management Plan	Page 23	Grievance		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 TUMAD Audit Plan and Programme against the requirements this Management Plan, ESMS of TUMAD 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 TUMAD 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 TUMAD		All Phases						
	Contractor Management Plan	Page 23	Reporting		Evidences of the implementation of the mitigation actions/measures and related results are collected through TUMAD 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 TUMAD standards, policies and procedures;• Other industry guidelines with which TUMAD has committed to comply or align with		All Phases						

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	Community Health and Safety Plan	Page 14	Legal Compliance		TÜMAD 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		TÜMAD 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 TÜMAD 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 Community Health & Safety Security Management Plan of TUMAD, will be complied with		All Phases						
	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, Küçüklıca, 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						
	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						

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	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 TUMAD Policies, Management Plans, Standard Operational Procedures (SOP), Instructions, and Permit requirements will also apply to TUMAD'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, TUMAD 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 TUMAD'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						
	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		TUMAD 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		TUMAD 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						

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	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						
	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						

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	Explosives and Hazardous Materials Management Plan	Page 13	Mitigation Measure		All spent solvents, liquid wastes and spent fuels/ lubricants will be stored in lined, banded 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						
	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_ISG_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 TUMAD 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 TUMAD 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						

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	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						
	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; <ul style="list-style-type: none">• 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: <ul style="list-style-type: none">• 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						

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	Labour Management Plan	Page 16	Employment		TÜMAD community relations team will inform local residents about the application process and of conditions for employment		All Phases						
	Labour Management Plan	Page 16	Employment		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						
	Labour Management Plan	Page 17	Employment		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	Employment		All wages and salaries paid to employees and Contractors must accord with the HR policies of TÜMAD.		All Phases						
	Labour Management Plan	Page 17	Employment		Employees (local or regional workers) at TÜMAD will be provided a competitive salary in relation to market rates.		All Phases						
	Labour Management Plan	Page 18	Employment		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	Employment		All worker terminations will be performed strictly according to Turkish legal requirements and TÜMAD policies.		All Phases						
	Labour Management Plan	Page 18	Employment		A demobilisation plan will be prepared prior to the end of construction period at both mines.		Construction, Commissioning						
	Labour Management Plan	Page 18	Employment		A separate Retrenchment Plan will be prepared for operations and prior to mine closure.		Operation						
	Labour Management Plan	Page 18	Employment		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 TÜMAD.• 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	Employment		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	Employment		In the event that Collective Redundancies as defined above cannot be avoided, they will be managed as follows (these requirements apply to both TÜMAD and Contractors or Sub-Contractors): <ul style="list-style-type: none">• 30 days' notice of redundancy will be given to İSKUR 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	Employment		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	Employment		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	Employment		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	Employment		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	Employment		At the end of the commercial life of the Project TÜMAD 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	Employment		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						
	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						

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	Labour Management Plan	Page 20	Employement		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	Employement		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	Employement		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 TUMAD employees		All Phases						
	Labour Management Plan	Page 20	Employement		TUMAD 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	Employement		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	Employement		the company management shall perform applications that increase employee satisfaction and motivation by preparing action plans		All Phases						
	Labour Management Plan	Page 20	Employement		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	Employement		Contractors will be required to implement similar employee grievance mechanisms.		All Phases						
	Labour Management Plan	Page 20	Employement		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	Employement		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	Employement		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	Employement		TUMAD 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 TUMAD 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		TUMAD shall ensure that contractual provisions reflect these requirements. Compliance by Contractors and Sub-Contractors will occur either by adopting TUMAD policies and procedures or by implementing their own equivalent procedures that are approved by TUMAD.		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		TUMAD 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						
	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 TUMAD 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 TUMAD 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 TUMAD 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 TUMAD 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 TUMAD 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 TUMAD suppliers are required to maintain compliance with all Health, Safety and Environment (HSE) requirements of TUMAD 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 TUMAD 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 TUMAD's operations		All Phases						
	Labour Management Plan	Page 21	Supply Chain Management		TUMAD 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 TUMAD safety requirements will be prevented from future works on the Project TUMAD 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 TUMAD Departments and for all key Contractors.		All Phases						
	Labour Management Plan	Page 21	Contractor Verification Process		Compliance verification will assess TUMAD and Contractors performance against HR procedures, Turkish Law, and international standards (particularly those of the EBRD). Compliance verification may be conducted directly by the TUMAD Audit Department or externally by third parties hired by TUMAD for this function		All Phases						
	Labour Management Plan	Page 22	Monitoring		"Key Monitoring Activities" presented in Table 8 of the Labour Management Plan of TUMAD will be complied with.		All Phases						
	Labour Management Plan	Page 24	Training		TUMAD 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 TUMAD Madencilik.		All Phases						
	Labour Management Plan	Page 24	Auditing		Contractors will be subject to inspection and audit by TUMAD 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 TUMAD requirements.		All Phases						
	Labour Management Plan	Page 24	Auditing		During operations, audits will be undertaken on an annual basis as a minimum.		All Phases						

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	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						
	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 mili-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 TÜMAD 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						
	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						

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	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 TUMAD 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 TUMAD 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 TUMAD.		All Phases						
	Noise and Vibration Management Plan	Page 18	Auditing		The activities defined by this Management Plan is subject to auditing as per the TUMAD 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 TUMAD (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						
	Air Quality Management Plan	Page 8	Legislative Compliance		Standards applicable to the Project must be complied with during all Project activities (the "Project Standards"). TUMAD comply with the more stringent of national standards and other applicable standards. <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 TUMAD standards, policies and procedures;• Other industry guidelines with which TUMAD 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 <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• 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						

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	Air Quality Management Plan	Page 15	Mitigation Measure		HCL: Plant, Columns instruction		• Will be used in strict compliance with the operation procedures and				Operation		
	Air Quality Management Plan	Page 15	Mitigation Measure		Gaseous Emissions: All Equipment and Vehicles 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		• The lowest sulphur				All phases		
	Air Quality Management Plan	Page 15	Mitigation Measure		Risk Records: All Activities 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.		• Maintain and develop the risk register to identify health and environmental				All phases		
	Air Quality Management Plan	Page 15	Mitigation Measure		GHG Emissions: Power Lines, Fuel Burn, Dry Stack Tailking 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		
	Air Quality Management Plan	Page 16	Mitigation Measure		If an issue is raised in accordance with the complaint and feedback procedure (TMD_KT1_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		•All employees of TÜMAD 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. 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.		•Plant operators and key personnel, who are engaged site				All Phases		
	Air Quality Management Plan	Page 23	Employee Training-Specific		All construction and operation contractor workers will be trained on: • 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 TÜMAD operation workers will be trained on; • 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 TÜMAD.						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 TÜMAD (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 TÜMAD will employ internationally recognized best management practices (BMPs) for the management of cyanide, and TÜMAD 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		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 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		TÜMAD 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 TÜMAD will prepared instructions/guidelines for the usage of the contractor with respect to the transportation of cyanide outside the Project area. TÜMAD will be ensured the external transportation contractor has valid licence to transport cyanide and TÜMAD 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		TÜMAD 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: • 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 TÜMAD IMS standards, policies, plans and procedures.						All Phases		
	Cyanide Management Plan	Page 10	Legislative Compliance		The standards, which TÜMAD shall implement, are those specified by European Bank for Reconstruction and Development (EBRD): EBRD Performance Requirement 1, 3, 4, 6, and 10.						All Phases		
	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		

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	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		TUMAD has prepared the Spill Clean Up & Emergency Response Plan and will 1) provide a copy to appropriate local and regional authorities, TUMAD 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 TUMAD is responsible, in accordance with the Spill Clean Up & Emergency Response Plan and in the TUMAD ESMS Plan.		Operation						
	Cyanide Management Plan	Page 11	ICMC		TUMAD 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: protective manner. • 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	Standard of practice; • Encourage responsible cyanide manufacturing by purchasing from manufacturers who operate in a safe and environmentally					
	Cyanide Management Plan	Page 12	Principles and Standards		Transportation: transport. • 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	Standard of practice; • Protect communities and the environment during cyanide					
	Cyanide Management Plan	Page 12	Principles and Standards		Handling and Storage: storage. • 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	Standard of practice; • Protect workers and the environment during cyanide handling and					
	Cyanide Management Plan	Page 12	Principles and Standards		Operations: 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	• Manage cyanide process solutions and waste streams to protect human health and the					
	Cyanide Management Plan	Page 12	Principles and Standards		Decommissioning: implementation of decommissioning plans for cyanide facilities. • 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	Standard of practice; • Protect communities and the environment from cyanide through development and					
	Cyanide Management Plan	Page 17-18	Legislative Compliance		TUMAD 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		TUMAD 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: PLUS etc.)		Operation	• TUMAD shall purchase cyanide from an ICMC signatory producer (ORICA, HEBEI CHENGXIN, CY					
	Cyanide Management Plan	Page 20	Mitigation Measure		Cyanide Transportation: 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 • TUMAD 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	• TUMAD has developed a transportation procedure, which specifies clear					
	Cyanide Management Plan	Page 20	Mitigation Measure		Cyanide Transportation: Responsibilities during Transport • As part of its contractual arrangements, TUMAD 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/TUMAD communications; storage and security at ports of entry; interim loading, storage and unloading during shipment; transport to the TUMAD 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 TUMAD, 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: 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. TUMAD 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	TUMAD shall design and build consistent discharging, storage and mixing facilities in accordance with					
	Cyanide Management Plan	Page 21	Mitigation Measure		Operational Management: circumstance plans and investigations as well as maintenance procedures that are designed to protect human health and environment. • TUMAD shall develop and implement management and operation systems to use cyanide as effective as possible in order to reduce cyanide usage. • TUMAD shall develop and apply a comprehensive process water management program in order to minimize the possibility and amount of unintentional releases. • TUMAD shall take precautions to protect birds, other wildlife and herds against negative impacts of cyanide process solutions. • TUMAD shall take precautions to protect wildlife against direct or indirect discharge of cyanide process solutions to surface water. • TUMAD shall implement measures to manage seepage from cyanide facilities in order to protect groundwater quality. • TUMAD shall take leakage prevention and/or secondary barrier precautions for process tanks and pipelines which contain cyanide. • TUMAD shall implement quality control / quality assurance procedures to verify that cyanide facilities have been built in accordance with the accepted engineering standards and conditions. • TUMAD shall conduct monitoring programs to assess impacts of cyanide usage on wildlife, surface water and groundwater quality.		Operation	• TUMAD shall develop and implement management and operation systems, including unexpected					
	Cyanide Management Plan	Page 22	Mitigation Measure		Decommissioning: cyanide facilities, in order to protect human health, wildlife and herds. • TUMAD shall develop a Closure plan that includes a guaranty mechanism, which can completely finance decommissioning activities of the cyanide.		Decommissioning	• TUMAD shall prepare a decommissioning plan, which considers the requirement of effective decommissioning of the					
	Cyanide Management Plan	Page 22	Mitigation Measure		Worker Safety: control these risks. • TUMAD shall operate and monitor cyanide facilities in order to protect workers' health and safety and periodically assess effectiveness of health and safety precautions. • TUMAD shall improve and implement emergency case plans and procedures to intervene cyanide exposure of workers.		Operation	• TUMAD shall specify potential cyanide exposure scenarios and take necessary precautions to eliminate, mitigate and					
	Cyanide Management Plan	Page 22	Mitigation Measure		Emergency Case Intervention: • TUMAD shall engage site personnel and stakeholders in the planning process. • TUMAD shall assign suitable personnel for urgent intervention and provide necessary equipment and sources. • TUMAD shall develop procedures for internal and external emergency case notifications and reporting. • TUMAD shall include monitoring items and improvement precautions, which explain additional hazards caused by usage of cyanide refining chemicals, in the intervention plans. • TUMAD shall periodically assess the intervention procedures and opportunities and revise the same in due manner.		Operation	• TUMAD shall prepare a detailed emergency case intervention plans for potential cyanide release scenarios					

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	Cyanide Management Plan	Page 23	Mitigation Measure		Worker Training: • 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.		• TÜMAD shall train workers to ensure that hazards regarding the cyanide usage are understood.				Operation		
	Cyanide Management Plan	Page 23	Mitigation Measure		Stakeholder Engagement: • 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.		• TÜMAD shall provide stakeholders with the opportunity to express their apprehension				Operation		
	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 İvrindi 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, TÜMAD 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		TÜMAD 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 TÜMAD operation requirements. IMS and Sustainability Manager, who is in charge of the plan, and TÜMAD 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 TÜMAD employees and contractors working at Çanak kale Lapseki and Balıkesir İvrindi 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 Tüm ad 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 TÜMAD (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		
	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		The following measures will be implemented regarding appointment of the occupational safety specialists and workplace physician: • 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		

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	Health and Safety Management Plan	Page 9	Mitigation Measures		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: • 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		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: • 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						
	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: • 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 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,	• To perform studies to plan for employees' occupational health and safety trainings	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: • 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: • 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						
	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		TUMAD 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. TUMAD 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: • 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		TUMAD 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						

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	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. TUMAD personnel shall be responsible to convey the information on the Visitor Brochure to his/her visitor. TUMAD 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 TUMAD which indicates that they are fit for work.		All phases						
	Health and Safety Management Plan	Page 15	Health Risks-Exposure		In this respect, TUMAD 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. TUMAD will ensure that personal measurements meet the legal standards by taking appropriate engineering and administrative control measures.		All phases						
	Health and Safety Management Plan	Page 15	Safe Work Principles		TUMAD 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 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.		All phases						
	Health and Safety Management Plan	Page 15-16	Instructions		The following instructions shall be prepared and delivered to all employees. <ul style="list-style-type: none">• 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		TUMAD will implement following legal requirements and principles: <ul style="list-style-type: none">• 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 TUMAD.		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_ISG_PRD.014), HSE Legal Requirements List (TMD_ISG_LST.001), HSE Objective and Targets (TMD_ISG_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						

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	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						
	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						
	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						

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	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; <ul style="list-style-type: none">• 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 activitites 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 <ul style="list-style-type: none">• 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						
	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						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	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; • 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						
	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		• 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. • 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		• 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: • Direction • Safe Movement • Speed Limitation Location requirements: • 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						
	Traffic Management Plan	Page 21	Signage and Move-of Procedures		All equipment and vehicles, shall comply with traffic signage located in the construction area and mine site area. 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 TÜMAD management. All vehicles and plant shall use the following vehicle operation horn signals must be used in all areas: • Engine start – single blast. • Move off forward – two blasts. • Move off reverse – three blasts. Operating (stationary) plant, equipment, shall have high-visibility cones separating the operational area from areas of moving traffic. 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). • Wearing seat belts is compulsory in all TÜMAD 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		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: • 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 TÜMAD 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		• 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						

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	Traffic Management Plan	Page 23	Critical Transport		TÜMAD will utilize routes inside fenced construction areas as much as practicable for the transportation. In any case, following measures will be taken: <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		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. 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: <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 TÜMAD vehicles.		All phases						
	Traffic Management Plan	Page 24	Speed Restrictions		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 TÜMAD traffic and safety protocol are adhered to. TÜMAD 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).		All phases						
	Traffic Management Plan	Page 24	Designated Parking		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 Signage shall be displayed at the entrance to the car parking facility, indicating location of office and visitors vehicle parking area. Signage shall be displayed indicating reverse parking only.		All phases						
	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						
	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						

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	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.</p> <p>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		<p>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.</p>		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:• 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:• Industrial water supply;• Potable water supply.• Mine waste management:• 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:• Buildings;• Site access roads;		All Phases						
	Conceptual Mine Closure Framework	Page 26	6.1 Post Closure Monitoring		<ul style="list-style-type: none">• Site access roads; <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 TUMAD 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 TUMAD 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 TUMAD Madencilik Sanayi ve Ticaret A.Ş (TMD_EYS_PRD.004).</p>		All Phases						
	Framework Biodiversity Action Plan	Page 10	Monitoring		<p>The development of the construction sites should be monitored weekly in order to avoid footprint creep within and outside the fence line</p>		Construction						
	Framework Biodiversity Action Plan	Page 10	Monitoring		<p>On site conservation areas adjacent to active construction sites should be monitored monthly for inadvertent disturbance.</p>		Construction						
	Framework Biodiversity Action Plan	Page 11	Monitoring		<p>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).</p>		Construction						
	Framework Biodiversity Action Plan	Page 11	Monitoring		<p>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</p>		Construction						
	Framework Biodiversity Action Plan	Page 11	Monitoring		<p>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)</p>		Construction /Operation						
	Framework Biodiversity Action Plan	Page 11	Monitoring		<p>Culverts will be regularly monitored (once every three months) to avoid any blockages or erosion that would made them unsuitable for target wildlife.</p>		Construction /Operation						
	Framework Biodiversity Action Plan	Page 11	Monitoring		<p>Signs of erosions in areas characterize by critical habitats and endemic speices 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</p>		Construction /Operation						

Nominated Entity	Document	Obligation/Condition Number	Condition Description/ Summary	Action Type	Action/Condition Description	Rank	Project Phase	Responsible Company	Responsible Person	Resolution Date	Status	Comments	Project Evidence Reference Number
	Framework Biodiversity Action Plan	Page 12	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)		Construction /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		Construction /Operation						
	Framework Biodiversity Action Plan	Page 13	Monitoring		The implementation of the Explosives and Hazardous Materials Management Plan will be monitored and the records on the spill register reviewed. The Hazardous Material Management Plan will be updated regularly as needed.		Operation						