Audit 2014
Volume 1 Executive Summary
Koza Altın İşletmeleri A.Ş.
Turkey

Report Prepared for

Koza Altın İşletmeleri A.Ş.

Report Prepared by

SRK Consulting (U.S.), Inc.
SRK Project Number 173600.130
January 31, 2015

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List of Abbreviations

The metric system has been used throughout this report unless otherwise stated. All currency is in U.S. dollars unless stated otherwise. Market prices are reported in US$ per troy oz of gold and silver. Tonnes are metric of 1,000 kg, or 2,204.6 lb, unless otherwise stated. The following abbreviations are typical to the mining industry and may be used in this report.

Abbreviation	Unit or Term
º	degree
%	percent
AA	atomic absorption
AAS	atomic absorption spectroscopy
Ag	silver
Amsl	above mean sea level
Au	gold
BLEG	Bulk Leach Extractible Gold
BWI	Bond Work Index
C	Celsius
CoG	cutoff grade
CIP	carbon in pulp
cm	centimeter
CP	Competent Person
CPR	Competent Person's Report
CRP	Community Relations Plan
CRM	Certified Reference Material
Cu	copper
dia.	diameter
Eq	equivalent
EIA	Environmental Impact Assessment
F	Fahrenheit
ft	feet/foot
g	gram
g/cm	grams per centimeter
g/t	grams per tonne
gpm	gallons per minute
ha	hectares
HG	high-grade
hr	hour
ID2	Inverse Distance Squared
ID3	Inverse Distance Cubed
in	inch
IP	Induced Polarization
kg	kilogram
km	kilometer
koz	thousand troy ounce
kt	thousand tonnes
kV	kilovolt
L	liter
lb	pound
LHD	load haul dump
LG	low-grade
LoM	life of mine

Abbreviation	Unit or Term
Lpm	Liters per minute
m	meter
M	million
m.a.	million annum
min	minute
mm	millimeter
Mm	million meter
Moz	million ounces
Mt	million tonnes
Mt/y	million tonnes per year
MVA	million volts amperes
NN	Nearest Neighbor
NPV	net present value
OK	Ordinary Kriging
OP	open pit
oz	ounce
ppb	parts per billion
ppm	parts per million
QA/QC	Quality Assurance/Quality Control
RC	reverse circulation
RoM	run of mine
SART	sulfidization, acidification, recycling, and thickening
t	tonne(s)
t/h	tonnes per hour
t/d	tonnes per day
t/m	tonnes per month
t/y	tonnes per year
TEM	Technical Economic Model
TSF	tailings storage facility
µ	micron
UG	underground
V	volt
WAD	weak acid dissociable
Zn	zinc

1 Introduction

SRK Consulting (U.S.), Inc. (SRK) was commissioned by Koza Altın İşletmeleri A.Ş. (Koza) to audit Koza's gold resources and reserves and exploration projects as of the end of December 2014. Koza's Mining Assets are located in the Ovacık Mining District, Mastra Mining District, and Kaymaz District, including Söğüt, as well as Mollakara in the Diyadin District in Eastern Turkey and Himmetdede in Central Turkey.

This report is Volume 1 Executive Summary of the following nine volumes reports:

- **Volume 1 Executive Summary;**
- Volume 2 Ovacık Resources and Reserves;
- Volume 3 Mastra Resources and Reserves;
- Volume 4 Kaymaz Resources and Reserves;
- Volume 5 Söğüt Resources and Reserves;
- Volume 6 Himmetdede Resources and Reserves;
- Volume 7 Mollakara Resources and Reserves;
- Volume 8 Technical Economics;
- Volume 9 Hasandağ and Işıkdere Resource Areas; and
- Volume 10 Exploration Projects.

This report is prepared using the industry accepted Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012).

Certain definitions used in this executive summary are defined in the body of this report and in the glossary in Section 12.

Table 1.1 lists Koza's process plants and resource and reserve areas.

Table 1.2 lists Koza's exploration projects.

The 2013 production from all business units is detailed in Table 1.3.

Table 1.1: Summary of Koza Resources and Reserves

Asset	Status	Type	Comments
Ovacık Area			
Ovacık Process Plant	Production	Processing plant	Commenced operation in 2001. Current gold production approximately 125,000oz/y
Ovacik Mine	Production	Underground	Open pit production began in 2001, completed in 2007. Underground ongoing. Planned production average 65,000 t/y
Çukuralan	Production	Open Pit/Underground	Mining operations began in 2010
Kubaşlar	Development	Open Pit	Planned operation beginning 2024
Gelintepe	Exploration	Open Pit	Resource
Narlıca	Exploration	Open Pit	Resource
Kıratlı	Exploration	Open Pit	Resource
Aslantepe	Exploration	Open Pit	Resource
Mastra Area			
Mastra Process Plant	Production	Processing plant	Operations commenced 2009.
Mastra Underground	Production	Underground	Restart planned for June 2015; planned production through February 2018
Mastra North	Development	Open Pit	Operations planned June through November 2015
Kaymaz Area			
Kaymaz Process Plant	Production	Processing plant	Operation began in 2011
Kaymaz	Production	Open Pit	Operation began in 2011; planned production through May 2018
Söğüt Area			
Akbaştepe	Development	Open Pit/Underground	Akbaştepe reserve 2014; planned production January 2018 through September 2024
Korudanlık	Exploration	Underground	Resources updated in 2014
Hayriye	Exploration	Open Pit	Resource
Diyadin District			
Mollakara	Prefeasibility	Open Pit	Planned operation April 2019 through July 2021
Himmetdede Area			
Himmetdede	Production	Open Pit	Operation startup planned for April 2015; planned production through 2020
Himmetdede North	Development	Open Pit	Resource
Central Turkey			
Hasandağ	Exploration	Open Pit	Resource
Işıkdere	Exploration	Open Pit	Resource

Table 1.2: Summary of Koza Explorations Projects

Asset	Status	Deposit Type	Comments
UTM Zone 35			
Aslantepe	Exploration	Low Sulfidation Epithermal	Mapping, surface sampling, trenching, drilling, geophysics
Karapınar	Exploration	Low Sulfidation Epithermal	Mapping, surface sampling, geophysics
Dedetepe	Advanced Exploration	Low Sulfidation Epithermal	Mapping, surface sampling PIMA Mapping, geophysics
Ahatlar	Exploration	Epithermal	Drilling, trenching, mapping and geophysics PIMA mapping
Büyükpınar	Advanced Exploration	Cu-Au Porphyry/Epithermal	Mapping, surface sampling PIMA Mapping, trenching, drilling, geophysics
UTM Zone 37			
Torul North	Exploration	Cu-Au Porphyry	Mapping, surface sampling, trenching, started drilling, geophysics
Torul South	Advanced Exploration	Low Sulfidation Epithermal	Mapping, surface sampling, trenching, drilling, geophysics
Kırıntı	Advanced Exploration	Au Porphyry/High Sulfidation Epithermal	Trenching, mapping, surface sampling, drilling, geophysics
Bulancak	Exploration	Cu-Au Porphyry	Mapping, surface sampling, PIMA mapping, geophysics
Hapan	Exploration	Epithermal/Mesothermal Au veins with thrust faulting	Mapping, surface sampling,
UTM Zone 38			
Ağadeve	Exploration	Low Sulfidation Epithermal	Drilling, trenching, surface sampling, mapping and geophysics completed
Küçükdoğutepe	Exploration	Cu-Au Porphyry	Drilling, trenching, surface sampling, mapping and geophysics completed
Çakıllıtepe	Exploration	Low Sulfidation/Epithermal	Mapping, surface sampling, geophysics
Taşkapi	Exploration	Cu-Au-Mo Porphyry and Low Sulfidation Epithermal	Mapping, surface sampling, geophysics

Table 1.3: 2014 Koza Production – All Sites

Process Plant	Mill Feed			Poured Ounces	
	Tonnes	Au g/t	Ag g/t	Au	Ag
Ovacik	866,867	7.71	4.56	203,711	82,402
Mastra	87,077	4.99	5.95	16,200	11,814
Kaymaz	659,177	4.88	3.66	92,888	48,001
Himmetdede	211,000	0.54	0	3,711	0
Total	**1,824,121**	**5.39**	**2.42**	**316,510**	**142,217**

1.1 Background

Koza is the first wholly Turkish-owned gold mining company. In March 2005, Koza-İpek Holding A.Ş. (KIH) and ATP İnşaat ve Ticaret A.Ş, (ATP), an indirectly owned subsidiary of KIH, (collectively the Koza Group), acquired 40% and 60%, respectively, of the shares of Normandy Madencilik A.Ş. (NMAS) from Newmont Mining Corporation Limited (Newmont). Subsequent to the Koza Group's acquisition of NMAS, NMAS's name was changed to its current name, Koza Altın İşletmeleri A.Ş. In 2005, Koza became the first Turkish company in the history of the Republic of Turkey to realize gold production within Turkey after acquiring the Ovacık Mine.

Since 2005, in addition to successfully operating the Ovacık Mine, Koza has explored, developed and opened five additional mines. Koza has four projects currently in development and eight exploration projects carrying a resource estimate. In addition, Koza is reporting 13 of its more promising exploration projects with mineral potential in this report. Koza has a proven methodology that enables them to advance projects through the life cycle of mining operations from discovery, exploration, resource delineation, development, mining and closure, which is demonstrated by the Koza assets presented in this report.

This ability has been enhanced by the establishment of the Koza Technical Services Group based in 2011. The Koza Technical Services group is based in the Ankara office and is responsible for resource and reserve estimations, exploration on Koza's properties and identifying and evaluating targets for possible acquisition. Since 2007 when SRK was first engaged by Koza, SRK has observed an impressive continual improvement in technical skills, awareness and understanding of international standards for resource and reserve estimation and reporting, exploration practices and prospect assessment. Koza geologists and mining engineers and metallurgists have learned, and are applying, new technologies to their studies. This is reflective of a progressive Company for which all involved should be commended.

1.2 Terms of Reference and Purpose of the Report

This audit of the Mineral Resources and Ore Reserves is intended to be used by Koza to further the development of its Projects by providing an independent audit of the mineral resource and ore reserve estimates and classification. This audit of the exploration properties provides an independent audit of the assumptions and methods used. Koza may also use this Report for any lawful purpose to which it is suited.

1.3 Reliance on Other Experts

SRK's opinion contained herein is based on information provided to SRK by Koza throughout the course of SRK's investigations, which in turn reflect various technical and economic conditions at the time of writing.

SRK reviewed certain materials pertaining to a limited amount of correspondence, pertinent maps and agreements to assess the validity and ownership of the mining concessions. However, SRK did not conduct an in-depth review of mineral title and ownership; consequently, no opinion will be expressed by SRK on this subject.

SRK is of the opinion that the information concerning the properties presented in this report (within or not produced by SRK) adequately describes the properties in all material respects.

1.3.1 Sources of Information

The underlying technical information upon which this Report is based represents a compilation of work performed by Koza and its consultants. The studies and additional references for this audit are listed in the reference section of each volume listed in Section 1 of this volume.

SRK has reviewed the Project data and incorporated the results thereof, with appropriate comments and adjustments as needed, in the preparation of this report.

The authors reviewed data provided by Koza including hard copy and digital files located at the Company's office in Ankara and at the individual Projects in Turkey. Discussions on the geology and mineralization were conducted with Koza's technical team. The drillhole assay database, resource and reserves estimations were prepared by Koza or its consultants and verified by SRK.

Leah Mach, Neal Rigby, Bret Swanson, Eric Olin, Valerie Obie and Dorinda Bair are Competent Persons as defined under the JORC code.

1.4 Qualifications of Consultants (SRK)

The SRK Group comprises over 1,700 staff worldwide, offering expertise in a wide range of resource engineering disciplines. The SRK Group's independence is ensured by the fact that it holds no equity in any project and that its ownership rests solely with its staff. This permits SRK to provide its clients with conflict-free and objective recommendations on crucial judgment issues. SRK has a demonstrated record of accomplishment in undertaking independent assessments of Mineral Resources and Mineral Reserves, project evaluations and audits, technical reports and independent feasibility evaluations to bankable standards on behalf of exploration and mining companies and financial institutions worldwide. The SRK Group has also worked with a large number of major international mining companies and their projects, providing mining industry consultancy service inputs.

This report has been prepared based on a technical and economic review by a team of consultants sourced principally from the SRK Group's Denver, U.S. and Ankara, Turkey offices. These consultants are specialists in the fields of geology exploration, mineral resource and mineral reserve estimation and classification, open pit mining, mineral processing, mineral economics and environmental and permitting.

Neither SRK nor any of its employees and associates employed in the preparation of this report has any beneficial interest in Koza or in the assets of Koza. SRK will be paid a fee for this work in accordance with normal professional consulting practice.

The individuals listed in Table 1.4.1 have provided input to this audit and have extensive experience in the mining industry and in the main, are members in good standing of appropriate professional institutions.

Table 1.4.1: SRK Team

Team Member	Discipline
Leah Mach	Geology and Resources
Dorinda Bair	Geology and Exploration
Bret Swanson	Open Pit/Underground Mining
Eric Olin	Metallurgy and Process
Valerie Obie	Technical Economic Model
Gözde Kaya Akbaş	Permitting and Environmental
Nilüfer Gümüş	Permitting and Environmental
Ahmet Oğuz Öztürk	Permitting and Environmental
Neal Rigby	QA/QC Review

1.5 Site Visit

Over the past seven years, SRK has visited 29 precious metals exploration, development and mining projects held by Koza. Site visits occurred in August and September of 2007, October 2009, November 2010, October 2011, October 2012, November 2013 and October 2014. These projects are:

- Ovacık, Çukuralan, Çoraklıktepe, Gelintepe, Narlıca, Dedetepe, Karapinar and Aslantepe (low sulfidation epithermal), Kaymaz (epithermal), Söğüt (Carlin-Type, mesothermal and low sulfidation epithermal), Himmetdede (thrust related low sulfidation epithermal), Mastra/Mastra North (low to intermediate sulfidation epithermal;
- Kıratlı and Kubaşlar — low and high sulfidation epithermal;
- Taşkapi — low and high sulfidation and copper-gold porphyry;
- Mollakara and Çakillitepe — High and low sulfidation epithermal;
- Ağadeve and Küçükdoğutepe — low and high sulfidation and copper-gold porphyry;
- Işıkdere and Torul North — Cu-Au porphyry;
- Torul South — intermediate sulfidation;
- Bulancak — high sulfidation and Cu-Au porphyry;
- Hapan — thrust related low sulfidation epithermal and mesothermal vein systems;
- Kırıntı — high sulfidation epithermal;
- Ahatlar — low sulfidation;
- Büyükpınar — Cu-Au porphyry; and
- Hasandağ — high sulfidation system with potential porphyry association.

Visits to the process plants at Ovacik, Kaymaz and Mastra were undertaken during the following periods:

- Ovacik: October 16 through October 18, 2007;
- Ovacik and Mastra: October 19 through October 21, 2009;
- Ovacik, Mastra and Kaymaz: October 17 through 21, 2011;
- Kaymaz: October 15 to 17, 2012;
- Kaymaz and Himmetdede: November 4 through 8, 2013; and
- Ovacik and Himmetdede: October 20 through 22, 2014.

1.6 Effective Date

The effective date of this Audit is December 31, 2014. The topography and stockpiles are current as of December 31, 2014.

1.7 Audit Basis

The resource estimates produced by Koza were verified by SRK by a review of the estimation procedures, visual examination of block model and composite grades on cross-sections and plans, review of statistics for block model grades and composites, and in some cases, re-estimation of resources through compositing drillhole data and using an ordinary kriging or inverse distance technique.

The resources are classified according to JORC standards as follows:

“A ‘Mineral Resource’ is a concentration or occurrence of solid material of economic interest in or on the Earth’s crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories.”

“An ‘Inferred Mineral Resource” is that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.”

“An ‘Indicated Mineral Resource’ is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes, and is sufficient to assume geological and grade (or quality) continuity between points of observation where data and samples are gathered.”

“A ‘Measured Mineral Resource’ is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration , sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes, and is sufficient to confirm geological and grade (or quality) continuity between points of observation where data and samples are gathered.”In this report, Measured, Indicated and Inferred Mineral Resources are inclusive of those Mineral Resources modified to produce the Ore Reserves.

The reserve estimates produced by Koza were verified by SRK by a review of the mine cutoff grades, pit optimizations, mine plans and designs.

The reserves are classified according to JORC standards as follows:

"An 'Ore Reserve' is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.

"A 'Probable Ore Reserve' is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Ore Reserve is lower than that applying to a Proved Ore Reserve."

"A 'Proved Ore Reserve' is the economically mineable part of a Measured Mineral Resource. A Proved Ore Reserve implies a high degree of confidence in the modifying factors."

1.8 Price Assumptions

Koza has used a gold price of US$1,450 per ounce in calculating cutoff grades for resources. The one year rolling average gold price is US$1,266; the two year average is US$1,339; and the three year average is US$1,449.

Koza has used a gold price of US$1,250 per ounce in calculating reserve cutoff grades. SRK finds these to be acceptable prices.

In the Technical Economic Model (TEM), gold and silver are modeled at US$1,250/oz and US$20/oz, respectively for the life of mine (LoM).

1.9 Koza Technical Group

The Koza Technical Group has a typical corporate organizational structure with a general manager and assistant general manager. The assistant general manager directly manages the following departments:

- Exploration;
- Geology and resources;
- Mine planning and business development;
- Environmental; and
- Project Development.

1.9.1 Exploration Department

The exploration department is overseen by the exploration manager and includes the following areas:

- West Anatolian Exploration;
- Central Anatolian Exploration;
- East Anatolian Exploration;
- Project Generation Department;
- Licensing and Permitting Department; and
- Drilling Department.

The three exploration groups (West, Central and East Anatolian) are each overseen by a senior geologist who in turn has a staff of six project geologists. Each project geologist is aided by two geologists.

The Project Generation Department is headed by a senior geologist who manages a geochemist, a remote sensing specialist, a mineralogist-petrologist, a database supervisor with two database geologists and two geophysicists with two technicians.

The Licensing and Permitting Department is headed by a senior mining engineer. Under the senior mining engineer is a geologist supervisor that manages a mining engineer, two geologists and a surveyor.

The drilling department is overseen by a drilling coordinator and then a drilling supervisor geologist. Below the drilling supervisor geologist are two drilling geologists, a mud engineer, and a drilling techniques specialist.

1.9.2 Geology and Resource Department

The geology and resource department is managed by a department manager who manages the following:

- Three resource geologists;
- Grade control and mine production geologist;
- Geometallurgist;
- Geotechnician; and
- Hydrogeologist.

Koza is in the process of adding one resource geologist and one hydrogeologist.

1.9.3 Mine Planning and Business Development Department

The mine planning and business development department has a department manager who directly manages a senior engineer and two chief engineers. The senior engineer is responsible for the planning department and the chief engineers are responsible for group metallurgy and metallurgy lab departments. The staff positions of each department are given below:

- Planning:
  - Rock mechanic;
  - Underground planner;
  - Open pit planner;
  - Project engineer; and
  - Project analyst.
- Group Metallurgy:
  - Project engineers (2); and
  - Operations engineers (2).
- Metallurgy Lab:
  - Process engineers (2); and
  - Lab operators (3).

Koza is in the process of adding an open pit planner, project analyst, project engineer and operations engineer.

1.9.4 Project Department

The project department has a manager who directly reports to the assistant general manager. The staff includes:

- Electrical and automation coordinator;
- Project coordinator;
- Chief technical engineer;
- Chief site and planning engineer;
- Electric and electronic engineer;
- Mechanical engineer; and
- Civil engineer.

The environment department has a manager who directly manages two senior engineers and two chief engineers. Detail of the department is given below:

- Senior engineer - operations;
- Senior engineer – EIA preparation and control;
- Chief engineer - operations;
- Chief environmental engineer - EIA preparation and control;
- Chief hydrogeologist;
- Hydrogeologist;
- Mining engineer;
- Geology engineer;
- Environmental engineers (5);
- Biologist;
- Surveyor; and
- Office clerk.

1.10 Exploration, Drilling, Sampling and Assaying Procedures

1.10.1 Exploration

Koza uses industry best practice in its exploration work. Within the exploration team, there is a logical progression of steps that are used at each project using a standard set of procedures. This progression begins with identification of the target area and mapping at ever increasing detail. In tandem with this, Koza incorporates stream sediment, rock chip, chip channel and soil sampling to better define a target for drilling. Where possible, Koza uses a TerraSpec 4 Hi-Res Mineral Spectometer and Portable Infrared Mineral Analyzer (PIMA) to characterize alteration to vector into the center of mineralized systems. Koza also uses any geophysics tools at its disposal, including Induced Polarization (IP), resistivity and magnetic surveys.

Koza uses standard approaches to stream sediment, selective rock chip, chip channel, channel and soil sampling. Any or all of these sample types may be used at any time during and exploration project depending on the site conditions and requirements. Samples are collected by Koza personnel and in the control of Koza either locked in a company vehicle or in a locked building at an exploration camp or mine site until they are delivered to the analytical laboratory by Koza personnel or shipped by a commercial trucking company to the analytical laboratory. This is industry best practice.

Stream sediment samples are part of early reconnaissance work and are used to vector into mineralization. Samples are collected along master streams above and below the inflow of tributary creeks, where active deposition is occurring and from the depositional environment in the stream bed at each location. Stream sediment samples are typically 3 to 4 kg and are screened to -80 mesh to eliminate organic matter and oversized particles and rocks.

Selective rock chip samples and chip channel sampling may be conducted during reconnaissance as well as later in the project timeframe. Selective rock chip samples are generally taken early on exposed outcrops and are collected to be as representative as possible of the observed mineralization and true thickness of mineralization. Chip channel samples are more constrained by trying to reproduce channel sampling using a hammer and moil. Chip channels will typically average 1 m in length, but may be shorter or slightly longer depending on lithological contacts. Koza collects a nominal 3 to 4 kg of material per sample.

Channel samples are the most controlled of the outcrop samples and are typically collected in trenches. These samples are cut using a gas powered concrete saw with a diamond blade. Channel samples are typically 1 m long but vary in depth and width depending on field conditions and lithological contacts. Widths range from 5 to 15 cm and depths range from 15 to 20 cm. Channel sample weights range from 2 to 3 kg.

Soil samples are used at any stage of exploration prior to drilling to potentially vector into mineralization that is covered by overburden. Koza determines soil sample grids and their spacing based on the type of mineralized target and its orientation. Samples are collected from the B horizon of the soil profile and are typically 3 to 4 kg in size.

The exploration data is systematically incorporated into the geographical information system (GIS) MapInfo for data management and correlative purposes, and is subsequently reviewed to better focus exploration efforts.

1.10.2 Drilling and Sampling

Once drilling begins, Koza continues to use industry best practice in its chain of custody, core logging, core photography, sample collection, sample submission, Quality Assurance/Quality Control (QA/QC) and database management.

Drilling programs are designed by the project geologist with drillholes oriented perpendicular to the structural trend of the deposit and inclined to be as close to perpendicular to the structures as possible. Once the drilling program is finalized, the drilling department manages the drilling contractor and all technical aspects of the drilling program except for total depth determinations, logging and sampling. The drilling program is overseen by a drilling coordinator and includes a drilling supervisor geologist, two drilling geologists, a mud engineer, and a drilling techniques specialist. Koza primarily drills HQ sized core reducing to NQ size when required by drilling conditions. In a few cases, Koza starts the holes with PQ sized core to reduce downhole deviation. Exploration drillholes are set up using a handheld GPS and a Brunton compass. Final collar surveys are completed by a Koza survey crew and marked with a metal tag with the drillhole number. For infill drilling at mine sites drillhole collar locations are surveyed before and after drilling.

During drilling, the core is transferred to a core box which is marked with the drillhole number and the downhole interval (from and to). The core is transferred to a secure logging facility on a daily basis. Once the drill core arrives at the core storage facility, the drillhole number and interval is checked.

The core is then photographed, measured for core recovery and logged for mineralogy, alteration, lithology and structure. Geotechnical logging is conducted on all drillholes and information collected includes RQD, fracture counts and fracture orientation. Geotechnical data is collected by a geotechnical engineer. In some cases additional work including TerraSpec and PIMA and magnetic susceptibility measurements may also be conducted on the core. Core is logged directly into the computer so that data can be imported seamlessly into GIS software or Datamine mining software.

Sample selection is made by the geologist who marks the sample interval on the core. The core is cut in half lengthwise with a saw and one-half the core is bagged for the sample. The remaining half of the core is returned to the core box and archived in the storage facility for reference or additional sampling. QC samples are inserted into the sample sequence and samples are shipped to the analytical laboratory for preparation and analysis. Core is archived in the core storage facility at the mine sites. Exploration core is archived at the nearest Koza mine.

1.10.3 Grade Control Sampling

Koza collects grade control samples at its operating properties, both open pit and underground. At the mines where mineralization is controlled by steep structures, the open pit samples are collected from shallow trenches which are excavated perpendicular to the structures. The trenches are 10 m apart on the strike of the structures. The samples are generally taken on 1 m intervals in the trenches, but they may be longer or shorter depending on the width of the structure that is being sampled. This method is useful where the structures are near vertical and would be difficult to sample with a blasthole drill. For deposits that are less structurally controlled or where the structures are shallowly-dipping, Koza samples cuttings from the blasthole drills.

The underground samples are collected at the face of the workings and are generally about 1 m in length. The face samples are spaced at about 4 m along the workings.

1.10.4 Assay Procedures

Koza has mine laboratories at Ovacik, Kaymaz, Mastra and Himmetdede. The mine laboratories are primarily used for ore control, but the Kaymaz laboratory has been used for Kaymaz and Himmetdede exploration samples as well.

The Ovacik lab has been participating in round robin analyses at Geostat and ALS laboratories. The Geostat round robins are held twice a year and include fire assay and aqua regia analysis. ALS round robins are held every month.

The Kaymaz laboratory has the following analytical capability:

- Au by aqua regia – di-isobutyl ketone (AR-DIBK or DIBK) and Atomic Absorption Spectroscopy (AAS) finish with a lower detection limit of 0.1 ppm;
- Ag by aqua regia and AAS finish with a lower detection limit of 0.2 ppm;
- Cu, Ni, As, Sb and Mn by aqua regia and ICP-MS finish all with a lower detection limit of 0.001 ppm;
- C and S by LECO both having a lower detection limit of 0.01%; and
- Fe by AAS with a lower detection limit of 0.01%.

The Himmetdede laboratory has the following capabilities:

- Au by aqua regia – DIBK (AR-DIBK) with a lower detection limit of 0.05 ppm; and

- Ag by aqua regia and AAS finish with a lower detection limit of 0.2 ppm.

The Ovacık and Mastra laboratories have the following capabilities:

- Au by aqua regia – DIBK (AR-DIBK) with a lower detection limit of 0.1 ppm; and
- Ag by aqua regia and AAS finish with a lower detection limit of 0.2 ppm.

The Ovacık laboratory also conducts Fire Assay (FA) using a 15 g charge with an Atomic Absorption Spectroscopy (AAS) finish. If the sample exceeds 2,000 ppm the laboratory uses a gravimetric finish. The lower detection limit is 0.1 ppm.

Koza currently sends the majority of its exploration samples to ALS in Izmir. Before 2012, the ALS Izmir laboratory was a preparation laboratory only and submitted samples were shipped within the ALS system to Vancouver, Canada for ICP-MS analysis and to Roşia Montană for FA. Koza tailors its requested analytical methods to the requirements of the mineralization at each deposit.

Sample preparation at ALS includes drying samples to a maximum temperature of 60°C in order to avoid or limit volatilization of elements such as mercury (ALS code DRY-22). Soil and stream sediment samples are screened to -180 micron (80 mesh) to remove organic matter and large particles. Soil samples are analyzed while stream sediment samples must be reduced further and are pulverized to 85% passing 75 microns (ALS code PUL-31) prior to digestion and analysis.

Rock chip and channel samples are also dried using ALS code DRY-22, and are then crushed to 70% passing -2 mm (ALS code CRU-31) and a 1,000 g split is collected using a riffle splitter (ALS code SPL-21). The 1,000 g split is pulverized to 85% passing 75 microns (ALS code PUL-32). Koza requests a larger split pulverized to help mitigate the nugget affect.

Typical analytical procedures for stream sediment, soil, selective rock chip, chip channel and channel samples include the following ALS methods:

- Au-ICP22, which is a FA method using a 50 g charge with an Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES) finish; and
- ME-MS41, a 51 element, ultra-trace level, analysis by ICP-AES or Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS) using aqua regia digestion.

Table 1.10.4.1 lists the elements and detection limits for the ALS Au-ICP22 and ME-MS41 requested by Koza.

Table 1.10.4.1: Elements and Detection Limits for ALS Methods Au-ICP22 and ME-MS41

Analyte	Range	Analyte	Range	Analyte	Range
Au (1)	0.001-10	Hf	0.02-500	Sc	0.1-10,000
Ag	0.01-100	Hg	0.01-10,000	Se	0.2-1,000
Al	0.01-25%	In	0.005-500	Sn	0.2-500
Au	0.2-25	K	0.01-10%	Sr	0.2-10,000
B	10-10,000	La	0.2-10,000	Ta	0.01-500
Ba	10-10,000	Li	0.1-10,000	Te	0.01-500
Be	0.05-1,000	Mg	0.01-25%	Th	0.2-10,000
Bi	0.01-10,000	Mn	5-50,000	Ti	0.005-10%
Ca	0.01-25%	Mo	0.05-10,000	Tl	0.02-10,000
Cd	0.01-1,000	Na	0.01-10%	U	0.05-10,000
Ce	0.02-500	Nb	0.05-500	V	1-10,000
Co	0.1-10,000	Ni	0.2-10,000	W	0.05-10,000
Cr	1-10,000	P	10-10,000	Y	0.05-500
Cs	0.05-500	Pb	0.2-10,000	Zn	2-10,000
Cu	0.2-10,000	Rb	0.1-10,000	Zr	0.5-500
Fe	0.01-50%	Re	0.001-50		
Ga	0.05-10,000	S	0.01-10%		
Ge	0.05-500	Sb	0.05-10,000		

Source: ALS, 2014
(1) Fire Assay/50 g charge/ICP-AES finish

Selective rock chip, chip channel and channel samples may also be analyzed using the methods listed below. These are the typical analytical procedures for exploration drilling programs:

- ME-ICP61, a 33 element analysis by Inductively Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES) using a four acid digestion;
- Au-AA24 which is a FA method using a 50 g charge with an AAS finish; and
- Au-GRA22 which is FA with a 50 g charge and a gravimetric finish.

Previously Koza used Hg-CV41 but has moved Hg-MS42, which has a wider detection range. The method Hg-CV41 is cold vapor with an AAS while Hg-MS42 is ICP-MS finish. Both methods use an aqua regia digestion.

Table 1.10.4.2 lists the elements and detection limits for the ALS ME-ICP61, Au-AA24, Au-GRA22 and Hg-CV41 requested by Koza.

Table 1.10.4.2: Elements and Detection Limits for ALS Methods ME-ICP61, Au-AA24, Au-GRA22 and Hg-CV41.

Element	Range	Element	Range	Element	Range	Element	Range
Au (1)	0.005-10	Ca	0.01%-50%	Mn	5-100,000	Th	20-10,000
Au (2)	0.05-	Cd	1-10,000	Mo	1-10,000	Ti	0.01%-10%
Hg (3)	0.1-100	Co	1-10,000	Na	0.01%-10%	Tl	10-10,000
Hg (4)	0.005-100	Cr	1-10,000	Ni	1-10,000	U	10-10,000
Ag	0.5-100	Cu	1-10,000	P	10-10,000	V	1-10,000
Al	0.01%-50%	Fe	0.01%-50%	Pb	2-10,000	W	10-10,000
As	5-10,000	Ga	10-10,000	S	0.01%-10%	Zn	2-10,000
Ba	10-10,000	K	0.01%-10%	Sb	5-10,000		
Be	0.5-1,000	La	10-10,000	Sc	1-10,000		
Bi	2-10,000	Mg	0.01%-50%	Sr	1-10,000		

Source: ALS, 2014
(1) Fire Assay/50 g charge/AAS finish
(2) Fire Assay/50 g charge/Gravimetric finish
(3) Cold vapor AAS
(4) Cold vapor ICP-AES

Occasionally analyses return results that are above the detection limits. In such cases, samples are re-assayed using different methods with higher upper-end detection limits. ALS analytical code ME-OG62 is used in these situations. This specific analytical method is run by element, is an analysis for high-grade materials and uses a conventional ICP-AES and a four acid digestion. Table 1.10.4.3 lists the elements that can be selected and detection limits for ME-OG62.

Table 1.10.4.3: Elements and Detection Limits Available using ALS ME-OG62

Element	Range	Element	Range	Element	Range	Element	Range
Ag	1-1500ppm	Co	0.001-20	Mg	0.01-50	Pb	0.001-20
As	0.001-30	Cr	0.002-30	Mn	0.01-50	S	0.01-10
Bi	0.001-30	Cu	0.001-40	Mo	0.001-10	Zn	0.001-30
Cd	0.0005-10	Fe	0.01-100	Ni	0.001-30		

Source: ALS, 2012.

In 2013, Koza submitted check samples to SGS in Ankara, Turkey and one of the SGS in Australia as part of its QA/QC program. Gold FA was completed in Ankara. Silver and gold by aqua regia with and AAS finish were completed in one of the SGS laboratories in Australia. Below are the SGS analytical methods and detection limits:

- Au using FAA505, which is a FA method using a 50 g charge and an AAS finish with a detection limit of 0.01 to 100 ppm;
- Au using aqua regia digestion with AAS finish with a detection limit of 0.01 ppm; and
- Ag using AAS12E which is an Aqua Regia digestion and AAS finish and has detection limits of 0.3 to 300 g/t.

Both ALS and SGS have ISO/IEC 9000:2008 accreditation of its internal quality management system. SGS is accredited under OHSAS 18001 for occupational safety and health. ALS has ISO/IEC 17025:2005 accreditation for specific elements.

1.10.5 QA/QC Procedures

Koza currently uses preparation blanks, Certified Reference Materials (CRMs), Reference Materials (RMs), and duplicates as part of its routine QC program. In 2013, Koza added check samples sent to a secondary laboratory. Prior to 2012, Koza used pulp blanks but these have been replaced with preparation blanks to check for cross contamination during sample preparation. Koza uses both commercially purchased CRMs and RMs that Koza generates in-house to monitor accuracy at the laboratories. At early stage projects, Koza submits core duplicates and preparation duplicates. As the project advances and the variability of the samples is better understood, Koza discontinues using core duplicates. Koza inserts QC samples at the following frequency:

- Preparation blanks 1 per 50 samples or if there are less than 50 samples in a drillhole 1 per drillhole;
- Duplicates 1 per 30 regular samples; and
- CRMs or RMs 1 per 50 sample batch.

Koza uses the following performance gates to identify QC failures:

- Preparation blanks are 5x the detection limit;

- Duplicates are ±30% for core duplicates, ±20% for preparation duplicates and ±10% for check samples; and
- CRMs and RMs are ±2 standard deviation with ±10% sometimes used with smaller datasets.

Koza monitors its QA/QC program on an ongoing basis and addresses QC failures and inconsistences as they occur. Koza generates a monthly report as an addition to its monthly exploration reports. Koza has used the practice of reanalyzing the entire batch should a failure be recognized. SRK is of the opinion that unless all QC samples in a batch fail, reanalyzing the entire batch is unnecessary. In the case of one QC failure, SRK recommends sampling the failed QC sample and three to four samples in sequence before and after the failure. SRK also recommends that Koza use the following industry practice for monitoring CRMs:

- If one analysis is outside of ±2 standard deviations it is a warning;
- Two or more consecutive analyses outside of ±2 standard deviations is a failure; and
- If an analysis is outside ±3 standard deviations it is a failure if ±3 standard deviations does not exceed ±10% of the mean.

In addition, SRK recommends that Koza track all QC control samples by date and work order for batches. Koza has amassed a large amount of QA/QC data for its analytical samples and should include a date field and work order field for all of its tables to track QA/QC over time. This aids in recognizing problems in the laboratory as well as allowing Koza to track QA/QC by year and identifying QA/QC when changes were made to the QA/QC program. This should be adopted as part of the QA/QC program going forward.

2 Property Description and Location

2.1 Location and Land Tenure

Mining rights and title in Turkey “are subject to the exclusive ownership and disposition of the state and are not considered part of the land where they are located. Under the mining legislation, the state delegates its right to explore and operate the mines to individuals (Turkish citizens) or legal entities (established under Turkish law) for specific periods by issuing licenses subject to payment of a royalty to the state” (Önder and Ergün, 2007). The status of mining licenses is listed in a mining registry, which is open to the public.

The procedures pertaining to the mining exploration and operation licenses in Turkey are established through the Mining Law (Nr. 3213) which is enforced by the Ministry of Energy and Natural Resources (ETKB). The General Directorate of Mining Affairs (MİGEM), an agency under ETKB, is responsible for the mining permitting process.

The Mining Law was promulgated on June 4, 1985 and was amended on May 25, 2004 (modified by Law Nr. 5177) and recently on June 10, 2010 (modified by Law Nr. 5995). The modifications made several changes to the mine permitting process and requirements. Depending on the issue dates, existing mine licenses can be subjected to older versions of the Mining Law. Therefore, it is common to find existing mining licenses with different timeframes and conditions. In this report, the most recent Mining Law is mainly discussed. However, some of the licenses covered in this report fall into the area of older versions of the Mining Law. These exceptions are noted in relevant sections of the report.

The Mining Law distinguishes between six different classes of minerals for the purposes of licensing. Precious and base metals are grouped under Class IV minerals. The discussions provided in this section are for Class IV minerals only, which are the interest of Koza.

Under the most recent Mining Law, the mine licensing process involves obtaining, in the following order, an exploration license, an operation license, several non-mining licenses, and a mining operation permit. The license areas are restricted to a maximum of 2,000 ha and where no existing licenses are found for the same mineral class. Exploration licenses (indicated with “AR” – Arama Ruhsatı) are issued for a maximum period of seven years: one year for preliminary exploration, two years for general exploration, and four years for detailed exploration stages. During the license period, the license owner is required to expend a mandatory minimum annual exploration budget and provide an annual progress report.

At the end of the exploration license period, the license owner has to obtain an operation license (indicated with “İR” – İşletme Ruhsatı) to extend the mining license. In order to obtain an operation license, the owner has to submit a Mining Operation Project to MİGEM before the expiry of the exploration license. The Mining Operation Project requires details about the resources, reserves, mining and processing methods, and financial aspects of the proposed project, which can be typically found in mine feasibility reports. Upon approval of the project, MİGEM issues the operation license for a minimum of 10 years, which can then be extended further as needed.

During the operation license period, the exploration activities can be continued by the license owner as desired. However, before a mining operation can commence, the license owner has to obtain a Mining Operation Permit, which is dependent upon various other non-mining permits. These permits

should be obtained within three years of the issue date of the operation license: Environmental Impact Assessment (EIA) Permit, property permits, business opening permit, and several other minor permits. Once all the required permits are obtained a Mining Operation Permit is issued, which would allow mining operations to commence. Failure to obtain the required Mining Operation Permit would result in revocation of the previously issued operation license and the loss of mineral tenure. The Mining Operation Permit has the condition of minimum of three consecutive years of mineral extraction within a 5-year period from the time of issue of the Permit.

Koza's projects visited by SRK and discussed in this report lie within exploration and operation licenses totaling approximately 182,183 ha. Projects, licenses and land tenure are listed in Table 2.1.1. Figure 2.1.1 shows the location map of the Koza projects in Turkey.

Table 2.1.1: Property Tenure and Permit Information

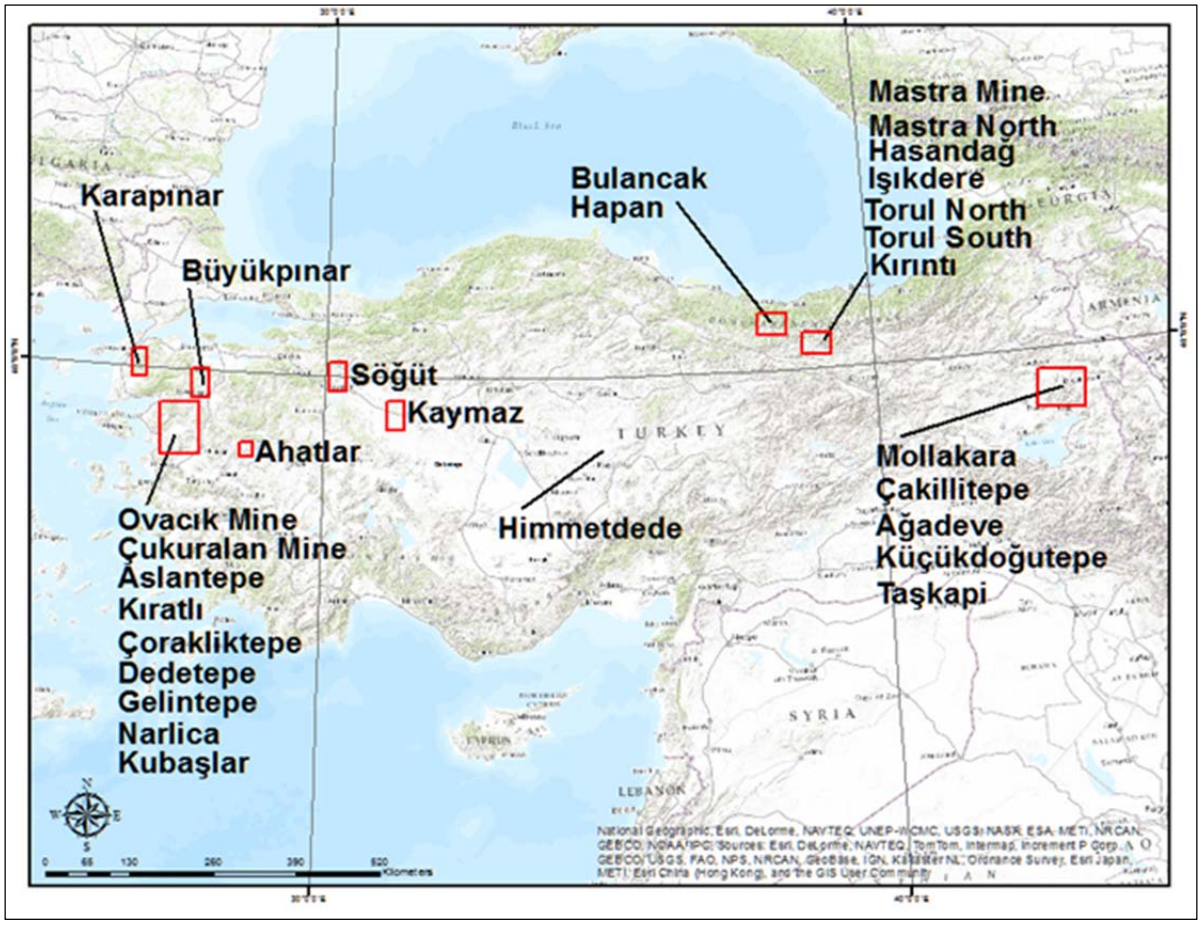
Property	City	Small Town	Village	License Type & No.	License (ha)	Permit	Permit (ha)	Start Date	End Date
Ahatlar	Manisa	Demirci	Icikler	Exploration 200810568	750	NA	NA	21.11.2008	21.11.2013*
	Manisa	Demirci	Delidemirci	Exploration 200810581	1,308.04	NA	NA	24.11.2008	24.11.2013*
	Manisa	Demirci	Delidemirci	Exploration 200810583	1,643.75	NA	NA	24.11.2008	24.11.2013*
	Manisa	Demirci	Delidemirci	Exploration 200810584	1,476.57	NA	NA	24.11.2008	24.11.2013*
	Manisa	Demirci	Delidemirci	Exploration 200810589	931.7	NA	NA	24.11.2008	24.11.2013*
	Manisa	Demirci	Delidemirci	Exploration 200810437	792.01	NA	NA	17.11.2008	17.11.2013*
Aslantepe	Balikesir	Burhaniye	Kurucaoluk	Operation 84240	1,629.72	NA	NA	03.11.2014	03.11.2024*
	Balikesir	Burhaniye	Hisar	Exploration 200810239	1,236.26	NA	NA	06.11.2008	06.11.2013*
	Balikesir	Burhaniye	Kirtik	Exploration 200810243	818.84	NA	NA	06.11.2008	06.11.2013*
	Balikesir	Ayvalik	Yaylacik	Exploration 201201402	800.00	NA	NA	31.10.2012	31.10.2019
Bulancak	Giresun	Bulancak	Kizilar	Operation 200702532	1,624.24	NA	NA	23.11.2012	23.11.2022
Büyükpinar	Balikesir	Ivrindi	Ciğdem	Operation 80576	1,115.54	NA	NA	21.10.2011	21.10.2021
Çorakliktepe, Küçükdere	Balikesir	Havran	Küçükdere	Operation 28237 (3627)	7,982.16	Au and Ag	2,489.13	06.08.2012	06.08.2022
Çukuralan	Izmir	Bergama	Kaplan	Operation 64426	1,627.78	Au and Ag	525.07	01.05.2008	01.05.2018
Diyadin (Mollakara)	Ağri	Diyadin	Yolcupinar	Operation 55411	24,459.68	Au	276	03.09.2008	03.09.2018
Diyadin (Samanyolu)	Ağri	Taşliçay		Operation 56951	12,000.00	Au	268.5	03.09.2008	03.09.2018
Diyadin (Çakillitepe, Taşkapi)	Ağri	Diyadin		Operation 55410	17,044.54	Au and Ag	133.25	03.09.2008	03.09.2018
Diyadin (Küçükdoğutepe)	Ağri	Merkez	Murat Bezirhabe	Exploration 20056511	1,920.63	NA	NA	28.09.2005	28.09.2010*
Diyadin (Ağadeve)	Ağri	Merkez	Bezirhabe	Operation 20054521	1,980.00	NA	NA	13.08.2013	13.08.2023
Gelintepe, Kapikaya	Izmir	Bergama	Kozak	Operation 25921	4,543.21	Au	400	11.02.2014	11.02.2024
Gıcık	Ankara	Merkez	Pursaklar	Operation 30790	1,380.97	Au	17.34	10.08.2009	10.08.2012*
Hapan	Giresun	Derelı	Konuklu	Operation 82193	1,479.47	NA	NA	03.12.2012	03.10.2022
	Giresun	Şebinkarahisar		Exploration 200806522	1,008.63	NA	NA	08.07.2008	08.07.2013*
	Giresun	Şebinkarahisar		Exploration 200806525	1,430.76	NA	NA	08.07.2008	08.07.2013*
	Giresun	Merkez	Ortakent	Exploration 200802900	1,057.83	NA	NA	10.04.2008	10.04.2013*
	Giresun	Merkez	Ortakent	Exploration 200802901	1,664.44	NA	NA	10.04.2008	10.04.2013*
	Giresun	Merkez	Ortakent	Exploration 200802903	1,790.33	NA	NA	10.04.2008	10.04.2013*
	Giresun	Merkez	Ortakent	Exploration 200803015	1,055.77	NA	NA	14.04.2008	14.04.2013*
	Giresun	Merkez	Ortakent	Exploration 200803016	781.1	NA	NA	14.04.2008	14.04.2013*
	Giresun	Şebinkarahisar		Exploration 200806497	1,850.13	NA	NA	08.07.2008	08.07.2013*
	Giresun	Şebinkarahisar		Exploration 200806499	1,398.6	NA	NA	08.07.2008	08.07.2013*
	Giresun	Şebinkarahisar		Exploration 200806501	1,830.18	NA	NA	08.07.2008	08.07.2013*
	Giresun	Şebinkarahisar		Exploration 200806521	1,495.74	NA	NA	08.07.2008	08.07.2013*
	Giresun	Şebinkarahisar		Exploration 200806523	720.12	NA	NA	08.07.2008	08.07.2013*
	Giresun	Derelı		Exploration 200901317	642.14	NA	NA	31.03.2009	31.03.2014

Table 2.1.1 Cont'd: Property Tenure and Permit Information

Property	City	Small Town	Village	License Type & No.	License (ha)	Permit	Permit (ha)	Start Date	End Date
Hapan (cont'd)	Giresun	Şebinkarahisar		Exploration 201101098	1,574.88	NA	NA	08.07.2008	08.07.2013*
Hasandağ	Giresun	Alucra	Demirozu	Operation 61929	3,200.01	Au	725	17.09.2009	17.09.2019
	Giresun	Alucra	Demirozu	Operation 61840	1,600.00	NA	NA	30.09.2009	30.09.2019
Himmetdede	Kayseri	Merkez	Himmetdede	Operation 82972	3,985.23	Au	1,297.84	06.07.2011	06.07.2021
	Kayseri	Merkez	Elmali	Operation 20057514	1,999.51	NA	NA	06.07.2011	06.07.2021
Işıkdere	Gümüşhane	Kelkit	Işikdere	Operation 201001935	1,641.59	NA	NA	21.09.2010	21.09.2020
	Gümüşhane	Merkez	Kirikli	Exploration 200902415	1,188.85	NA	NA	21.05.2009	21.05.2014
Karapinar	Çanakkale	Bayramic	Karapinar	Exploration 201001197	1,880.92	NA	NA	05.07.2011	05.07.2022
Kaymaz	Eskişehir	Sivrihisar	Kaymaz	Operation 82567	3,013.44	Au and Ag	1,070.47	10.10.2010	10.10.2015
	Eskişehir	Sivrihisar	Kaymaz	Operation (5262)43539	8,890.16	5,262 Au and Ag	479.01	12.08.2010	12.08.2015
Kırıntı	Gümüşhane	Şiran	Kırıntı	Operation 45002	599.98	Au and Cu	8.13	24.09.2004	24.09.2014*
Kubaşlar	Balikesir	Ayvalik	Bağyüzü	Operation 200808237	538.63	Au and Ag	122.07	15.11.2012	15.11.2022
	Balikesir	Ayvalik	Bağyüzü	Operation 200709860	9.66	Au and Ag	9.66	14.11.2012	14.11.2022
Mastra	Gümüşhane	Merkez		Operation 6642	1,758.51	Au, Ag, Zn, Cu and Pb	Au and Ag 755.4; Zn, Cu and Pb 1,215.19	24.07.2011	24.07.2021
	Gümüşhane	Merkez	Mescitli	Operation 4345	1,097.99	Au, Ag and Al	Au and Ag 758.49; Al 230.72	10.06.2004	10.06.2014*
Ovacık, G Vein, Kiratli, Narlica, Dedetepe	İzmir	Kinik	Turanli	Operation 18201	26,040.26	Au and Ag	987.5	06.12.2001	02.11.2021
Söğüt	Bilecik	Merkez	Kizilsaray	Operation 82050	2,975.82	Wolframite, Au, and Ag	Wolframite 2,975.82; Au and Ag 132.25	24.02.2013	25.02.2023
	Bilecik	Söğüt	Dudas	Operation 20053973	1,792.69	Au	111.55	08.02.2010	08.02.2020
	Bilecik	Bozüyük	Hayriye	Operation 20054122	202.5	NA	NA	13.08.2012	13.08.2022
	Bilecik	Söğüt		Operation 83624	1,774.29	NA	NA	27.06.2012	27.16.2022
	Bilecik	Söğüt		Exploration 20066048	1,288.67	NA	NA	23.06.2006	23.06.2011*
Torul	Gümüşhane	Torul	Sive	Operation 45076 (7962)	3,914.90	Au and Ag	288	17.11.2004	17.11.2014*
Katranci	Niğde	Ulukışla	Alihoca	Operation 72032	3,875.36	Na	Na	18.10.2010	18.10.2020
	Niğde	Ulukışla	Kocakkoy	Exploration 20058722	266.55	Na	Na	06.12.2005	06.12.2010*
Total					**182,183.84**				

Source: Koza, 2013

*Licenses in the process of being renewed or converted to operating licenses. Currently the applications are at the General Directorate of Mining Affairs



Source: Basemap = ESRI Basemap World_Topo_Map, 2013

Figure 2.1.1: Location Map of Koza Projects in Turkey

3 Mineral Resources

The Mineral Resources have all been estimated by the Koza group.

The resources were estimated at the various projects using the same general technique of constructing wireframe solids to define the vein structures or grade shells, compositing the drillholes within the vein or grade shells, and then estimating grade within the wireframes using only the composites within the wireframe. The grades were estimated using ordinary kriging or inverse distance squared as appropriate according to drill spacing and number of samples.

The resource cutoff grades are based on a price of US$1,450 per ounce of gold. The resources are stated as of December 31, 2014 and are inclusive of that material subsequently converted to reserves. The Measured, Indicated and Inferred resources for each asset are shown in Tables 3.1a through 3.1d.

Koza is stating the Çukuralan and Akbaştepe resources inside a pit shell with an open pit cutoff grade and outside the pit shell with an underground cutoff grade, which is an appropriate practice for these deposits. Koza is also starting to use resource pit shells for the new resource areas to constrain the resources. SRK commends this practice as it is becoming an industry standard to use pit shells to define the “potentially mineable” aspect of resources. SRK suggests that Koza initiate this practice at the older resource areas as well, especially Kaymaz and Himmetdede and the Ovacik satellite deposits.

Table 3.1a: Koza Mineral Resource, Inclusive of Ore Reserves, as of December 31, 2014 – Measured

Area	Mining	Process	Cutoff Au g/t	Measured				
				kt	Au g/t	Ag g/t	Au koz	Ag koz
Ovacik [1]	Underground	Ovacik Mill	1.65	1,616	5.06	3.3	263	173
Çukuralan [2]	Open Pit	Ovacik Mill	0.80	1,988	4.37	1.4	279	88
	Underground	Ovacik Mill	1.85	5,488	5.82	2.1	1,027	374
Narlica	Open Pit	Ovacik Mill	0.70					
Kaymaz	Open Pit	Kaymaz Mill	0.80	1,074	3.43	4.7	118	162
Mastra	Underground	Mastra Mill	1.95	372	6.13	6.6	73	79
Mastra North	Open Pit	Mastra Mill	0.90					
Himmetdede	Open Pit	Leach	0.15	7,063	0.66		151	
		Leach - sulfide	0.50	22	0.80		1	
Mollakara	Open Pit	Leach - oxide	0.26	2,942	0.80	0.2	76	20
		Leach - trans	0.48	570	1.26	0.4	23	7
		Mill - sulfide	0.39	9,481	1.11	0.2	338	55
Söğüt Akbaştepe [2]	Open Pit	Söğüt Mill	1.75	420	15.83	1.4	214	19
	Underground	Söğüt Mill	3.00	580	12.99	1.2	242	22
Söğüt Hayriye	Open Pit	Söğüt Mill	0.60					
Işıkdere	Open Pit	Mastra Mill	1.15					
Kubaşlar	Open Pit	Ovacik Mill	1.10					
Ovacik Rom	Stockpile	Ovacik Mill		95	5.89	4.0	18	12
Çukuralan RoM	Stockpile	Ovacik Mill		206	5.11	2.8	34	19
Çoraklik RoM	Stockpile	Ovacik Mill		234	3.19	6.5	24	49
Mastra Rom	Stockpile	Mastra Mill		79	5.91	5.8	15	15
Himmetdede RoM	Stockpile	Himmetdede		33	0.94		1	
Ovacik Mill	Stockpile	Ovacik Mill		61	6.59	4.5	13	9
Mastra Mill	Stockpile	Ovacik Mill		18	4.74	5.3	3	3
Ovacik LG	Stockpile	Ovacik Mill						
Çukuralan LG	Stockpile	Ovacik Mill						
Küçükdere LG	Stockpile	Ovacik Mill						
Mastra LG	Stockpile	Mastra Mill						
Kaymaz LG	Stockpile	Kaymaz Mill						
Total Measured				**32,342**	**2.80**	**1.1**	**2,913**	**1,103**

[1] Ovacik Resource corrected in January 2015
[2] Open pit resources stated within a pit optimization shell at US$1,450; underground resources are outside the shell

Table 3.1b: Koza Mineral Resource, Inclusive of Ore Reserves, as of December 31, 2014 – Indicated

Area	Mining	Process	Cutoff Au g/t	Indicated				
				kt	Au g/t	Ag g/t	Au koz	Ag koz
Ovacik [1]	Underground	Ovacik Mill	1.65	703	3.20	1.9	72	43
Çukuralan [2]	Open Pit	Ovacik Mill	0.80	739	4.38	1.5	104	35
	Underground	Ovacik Mill	1.85	4,382	5.04	1.4	710	200
Narlica	Open Pit	Ovacik Mill	0.70	376	2.48	10.8	30	131
Kaymaz	Open Pit	Kaymaz Mill	0.80	2,335	4.58	5.3	344	397
Mastra	Underground	Mastra Mill	1.95	399	5.49	9.0	70	115
Mastra North	Open Pit	Mastra Mill	0.90	291	2.05	5.8	19	54
Himmetdede	Open Pit	Leach	0.15	41,589	0.58		775	
		Mill - sulfide	0.50	2,779	1.27		114	
Mollakara	Open Pit	Leach - oxide	0.26	9,414	0.73	0.2	222	58
		Leach - trans	0.48	2,570	0.86	0.2	71	18
		Mill - sulfide	0.39	34,123	0.98	0.2	1,080	227
Söğüt Akbaştepe [2]	Open Pit	Söğüt Mill	1.75	2	3.66	1.3		
	Underground	Söğüt Mill	3.00	1,350	14.62	1.1	634	46
Söğüt Hayriye	Open Pit	Söğüt Mill	0.60	165	3.07		16	
Işıkdere	Open Pit	Mastra Mill	1.15	88	1.69	9.6	5	27
Kubaşlar	Open Pit	Ovacik Mill	1.10	1,726	1.91	13.6	106	754
Ovacik Rom	Stockpile	Ovacik Mill						
Çukuralan RoM	Stockpile	Ovacik Mill						
Çoraklik RoM	Stockpile	Ovacik Mill						
Mastra Rom	Stockpile	Mastra Mill						
Ovacik Mill	Stockpile	Ovacik Mill						
Mastra Mill	Stockpile	Mastra Mill						
Ovacik Low Grade	Stockpile	Ovacik Mill		158	1.40	1.5	7	8
Çukuralan Low Grade	Stockpile	Ovacik Mill		573	0.86	1.2	16	22
Küçükdere Low Grade	Stockpile	Ovacik Mill		389	1.36	6.3	17	79
Mastra Low Grade	Stockpile	Mastra Mill		310	1.18	3.2	12	32
Kaymaz Low Grade	Stockpile	Kaymaz Mill		67	0.93	2.7	2	6
Total Indicated				**104,527**	**1.32**	**0.7**	**4,427**	**2,249**

[1] Ovacik Resource corrected in January 2015
[2] Open pit resources stated within a pit optimization shell at US$1,450; underground resources are outside the shell

Table 3.1c: Koza Mineral Resource, Inclusive of Ore Reserves, as of December 31, 2014 – Measured and Indicated

Area	Mining	Process	Cutoff Au g/t	Measured and Indicated				
				kt	Au g/t	Ag g/t	Au koz	Ag koz
Ovacik [1]	Underground	Ovacik Mill	1.65	2,319	4.50	2.9	335	215
Çukuralan [2]	Open Pit	Ovacik Mill	0.80	2,728	4.37	1.4	384	122
	Underground	Ovacik Mill	1.85	9,870	5.47	1.8	1,737	574
Narlica	Open Pit	Ovacik Mill	0.70	376	2.48	10.8	30	131
Kaymaz	Open Pit	Kaymaz Mill	0.80	3,409	4.22	5.1	462	558
Mastra	Underground	Mastra Mill	1.95	771	5.80	7.8	144	194
Mastra North	Open Pit	Mastra Mill	0.90	291	2.05	5.8	19	54
Himmetdede	Open Pit	Leach	0.15	48,652	0.59	0.0	926	0
		Mill - sulfide	0.50	2,801	1.27	0.0	114	0
Mollakara	Open Pit	Leach - oxide	0.26	12,356	0.75	0.2	298	78
		Leach - trans	0.48	3,140	0.93	0.2	94	24
		Mill - sulfide	0.39	43,604	1.01	0.2	1,418	282
Söğüt Akbaştepe [2]	Open Pit	Söğüt Mill	1.75	422	15.76	1.4	214	19
	Underground	Söğüt Mill	3.00	1,930	14.13	1.1	877	68
Söğüt Hayriye	Open Pit	Söğüt Mill	0.60	165	3.07	0.0	16	0
Işıkdere	Open Pit	Mastra Mill	1.15	88	1.69	9.6	5	27
Kubaşlar	Open Pit	Ovacik Mill	1.10	1,726	1.91	13.6	106	754
Ovacik Rom	Stockpile	Ovacik Mill		95	5.89	4.0	18	12
Çukuralan RoM	Stockpile	Ovacik Mill		206	5.11	2.8	34	19
Çoraklik RoM	Stockpile	Ovacik Mill		234	3.19	6.5	24	49
Mastra Rom	Stockpile	Mastra Mill		79	5.91	5.8	15	15
Himmetdede RoM	Stockpile	Himmetdede		33	0.94	0.0	1	0
Ovacik Mill	Stockpile	Ovacik Mill		61	6.59	4.5	13	9
Mastra Mill	Stockpile	Mastra Mill		18	4.74	5.3	3	3
Ovacik Low Grade	Stockpile	Ovacik Mill		158	1.40	1.5	7	8
Çukuralan Low Grade	Stockpile	Ovacik Mill		573	0.86	1.2	16	22
Küçükdere Low Grade	Stockpile	Ovacik Mill		389	1.36	6.3	17	79
Mastra Low Grade	Stockpile	Mastra Mill		310	1.18	3.2	12	32
Kaymaz Low Grade	Stockpile	Kaymaz Mill		67	0.93	2.7	2	6
Total Measured and Indicated				**136,870**	**1.67**	**0.8**	**7,340**	**3,352**

[1] Ovacik Resource corrected in January 2015
[2] Open pit resources stated within a pit optimization shell at US$1,450; underground resources are outside the shell

Table 3.1d: Koza Mineral Resource, Inclusive of Ore Reserves, as of December 31, 2014 – Inferred

Area	Mining	Process	Cutoff Au g/t	Inferred				
				kt	Au g/t	Ag g/t	Au koz	Ag koz
Ovacik [1]	Underground	Ovacik Mill	1.65	251	4.00	2.1	32	17
Çukuralan [2]	Open Pit	Ovacik Mill	0.80	32	2.87	1.3	3	1
	Underground	Ovacik Mill	1.85	3,123	5.33	2.1	535	212
Gelintepe	Open Pit	Ovacik Mill	1.85	48	3.54	2.3	5	3
Narlica	Open Pit	Ovacik Mill	0.70	125	3.05	11.1	12	45
Kiratli	Open Pit	Ovacik Mill	0.75	1,786	2.32	38.6	133	2,216
Kubaşlar	Open Pit	Ovacik Mill	1.10	204	2.17	12.5	14	82
Aslantepe [2]	Open Pit	Ovacik Mill	0.85	263	2.71	8.4	23	71
Kaymaz	Open Pit	Kaymaz Mill	0.80	1,190	4.13	5.0	158	190
Mastra	Underground	Mastra Mill	1.95	527	7.00	5.9	119	100
Mastra North	Open Pit	Mastra Mill	0.90	24	2.39	5.5	2	4
Himmetdede	Open Pit	Leach	0.15	1,773	0.36		20	0
		Mill - sulfide	0.50	74	0.78		2	0
Mollakara	Open Pit	Leach - oxide	0.26	7,426	0.47	0.1	112	23
		Leach - trans	0.48	4,582	0.69	0.1	102	18
		Mill - sulfide	0.39	94,064	0.83	0.1	2,520	435
Söğüt Akbaştepe [2]	Open Pit	Söğüt Mill	1.75	37	2.52	1.3	3	2
	Underground	Söğüt Mill	3.00	1,348	11.90	1.2	516	52
Söğüt Korudanlık	Underground	Söğüt Mill	1.70	5,907	8.59	0.4	1,632	83
Söğüt Hayriye	Open Pit	Söğüt Mill	0.60	155	3.04	0.4	15	2
Işıkdere	Open Pit	Mastra Mill	1.15	359	1.72	5.8	20	67
Hasandağ [3]	Open Pit	Leach - oxide	0.20	7,799	0.41	0.2	102	59
Total Inferred				**131,098**	**1.44**	**0.9**	**6,080**	**3,684**

[1] Ovacik Resource corrected in January 2015
[2] Open pit resources stated within a pit optimization shell at US$1,450; underground resources are outside the shell
[3] Resource within the Koza license

4 Ore Reserves

LoM plans and resulting reserves are determined based on a gold price of US$1,250/oz for the underground and open pit mines and projects. Although the current three year moving average is US$1449/oz, the spot price is lower and Koza have decided to use the default $US1,250/oz price estimate that is common in the industry through 2013 and 2014. Table 4.1 summarizes the proven and probable reserves for the open pit, underground and stockpiles for the Koza assets as of December 31, 2014.

Table 4.1: Koza Ore Reserve, as at December 31, 2014

Area	Process	Proven				
		kt	g/t Au	g/t Ag	koz Au	koz Ag
Ovacik Underground	Ovacik Mill	190	5.31	3.0	32	18
Çukuralan Open Pit	Ovacik Mill	1,920	4.46	1.4	275	85
Çukuralan Underground	Ovacik Mill	4,554	4.74	1.7	694	246
Kaymaz	Kaymaz Mill	935	3.69	4.9	111	148
Mastra Underground	Mastra Mill	134	5.31	4.9	23	21
Mastra North Open Pit	Mastra Mill					
Himmetdede	HD Leach Pad	7,200	0.63		145	
Mollakara	Leach	3,529	0.87	0.2	99	27
Akbaştepe Open Pit	Akbaştepe Mill	346	19.36	1.5	216	17
Akbaştepe Underground	Akbaştepe Mill	594	9.96	0.9	190	16
Kubaşlar	Ovacik Mill					
Ovacik Rom Stockpile	Ovacik Mill	95	5.89	4.0	18	12
Çukuralan Rom Stockpile	Ovacik Mill	206	5.11	2.8	34	19
Çoraklık Rom Stockpile	Ovacik Mill	234	3.19	6.5	24	49
Mastra Rom Stockpile	Mastra Mill	79	5.91	5.8	15	15
Himmetdede Rom Stockpile	HD Leach Pad	33	0.94		1	
Ovacik Mill Emergency Stockpile	Ovacik Mill	61	6.59	4.5	13	9
Mastra Mill Emergency Stockpile	Mastra Mill	18	4.74	5.3	3	3
Küçükdere Rom Stockpile	Ovacik Mill					
Kaymaz Rom Stockpile	Kaymaz Mill					
Total Proven		**20,127**	**2.93**	**1.1**	**1,893**	**686**
		Probable				
Area		**kt**	**g/t Au**	**g/t Ag**	**koz Au**	**koz Ag**
Ovacik Underground	Ovacik Mill	37	2.95	2.8	4	3
Çukuralan Open Pit	Ovacik Mill	693	4.59	1.5	102	33
Çukuralan Underground	Ovacik Mill	3,240	4.23	1.1	441	115
Kaymaz	Kaymaz Mill	2,037	5.04	5.5	330	360
Mastra Underground	Mastra Mill	128	4.98	5.2	20	21
Mastra North Open Pit	Mastra Mill	90	2.27	7.0	7	20
Himmetdede	HD Leach Pad	18,877	0.78		473	
Mollakara	Leach	11,387	0.75	0.2	275	71
Akbaştepe Open Pit	Akbaştepe Mill		2.48	0.7		
Akbaştepe Underground	Akbaştepe Mill	913	16.73	0.8	491	24
Kubaşlar	Ovacik Mill	927	2.31	14.5	69	433
Ovacik LG Stockpile	Ovacik Mill	158	1.40	1.5	7	8
Çukuralan LG Stockpile	Ovacik Mill	573	0.86	1.2	16	22
Küçükdere LG Stockpile	Ovacik Mill	389	1.36	6.3	17	79
Mastra LG Stockpile	Mastra Mill	310	1.18	3.2	12	32
Kaymaz LG Stockpile	Kaymaz Mill	67	0.93	2.7	2	6
Total Probable		**39,827**	**1.77**	**1.0**	**2,266**	**1,226**

Table 4.1 Cont'd: Koza Ore Reserve, as at December 31, 2014

Area	Process	Proven and Probable				
		kt	g/t Au	g/t Ag	koz Au	koz Ag
Ovacik Underground	Ovacik Mill	227	4.92	3.0	36	22
Çukuralan Open Pit	Ovacik Mill	2,614	4.49	1.4	378	118
Çukuralan Underground	Ovacik Mill	7,793	4.53	1.4	1,135	361
Kaymaz	Kaymaz Mill	2,972	4.62	5.3	441	508
Mastra Underground	Mastra Mill	262	5.15	5.1	43	43
Mastra North Open Pit	Mastra Mill	90	2.27	7.0	7	20
Himmetdede	HD Leach Pad	26,077	0.74		619	
Mollakara	Leach	14,916	0.78	0.2	374	98
Akbaştepe Open Pit	Akbaştepe Mill	347	19.35	3.6	216	40
Akbaştepe Underground	Akbaştepe Mill	1,507	14.06	0.8	681	40
Kubaşlar	Ovacik Mill	927	2.31	14.5	69	433
Ovacik Rom Stockpile	Ovacik Mill	95	5.89	4.0	18	12
Çukuralan Rom Stockpiles	Ovacik Mill	206	5.11	2.8	34	19
Çoraklık Rom Stockpile	Ovacik Mill	234	3.19	6.5	24	49
Mastra Rom Stockpile	Mastra Mill	79	5.91	5.8	15	15
Himmetdede Rom Stockpile	HD Leach Pad	33	0.94		1	
Ovacik Mill Emergency Stockpile	Ovacik Mill	61	6.59	4.5	13	9
Mastra Mill Emergency Stockpile	Mastra Mill	18	4.74	5.3	3	3
Ovacik LG Stockpile	Ovacik Mill	158	1.40	1.5	7	8
Çukuralan LG Stockpiles	Ovacik Mill	573	0.86	1.2	16	22
Küçükdere LG Stockpile	Ovacik Mill	389	1.36	6.3	17	79
Mastra LG Stockpile	Mastra Mill	310	1.18	3.2	12	32
Kaymaz LG Stockpile	Kaymaz Mill	67	0.93	2.7	2	6
Total Proven and Probable		**59,954**	**2.16**	**1.0**	**4,159**	**1,911**

- Refer to relevant sections for detailed footnotes on recovery and cutoff grade
- Reserves based on US$1,250/Au oz
- LG = low-grade

5 Mine Operations

Table 5.1 compares the 2014 mine production achieved for Koza operations with the production schedules estimated in 2013 for each site. A negative reconciliation indicates that the estimate was less than what was actually achieved by operations and a positive number that production was higher than that estimated in the economic model.

The comparisons have been modified to only compare production with the schedule estimate on months when both production and schedule estimates exist. This is because in 2014, there were disruptions to production at Kaymaz, Himmetdede and Mastra.

The critical operations for Koza in 2014 are Çukuralan open pit and underground. On a whole year basis, the open pit estimate for tonnes and grade was excellent but should be cautioned that on a monthly basis the reconciliation was highly variable. For the underground, the tonnage mined was close to that estimated but consistently higher gold grades and ounces were achieved.

For the underground, the operations produced more ounces than predicted and achieved higher grade for a similar estimated ore tonnage. Overall, the technical model underestimated the total ounces by 25%.

For all operations, the technical economic model underestimated tonnage by 3%, gold grade by 11% and ounces mined by13%. This suggests the production schedules used in the technical economic model are performing well as an aggregate although there are large differences for the individual mines.

Table 5.1: 2014 Koza Mine Performance Compared to Technical Economic Model Production Schedule Estimate for 2014

2014 Production	Koza Production				2013 EOY Technical Model				Reconciliation (Predicted vs Actual)		
	Ore Tonne	Au g/t	Ag g/t	Gold Ounces	Ore Tonne	Au g/t	Ag g/t	Au Ounces	Tonnage	Au Grade	Au Ounce
Çukuralan	616,076	6.75	3.96	133,677	617,534	6.76	2.29	134,198	0%	0%	0%
Kaymaz*	243,572	5.01	3.41	39,264	182,846	4.86	4.09	28,574	-25%	-3%	-27%
Çorakliktepe	149,644	4.59	10.58	22,094	86,386	5.59	9.40	15,524	-42%	22%	-30%
Akbaştepe	43,984	3.75	1.40	5,308	111,154	2.29	1.11	8,175	153%	-39%	54%
Open Pit	**1,053,276**	**5.92**	**4.67**	**200,343**	**997,920**	**5.81**	**3.10**	**186,471**	**-5%**	**-2%**	**-7%**
Çukuralan	196,191	9.07	3.76	57,192	193,553	6.97	1.87	43,381	-1%	-23%	-24%
Ovacik	97,738	9.02	6.13	28,333	152,597	5.06	3.28	24,803	56%	-44%	-12%
Mastra**	120,926	6.05	5.70	23,508	83,444	5.17	4.16	13,873	-31%	-15%	-41%
Underground	**414,855**	**8.18**	**4.88**	**109,033**	**429,594**	**5.94**	**2.82**	**82,057**	**4%**	**-27%**	**-25%**
Total	**1,468,131**	**6.55**	**4.73**	**309,376**	**1,427,514**	**5.85**	**3.02**	**268,528**	**-3%**	**-11%**	**-13%**

The LoM production rates vary from year to year depending on open pit versus underground mill feed and available stockpile accumulated. End dates are estimated based on reserves as of 2014 and current mill production rates. Mastra has a process rate of 40,000 t/m, Ovacik operates at 72,000 t/m and Kaymaz design has increased up to 75,600 t/m. Himmetdede is a dedicated heap leach pad operation and Mollakara will be a heap leach operation with scheduled production rates at 600,000 t/y and 500,000 t/y, respectively. Table 5.2 shows the LoM Production Rate and Quantity by Mine Center.

Table 5.2: Operating Unit Production Summary (LoM Values)

Unit Assets	Develop (m)	Waste (kt)	Ore (kt)	Gold (koz)	Silver (koz)	Start Date (1)	End Date
Mastra Unit							
Mastra Open Pit	0	1,132	90	7	20	01 June 2015	01 November 2015
Mastra Underground	229	128	262	43	43	01 July 2015	01 February 2018
Mastra Mines	229	1,260	352	50	63		
Ovacik Unit							
Ovacik Underground	107	40	227	36	20	-	01 July 2021
Kubaşlar Open Pit	0	2,622	927	69	433	01 January 2024	01 November 2024
Çukuralan Open Pit	0	49,192	2,614	377	118	-	01 June 2021
Çukuralan Underground	13,156	1,700	7,793	1,135	360	-	01 September 2030
Ovacik Mines	13,263	53,554	11,560	1,617	932		
Kaymaz Unit							
Kaymaz Mines	-	49,393	2,972	441	508	01 January 2015	01 May 2018
Himmetdede Unit							
Himmetdede Mines	0	51,612	26,077	618	0	01 April 2015	01 April 2020
Mollakara Unit							
Mollakara Mines	0	11,012	14,916	374	98	01 April 2019	01 July 2021
Akbaştepe Unit							
Akbaştepe Open Pit	0	16,940	347	216	17	01 January 2018	01 January 2020
Akbaştepe Underground	4,883	396	1,507	681	40	01 January 2018	01 September 2024
Akbaştepe Mines	4,883	17,336	1,854	897	57		

(1) Denotes start dates and end dates for the asset. A "-" means the asset was operational prior to the beginning of the modeling period.

5.1 Process Hubs

The reserves for the Koza mining operations are affected by transportation, recovery and processing costs associated with the processing hub strategy employed by the company. Table 5.1.1 details the production rate and recovery assumptions associated with each processing facility.

Table 5.1.1: Mill Parameters

Parameter	Units	Mastra Mill	Ovacik Mill	Kaymaz Mill	Himmetdede Heap Leach	Mollakara Heap Leach	Akbaştepe Mill
Operating Capacity	t/month	40,000	72,000	75,600	500,000	500,000	30,000
Gold Recovery	%	94%	95%	87%	72%	65%	82%
Silver Recovery	%	75%	75%	75%	50%	10%	75%

Ovacik

The Ovacık Mine is an underground and open pit complex. The open pit completed operation in September 2007. It has been partially backfilled and no further production is currently planned although engineering studies continue as to the suitability of the old pit as a tailings storage facility.

Two primary vein systems are found on the property. The M Vein system tends to be higher grade and more shallowly dipping and is mined using a cut and fill method. The S Vein is lower grade, steeper and mainly mined using an open stoping method with backfill.

Underground mining commenced in June 2005 and the current ore reserve gives a lifespan through July 2021 at an approximate ore mining rate of 500 t/d for the 1st half of 2015 then dropping to 100 t/d after that. Koza will reduce operations at Ovacik to 1 shift per day and move the other workers to the second underground portal at Çukuralan.

The 2014 reserve estimates for the Ovacık underground used a mining cost of US$55/t in the conversion of resources to reserves.

Çukuralan

The Çukuralan mine is the flagship operation for Koza, closely followed by Kaymaz. The exploration success, high grade production achieved and ability for operations to expand along strike (particularly underground) and at depth paint a positive future for the project. Given the increase in mine life through 2030 as defined by the current reserve, the remote location of the process plant (Ovacık) has been questioned and moving the process infrastructure closer to Çukuralan is being investigated.

The Çukuralan Mine is an underground and open pit complex approximately 40 km from Ovacık in wooded mountainous terrain where both mining methods are being applied simultaneously. The terrain surrounding Çukuralan, combined with water diversion and waste disposal constraints, has dictated a reduced open pit footprint and careful phase design. Where mine sequencing is affected by environmental constraints, resulting in reduced open pit reserves, underground operations are applied. The Çukuralan underground has a similar layout to the Ovacık underground and utilizes cut and fill mining methods with the inclusion of some open stoping where possible. Koza are preparing to open a second portal at Çukuralan to accelerate underground high grade production that cannot be mined via open pit methods due to land usage constraints and stripping constraints.

Stockpiles generated by the open pit and underground operations that are available for processing are transported the Ovacık processing facility via public road.

The 2014 reserve estimates for the Çukuralan underground used a mining cost of US$38/t in the conversion of resources to reserves.

The 2014 reserve estimates for the Çukuralan open pit used a mining cost of US$1.93/t in the conversion of resources to reserves through pit optimization and design.

An additional US$8/t.ore transportation cost for both open pit and underground mines is incurred for transport to the Ovacık processing facility.

Mastra

The Mastra Mine was closed on June 2014 with only 120 kt of ore (two months production) produced in the first six months of the year. The main reason for the shut down relates to a forestry permit that

was not provided to Koza concerning the extension of the main tailings dam and waste rock facility onto forestry land.

The ore at Mastra is to be extracted using primarily underground mining methods and a small open pit.

The 2013 reserve estimates for the Mastra underground used a mining cost of US$47/t to US$52/t in the conversion of resources to reserves.

Kaymaz

The Kaymaz project is located approximately 70 km from Eskişehir on relatively flat terrain. The Kaymaz site is separated into the mining areas of Damdamça, Mermerlik, Kizilagil and Main Zone. The Damdamça orebody is approximately 3.5 km to the north west of the Main zone with the Mermerlik orebody approximately 1.5 km to the south.

The Damdamça pit was exhausted in April 2014. Operations at the main zone have re-commenced after being shut down in March 2014 due to permitting issues and will provide the majority of ore to the process plant after Damdamça was depleted.

RoM grade is transported directly to the Kaymaz processing facility stockpiles where it is blended and fed to the process plant.

Mine operations are similar to other Koza operations with contractors used for open pit excavation, waste disposal and ancillary operations. Koza act as mine owner and provide grade control technicians.

Akbaştepe

The Akbaştepe deposit is located approximately 40 to 50 km by paved road from the Kaymaz mill. Akbaştepe was mined in 2013 with oxide material sent to Kaymaz for batch processing. So operations have technically begun. It is planned that a mill complex will be created for the continued development of the Söğüt region.

A prefeasibility study was completed by Koza on the Akbaştepe sulfide mineralization and it was determined that a combination of open pit and underground mining are feasible to liberate the 900 kOz defined. The Akbaştepe deposit is supported by high gold grades above 15 g/t that are able to pay for difficult refractory processing and high strip ratios in the pit.

The 2014 reserve estimates for the Akbaştepe underground and open pit used a processing cost of US$70/t and US$50/t for underground mining cost in the conversion of resources to reserves.

Himmetdede

Himmetdede will be an open pit heap leach operation comprising Himmetdede and Himmetdede North. All mine site operations will be owner operated with minimal reliance on third party contractors and thus constitutes a business change for Koza. Delays in receiving the necessary permits for operations have prevented full scale production at Himmetdede throughout 2014. Koza commenced legal action to accelerate the permit release and received the required permit in January of 2015. Mining will target a 50 kt/d total material movement production rate that will allow up to 20 kt/d of ore delivery to crusher and ultimately the heap leach pad. This will equate to a gold production rate between 6,000 and 9,000 oz Au per month depending on grade. The mine life is currently estimated to continue for approximately five years.

Koza has purchased Komatsu equipment for major loading and earthmoving in combination with Volvo 40 t highway trucks. There are four Sandvik DX800 blast rigs using 101 mm bits for grade control and blasting. The equipment is all new and the majority of equipment can be supported from the major town of Kayseri.

Mollakara

The Mollakara orebody is located on the side of a valley surrounded by hilly terrain in eastern Turkey. The orebody is intersected by a small/medium sized river and comprises oxide and transition material which is suitable for heap leaching. The sulfide material that continues under the river is considered a resource only until further metallurgical testwork has been initiated. Due to the limited space for heap leach pads, waste dump locations, and the environmental concerns of mining near a major watershed, only the oxide and transition material is being studied at this time.

Mollakara is a development Project with mine production expected to begin in 2019 and operate through 2021. An EIA permit has been obtained for the oxide mine operation. However, this will need to be upgraded should the project expand to mine the sulfide portion of the deposit.

Due to the difficult mining conditions faced during the winter months, Koza is planning on mining between April and November each year with approximately 7 Mt of leach material stockpiled at the heap leach pad.

6 Mineral Processing

Ovacik

The Ovacik process plant incorporates a conventional carbon-in-pulp (CIP) cyanidation flowsheet that consists of two-stage crushing, two-stage grinding, cyanide leaching with oxygen injection, CIP adsorption of the dissolved gold, carbon elution, electrowinning and smelting through to doré metal.

The Ovacik process plant was initially designed for a throughput of 300,000 t/y although it became evident that the design grind size at 80% -38µm was finer than required and that increased throughput could be achieved with only a minor loss in recovery at a coarser grind of 80% -75µm. It is notable that plant annual throughput increased steadily to 658,050 ore tonnes by 2007 during the period when ore was sourced from the Ovacik open pit and underground mines. During the period from 2009 to 2010 plant throughput was further increased to over 800,000 t. This was due to the processing of ore sourced from the Küçükdere mine, which was significantly softer than Ovacik ore, and as a result, could be processed at a higher tonnage rate while maintaining the target grind and recovery levels. During 2011 to 2014, ore has been sourced predominantly from the Çukuralan mine with some ore contributed from the Ovacik underground mine and the Çoraklıktepe open pit mine. During this period, annual production steadily increased to as high as 879,411 t.

Gold recovery from the Ovacik process plant has been remarkably consistent over the years, ranging from 94 to 96%. During 2014 gold recovery averaged 95.4%. Silver recovery has been much more variable over the years, ranging from almost 78% during the initial production years and declining to as low as 49% (2010) as the silver grade declined and ore sources changed. Silver recovery averaged almost 64% during 2014. Ore will continue to be sourced from Çukuralan during the next several years and it is reasonable to expect gold and silver recoveries in the range of 95% and 60%, respectively.

Operating costs for 2013 were US$11.61/t, and declined to US$10.87/t during 2014. A significant portion of the cost decline is attributed to a decline in unit energy consumption, as well as the effect of exchange rate fluctuation.

Mastra

The Mastra process plant initiated operations during March 2009 and continued production until it was shut down in February 2014. As such, the Mastra process plant reported production for only January and February during 2014.

The Mastra process plant flowsheet incorporated two-stage crushing, two-stage grinding (rod mill and ball mill), hydrocyclone classification, thickening, cyanide leaching, carbon adsorption, stripping and smelting to produce a final doré product. The tails were detoxified for the destruction of cyanide prior to discharge by gravity to the lined tailings storage facility. Following initial plant commissioning it was found that cyanide soluble minerals in the ore (such as chalcocite) were creating significant process problems including:

- Excessive cyanide consumption;
- High copper contamination of the final doré product; and
- Inability to detoxify the final tailings to required cyanide levels.

To remedy this problem was the installation of a sulfidization, acidification, recycling, and thickening (SART) circuit. The circuit was designed to remove cyanide soluble copper from the process, which is precipitated and recovered as a marketable product, and regenerate cyanide for reuse in the leach circuit. The successful incorporation of the SART circuit enabled the processing of ores with higher levels of cyanide soluble copper without significant penalty.

During 2014, ore from the Mastra mine averaged about 6.0 g/t Au and 5.6 g/t Ag. Overall gold recovery averaged 91.0% and overall silver recovery averaged 50.9%. Operating costs averaged US$28.15/t in 2013 and US$31.70 during 2014 (Jan to Feb).

Kaymaz

The Kaymaz process plant incorporates a conventional carbon-in-pulp (CIP) cyanidation flowsheet that consists of two-stage crushing, two-stage grinding, preaeration, cyanide leaching with oxygen addition, CIP adsorption of the dissolved gold, carbon elution, electrowinning and smelting through to doré metal. The process plant capacity was expanded to about 105 t/h (2,500 t/d) during 2013 with the installation of additional crushing and grinding capacity. The expanded process plant was commissioned during October 2013.

The plant expansion included installation of new primary and secondary crushers along with the addition of a new rod mill, ball mill and grinding control thickener and installation of larger inter-stage screens in the CIP circuit. The leach circuit tankage was not expanded, resulting in the reduction of overall leach retention time from 34 hours to about 17 hours. Koza has conducted metallurgical investigations that confirm that 17 hour leach retention is sufficient to achieve target gold extraction. The basic process flowsheet is identical to the previous flowsheet; however the grind size at the higher capacity is somewhat finer at about P_{80} 58 µm.

Mining activities during 2014 at Kaymaz were curtailed after April due to permit issues, and much of the production for the balance of the year was derived from stockpiled ore and from ore hauled from the Söğüt open pit mine. Process operations were suspended at the end of November with no production reported for December. A total of 659,178 t of ore were processed at an average grade of 4.88 g/t Au and 3.66 g/t Ag. Overall gold recovery averaged 85.6% and overall silver recovery averaged 58.9%, resulting in the production of 92,482 poured ounces of gold and 46,889 poured ounces of silver.

Unit processing costs for 2013 averaged US$37.11/t and during 2014 unit processing costs averaged US$17.91. The lower unit operating cost for 2014 is, in part, attributed to the higher production rates following the plant expansion, as well as the impact of exchange rate fluctuations.

Mollakara

Metallurgical Investigations

Extensive metallurgical investigations have been conducted by McClelland Laboratories, Inc. (McClelland) on drill core samples from Mollakara. This work included initial bottle roll variability testing on 35 composites selected to represent calc-schist (CCS) and volcanic epiclastic (VVC) lithologies in both the oxide and transition zones of the deposit. The results of this variability testwork were used to formulate six test composites (two from the transition zone and four from the oxide zone) for column leach testwork at P_{80} -32 mm and P_{80} -9.5 mm crush sizes.

Column tests on the oxide composites demonstrated that this ore type was readily amenable to simulated heap leach cyanidation treatment, at both crush sizes and gold extraction was not sensitive to the feed sizes tested. At the P_{80} -32 mm crush size gold extractions ranged from 72.7 to 85.1% at the P_{80} -9.5 mm crush size gold extractions ranged from 72.7 to 87.2%.

These results indicated that leaching at a coarser crush size might be possible. To demonstrate this possibility, Koza ran additional column tests on bulk ore composites at both 25 mm and 90 mm crush sizes. At the 90 mm crush size 67.5% of the gold was extracted after 56 days of cyanide leaching and rinsing.

Process Plant

Koza is currently considering heap leaching Mollakara ore at the rate of 6 million tonnes per year. RoM ore would be crushed to -90 mm in a single-stage of crushing and then conveyed or truck-hauled to the leach pad. The ore would then be leached with a weak cyanide solution (~400 ppm NaCN) for about 60 days.

Gold contained in the pregnant leach solution would then be recovered in a six-stage carbon-in-column (CIC) carbon adsorption circuit where the carbon is moved through the circuit counter-currently to the flow of the pregnant leach solution. It is expected that gold will load onto the carbon to a concentration of about 4,000 to 5,000 g/t Au. The barren solution exiting the CIC circuit would be pumped to the barren pond where the alkalinity and cyanide concentration would be adjusted to the proper levels prior to being recycled back to the heap leach.

The loaded carbon would be trucked to Koza's near-by Mastra Gold Mine where the gold would be stripped from the carbon with a hot caustic solution containing about 3% NaCN. The redissolved gold would be recovered in electrolytic cells to produce a precious metal cathode sludge which would be filtered, retorted to remove mercury and then refined to produce a final doré product. It should be noted that the mercury content of the Mollakara ore is sufficiently high that retorting may be required in the gold recovery circuit to remove the contained mercury prior to refining.

Estimated Recovery

At a P_{80} 90 mm crush size, SRK estimates an overall gold extraction of ~69% on the oxide ore, based on the average oxide ore gold extraction of 77.3% obtained during the McClelland test program at a 32 mm crush size, adjusted down by 5.4% to allow for reduced gold extraction at the coarser P_{80} 90 mm crush size. An additional 3% reduction in gold extraction is taken to allow for inefficiencies normally encountered in a commercial heap.

Estimated Plant Operating Cost

Process plant operating costs are estimated at US$4.98/t and assume the operation of an "on/off" heap leach at a cost of US$1.69/t of ore for loading and unloading. Although a conventional multi-lift heap leach operation is anticipated, the cost of an "on/off" heap leach operation is included in the cost analysis due to the high clay content of the ore, and concern for reduced percolation rates in a multi-lift operation. Load-permeability tests are currently underway to assess the potential for reduced permeability in a multi-lift heap.

Himmetdede

Column percolation leach tests were conducted by McClelland in 2012 on each of the six composites at P_{80} -32 mm and P_{80} -9.5 mm crush sizes to determine gold extraction, extraction rate, reagent

requirements and feed size sensitivity, under simulated heap leaching conditions. The ore charges were agglomerated by adding the appropriate quantity of lime and cement, wetting with water to optimum moisture content, mechanically tumbling to affect agglomeration, and curing in 3 m high leaching columns before applying leach solution. Leaching was conducted by applying cyanide solution at a concentration of 1.0 g/L NaCN at a rate of 0.20 Lpm/m^2 (0.005 gpm/ft^2. Gold extractions at the P_{80} -9.5 mm crush size averaged 80.2% (ranging from 70.3 to 85.7%) and gold extractions at the P_{80} -32 mm crush size have averaged 79.0% (ranging from 69.2 to 86.4%).

Koza conducted additional metallurgical testing throughout 2014 to further investigate heap leach characteristics of the upper, middle and lower zones of the Himmetdede deposit. This work included drilling a total of 12 metallurgical PQ drill core holes to achieve lithology and spatial representation throughout the deposit. The purpose of this test program was to:

- Determine the optimum crush size for heap leaching;
- Determine the size by size gold distribution;
- Establish whether agglomeration is required;
- Determine optimum reagent additions for column leach tests;
- Test the percolation properties versus simulated heap height;
- Test the effect of agglomeration; and
- Confirm the optimum cement addition rate.

It was found that the upper zone and middle zone composites were relatively insensitive to crush size. A crush size of – 50 mm would be adequate for the upper and middle ore zones. The lower zone composite was shown to be very sensitive to crush size and that a crush size of -9.5 mm is indicated.

Process Plant

Metallurgical testwork has demonstrated that gold from Himmetdede oxide ore is readily recoverable using standard heap leach cyanidation technology. Koza initiated development of the Himmetdede mine, heap leach and process facilities during 2013, with completion expected during the first quarter 2014.

Run of Mine (RoM) ore will be crushed at the rate of 6 MT/y in a two-stage crushing plant operated in closed circuit with vibrating screens to produce a final crushed product of approximately P_{80} -32 mm. The crushed ore will be agglomerated with lime and cement and then conveyed to the heap leach pad with a series of grasshopper-type conveyors and then loaded onto the heap with a radial stacker. The ore will then be leached with a weak cyanide solution (~400 ppm NaCN). The leach cycle time required to achieve ultimate projected gold recoveries may require 120 to 180 days. The column leach tests demonstrated that gold extraction in the columns was essentially complete after about 60 days at the P_{80} 32 mm crush size. In order to scale-up to a commercial operation a 3X factor is typically applied to allow for inefficiencies normally encountered in full size heap leach operations.

Gold contained in the pregnant leach solution will be recovered in a five-stage CIC carbon adsorption circuit where the carbon is moved through the circuit counter-currently to the flow of the pregnant leach solution. The loaded carbon will then be pumped to the carbon strip circuit where the gold will be stripped from the carbon with a hot caustic solution containing about 3% NaCN. The redissolved gold will be recovered in electrolytic cells to produce a precious metal cathode sludge, which will be

filtered, retorted to remove mercury, and then refined to produce a final doré product. It should be noted that the mercury content of the Himmetdede ore is sufficiently high that retorting may be required in the gold recovery circuit to remove the contained mercury prior to refining.

The barren solution exiting the CIC circuit will be pumped to the barren pond where the alkalinity and cyanide concentration will be adjusted to the proper levels prior to being recycled back to the heap leach.

Estimated Recovery

Gold extraction from the Himmetdede oxide ore is estimated at 72% at a P_{80} 32 mm. This recovery estimate includes a 5% reduction in gold extraction to account for inefficiencies normally encountered in a commercial heap.

The results of column testing conducted by Koza in 2014, on upper, middle and lower ore zones indicate that gold recoveries of 86%, 76% and 45%, respectively, can be expected after discounting extraction by 5% to allow for heap leach inefficiencies. This would require crushing the upper and middle ore zones to -50 mm and crushing the lower ore zone to -9.5 mm.

After receiving low recovery results for D3, Koza conducted 38 coarse bottle roll tests for the oxide and sulfide zones in D3. Test results indicate that D3 consists of both oxide and sulfide zones. D3 consists of 83% oxide ore with an average gold recovery of 70%. The sulfide portion averages 30% recovery according to metallurgical testwork. Koza plans to mine the D3 zone selectively according to oxide and sulfide zones.

Estimated Plant Operating Cost

Koza estimates that process plant operating costs are approximately US$3.68/t and assume conventional multi-lift heap leach operation with ore crushed to P_{80} 50 mm. This cost estimate is based on Koza's initial run-of-mine (RoM) heap leaching costs experienced during the fourth quarter 2013 and adjusted for additional costs associated with primary and secondary crushing once construction of the crushing facilities is completed and commissioned.

Estimated Process Facility Capital Costs

Koza has developed a capital cost estimate of US$130.5 million for the Himmetdede processing facilities. These costs were developed from both equipment vendor and contractor quotations provided to Koza.

Söğüt

Metallurgical studies were conducted on test composites from both the Korudanlik oxide deposit and the Akbaştepe sulfide deposit.

Korudanlik

Metallurgical testwork on the Korudanlik oxide samples consisted of diagnostic leach tests, which were used to determine the gold deportment of the sample, gravity separation testwork, cyanidation testwork and solid/liquid separation testwork. Diagnostic leach tests were performed on Oxide composite 2 (RoM) to examine the gold deportment in the sample by systematically accounting for gold association with different mineral assemblages or ore matrices. The results of the diagnostic leach test indicated that approximately 94% of the gold was readily available and could be extracted by gravity separation and cyanidation.

Gravity separation testwork found that the oxide ore is highly amenable to gravity concentration with 55 to 66% of the gold reporting to the gravity concentrate after five passes through a Knelson centrifugal concentrator.

Cyanidation testwork conducted on the gravity tailing from Oxide Composite 1 demonstrated that 96.1% of the contained gold could be extracted after 48 hours of leaching, which yielded an overall gravity + cyanidation gold recovery of 98.7%. Overall gold (gravity + cyanidation) recovery for Oxide Composite 2 was reported at 94.6%. Cyanide and lime consumption were low at 0.08 kg/t NaCN and 0.41 kg/t CaO.

Whole ore cyanidation tests were completed on Oxide Composite 2 (without gravity preconcentration). The results of these tests showed that about 93% of the gold could be extracted at a grind of 80% passing (P_{80}) 80 microns. Gold extractions of about 91% were achieved at coarser grinds of P_{80} 98 -137 microns. Again, cyanide and lime consumption were low at 0.08 kg/t NaCN and 0.43 kg/t CaO.

Akbaştepe

The metallurgical testwork on the Akbaştepe sulfide composites consisted of diagnostic leach tests, gravity separation testwork, flotation, cyanidation testwork, pressure oxidation, roasting and bio-oxidation.

Diagnostic leach tests on the C5 Core Composite indicated that only 19% of the gold was readily available for extraction by direct cyanidation. Similar tests on the C6 Core Composite found that about 51% of the gold was available for extraction by direct cyanidation. As such, gold contained in Akbaştepe sulfide deposit is considered refractory. Due to the refractory nature of the ore, metallurgical testwork was focused on a process flowsheet that would include flotation to recover the contained gold into a bulk sulfide flotation concentrate that could then be oxidized by either pressure oxidation, roasting or bio-oxidation to make the gold in the concentrate amenable to extraction by cyanidation.

A bulk gravity + rougher flotation test was conducted on 170 kg of the Akbaştepe C1-C2-C3 composite in order to generate a sufficient quantity of flotation concentrate for downstream oxidation and cyanidation testwork. This test resulted in the recovery of 18.2% of the gold into a gravity concentrate containing 1,863 g/t Au and representing only 0.06 weight % of the ore. The overall gold recovery (gravity + rougher flotation) was 88% at a combined concentrate grade of 36 g/t Au. The sulfur to carbonate ratio of the rougher concentrate was 1.3 and suitable for subsequent oxidative testwork to evaluate pressure oxidation (POX), roasting and bio-oxidation.

A comparison of the flowsheets tested using the Akbaştepe C1-C2-C3 sample is outlined in Table 6.1 along with estimated gold recoveries. Process flowsheet alternatives that include gravity concentration, bulk sulfide rougher flotation, flotation concentrate oxidation by either POX or BiOx and then CIL cyanidation of the oxidized flotation concentrate are both estimated to result in overall gold recoveries of about 89%.

Table 6.1: Akbaştepe Process Flowsheet Comparison

Flowsheet	Overall Au Recovery %
Gravity (Conc. Leach) + Flotation + Leaching (Intensive Conc. and Tail)	44.6
Gravity (Conc. Leach) + Flotation + Leaching (UFG Conc. and tail)	35.3
Gravity (Conc. Leach) + Flot. Tail Leach + Flot Conc. POX/CIL	89.4
Gravity (Conc. Leach) + Flot. Tail Leach + Flot Conc. Roast/CIL	75.7
Gravity (Conc. Leach) + Flot. Tail Leach + Flot Conc. BIOx/CIL	89.4

Source: SGS, 2014

As part of its prefeasibility study for the Akbaştepe project dated December 2014, Koza designed a process plant to treat refractory gold ore at the rate of 500,000 t/y, equivalent to 1,370 t/d through a process flowsheet that includes:

- Three stage crushing;
- Rod and ball mill grinding;
- Gravity concentration & intensive cyanide leaching;
- Bulk sulfide rougher flotation and thickening;
- Rougher flotation concentrate regrinding;
- Pressure oxidation (POX) of the rougher flotation concentrate;
- Hot curing;
- Counter-current decantation (CCD) thickener washing;
- CIL cyanidation;
- Acid wash, gold elution and electro-winning, carbon regeneration;
- Cyanide detoxification; and
- Fresh and reclaim water supply and distribution.

Koza has estimated the capital cost (Capex) for the Akbaştepe project, including a 500,000 t/y process plant to treat refractory gold ore from the Akbaştepe deposit at US$120 million.

Process plant operating costs are summarized in Table 6.2 and are estimated at US$69.36/t ore processed, including a 30% contingency. The major contributors to the operating cost are process consumables at US$29.37/t ore and process power at US$18.00/t ore.

Table 6.2: Process Plant Operating Cost Summary

Cost Area	US$/t
Plant Consumables	29.37
Maintenance	3.62
Labor Costs	2.41
Power & Energy	17.96
Sub-Total	53.36
Contingency (30%)	16.01
Total	**$69.36**

Source: Koza, 2014

7 Waste Management and Environmental

7.1 Waste Management

Koza has three operational tailing storage facilities (TSF) located at the Ovacik, Mastra and Kaymaz mine sites. The second TSF construction for Kaymaz was completed in 2011.

Ovacik Mine

The Ovacik TSF was originally designed with a 1.6 Mm^3 capacity, which has been expanded to a total capacity of 3.84 Mm^3. The capacity was increased in order to accommodate additional tailings resulting from the Ovacik Mill processing ore from other Koza deposits. A new TSF was built with a planned total capacity of 4.87 Mm^3. The first stage of the new TSF was completed during 2009 and put into operation and the second stage was completed in 2010. The TSF currently receives tailings from the processing of ore from the Ovacik underground, Çukuralan, Küçükdere and Çoraklıktepe mining operations. There is the potential to receive tailings from the processing of other future ore sources. A third TSF is currently being planned within the depleted open pit. The technical studies and the EIA permitting process for this are on-going.

Mastra Mine

The tailings from Mastra ore processing have been stored in a TSF with a capacity of 2 Mm^3 which was constructed with an impermeable liner. The tailings storage facility, located in a mountain valley, is 10 ha in size. The dam crest will be 47 m high and has been designed to accommodate 100 year storm events. A second TSF with a volume of 1.2 Mm^3 will be constructed in the upper valley of the Mastra River due to the required increased capacity resulting from an increase in production. The construction of this second TSF is dependent on the approval of the forestry permits. In the meantime, a third TSF with a volume of 0.75 Mm^3 is being constructed within the depleted central pit to accommodate the tailings that will be generated until the permitting for the forestry land is completed. The EIA permitting process for the third TSF is on-going.

Kaymaz

The Kaymaz TSF has been designed to contain 3 Mm^3 of tailings and is to be constructed in three stages. The first stage construction has been completed. New reserves are being developed and the existing TSF capacity has to be increased to 5 Mm^3. The TSF will receive tailings from processing ore from the Kaymaz mine in addition to other nearby deposits that Koza may develop in the future. It has been designed sufficient to contain a 100 year storm event and has been fully lined and operated on a “Zero Discharge Principle”.

7.2 Environment

The Koza properties that currently have operation licenses and Environmental Impact Assessment (EIA) permits are listed in Table 7.2.1. The properties that currently have exploration licenses are listed in Table 7.2.2.

Table 7.2.1: Operation Licenses and EIA Status

Property	City	Small Town	Village	License Type & No.	License (ha)	License start date	License end date	EIA
Ovacik	İzmir	Kinik	Turanli	Operation 18201	26,040.26	02-11-11	02-11-21	EIA - Feb 22, 2008 (TSF capacity inc.) EIA - Feb 18, 2009 EIA - Jun 03, 2009 (TSF capacity inc.) EIA process for the 3rd TSF is on-going
Çukuralan	Izmir	Bergama	Kaplan	Operation 64426	1,627.78	01-05-08	01-05-18	EIA - Sep 02, 2009 EIA - Nov 03, 2010 (1st capacity inc.)
	İzmir	Kinik	Turanli	Operation 18201	26,040.26	02-11-11	02-11-21	EIA - Nov 03, 2011 (2nd capacity inc.) EIA – 3rd capacity increase - ongoing
Çoraklıktepe	Balikesir	Havran	Küçükdere	Operation 28237 (3627)	7,982.16	06-08-12	06-08-22	EIA - Nov 15, 2012 EIA not required – Sep 26, 2013 (capacity inc.)
Gelintepe	Izmir	Bergama	Kozak	Operation 25921	4,543.21	11-02-04	11-02-24	EIA was canceled by Ministry
Narlıca	İzmir	Kinik	Turanli	Operation 18201	26,040.26	02-11-11	02-11-21	EIA required - Aug 26, 2010 (not applied for EIA)
Kaymaz	Eskişehir	Sivrihisar	Kaymaz	Operation 5262 (43539)	8,890.16	12-08-10	12-08-15	EIA - Nov 02, 2009
	Eskişehir	Sivrihisar	Karakaya	Operation 82567 (6277& 45059 are merged)	3,013.44	10-10-10	10-10-15	EIA - Nov 15, 2012 (1st capacity inc.) (45059,6277,43539) EIA 2nd capacity increase – ongoing
Mastra	Gümüşhane	Merkez		Application made to MIGEM for License Merge Operation 4345 & 6642	1,758.51	24-07-11	24-07-21	EIA - Jul 25, 2007 EIA - Mar 07, 2012 (1st capacity inc.) EIA presented in Jan 2014,
	Gümüşhane	Merkez	Mescitli	4345	1,097.99	10-06-04	10-06-14	Waiting for EIA positive statement
Himmetdede	Kayseri	Merkez	Himmetdede	Operation 82972 (200507515 & 20057516 are merged)	3,985.23	06-07-11	06-07-21	EIA - Mar 15, 2012 (20057514, 20057515, 20057516) EIA presented on Jul 14, 2014 (82972) EIA process is ongoing
	Kayseri	Merkez	Elmali	Operation 20057514	1,999.51	06-07-11	06-07-21	EIA not required – April 29, 2013.
Mollakara	Ağri	Diyadin	Yolcupinar	Operation 55411	24,459.68	03-09-08	03-09-18	EIA not required – July 31, 2009. EIA - Aug 23, 2012
Söğüt	Bilecik	Merkez	Kizilsaray	Operation 82050	2,975.82	24-02-13	24-02-23	EIA - Aug 24, 2012
	Bilecik	Söğüt	Dudas	Operation 20053973	1,792.69	08-02-10	08-02-20	EIA not required - Nov 02, 2010
	Bilecik	Bozüyük	Hayriye	Operation 20054122	202.50	13-08-12	13-08-22	Waiting for Minister signature for EIA positive statement
	Bilecik	Söğüt		Operation 20057517	62.62	27-06-12	27-06-22	EIA - Dec 10, 2013
	Bilecik	Söğüt	Dudas	Operation 82134 (20066059 &	1,711.01	13-08-12	13-08-22	EIA - Dec 10, 2013

Property	City	Small Town	Village	License Type & No.	License (ha)	License start date	License end date	EIA
				20061427& & 200900934 are merged)				
Işıkdere	Gümüşhane	Kelkit	Işikdere	Operation 201001935	1,641.59	21-09-10	21-09-20	EIA not required - Jul 20, 2012
Kubaşlar	Balikesir	Ayvalik	Bağyüzü	Operation 200808237	538.63	15-11-12	15-11-22	EIA - Feb 07, 2013
	Balikesir	Ayvalik	Bağyüzü	Operation 200709860	9.66	14-11-12	14-11-22	
Hasandağ	Giresun	Alucra		Operation 61929	3,200.01	17-09-09	17-09-19	EIA - Jul 03, 2012 (61929)
	Giresun	Alucra	Aydınyayla	Operation 61840	1,600.00	30-09-09	30-09-19	EIA - Jul 03, 2012 (61840)
Karapınar	Çanakkale	Bayramic	Karapinar	Operation 201001197	1,880.92	05-07-12	05-07-22	EIA process has been suspended by the adverse opinion of General Directorate of Forestry. Official correspondence ongoing.
Dedetepe	İzmir	Kinik	Turanli	Operation 18201	26,040.26	02-11-11	02-11-21	EIA Application has not been made.
Büyükpınar	Balikesir	Merkez	Gökmusa	Operation 80576	1,115.54	21-10-11	21-10-21	EIA - Sep 12, 2013
Torul	Gümüşhane	Torul	Sive	Operation 7962	3,914.90	03-09-08	03-09-18	EIA not required - Aug 15, 2007 "EIA not required" was canceled on Aug 15th of 2012 because of 5 years' time limit.
Kırıntı	Gümüşhane	Şiran	Kırıntı	Operation 45002	599.98	24-09-04	24-09-14 Applied for time extension	EIA not required - Dec 05, 2011
Bulancak	Giresun	Bulancak	Kizilar	Operation 200702532	1,624.24	23-11-12	23-11-22	Waiting for EIA positive statement
Hapan	Giresun	Dereli	Konuklu	Operation 82193	1,479.47	03-10-12	03-10-22	EIA - Dec 02, 2013
Ağadeve	Ağri	Merkez	Bezirhane	Operation 20054521	1,980.00	13-08-13	13-08-23	EIA not required Apr 08, 2014
Çakıllıtepe / Taşkapı	Ağri	Diyadin		Operation 55410	17,044.54	03-09-08	03-09-18	EIA not required Jul 09, 2009 EIA not required Jul 10,2014
Aslantepe	Balıkesir	Burhaniye	Kurucaoluk	Operation 84240	1829.72	03-11-14	03-11-24	EIA process has been canceled by Ministry on December 25, 2014.

Source: SRK Turkey and Koza, December 2014

Table 7.2.2: Exploration Licenses

Property	City	Small Town	Village	License Type & No.	License (ha)	License start date	License end date	Notes
Söğüt	Bilecik	Söğüt		Exploration 20066048	1,288.67	23-06-06	23.06.2011	Operation Project was delivered to General Directorate of Mining Affairs
Işıkdere	Gümüşhane	Merkez	Kirikli	Exploration 200902415	1,188.85	21-05-09	21.05.2014	Operation Project was delivered to General Directorate of Mining Affairs
Ahatlar	Manisa	Demirci	Icikler	Exploration 200810568	750	21-11-08	21-11-13	Operation Project was delivered to General Directorate of Mining Affairs
	Manisa	Demirci	Delidemirci	Exploration 200810581	1,308.04	24-11-08	24-11-13	
	Manisa	Demirci	Delidemirci	Exploration 200810583	1,643.75	24-11-08	24-11-13	
	Manisa	Demirci	Delidemirci	Exploration 200810584	1,476.57	24-11-08	24-11-13	
	Manisa	Demirci	Delidemirci	Exploration 200810589	931.7	24-11-08	24-11-13	
Hapan	Giresun	Şebinkarahisar		Exploration 200806522	1,008.63	08-07-08	08-07-13	Operation Project was delivered to General Directorate of Mining Affairs
	Giresun	Şebinkarahisar		Exploration 200806525	1,430.76	08-07-08	08-07-13	
Küçükdoğu	Ağri	Merkez	Murat-Bezirhabe	Exploration 20056511	1,920.63	28-09-05	28-09-10	Application for operation license was approved. Waiting for General Directorate of Mining Affairs to prepare Operation License documents

Source: SRK Turkey and Koza, December 2014

Most Turkish environmental regulations are aligned with the European Union (EU) acquis communautaire. Transposition of the EU Mining Waste Directive into Turkish environmental legislation is in progress. However, the enforcement date is currently unknown. In the absence of specific legal requirements, EU Mining Waste Directive, World Bank Guidelines, and international best management practices are generally followed for the selection of design, construction and operational practices.

Tables 7.2.3 and 7.2.4 list the environmental permit status for the Koza projects in operation and under development, respectively.

Table 7.2.3: Environmental Permits of Operating Properties

Permit/License	Ovacik		Çukuralan		Mastra		Kaymaz		Çoraklıktepe		Himmetdede		Söğüt (82050)
	Original	Capacity Increase	Original	Capacity Increase	Original	Capacity Increase	Original	Capacity Increase	Original	Capacity Increase	Original	Capacity Increase	Original
EIA	Feb 18, 2009	Feb 22, 2008 (1st TSF extension) Jun 03, 2009 – (2nd TSF) EIA process for 3rd TSF is on-going	Sep 02, 2009	Nov 03, 2010 - 1st capacity increase Mar 11,2011- 2nd capacity increase EIA process for the third capacity increase is on-going	Jul 25, 2007	Mar 07, 2012 - 1st Capacity extension (Second TSF) EIA (Third TSF) presented in Jan 2014, Waiting for EIA positive statement	Nov 02, 2009	Nov 15, 2012 - Capacity increase 2nd Capacity increase - ongoing	Nov 15, 2012	Sep 26, 2013	Mar 15, 2012	EIA presented on Jul 14, 2014 (82972) EIA process is ongoing	Aug 24, 2012 (Test pit operation suspended)
Reclamation Plan	Dec 15, 2008	NA	Committed/ Specified in EIA	Committed/ Specified in EIA	Jan 09, 2009- approved by Provincial authority of Gümüşhane	Committed/ Specified in EIA	Oct 23, 2009	-	Committed/Specified in EIA		To be prepared	-	Committed/Specified in EIA
Waste Water Treatment Plant Project approval (domestic)	constructed before 2005	WWTP constructed in first stage will be used	WWT project was approved and constructed in 2011	NA	Dec 04, 2008	WWTP constructed in first stage will be used	Sep 06,2010	WWTP constructed in first stage will be used	NA		Apr 11, 2014	-	NA
Waste Water Treatment Plant Project approval (industrial/mine water)	constructed before 2005	-	NA (Ore to be processed in Ovacik)	NA (Ore to be processed in Ovacik)	NA (No discharge)	NA (No discharge)	Approved (approval date is not indicated on project)	-	NA (Ore to be processed in Ovacik)		NA	-	NA (Ore to be processed in Kaymaz)
Temporary Operation License	Process ongoing		Process ongoing		Process ongoing		Process ongoing	Dec 16, 2014	Process ongoing		Jan 23, 2015		Process ongoing
Environment Permit and/or License (permit including waste water discharge, emissions, noise and solid waste disposal)	Environmental permit and license was received (Dec 02, 2013 – Dec 02, 2018)		Environmental permit and license was received (Mar 07, 2014- Mar 07, 2019)		Environmental permit and license was received (Jan 11, 2013 – Jan 11, 2018)		Environmental permit and license was received (Jan 9, 2013 – Jan 9, 2018)	-	Environmental permit was received (Sep 24, 2013 – Sep 24, 2018)		-	-	Environmental permit was received (Oct 09, 2013 – Oct 09, 2018)
TSF License	Included in environmental permit		NA (No tailings production)		EIA for second TSF not accepted EIA for third TSF is in progress		Included in environmental permit		NA (No tailings production)		NA (No tailings production)	-	NA (No tailings production)
Operation License	Aug 04, 2011		Apr 15, 2011		July 15, 2013		Nov 25, 2011-Damdamca Feb 04, 2013-Topkaya		Oct 10, 2013		-	-	Jun 21, 2012
Construction License	NA (due to Mining Law)		NA (due to Mining Law)		NA (due to Mining Law)		NA (due to Mining Law)		NA (due to Mining Law)		NA (due to Mining Law)		NA (due to Mining Law)
Acquisition of lands (state property)	Completed	Completed	Acquisition process completed and permit for forest areas was obtained for original design.		Completed	Acquisition process not completed yet	Completed	Acquisition process not completed yet	No state property		NA		No state property
Acquisition of lands (private property)	Completed	Completed	NA		Completed	No private land	Completed	Completed	Completed		Ongoing		Completed
Baseline Land use status	Marginal Agricultural Land, Mining area, Forest area		Forest area		Forest area, marginal agricultural land (property of State Treasury and private property)		Pastureland, agricultural land		Agricultural land		Agricultural land		Forest area and agricultural land
Solid Waste (Domestic)	Disposal to Bergama municipality disposal facility is conducted by subcontractor firm		Disposal to Bergama municipality disposal facility is conducted by subcontractor firm		Oct 13, 2011-Permit for disposal to Gümüşhane Municipality disposal area		Protocol with Sivrihisar Municipality		Transported to closest municipality's disposal area		Transported to closest municipality's disposal area		Protocol with a licensed firm.
Solid Waste (Others)	Handling (disposal, recycling, etc.) by subcontractor firm		Handling (disposal, recycling, etc.) by subcontractor firm		Handling (disposal, recycling, etc.) by subcontractor firm		An agreement to be made with a subcontractor firm		Handling (disposal, recycling, etc.) by subcontractor firm		Handling (disposal, recycling, etc.) by subcontractor firm		Handling (disposal, recycling, etc.) by subcontractor firm
Effluent Discharge (Domestic/ Mine dewatering)	Domestic WW discharge to TSF Mine water discharge to surface water		Discharge to surface water		Discharge to surface water		Discharge to surface water		Domestic WW is carried to Municipality WW treatment Facility (septic tank)		Discharge to surface water		Domestic WW is carried to Municipality WW treatment Facility (septic tank)

Source: SRK Turkey and Koza, December 2014

Table 7.2.4: Environmental Permits of Projects under Development

Permit/License	Mollakara	Işıkdere	Hasandağ 61840, 61929	Söğüt 20057517, 82134	Söğüt 20053973	Büyükpınar	Kırıntı	Hapan	Çiftehan	Konak	Ağadeve	Kubaşlar	Aslantepe
EIA	EIA – Aug 23, 2012	EIA not required - July 20, 2012	EIA – Jul 03, 2012 - Jul 03, 2012	EIA – Dec 10, 2013 – Jun 14, 2012	EIA not required - Nov 02, 2010	EIA – Sep 12, 2013	EIA not required - Dec 12, 2011	EIA – Dec 02, 2013	EIA not required - Sep 17, 2008	EIA – Jul 28, 2013	EIA not required - Apr 08, 2014	EIA - Feb 07, 2013	EIA process has been canceled by Ministry on December 25, 2014. KOZA is in a decision making process for the further plans of the project.
Reclamation Plan	Committed/ Specified in EIA	To be prepared	To be prepared	To be prepared	To be prepared	To be prepared	To be prepared	To be prepared	To be prepared	To be prepared	To be prepared	Committed/ Specified in EIA	To be prepared
Waste Water Treatment Plant Project approval (domestic)	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	NA	Not yet obtained
Waste Water Treatment plant Project approval (industrial/mine water)	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	NA (Ore to be processed in Ovacik)	Not yet obtained
Temporary Operation License	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	TOP canceled on Dec 30th of 2014	Not yet obtained
Environment Permit and/or License (permit including waste water discharge, emissions, noise and solid waste disposal)	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained
TSF license	NA (No tailings production)	NA (No tailings production)	NA (No tailings production)	NA (No tailings production)	NA (No tailings production)	NA (No tailings production)	NA (No tailings production)	NA (No tailings production)	NA (No tailings production)	NA (No tailings production)	NA (No tailings production)	NA (No tailings production)	NA (No tailings production)
Operation License	Not yet obtained	Not yet obtained t	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	May 17, 2013	Nov 3,.2014
Construction License	NA (due to Mining Law)	NA (due to Mining Law)	NA (due to Mining Law)	NA (due to Mining Law)	NA (due to Mining Law)	NA (due to Mining Law)	NA (due to Mining Law)	NA (due to Mining Law)	NA (due to Mining Law)	NA (due to Mining Law)	NA (due to Mining Law)	NA (due to Mining Law)	NA (due to Mining Law)
Acquisition of lands (state property)	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started

Permit/License	Mollakara	Işıkdere	Hasandağ 61840, 61929	Söğüt 20057517, 82134	Söğüt 20053973	Büyükpınar	Kırıntı	Hapan	Çiftehan	Konak	Ağadeve	Kubaşlar	Aslantepe
Acquisition of lands (private property)	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started	Acquisition process not started
Baseline Land use status	Pastureland, Agricultural Land, Treasury Land	Forest area	Forest area	Private property, Forest area	Forest area	Private Property, Forest area	Forest area	Forest area	Forest area	Forest area, Pastureland, Treasury Land	Pastureland and Agricultural Land	Forest area, Agricultural Land	Forest area
Solid Waste (domestic)	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained
Solid Waste (Others)	Not yet obtained	Not yet obtained	Not yet obtained t	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained
Effluent discharge (Domestic/ Mine dewatering)	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained	Not yet obtained

Source: SRK Turkey and Koza, December 2014

8 Technical Economics

The base case economic analysis that includes proven and probable reserves for Koza's Mining Assets, shown in Table 8.1, indicates a post-tax Net Present Value (NPV) of US$1,377.9 million at a 5% discount rate.

The SRK LoM plan and economic model are based on the following criteria:

- Proven and probable reserves only;
- An overall project life of 15 years;
- An overall average metallurgical recovery rate of 85% Au and 72% Ag, over the LoM;
- LoM operating cost of US$30.29/t-processed, or US$512.56/oz Au;
- LoM capital costs of US$382.8 million;
- 20% tax rate; and
- No allowance for salvage value is assumed in the analysis.

Table 8.1: Technical Economic Model Results (US$000's)

Description	Value	US$/t-milled	US$/oz-Au
Net Revenue			
Gold	4,428,660		
Silver	27,392		
Net Revenue	**$4,456,051**		
Refinery	(7,086)		
Community Charge	(5,102)		
NSR	**$4,443,864**	**$74.11**	**$1,254.29**
Royalties - Ovacik Private	(1,380)		
Mastra MTA	(149)		
Government	(44,287)		
Net Revenue	**$4,398,048**	**$73.35**	**$1,241.36**
Operating Costs			
Mastra Unit	58,220		
Ovacik Unit	964,736		
Himmetdede Unit	240,316		
Mollakara Unit	136,903		
Kaymaz Unit	160,278		
Akbaştepe Unit	255,513		
Environmental Cost	0		
Operating Cost	**$1,815,967**	**$30.29**	**$512.56**
Operating Margin	**$2,582,081**	**$43.06**	**$728.80**
Capital Costs			
Mastra Unit	16,151		
Ovacik Unit	68,497		
Himmetdede Unit	22,973		
Mollakara Unit	105,109		
Kaymaz Unit	39,319		
Akbaştepe Unit	130,008		
Koza HQ	777		
Capital Cost	**$382,834**		
Income Tax	**$363,653**		
Cash Flow	**$1,835,594**		
NPV	**$1,377,905**	**5%**	

9 Material Upside Opportunities

9.1 Conversion of Resources to Reserves

There is approximately 2 Moz of measured and indicated resources that have not been converted to reserves through engineering studies or mine planning. The sulfide resource at Mollakara contains approximately 1.4 Moz of resource that have not been converted to reserves. Koza should consider furthering studies on the sulfide resource to determine if the resources ounces will be converted and if the sulfide project is profitable. To a smaller degree, both Çukuralan and Ovacik underground have some areas that may add reserve through further mine design.

9.2 Inferred Resources

There are presently 131.1 Mt of Inferred resource containing 6.1 Moz of gold. With further exploration, SRK would expect a significant proportion of these resources to be upgraded to indicated status or better and in due course to be converted to reserves.

9.3 Exploration Potential

JORC (2012 Clause 17-19) recognizes that when there is insufficient exploration to estimate a Mineral Resource under JORC guidelines it is often appropriate to comment on and discuss exploration results in terms of mineral potential provided that such information relating to exploration targets is not misconstrued as an estimate of Mineral Resources or Ore Reserves. In these cases, mineral potential of exploration targets is represented as a range of tonnes and grades, the basis for the stated mineral potential, description of the level of completed exploration, details of testing to confirm the validity of the exploration target and a timeframe within which the testing is expected be completed.

The Koza exploration team has many exploration targets that have been sampled and explored with enough detail to be expressed as mineral potential. The potential quantity and grade of the exploration targets described below is conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource. Table 9.3.1 presents SRK's evaluation of the mineral potential in the resource and exploration areas including evaluation timeframes. Detailed information on the assumptions supporting the mineral potential including basis for potential, proposed testing to confirm potential and exploration budget information can be found in Volume 9. The expected duration in months to evaluate the potential with possible conversion to resources is shown on Table 9.3.2. The timeframe is between 2014 and 2018; as shown in Table 9.3.2. There is no guarantee that with additional exploration, any of the Koza exploration projects in the following table will advance to a resource stage.

Table 9.3.1: Exploration Potential at Koza Properties

Area	Mt		g/t Au		oz Au		Duration (months)		Exploration Period
	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	
Çukuralan Main	2.9	3.8	3	4.5	280,000	560,000	8	18	2015 - 2017
Çukuralan SE	0.5	0.5	1	4.5	17,000	78,000	5	10	2015 - 2017
Aslantepe	2.4	4.7	1.5	1.9	114,000	288,000	10	20	2015 - 2018
Kıratlı	0.75	1.0	2	2.5	46,000	84,000	5	10	2015 - 2017
Karapınar	4.7	7.2	0.5	2.5	75,000	577,000	10	24	2015 - 2019
Kubaşlar	0.7	0.7	0.5	1.6	12,000	38,000	12	24	2016 - 2017
Dedetepe	2.2	3.1	0.24	1	17,000	100,000	8	14	2016 - 2018
Ahatlar	0.6	1.5	1	1.5	18,000	75,000	8	16	2016 - 2018
Kaymaz - Mermerlik	0.1	0.2	2	2	13,000	31,000	6	12	2015 - 2017
Söğüt Akbaştepe	1.8	3.0	10	12	586,000	1,200,000	12	24	2015 - 2017
Söğüt Hayriye	0.15	0.3	3	6	15,000	58,000	6	12	2015 - 2017
Söğüt Korudanlik	1.6	5.1	5	6	256,000	1,000,000	12	24	2015 - 2018
Söğüt Kışladere	0.3	1.0	1	3	10,000	96,000	12	24	2015 - 2019
Işıkdere	2.9	4.6	0.5	2	46,000	299,000	8	14	2015 - 2018
Hasandağ	14.9	26.5	0.5	1	240,000	852,000	12	24	2015 - 2019
Torul Epithermal	1.5	1.7	0.9	1.5	43,000	85,000	6	12	2015 - 2019
Torul Porphyry	1.9	3.9	0.5	0.5	31,000	63,000	12	36	2015 - 2019
Taşkapi	0.3	0.6	1	2	10,500	42,000	12	36	2015 - 2019
Hapan 1	2.0	2.0	1	2.5	64,000	161,000	6	12	2015 - 2019
Bulancak	0.8	1.1	1	1.5	25,000	56,000	6	12	2015 - 2019
Çakillitepe	0.09	0.1	2	10	6,000	33,000	6	12	2015 - 2019
Küçükdoğutepe	0.2	0.2	1	2	7,500	13,000	6	12	2015 - 2019
Büyükpinar	2.6	2.6	0.2	1.5	17,000	125,000	10	20	2015 - 2018
Kirinti	5.0	5.0	0.5	5	80,000	804,000	12	24	2015 - 2019
Total	**51**	**80**	**0.2**	**12.0**	**2,029,000**	**6,718,000**			

Source: SRK

- This table has not changed from December 2013.
- Koza drilled at Söğüt Akbaştepe and Korudanlik in 2014, but did not receive the necessary permits to drill at the other sites.
- Work is not planned at Ahatlar, Kubaşlar or Dedetepe during the 2015 field season. Budgets reflect permitting.

Table 9.3.2: Timeframe for Evaluation of Exploration Potential and Possible Conversion to Resource

Property Area	Time (months)		2015												2016				2017				2018				2019			
	Minimum	Maximum	January	February	March	April	May	June	July	August	September	October	November	December	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Çukuralan Main	8	18																												
Çukuralan SE	5	10																												
Aslantepe	10	36																												
Kıratlı	5	12																												
Karapınar	10	72																												
Kubaşlar	5	10																												
Büyükpinar	10	20																												
Dedetepe	8	14																												
Ahatlar	8	16																												
Kaymaz - Mermerlik	6	12																												
Söğüt Akbaş Tepe	12	24																												
Söğüt Hayriye	6	12																												
Söğüt Korudanlık	12	24																												
Söğüt Kışladere	12	24																												
Işıkdere	12	18																												
Hasandağ	12	24																												
Torul Epithermal	6	15																												
Torul Porphyry	24	48																												
Taşkapi	24	48																												
Hapan 1	12	48																												
Bulancak	12	36																												
Çakillitepe	12	24																												
Küçükdoğutepe	12	24																												
Kirinti	12	48																												

Source: SRK, 2014

The exploration and technical team at Koza are highly competent and have proven to be very successful at identifying potential that has progressed to resources at the operating mines and exploration projects. In some past cases the Koza exploration team has verified the maximum within the range of the potential evaluation. In many cases, the targets have been carried for several years with no exploration having been conducted on them. There is no guarantee that the potential will be realized for any of the projects in Table 9.3.1 with further exploration.

The capacity of Koza to maintain and expand the reserve and resource base to assure continuing levels of production and future expansion is dependent upon a commitment to acquire and explore potential mineral prospects. Koza has demonstrated this commitment through the establishment of an experienced exploration team and budgets to support exploration activities. Exploration priorities and long-term development options are based on an internal assessment of mineral potential within its extensive exploration portfolio at different stages of evaluation. Koza holds a number of exploration properties with excellent potential for developing resources after drilling or additional drilling. In addition, there are opportunities at some of the operating mines and resource areas to extend known vein structures and extend the mine life. Understanding the reserve and resource replacement strategy of Koza, SRK is of the opinion that this mineral potential is material for the long-term development of the company and that sustained exploration by the Koza exploration team is necessary to continue replacing mined ounces of gold and silver. The Koza exploration team uses good scientific approach and industry best practice in their exploration and is competitive with other leading international companies.

9.4 Changes to Central Processing Hubs

Because of the exploration successes at Çukuralan and Söğüt, the location of process facilities closer to the main reserve centers may have a material operating cost advantage. This may also allow for suitable expansion of infrastructure (particularly tailings) given the current restrictions at Ovacik. Koza is planning a process facility at Söğüt to process ore from Akbaştepe and from Korudanlik and Hayriye once their resources are converted to reserves.

9.5 Mining Opportunities

The grade at Akbaştepe is very high when compared to other mining operations around the world. Akbaştepe has the potential to provide another processing hub for Koza that will able to deal with refractory ores. The orebody is open at depth and the whole region remains prospective. Akbaştepe has the potential to provide Koza with significant additional cashflow and resource/reserve potential.

There is a significant reliance on contractors throughout the open pit operations. By completing a phased production schedule, a fleet estimation can be determined and costed as if the mining was “Owner Operated”. Having a first principle cost estimation, Koza has the opportunity to negotiate better contract rates and/or conduct trade-offs for owner versus contract mining operations.

Koza will have experience in heap leach operation by the end of 2015. This will open up the potential for Koza to evaluate and construct future heap leach operations and identify fatal flaws or opportunities at grass root levels moving forward. This expertise will also open Koza to the idea of multiple processing route projects where significant economic gains can be made for deposits with large amounts of both high and low grade or oxidation types such as Söğüt and Mollakara.

The underground operations all use the tried and true cut and fill methods with extensive shotcreting. SRK is of the opinion that there is considerable opportunity to evaluate the underground mines from a geotechnical perspective with the purpose of optimizing the mining method and ground support requirements. This would be considered a cultural shift for Koza, so a staged implementation plan from feasibility through trial mining should be considered. The goal of the evaluation would be to improve production rates safely that will allow the liberation of the considerable underground resources earlier in the companies gold schedule.

10 Risks

In addition to risks typical of the mining sector, the following specific risks have been identified for Koza's business:

- Formal mine closure studies and plans are not conducted for any of the mines. While, there are some closure cost estimates prepared by Koza for the currently operating mines, these are not comprehensive (e.g. not accounting for post-closure ARD/ML mitigation measures and other social, human resources costs). Therefore, the existing closure costs may be underestimating Koza's financial liabilities, which will extend to 30 years in the post-closure phase in accordance with given legal commitments;
- Recent trends in Turkish mine permitting system have resulted in slower permitting times, and at times in non-permitting. Land use permits, especially relating to forestry lands and pasture lands have been scarcely issued within the past year by the Prime ministry. This is an industry-wide issue in Turkey, which could be afflicting Koza's future development plans as well;
- Open Pit Sequencing, water and waste management at Çukuralan meeting environmental and social guidelines all add complexity to mine operations. The water diversion and in pit backfilling has commenced making for a more congested work environment;
- The open pit/underground interface at Çukuralan is expected to increase with development of the second portal and deepening of the open pits. When added to the groundwater already present underground, any significant rain event on the surface must be adequately diverted away from backfilled open pits – otherwise there is potential to flood the underground workings through perched water in the open pits connecting to underground workings just below the pit bottoms may be possible;
- ARD management at Mastra will impact closure and monitoring costs;
- The cost creep particularly related to general and administration costs and underground mine cost have stabilized in the last couple of years but are still high from an industry standpoint. While related to the relatively low production rates at the operations, the burden placed on mining operations for social and environmental considerations is considerable. Good gold grades have reduced the total effect of these costs but any downturn will leave the Koza operations exposed. Considerations for increased production rates through plant expansions and identification of further reserves will be advantageous to reduce unit mining costs;
- Exploration expectations may not be realized due to the early stage status of many projects. Drilling is required to evaluate many of these projects and Koza is currently waiting on drilling permits for further exploration at some of these projects. Delays in obtaining drilling permits will delay evaluation of the potential at several of these projects;
- Koza will operate the Himmetdede heap leach pad for the first time in 2015 if permits are received. There is limited experience for this type of operation within Koza, and as such, they will need to be cognizant of the different methodologies used in mining and extracting gold from a processing, grade control and mining rate perspective. As the grade will be much lower, mining cost drivers will need to be closely watched as the high grade achieved at other properties will not cover up any inefficiency from a mining, processing and general

overhead perspective. Blasting practices will need to be optimized to reduce the generation of fines that may or may not limit the percolation on the heap leach pad;

- Although Himmetdede incorporates a sizer and jaw crusher, there may be a need for a mine schedule recipe that will aid in the crushing and sizing of the ore thereby preventing clogging due to clay fines in the orebody. The crushing and sizing of the Himmetdede ore has not been evaluated during commercial operations; and
- Tailings capacity for Koza operations will need to dispose 19 Mt of tails defined by the reserves. Assuming Mastra is decommissioned, 13.3 Mt of tailings must be disposed of at Ovacık, 3.0 Mt at Kaymaz and 1.85 Mt at Akbaştepe. The need for additional tailings storage at Ovacık is of greatest concern as if the old open pit cannot be used for storage alternate sites must be engineered and ready for construction.

11 Conclusions and Recommendations

11.1 Ovacik Resources and Reserves

11.1.1 Ovacik Mine

Geology and Resources

Koza is using all grade control samples in the estimation as well as drillhole samples. Because the grade control samples are much more closely spaced than the drillhole samples, Koza has used a restricted search in order to limit the influence of the higher grade samples. Koza is using the wireframes as hard boundaries and uses only composites within the individual wireframes for estimation. SRK considers these good estimation practices.

Koza has reviewed the variography but is still using the parameters generated some years ago when only the open pit was in production. SRK suggests that variography be updated in the estimation given the large amount of grade control data that is being used in the resource estimation.

Koza validates the model by visual comparison of composites versus block grades and through reconciliation of mined tonnes and grade to tonnes and grade predicted by the model. These are acceptable methods for validation for an operating mine. SRK suggests that Koza may also use swath plots as another validation method.

Koza should continue to remove remnant blocks in areas where mining has been completed; leaving them in the resource block model results in an overstatement of resource.

Mining and Reserves

The underground operations at Ovacik are planned to wind down in 2015 where mine production rates are planned to fall to just 100t/d through the planned end of mining in 2021.

Metallurgy and Process

The Ovacik process plant is in good condition and achieves consistently high metallurgical performance.

The plant operations at Ovacik are running well and few technical risks are envisaged for the treatment of ores similar to those from Ovacik and Çukuralan. Additional proposed feeds would need to be tested for amenability to the relatively simple leach and CIP process installed at Ovacik and to confirm relevant operating parameters (optimum grind size, reagent additions etc.).

11.1.2 Çukuralan Mine

Geology and Resources

SRK recommends that the block model and grade control data be closely compared to find areas where there is not good agreement. Special attention should be paid to areas where the grade control samples were used in the estimation to determine if they are contributing to an over-estimation of grade that is suggested in the reconciliation.

SRK recommends that Koza assess pulp duplicates to monitor analytical precision at its advanced exploration projects. SRK commonly recommends that a client request a second split of client

selected pulps be generated by the analytical laboratory and a sample number predetermined by the client be assigned to the split. Alternatively, commercial laboratories routinely run pulp duplicates as part of internal laboratory Quality Assurance/Quality Control (QA/QC). The internal QA/QC can be requested and reviewed by Koza as an acceptable procedure to assess the laboratory precision, without submitting additional samples. SRK also recommends that Koza use commercially available Certified Reference Material (CRM) samples or have site specific CRMs prepared and certified by a commercial lab.

Mining and Reserves

The Çukuralan project has shown Koza can operate a successful open pit and underground operation simultaneously while dealing with adverse waste haulage requirements, diversion of stream flows and limitations based on land access. The orebody remains open at depth and along strike for further underground operations in the future.

As the open pit transitions to the south pit and in-pit backfilling continues, further operating efficiencies and reduced contractor costs are likely.

SRK recommends further optimization of the pit walls which would allow improved open pit extraction. Enough information on water table, joint orientation and lithology's from past operations should now be incorporated into geotechnical models with the recommendation that all slopes have a factor of safety above 1.3 but less than 2. It is also recommended that local stability analysis be performed with enhanced lithological modelling. This will test the local stability in relation to changes in lithology that may be missed in a global analysis for the high wall. Re-optimization of bench heights and bench face angles should be considered for the South Pit as it was evident that joint set orientation was unfavorable for keeping benches stable on the high wall as they were daylighting consistently.

The ramp systems of the south phase designs should be optimized to interlink where possible. The current design is based on individual pit phases working in isolation rather than harmoniously. As such, ramps have been designed to remain in the highwalls serving no useful purpose and will lead to unnecessary increases in stripping ratio and/or ore loss.

The block model for Çukuralan is focused on two main veins but there are multiple areas of mineralization that occur between these two features that are only accounted for during operations. SRK recommends that a leapfrog wireframe analysis be conducted to aid in the identification of these small areas of mineralization rather than relying on manual interpretation. Alternatively, an indicator model to identify these areas may be considered.

The mine grades achieved from underground operations have been consistently good for 2013 and 2014 and there is no reason to believe that the underground will not produce good grade (5+ g/t Au) for years to come. That being said, SRK would recommend a groundwater analysis be conducted on the LoM plans to predict future mine pump requirements and capacities. As the underground deepens, the quantity and cost of disposing this water will likely increase and should be planned for.

11.1.3 Kubaşlar Project

SRK recommends that Koza state resources within a pit optimization shell.

SRK observed that the QA/QC program in place at Kubaşlar is providing appropriate data for the project. SRK notes that the data is limited and recommends that Koza continue to monitor the

Certified Reference Material (CRM)s, which are performing low and the preparation duplicates to confirm that sample preparation is appropriate. SRK also recommends that Koza add pulp duplicates to monitor analytical precision and check samples to verify analytical results at the primary laboratory.

11.1.4 Kıratlı Project

SRK recommends that future resource estimations investigate compositing length and capping values for gold and silver. SRK also recommends that resources be stated with a pit optimization shell.

Koza monitors its QA/QC on an ongoing basis during drilling and addresses failures as they occur. SRK observed that Koza uses only one high grade CRM at Kıratlı. SRK also observed that there was a lack of precision in preparation duplicates, but the number of preparation duplicates in the database was relatively small. SRK recommends that Koza add a low grade CRM to the standards used at Kıratlı. SRK also recommends that Koza submit more preparation duplicates to increase the preparation duplicate database in order approach a meaningful statistical number of samples. If the database continues to show low reproducibility, then Koza should investigate the reproducibility by first examining homogenization procedures and then possibly adjusting the volume of material submitted for pulverization. In addition, SRK recommends that Koza submit samples within the resource range of the deposit to determine if the laboratory can provide reproducible results in the range of resource grades. Additions to the QA/QC program also should include pulp duplicates to test analytical precision and check samples sent to a secondary laboratory to test analysis of the primary laboratory.

11.1.5 Aslantepe

SRK recommends that Koza add at least one more CRM that is near the average grade of the mineralization, and that Koza discontinue the use of CRM OREAS 501 since it is too far below the lower cutoff grade for both gold and silver at Aslantepe. SRK also recommends that Koza monitor pulp duplicates to assess precision of the primary laboratory by either requesting and reviewing the laboratories internal QA/QC or requesting that the laboratory take a second split of Koza selected pulps, giving those pulps a new sample numbers and analyzing using the same methods. As in all other duplicates the pulp duplicates should not be inserted into the sample stream adjacent to the original. In addition, Koza should select duplicate samples from mineralized zones to test the precision of the laboratory in mineralization above cutoff grade. The preparation duplicates demonstrate low variability and good precision by the laboratory but the majority of samples tested to date are below the cutoff grade for resources at the deposit.

Koza has established a small resource for Aslantepe through drilling in 2013. SRK recommends that Koza continue with its drill program to better define the geology and increase the resource.

SRK suggests that Koza review the capping values. The highest silver values are found in Domain 4 and these values have been used to determine the capping value. The other three domains have significantly lower grades and the capping value should be lower in those domains.

11.2 Mastra Resources and Reserves

11.2.1 Geology and Resources

At Mastra, in the drillhole model, the estimated block Au grades are higher than the composite grades for half of the domains. SRK recommends that Koza investigate the reasons for the significant differences between block and composite grades. This could be done through swath plots or careful review on cross-sections. The fact that the mined to model reconciliation shows a lower mined gold grade also indicates that there could be a problem with the estimation.

SRK suggests that the Mastra variograms be updated considering the number of grade control samples that have been generated since 2010.

Koza should continue depleting the block model to remove remnant blocks that either do not have sufficient grade, or which are too small on which to develop a mine plan. The inclusion of these blocks in the resource statement results in an overstatement of tonnage.

SRK recommends that Koza use a pit optimization shell to constrain resources at Mastra North. This is becoming an industry standard for resource reporting. The resource contains 19,000 oz of gold in Indicated and 2,000 oz of gold Inferred resources whereas the reserve contains 7,000 oz of Probable reserves. This is low a conversion rate of Indicated resources to Probable reserves and indicates that more than half of the resource does not meet the criterion of being potentially mineable.

In regard to QA/QC, SRK recommends that in subsequent drilling programs, Koza use silver CRMs in addition to the gold ones used at Mastra. Koza should also submit preparation duplicates in the grade range of the resource estimate. SRK also recommends that Koza add pulp duplicates and check samples to a secondary laboratory to its QA/QC in subsequent exploration programs at this project. A final recommendation is that Koza should assess the type of sample failures. If all QA/QC samples fail in a batch, then the entire batch should be reassayed. However, if only one QA/QC sample failed, then that QA/QC sample plus three to four samples in sequence on either side of the failure should be re-submitted for analysis.

11.2.2 Mining and Reserves

Koza is planning on operating the process plant during the latter half of 2015 and then stop processing of ore at Mastra at the end of the year. From 2016, ore will be mined at a very low production rate with ore stockpiled and ready for toll milling at the Mastra processing facility when mining operations finish in 2018. It is planned that 27,000 t will be available for processing or half a month of processing capacity at the end of the mine life.

SRK would recommend Koza begin detailed mine closure planning and enough resources be allocated to the plan. Special attention to the waste dump and the need to cap or not cap the dump should be investigated.

11.2.3 Metallurgy and Process

The Mastra process plant initiated operations during March 2009 and continued production until it was shutdown in February 2014. As such, the Mastra process plant reported production for only January and February during 2014.

During 2014, ore from the Mastra mine averaged about 6.0 g/t Au and 5.6 g/t Ag. Overall gold recovery averaged 91.0% and overall silver recovery averaged 50.9%. Operating costs averaged US$28.15/t in 2013 and US$31.70 during 2014 (Jan to Feb).

11.3 Kaymaz Resources and Reserves

11.3.1 Geology and Resources

SRK recommends that Koza report resources within pit optimization shell. This has become a standard procedure for mining companies internationally.

SRK recommends that Koza composite on run length intervals rather than using the distribution option in order to standardize the sample length.

The wireframes at Mermerlik should be reviewed to incorporate narrow zones of waste into the wireframes and to incorporate all drilling.

Swath plots should be generated as another method of resource model validation.

In regard to QA/QC, SRK recommends that Koza stop using OV20, OV23, KA02, and KY01 because of poor performance. Since Koza is reporting silver as part of its resource, Koza should add silver CRMs to its QA/QC program. SRK recommends that commercially prepared CRMs be used in its QA/QC program, or that site specific CRMs be prepared and certified by a commercial lab. In addition, the preparation duplicates have demonstrated that crushing, splitting and pulverizing is appropriate for the deposit. Because of this, Koza could reduce the number of preparation duplicates and submit pulp duplicates to monitor laboratory precision.

11.3.2 Mining and Reserves

Since the beginning of 2014 operations have been suspended at the main zone and Koza only received permits to operate in December of that year. Koza did successfully mine out the Damdamça open pit through April 2014.

Koza performs global stability analysis on the pit designs at Kaymaz. It may be prudent for Koza staff to implement local stability analysis into their model runs for the main zone given the slope stability problems encountered at Damdamça. This will lead to improved inter-ramp angle optimization based on material hardness rather than applying an overall wall angle to the entire depth of the deposit.

SRK recommends that additional time be spent on the pit design of Main Zone so that the walls can be straightened and noses removed where potential slope instability will be focused. SRK would also recommend a phased approach be applied at Main Zone rather than a single top down bench approach that was used at Damdamça. The east pit is 700 m wide and the west pit 430 m wide. These are very large pits to be taken in a single phase.

11.3.3 Metallurgy and Process Plant

SRK offers the following conclusions and recommendations regarding the Kaymaz process plant:

- The Kaymaz process plant has been well designed and constructed, and is similar in many respects to the Ovacik and Mastra process plants;
- Plant expansion to 2,500 t/d included additional crushing and grinding capacity and larger inter-stage screens in the CIP circuit;

- Mining activities during 2014 at Kaymaz were curtailed after April due to permit issues, and much of the production for the balance of the year was derived from stockpiled ore and from ore hauled from the Söğüt open pit mine;
- Process operations were suspended at the end of November with no production reported for December. A total of 659,178 t of ore were processed at an average grade of 4.88 g/t Au and 3.66 g/t Ag. Overall gold recovery averaged 85.6% and overall silver recovery averaged 58.9%, resulting in the production of 92,482 poured ounces of gold and 46,889 poured ounces of silver; and
- Unit processing costs for 2013 averaged US$37.11/t and during 2014 unit processing costs averaged US$17.91. The lower unit operating cost for 2014 is, in part, attributed to the higher production rates following the plant expansion, as well as the impact of exchange rate fluctuations.

11.4 Söğüt Project

11.4.1 Geology and Resources

Koza has successfully defined a large resource at Söğüt including Akbaştepe, Korudanlik and Hayriye. In 2014, Koza undertook metallurgical studies and a prefeasibility study for Akbaştepe, resulting in a reserve statement for this deposit. SRK suggests that Koza continue studies for the other two deposits to bring them to reserve category.

SRK recommends that the composite length at Korudanlik be changed to 1.5 m because 25% of the drillhole samples are longer than the 1.1 m now being used as the composite length. SRK also recommends that a simple run length option be used rather than the distribution option to standardize the composite lengths.

The CV at Korudanlik is relatively high at 1.73 (gold) and 1.93 (silver). SRK suggests that the CV may be reduced with the longer composite length and also suggests that Koza review the capping values.

SRK recommends that pit optimization shells be generated for Hayriye to be used in the resource statement. This has become an industry standard which Koza is following for many of its projects. SRK suggests that Koza make this a standard practice at all its projects.

Overall the laboratory has acceptable performance and the QA/QC program is sufficiently monitoring laboratory accuracy and reliability. SRK makes the following recommendations that in SRK's opinion will improve the QA/QC program.

SRK recommends that Koza add date information to its QA/QC spreadsheets in order to track the blanks, CRMs and duplicates over time and to help identify specific batches if a failure should occur. Koza should also add the work order number for the batch to assist in this as well. The preparation duplicate data provided demonstrates that the appropriate amounts of material are being provided for analysis and that the laboratory has good precision. SRK recommends that Koza insert less preparation duplicates and add pulp duplicates to the Söğüt QA/QC program to better monitor laboratory precision. SRK notes that approximately 80% of the submitted duplicates are below the cutoff grade for resources at Akbaştepe and 97% of the submitted duplicates are below the cutoff grade for resources at Korudanlik. These duplicates are not testing the precision within the resource range and Koza needs to select samples that are mineralized to monitor duplicate performance.

11.4.2 Metallurgy and Process

Metallurgical studies were conducted on test composites from both the Korudanlik oxide deposit and the Akbaştepe sulfide deposit.

- Metallurgical testwork on the Korudanlik oxide samples consisted of diagnostic leach tests, which were used to determine the gold deportment of the sample, gravity separation testwork, cyanidation testwork and solid/liquid separation testwork. Diagnostic leach tests were performed on Oxide composite 2 (RoM) to examine the gold deportment in the sample by systematically accounting for gold association with different mineral assemblages or ore matrices. The results of the diagnostic leach test indicated that approximately 94% of the gold was readily available and could be extracted by gravity separation and cyanidation;
- The metallurgical testwork on the Akbaştepe sulfide composites consisted of diagnostic leach tests, gravity separation testwork, flotation, cyanidation testwork, pressure oxidation, roasting and bio-oxidation; and
- Process flowsheet alternatives for Akbaştepe sulfide deposit that include gravity concentration, bulk sulfide rougher flotation, flotation concentrate oxidation by either POX or BiOx and then CIL cyanidation of the oxidized flotation concentrate are both estimated to result in overall gold recoveries of about 89%.

11.4.3 Mining and Reserves

Akbaştepe open pit and underground has the potential to be a high grade deposit and is currently at a pre-feasibility level stage of study. The open pit will have a very high strip ratio but benefits from an average grade of approximately 20 g/t.

The underground operations have been designed using a cut and fill mining method using similar equipment, production rate, geotechnical and ventilation parameters that are employed at other Koza operations.

SRK recommends that considerable time and effort be placed into optimizing the underground mine plan and in particular the dimensions of the drifts. Using the current mine dimensions and compared to the sub-blocked block model there is a 33% dilution of grade based. As there is so much dilution currently incorporated into the design, an understanding of expected production rates should also be considered. (Accept dilution for high production rate or reduce dilution and reduce production rate).

11.5 Himmetdede Resources and Reserves

11.5.1 Geology and Resources

The oxide/sulfide surface is quite irregular at Himmetdede and may not be predicting the amounts of oxide material as accurately as possible. SRK suggests that the surface be reviewed.

The sulfide material is included in the resource with the assumption that it can be processed by heap leaching. Metallurgical tests have not been conducted on the sulfide material that supports this assumption, and SRK strongly recommends that this test work be done or that the sulfide material be left out of the resource statement. SRK has made this recommendation since 2010.

SRK recommends that resource pit shells be used to constrain the resources at both Himmetdede and Himmetdede North. Much of the sulfide material is not contained in the pit shell that Koza generated and SRK again recommends that this material be excluded from the resource.

SRK suggests that the Himmetdede North and Main block models be combined into one as there does not seem to be a geological distinction between the two and mine planning would be easier with one block model.

Overall the laboratory has acceptable performance and the QA/QC program is sufficiently monitoring laboratory accuracy and reliability. SRK makes the following recommendations that in SRK's opinion will improve the QA/QC program.

SRK recommends that Koza add date information to its QA/QC spreadsheets in order to track the blanks, CRMs and duplicates over time and to help identify specific batches if a failure should occur. Koza should also add the work order number for the batch to assist in this as well. The preparation duplicate data provided demonstrates that there is a nugget affect for gold, but in general there is acceptable reproducibility in the preparation duplicates. Koza should consider splitting a larger sample during sample preparation. SRK recommends that Koza add pulp duplicates to the Himmetdede QA/QC program to better monitor laboratory precision. In addition, SRK notes that approximately 70% of the submitted duplicates are below the cutoff grade for resources. These duplicates are not testing the precision within the resource range and Koza needs to select samples that are mineralized to monitor duplicate performance.

11.5.2 Mining and Reserves

Mining operations at Himmetdede were shut down due to the government failing to provide an operations permit for the project. In January 2015, the project received its permit after legal proceedings were implemented by Koza Gold. Operation of the 20,000 t/d heap leach operation is expected to commence immediately.

SRK recommend that the pit walls currently designed be straightened and noses removed from the design. Any local changes in rock strength will be amplified by these noses and can lead to pit wall instability.

SRK recommends that integrated phase design and scheduling be conducted at Himmetdede for several reasons:

- Koza have purchased a dedicated fleet and the purpose of the production schedule is to operate that fleet at maximum capacity. This will entail balancing haul profiles with pit sinking rates and waste dump development while meeting production requirements. On a life of mine time frame the dump sequencing is much more important for owner operating mines than contractor operations where the mine fleets are flexible;
- Phases will allow the material properties (crushing, clay, perculation, hardness, etc.) from the pit surface to depth be understood from an operational perspective and provide sump capability if groundwater inflow becomes an issue. Multiple phase excavation provides for multiple ore faces rather than a single source leading to operational flexibility and blendability of material types;
- Geotechnical information learned from phase excavation can allow for refinement of highwall parameters before they are excavated; and

- Phase excavation does not burden the initial mine fleet with excessive pre-stripping while cash-flows are minimal.

There is a crushing and sizer circuit at Himmetdede to handle unknown material properties. As mining progresses these properties should be defined from an operational perspective. The particular parameters to understand are moisture content, swell factor, loose density, dry density and clay content. If operational issues arise these should be estimated into an operational block model and scheduled accordingly. A pit recipe that controls ore hardness, clay content, grade and moisture may be required.

11.5.3 Metallurgy and Process

Koza conducted additional metallurgical testing throughout 2014 to further investigate heap leach characteristics of the upper, middle and lower zones of the Himmetdede deposit. This work included drilling a total of twelve metallurgical PQ drill core holes to achieve lithology and spatial representation throughout the deposit. The purpose of this test program was to:

- Determine the optimum crush size for heap leaching;
- Determine the size by size gold distribution;
- Establish whether agglomeration is required;
- Determine optimum reagent additions for column leach tests;
- Test the percolation properties versus simulated heap height;
- Test the effect of agglomeration; and
- Confirm the optimum cement addition rate.

It was found that the upper zone and middle zone composites were relatively insensitive to crush size. A crush size of – 50 mm would be adequate for the upper and middle ore zones. The lower zone composite was shown to be very sensitive to crush size and that a crush size of -9.5 mm is indicated.

The results of column testing conducted by Koza in 2014, on upper, middle and lower ore zones indicate that gold recoveries of 86%, 76% and 45%, respectively, can be expected after discounting extraction by 5% to allow for heap leach inefficiencies. This would require crushing the upper and middle ore zones to -50 mm and crushing the lower ore zone to -9.5 mm.

Although construction the Himmetdede process facilities was completed during 2014, commencement of commercial operation is not expected until first quarter 2015 due to permitting delays.

11.6 Mollakara Resources and Reserves

SRK recommends that in future resource estimations that Koza incorporate lithological and structural information.

Mollakara will be Koza's second heap leach operation and should benefit from experiences gathered at Himmetdede. The combination of seasonal mining, water management, extended transportation of ore to the heap pad and relatively low grade, will challenge mining operations at Mollakara. Care will need to be taken that surface and groundwater interfacing with the pit and waste dump does not enter the Murat River giving rise to social and environmental concerns. Blasting and material handling will need to be considered carefully given the potential clay content of the ore and potential

effect on percolation. SRK recommends that material properties such as moisture content, swell and clay content be defined from a mining perspective and storm water management plan implemented for the site.

Koza has run a resource pit optimization for Mollakara; more than 90% of the resources fall inside this pit shell.

11.6.1 Metallurgy and Process

At a P_{80} 90 mm crush size SRK estimates an overall gold extraction of ~69% on the oxide ore, based on the average oxide ore gold extraction of 77.3% obtained during the McClelland test program at a 32 mm crush size, adjusted down by 5.4% to allow for reduced gold extraction at the coarser P_{80} 90 mm crush size. An additional 3% reduction in gold extraction is taken to allow for inefficiencies normally encountered in a commercial heap.

Process plant operating costs are estimated at US$4.98/t and assume the operation of an “on/off” heap leach at a cost of US$1.69/t for ore placement and removal. Although a conventional multi-lift heap leach operation is anticipated, the cost of an “on/off” heap leach operation is included in the cost analysis due to the high clay content of the ore, and concern for reduced percolation rates in a multi-lift operation. Load-permeability tests are currently underway to assess the potential for reduced permeability in a multi-lift heap.

11.7 Hasandağ and Işıkdere Resource Areas

11.7.1 Hasandağ Project

Laboratory QA/QC

In regard to Koza’s QA/QC samples, SRK recommends adding two standards that would bracket the grade range of the resource and adding silver CRMs as well since a silver resource is reported for Hasandağ. SRK also recommends that Koza submit duplicates in the grade range of the resource in order to adequately test the precision of the preparation duplicates. Additional recommendations include reviewing pulp duplicates to monitor precision of the primary laboratory and adding check samples to a secondary laboratory to verify the results from the primary lab.

Resource Estimation

The resource that has been defined to date is very low grade and no metallurgical test work has been performed to support the assumption that this could be processed as a heap leach operation.

SRK has the same recommendations as 2013:

- Koza should continue exploration to define a larger and potentially higher grade resource;
- The Newmont silver grades should be investigated; and
- A resource pit shell should be used to constrain resources.

SRK suggests that Koza use a simple run length compositing routine to standardize the composite length.

Koza should also produce swath plots as another means of model validation.

Metallurgical Testwork

SRK recommends that Koza test representative samples from the Hasandağ deposit to determine metallurgical characteristics.

11.7.2 Işıkdere Project

Laboratory QAQC

In regard to QA/QC, SRK recommends confirming that the digestion and analysis used for routine samples is the same at the laboratory as were used to certify the CRMs used at Işıkdere. It may be necessary to replace the standards at Işıkdere with ones that perform closer to the certified mean. Koza should add two standards that bracket the grade range of the resource at the Işıkdere project should also add silver standards to the QA/QC program since it is reporting a silver resource for Işıkdere.

For duplicates, SRK recommends that Koza continue to submit preparation duplicates with sample selections that are mineralized to test the range of grades in the deposit above the cutoff grade. Koza should also continue to submit pulps to a secondary laboratory for check assays to monitor accuracy of the samples at the primary. In addition, SRK recommends that Koza add pulp duplicate to monitor precision of the laboratory.

Exploration

SRK recommends that Koza continue drilling at Işıkdere to increase the resource and to upgrade the Inferred resources to Indicated.

Resource

SRK suggests the following:

- Koza should look at 2 m composite lengths;
- Koza use pit optimization shells for reporting resources as this has become a standard practice for most mining companies;
- Koza generate swath plots as a means of validating the resource models;
- Koza conduct metallurgical testwork to justify the recoveries and process costs used in the cutoff grade analysis; and
- Swath plots should be generated as a method of resource model validation.

Metallurgical Testwork

SRK recommends that Koza select representative samples from Işıkdere for preliminary testwork to determine metallurgical characteristics.

11.8 Exploration Projects

Koza uses industry best practices for its exploration activities and follows a QA/QC program that supports resource estimation. Koza monitors the QA/QC at its projects during drilling and addresses identified failures immediately, which is industry best practice. Koza uses CRMs and site specific reference materials prepared from mineralization at its mines at all exploration projects. Preparation blanks are used to monitor cross contamination during sample preparation. Koza uses field duplicates and preparation duplicates to assess the volume and physical preparation methods and

has added check samples to monitor the precision at the primary laboratory. Specific QA/QC recommendations for each project are listed in Sections 11.1 through 11.7. General improvements to the global QA/QC program include the following:

- Using two to three CRMs at each deposit to bracket the grade range of each deposit. This includes one near the cutoff grade, one near the average grade and one near the upper range of the statistical spread at approximately 80%. CRMs should not be selected to monitor the outliers;
- Submitting duplicate samples within the grade range of the deposit;
- Adding review of pulp duplicates to the QA/QC program that would monitor the precision of the analysis. This can be accomplished through one of two industry accepted methods. Koza can request the commercials laboratories internal QA/QC including the pulp data and reviewing the pulp duplicate data. The other method is to request that the preparation laboratory makes a second split of a selected pulps, providing a new sample numbers for the second splits that is not in sequence with the original samples and having those analyzed with the batch. The second method allows Koza to select pulps in the grade range of the resource;
- SRK recommends that Koza obtain commercially available CRMs or have them made from site material by commercial labs instead of making reference material in house;
- SRK recommends that that Koza monitor QA/QC results for every element reported in a resource estimate at each deposit; and
- SRK recommends that Koza monitor QA/QC results over time by adding a date of submission and a date of analysis to its QA/QC database.

11.9 Technical Economics

The analysis performed has resulted in favorable economics for the group of mining operations contained in this report. Commodity pricing for gold and silver always carry some risk when predicting future price scenarios.

Recommendations, opportunities and risks are mainly driven on the technical aspects of the resources, reserves, mine plans and processes and mine closure planning are addressed in the remaining volumes of this report.

12 References

ESRI Basemap World_Topo_Map, 2013, Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), and the GIS User Community, Accessed January 2013.

Önder Ş. and Ergün, Ç. E., 2007, *Turkey, Getting the Deal Through-Mining 2007*, Submission by Çakmak Avukatlık Bürosu. Law Firm, pp.134-135.

13 Glossary

13.1 Mineral Resources and Reserves

The JORC Code 2012 was used in this report to define resources and reserves.

A ‘Mineral Resource’ is a concentration or occurrence of material of intrinsic economic interest in or on the Earth’s crust in such form, quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories.

An ‘Inferred Mineral Resource’ is that part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not verified geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes which may be limited or of uncertain quality and reliability.

An ‘Indicated Mineral Resource’ is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes. The locations are too widely or inappropriately spaced to confirm geological and/or grade continuity but are spaced closely enough for continuity to be assumed.

A ‘Measured Mineral Resource’ is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes. The locations are spaced closely enough to confirm geological and grade continuity.

13.2 Glossary of Terms

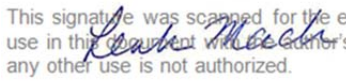
Table 13.2.1: Glossary

Term	Definition
Assay	The chemical analysis of mineral samples to determine the metal content.
Capital Expenditure	All other expenditures not classified as operating costs.
Composite	Combining more than one sample result to give an average result over a larger distance.
Concentrate	A metal-rich product resulting from a mineral enrichment process such as gravity concentration or flotation, in which most of the desired mineral has been separated from the waste material in the ore.
Crushing	Initial process of reducing ore particle size to render it more amenable for further processing.
Cutoff Grade	The grade of mineralized rock, which determines as to whether or not it is economic to recover its gold content by further concentration.
Dilution	Waste, which is unavoidably mined with ore.
Dip	Angle of inclination of a geological feature/rock from the horizontal.
Fault	The surface of a fracture along which movement has occurred.
Flitch	Mining horizon within a bench. Basis of Selective Mining Unit and excavator dig depth.
Footwall	The underlying side of an orebody or stope.
Grade	The measure of concentration of gold within mineralized rock.
Haulage	A horizontal underground excavation which is used to transport mined ore.
Igneous	Primary crystalline rock formed by the solidification of magma.
Kriging	An interpolation method of assigning values from samples to blocks that minimizes the estimation error.
Level	Horizontal tunnel the primary purpose is the transportation of personnel and materials.
Milling	A general term used to describe the process in which the ore is crushed and ground and subjected to physical or chemical treatment to extract the valuable metals to a concentrate or finished product.
Mining Assets	The Material Properties and Significant Exploration Properties.
SAG Mill	Semi-autogenous grinding mill, a rotating mill similar to a ball mill that utilizes the feed rock material as the primary grinding media.
Sedimentary	Pertaining to rocks formed by the accumulation of sediments, formed by the erosion of other rocks.
Sill	A thin, tabular, horizontal to sub-horizontal body of igneous rock formed by the injection of magma into planar zones of weakness.
Smelting	A high temperature pyrometallurgical operation conducted in a furnace, in which the valuable metal is collected to a molten matte or doré phase and separated from the gangue components that accumulate in a less dense molten slag phase.
Spigotted	Tap/valve for controlling the release of tailings.
Stope	Underground void created by mining.
Strike	Direction of line formed by the intersection of strata surfaces with the horizontal plane, always perpendicular to the dip direction.
Sulfide	A sulfur bearing mineral.
Tailings	Finely ground waste rock from which valuable minerals or metals have been extracted.
Thickening	The process of concentrating solid particles in suspension.
Variogram	A statistical representation of the characteristics (usually grade).

14 Date and Signature Page

Signed on this 31st Day of January, 2015.

Endorsed by CPs:



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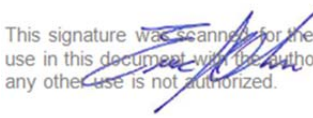

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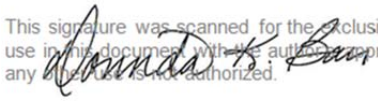

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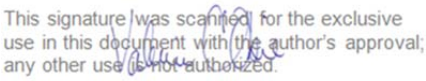

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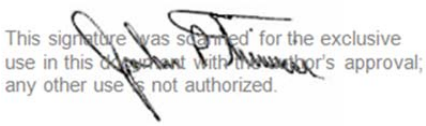

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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted industry practices.

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