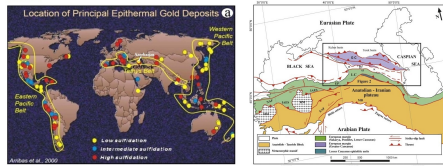
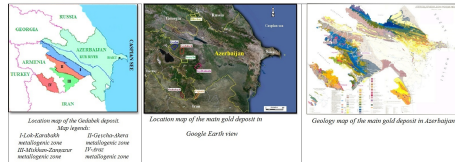


1. INTRODUCTION

The structure and geological history of the Caucasus are largely determined by its position between the still-converging Eurasian and Africa-Arabian lithospheric plates, within a wide continental collision zone. During the Late Proterozoic–Early Cenozoic, the region belonged to the Tethys Ocean and its Eurasian and Africa-Arabian margins and associated system of island arcs, arc rifts, and arc basins all characteristic of the pre-collisional stage of its evolution of the region. The Lesser Caucasus mountain-fold system covers the southern part of the Caucasus and is characterised by a heterogeneous internal structure, influenced by convergence within the two branches of the Alpine-Himalayan mobile belt: Iberian-Elburs in the North and Dinara-Zond in the South.

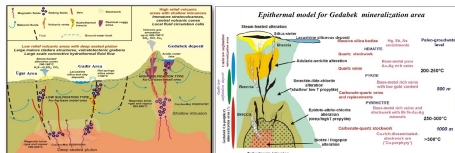


There are four main structural-formation zones of the Lesser Caucasus metallogenic zone in Azerbaijan: Lok-Karabakh Zone, Geycha-Akera Zone, Miskhano-Zangezur zone and Araz zone.

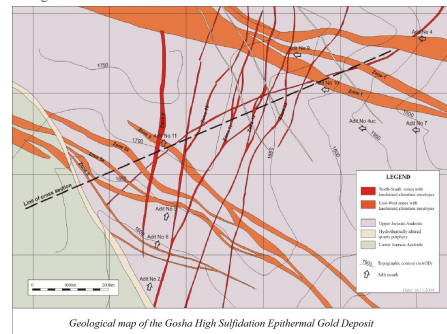


2. LOK-KARABAKH METALLOGENIC ZONE

Lok-Karabakh Zone situated in North-West Azerbaijan. Bajocian sediments sequences of the basic structure of the Lok-Karabakh structural-formational zone consist of a complex of volcanogenic, volcanogenic-sedimentary and to a lesser extent, sedimentary rocks of basalt-andesite-dacite-rhyolite composition. The complex is divided into Early Bajocian basalt-andesite and Upper Bajocian dacite-rhyolite complexes, the latter in paragenetic connection with metalliferous mineralisation. High-sulfidation gold deposits, namely Gedabek, Chovdar, and Ugur; Gadir low-sulfidation gold deposit; and epithermal gold deposit-Dakhkesaman, Gyzylbulag and Goshia are located at the Lok-Karabakh zone. Other types of mineral deposits containing aluminum; Zaklik deposit, cobalt, iron; Dashkesan deposit, and manganese; Molladjalili deposit are located on this "ore" rich structural formation zone.



Qosha deposit – is located in western portion of Gadabay ore region, 30 km south of Tovuz city. 9 vascular gold-bearing sulphide zones exist within the deposit. Majority of these zones stretch till the near north-west and meridian, thickness of them is from 2.0 m to 15m. Thickness of ore masses at these zones holds 0.5-3 m. Basic utilitarian components of the field are gold and silver. The quantity of gold at north-western zones is 4-8 g/t; while nearly 10 g/t at meridional zones reaching 1000 g/t in occasional tests.

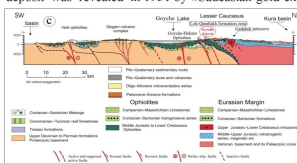


The Chovdar epithermal gold deposit is situated five kilometers NW of the world-class Dashkesan Fe-skar deposit. The area consists of Jurassic (Bajocian) lavas, breccias and tuffs divided into Lower Bajocian (basalt-andesite) and Upper Bajocian (dacite-rhyolite) sequences. The Zaylik deposit is located in Dashkesan region, 18 km East of Qushchu bridge. Alunite ores are widespread in Jurassic volcanic sediments and are represented with schistous two ore layer. Ores consist mainly of alunite and quartz. The amount of alunite oscillates between 10-80%, and average quantity is 53% over the deposit.



3. GEYCHA-AKERA METALLOGENIC ZONE

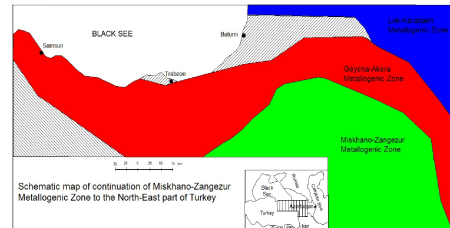
Geycha-Akera Zone exhibits a folded ophiolite rock sequence, that represents the ocean closure suture zone that once separated the continental plates. Ophiolite association in Azerbaijan, minor occurrences trending NW direction in Turkey (Erzincan area), combining with other ophiolite splays form the single suture zone (Arabian syntax), the so-called Erzincan-Lesser Caucasian Zone. Based on the specifics of metallogenic zoning, forecasting mineral potential should be focused on the discovery of chromite, where known occurrence Goydere deposit, pyrite (reduced), gold (Agdzudag gold deposit) and mercury-antimony deposits (Agyatag, Shorbulag, Levchay, Qamishli and others) are controlled by ring structures. **Soyudlu deposit** – is located at the border of Kalbajar region of the Republic of Azerbaijan and Basarkehar (Vardenis) region of the Republic of Armenia. The deposit was revealed in 1951 by «Caucasian-gold-exploration» agency.



Levchay quicksilver deposit is situated in 15-20 km NW of Kalbajar region. Ore masses are located inside carbonate rocks. Length of masses is 20 – 70m. Amount of mercury vacillates from 0.25-0.5%.

4. MISKHANO-ZANGEZUR METALLOGENIC ZONE

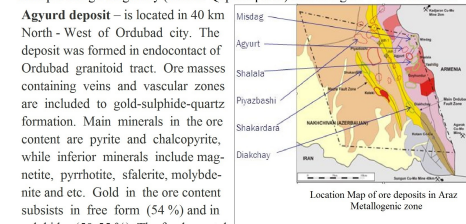
Miskhano-Zangezur Zone is defined as containing wide magmatic complexes of acid and alkaline composition related medium and small-scale sized deposits of porphyry gold-copper-molybdenum ores. Ore bearing intrusive rocks; satellites of the Ordubad pluton defined the metallogeny of the region. All industrial deposits of copper, gold and tungsten are related with intrusive activity. Mercury, antimony and arsenic deposits are associated with subvolcanic facies. This zone is abundant with several types of mineral deposits containing mercury; namely Narzanli, Chilgachay and Saribulag deposits; Vejnali gold deposit (located in the Nagorno-Karabakh disputed region) containing 18 tonnes of gold as reserve where ores are related with quartz veins.



Vejnali deposit – is situated in Zangilan region, 4-5 km of Agband railway station. The field is included to quartz-gold-sulphide-bearing vascular geological-industrial type. 25 gold-bearing veins were revealed and estimated within the deposit. Industrially significant gold reserves are concentrated in 6 quartz-chalcopyrite, quartz-carbonate-pyrite-chalcopyrite-bearing veins. Contact of the whole ore veins with neighboring rocks is acute and they are characterized with oscillation of thicknesses from 10 cm to 4.0 m. Primary useful component in the ore content is gold. Furthermore silver, copper, tellurium, bismute exist in extractable amount in the ore composition. Large scale gold subsists in the ore content. In this regard the amount of "free" gold is 9.8 %, while 85.3 % in compound form. The ores are purported to be enriched by using gravitation-flotation diagram. 96.52 % gold, 97.38 % silver, 95.9 % tellurium and 65 % bismute is able to be extracted.

5. ARAZ METALLOGENIC ZONE

Araz Metallogenic Zone is defined by the widespread infestation of endo- and exo-contact zones of the Ordubad Late Eocene-Oligocene granitoid massif. Industrial copper deposits in Ordubad region, namely Misdag, Goydag, Diahchay, Goygol, etc., contain reserves of more than 2 million tonnes of copper, with copper content 0.5%-1.56%. Gold deposits, including Agyurd, Pyazbashi, Shakardara, Munundara are located in this zone. In addition molybdenum type deposits are known, with main example being Paragachay (include Qapichiq area) containing a 54 tonne resource.



Agyurd deposit – is located in 40 km North-West of Ordubad city. The deposit was formed in endocontact of Ordubad granitoid tract. Ore masses containing veins and vascular zones are included to gold-sulphide-quartz formation. Main minerals in the ore content are pyrite and chalcopyrite, while inferior minerals include magnetite, pyrrhotite, sfalerite, molybdenite and etc. Gold in the ore content subsists in free form (54 %) and in sulphides (50-55 %). The fundamental utilitarian components are gold, silver and copper. 85% gold can be extracted off the ore once ores will be enriched based on gravitation-flotation scheme.

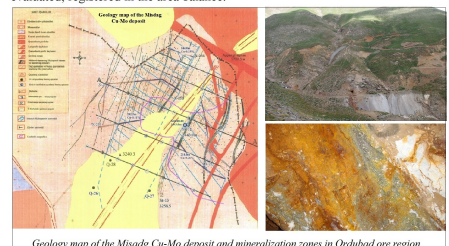
Pyazbashi deposit – is situated in exocontact of Ordubad massif, in paleo-genous age sedimentary rocks, 2.0-2.5 km west of Agyurd deposit. Up to 50 quartz-sulphide veins exist inside the deposit. 5 of them were relatively exactly estimated and have industrial significance. Thickness of the veins vacillates between 0.2 m to 1.5-2.0 m and is composed mostly of quartz and pyrite. The field will be exploited at single refining fabric according to identical technological scheme along with Agyurd deposit.

Shakardara deposit – is located in 1.8-2.0 km South of Pyazbashi deposit and was explored in 60-100 m depth from earth surface through caves. Basic ore-bearing and ore-storing structure is Nusnus-Kalaki-Mazra depth fragment in North-West direction. It is represented with highly thick quartzose, kaolinic and ironing zones of andesite-bearing lava-pyroclastic rocks. Ore masses are divided into two morphological types: 1) vascular zones changing between 1000-1200 m in length and 2-5-13-20 m in thickness, and 2) metasomatites strip bearing veinlet-porous sulphide mineralization stretching in the distance of 850-900 m and in volatile thickness (from 90-100 m to 300-350 m). The basic utilitarian components are gold, silver and copper.



Molybdenum reserves registered in state balance are centered in Paragachay deposit (alongside Qapichiq area) of Ordubad ore region. As contiguous component molybdenum reserves were evaluated, admitted to area balance, and their prognostic resources were estimated in Goydag, Diakhchay, Misdag-Shalala copper-porphry deposits in Ordubad ore region of Nakhichevan rugged zone and in Damlirli copper-porphry deposit in Qarabag ore region of Minor Caucasus.

Copper reserves in Goydag, Diakhchay, Misdag-Shalala copper-porphry, Agyurd gold, Nasirvaz-Agdara polymetal deposits in Nakhichevan rugged zone were evaluated, registered in the area balance.



Formerly ore-dressing mine operated in **Ordubad** ore region in the territory of Nakhichevan AR confirmed of reserves, based on Paragachay Cu-Mo deposit and of the same name with it. Continuation of exploitation and planned research works on the deposit are considered essential for its equipment with reliable raw material. Ordubad ore region which is located in Miskhano-Zangezur metallogenic square is deemed to have high perspective for discovery of industrially significant copper fields in Nakhichevan rugged zone. As a result of researches implemented lately in this region, numerous copper-molybdenum displays were revealed in Paragachay, Misdag, Goydag, Goygol, Shalala, Diakhchay, Kotam-Kilit ore fields. Moreover, Eocene aged prognostic resources are expected in considerable amount of hydrothermally changed rocks within the volcano-plutonic complex in Khanaga-Ordubad mineralization area of Julfa region.