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ON THE GEOLOGICAL LOCATION OF THE GUJUMSAY GOLD DEPOSIT, ORE BODIES, ROCKS AND HYDROGEOLOGICAL CHARACTERISTICS OF THE DEPOSIT, AS WELL AS THE DISCOVERY AND MINING OF THE MAIN SECTION OF THE DEPOSIT.

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Annotation

The article provides detailed information on the location of the Gujumsay gold deposit, the geological structure of the deposit area, the description of the ore bodies and rocks in the deposit, as well as the discovery and mining of the main section of the deposit. The deposit is located in the south-eastern part of the Koshrabat granitoid massive.), the opening and excavation of the main section (Figures 1-2) are shown schematically, and all the information is covered in a broad sense.

Introduction

Gujumsay gold deposit is located on the southern slope of the central part of the Northern Nurata Mountains, administratively located in the territory of Koshrabat district of Samarkand region of the Republic of Uzbekistan. The Gujumsoy deposit belongs to the southern mining department of NMMC. The nearest settlement is Koshrabad, the district center, 14 km southwest of the mining area. The distance to Samarkand is 120 km, the railway station is 80 km in Kattakurgan. The deposit is located in the south-eastern part of the Qoshrabat granitoid massive. The relief of the region consists of low mountains, the absolute heights vary from 910 meters to 1000 meters, the relative elevations vary from 40 to 60 meters. The slope of the slopes is 10º-40º degrees. Almost the entire surface of the mining area is covered with Quaternary deposits of 5 to 120 meters in thickness. The climate of the region is sharply continental, summers are dry, hot and continuous, winters are short and humid. In summer the temperature varies from +26 + 42º C in winter to -7- 23ºC. Annual precipitation does not exceed 660 mm. Most of it (505 mm) falls in the spring, the rest in the autumn-winter season. The 110 kV Kattakurgan-Gujumsay and 35 kV Ishtikhon-Gujumsay power transmission lines have been laid to Konga. The seismic hazard of the area is set to 7 points. In the mining area there are clay soils, building stones, quality gravel from local building materials. The largest and richest area in the

Samarkand cultural area, rich in reserves of precious metals, is the Charmitan cultural area. There are three major deposits - Charmitan, Gujumsay and Yangibulak. The gold-bearing objects of the Charmitan ore-bearing area have a common geological structure, a single technological cycle, and the morphology and composition of the ores are of the same type. The ore deposit is located in the northern Nurata gold ore belt of the Zarafshan-Turkestan metallogenic zone. Here are mineralized points of gold, tungsten, molybdenum, antimony, silver, uranium. The main benefit of the areaThe mineral is gold, and in practice different constructions have been identified in different structural formation zones. In the industrial type, the main high amount of gold cultures is associated with the Qoshrabat intuition.

Brief geological description of Gujumsay deposit: The geological structure of the deposit area includes intrusive sedimentary, Lower Paleozoic sedimentary volcanic and Cenozoic spike rocks.
Metamorphic sedimentary-volcanic rocks are composed of siltstones, quartz-sericite, sericite-chlorite and carbonized-gel shales, quartz sandstones, limestones. The granitoid rocks of the Koshrabat massif are widespread in the region, and their composition consists of syenites, gabbrosienites, granosienites, granitporpyrites, pegmatoid granites, aplite and granite-aplite dyke. The rocks are scattered in a north-westerly direction, rising steeply to the northeast (65-85m). The location of gold mines is spread across the subcontinent and is more than 20 km long.
A brief description of the body bodies: Exploration of the Gujumsay deposit has so far identified 48 ore bodies, 30 of which are rated C2. Prospective civilizations up to 300 m deep have been identified through columns drilling wells. The ore bodies in the area are distributed in the north-western directions from 80 to 1600 m in length. The rise is steep to the northwest (65–85 °), with small thicknesses ranging from 0.20 m to 1.70 m and sometimes up to 9.0 m. Most of the ore bodies are mixed with granosienite of the Qoshrabat massive. Mineral bodies were morphologically divided into two main types: vascular and small-thickness linear vascular mineralized zones.
The vascular type is in the form of a sternum, containing quartz, with a thickness of a few cm to 1.5 m. The thickness of the fibers in the linear mineralized zones is 0.1-5.0 cm with quartz, sulfide-quartz and sulfide content. The internal structure of ore bodies is complex and several stages of mineralization have been identified. The morphology, bedding conditions, and distribution of mineral components at the Gujumsay deposit were considered to be of level 3 complexity for exploration in accordance with the 1994 Law on Classification of Mineral Resources and Forecasting of Solid Mineral Resources. The morphology and deposit conditions of the ore bodies in the Gujumsay deposit are determined by structural tectonic factors. Identified cultured bodies are the father prospect and require more in-depth research. No decrease in gold content was observed at an organized depth of 250-300 m. At present, the deposit has 15886.3 tons of ore and 164385.6 kg of gold in the balance of S1 + S 2 categories. In addition, in 2005 the reserves of the deep horizons of the Zarmitan deposit and the reserves of the Gujumsay deposit were transferred to the balance of NMMC.
Description of mining rock: Granosienites, which are the main rock in the mining area, have different levels of strength because they have cracks in different directions. In terms of strength, rocks have low, medium and high strength. The granosienites in the decomposition zone are 30-40 m thick, consisting of 53, 54, 55 and 57 ore bodies.
As a result of the organization of rock cracks, the mining area is divided into the following systems by cracks:

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-small slope (bending angle up to 10 °);
-slope (10-45 ° degrees); -cut angle (45-80 ° degrees);-vertical (more than 80 °).
The cracks along the genesis are mostly tectonic. The volume weight of gold-bearing ores is 2.61-2.71 t / m³, and gold-silver ores are 3.1 t / m³. The coefficient of erosion of the ore is 1.5-1.7, and that of the overlying rocks is 1.5.

Table 1. Description of mining rocks

Naming of rocks	Density g/sm³	Humidity %	Prosity %	oefficient of hardness on the Protodyakonov Scale
Quartz-mica shales	2,6-2,71	0,2-0,47	0,78-3,1	8-10
Granosienites	2,62-2,68	0,19-0,37	0,5-1,0	8-13
Sienites	2,62-2,67	0,43-0,63	1,13-1,16	8-11
Quartz roots in the culture zone	2,63-2,7	0,1-0,3		8-11

Hydrogeological description of the deposit: Hydrogeological research in the mining area was carried out by Golodnostep GQE of the Uzhydrogeology Department. The research was conducted mainly in 1976-1985 and is carried out in several stages, depending on the complexity of the hydrogeological conditions. The hydrogeological features of the deposit are divided into the following categories:
- the deposit is located on a high regional erosion base;
- there is no risk of encountering karst waters in the mining area, landslides and landslides in the twisted and semi-twisted layers.
The ore bodies and adjacent rocks are gas-safe, with a geometric gradient of 1.78 ° C per 100 m to a depth of 300 m. Groundwater occurs in sparse alluvial-proluvial deposits, which are saturated with atmospheric precipitation. Low-pressure fissures occur in Paleozoic deposits adjacent to ore bodies. The highest water level rises in April-May and the lowest falls in December-January. Depending on the chemical composition of the water, it belongs to the type of hydrocarbonate-sodium, minerals occur in the range of 0.4-0.6 g / l. During the opening works in the aquifers, a strong water flow may erupt in the short term (2-3l / s). Expected water flows in the mine shafts are up to 300 m³ / h at +720 horizon, +660380 m³ / h on the horizon. Pumps StNS 300-300, StNS180-425 are installed in the N-3 mine +720 horizon. Drinking water supply to Gujumsay field —Three drainage wells will be used at the Boytop pumping station. The volume of drinking water required for practical use in the field is 378.4 m³ / year, of which:
-257,312 m³ / year for household drinking needs
-121,088 thousand mU / year for production needs.

The following measures will be taken at the Gujumsay field for the rational use of water resources:

- regular sampling of wastewater;
- complete overhaul of the treatment plant.

Procedure for opening and mining of the main section of the Gujumsay deposit.

The Gujumsay ore underground mining project at the Charmitan deposit was designed in 1971-1975 and put into operation in 1976-1977 to produce the upper part of the deposit. In the central part of the deposit, two vertical trunks with diameters of 5.5 and 4.5 m and a depth of +720 horizon were fired. The main shaft serves for the loading and unloading of workers of different weights, as well as for the transportation of minerals from the horizon +720. The auxiliary shaft is used to transport the auxiliary exit and the mineral. №3 mines in the central area for geological exploration have been drilled to +660 horizon. The NTS-3 line has been constructed to facilitate excavation and transportation. (Figure 1)

Most of the deposits of ore deposits are located in the earth's crust in a parent slope or inclined position relative to the horizon. These deposits are divided into strata in order to facilitate mining from top to bottom. The following mining systems are used in the extraction of reserves:

- The system of prefabricated mining with the help of short brooms;
- The system of mining with the help of boreholes in the intermediate tracks.

Of the total volume of ores mined at the Gujumsoy deposit
82.6% is carried out in the prefabricated mining system, 17.4% in the prefabricated mining system.
Ore extraction system using short boreholes (Fig. 2).
The parameters of this mining system are as follows:

The height of the blocks is 45-60 m, determined according to the height of the ore bodies.
Block length 40-60 m, block thickness up to 3 m, angle of elevation 65º-85º degrees. For the preparation of blocks, every 30-60 m from the wing of the block are thrown soldering irons (uprising). The height of the blocks is bounded on the horizons by the surface of the mining solder or by the ventilation shafts and the lower part of the shale shear.

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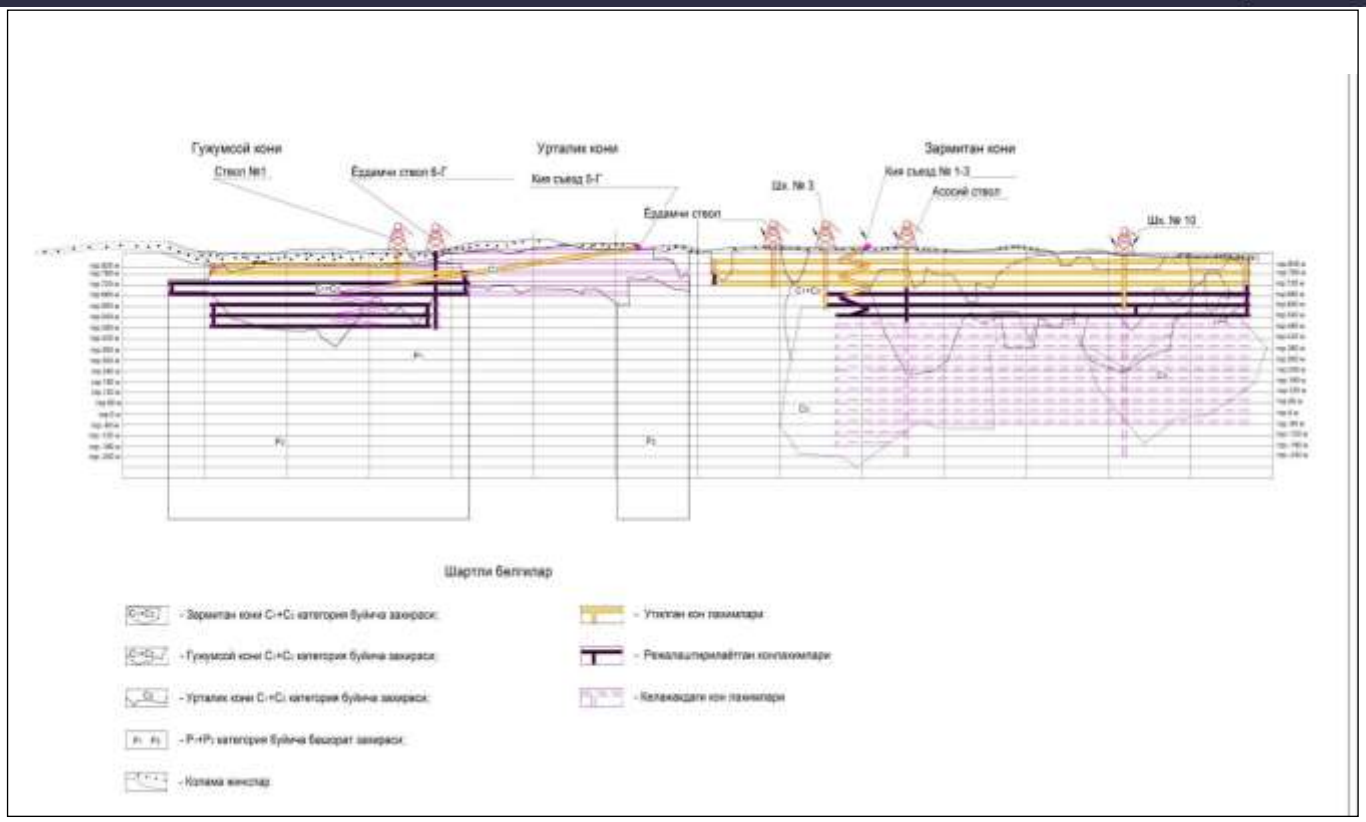

Figure 1. Scheme of opening of Gujumsay deposit

The height of the blocks is bounded on the horizons by the surface of the mining solder or by the ventilation shafts and the lower part of the shale shear. In the wing lifts, a block-cutting solder is fired at a distance of 3 m, which is raised like a 7-8 meter lift, the main function of which is to adapt to the method of transporting the ore bodies.

Transport shots are fired at a distance of 8-10 meters from the body of the mine. Cut solder is thrown from the strokes on the bodies of the ore. They are cleaning the mines on the floor. The width of the bars is adjusted to the height of the loading backs depending on the mining width of the ore bodies. At a distance of 6-8 meters from the transport lanes, the back lanes are shot towards the lane cut. Mining is carried out by means of PP-63V copper perforator. Vertical mining is carried out by means of a standard copper perforator. Vertical mining is carried out using telescopic perforators PT-36, PT-48 and PT-63. Once the preparation and cutting operations are completed, the mines will be irrigated with short boreholes (Figure 2).

Cultivation is carried out by means of tin and telescopic perforators. The height of the feeding tapes is up to 1.8 m. The cutting solder is fired in parallel with the lift and acts as a compensating chamber to clean the mined ore.

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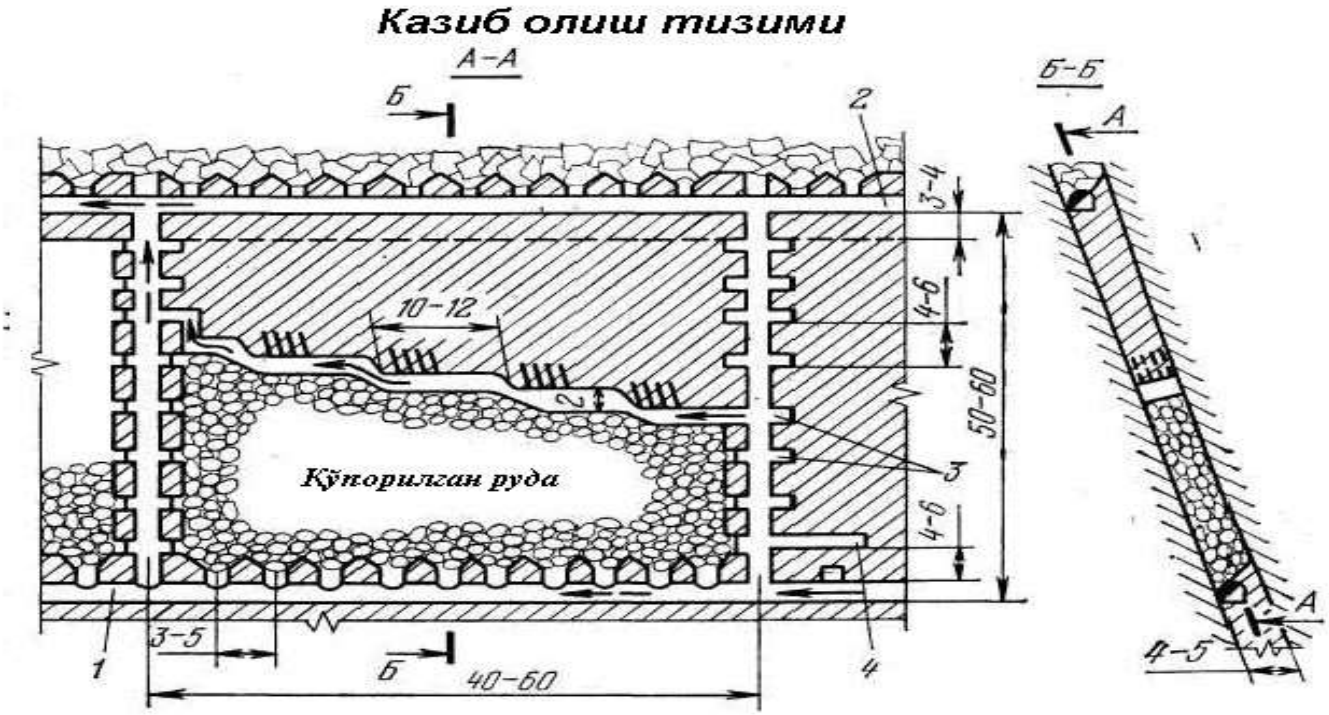

Figure 2. Mining system

During the excavation process, 35% of the excavated ore is periodically removed from the block, as there must be a head of 2-2.5 m between the solder ceiling and the welded ore, which is needed to ensure safety in human movement to drill the roof and side walls of the block. To refresh the air of the cleaned cage, compressed air is sent from the block transport horizon through the riser and corridors. Harmful air escapes from the second rise to the surface. The final extraction is performed when the accumulation of the collected ores is completed and reaches the tosin limit.

To monitor the extraction of the ore, a corridor is thrown from the hoist through the block slime to the clearing width. At the boundary of the mines, the block is unloaded with a small weight and loaded onto the wagons from the rear, the loading is carried out by a loader type PPN1S.

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