

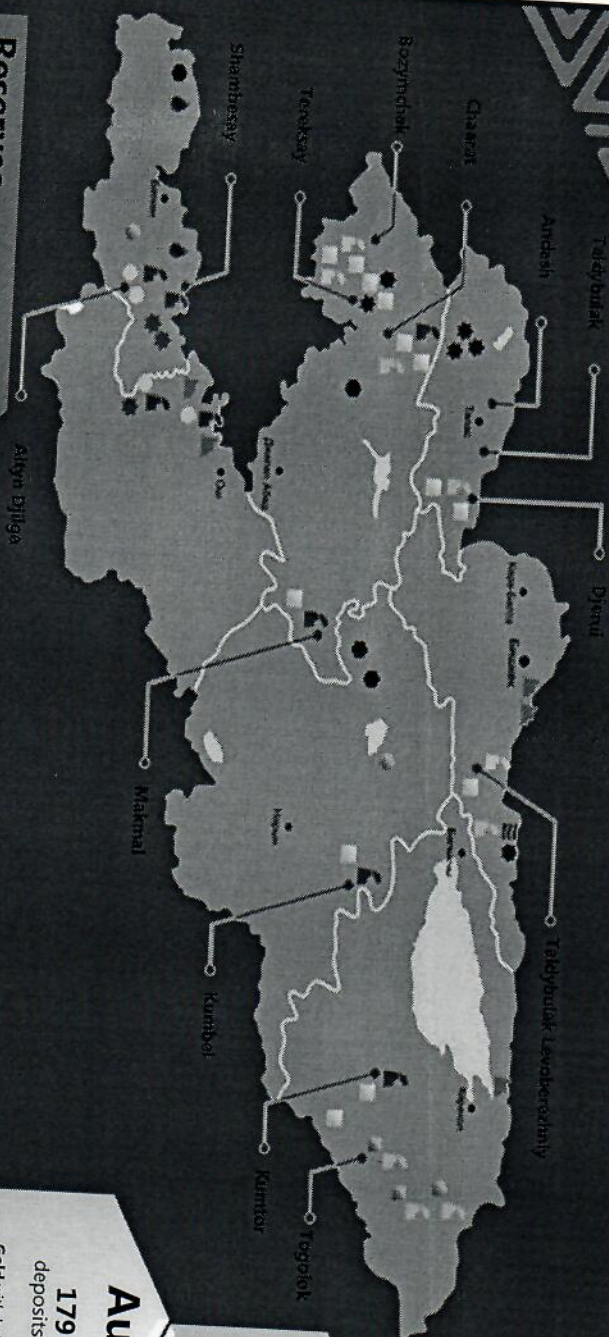
Ministry of Natural Resources, Ecology, and Technical Supervision of  
Kyrgyz Republic

# Investment Projects in the Mining Industry of Kyrgyzstan

Bishkek, Kyrgyz Republic



# POTENTIAL OF CRITICAL MINERALS INDUSTRY IN KYRGYZ REPUBLIC



**Reserves**

Tin – 208.8 thousand tons  
 Tungsten – 122.8 thousand tons  
 Antimony – 273.8 thousand tons  
 Mercury – 42.7 thousand tons

Beryllium - 25,247.2 tons  
 Rare Earths – 63.3 thousand tons  
 Aluminum – 199,470.8 thousand tons  
 Gold – 1024 tons





## Rare Earth elements – 1. Kutesay II and 2. Kalesay

As a result of the industrial activities of JSC "KHMS" (1992-1995), 5 tailings ponds were created. Four tailings ponds are located in the Ak-Tyuz area, and the fifth, the Buurdun tailings pond, is located 3.8 km south of the city of Orlovka.

The average particle size is 0.138 mm, and the average density is 1.65 g/cm<sup>3</sup>.

Total reserves for tailings ponds of deposits No. 1-4: 5.52 million tons.

Buurdun deposits tailings pond: 5.28 million tons.



Deposit tailings storage facility №1  
Объемов 0,37 тис. м3 = 500 тис. т

Deposit tailings storage facility №2  
объемов 0,37 тис. м3 = 500 тис. т

Deposit tailings storage facility №3  
Объемов 1,1 тис. м3 = 1,85 млн. т

Deposit tailings storage facility №4  
Объемов 1,5 тис. м3 = 2,47 млн. т

Buurdun deposit tailings storage facility  
Volume of 3,2 million m<sup>3</sup> = 5,28 million tons

### Rare Earth elements:



**Kutesay II**



**Kalesay**

Rare earth elements

**63,3 тис. тонн**

15 rare earth metals

Beryllium reserves:

**11.7 thousand tons**

As of 01.01.2024, the remaining reserves at the Kutesay-2 deposit are:

**Zinc:** 23.8 thousand tons

**Molybdenum:** 3.6 thousand tons

**Bismuth:** 3.4 thousand tons

**Rare earth elements:** 63.3 thousand tons

**Silver:** 129.9 tons

**Lead:** 27.5 thousand tons

Development is recommended in conjunction with the beryllium deposit "Kalesay."



# Rare earth elements and critical minerals – Kyzyl-Ompol

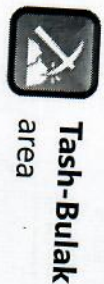
Areas of the Kyzyl-Ompul placer group

The placer group was discovered in 1951. It consists of five placers:

1. Bake
2. Tash-Bulak
3. Uzunsay
4. Tyunduk
5. Otuk



## Reserves of the deposit



As of 01.01.2024, the State Balance lists reserves of valuable components for the Tash-Bulak placer of the Kyzyl-Ompul placer group as per the following table:

Category of reserves and resources	Titanomagnetite (thousand tons)	Zr (X1000 tons)	P (tons)	Th (tons)	U (tons)
$C_1 + C_2$	1415,65	33,31	11898,3	6879,7	2903,3
Off-balance reserves	83	0,83	600	1616,6	612
$P_1$	4112,4	33,8	29229,9	3338,8	1632,9
Total	5611,05	67,94	41728,2	11835,1	5148,2

## Forecast resources for the entire deposit

Category of reserves and resources	Titanomagnetite (thousand tons)	P (tons)	P (tons)	Th (tons)	U (tons)
$C_1 + C_2 + P_1 + P$	12899,05	201368,2	284822,7	27692,7	11396,9



# Open-pit mining of nepheline syenites at the Sandyk deposit.

Located at Djungal district of Naryn region



## Reserves of Sandyk deposit

Name of area	Category of reserves and resources	Ore (Million ton)	Alumina (Million ton)	Average content
Chechekty	$C_1 + C_2$	731.874	147.057	20,09%
Sandyksu	P1	117	20.8	17,81%
Kumbel	P1	187.2	35.8	19,16%
<b>Total:</b>		1036,074	203,657	

## Category of reserves and resources

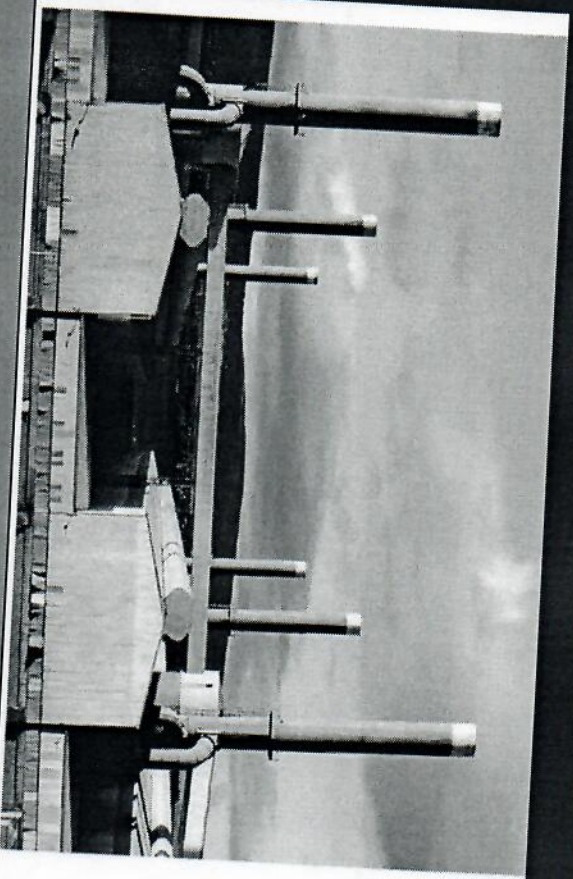


located in Kadamdzhai District

Name of deposit	Category of reserves and resources	Boxytes and Alumina (Million ton)	Alumina (Million ton)	Content of $Al_2O_3$
Katranbashi	$C_2 + P_2$	4.49	-	46,8%
Karangli	$P_1 + P_2$	-	18.68	38,28%



## Surface extraction of nepheline syenite at the Sandyk deposit



### The implementation of this project will allow to:

- reduce both internal and external migration;
- create over 7,000 jobs at the enterprise;
- engage more than 9,000 people in the service sector;
- increase the export potential of aluminum to both near and far abroad markets.

Capital investments for the development of the Sandyk deposit

**9,13 billion \$**

Yearly profit after ramp-up to full capacity

**9,13 billion \$**

Return on investment (ROI)

**4,13 years**

Annually in the form of tax and other contributions to the budget

**279,0 million \$**

Create over 7,000 jobs at the enterprise

Workers average salary  
**35-40 thousand soms**



## Uzunbulak area (lithium)

The Uzunbulak area is administratively part of the Ton district in the Issyk-Kul region.

Li – 0,32 % Rb – 0,26 % In – 0,002 %

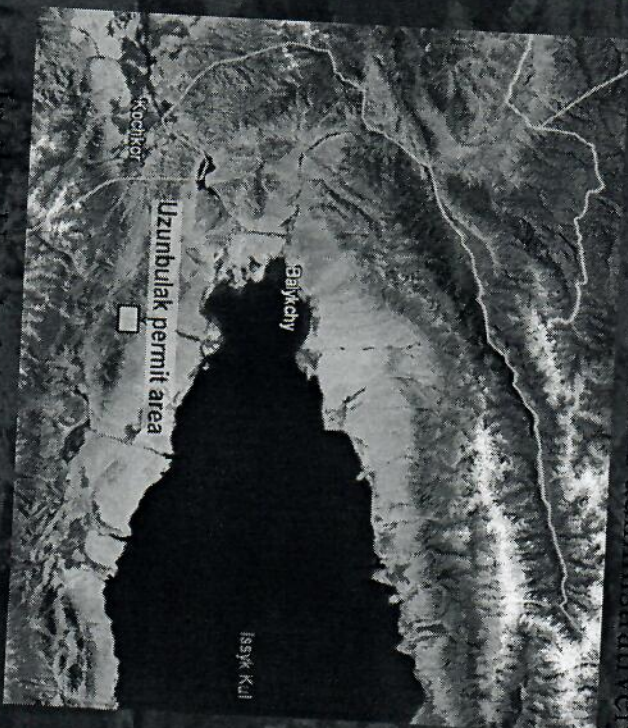


### Perspectives



Forecast resources in category P2:

	Block area, m <sup>2</sup> .	Average grade, %.	Forecast resources (P2), tons.
Lithium	195x50	0,32	8500
Rubidium	195x50	0,26	6300
Tin	165x50	0,037	760
Beryllium	30x50	0,017	65
Indium	40x50	0,0022	11



In the Uzunbulak area, previous work has identified one lithium occurrence, two points of tin and beryllium mineralization, a medium concentration tin lithochemical anomaly, and a high concentration tin placer anomaly. Of the identified ore occurrences, the lithium occurrence associated with a zone of greisenized metasediments is of particular exploration interest.

**Total forecasted lithium resources in category P3 for the Uzunbulak area:  
366,767 tons.**

This data provides a complete overview of the forecasted lithium reserves and resources in different categories for the Turasu area, as well as for other areas in the Uzunbulak region.



## Antimony deposits




The Kadamjaj deposit is located in the Kadamjaj District, a well-developed region, at elevations ranging from 500 to 1,200 meters, in close proximity to the city of Kadamjaj.

### Reserves of Kadamja deposit

Reserves (thousand tons)	Average content	Prospective resources (P1) (thousand tons)	Average content
84,0	2,04% - 5,32%	69,7	3,6 %

51  
Sb  
121.7  
Antimony

In addition, there are also promising, unexplored deposits of various scales.

-  **1. Sharkratma antimony deposit** – located in the Batken District, in a high-altitude zone at elevations of 2,660–3,512 meters. It lies in a relatively accessible area adjacent to the economically developed regions of the Batken Valley and the Tajik enclave "Vorukh".
-  **2. Abshir (Abshirsky) antimony ore deposit** – located in the Nookat District, on the northern slopes of the Alai Range, at elevations of 2,600–3,100 meters, in close proximity to the economically developed foothills of the Fergana Valley.
-  **3. Gezart North antimony deposit** – located in the Nookat District, on the northern slopes of the Alai Range, at elevations of 3,000–3,800 meters, in an undeveloped area, 5 km east of the Abshir antimony deposit.



## Jetim Deposit

The Jetim deposit is located in the Naryn district of the Naryn region.

From 1979 to 1983, geological mapping at scales of 1:50,000 and 1:10,000 was carried out by the State Geological Survey (SKGE) and the Geophysical Expedition of the Geology Directorate of the Kyrgyz SSR, combined with aeromagnetometry and ground magnetotelluric surveys in the Jetim iron ore district. Simultaneously, high-precision magnetometry was conducted at 6 areas of the deposit:

Dangi;  
Tuyuksu;  
Altansu;  
Moldobashi;  
Teleke (North and South);  
Kurmeny.

As a result of this work, over 500 magnetite and hematite ore bodies were delineated in the ore district. The forecasted iron ore resources to a depth of 500 meters are estimated at 5.4 billion tons in categories C2+P1 with an average total iron content of 31.7%, including 2.88 billion tons in category C2.



### Perspectives

- The forecasted iron ore resources to a depth of 500 meters are estimated as follows:
- **5.4 billion tons in categories C2+P1** with an average total iron content of 31.7%, including **2.88 billion tons in category C2.**

The area for exploration is 30,555.4 hectares



## Delbek and Tutek rare earth deposits (niobium and tantalum)

1. Delbek deposit is located within the Batken District of the Batken Region, in the upper reaches of the Sokh River, within the Delbek stream basin. The Delbek deposit should be considered a multi-component deposit: in addition to tantalum, the ores contain notable quantities of niobium, zirconium, hafnium, and yttrium.



2. Tutek deposit is located within the Batken District of the Batken Region, in the upper reaches of the Sokh River, within the Tutek stream basin, which is a tributary of the Akterek River – the western branch of the Sokh River. According to the forecast resource estimates for Ta<sub>2</sub>O<sub>5</sub> (Berezansky, 1992), with a combined total of 30,635 tons (Categories P1 + P2), the Tutek deposit should be classified as a large-scale deposit.

Name of object	Resources	Remark
<b>Delbek</b>	Categories P1 + P2 (forecast resources): •Tantalum pentoxide (Ta <sub>2</sub> O <sub>5</sub> ): 52.2 thousand tons	Promising and unexplored. High-altitude zone (2,200–4,000 m), sparsely developed area.
<b>Tutek</b>	Categories P1 + P2 (forecast resources): •Tantalum pentoxide (Ta <sub>2</sub> O <sub>5</sub> ): 30.6 thousand tons •Niobium pentoxide (Nb <sub>2</sub> O <sub>5</sub> ): 16.4 thousand tons •Zirconium dioxide (ZrO <sub>2</sub> ): 60.1 thousand tons •Uranium (U): 2.4 thousand tons •Thorium (Th): 6.5 thousand tons	A promising, unexplored deposit located in a high-altitude zone (3,500–3,900 meters), within a sparsely developed region.



# Aprelskoe gold deposit

## Reserves by areas

Name of area	Category of reserves and resources	Gold (kg)	Silver (kg)
Central	$C_1+C_2$	972,9	3145,1
Rodnikoviy	$C_1+C_2$	2135,3	10397
Medniy	$C_2+P_1$	14351,1	-
<b>Total:</b>		<b>17459,3</b>	<b>13542,1</b>



## Reserves of whole deposit

### Balance reserves (Categories C1 + C2):

Gold – 3.1 tonnes

Silver – 13.5 tonnes

### Preliminarily estimated reserves:

C2 – Gold: 2.2 tonnes

P1 – Gold: 12.1 tonnes



# Unkurtash-Karatyube gold deposit

The Unkurtash-Karatyube area is administratively part of the Alabuka District in the Jalal-Abad Region of the Kyrgyz Republic.

The following reserves are recorded in the State Balance:

- Unkurtash deposit amount to:
  - Gold – 45,293.8 kg
  - Silver – 30.22 tons

The reserves at the Karatyube deposit amount to:

- Gold – 6,451.34 kg
- Silver – 3.90 tons

- Sarytyube deposit amount to:

- Gold – 33,840.40 kg
- Silver – 50.869 tons

- Unkurtash-Karatyube area amount to:

- Gold – 3,885.718 kg
- Silver – 3,532 tons

- According to March 26, 2024, within the Unkurtash-Karatyube area, the preliminarily estimated gold reserves of Category C2 amount to 673 kg, and forecast resources of Category P1 amount to 5,831 kg.



## Запасы по месторождению

Total reserves of the Unkurtash-Sarytyube-Karatyube deposit amount to:  
Total reserves in Categories C1 and C2:

- Gold – 90,144.3 kg
- Silver – 88.5 tons

Forecast resources of gold:  
• 5,831 kg





In Kyrgyzstan, more than 100 mining companies are engaged in the extraction and processing of minerals, including large enterprises.

KAZ  
MINERALS  
КОЗМІНАРАЛ



#### Kaz Minerals

This is one of the leading copper producers. The Group's shares are listed on the London and Hong Kong stock exchanges.



#### JSC Kumtor Gold Company

The Kumtor deposit was discovered in 1978, and gold production began in 1997. Today, JSC "Kumtor Gold Company" is the largest enterprise and the number one taxpayer in the country. Currently, the company employs 3,335 specialists, of whom 99% are citizens of the Kyrgyz Republic.



#### STEWART ASSAY AND ENVIRONMENTAL LABORATORIES

Area of activity: Laboratory for geochemistry, ecology, and metallurgy.

CHAAARAT

#### Chaarat Gold Holdings Limited

The company conducts geological exploration work in Kyrgyzstan and is listed on the Alternative Investment Market (AIM) of the London Stock Exchange. The company has been operating in Kyrgyzstan since 2002.



#### Cengiz Holding

A Turkish company is jointly developing the deposit in the Chatkal district. The company has been operating in Kyrgyzstan since 2016.



#### Société Générale de Surveillance

SGS is a global leader in testing, inspection, and certification.



#### Lingbao Gold Company Limited

A Chinese state-owned corporation engaged in gold mining in Kyrgyzstan. The company has been operating in Kyrgyzstan since 2008.



#### Zijin Mining Group Company Ltd

An international company that conducts mining operations at the Taldy-Bulak Left Bank deposit. The company has been operating in Kyrgyzstan since 2006.



#### Alfred H Knight

Other professional, scientific, and technical activities.



#### Alliance Altyn

LLC "Alliance Altyn" holds a license for the development of the Jerui gold deposit and a license for geological exploration for gold in the Jerui area.

The company has been operating in Kyrgyzstan since 2015.



#### JSC Kyrgyzaltyn

The largest domestic enterprise in the Kyrgyz Republic, specializing in the development of gold deposits, established in 1992.



#### Archi Tech

Software development for chemical analytical laboratories.

There are no laboratories like those in Kyrgyzstan in Asia.





**Thank you for your attention**

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