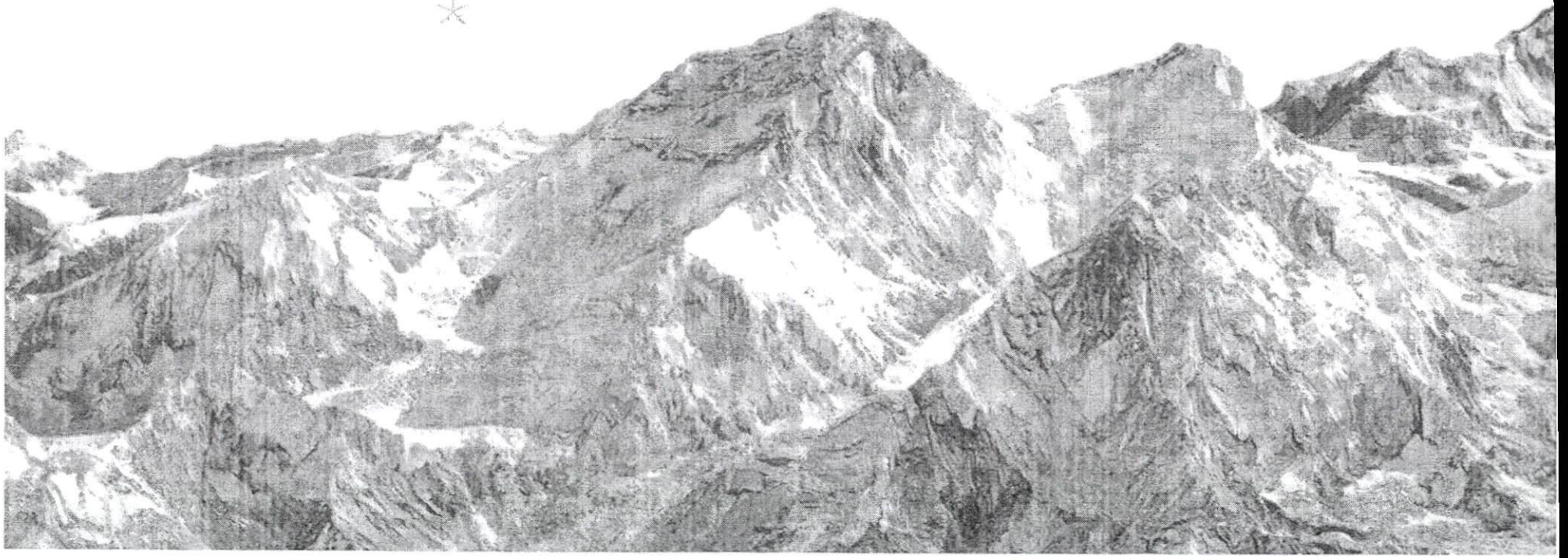
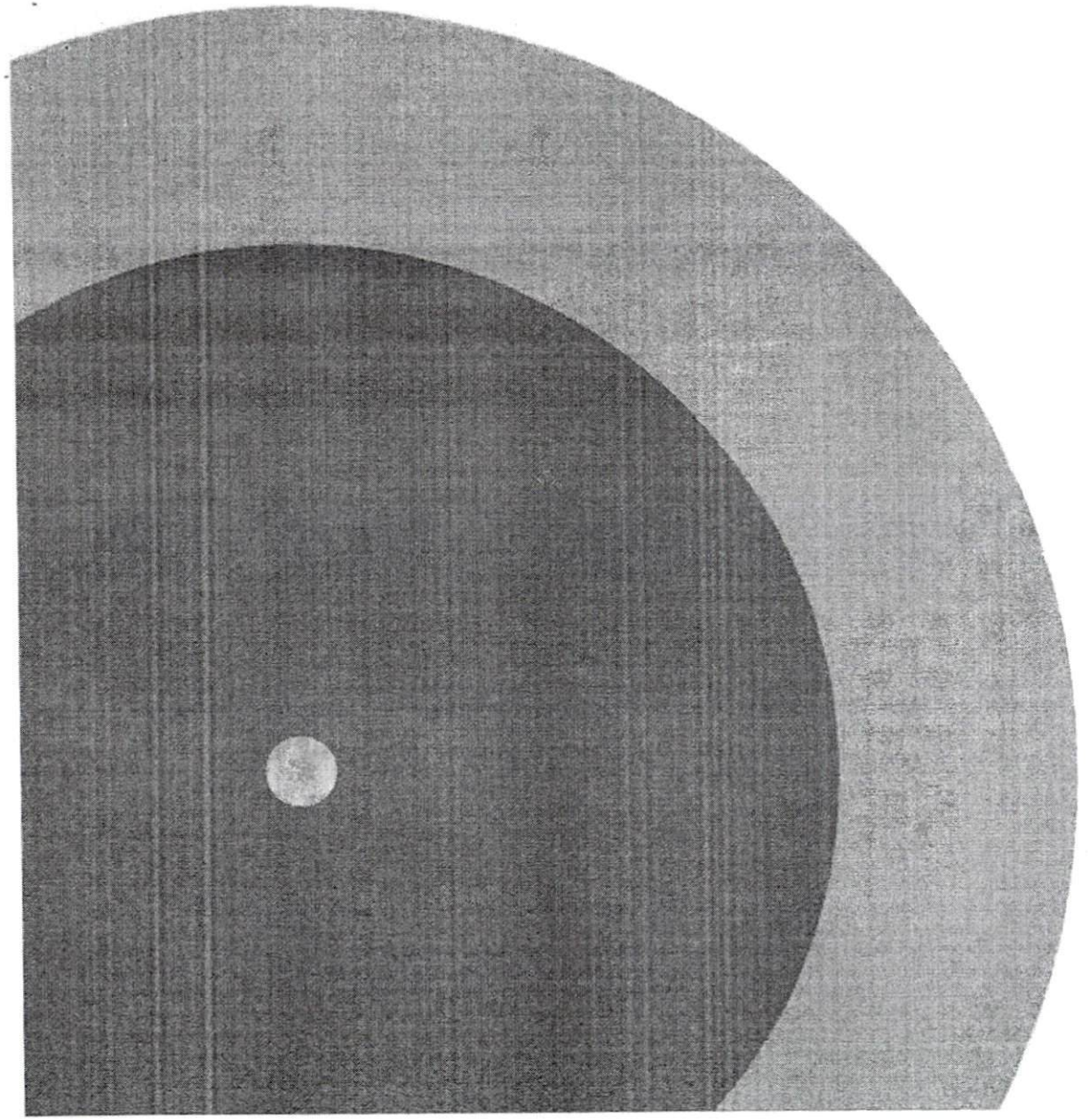
Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic
Kyrgyz Geological Survey

Investment proposal for the development of rare earth metals on the basis of the Ak-Tyuz tailing dumps and the Kutessai-II deposit



State Enterprise «Kyrgyzgeology»



In the Kyrgyz Republic

Rare earth me

Rare earth metals (REM) are a group of 16 elements.

REM is widely used in various technological industries, such as the production of high-power magnets, catalysts, lasers, nuclear power, fiber optics, electronics and other high-tech sectors.

Due to their strategic importance for various industries, the extraction and processing of rare earth metals is a significant industrial activity.

Reserves of the Kutessai II deposit

Kutessai II is located on the territory of the Keminsky district of the Chui region. It is orographically located on slope of the Tasa-Keminsky ridge, which is the watershed of the Maly and Bolshoy Kemin rivers. Geographical c the deposit: 760,070,270 sq.s. and 420,510,320 sq. d.

By category A+B+C1

Ore

16,763,000 tons

- ✓ ΣTR_2O_3 - 44 300 tons
- ✓ Content

  2,642,72 g/ton

Off-balance sheet

Ore

16,409,000 tons

- ✓ ΣTR_2O_3 - 11 800 tons
- ✓ Content

  719,1 g/ton

By category C_2

Ore

3,465,000 tons

- ✓ ΣTR_2O_3 - 7 200 tons
- ✓ Content

  2 077,9 g/ton

Σ A+B

Ore

20,228

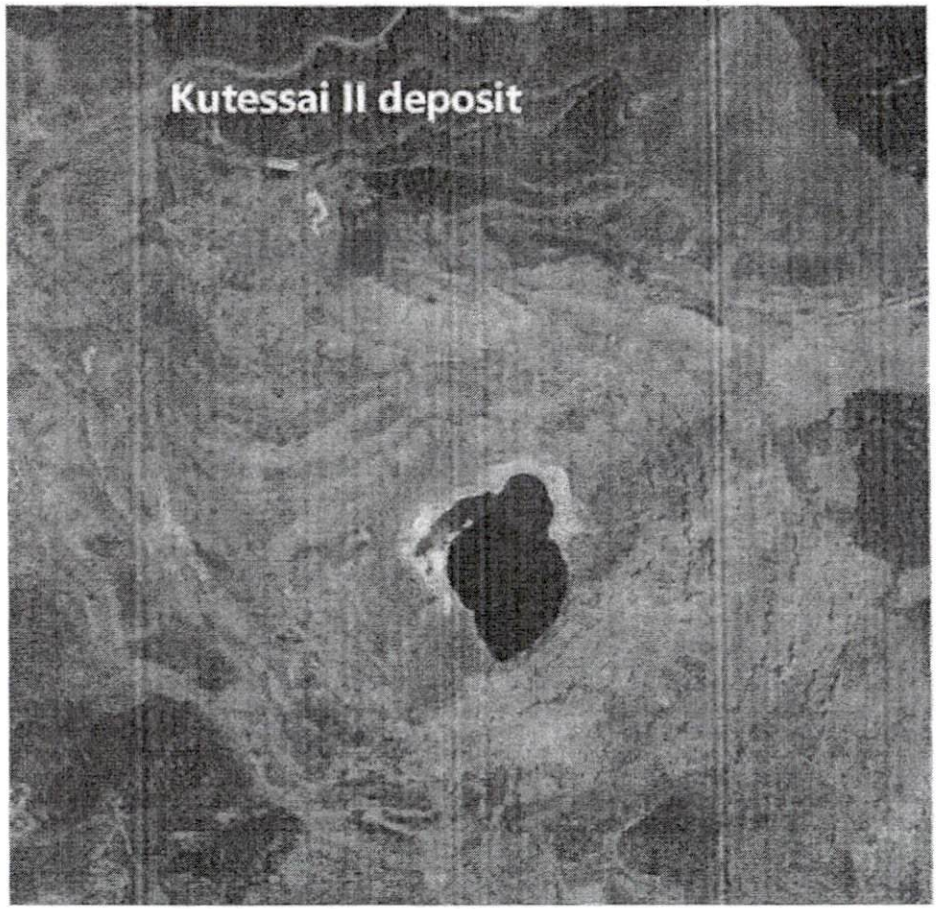
- ✓ ΣTR_2O
- ✓ Conter

  2 545

  Conter

Data on tailings dumps

As a result of the production activities of JSC KHMZ (1942-1995), 5 tailings dumps were formed. Four tailings dumps are located in the area of Ak-Tyuz settlement, the fifthThe Boordun tailing dump is located 3.8 km south of the city of Orlovka.



The weighted average particle size is 0.138 mm, the average density is1.60 g/cm3

Total volumes for tailingsdumps No. 1, 2, 3 –3.1 million tons

Volumes of the Buurdinsky tailings dump5.1 million tons

Audit work for economic
is carried out at 4 tailings

- Buurdinskoye tailing
volume is 3.2 million.
million tons
- Tailing dump No. 1Th
370.6 thousand. m3 =
thousand tons
- Tailing dump No. 2vc
thousand. m3 = 800
tons
- Tailing dump No. 3Th
1050 thousand. m3 =
thousand tons

Technical and economic calculation

№	Name	Amount in US$ (Per year)
1	Mining and technical costs.	6,500,000
2	Mining and processing costs. Operational and depreciation expenses.	17,500,000
3	Chemical and metallurgical plant.Operational and depreciation expenses.	13,666,000
	Total:	**37,666,000**
	Profit before tax.	**418,000,000**
	Net profit.	**380,334,000**
	Production capacity.	**1 million tons**

Economic indicators

Mining costs:

№	In an open way	Underground way	Total of US$ (Over 18 years)	Annua
1	48,000,000	65,000,000	48,000,000 + 65,000,000 = 113,000,000	113/18 years =
	Total:		113,000,000	6,5

Mining and processing costs:

№	Capital expenditures	Operating costs (over 18 years)	Total of US$ (Over 18 years)	Annua
1	45,000,000	270,000,000	45,000,000 + 270,000,000 = 315,000,000	270/18 years
	Total:		315,000,000	17,

Chemical and Metallurgical plant:

№	Капитальные затраты	Operating costs (over 18 years)	Total of US$ (Over 18 years)	Annua
1	30,000,000	216,000,000	30,000,000 + 216,000,000 = 246,000,000	246/18 years
	Total:		246,000,000	13,
	All:		674,000,000	37,

Total costs

Miningand technical costs:

48 million

65 million

Equal to: 113 million –mining.

113/18 years =$ 6.5 million/year

Mining and processingcosts:

45 million - Capital expenditures

15 million - Operating costs

15 million × 18 years = 270 million $

270 million $ + 45 million$ = 315 million $/over18 years

315 /18 years = $17,500 million/year

Chemical and Me

30 million - Capital

12 million - Operati

12 million × 18 year

$ 216 million + $ 30 million/over18 years

246 /18 years = $ 1

Cost price

Recycling

Processing – 1,000,000 million tons × 2,545.97 g/t $\Sigma TR2O3$ - 2,545.97 tons of iron in ore/ear of extracti
1,900 tons/year of metal

Concentrate yield – 5% total: 50,000 tons of concentrate per year

The content in the concentrate is $\Sigma TR2O3$ - 38 189.55 g/ton = 3.8% of the concentrate

For the extraction of 1 million tons of ore = $ 6.7 million

Depreciation funds (annual) – $4.1 million/year

Operating costs – $ 27 million/year

Total: 1 ton of concentrate = $ 757.32 (cost) = 34,370.5 grams = $ 22.03 per kilogram of metal

Ongoing work at the Buurdinsky tailings dump

Geological tasks

1. Carrying out search and evaluation work on the entire area of work.

2. Carrying out a complex of exploration works for polymetals, in order to calculate reserves and allocate an area for industrial development.

3. Conducting technological studies of tailings and determining the possibility of obtaining commercial concentrates from them using modern equipment and the latest enrichment methods.

The tasks are solved by the following types of work:

Generalization and analysis of geological materials;

- Conducting search and filming operations;
- Core drilling and sampling;
- Geophysical and technological research;
- Topo-surveying service of mining operation
- Construction and restoration of access roa
- Analytical research and reporting.

№	Types of work	Unit of measurement
1	Core drilling of wells	P.M. (square)
2	Topographic and geophysical work on the surface	ha
3	Spectral analysis	probe
4	Assay for gold and silver	probe
5	Chemical analysis for Pb, Zn, Au, Ag, Cu, In, TR, etc.	probe
6	Laboratory technological research	probe
7	Hydrogeochemical studies	probe
8	Preparation of the report	squad/day

State Enterprise «Kyrgyzgeology»

Reserves of the Kutessai II deposit

As of 01.01.1992, in the author's figures in the following amount (Protocol No. 445 of October 31, 1995.)

Counting elements	Balance sheets			Off-balance sh	
	Inventory category			Inventory cate	
	B	C_1	C_2	B	C_1
1	2	3	4	5	6
Total for the field without balance sheet					
Ore reserves, thousand tons	15147,4	1797,5	3464,7	-	-
The amount of TR_2O_3, t	40950,5	3892,8	7250,3	-	-
Lead. t	19500	700	1400	-	-
Molybdenum, t	1984,3	117,6	327,8	-	-
Bismuth, t	-	2185,1	104,5	-	-
Zinc, t	-	16500	-	-	-
Silver, t	-	52,95	8,19	-	-
Including: 1. In the outline of a project career					
Ore reserves, thousand tons	10885,0	830,1	-	2001,5	241,5
The amount of TR_2O_3, t	32355,6	1971,1	-	3928,4	460,4
Свинец, т	13800	200	-	1640	100
Molybdenum, t	1546,9	45,4	-	201,9	7,4
Bismuth, t	-	1757,3	-	-	307,8
Zinc, t	-	-	-	-	11900
Silver, t	-	38,07	-	-	7,3
2.Behind the contour of a project career without a balance sheet					
Ore reserves, thousand tons	2260,9	725,9	3464,7		
The amount of TR_2O_3, t	4666,5	1461,3	7250,3		
Свинец, т	4100	400	1400		
Molybdenum, t	235.5	64,8	327,8		
Bismuth, t	-	120,1	104,5		
Zinc, t	-	4600	-		
Silver, t	-	7,58	8,19		


Thanks for your attention

وزارة الخارجية
MINISTRY OF FOREIGN AFFAIRS

فهرسة معاملة

م	الرقم	التاريخ	نوعها	الجهة التي وردت منها	موضوعها
1	١-١١	—	—	سفارة فرنسا بالمملكة	عرض تقديمي للمعادن
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