



**MINISTRY FOR INVESTMENT AND DEVELOPMENT OF THE
REPUBLIC OF KAZAKHSTAN**

Presentation

**Project «Development of Titanium-Zirconium
Deposit of Ashisay in Aktobe region»**

Astana, 2015

Main project data:

Subsoil user : «Kazakhstan Minerals Technology» Limited Liability Partnership
office 75, h. 24, Abay avenue, Aktobe, Republic of Kazakhstan
Contact phone numbers: 8-7132-568179, 8-701-5504079.

Main goals of the project: Development of titanium-zirconium deposit of Ashisay in Temir district of Aktobe region, which includes :

1. Carrying out supplementary exploration of the deposit, with a view to contouring beds, laboratory tests to define ore stock and its conditions and justification in Land Resources Committee, working on the Technical Regulations and selecting necessary technological equipment.
2. Developing deposit, with construction of refinery plant, with all necessary infrastructure, purchasing main and auxiliary technological equipment.
3. Mining and processing metalliferous sands and obtaining imenite, rutile and zirconium with concentration, sufficient for further industrial processing.

- Total project cost : Total cost of capital expenses for developing deposit, until achieving designed capacity – 40 million Euro.
- Project implementation period: Reaching the design capacity is planned within 2 – 3 years. Return of investment 5-6 years. Development period, according to the contract- until 2038.
- Project implementation place : Preprocessing and bulk concentrate plant is planned to be built at the deposit «Ashisay» in Temir district of Aktobe region.
Location of fine processing plant will be defined on the basis of price for main energy carriers and distances for transporting concentrate.

Summary and main design solutions:

- Brief geological description o the deposit (area, site etc):

Ashisay deposit is a deep lead, belonging to coastal-marine, industrial-genetic type of deposits.

Ashisay titanium-zirconium alluvial deposit is linked with the central part of Karamola compensatory mould. Industrial mineralization is related to sand spit of buldurtine suite of Eocene. Section of productive stratum reveals 3 ore horizons.

- Available reserves: according to the results of prospecting and evaluation works (1990-93) in the deposit, the reserves of C₂ category ore sands were calculated in the deposit. The cut-off grade of ilmenite is equal to 60 kg/m³. the reserves are as follows:

ore sand– 55710,2 thousand m³

titanium dioxide 1338 thousand tons

zirconium dioxide – 344 thousand tons

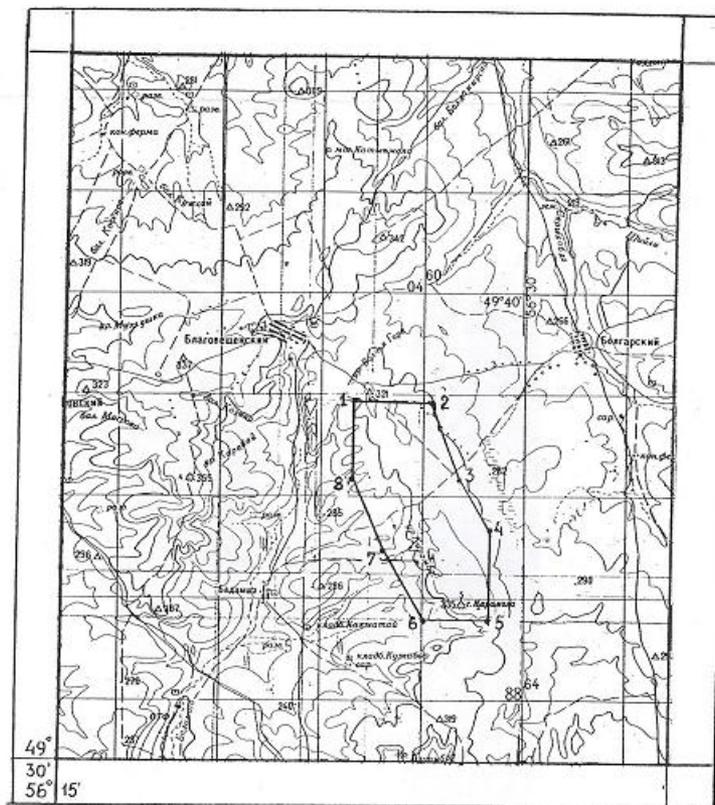
- Contract area:

Ashisay deposit is located in Temir district of Aktobe region of the Republic of Kazakhstan, 120 km south-west of Aktobe city. The nearest railway station, Shubar-Kuduk, is 45km away. There are rural settlements, like Perelybovka, Bolgarka, Taldysai, in the deposit area.

Deposit area is approx. 13 sq. km,
Geological allocation area is 33 sq.km.

Contract area location scheme

Картограмма расположения геологического отвода
месторождения Ащисай
Масштаб 1 : 200 000



 - *Контур геологического отвода*

Infrastructure

- Railroad Nearest railroad station, Shubar-Kuduk, is located 45 km away from the deposit.
- General roads Road network at deposit area is represented by rural earth roads. serviceability of roads is maintained for ally year round, with some limitations only for flooding period. Hard pavement road is located 6 km away from the deposit, and is represented by highway Aktobe-Bogoslovka-Bolgarka-Zhaksymbai.
- Electricity lines There are no electricity lines in the deposit area. The nearest substation with capacity, sufficient for connecting initial refinery plant exists in Bolgarka settlement, at the distance of 19 km.
- Railroad stations Nearest railroad station, Shubar-Kuduk, is located 45 km away from the deposit.

- Required investments :

Carrying out supplementary exploration of the deposit, with a view of contouring beds laboratory tests to define ore stock and its conditions and justification in Land Resources Committee, working on the Technical Regulations and selecting necessary technological equipment. Necessary expenses– 3 mln Euro.

Developing deposit, with construction of refinery plant, with all necessary infrastructure, purchasing main and auxiliary technological equipment. Necessary expenses– 37 mln Euro.

Total capital expenses for developing deposit, until reaching designed capacity – 40 mln Euro.

- Technologies and equipment: For the period of exploration – purchasing set of laboratory equipment СИАМС – 7С, with technology «Automated methods of quantitative mineralogical analysis «Mineral C7», staff training.
equipment for the period of developing deposit will be defined on the basis of technological regulations in the specialized technological center.

Main technical-economical indicators:

- Productivity : Minimum productivity after reaching design capacity will make at least 30 thousand tons of bulk concentrate.
- IRR (ВНД)- 21,7 %, NPV(ЧДД) - 8,7 mln Euro
- Payback period : payback period for capital expenses is at least 5 years
- Product market: Product markets are enterprises, producing titanium and titanium alloys in aerospace, automobile, chemical and atomic industries.
- Creation of workplaces : After reaching the design capacity, approximately 120 workplaces will be created. With 2 shift working mode, 250-300 workers will be employed

Project datasheet

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Goal and concept of the project:	Main goal of the project is development of titanium-zirconium deposit «Ashisay» in Temir district of Aktobe region and receiving marketable produce of titanium and zirconium
Period of implementation :	2015 - 2038 (including period of construction, operation and attenuation)
Place of implementation:	Republic of Kazakhstan, Aktobe region, Temir district
Total cost of the project :	40 mln. Euro

Required investments :

38 mln Euro, including:

1 stage – exploration– 3 mln Euro.

2 stage– development:

1 trench– ordering equipment and infrastructure
– 20 mln Euro.

2 trench– completion of works - 17 mln. Euro..

Expected results :

receiving titanium and zirconium ore with concentration and purity, sufficient for further industrial processing, selling marketable product, return of investments for assimilating and distributing profit.

Current status :

Main permission documents for exploration works are obtained, geological exploration design completed and approved. Personnel problem solved.

IRR (ВНД)- 27,7 %, NPV(ЧДД) 8,7 mln Euro (10,9 mln. US dollars)

Payback period

5 years

Productivity:

Main permission documents for exploration works are obtained, geological exploration design completed and approved. Personnel problem solved.

Advantages:

High competitiveness of produce, intended for production, trends of growing prices and demand for titanium and zirconium concentrates.

Drawbacks:

General tendencies in the conditions of world economy.

Infrastructure and resources: The territory, adjacent to the deposit, has the sources of electricity, with capacity, sufficient for organizing initial refinery, the territory, planned for final refinery, has all the energy types – electricity, gas, water. The planned territory borders with railroad.

Creation of workplaces: Project implementation will allow to create at least 120 workplaces. At least 250-300 workers will be employed from nearest settlements, on condition of employing workers from local settlements.

COMPILED MAP