



FIVE STAR
EQUITIES
GROUP

FIVE STAR EQUITIES TANZANIA

MINING OUR BUSINESS

COPPER MINING

COPPER MINING

Project Profile: Processing Plant at Kongwa Maji

Project Title: Kongwa Maji Copper Processing Plant

Project Location: Kongwa Maji, Tanzania

Project Cost: USD 13 million – 18 million

Implementation Period: 18 months

Program of Implementation:

January – March 2024	Land acquisition and preparation
March – May 2024	Construction of buildings and installation of machinery
June – October 2024	Procurement and installation of equipment
December – 2024 March – 2025	Testing and commissioning
April 2025 – November 2025	Ramp-up and full production

Operative Date: January 2026

P.O. Box 965 Mbeya Tanzania
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TANZANIA



FIVE STAR EQUITIES GROUP

Five Star Equities Group, LLC (FSEG) is a modern and global logistics management service entity that offers a unique approach to worldwide product management solutions for today's global clientele. We address critical corporate and private group projects with intelligent and flexible management solutions that transform individual aspirations into bankable entities including management and system governance processes through fruition.

Proprietary & Confidential



THE UNITED REPUBLIC OF TANZANIA
 MINISTRY OF MINERALS
 MINING COMMISSION



THE MINING (MINERALS AND MINERAL CONCENTRATES TRADING) REGULATIONS, 2018
 The Mining Act, Cap. 122

Made under Regulation 2

DEALER LICENCE No. DL/16/0001/024/005

Licence is hereby granted to **FIVE-STAR EQUITIES TANZANIA LIMITED** of P.O. Box 965, Mbeya to buy, sell or otherwise deal in **Minerals** from the date of issue up to **30th June, 2025** at **Kongwa Mineral and Gem Zone**.

This licence is issued subject to the following terms and conditions:-

1. The licensee shall be liable for the due in full payments of royalties and other prescribed fees in respect of all minerals bought, sold, received or exported by him.
2. Licensee must buy or otherwise acquire minerals to sell or otherwise dispose minerals as specified in the licence in the Minerals and Gem base for the purposes of carrying on business as a dealer, to have possession thereof.
3. The holder of this licence shall keep fully and accurate records and account of transactions undertaken by him and submit a report to commission on a monthly basis.

Date at Dodoma this 21st day of September 2024.

George B. Kasira
 George B. Kasira
 For: EXECUTIVE SECRETARY
 MINING COMMISSION

Note:
 1. All terms and conditions of the Mining Act, Cap. 122 and MINING (MINERALS AND MINERAL CONCENTRATES TRADING) REGULATIONS, 2018 shall be subject to.

THE UNITED REPUBLIC OF TANZANIA
BUSINESS LICENCE
 B.L. No. 200007418
 The Business Licensing Act No. 21 of 1997 (B.L.E. 2002)

1. Issuing Office: **BUSINESS REGISTRATIONS AND LICENSING AGENCY**
 2. Tax Identification No: **172-184-921**
 3. Licence issued to: **FIVE STAR EQUITIES TANZANIA LIMITED** for the Business of **Mineral Processing**
 4. Business Location:
 Region: **Dodoma**
 District: **Kongwa District Council**
 Ward: **Kongwa**
 Vessel: **MLANGA**
 5. Principal / Branch: **Principal**
 6. Amount of fee paid: **TZS 600000** Receipt No: **SIB/12/00 2024/005**
 7. New / Renewal of Licence: **Renewal**
 8. Date of Issue: **21/09/2024** Expiry Date: **21/09/2025**

This digital copy shall serve as a complete substitute in respect of the licence. Any change in the particulars originally registered shall be notified to the Licensee.

JAMHURI YA KUHESHA NA TANZANIA
 DUBA NA HAKA
 TANZANIA ZA BIHA NA MIPATAJI YA BIHA
MILIMASHAURI YA WILAYA YA KONGWA
 (MILIMASHAURI YA KONGWA - COUNCIL)

Mapema iliyotakiwa kipi:
 Kundi: **DL/16/0001/024/005**
 Mawaziri (Waziri):
 Mheshimiwa ya Wilaya ya Kongwa
S.I.P. II
KONGWA
 01-09-2024

YANU KUTAMBUA KAMPUNI YA FIVE STAR EQUITIES TANZANIA
 Kwa kuwa na mabao hayo hayo yote:

2. Ota ipokea kama vyote na kutokutokuwa wakati ya tarehe **06-08-2024** yotein akhwa cha taasisi **KUTAMBULWA NA KUPATA DHOLO (PROCESSING PLANT)**

3. Kampuni inavyo mshahidi wa vemaali kutali wa leseni za biha vya Uchumi wa kwanza wa biha) ambao ni mshahidi wa Kongwa Maji (Kwa Mungwa na Wenzake). Hivyo Kampuni hiyo wakati wa kutoka kwa kipi ya kuhaywa mshahidi wa kutopasa mamani (Processing Plant)

4. Mshahidi wa **1185004** Kisiwani lakar cha sharia cha Borch la Shamba ya (Mungwa) Kongwa wakati wa kutoa kipi kutambulwa Akia Mshahidi wa Uchumi wa Mungwa (DEM)

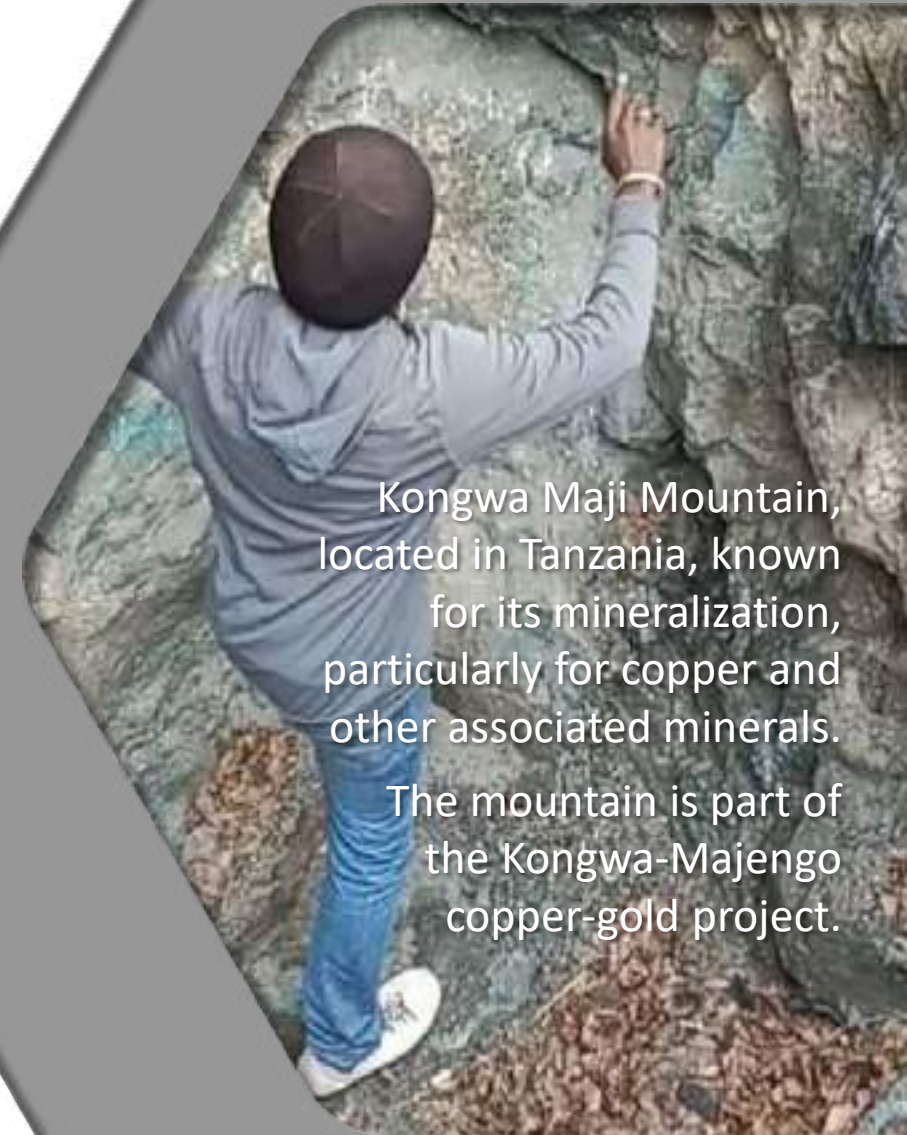


FIVE STAR
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EXECUTIVE SUMMARY

FIVE STAR EQUITIES TANZANIA Ltd is pleased to present a comprehensive plan for the establishment of a copper concentrating processing plant in Kongwa Maji, Tanzania.

Our mission is to become a leading player in the copper industry in Tanzania, leveraging the country's vast mineral resources and our team's expertise to deliver high-quality products and exceptional value to our stakeholders.



Kongwa Maji Mountain, located in Tanzania, known for its mineralization, particularly for copper and other associated minerals.

The mountain is part of the Kongwa-Majengo copper-gold project.



OBJECTIVES

- The project aims to expand on our copper concentrating processing plant in Kongwa Maji, Tanzania.
- Establish a state-of-the-art copper processing plant with a production capacity of 10,000 or more tonnes per annum
- Create 50 or more jobs and generate USD 5 million in revenue per annum
- Achieve a payback period of 5 years
- Contribute to the economic growth and development of Tanzania

Key Highlights:

- Strong demand for copper in the African and the international market
- Access to high-quality copper ore deposits in Tanzania
- Experienced management team with a proven track record in the mining industry
- State-of-the-art technology and equipment to ensure efficient and environmentally friendly operations



INTRODUCTION to Copper Mining

Copper is a vital metal used in various industries due to its excellent conductivity, corrosion resistance, and malleability.

The global demand for copper continues to rise, fueled by urbanization, infrastructure development, and the transition to cleaner energy sources.

Our venture seeks to capitalize on this demand by establishing a modern and efficient copper mining operation.



FINANCIALS

1

Location: The coordinates 6°14'10" S, 36°26'12" E to point to a location within the Kongwa District of the Dodoma Region in Tanzania.

2

This area is known for its mineralization, particularly copper and gold, as well as other associated minerals like quartz, pyrite, and malachite ¹.

3

This area is known for its mineralization, particularly copper and gold, as well as other associated minerals like quartz, pyrite, and malachite ¹.

Copper Mineralization:

Mainly in the form of chalcopyrite, bornite, and malachite.

Gold and silver:

Present and often associated with copper mineralization.

Other minerals:

Quartz, pyrite, pyrrhotite, and magnetite.

Geological setting:

Mineralization is hosted within meta-volcanic and meta-sedimentary rocks.

Structural controls:

Faults, shear zones, and contact metamorphism control mineralization.

EXTRACTION

Please note that the specific details of mineralization can vary depending on the location and depth within the mountain.





Market Analysis: The global copper market is characterized by steady growth, with increasing demand from emerging economies and technological advancements driving consumption. The market demand for copper is growing at a rate of 5% per annum. The target market is the Africa and international copper market. Major players in the industry include mining giants such as Freeport-McMoRan, BHP, and Rio Tinto. Despite market fluctuations, copper remains a valuable commodity with promising long-term prospects.

Operational Plan: Our mining operation will involve exploration, extraction, crushing, milling, and concentration of copper ore. We plan to leverage advanced technologies and best practices to optimize efficiency and minimize environmental impact. Strict adherence to safety standards and regulatory requirements will be paramount throughout the operation.

Production Plan: We aim to achieve a daily production capacity of 100 tons of copper concentrates within the first year of operation. This will involve ramping up production gradually, with a focus on maintaining consistent quality and meeting customer demand. Continuous improvement and process optimization will be ongoing priorities to enhance productivity and profitability.

Technical Analysis: The plant uses flotation technology with furnace engineering, and have already begun the process of exporting our high-level concentrates to Chinese trade. The machinery and equipment are sourced from China, Europe and specialized equipment made in Tanzania

Investment – USD 10 Million

1

Cost Analysis: The cost of establishing and operating the copper mining venture includes expenses such as equipment procurement, labor, energy, transportation, maintenance, and administrative overheads. A detailed cost analysis will be conducted to determine the total cost to produce 100 tons of copper concentrates daily and ensure competitiveness in the market.

Revenue per annum – USD 5 Million

2

Financial Projections: Based on projected sales volume and copper prices, we anticipate significant revenue generation once the operation reaches full capacity. However, initial capital investment and operating expenses will need to be carefully managed to achieve profitability. Financial projections, including NPV, IRR, and payback period, will be provided to potential investors to demonstrate the venture's viability.

3

Risk Assessment: Risks associated with the venture include market volatility, regulatory changes, operational challenges, and environmental concerns. Mitigation strategies will be implemented to address these risks, including diversification of customer base, compliance with regulations, and implementation of safety measures.

FINANCIALS



CONCLUSION



Our proposed copper mining venture represents a compelling investment opportunity in a growing market. With a strategic approach, sound operational plan, and commitment to sustainability, we are confident in the success and profitability of this venture. We invite potential investors to join us in realizing the full potential of this exciting opportunity.





Here's a brief breakdown of the costs associated with extraction for the copper mining venture:



Extraction Costs: in USD

- **Site Preparation:** Expenses for clearing land, constructing access roads, and establishing infrastructure at the mining site.
- **Land and buildings:** Costs associated with the facility. **\$250,000**
- **Equipment Procurement:** Costs associated with acquiring mining equipment such as excavators, haul trucks, drills, and loaders. **\$12,500,000**
- **Labor:** Expenses for skilled and unskilled labor involved in the extraction process, including miners, operators, and supervisors. **\$3,750,000**
- **Raw materials¹:** Costs for sampling to identify and evaluate potential ore deposits. **\$1,000,000**
- **Concession² (16sq kilo meter):** Costs for location. **\$16,000**
- **Exploration:** Costs for geological surveys, drilling, and sampling to identify and evaluate potential ore deposits.
- **Permitting and Regulatory Compliance:** Fees for obtaining permits, licenses, and complying with environmental and safety regulations. **\$5,000**
 - **Utilities:** Expenses for powering and maintaining operations. **\$200,000**
 - **Total Budget: \$17,721,000**



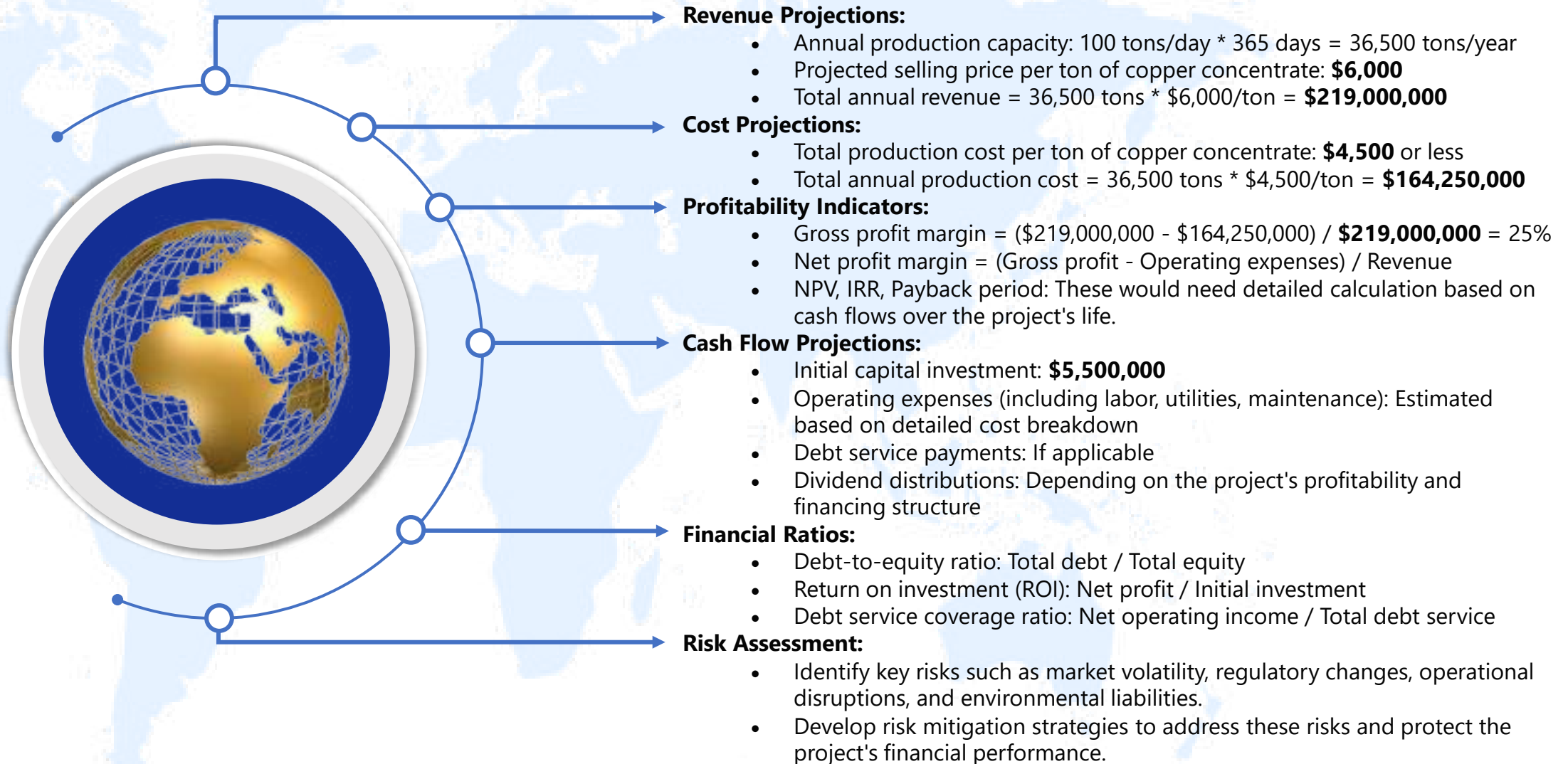
Here's a brief breakdown of the costs associated with processing for the copper mining venture:



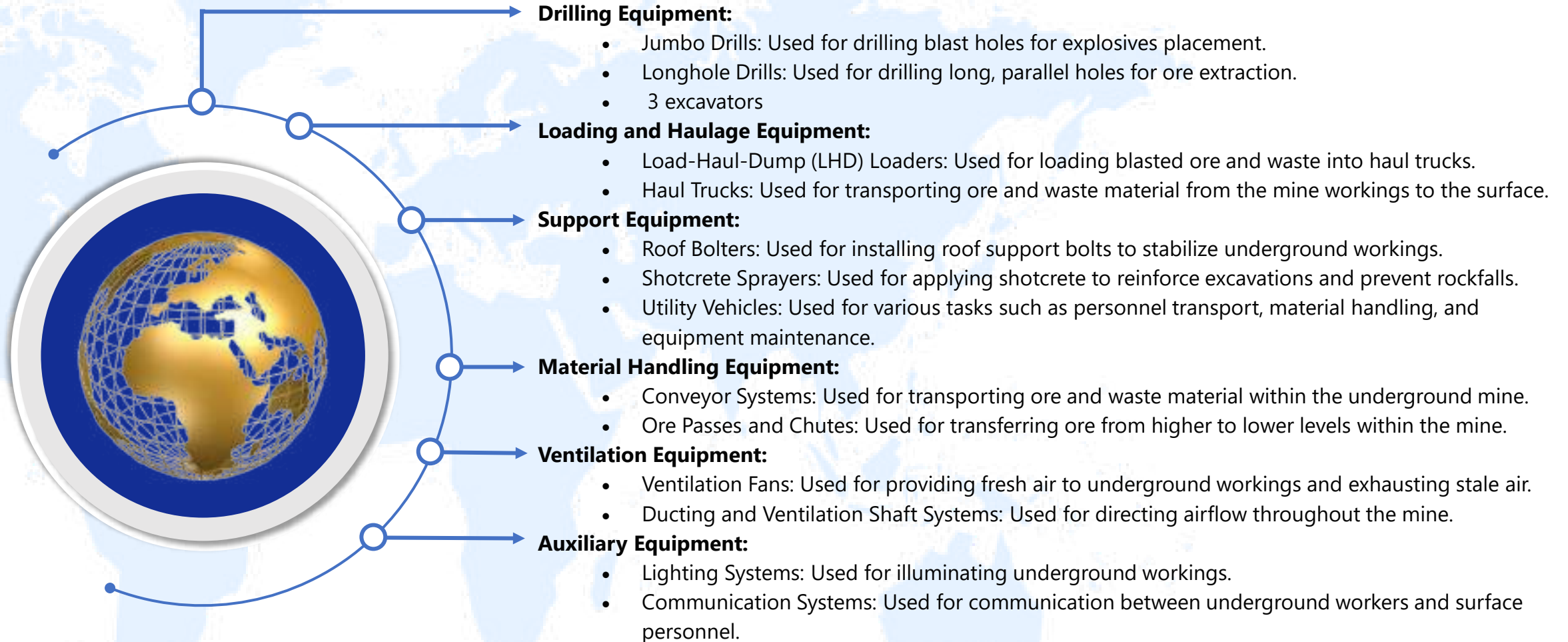
Processing Costs:

- **Crushing and Milling:** Costs for crushing the mined ore into smaller particles and milling it to a fine powder for further processing.
- **Concentration:** Expenses associated with the concentration process, which involves separating the copper minerals from the ore through flotation or other methods.
- **Chemicals and Reagents:** Costs for chemicals and reagents used in the flotation process to facilitate the separation of copper minerals from the ore.
- **Energy and Utilities:** Expenses for electricity, water, and other utilities required to power and operate the processing plant.
- **Maintenance and Repairs:** Costs for regular maintenance, repairs, and replacement of equipment and machinery in the processing plant.
- **Labor:** Expenses for skilled technicians, operators, and maintenance staff involved in operating and maintaining the processing plan

Financial Projections for Copper Mining Venture (est.)



Underground Mining Operations for copper and gold extraction:



Operational Parameters | Sample Mining Operation Cost Estimate



Labor Costs:

- Miner (15 number of employees): \$5/hour \$1120 monthly
- Machine Operator (6 number of employees): \$9/hour
- Technician (3 number of employees): \$12/hour
- Engineer (3 number of employees): \$14/hour
- Geologist \$16/hour
- Administrative Staff (x number of employees): \$5/hour
- Total Monthly Labor Cost = **$(Emp \times AHw) \times AHm$**
*(Total number of employees * Average hourly wage) * Average number of working hours per month.*

Chemical Costs:

- Flotation Collector: \$XX/ton of ore processed
- Frother: \$XX/ton of ore processed
- Depressant: \$XX/ton of ore processed
- pH Modifier: \$XX/ton of ore processed

Some of the equipment involved in this process are flotation cells, feed boxes, launders, froth crowders, froth skimmers, air spargers, pumps, pipes, valves, etc. Some of the chemicals used are water, air, collectors (such as xanthates or dithiophosphates), frothers (such as pine oil or methyl isobutyl carbinol), modifiers (such as lime or sodium cyanide), pH regulators (such as sulfuric acid or sodium hydroxide), etc. Activators are reagents that enhance the flotation response of minerals that are otherwise difficult to float. Activators can either modify the surface properties of minerals or form complexes with collectors to increase their hydrophobicity. For example, copper sulphate can be used as an activator for gold-bearing pyrite or arsenopyrite, by forming a layer of copper xanthate on their surface. The dosage of activators depends on the mineral composition and pH of the pulp, but generally ranges from 10 to 100 g/t for copper sulphate. Depressants are reagents that prevent or reduce the flotation of unwanted minerals by making them hydrophilic or by interfering with their interaction with collectors. Depressants can either react with minerals or form soluble complexes with metal ions in solution. For example, lime can be used as a depressant for pyrite or other iron sulphides, by increasing the pH and forming iron hydroxide on their surface. The dosage of depressants depends on the gangue mineralogy and collector type, but generally ranges from 500 to 2000 g/t for lime.

- One possible reagent that can be considered as sustainable is biosolids, which are organic wastes derived from sewage treatment plants or animal manures. Biosolids can act as both collectors and frothers in flotation, and have been shown to improve the recovery and grade of copper ores
- Total Monthly Chemical Cost = Sum of (Chemical consumption rate * Chemical unit cost) for all required chemicals

Operational Parameters | Sample Mining Operation Cost Estimate



Equipment Costs:

- Equipment Type 1 (e.g., used Load-Haul-Dump Loader):
 - Initial Purchase Price: **\$70,000**
 - Annual Maintenance Cost: **\$20,000**
 - Annual Operating Cost: \$
 - Annual Depreciation Cost: \$
- Equipment Type 2 (e.g., Jumbo Drill):
 - Initial Purchase Price: **\$180,000**
 - Annual Maintenance Cost: **\$40,000**
 - Annual Operating Cost: \$XX,XXX
 - Annual Depreciation Cost: **\$25,000**
- Repeat for all types of equipment used in the operation.
- Total Monthly Equipment Cost = Sum of (Initial Purchase Price + Annual Maintenance Cost + Annual Operating Cost + Annual Depreciation Cost) for all equipment

Other Operating Expenses:

- Utilities (electricity, water, etc.): **\$15,000/month**
- Fuel and Lubricants: **\$58,000/month**
- Maintenance and Repairs: **\$64,000/month**
- Administrative Expenses: **\$8,000/month**
- Total Monthly Other Operating Expenses = Sum of all miscellaneous operating expenses

Total Monthly Operating Cost:

- Total Monthly Operating Cost = Labor Costs + Chemical Costs + Equipment Costs + Other Operating Expenses

Annual Operating Cost:

- Total Annual Operating Cost = Total Monthly Operating Cost * 12 months

Total Projected Cost Over Mine Life:

- Total Projected Cost Over Mine Life = Total Annual Operating Cost * Number of Years of Mine Operation

Underground mining requires a variety of specialized equipment to extract ore safely and efficiently. Here's an overview of some common types of equipment used in underground mining operations, along with typical cost ranges. Please note that these costs can vary widely depending on factors such as equipment size, capacity, manufacturer, market conditions, and whether the equipment is new or used.

Mining Equipment | Cost Estimates



Drilling Equipment:

- Jumbo Drills: These are large drilling rigs used for drilling blast holes for explosives placement. Cost: \$90,000 to \$1,500,000 per unit.
- Longhole Drills: These are specialized drills used for drilling long, parallel holes for ore extraction. Cost: \$200,000 to \$2,000,000 per unit.

Loading and Haulage Equipment:

- Load-Haul-Dump (LHD) Loaders: These are compact loaders equipped with a bucket used for loading blasted ore and waste into haul trucks. Cost: \$100,000 to \$1000000 per unit.
- Haul Trucks: These are heavy-duty trucks used for transporting ore and waste material from the mine workings to the surface. Cost: \$60,000 to \$100,000 per unit.

Support Equipment:

- Roof Bolters: These machines are used for installing roof support bolts to stabilize underground workings. Cost: \$140,000 to \$1,500,000 per unit.
- Shotcrete Sprayers: These are used for applying shotcrete to reinforce excavations and prevent rockfalls. Cost: \$90,000 per unit.
- Utility Vehicles: These are used for various tasks such as personnel transport, material handling, and equipment maintenance. Cost: \$60,000 per unit.

Material Handling Equipment:

- Conveyor Systems: These are used for transporting ore and waste material within the underground mine. Cost: \$100,000 per system.
- Ore Passes and Chutes: These are used for transferring ore from higher to lower levels within the mine. Cost: \$100,000 per system.

Ventilation Equipment:

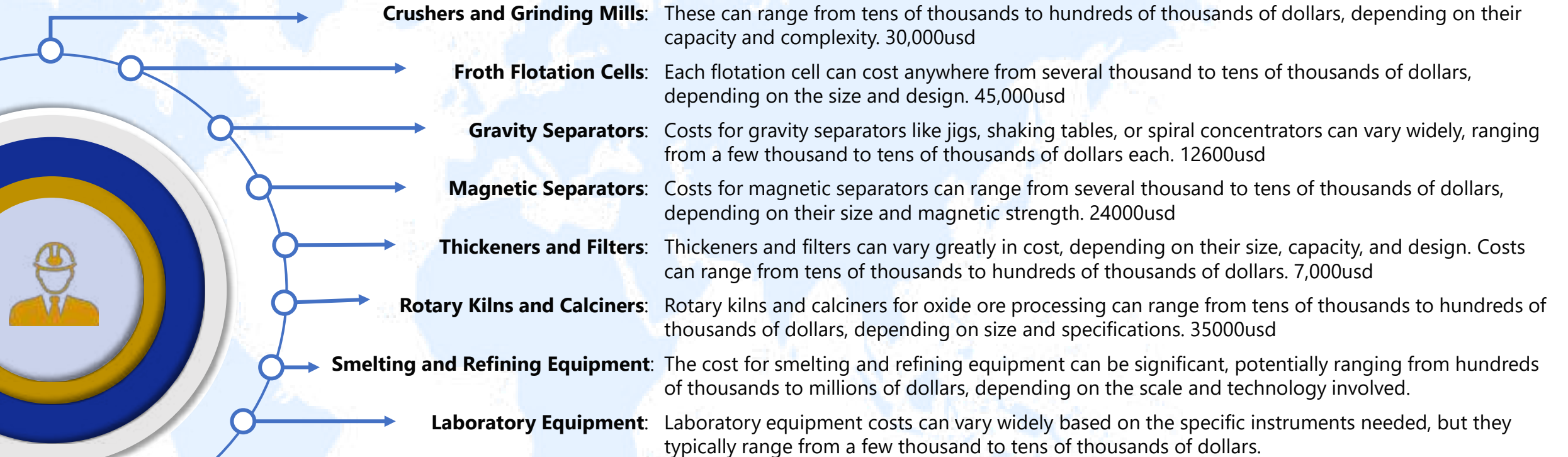
- Ventilation Fans: These are used for providing fresh air to underground workings and exhausting stale air. Cost: \$100,000 per unit.
- Ducting and Ventilation Shaft Systems: These are used for directing airflow throughout the mine. Cost: \$200000per system.

Auxiliary Equipment:

- Lighting Systems: These are used for illuminating underground workings. Cost: \$50,000 to \$200,000 per system.
- Communication Systems: These are used for communication between underground workers and surface personnel. Cost: \$100,000 per system.

Water Management Systems: These are used for dewatering underground workings and managing water inflows. **Cost:** \$100,000 per system.

Mining Equipment | Cost Estimates



It's important to note that these are rough estimates, and actual costs can vary based on factors such as market conditions, location, specific requirements, and negotiations with suppliers. Additionally, operational costs, such as energy consumption, labor, maintenance, and other overheads, should also be considered when calculating the total cost of equipment for a beneficiation operation.



Project Risks:

- Delays in project implementation.
- Increase in raw material prices, and prices of importation
 - Fluctuations in market demand
 - Environmental and safety concerns

Project Assumptions:

- Delays in project implementation.
- Increase in raw material prices, and prices of importation
- Fluctuations in market demand
- Environmental and safety concerns

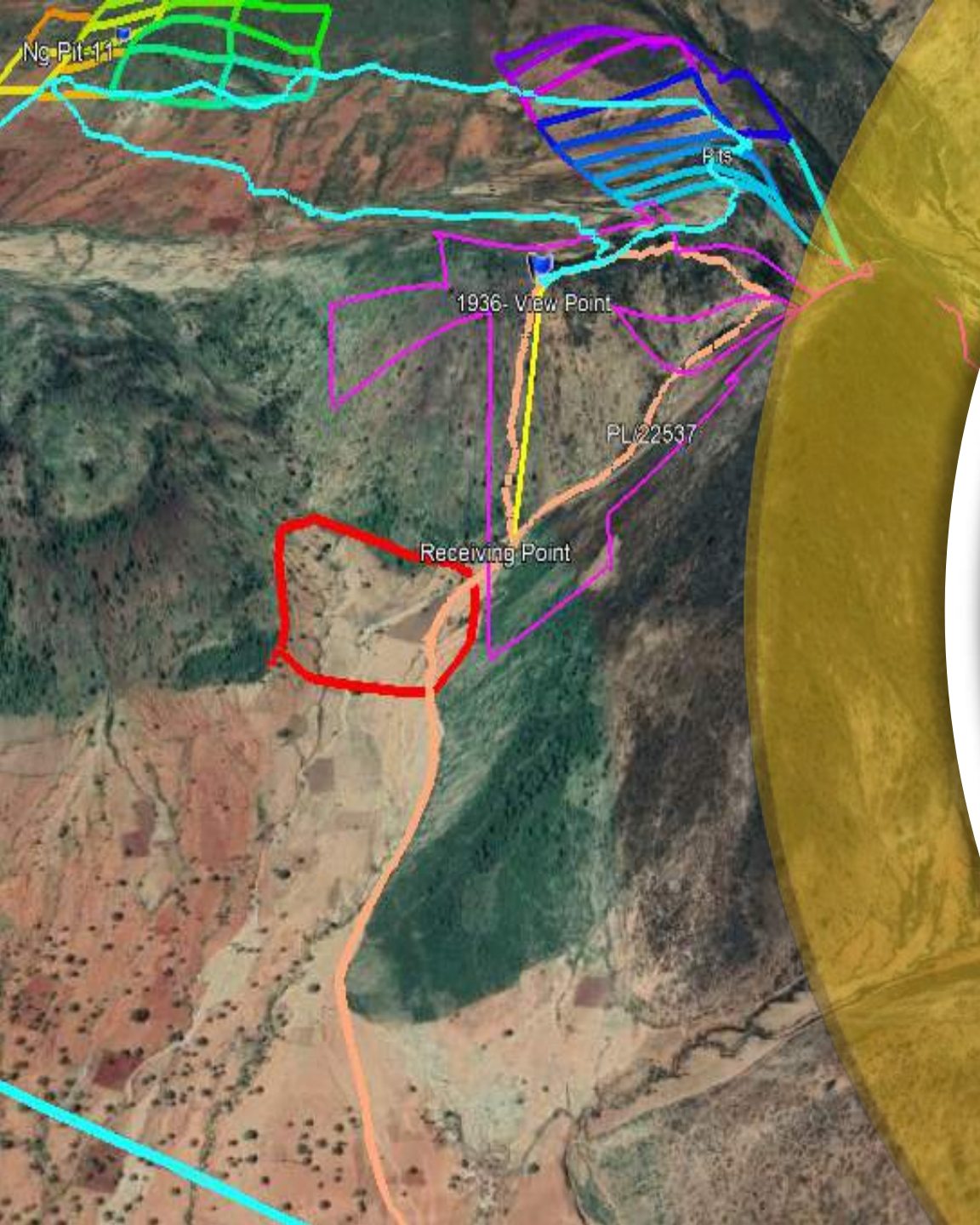
Project Constraints:

- Time constraint (18 months implementation period).
- Budget constraint
- Experience personnel
- Import cost
- Low % of ore









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