[Year]

KAIXING MINERAL INTERNATIONAL
DEVELOPMENT COMPANY LIMITED

PROPOSAL FOR THE DEVELOPMENT OF GOLD PROCESSING PROJECT

PREPARED BY;
KAIXING MINERAL INTERNATIONAL
DEVELOPMENT COMPANY LIMITED

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1.0 EXECUTIVE SUMMARY

M/s Kaixiang Mineral International Development Company Limited is a newly incorporated company under Certificate of incorporation No: ***143676773 dated the 20th day of September 2020*** established for the main objective of processing gold in the Kahama District in Sinyanga Region.

Kaixiang Mineral International Development Company Limited has secured a processing site in a parcel of land At Kahama District in Shinyanga for the establishment of leaching plant to comprise of leaching tanks with a combined processing capacity of 450 metric tons of tailings per week which is treated with chemicals to produce activated carbons. The activated carbons will then be transported to Mwanza City for elution to produce gold. The plant will operate 24 hours with hourly shifts when the production is in process.

As a gold processing company, Kaixiang Mineral International Development Company Limited will obtain gold tailings from its mining bases at PL No. 11301/2019 leased from Henan Afro Asia Geo Engineering Tanzania Company Limited and from small-scale gold miners near the surrounding villages. The company will apply chemicals to extract the remaining gold using leach process. The Company intends to comply with all registration procedures which includes government chemists, NEMC and other as the as process requires.

1.1.2 Deliberation of the Project Concept

Kaixiang Mineral International Development Company Limited will focus on the construction of the gold processing facilities and engage in the processing activities expending gold ore and tailings from our mining sites and from bought artisanal miners gold ore to produce gold through VAT leaching process with capacity to process 450 metric tons per week. The processing plant at Kahama District Shinyanga Region will only produce activated carbon which will be transported to Mwanza for elusion to produce gold.

In addition to gold processing, the project promoters are also looking at supporting small scale miners for purposes of increasing their production on

understanding that the company and small scale miners will enter into contract where the gold recovered by the small scale miners will be sold to the company. Another option will be procuring gold all from the artisanal/small scale miners.

1.1.3 Objectives of the proposed project study

The objectives of the project proposal is to define the project viability and operational feasibility of the project of the proposed medium gold mining and processing project. The second objective is to facilitate the application for Tanzania Investment Centre (TIC) Certificate of Incentives to access tax reliefs on duties, VAT and other benefits and protections as statutorily provided for under Tanzania Investment Act (1997) for the proposed project.

1.1.4 Scope of Assignment

The scope of the assignment includes standard requirements of a techno-economic feasibility study to facilitate appropriate investment decision. Hence such a study carried out professionally for this study must include, among others:

Most of the data has been complied by the promoters' own research and study and therefore is first-hand information. On the other hand, Environmental Management Plan and all environmental aspects referred to under this study was recently carried out **our NEMC certified Consultants .**

The financials have also been carried out on the basis of market and cost information provided by the promoters of the project.

1.2 PROJECT SPONSORS

The shareholders of M/s Kaixiang Mineral International Development Company Limited are as shown here below:

Name	**Number of Shares**	**Percent Shareholding**
1.Beijing Hairun Yuxiang International	80	80%

Trade Company Limited **No. 20, Xiquan Road, Changping District, Beijing China**		
2. Henan Yukuang Kaiyuan Mining Company Limited **No. 56, Lianhua Street, High-tech District, Zhengzhou, Henan Province, China**	20	20%

1.3 LOCATION AND INFRASTRUCTURE

M/s Kaixiang Mineral International Development Company Limited has at present its Registered and Head Office situated at No: 507, block A, Nyamhongolo, Ilemela, Mwanza. The processing project is located at Kahama District in Shinyanga Region. The plant obtains its water from its own shaft constructed in the plant. TANESCO is expected to connect the plant with the power but we shall also have our own generated power. We expect to be connected to sewage system but as well construct and install septic tanks as temporary storage system which, when full will be taken to municipal council waste stabilization ponds for final disposal.

1.4 THE GOLD PRODUCTION PROCESS

Kaixiang Mineral International Development Company Limited plans use state-of-the-art gold processing facilities. The proposed processing technology to be used under this project is small scale VAT Leaching process. However, for security reasons, the facility will only process gold up to reactivated carbons stage. The final process for producing gold will be done elsewhere in elution plants belonging to other investors. The company will be importing its processing technology from China.

1.5 PLANT CAPACITY UTILISATION AND GOLD PRODUCTION

The project is also looking at establishing its VAT leaching facilities at processing capacity of 450 metric tons **per week**. Initially, the investors plan to start with processing of 150 metric tons of raw materials, gradually increasing to 195 in the

second year before stabilizing at 450 metric tons per week, equivalent to 75% of installed capacity utilization.

1.7 RAW MATERIALS REQUIREMENT AND AVAILABILITY:

Kaixiang Mineral International Development Company Limited Company Limited will obtain gold tailings from its mining bases at PL No. 11301/2019 leased from Henan Afro Asia Geo Engineering Tanzania Company Limited and from small-scale gold miners near the surrounding villages.
The company will procure processing chemicals required for the process are sodium cyanide, lime, silver nitrate, carbons, potassium iodide, POP, chloride exide and hydrochloric acid.

1.8 PRODUCTION COSTS AND REVENUE ESTIMATES

Direct Costs

The major costs under this project are:

- **Raw Materials (Gold Ore/Tailings):** is estimated to cost US$ 37 per metric ton.

- **Gold Ore Crushing Costs**: this involves the cost of running the crusher. The crusher is estimated to consume 30 litres of fuel and oils per three-shift day, 6 days a week.

- **Processing Costs (Siga Village)**: the cost of running the processing plants are simply application of chemicals in the VAT leaching tanks.

- **Elution Costs (Mwanza City)**: the activated carbons will be processed in private elution plants where a processing fee will be paid to the plant owners.

- **Repair and Maintenance**: It is projected to cost 5% of the cost of all major assets per annum.

 Labour Cost: The project plans to recruit and employ regular employees (38) including crusher operators, processing plant operators, Plant Technicians and Security Guards on permanent and pensionable terms. It will also employ about 24 General Workers. Labour cost is estimated at 9.6% of gross sales revenue.

 Fuels & Oils: Will be required in running power generators, mining equipment and motor vehicles. It is estimated that 18,000 litres will be required per annum which is computed at US$ 18,000- per year.

Revenue Estimates

Gold processing is projected at 12,000 tons per annum in the first year, 19,360 tons in the second and 25000 tons from year three onwards. Gold production is estimated at an average of 4 grams per ton using cyanide leaching process. Revenue per gram is estimated at US$ 35.00 before deducting royalty of 5%.

1.9 ESTIMATED INVESTMENT COSTS AND PROPOSED FINANCING

The project is estimated to cost US$ 2,314,460 as summarised here below:

S/N	Item	US$
1.	Land & Buildings	335,000
2.	Plant Machinery and Equipment	1494,000
3.	Utility Motor Vehicles	215,000
4.	Furniture, Fittings and Office Equipment	15,000
5.	Pre-operational Expenditures	138,000
6.	Contingencies	20,000
	Total	*917,000*
7.	Add: Initial Working Capital	97,460
	GRAND TOTAL	2,314,460

The financing of this project would be through 100% equity contribution from the project promoters.

1.10 MANAGEMENT OF THE PROJECT

The day to day management of the company will be assigned in the management team to be headed by a Managing Director. On implementation of the proposed project, the company plans to employment up to the total of 121 people in the next three years.

1.11 PROJECT EXECUTION

During the project implementation Kaixiang Mineral International Development Company Limited plans to import and install processing facilities to meet the project goals. The company plans to bring in the plants soon after being granted TIC accreditation. Assuming that all things run according to plan, the company should start mining operations by first of December 2020 at the latest.

1.12 FINANCIAL PROJECTIONS AND EVALUATIONS

The project proposal will analyse Financial Projections the Total Production Costs, analyses Income Statement Projections while and Break-even Analysis as summarised. The analysis is well elaborated in the attached projections and summary.

1.13 ENVIRONMENTAL CONSIDERATIONS

Kaixiang Mineral International Development Company Limited operations will have a minimal impact on the environment of the area. A benefit of using VAT leaching technology as a method of gold extraction is that the crashed gold ore can be washed and drained before moving to the dump site. This means that the crushed and extracted ore will be inert and relatively free of chemicals.

1.14 BENEFITS OF THE PROPOSED PROJECT

Implementation of this project will lead to realisation of the social and economic benefits. It is expected to contribute substantially to local economies in form

Direct job creation in the region of 121 in the proposed processing and refinery sites. A high proportion of the investment will be spread widely to remote communities that are in desperate need of jobs and investment.

The village in which the mining operations will be taking place will also see a number of benefits besides the creation of jobs in the form of social services from the company's Corporate Social Responsibility. When boreholes are sunk on site to allow extraction of water for the process, boreholes will also be provided for the village, increasing their access to fresh water.
The project involves transfer of technology to Tanzania. Tanzanians will be trained on the job on how to extract gold using modern gold processing techniques.

1.15 CONCLUSION AND RECOMMENDATIONS

In view of the global growing demand for gold and the benefits associated with this project as indicated in this report, the project is therefore strongly recommended for financing and subsequently implemented without unnecessary delays.

2.0 BUSINESS ENVIRONMENT AND BACKGROUND

Tanzania has become one of the fastest-emerging gold producers in Africa, and is the continent's third-largest gold-producing country after South Africa and Ghana. A number of large international mining companies includes Barrick Gold Corporation, AngloGold, Ashanti Mining are now involved in operations in the country.

There are a small number of companies that are carrying out similar gold leaching operations in Tanzania. These companies have appeared in the last few years following the gold price rises of 2005 where such business models became feasible. Pioneers of this business include M/s Mineral Extraction Technologies Ltd. Their leaching operation is based near Geita approximately 100km south west of Mwanza with another leaching plant 40 km north of their current plant. There are also operations based in Ushirombo and Kahama by M/s Dynamic Mining, and

a leaching plant at Igurubi by MMS Limited near Nzega. More companies of similar operations have increased in the last five years.

The medium scale gold leaching market in Tanzania is still clearly in its infancy as most of the companies operating have just started and sought to employ leaching as a method of improving yield.

3.0 THE GOLD PROCESSING PROJECT

The proposed project will entails development of gold processing facilities and engage in the processing activities using crushed gold ore in the vicinity of the processing site to produce gold through VAT leaching process with capacity to process 280 metric tons per year.

Major capital expenditure will involve procurement of dump trucks for transportation of the raw materials, laboratory equipment for metal testing, environmental protection plant, workshop tools and equipment, power generators; purchase of utility motor vehicles, furniture and fittings, and fencing of the project sites; and provision of technical support to artisanal and small scale miners to ensure the company obtains adequate raw materials/tailings.

Another option will be procuring gold all from the artisanal/small scale miners. Such support services will include supply of cyanide and small gold recovery plants; and also small scale mining equipment.

The proposed project will therefore involve the following activities:

- Acquisition of mining licence to ensure availability of adequate raw materials to guarantee maximum production of gold;
- Construction of processing structures and infrastructure;
- Construction of gold storage facilities, workshops and offices;

- Importation and installation of gold processing plants, laboratory for metal testing;

- Procurement and installation of environmental protection plant equipment;

- Procurement of heavy duty trucks for transportation of gold ore and tailings from the various small scale mining centres to the processing site. Other utility vehicles will also be procured for the project. This will include pickups, 4-WD station wagons, and motorcycles to facilitate movement, as well as box body trucks for the transportation of activated carbons from the processing site in the village to elution plant in Mwanza City;

- Purchase of furniture, fittings and general office equipment;

3.2 Location and Infrastructure

M/s Kaixiang Mineral International Development Company Limited has at present its Registered and Head Office situated at No: 7 Aga Khan Flats, Plot No: 86 Block "S" Makoroboi Street/Nyerere Road, P.O. Box 1283 Mwanza. The mining and processing project is located at Iponelo.

The facility will develop water storage tank (underground reservoir) with a holding capacity of 300,000 litres of water and one underground concrete tank with 100,000 litres capacity. The average water consumption for both production process and domestic use in the plant is estimated at approximately 100 cubic metres per month. The main source of energy for the plant facility is electricity generated from TANESCO and own power generators. Power generators of over 10 kW to operate full time during production period are considered adequate for the project power requirements. The facility however is not connected to sewage system, the site plans to use its own septic tanks as temporary storage system which,

when full will be taken to town council waste stabilization ponds for final disposal.

3.3 Ownership

M/S Kaixiang Mineral International Development Company Limited is a project implementer, a locally registered private company incorporated in the United Republic of Tanzania for purposes of engaging in mining processing in Tanzania. The company is registered with authorized capital of 22,976,400,000/= divided into 100 shares of TShs 229,764,000/= each.

THE SHAREHOLDERS

Name	**Number of Shares**	**Percent Shareholding**
1.Beijing Hairun Yuxiang International Trade Company Limited **No. 20, Xiquan Road, Changping District, Beijing China**	80	80%
2. Henan Yukuang Kaiyuan Mining Company Limited **No. 56, Lianhua Street, High-tech District, Zhengzhou, Henan Province, China**	20	20%

4.0 PROPOSED TECHNICAL ASPECTS OF THE GOLD PROCESSING

4.1. The Gold Process

The first stage will be that of the delivery of crushed gold ore and tailings to the leach plant. The second stage will be the leaching process that will take place at the leach plant. The third stage will be the elution of gold and creation of the bullion that will be sold to the banks or imported.

One important factor will be to build up and maintain an on-site gold ore and tailings stock pile to ensure a steady and reliable flow of crushed ore and tailings to the vats. There will always be occasions when roads are made impassable by bad weather, or when trucks are being serviced or repaired. It would be wise to maintain a pile of at least 500T of gold ore and tailings at the site. During the wet seasons it may be reasonable to increase this stock pile to 1000T.

4.1.3 Static Leaching and the Cyanidation process

The Cyanidation Process

The absorption of gold from aqueous solutions onto activated carbon was first noted in the early 19th century. However, at this time the only known way of extracting the gold from the carbon was by combustion of the carbon and smelting of the resulting ash. This was costly and given the advances made in the zinc cementation process, was not used. It wasn't until the 1950s when the Zadra process was developed to strip gold from activated carbon that the use of activated carbon became widespread. However the low gold price during this era restricted developments. It wasn't until the gold price boom of the 1980s that saw the development of the two major processes that are used widely today. These are carbon-in-pulp (CIP) processing and heap leaching.

The Leach Plant Process

The concrete vats will have a capacity of approximately 20T. The Tailings are mixed with hydrated lime and placed into the vats. The crushed ore and tailings are brought to the plant in trucks and offloaded adjacent to the concrete vats. The hydrated lime optimises the conditions for gold extraction and reduces the loss of cyanide by hydrolysis. The tap at the bottom of the vat is closed and a cyanide solution of approximately 250ppm is run into the top of the tank at a slow rate so as to achieve a plug flow through the tank and avoid channelling. This improves gold extraction. Once the crushed ore/tailings have been soaked, the tap is opened and solution is allowed to percolate through the crushed ore/tailings dissolving the gold in its path. The solution flows through a filter at the base of the vat that keeps the tailings in the vat.

The gold bearing (pregnant) solution flows out of the tank and into the clarifier. This removes any unwanted solid particles in the clear solution. This solution is then pumped through a series of carbon columns or contactors. The carbon adsorbs the gold from the pregnant solution. Barren solution then flows out of the columns and into the barren tank. Water and cyanide are added here to maintain the balance in the closed system. Oxygen, a key reactant in the process is added in the barren tank by using a pump to aerate the solution. The barren solution containing the cyanide is then pumped into the newly filled vat and the solution cycle starts again.

After 3-5 days of solution flowing through the tailings the gold will have been extracted. The exhausted crushed ore/tailings in the tank are now washed with water and drained. The tank is then emptied and the tailings are moved to the tailings dump site.

Once the gold has been absorbed by the carbon, the loaded carbon is removed and replaced with fresh carbon. The loaded carbon is then sent to the elution plant for extraction/stripping.

4.1.3.4 Elution, Extraction and Smelting

This is done by taking the carbon and placing it in an elution vessel. Here the process of loading the gold onto the carbon is reversed and the gold is stripped. This is done by passing hot caustic solution past the carbon. Once the gold has entered the solution, it is pumped to an electro-winning cell. Here the gold is removed using electrolysis and it accumulates at the steel cathode. The now barren solution is then pumped to a heating tank where more cyanide and caustic soda can be added to recharge the stripping solution. The solution is now fed back to the elution vessel for another stripping cycle.

Once all the gold has been stripped from the carbon, the carbon is removed and replaced with more loaded carbon. The stripped carbon is then acid washed and sent back to the leach plant for reloading. The gold sludge is now removed from the electro-winning cell, placed into a kiln and smelted to create bullion.

4.2 Raw Materials Requirements and Availability

Kaixiang Mineral International Development Company Limited will be operating a gold processing plant using crushed gold ore and tailings, to be procured from artisanal/small scale miners as the source of raw materials. Processing chemicals required for the process are sodium cyanide, lime, silver nitrate, carbons, potassium iodide, POP, chloride exide and hydrochloric acid.

At the processing rate of 450 metric tons per week in year one, 195 metric tons in year two and 210 metric tons per week from year three onwards, the facility will require 8,640 metric tons of gold ore/tailings per annum in the first year of production, 9,360 tons in the second year and 10,080 metric tons from year three onwards.

Chemicals Requirements per annum

TYPE OF CHEMICAL	YEAR 1	YEAR 2	YEAR 3 ONWARDS
Sodium Cyanide (6,000 kgs)	7,200 kgs	7,800 kgs	8,400 kgs
Lime (54,000 kgs)	64,800	69,840	75,600
Silver Nitrate (6 litres)	7.2 litres	7.8 litres	8.4 litres
Carbons (12,000 kgs)	14,400	15,600	16,800
Potassium Iodide (3 litres)	3.6 litres	3.9 litres	4.2 litres
POP	7.2 litres	7.8 litres	8.4 litres
Chloride Exide	14.4 litres	15.6 litres	16.8 litres
Hydrochloric Acid	216 litres	234 litres	252 litres

These chemicals will be originated from China and Malaysia However, the company will also source them locally to stimulate trade.

4.3 Production Costs and Revenue Estimates

Direct Costs

The major costs under this project are:

Raw Materials (Gold Ore/Tailings): is estimated to cost US$ 37 per metric ton. This involves digging the ore (US$ 12 per ton), loading (US$ 7) and transportation from mining pit to processing site (US$ 20 per ton). At the rate of 10,080- per annum at full production, the main raw material is expected to cost 372,960 per year – which translates to about 25% of sales revenue;

Gold Ore Crushing Costs: this involves the cost of running the crusher. The crusher is estimated to consume 30 litres of fuel and oils per three-shift day, 6 days a week. At the current price of diesel and oils, this translates to the cost of US$ 30 per day @ US$ 1 x 6 days per week x 4 weeks x 12 months = US$ 8,640 plus 10% thereof being cost of oils total US$ 9,504;

Processing Costs (Siga Village): the cost of running the processing plants are simply application of chemicals in the VAT leaching tanks. The major chemicals are: sodium cyanide, lime, silver nitrate, carbons, potassium iodide, POP, chloride exide and hydrochloric acid.. This is estimated to cost 12% of gross revenue, i.e. US$ 145,152- in year one, 157,248- in year two, and US$ 169,344 from year three onwards;

Elution Costs (Mwanza City): the activated carbons will be processed in private elution plants. The charges payable to the elution plant owners for the service are estimated at 8% of gross revenue. Hence, year one US$ 96,768, year two US$ 104,832 and US$ 112,896 from year three onwards.

Repair and Maintenance: It is projected to cost 5% of the cost of all major assets per annum. These include plant machinery & equipment (US$ 519,000-) and utility motor vehicles (US$ 125,000-) totaling US$ 634,000- x 5% thereof = US$ 31,700-;

Labour Cost: The project plans to recruit and employ regular employees (26) including crusher operators, processing plant operators, Plant Technicians and Security Guards on permanent and pensionable terms. In addition to the Managing Director, the project will hire three line managers, i.e. Technical

Manager, Production Manager and Finance & Administrative Manager. It will also employ about 18 General Workers.

Labour cost is estimated at 9.6% of gross sales revenue, hence a budget of US$ 116,120- has been set aside for salaries, wages and labour overhead costs (including social security and medical insurance) in the first year of operation, US$ 126,277- in the second and US$ 135,475- from year three onwards.

Fuels & Oils: Will be required in running power generators, mining equipment and motor vehicles. It is estimated that 18,000 litres will be required per annum which is computed at US$ 18,000- per year.

Revenue Estimates

Gold processing is projected at 8,640 tons per annum in the first year, 9,360 tons in the second and 10,080 tons from year three onwards.. From tests conducted at materials from the sites and experience from almost one year of operation, gold production is estimated at an average of 4 grams per ton of ore/tailings at the recovery rate of 75% to 80% using cyanide leaching process. Revenue per gram is estimated at US$ 35.00 before deducting royalty of 5%. At this rate therefore, revenue is computed as per table below:

YEAR	PROCESSED RAW MATERIALS (TONS)	GOLD RECOVERY PER TON (GRAMS)	PRICE PER GRAM (US$)	ESTIMATED REVENUE (US$)
1	8,640	4	35	1,209,600
2	9,360	4	35	1,310,400
3 onwards	10,080	4	35	1,411,200

4.4 Environmental Aspects

Kaixiang Mineral International Development Company Limited operations will apply VAT leaching and a benefit of using vat leaching as a method of gold

extraction is that the crushed gold ore/tailings can be washed and drained before moving to the dump site.

This means that the tailings/crushed and extracted ore will be inert and relatively free of chemicals. The last charge to the vats will be a fresh water wash. This will ensure that all salts, soluble material and cyanide are washed from the crushed and extracted gold ore rendering the ore chemically inert. A good quantity of Ferro-Sulphate will be stored at site. Should any cyanide spillages occur, this can be used to neutralise the chemical safely

As for waste and by products, the main types of wastes are solid waste and liquid waste. Solid wastes that are currently generated during production include pieces of paper resulting from office use, plastic drums from chemicals used, and used tailings. Yard wastes are handled through existing waste collection point within the facility of which are burnt, while empty plastic drums are kept for destruction within the designated area.

Waste water generated including grey and black water (kitchen and toilets respectively) are temporarily stored in septic tanks on-site of which, when full, will be collected by septic emptier to municipal waste water stabilization pond for final disposal. Waste waters generated from the different stages of processes are collected within a separate reservoir outside the facility fence. The amount of waste water generated at Kaixiang Mineral International Development Company Limited is approximately 80 cubic metres per month from washrooms, kitchen and processing. The company has installed a number of septic tanks used for temporary storage of the effluents section wise before being taken to municipal waste water stabilization ponds when are full.

4.5 Implementation Schedule

Kaixiang Mineral International Development Company Limited plans to import mining equipment and expand its processing capacity to meet the project goals. The company plans to bring in the plants soon assuming that all things run according to plan, the company should start operations by 2021 at the latest.

5.0POLICIES AND LEGAL FRAMEWORK FOR PLANT OPERATION IN TANZANIA

Kaixiang Mineral International Development Limited will comply with necessary policy and legal frame work.
Tanzania Environmental policy applicable to the established and operated plant include:-

National Environmental Policy (1997)

The policy requires that industrial development be done in a way that it does not compromise the environmental integrity. It stipulated that the chosen technologies should be environmentally friendly, socially acceptable and economically viable. The policy states that in order to protect the environment and to ensure sustainable development, the following objectives shall be pursued;

I. Environmental audits / inventory shall be carried out for the existing industries for pollution control and waste minimization;

II. Industries should be planned in manner that minimized adverse effect on the environmental at all stages (i.e location, effluent discharge, waste disposal, use and disposal of products);

III. Industrial emissions shall be controlled;
IV. Workers health shall be adequately protected from environmental health hazards.

The policy underscores the importance of conserving environment, protecting public health and promotion of national industrial base.

During the operation Kaixiang Mineral International Development Limited plant shall observe the requirements of this policy's objective.

5.2.2 National Health policy (1990)

The health policy aimed improving health status of all people wherever they are, by reducing morbidity and mortality and raising life Expectancy. Good health, i.e physical mental social wellbeing, is a major resource of economic development.

Kaixiang Mineral International Development Limited plant shall observe this legal requirement by ensuring all their workers are in healthy ensured.

5.2.3 National Water policy(2002)

The planning, sitting designing, construction strategy and operations of the project are also in consistence with the national water policy (2002), which provides for a comprehensive sustainable and equitable exploitation and use of water resources for sustainable development. The policy seeks to ensure more efficient utilization of existing water resources and improved monitoring to control water quality and arrest contamination from industrial sewerage and excessive use of chemicals. These objectives requite an integrated and holistic planning and management approach in areas of water use and disposal of effluents.

During the operation of Kaixiang Mineral International Development Limited plant shall observe the requirements of this policy's objectives.

5.2.4 National Human Settlement Development Policy (2000)

The planning of the proposed project is in harmony with this policy. Among others, one of the objectives of National Human Settlement Development policy (2000) is to protect human settlement, the environment and its embedded ecosystem from environmental pollution, environmental degradation and destruction or loss of biodiversity in order to attain sustainable development. During the operation of Kaixiang Mineral International Development Limited plant shall observe the requirements of this policy's objectives.

5.3.9 The industrial and consumer chemicals (management and control) Act, 2003

The act promote good manufacturing practices, require risk assessment and risk management and emergency response plan. It gives definition of toxic chemicals and their dosage and registers and certifies chemicals before use. Section 11 requires chemical registration to the chief Government chemist in the prescribed

manner and form, as set out in the second schedule to this Act. Kaixiang Mineral International Development Limited plant shall observe this legal requirement.

6.0 REQUIRED STANDARDS FOR INDUSTIAL OPARATION

6.1 Overview

This chapter explains on how the plants shall practice their activities in such a way that not causing pollution to the environment from emissions, discharges and sounds produced during the operation in relation to the adoption of relevant standards.

6.2 The relevant standard

Different standards are being used depending upon different parameters of concerns. These include the waste water standards discharge, permissible noise levels and air pollution standards.

6.2.1 Noise levels standards

The permissible noise level standards for the workers from plant are categories into different limits according to during to duration (daily) hours). According to **Tanzania Bureau of standards (TBS)** the recommended value for 8 hours for the workers in a plant is 85DBA.

6.2.2 Indoor Air Quality Standards

Indoor pollution sources that release gases or particles into the air are the primary cause of indoor air quality problems in factories. Inadequate ventilation can increase indoor pollutant levels by not bringing in enough outdoor air to dilute emissions from indoor pollutant levels and by not carrying indoor air pollutants out of the factories. High temperature and humidity levels can also increase concentrations of some pollutants. The source of indoor air pollution in any plant include combustion source such as oil and gas. These range in size from

0.3 to 100 microns, and are small enough to be inhaled, but too large to be easily exhaled.

Smoke from biomass combustion produces a large number of health damaging air pollutant such as reparable particulate matter carbon monoxide (CO), nitrogen oxides formaldehyde, benzene, poly-cyclic aromatic hydrocarbons and many other toxic organic compounds.

6.2.3 Adoption of standard

For Ensuring not causing the pollution to the environment from its emissions, discharges and sounds produced during the plant operations relevant standards are practiced in such a way that;

- The workers shall be provided with the nose mask at the machines/ working places were dust are being emitted so as to protect workers from the health effects due to dust emission , also there shall be enforcement of the workers to wear the nose mask.
- Noises generated during operation machinery equipment which produces reasonable sound during operation.
- There shall be proper emergency prevention and preparedness, no smoking sign for fire prevention shall be provided; the workers shall be trained in risk of fire hazards and within the plant shall be reasonable number of fire extinguishers.
- Solid waste generation, management and disposal shall be well managed within the plant and stored in the required storage facilities ready for collection to the final disposal.

7.0 ENVIRONMENTAL MANAGEMENT

The following sections describe the environmental protection commitments, control strategies and performance objectives for the operation of the Kaixiang Mineral International Development Limited plant. Kaixiang Mineral International Development Limited will provide an outline of the environmental values and potential impacts associated with the project and how these will be controlled.

8.0 ORGANISATION AND MANAGEMENT

8.1 Board of Directors

The project will be managed through the Board of Directors. The Board will formulate policy, offer strategic business guidance to management and regularly monitor and evaluate performance of the company. The Board of Directors will comprise of the company directors and possibly a representative from the lending institution in this project. Only the shareholders will have the right to vote.

8.2 Management and Organizational Structure

The day to day management of the company will be vested in the management team to be headed by a Managing Director. The Managing Director will be directly assisted by three line managers who will further be assisted by four Managers responsible for the plant, workshop, purchasing and administration. These will in turn be assisted by qualified and experienced personnel.

- The Logistics and Procurement Manager who will be in-charge of procurement, and transportation activities, including raw materials

- Production Manager who will be in-charge of plant operations and production while the

- Finance and Administration Manager will look after all financial matters including personnel and up keep of proper records of company accounts and assets.

Below the three line managers, there will be four supervisors to assist the line managers. They will be responsible for the plant, workshop, purchasing and administration. These will in turn be assisted by qualified and experienced personnel.

On implementation of the proposed project, the company plans to employ up to 52 people in the next three years.

9.0 FINANCIAL ANALYSIS

9.1 Financial Assumptions

The estimated capital cost and basic operating assumptions are summarised in the financial projections as shown in in the financial analysis. The following major assumptions have been taken into considerations:

- By taking into consideration repayment period of the term loan and gradual increase in plant production capacity, the financial projections are for 10 years.

- For convenience and stability, all financial figures have been quoted in United States Dollar at US$ 1 = 2,230/=TShs.

- Total capital investment cost is estimated at US$ 2,314,460

10.0 CONCLUSION AND RECOMMENDATIONS