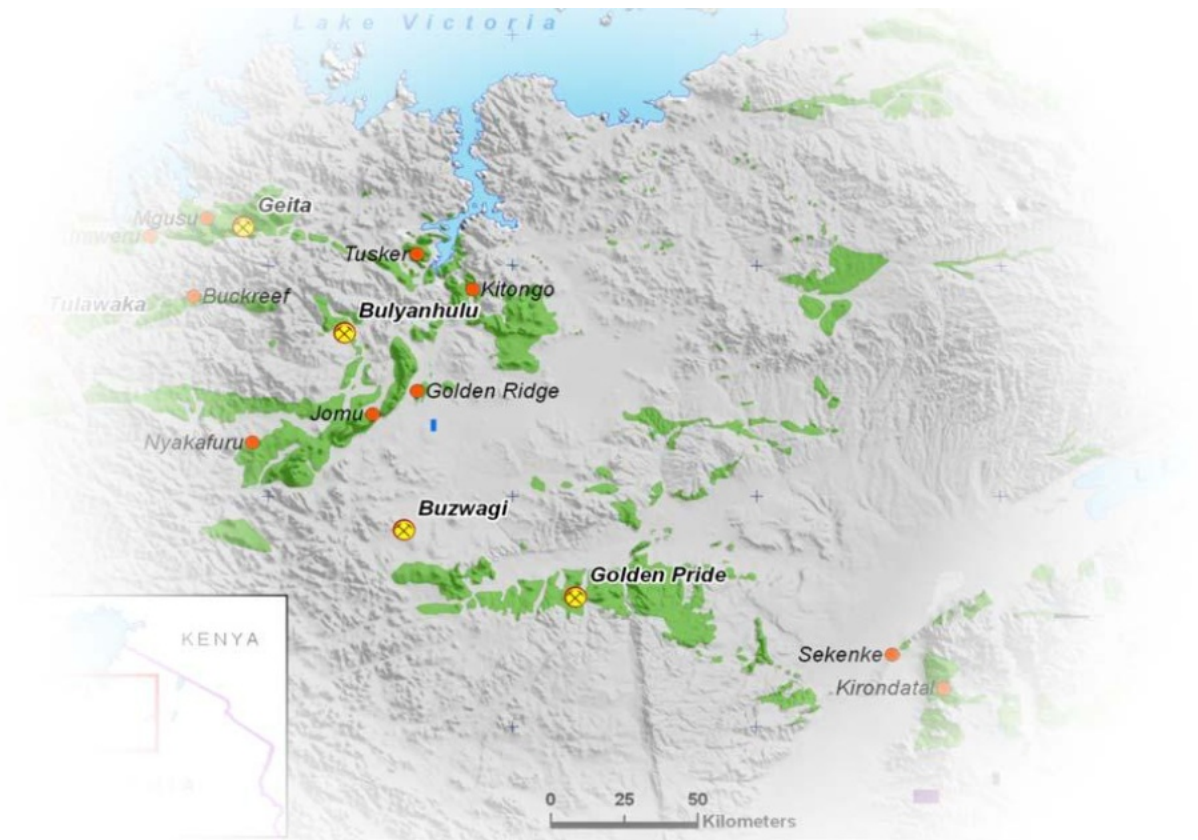




# PRE FEASIBILITY STUDY REPORT ON INVESTMENT IN PROCESSING FACILITIES FOR GOLD, COPPER, MANGANESE AND OTHER RELATED MINERALS

02-June-21

Dharti Minerals Co. Ltd.



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## X. Financial Analysis

### I. Introduction

Tanzania has become one of the fastest-emerging gold producers in Africa, and is now the continent's third-largest gold-producing country after South Africa and Ghana. Annual production of gold has increased from around 43.2 t in 2002 to about 48.0 t in 2003. Based on ongoing projects and developing mines, Tanzania's estimated gold reserves have been calculated at a conservative total of Tanzania now has proven gold reserves in excess of 36 Moz (1000 t). In 2003 Tanzania reported a 20% increase in gold exports from US\$414 million to US\$504 million and accounted for more than 62% of total export revenues, compared with 49% in 2002. There was a tremendous increase in gold exports which resulted in the signing of another gold-mining contract, this time between the Government of Tanzania and Pangea Minerals Ltd. The contract will pave the way for mining at Tulawaka in the Biharamulo District, Kagera Region, in the Lake Victoria goldfields. The Tulawaka mine is expected to come on stream in early 2005. It will be the sixth large-scale gold mine to come into production in Tanzania within six years. Mining sector contributes about 2.3 per cent of the GDP, which is projected to account 10 per cent in 2025 as stated in the [Development Vision 2025](#). It is one of the leading components in generating foreign exchange earnings within the non-traditional exports. Further is has great potentials for employment opportunities and spearheading for both the forward and backward linkage of the Tanzania's economy.



## 1.1 Mineral Resources Endowments

Tanzania has a great potential particularly for Gold, Copper, Lead, base metals, diamonds, ferrous minerals and a wide variety of gemstones, some of which are unique such as tanzanite. Coal, uranium, and various industrial minerals such as soda, kaolin, tin, gypsum, phosphate and dimension stones are available at attractive economic rates. The following are minerals that have attracted most interest in the recent years:

- Gold found in greenstone belts located in the east and southern of Lake Victoria, and rock formation in southern and southwestern of the country;
- Base metals found in a belt running from Kagera through Kigoma to Mbeya, Ruvuma and Mtwara regions, and,
- Gemstones, which are found in eastern and western belts running from Kenya border in the northern part to Mozambique in the south and Mbeya and Rukwa regions.
- Gold and diamonds have always been the mainstay of the country's mineral production. Brief explanation is provided below for easy reference.

## 1.2 Mineral Sector Policy:

The Mineral Policy of Tanzania, 1997 stresses on private sector led mineral development while the major roles of the government are regulating, promoting and facilitating. The public roles consist of the inter alia:

- Policy formulation to accommodate the overall and sectoral government policy framework.
- Advising on legislation, regulation and fiscal matters related to the sector.
- Revenue collection through royalties, annual rents, prospecting rights and licenses.
- Monitoring of mining activities.
- Collection and maintenance of geo-technical data for promotional purposes.
- Provision of extension services to small scale miners.

- Administration and inspection of mining activities, and
- Carrying out research on minerals.

The mineral policy objectives are:

- To stimulate exploration and mining activities;
- To regulate and improve artisanal mining;
- To ensure that wealth generated from mining support sustainable economic and social development; to minimize or eliminate adverse social and environmental impact of mining activities
- To promote and facilitate mineral and mineral based products' marketing arrangements.
- To alleviate poverty especially for artisan and small scale miners.
- To promote and develop Tanzania as the gemstone center of Africa.

## II. Company Profile

M/s. Dharti Mineral Co. Ltd. P.O. BOX 21934, DAR ES SALAAM is a Limited liability Company registered in the United Republic of Tanzania under the companies Act (Act No. 12 of 2002). Mr. Pravinkumar Godhani and Mr. Ankur Kathiriaya are Businessmen from India and they are the main promoters of the company.

Directors and Geologist visited Handeni, Lindi, Tunduru, Shingida, Morogoro, and Kigoma for prospective many mine area and selected some of them are described as below.

Company having following Prospecting License PL is at Handeni, Njombe DISTRICT in for exploration and Mining of Gold, Copper, and Manganese, Also Company is doing desktop study and apply Prospecting licence of ilmenite in near future

S.No	PROSPECTING LICENCE NO.	Minerals	Area	Status
1	PL/11489/2020 (32.02 SQ KM)	Gold	Handeni	Active
2	PL/17033/2021 (0.55 SQ KM)	Gold	Handeni	Recommended
3	PL/17506/2021 (11.705 SQ KM)	Copper	Handeni	Applied
4	PL/16089/2020 (6.9 SQ KM)	Copper	Njombe	Recommended

5	PL/16087/2020 (129.56 SQ KM)	Manganese	Njombe	Recommended
6	PL/16088/2020 (134.42 SQ KM)	Manganese	Njombe	Recommended

Company has undertaken service Mining Service contract as described below PML (PRIMARY MINING LICENCE) for Exploration & excavation of Copper and iron & Limestone . Area: Handeni, Tanzania.

Sr No.	PML NO.	MINERALS	AREA
1	PML89113/EZ	Copper	Handeni
2	PML90277/EZ	Copper	Handeni
3	PML85089/EZ	Copper	Handeni
4	PML91299/EZ	Copper	Handeni
5	PML85081/EZ	Copper	Handeni
6	PML 0786TNG	Iron	Handeni
7	PML013409EZ	Limestone	Tanga

Company will undertake following activity: Apart from indulging in Exploration of Mine, Mining, Contract Mining, Mining Consultancy, consultancy for Investment in Tanzania, The engage in the following core investment activities:

Gold mining and processing – this will include mining of gold Ores and processing them into refined gold.

Copper mining and copper processing - this will include copper beneficiation and copper smelting.

Mining and processing other associated minerals - this shall include mining and processing other minerals like; zinc, silver, metals minerals, precious and semi precious stones etc.

Directors have wide experience and having good business relations with worldwide prospective investor in Mining sector

Tanzania is a large country where some area is under developed but has vast resource of Copper, Lead, zinc, Nickel, Gold, Marble. Granite, Silver, coal, manganese, precious and semiprecious stone Mines. The company will explore the area around the present purchase land and will buy/lease it from the local owners/govt. with a purpose of exploration and mining in that area.

The company has well qualified geologist who will explore the mining area by conducting Desktop study, Geo- chemical, Geo-Physics survey, RC and core drilling of the land by using latest technology to locate various areas where large deposits of area are available.

The company will import machinery like Excavator, backhoe, Dumper, compressor, generator and others mining equipment, process plant & machinery required from excavation and process various minerals.

The company will also explore the possibilities of tacking certain mining area on contract basis from local mine owner after working out mining plans. This will add up in company earnings and will help the company to grow faster in mining business.

The company will undertake mining contract with PL/ PML owner, who are unable to raise finance and technically sound to undertake mining. As a result economy in that area will improve and Local people will get employment. This also benefit to the co. to run mining operation smoothly.

The company has well trained employs and well known geologist with it. This will help to offer consultancy service to other mining owners in the nearby area. This will be done by analyzing various samples from different area. This will be done by conducting analysis of samples as the company has plans to set up its own laboratory for testing. This will help to analyze samples from its own mines as well as offer service to other miners.

The company has drawn up plans for next five years and has started work in procurement of funds and the manpower and machinery required for this project. As per present estimates of availability of various ores the company will be in sound financial position at the end of 3rd year and grow further in next two years.

### **III. Potential Market Overview**

#### **3.1 Market Overview**

Tanzania returned to strong 7% GDP growth in 2010, helped by consistent stable macroeconomic policies. Inflation declined below the double digits of 2009, though increased again in early 2011 due to growing fuel and food prices. Exports performed particularly well in 2010; gold alone brought in 1.4 billion US dollars, overtaking the tourism sector which contributed 1.3 billion US dollars. Also, in 2010 the industrial sector contributed significantly to foreign earnings for the first time, generating \$900 million.

The agricultural sector the mainstay of the country's economy employing about 80% of the population contributed 480 million US dollars. Transit goods earnings contributed 380 million USD. Tanzania's 2010 GDP per capita reached 600 USD, doubling from 300 USD in 2006.



Tanzania's main trading partners are the EU, China, India and neighboring Southern African Development Community (SADC) and East African Community (EAC) countries. Tanzania's exports to the U.S. are dominated by agricultural commodities, minerals, and textiles while imports from the US include wheat, agricultural / transport equipment, chemicals, used clothes and machinery

Basic economic statistics (2012 figures):

- GDP: USD 28.25 billion
- Real GDP Growth rate: 6.8 percent
- GDP per capita: USD 652
- Inflation: 12.10 percent as of December 2012
- Total Exports: USD 6957 million
- Total Imports: USD 11425 million
- Mean Exchange Rate: Tsh 1620 per USD
- Population Total: 47.78 million people

Tanzania could be a miner's dream. However, the infrastructure and the support

Services of the country in which companies operate are as essential as the minerals themselves. In this regard, Tanzania's reputation is still mixed.

Tanzania is commencing to offer an increasingly sophisticated and vibrant market for services. This is mainly due to the entry of new international firms, the vast majority of whom are staffed almost exclusively by Tanzanians, and most importantly, new local firms willing and prepared to service the expanding mining sector.

### **3.2 Market opportunities**

Tanzania experienced a steady rise of foreign direct investment over the last decade, although investment decreased in 2009 as a result of the global financial crisis. In 2009, the value of Foreign Direct Investment (FDI) was USD 650 million compared to USD 744 million in 2008 (the highest figure recorded in Tanzania in the past eight years). In the last decade the total FDI stock in Tanzania exceeded USD 6 billion, making the country a leading FDI destination in the East Africa region. Tanzania's strategic location makes it a natural East African hub for investors seeking to exploit

not only resources but also a growing market of 527 million consumers in East and Southern Africa.

Best prospect sectors include:

- Telecommunications and Information Technology
- Construction and Real Estate Development
- Tourism
- Petroleum, Gas and Energy
- Aviation Infrastructure
- Agribusiness and Food Processing
- Mining of gold, diamonds, gemstones and other minerals

The earliest organized prospecting and mining in Tanzania took place during the German colonial period, beginning with gold discoveries in the Lake Victoria region in 1894. Mining began at the Sekenke Mine in 1909. After 1930, gold production was substantial and increased steadily until World War II. By 1967, the gold industry had declined to insignificance, only to revive after 1974-75 when the world gold price increased greatly. Beginning in April 1990, the Bank of Tanzania began buying gold at the world market price through commercial banks, paying miners in Tanzanian shillings calculated at the parallel-market rate for the US dollar rather than at the official rate.

Diamond mining, which had been relatively minor prior to 1940, received a major boost with discovery of the Mwadui Mine in 1940. Besides gold and diamonds, which have long been the mainstays of mineral production, mining of other commodities has been relatively modest, namely for copper, lead, phosphate, coal, kaolin and gemstones. In the late 1980's, the government attempted to capture the revenues being generated from gem mining by licensing private companies to buy, cut and export gemstones being produced by small-scale miners. Coloured gemstones (excluding diamonds) are an increasingly important mineral product. In 1989, small miners produced about 10 tons of precious and semi-precious stones. Tanzania's most famous gem is tanzanite, a sapphire-coloured variety of zoisite discovered in 1967. Other important gemstones are ruby, sapphire, emerald, garnets and lesser quantities of zircon, tourmaline and other minerals. In the late 1990's, several mining companies from Canada, United Kingdom, Australia and South Africa arrived in Tanzania, interested in gold exploration and development. From 2000, production of gold at an industrial scale is growing, especially from the Geita (AngloGold/Ashanti) and Bulyanhulu (Barrick) mines.



## IV. Technical and Geology- Handeni (Phase I)

The PL/11489/2020 is situated in Handeni District in eastern edge of the Tanzania Craton. The techniques used in PL/11489/2020 are geological mapping and geochemical methods. The mapping was done at 1:25,000 scale concentrated in hills, ridge, river valley. Rock sampling, soil sampling and pit sampling took place concurrently with geological mapping.

In PL/11489/2020 covered by two target. Bondo target is approximately 32Km from Handeni to Bondo and from Handeni town to Mkoka (360873E/9375814N, kang'ata ward) target approximately 48Km.

The hosted rock mineralization at bondo target are kyanite-graphite-quartz-micaceous-feldspathic gneiss. The host unit of Gold mineralization trend in approximately length of (1.25Km) and width ( +/- 60m). Hydrothermal alteration of silica and feldspar rich which appear parallel to the direction of foliation and other cross-cut foliation.

The definable structure include N-S, NW, EW.

The techniques used to discover Ore at the bondo were started by panning the top soil and then seen Gold. We make the follow up by dug pits from top soil(0 – 3m) to bedrock (mostly bedrock at pits started on 3m). After that, we are panning weathered rock which came from the pits the Gold see.

And then, we choose the four rock of samples and sent to SEAMIC Laboratory. The result show that highest Ore-grade gold mineralization are 57.99g/t and the lowest are 34g/t.

Multi-Elements were analyzed by using Handheld XRF analyzers of the soil samples at the geochemical methods. The result of multi-element show that Arsenic(As) high value is 43PPM, Copper(Cu) high value is 105PPM, Sulphur(S) high value is 284PPM, Cobalt(Co) high value is 15.4PPM, Silver(Ag) high value is 13PPM, Chromium(Cr) high value is 643 PPM and Antimony(Sb) high value is 13PPM.

# V. Geology

## 5.1 Regional geology

The geology of this region represents a non-traditional exploration environment dominated by high-grade metamorphic (granulite to amphibolite Facies) of both sedimentary and igneous rocks. Upper amphibolite facies metamorphism has created a sequence including a variety of rocks including Feldspar-quartz biotite gneiss and Pegmatite, Kyanite and Garnet pelite to amphibolites and pyroxene-olivine ultramafic rocks. Quartz feldspathic rocks are resistant to weathering than the mafic rocks and other unit. The rocks unit most cover at the hills.

## 5.2 Property Geology -Lithology

Lithologies are dominantly comprises of Para-gneiss(amphibolites) and Ortho-gneiss (felsic gneiss and granitic gneiss).These rocks have been intruded by pegmatite vein, quartz vein, micaceous (Muscovite) and kyanite. Some of these rocks have hematite, limonite and epidote alteration. The total rock samples of 37 have been collected at target.

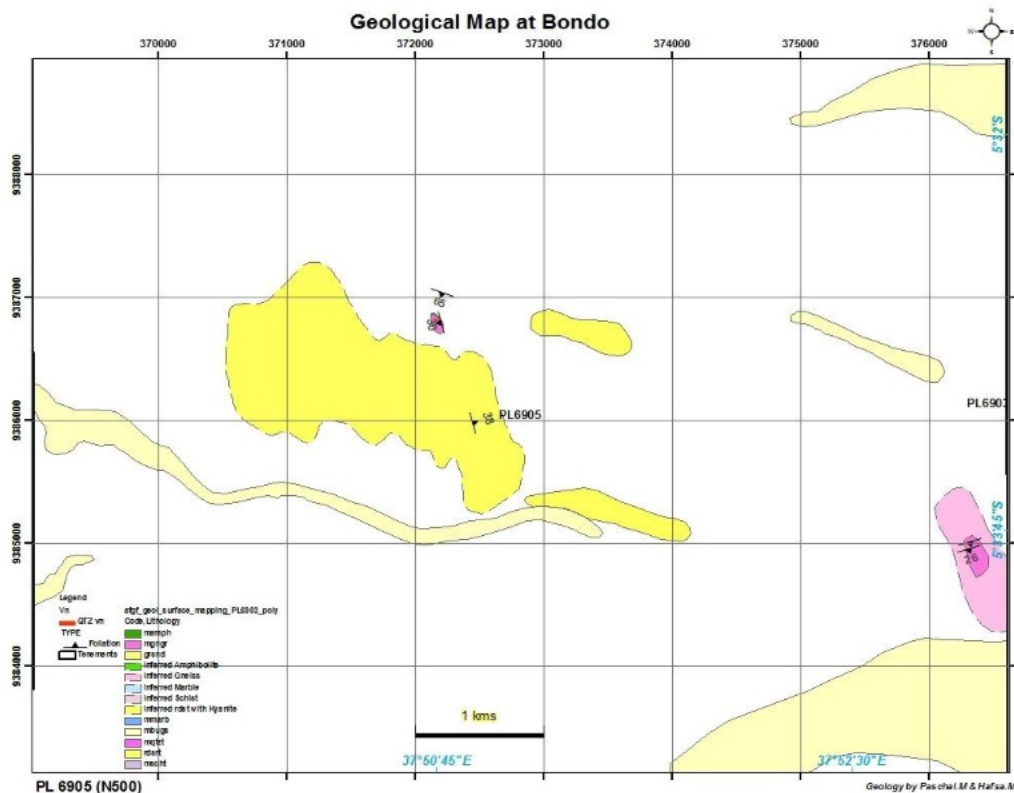


Fig 1: Bondo geological map.

### 5.3 Amphibolite

Dark grey in colour, Coarse grained rocks and homogeneous unit. Dominantly composed of hornblende, plagioclase, quartz rubble and iron nodules. Amphibolite trend on North of Bondo (372206E/9387007N, Elv 725m).



Fig 2: Amphibolite rock

#### 5.4 Granitic gneiss.

Coarse grained size, light grey in colour. It's homogeneous strongly strained unit. The unit is composed of feldspar, quartz, mica and biotite/hornblende. These rocks have been intruded by quartz vein trend 350deg, 270deg and pegmatite.(372173E/9386783N,Elv 708m)



Fig 3 : Granitic gneiss

#### 5.6 Pegmatite

Coarse-grained rocks, mostly of a granitic composition. Light colour. The unit is composed of quartz, feldspar dominate but many other minerals can form large beautiful crystals. Muscovite and other micas are seen and occur in large flat sheets.



Fig 4 : Pegmatite rock

### 5.7 Alteration

At bondo target most of the soil covered by reddish-brown colour, would be attributed to Hematite, Limonite and Epidote alteration due to highly weather of the kyanite-graphite-quartz-micaceous-feldspathic gneiss.



Fig 5 : Highly weathered hematite and limonite alteration at kyanite-graphite-quartz-micaceous-feldspathic gneiss and pegmatite.

## **DISCUSSION AND RECOMMENDATION**

The Seismic result show that the host unit for Gold mineralization is Kyanite- Graphite- Quartz-Micaceous-feldspathic gneiss, Quartz veinlets, Amphibolite gneiss and Pegmatite vein at Bondo target .

In multi-element (Cu and S) data are indicate the highest value in bondo target but (As and Ag) indicate the lowest value in bondo target. Gold mineralization in bondo target associated with Copper(Cu) and Sulphur(S) and minor Arsenic (As) and Silver (Ag).

These discovering are big so more work needed like detail mapping, soil infill, pitting trenching, geophysical working(IP and Magnetic) and final drilling in order to define well a deposit.

## VI. Shareholding Pattern

The shareholding pattern of the company shall be as mentioned below.

	Shareholders' Name	Amount(\$)
1.	Mr.Pravinkumar Godhani	108000/-
2.	Mr.Ankur Kathiriya	108000/-

## VII. Implementation

### 7.1 Planning for the Start of Operations:

Underground mining will be performed in the ore bodies that were previously open-pit mined. The upper limits of these excavations were topographically surveyed and are visible on existing aerial photographs. The bottom of these excavations is irregular and may only be defined via drilling, due to collapse of the surrounding hillsides.

As previously mentioned, during the survey phase, a 4.0 m x 3.75 m high, 12% grade and 352- m long ramp was opened, reaching the body at elevation 934. At this elevation, the bodies were partially developed by means of an 850-m tunnel featuring an average cross section of 3.75 m x 4.0 m in height. Several drifts complemented this phase of the survey. 77. The re-start of mine development will have the following phases: Development of a ventilation raise to supply the additional fresh air demand for mine ventilation. Development of a raise to serve as an alternate route, emergency escapeway and equipment traveling way. Additional development on Level 01 (elevation 930). Drift enlargement on elevation 930, exposing the footwall and the hanging wall. Development of a secondary access ramp to elevation 930. Development of a ramp, maneuvering areas and access to Level 02 (elevation 870) and Level -01 (elevation 980).

Development and enlargement of Level 02 and Level -01 drifts. Interconnection of Level 02 to the ventilation raise, emergency escapeway and equipment traveling way raise. Additional development for Level 02 support facilities (Support chamber, water reservoir and pumping station) and Level -01 to surface access. Beginning of simultaneous Level 01 and Level -01 ore excavation. Development of secondary access ramps from Level 01 and level -01 stopes to elevations 950 and 1005.

### 7.2 Detailing of the Development Phase

Development should be at least 1.5 years ahead of the effective start of ore being processed at the beneficiation plant. Therefore, development both on Level 01 and Level -02 shall be concluded before ore starts being processed. After the pre-

operating development, the mine will advance at a rate of 112.5 vertical meters per year (i.e., as the main panels bear 559,901 tonnes on average, for a 600,000 tpa production, approximately 93.32% of the planned development per level should be carried out every year). The following main equipment will be used during development: 78 Twin-boom electric hydraulic Jumbos Conventional 2.3 m<sup>3</sup> wheel loader 12-t diesel trucks For each development level, 2,135 meters of ramps and waste rock drifts, and 554 meters of ore tunnels are scheduled, totaling 2,689 meters to be developed with Jumbos. In addition, 351 meters of ventilation and emergency escapeway raises shall be developed.8.3 Access to Ore Body The access to the ore body will be via a 15% inclined ramp, driven into the footwall, and, from there, through a +2.5% inclined haulage drift. The ramp and access drift to Level 01 was excavated during the mineral survey phase and features:

- Ramp length: 352 m
- Dome-shaped section: 4.0 m x 3.75 m (width x height)
- Tunnel area: 15.00 m<sup>2</sup>
- Average slope: 12%
- Access drift length: 45 m
- Elevation of opening: 972 m
- Elevation of first level: 934 m
- Starting at Level 01, the designed ramp shall feature:
- Dome-shaped section: 5 m x 5 m
- Tunnel area: 22.3 m<sup>2</sup>
- Slope 15% 79

The ramp shall be fully developed in waste rock, in the footwall of the ore body, which is made up of compact schist. According to the geotechnical study, the ramp will be located at least 15 m below the ore body. Another access to Level 01 shall be developed starting from the ramp to Level 02

Basic development cycle using Jumbos: Drilling shall be executed with 2" diameter bits and 3.80 m length drill holes. The cleaning of the holes during drilling shall be via water injection to reduce dust formation. The water used for drilling and from springs shall be pumped with a pneumatic pump to a decantation and storage sump located at the level access way, from where it will be pumped to the surface. After drill hole cleaning (by compressed air) the loading and blasting operations will follow and special underground explosives will be used. There will be a ventilation period followed by an inspection of the working front and removal of loose rock blocks. The working front will be cleared for loading and transportation of the broken material to the waste dump located on the surface or to backfill stopping panels. The ramp shall be equipped with ducts for conducting ventilation air, compressed air and industrial water and electrical and phone cabling. A launder shall be built on the side for drainage, according to the Mining Regulatory Standards (see typical tunnel drawing attached in Appendix 06). Appendix 07 spreadsheet details the quantitative aspects

of the ramp and access development in waste.

### 7.3 Level Tunnels

Tunnels (5 m x 5 m) will be developed to +2.5% grade (ease of drainage) to allow accessing the ore bodies. These tunnels shall be developed in the waste rock up to the respective ore bodies.

At the ore bodies level, 4.2 m wide x 3.5 m high, 2.5% grade, rectangular tunnels will be developed to expose the ore body. Later, these tunnels will be widened for the purpose of exposing the footwall and the hanging wall of these bodies, preparing them for upward stopping. The bodies are composed of various ore lenses layered with waste rock. Depending on the thickness of the waste layers, they shall remain intact and serve as "pillars". Otherwise, they may be mined separately, reducing ore dilution or used as backfill in mined-out panels.

### 7.4 Secondary Ramps

Secondary ramps will be developed to 5 m x 5 m dimensions and grade varying from 2.5% to 15%, in order to provide access to the mine stope, allowing for loading and transportation of ore inside the stope as the operation progresses upwards.

There will be two secondary ramps for each level. The first one was designed to reach the stope 24 m vertically from the base. The second one was designed to reach the stope 47 m vertically from the same base. For the level with a vertical clearance of 50 m, there will be a secondary ramp starting 20 to 25 m above the floor level. These secondary ramps will allow ventilation air to return from inside the stopes, through 1.5 m x 1.5 m raises. 8121.1.9.4 - Ventilation and Emergency Escape way Raises. Two ventilation and one emergency escape way raises shall be developed between levels and will lead to the surface. The main ventilation raise shall have a final section of 3.0 m x 2.5 m, 60° slope and will be located within Bodies 2 and 5. The secondary ventilation raise shall have a 2.0 m x 2.5 m section and 60° slope and will be located after Body 6. The emergency escape way raise shall have a final section of 2.0 m x 2.5 m and 45° slope. For safety reasons, they will be driven with 1.5 m x 1.5 m section and widened subsequently. The raises were designed to be driven by a raise borer, depending on the availability of the piece of equipment at the time of operation. Also in this case, the raises will be opened with a minimum section of 1.5 m x 1.5 m and will be widened later, if required.

### 7.5 Operational Support Openings

In addition, drifts and rooms will be opened for sheltering purposes in connection with the following:

- Access to ventilation raises and emergency escape ways;
- Storage and decantation sumps for receiving and pumping spring and backfill drainage water);
- Sites for the installation of fixed and mobile electrical substations;



- Storeroom, meal room and office;
- Bathrooms; and
- Refuge chambers.

## 7.6 Basic Development Required by Level

	Material Specification	Length m	Dimension m	Sub total m
Ramp between levels	Waste	505.6	5 x 5	
05 Maneuvering areas	Waste	50.0	5 x 5	
Level access tunnel	Waste	97.0	5 x 5	
Water tank, bathroom, office, refuge chamber	Waste	371.0	5 x 5	1,023.6
Access development to Body 02	Waste	35.0	5 x 5	
Body 02 – a	Ore	149.0	4.2 x 3.5	
Body 02 – b	Ore	150.0	4.2 x 3.5	
Auxiliary ramp +20m Body 02	Waste	96.0	5 x 5	
Auxiliary ramp +40m Body 02	Waste	84.0	5 x 5	514.0
Access development to Bodies 05 and 06	Waste	182.0	5 x 5	
Development within Body 05	Waste	12.0	5 x 5	
Body 05 – a	Ore	103.0	4.2 x 3.5	
Body 05 – b	Ore	47.0	4.2 x 3.5	
Auxiliary ramp + 20m Body 05 and 06	Waste	154.0	5 x 5	
Auxiliary ramp + 40m Body 05 and 06	Waste	189.0	5 x 5	687.0
Development N 02 (between Body 05 and 06)	Waste	27.0	5 x 5	
Body 06 - a	Ore	42.0	4,2 x 3,5	
Body 06 - b	Ore	63.4	4.2 x 3.5	
External drifts to Bodies 5 and 6	Waste	332.0	5 x 5	464.4
Ventilation Raise (60°)	Waste	93.0	3 x 3.5	
Auxiliary Ventilation Raise (60°)	Waste	157.0	2 x 2.5	
Alternate Escapeway Raise (45°)	Waste	101.0	2 x 2.5	351.0
<b>TOTAL</b>		<b>3,040.0</b>		
<i>SUB TOTAL - WASTE (ramps, access ways and raises)</i>		<i>2,485.6</i>		
<i>SUB TOTAL - ORE</i>		<i>554.4</i>		
<i>SUB TOTAL - RAMP AND DRIFT DEVELOPMENT</i>		<i>2,689</i>		
<i>SUB TOTAL - RAISE DEVELOPMENT</i>		<i>351.0</i>		

## 7.7 General Description of the Mining Method and Operations

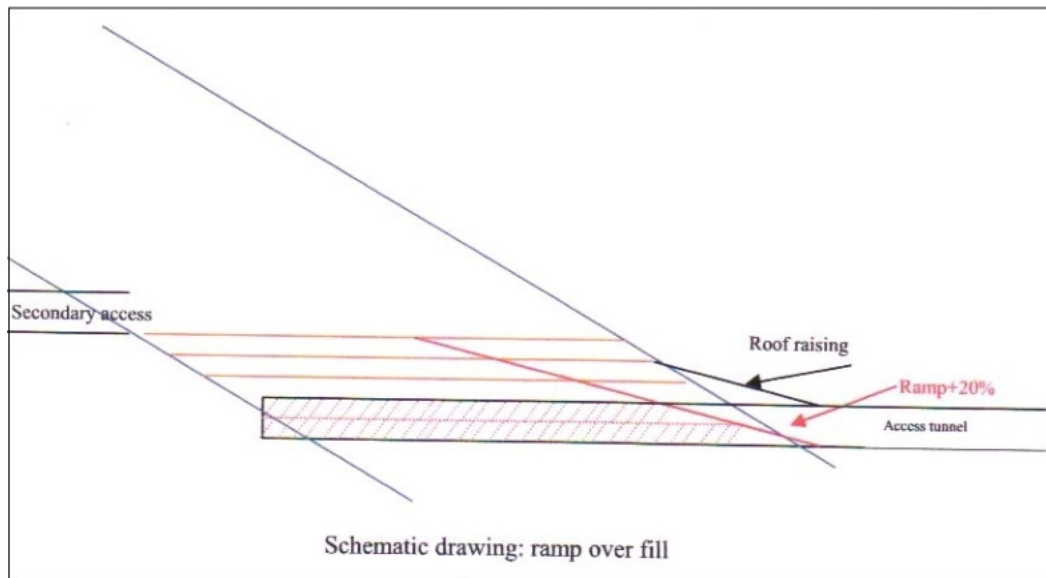
The mining method is the cut and fill, which removes ore in horizontal slices, starting from the bottom undercut and advancing upwards (overhand cut and fill). For the fill, part of the treated tailings from the backfill plant will be used, plus development waste and waste that exists between mineralization lenses to be extracted during the excavation of the mine panels. This method allows for ore selectivity, greater recovery and stability of the openings, and reduction of waste and tailings disposed of on the surface. The mine will be divided into levels. Level 01 was already developed at elevation 930 m. Level 01 will be at elevation 980 m, 50 vertical m above, and Level 02 will be at elevation 870 m, 60 vertical m below Level 01. Starting at this level, the vertical clearance shall be 75 m, i.e., Level 03 will be at elevation 795 m, Level 04 at elevation 720 m, etc. The Level 01 panel will be stopped up to elevation 1030. There will be a 5-m thick sill pillar in between levels. Tunnels will be developed to expose the footwall and the hanging wall. The waste layers between the ore lenses that comprise each body will be excavated, provided their thickness is less than 3.0 m. Part of the waste layers with thickness exceeding 3.0 m shall be left behind as "pillars" inside the panel and some other parts will be excavated separately and may be used as backfill within the panel.

Upon conclusion of the aforementioned development, stopping of the ore panel will be initiated. The excavation shall be made via 3.20 m long, 2" diameter, and 70°/80° upward drilling. Drilling shall be carried out by an electrical hydraulic single-boom Jumbo, equipped with a boom for upward drilling. Water shall be used to reduce dust accumulation. For loading drill 84holes with explosives, a derrick shall be used. Granular explosives with nonelectric delay detonators shall also be used. The first excavation stage, which shall be carried out with a step relative to the access way to the body, shall be the opened from a 3.20 m long vertical raise (slot raise) in each ore lens, to serve as a free face for subsequent blasts. According to the Blasting Plan Design, an average vertical 3.05 m advance per round is estimated. The broken material shall be loaded onto LHD wheel loaders equipped with 5 yd<sup>3</sup> buckets - after a ventilation period - and then hauled to the beneficiation plant by 16-t trucks. When the excavation of the first vertical slice reaches the entire length of the body, the hydraulic backfill process with backfill plant underflow, gets started. Initially, a draining bund will be built with waste to contain the backfill. After a draining period, the backfill surface will be smoothed and another drilling and blasting cycle will start. The mine will operate following this cycle (drilling, blasting, ventilation, loading, hauling and backfilling), until the horizontal pillar that separates the underground mine from the surface or until the horizontal pillar of the next panel is reached. Each panel (75 m vertical clearance) shall be sub-divided into three parts (vertically), for



the purpose of carrying out the work cycle. For the first 24 vertical m, the access to the panel shall be via the main level (at the base of the panel). As backfilling progresses, a 20% slope ramp will be constructed to provide access to the next drilling round above the backfill that was previously placed, and as the ramp is constructed, the roof immediately above it shall be raised, maintaining a clearance of 4.2 m. Two additional secondary access ways to the mine panel shall be opened through the main ramp. The purpose of the first access way is to reach the panel 24 m above the main level and the second, to reach the panel 47 m above the main level.

(See drawing below).

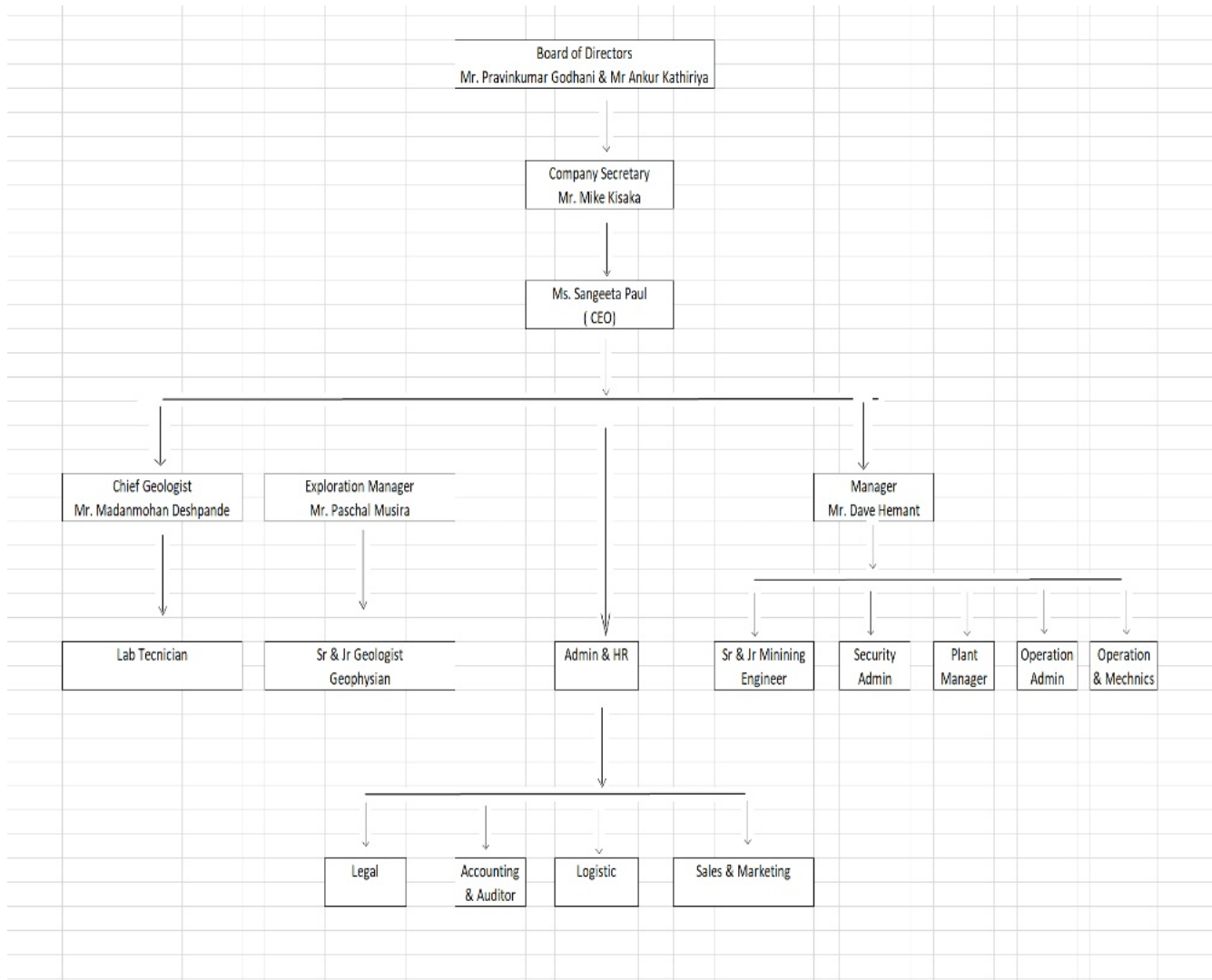


## 7.8 Mined-out Panel Backfill

Panel backfilling will be performed using the backfill technique and development waste. The backfill material will consist of the underflow from the backfill plant will consist of the 65% solids by weight underflow from the backfill plant. It will be pumped underground with no dilution, i.e., at 65% solids. The total backfill material will correspond to approximately 38% of the ROM extracted from the panel. Only the coarsest tailings portion shall be used for backfill (cyclones underflow), as it allows water to percolate and drain out of the fill, ensuring greater rock mass stability. The Backfill Plant will be assembled on the surface. This plant will receive the Metallurgical Plant tailings after they are treated in a Pulp Detox Plant. The Backfill Plant will consist essentially of cycloning operations, cutting the feed stream at 325 mesh. The Mine will receive the underflow of the cyclone, representing 38% of the ROM treated (size analysis and test work: 40% retained on 325 mesh). This material will be stored and, whenever required, reclaimed and pumped into the panels. Roof raising Ramp+20% Schematic drawing: ramp over fill Access tunnel Secondary access 86 Development waste will be used to complement the backfill. The backfill operation will be carried out with the use of slurry pumps that forward the material through pipes to the levels being mined. The backfill will be placed in 3.05 m high layers. After backfilling has been completed, the backfilled area will remain undisturbed for at least 28 hours before the next production cycle starts. This period

is required to allow water to drain out of the backfill material. The water drained from the backfill material will be collected by the mine drainage system and directed to the lower levels from where it will be pumped to be treated in the wastewater treatment plant.

## VIII. Organization Chart



## IX. Plant & Machinery

The list of Plant & Machinery to be purchased is as follow

Sr NO:	Plant and machinery	QTY	ITEM GROUP	APPX PRICE USD/UNIT
1.	Trommel Gold washing plant with Centrifugal	10	Machinery	105000
2.	Truck mounted trommel Gold washing plant	10	Machinery	105000
3.	Gold Processing plant	4	Machinery	1000000
4.	Copper processing plant	5	Machinery	1000000
5.	Water pump with Diesel Engine	15	Machinery	2000
6.	Compressor	10	Machinery	3500
7.	Shaking table	50	Machinery	2500
8.	Excavator	25	Machinery	100000
9.	Low bed trailer for Mobilizations	4	Machinery	30000
10.	Backhoe Loader	15	Machinery	80000
11.	Dumper (Tripper)	50	Machinery	80000
12.	Tractor with lorry and shovel	5	Machinery	5000
13.	Rock Breaker/needle	5	Machinery	25000
14.	Gold furnace including crucible	10	Machinery	5000
15.	Weighing Scale 1MT-60 MT	4	Machinery	8000



16.	Stone Crushing Plant	10	Machinery	50000
17.	Sand washing Plant	05	Machinery	45000
18.	Rig Core /RC drill Rig (Truck/tractor /channel mounted)	5	Exploration equipment	125000
19.	Geophysics-IP	1set	Exploration equipment	45000
20.	Geophysics-Magnetometer	2 set	Exploration equipment	12000
21.	Handheld XRF gun for minerals testing	2 set	Exploration equipment	45000
22.	Solar system with LED lamp	50	Exploration equipment	25000
23.	Metal detector	5	Exploration equipment	7000
24.	Generator set	08	Exploration equipment	15000
25.	Fuel pump	04	Exploration equipment	1000
26.	Vest-Geologists/engineers worker cloths including Shoes and helmet	500	Exploration equipment	50
27.	Electric fence set for mining area	5 set	Exploration equipment	50000
28.	PICK UP VAN	5	Vehicle	45000
29.	Staff bus	3	Vehicle	30000
30.	Utility Van	2	Vehicle	30000

## X. Financial Analysis

**PROJECTED PROFITABILITY STATEMENT FOR 5 YEARS:**

**For Lead & Copper**

**Figures In 000 \$**

<b><u>Particulars / Years</u></b>	<b><u>1</u></b>	<b><u>2</u></b>	<b><u>3</u></b>	<b><u>4</u></b>	<b><u>5</u></b>
Revenue	26,640.00	30,636.00	34,312.32	38,772.92	44,588.86
Other Revenue	960.00	1,056.00	1,161.60	1,277.76	1,405.54
Less: Export Tax	1,104.00	1,267.68	1,418.96	1,602.03	1,839.78
<b>Total Income</b>	<b>26,496.00</b>	<b>30,424.32</b>	<b>34,054.96</b>	<b>38,448.65</b>	<b>44,154.62</b>
<b><u>Expenses:</u></b>					
Stores & Consumables	5,328.00	6,249.74	6,999.71	7,909.68	9,096.13
W ages & Salaries	6,660.00	8,424.90	9,435.89	10,662.55	11,704.58
Fuel Power & Water	2,664.00	3,124.87	3,499.86	3,954.84	4,548.06
Transportation Exp.	2,797.20	3,281.12	3,674.85	4,152.58	4,775.47
Repairs & Maint. Exp.	532.80	624.97	699.97	790.97	909.61
<b>Cost of G ood Sold</b>	<b>17,982.00</b>	<b>21,705.61</b>	<b>24,310.28</b>	<b>27,470.61</b>	<b>31,033.85</b>
<b>COGS (%)</b>	<b>67.87</b>	<b>71.34</b>	<b>71.39</b>	<b>71.45</b>	<b>70.28</b>
<b>Gross Profit (Amount)</b>	<b>8,514.00</b>	<b>8,718.71</b>	<b>9,744.68</b>	<b>10,978.04</b>	<b>13,120.77</b>
<b>Gross Profit Ratio (%)</b>	<b>32.13</b>	<b>28.66</b>	<b>28.61</b>	<b>28.55</b>	<b>29.72</b>
Administration Expenses	1,864.80	2,187.41	2,473.92	2,822.67	3,277.28
Selling & Distribution Ex	529.92	638.91	715.15	807.42	927.25
Depreciation	1,205.64	1,052.14	951.24	886.54	817.90
Interest on Term Loan	480.65	383.03	280.92	174.12	62.42
<b>Total Expenses</b>	<b>22,063.01</b>	<b>25,328.18</b>	<b>28,016.36</b>	<b>31,353.95</b>	<b>35,191.44</b>
Profit before Tax	4,576.99	5,307.82	6,295.96	7,418.97	9,397.42
Tax on profit @ 30%	1,373.10	1,592.35	1,888.79	2,225.69	2,819.23
<b>Profit after Tax</b>	<b>3,203.89</b>	<b>3,715.47</b>	<b>4,407.18</b>	<b>5,193.28</b>	<b>6,578.19</b>
<b>Profit Share to PML</b>	<b>640.78</b>	<b>743.09</b>	<b>881.44</b>	<b>1,038.66</b>	<b>1,315.64</b>
<b>Dividend</b>	<b>800.00</b>	<b>500.00</b>	<b>1,000.00</b>	<b>1,000.00</b>	<b>1,700.00</b>
<b>Profit Carried to BS</b>	<b>1,763.11</b>	<b>2,472.38</b>	<b>2,525.74</b>	<b>3,154.62</b>	<b>3,562.55</b>



**PROJECTED PROFITABILITY STATEMENT FOR 5 YEARS:**

**For Gold**

**Figures In 000 \$**

<b><u>Particulars / Years</u></b>	<b><u>1</u></b>	<b><u>2</u></b>	<b><u>3</u></b>	<b><u>4</u></b>	<b><u>5</u></b>
Revenue	978.14	1,027.04	1,129.75	1,242.72	1,367.00
Less: Export Tax	39.13	41.08	45.19	49.71	54.68
<b>Total Income</b>	<b>939.01</b>	<b>985.96</b>	<b>1,084.56</b>	<b>1,193.02</b>	<b>1,312.32</b>
<b><u>Expenses:</u></b>					
Stores & Consumables	176.06	184.87	194.11	203.82	214.01
W ages & Salaries	215.19	225.95	237.25	249.11	261.57
Fuel Power & Water	97.81	107.60	118.35	130.19	143.21
Transportation Exp.	19.56	21.52	23.67	26.04	28.64
Repairs & Maint. Exp.	9.78	11.74	14.09	16.90	20.28
<b>Cost of Good Sold</b>	<b>518.41</b>	<b>551.67</b>	<b>587.47</b>	<b>626.06</b>	<b>667.71</b>
<b>G ross Profit (Amount)</b>	<b>420.60</b>	<b>434.29</b>	<b>497.09</b>	<b>566.96</b>	<b>644.61</b>
<b>G ross Profit Ratio (%)</b>	<b>44.79</b>	<b>44.05</b>	<b>45.83</b>	<b>47.52</b>	<b>49.12</b>
Surveying Expenses	-	30.00	115.00	200.00	300.00
Administration Expenses	9.78	12.23	15.28	19.10	23.88
Selling & Distribution Expenses	19.56	24.45	30.57	38.21	47.76
Depreciation	301.41	263.03	237.81	221.64	204.47
Interest on Term Loan	120.16	95.76	70.23	43.53	15.60
<b>Total Expenses</b>	<b>969.33</b>	<b>977.14</b>	<b>1,056.36</b>	<b>1,148.54</b>	<b>1,259.43</b>
Profit before Tax	8.81	49.90	73.39	94.19	107.57
Tax on profit @ 30%	2.64	14.97	22.02	28.26	32.27
<b>Profit after Tax</b>	<b>6.16</b>	<b>34.93</b>	<b>51.37</b>	<b>65.93</b>	<b>75.30</b>
<b>Profit Share to PML</b>	<b>1.23</b>	<b>6.99</b>	<b>10.27</b>	<b>13.19</b>	<b>15.06</b>
<b>D ividend</b>	<b>.00</b>	<b>15.00</b>	<b>30.00</b>	<b>40.00</b>	<b>50.00</b>
<b>Profit Carried to BS</b>	<b>4.93</b>	<b>12.95</b>	<b>11.10</b>	<b>12.74</b>	<b>10.24</b>



**PROJECTED BALANCE SHEETS FOR 5 YEARS :**

**Figures In 000 \$**

**Particulars / Years**

**1**

**2**

**3**

**4**

**5**

**SOURCE OF FUND**

**Equity & Liabilities**

Share Capital 375.00 375.00 375.00 375.00 375.00

Reserves & Surplus 1,768.04 4,253.37 6,790.21 9,957.58 13,530.37

**Non Current Liabilities**

Term Loan 11,902.82 9,124.50 6,218.54 3,179.09 0.00

**Current Liabilities**

Sundry Creditors 452.39 528.87 591.27 666.86 765.22

Other Liabilities

**TOTAL SOURCE OF**

**FUND**

**14,498.25 14,281.74 13,975.02 14,178.52 14,670.59**

**APPLICATION OF FUND**

**Non- Current Assets**

Factory Building 135.00 120.00 105.00 90.00 75.00

Plant & Equipment 8,886.85 7,775.99 6,978.99 6,237.87 5,545.64

Vehicle 187.50 117.19 73.24 45.78 28.61

Yard 90.00 261.00 279.90 296.91 267.22

Mine Rights 400.00 360.00 408.00 566.40 673.12

Investments 500.00 600.00 600.00 750.00 1,000.00

**Current Assets**

Inventory 1,921.95 2,310.64 2,587.74 2,923.61 3,304.10

Sundry Debtors 2,258.15 2,585.04 2,891.89 3,262.31 3,741.50

Cash & Bank Balances 118.80 151.87 50.25 5.66 35.40

**TOTAL APPLICATION**

**OF FUND**

**14,498.25 14,281.74 13,975.02 14,178.52 14,670.59**



**CASH FLOW STATEMENT FOR 5 YEARS :****Figures In 000 \$**

<b><u>Particulars / Years</u></b>	<b><u>1</u></b>	<b><u>2</u></b>	<b><u>3</u></b>	<b><u>4</u></b>	<b><u>5</u></b>
<b>CASH INFLOW</b>					
Increases in Capital	375.00	.00	.00	.00	.00
Increases in Term Loan	14,559.11	.00	.00	.00	.00
Increases in Creditors	452.39	76.48	62.40	75.59	98.35
Depreciation	1,507.05	1,315.17	1,189.04	1,108.18	1,022.37
Profit Before Interest & Tax	5,186.61	5,836.51	6,720.51	7,730.81	9,583.01
<b>Total Cash Inflow</b>	<b>22,080.16</b>	<b>7,228.16</b>	<b>7,971.95</b>	<b>8,914.58</b>	<b>10,703.74</b>
<b>CASH OUTFLOW</b>					
Increases in Fixed Assets	11,206.40	250.00	400.00	500.00	375.00
Repayment of Term Loan	2,656.29	2,778.32	2,905.96	3,039.45	3,179.09
Payment of Interest on T.Loan	600.82	478.79	351.15	217.65	78.02
Payment of Taxes	1,375.74	1,607.32	1,910.81	2,253.95	2,851.50
Dividend Declared	1,442.01	1,265.08	1,921.71	2,091.84	3,080.70
Increases in Inventory	1,921.95	388.70	277.10	335.86	380.49
Increases of S. Debtors	2,258.15	326.90	306.85	370.41	479.20
Increases of Investments	500.00	100.00	.00	150.00	250.00
<b>Total</b>	<b>21,961.35</b>	<b>7,195.10</b>	<b>8,073.57</b>	<b>8,959.17</b>	<b>10,673.99</b>
Opening Cash Balances	-	118.80	151.87	50.25	5.66
<b>Closing Balances</b>	<b>118.80</b>	<b>151.87</b>	<b>50.25</b>	<b>5.66</b>	<b>35.40</b>