

Pre-Feasibility Study

Granite Quarrying Project



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SUMMARY

- 1.1 This feasibility study is conducted for establishment of **Granite Quarrying Project**.
- 1.2 The initial cost of the project is Rs 81,700,600/=, including initial working capital of Rs. 9,200,600/=.
- 1.3 The project break-even sales are Rs. 32,133,373
- 1.4 The internal rate of return is 49.7% per annum.
- 1.5 Payback period of the project is approximately 2 years and 11 months.
- 1.6 Gross profit / (loss) for year 1, year 2, year 3, year 4 and year 5 is Rs. 10.2 million, 18.1 million, 33.334 million, 43.0 million and 50.0 million, respectively.
- 1.7 Gross profit / (loss) percentage is 26.6, 37.6, 49.2, 53.86 and 56.4 for year 1, year 2, year 3, year 4, and year 5, respectively.
- 1.8 Net profit / (loss) before tax for year 1, year 2 year 3, year 4 and year 5 is Rs. 4.7 million, 12.3 million, 27.0 million, 36.4 million and 42.9 million, respectively.
- 1.9 Net profit / (loss) before tax percentage is 12.4, 25.5, 39.9, 45.5 and 48.4 for year 1, year 2, year 3, year 4, and year 5 respectively.
- 1.10 Return on capital employed (ROCE) is 5.47 %, 13.24%, 27.10%, 27.20% and 35.14% for year 1, year 2, year 3, year 4 and 5, respectively.
- 1.11 Return on owner's equity (ROE) is 5.84%, 15.14%, 33.14%, 33.42% and 39.41% for year 1, year 2, year 3, year 4 and year 5, respectively.

1. INTRODUCTION

Granite is one of the emerging industries of Pakistan. According to estimates Pakistan has over 297 billion tons of granite reserves and more than 100 types of colours and varieties of granite are available in Pakistan. This study aims at providing ample information to the potential investors that would help them in preparing realistic business plan for the selected quarry.

1.1. OBJECTIVES

This feasibility study aims at both financial and socio economic viability with in-depth financial analysis and sustainable socio economic benefits.

2. GRANITE

2.1. THE PRODUCT

Granite is a product for decorating walls or interior space of buildings. It is now one of the most essential building materials for the decoration, durability and protection of the buildings.

GRANITE

Granite is igneous rock of visible crystalline formation and texture. It is composed of feldspar (usually potash feldspar and oligoclase) and quartz, with a small amount of mica (biotite or muscovite) and minor accessory minerals, such as zircon, apatite, magnetite, ilmenite, and sphene. Granite is usually whitish or gray with a speckled appearance caused by the darker crystals. Granite is mainly preferred for its use in the exterior applications including funeral trade². Variety of colours in Granite is traded in the world market with different price tags. High price is fetched for the rare colours including Jet-Black, Pearl Blue and Deep Green. These colours are found in South Africa, Brazil, Norway, India and Pakistan.

The specific gravity of Granite ranges from 2.63 to 3.30. Granite has greater strength than sandstone, limestone or Marble and is correspondingly more difficult to quarry. It is an important building stone, and its maximum usage is in the external flooring and facing followed by internal flooring.

2.2. MARKET POTENTIAL

The international granite trade was valued at \$2.5 billion in 2005, with production of about 19.6 million tons. Italy is the world leader in marble, granite, and stone sector, exporting over 38% of finished material and importing 18% of the world trade. Pakistan's production is 1.3 m tons annually, with less than 10% exported (0.03% of world trade in 2002). China, which is physically near the major mining sites in Pakistan, is the biggest importer of Raw & Finished marble slabs and tiles (nearly double that of USA) in the world.

2.3. OPPORTUNITY RATIONALE

Pakistan is bestowed with enormous mineral resources including Marble and Granite. Granite is used for both construction purposes and Handicrafts manufacturing, whereas, Onyx which is a semi-transparent and generally used by handicrafts manufacturing industry.

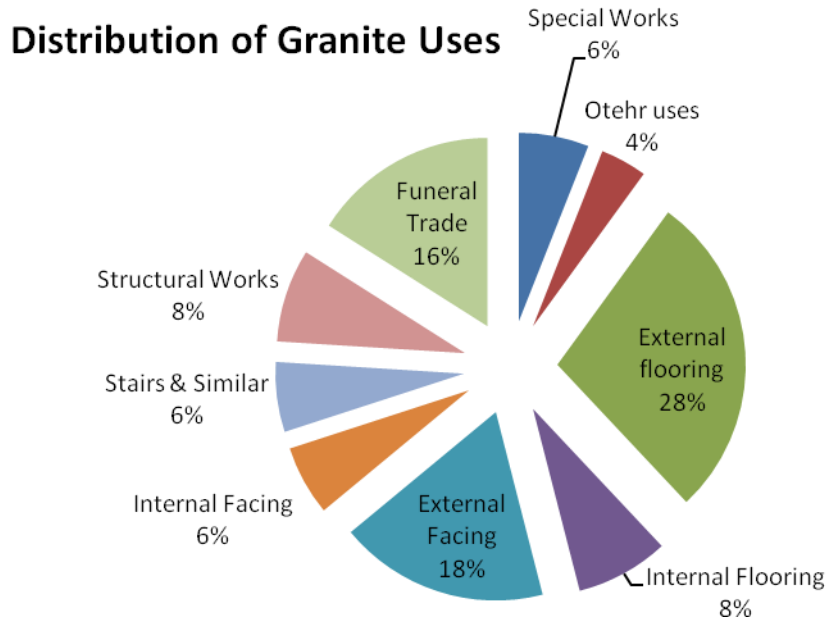
Availability of high quality Granite reserves in Pakistan in great quantities and the demand of its products in the export markets i.e. European Union countries, Central Asian countries etc. make this sector highly attractive. Foreign tourists are the main customers of the products made of marble and onyx and it has reached an all-time record Rs.763 million in 2004.

Formalization of PASDEC (Pakistan Stone Development Company) to for development Marble & Granite sector indicates government's interest in this sector which is a positive and encouraging gesture for the investors in this industry.

2.4. NATURE OF WORK ON GRANITE

2.4.1. GRANITE OR SILICEOUS STONE

Because of its uniform texture and hardness, Granite is preferred for external use. It is more durable as compared to Marble and is economical in maintenance. Granite does not need re-polishing once it is polished and fixed at the desired place, while Marble needs polishing every year or at least once in two years. The granular formation and compactness of Granite makes it non-porous and non-absorbent hence more hygienic for the use in laboratories, kitchen, washrooms and other water exposed areas. Uniformity in texture gives better look to Granite and is thus convenient in its application at the desired place. Majority of the cities located closer to the sea, provide greater markets for Granite as it can withstand the weather effects (moisturizing) better than Marble. Usage of Granite in special work, mainly involved in the making and fabrication of sculptures, decoration items etc. is lower as compared to Marble. This is simply because Granite is a harder material to work on due to its compaction and silica contents. The distribution of granite use is illustrated in the figure below.



2.5. PROCESS FLOW

Processes	Machinery	Process Description
1. Squaring of Large Stones	Squaring Machines	Large Stones with irregular shape are squared or atleast one side is leveled so that the stone can be placed in a proper manner on Gang saws and maximum square feet. of poecessable stone can be retrieved.
2. Slab Cutting	Gang Saw/Verical Or Horizontal Cutters	In this process squared/unsquared stone is cut into large slabs, which are defined as large on the basis of their length and/or width and/or height.
3. Sizing and Cutting into Slabs/Tiles	Single Cutter 12' to 36'	The large slabs are then dissected into saleable sizes, which can be in the form of slabs/tiles/patti etc.
4. Profiling, Edging, chamfering and calibrating	AutoLine	This is the first finishing process for the marble tile/slabs. Edges are smoothened and tiles/slabs are chamfered and calibrated.
5. Polishing	Manual/Auto-polisher	Polishing is done to give an attractive look to the products.

3. MINING AND QUARRING INDUSTRY

3.1. WORLD GRANITE TRADE

From a global view point the natural stone industry is growing rapidly. Since the beginning of the 1990's, production has risen annually by an average 7.3% and international trade has even increased by an average 8.7%. Worldwide natural stone extraction is meanwhile estimated at 150 million tons gross per year. Annual production after deduction of waste and cutting losses amounts to about 820 million square-meters – referred to a slab thickness of 2 cm. The total production value is estimated at 40 billion US \$.

Technological changes in the last seventy years have increased the world production and consumption of dimensional stone. There are over 40 dimensional stone producing countries in the world. Amongst the 12 largest producing countries, 6 are in Europe and the same number in Asia and Africa.

Dimensional stone processing is being done with different levels of technology in different countries but a few leading countries such as Italy, China, Spain, Japan, Taiwan, Portugal, Germany, France, USA, and Greece have developed highly efficient technology with good forward and backward linkages. India has also improved this sector considerably in the last two decades. Consumption on the other hand is more wide spread phenomena with over 50 countries of the world making use of dimensional stone in considerable quantities. The quarrying and working of stone, already practiced in ancient times by the Egyptians and the Greeks, was greatly developed in Italy under the Romans. However towards the end of the 18th century, economic activity in the stone sector developed for the first time with the invention of gunpowder and the use of mechanical cutting. Dimensional stones are produced in more than 42 countries of the world while 12 of these producers are dominant in the international market i.e. 6 European countries and 3 each from Asia and Africa. Technological advances in the last seventy years had increased the world production and consumption of dimensional stones to 150 million tons while, consumption came to about 8.8 billion square feet (820 million square meters), generating overall turnover of \$40 billion². The majority of world consumption comes from material that is quarried in different countries than those where it is eventually installed. The leading producers -- China, India, Italy, Spain and Portugal account for 53% of world quarrying production. The driving force in the sector was international trade, which is just under 29.6 million tons and equal to about 4.8 billion square feet (450 million equivalent square meters) and has reached US\$ 8.6 billions mark in 2004 with an annual average increase of 13% while China has shown the largest increase in its export value i.e almost 28%

annually over 4 years. Italy, China and Spain are the major players in the international market and exported more than 55% of the dimensional stone’s products (blocks and processed) by value. Other major exporters include Brazil, Spain, India, Turkey and Portugal.

Major importers of Granite products (processed and unprocessed) are Italy, USA, Japan, Germany, Italy and China and more than 60% of the products are directed toward these countries.

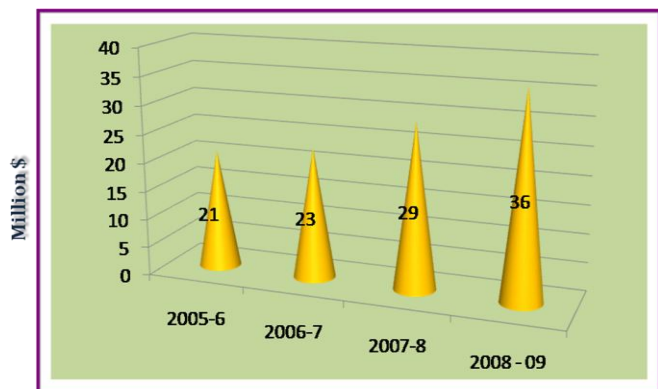
Values in \$ 1,000

Top Exporters	2000	2001	2002	2003	2004
World	5,655,417	5,776,917	6,218,024	7,829,163	8,677,536
ITALY	1,899,869	1,793,676	1,763,925	1,945,361	2,146,577
CHINA	764,951	896,374	1,082,548	1,330,279	1,629,164
SPAIN	768,196	789,277	852,167	991,594	1,087,715 ^a
INDIA	499,633	478,898	582,695	667,214	741,811 ^s
BRAZIL	263,103	273,093	331,273	421,287	589,148

3.2. PAKISTAN DIMENSIONAL STONE INDUSTRY

Granite is included in the list of largest minerals extracted among coal, chromites, rock salt, lime stone, china clay, dolomite, fire clay, gypsum, silica sand etc. Since 1990 mining & quarrying as consistently contributed 0.5 percent to the Gross Domestic Product. Production of Granite has grown substantially in the last twenty five years with total standing at about 5 million tons in 2003. It has been accompanied with high quarry wastage ranging from 61-73% in addition to poor quality, mainly due to unwieldy blasting techniques.

Processing industry is using wide array of technological options for basic as well as finishing stage, all of vintage age. Due to technological imbalance, wastages are around 52% to 55%. Presently the processing industry relies upon local manufacturers of machinery and equipment with a very few calibrated and high efficiency machines from reputable international suppliers.



The Granite Processing industry is closely related to the development of building materials, the modernization and vitalization of which leads to the progress of the tile industry. It shows a trend towards increasing use in modern architecture.

3.3. CONTRIBUTION TOWARDS NATIONAL GDP

(Value in '000' Rs.)

Type of Minerals	Average Daily Employment (Nos)	Employment Cost	Gross Value of Production	Intermediate Cost	Census Value Added	Contribution to GDP
1	2	3	4	5	6	7
All Minerals	86,729	8,699,281	170,471,728	5,097,776	165,373,952	162,715,095
Barytes	504	23,520	191,758	17,983	173,775	147,040
Bauxite	26	1,415	306	12	294	149
Bentonite	302	4,380	9,334	806	8,528	6,749
Chalk	148	12,530	91,526	3,952	87,574	84,476
China Clay	151	4,501	18,591	5,112	13,479	13,254
Chromite	582	25,329	70,690	1,205	69,485	64,423
Coal	24,159	1,577,496	4,171,155	517,748	3,653,407	3,513,736
Crude Oil	10,951	1,560,422	47,244,170	1,530,424	45,713,746	44,775,896
Copper Ore	1,195	148,583	2,934,312	232,984	2,701,328	2,647,705
Dolomite	997	35,514	154,763	27,626	127,137	123,359
Feld Spar	157	15,415	31,345	2,612	28,733	24,406
Fire Clay	189	16,284	25,565	243	25,322	24,536
Fuller Earth	507	1,935	6,118	206	5,912	5,872
Granite	84	5,104	38,788	1,427	37,361	36,619
Gypsum	1,425	64,577	351,758	11,190	340,568	334,322
Lake Salt/ Sea Salt	174	7,340	7,628	360	7,268	6,733
Laterite	970	12,709	25,170	2,077	23,093	20,954
Lime Stone	9,316	590,269	1,212,668	266,747	945,921	891,666
Magnesite	28	2,072	6,041	1,498	4,543	4,396
Marble	7,827	315,552	1,371,811	48,042	1,323,769	1,245,988
Natural Gas	18,195	3,900,506	111,260,979	2,305,990	108,954,989	107,668,220
Ocher	64	2,628	473	81	392	365
Phosphate	278	13,684	13,374	1,446	11,928	8,118
Quartz	47	1,432	8,490	538	7,952	7,716
Rock Salt	4,227	203,457	509,295	54,980	454,315	433,720
Shale Clay	1,440	10,841	15,418	3,694	11,724	9,432
Silica Sand	2,700	91,156	367,664	31,327	336,337	321,279
Slate Stone	210	10,112	104,132	7,652	96,480	95,042
Soap Stone	515	21,735	50,716	11,826	38,890	31,026
Sulphur	316	14,835	126,786	5,974	120,812	120,294
Surpentine	45	3,948	50,904	2,014	48,890	48,604

3.4. REGIONAL DISTRIBUTION

Currently in Pakistan, Quarrying of Granite is being carried out in Baluchistan, NWFP, Sindh, Punjab, and FATA & Northern Areas. Details of some potential areas bearing huge reserves of marble & granite are as under:-

Province / Region	Reserves	Potential Area
Baluchistan	Marble & Lime Stone	Quetta, Mastung , Loralai, Bolan, Chaghi, Zhob, Khuzdar, Lasbella, Sibi, Ziarat etc
Baluchistan	Granite	Chaghi , Zhob
NWFP	Marble & Lime Stone	Buner, Dir, Chital , Mardan , Noshera, Sawabi , Malakand, Manshera etc
NWFP	Granite	Buner, Dir, Manshera, Chitral
Punjab	Lime Stone	Khushab, Mianwali , DG Khan, Kohat etc
Sindh	Granite	Nagar Parkar
Sindh	Lime Stone / Marble	Dadu, Thatta
Northern Areas	Granite & Marble	Gilgit , Chillas , Hunza, Skurdu
FATA	Marble & Granite	Mohammad Agency , Bajore Agency, North Waziristan, South Waziristan

3.5. Sindh Contribution to the Sector

Sindh has good colours of granite widely spread in the area of Tharparker. There are 10 mines in operation; while reserves are not known as any efforts in this direction has not been made so far. The mines are producing blocks in squared shape and are supplied to feed the local industry. Sindh granite can compete in the international markets with India, as the colours found in Sindh are better than the colours found in India. There is a big cluster of processing units in Sindh at Karachi with over 180 medium size units. In addition there are more than 600 units of small and micro sizes with 1-3 cutters in each unit.

3.6. Prime location for Granite Quarrying

The Nagarparkar igneous complex is exposed in the southern extremity of the Tharparkar desert near the Runn of Kutch, covering an area of approximately 1000 sq. km. It is surrounded by Indian territory on three sides, thus forming an enclave of Pakistan within India. The road from Hyderabad to Nagarparkar is metalled, which is near about 475 kms, e.g. Hyderabad - Badin - Mithi - Islamkot - Nagarparkar. Likewise Nagarparkar can also be reached via Karachi, Karachi - Thatta - Sujawal - Badin - Mithi - Islamkot - Nagarparkar. Nagarparkar is also at the other extremity on the Coastal Highway, the new road under construction. Its earth work is completed. It connects Karachi with Nagarparkar via Keti Bundar - Badin - Nagarparkar.

Nagarparkar area comprises of main Karunjhar hill and isolated hillocks of limited aerial extent, surrounded by sand covered plains. The hillocks predominantly consist of 8 to 10 varieties of pink and grey coloured granites. The hillocks include Voravoh, Churio, Berano, Parodharo, Dhedhvero, Dhingano, Chanida, Densi, Wadhrai, Ranpur and Kharsar, amongst others.

Geologically there is a variety of Quaternary deposits, subordinate and scattered Juro – Tertiary sandstones and clays, overlying a basement that is termed as the Nagar Igneous Complex. It is divided into Dhedvero basic intrusion, Nagar pink granite and Karunjhar grey granite.

4. SWOT Analysis

STRENGTHS

- Large deposits of superior quality Granite in the country.
- Best Quality Granite is available in Nagar Parkar (Sindh) & Manshera.
- Large variety of types and colours.
- Accessibility to major Granite deposits.
- Significant number of mines.
- Availability of hard working & low-cost granite processing labour.
- Availability of improved technology.
- Good entrepreneurial and mechanical skills available within the country
- Availability of required infrastructure facilities

WEAKNESSES

- Untimely and inappropriate arrangement of finance.
- Constraint of research and development and production capabilities due to absence of economies of large scale and research and development.
- Use of Primitive method of quarrying
- Lack of quality production
- Incapability of meeting consistent supply
- Low production because of non - scientific quarrying
- Incapability of product grading
- Poor infrastructure due to which trucks may not carry heavy loads in the hilly areas.

OPPORTUNITIES

- Rehabilitation in Afghanistan.
- Higher Value of Pakistani Granite internationally
- Large and established world markets.
- Ample opportunity for exports.
- Growing size of middle income group in Pakistan
- Export potential for Central Asian Republics and Middle East
- On average 38% of the granite excavated from the mines in any country is exported in the same year which shows high potential for export. This figure is at 3% for Pakistan.
- Granite industry has been defined as zero-rated by the custom authorities of Pakistan, therefore, has no import tariffs and custom duty on import of machinery, specialized trucks and other tools - Usage of Granite wastage, by handicraft manufacturers.

THREATS

- Lack of high - skilled work force like Master Quarry.
- Huge cost sophisticated equipment
- Smuggling and dumping from Iran, India and China.
- Continuous depreciation of rupee against top world currencies

5. PROJECT COST

Initial cost of the project has been estimated as follows.

	(Rupees)
Plant, Machinery and Equipment	63,000,000
Mine development expenses	2,000,000
Building and civil works	3,000,000
Furniture and Fixtures	1,000,000
Vehicles	3,500,000
TOTAL	72,500,000
NET INITIAL WORKING CAPITAL	9,200,600
PROJECT COST	81,700,600

6. ASSUMPTIONS FOR FINANCIAL PROJECTIONS

6.1. INFLATION EFFECTS

No Inflationary effects have been taken while preparing the projections. If it is taken it will result in positive effects on financial results.

6.2. MACHINERY REQUIREMENTS

A balanced mix of imported & local machinery has been selected to maintain optimum level of productivity and efficiency. The machinery selected is well proven in the field and extensively used in the granite sector.

Following is the detail of plant, machinery and equipment.

S.No.	Machinery Details for Model Quarry	Sets	Quantity	Unit Cost Rs.	Total Cost Rs
1	Stitch drills with one Jack hammer designed for 20 feet drilling equipped with 3 meter long guide bar (with operational & maintenance manuals and part books)	1 Set	4	2,000,000	8,000,000
a.	Horizontal	2			
b.	Vertical	1			
c.	With Fixing Wedges & Chains				
2	Manual Jack Hammers (similar as being used in 5(a) & 5(b))	1	4	50,000	200,000
A	Spare set of springs, pauls, air piston, riffle bar & oiler (according to jack hammer specification)	1			

B	Integral drill rods (80,160,240,400,560 & 640 cm) 4nos each	8 sets			
3	Sharpening Grinder pneumatic (with operational & maintenance manuals and part books) for Drill Rods and Button Bits Sharpening	1	1	600,000	600,000
A	Grinding Wheels	20			
4	Compressor 425 CFM (with operational & maintenance manuals and part books)	1			
a.	Air hose wire braided rubber pipe (high pressure) (1" dia & ¾" dia air hose pipe) and Air Tank 2000ltr-1 No	800 meters each	2	2,200,000	4,400,000
b.	Oil filters as specified with compressor(2000hrs consumption)	8 sets			
5	Hydraulic Jacking Plant with Jacking Capacity of 300 tons (along with operational & maintenance manuals and part books)	1	1	650,000	650,000
a	Cylinders (small size)	2			
B	Cylinders (large size)	2			
6	Plugs and Feathers	1			
A	Plugs & feathers small (1.5 feet)	100	1	200,000	200,000
B	Plugs & feathers large (2.3 feet)	100			
7	Hydro pushing plant (with operational & maintenance manuals and part books) with Pushing Capacity of up to 250 to 300 tons	1	1	625,000	625,000
A	Rubber Bags (500x500 mm)	100			
B	Rubber Bags (1000x1000 mm)	100			
8	Excavator 350 HP (with operational & maintenance manuals and part books) 350- 400 HP	1	1	17,000,000	17,000,000
A	Quarry bucket (as suited with machine) (additional)	1	1	2,100,000	2,100,000

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B	Hydraulic Hammer suited with machine	1	1	2,500,000	2,500,000
C	Quarry Hook/Ripper	1	1	1,600,000	1,600,000
D	Fast Moving Consumable Part (Air Filters/ Fuel filters etc) for One year Consumption	1			
9	Wheel Loader 35 tons (with operational & maintenance manuals and part books) 350 to 400 HP		1	17,000,000	17,000,000
	350- 400 HP	1			
A	Fork lift (as suited with machine model)	1	1	1,500,000	1,500,000
B	Quarry Bucket (additional)	1	1	2,000,000	2,000,000
C	Tire Safety Chains	1	1	1,500,000	1,500,000
d	Fast Moving Consumable Part (Air Filters/ Fuel filters etc) for One year Consumption				
10	Welding Plant	1	1	2,000,000	2,000,000
11	Gas Welding Plant with Complete kit	1	1	50,000	50,000
12	Welding Plant electric	1	1	15,000	15,000
13	Oxygen Cylinder	1	1	15,000	15,000
14	Water Pump 5.5 HP (3'x3')	1	1	150,000	150,000
15	Diesel Tank	1	1	100,000	100,000
16	Gas Welding Plant with Complete kit	1	1	15,000	15,000
17	Water Pump 6.5 HP(petrol)	1	1	15,000	15,000
18	Generator 15 KVA	1	1	765,000	765,000
Total					63,000,000

6.3. Building & Infrastructure

Following is the detail of building and civil works

Detail of Building and Civil Works			
Description	Covered Area Square feet	Rate	Cost
Offices/Prefabricated Containers	800	1,000	800,000
Residential Setup /Prefabricated Containers	2,000	1,000	2,000,000
Bath Rooms	200	1,000	200,000
Total	3,000		3,000,000

Following is the detail of furniture, fixtures & Office Equipments

Furniture ,Fixtures & Office Equipments			
Item	Qty	Unit Cost	Total Cost
Beds , Mattress and Blankets	30	8,000	240,000
Chairs	20	3,000	60,000
Tables (10 @ Rs 2,000)	10	5,000	50,000
Cabinets	8	20,000	160,000
Office equipments (including 2 Computers @ Rs. 80,000)	3	80,000	240,000
Printer , Photo Copier, Scanner, Camera, Fridge,	5	50,000	250,000
Total			1,000,000

Following is the detail of vehicles:

Detail Of Vehicles		
Vehicle	Qty	Cost
Toyota 4x4	1	2,500,000
Suzuki Jeep (Project Manager)	1	1,000,000
Total	2	3,500,000

Mine development expenses are taken as Rs. 2,000,000/-.

6.4. WORKING CAPITAL

Net Initial Working capital is calculated on the basis of following assumptions:

Operating Expenses

First Six months operating expenses excluding depreciation have been taken in working capital computation.

Administration Marketing and Other Expenses

First three months administration, marketing and other expenses excluding depreciation and technical institute expenses, have been taken.

Accrued Expenses

Normally it takes 30 days to deposit the utilities bills. One month utilities, wages, salaries and benefits have been taken as accrued expenses in the working capital computation.

Accounts Receivable

Accounts receivable are estimated at 60 days of net sales.

6.5. OPERATING EXPENSES

Salaries are increased @ 10% per annum.

Salaries				
S.NO	STAFF	NO. OF EMPLOYEES	SALARIES PER MONTH	ANNUAL SALARIES
1	Quarry Master	1	60,000	720,000
	Engineers			
2	Mining	1	50,000	600,000
3	Mechanical	1	50,000	600,000
	Supervisors and others			
4	Compressor operator	1	20,000	240,000
5	Excavator Operator	1	20,000	240,000
6	Drill/ Wire saw operator	5	20,000	1,200,000
7	Loader operator	1	25,000	300,000
8	Heavy duty drivers	2	15,000	360,000
9	Store Keeper	1	20,000	240,000
10	Electrician	1	20,000	240,000
11	Labor's	10	10,000	1,200,000
	Total	25	260,000	5,940,000

Fuel power and lubricant

Item	Liters/Kgs Consumption Per annum	Price Per Liter/kg
Diesel	80,000	72
Lubricant oil	1,200	250
Hydraulic oil	1,200	500
Grease	300	200

		Years				
		1	2	3	4	5
Capacity Utilization	100%	50%	60%	80%	90%	95%
Diesel	5,760,000	2,880,000	3,456,000	4,608,000	5,184,000	5,472,000
Lubricant oil	300,000	150,000	180,000	240,000	270,000	285,000
Hydraulic oil	600,000	300,000	360,000	480,000	540,000	570,000
Grease	60,000	30,000	36,000	48,000	54,000	57,000
		3,360,000	4,032,000	5,376,000	6,048,000	6,384,000
		3,360,000	4,435,200	5,913,600	6,652,800	7,022,400

It is taken at actual based upon the capacity utilization and are increased @ 10% per annum in subsequent years.

Stores spares and loose tools

The Plant will be maintained and spares and stores are consumed for this @ 1.8% of plant and machinery with 5% increase in coming years

Carriage outwards

Carriage outwards is taken as Rs. 1,200 per ton.

Repair and maintenance

Cost of repair and maintenance is assumed @ 5% of fixed assets excluding land and plant and machinery with 5% increase in coming years

Water charges

Water charges are assumed at a lump sum amount of 10,000 per annum with 5% increase in coming years.

Insurance

Insurance will be necessary to cover in case of accidents etc. 0.75% of plant and machinery and 2% of vehicles value will be charged with 5% increase in coming years.

Excise duty and Royalty

Excise duty is taken @ Rs. 5/- per ton and royalty charges are taken as @ Rs. 30 per ton

Contingencies

Contingencies are assumed to be 5% of fuel, power and lubricant cost and stores consumed.

6.6. ADMINISTRATION MARKETING AND OTHER EXPENSES

Salaries are increased @ 10% per annum

Salaries				
S.NO	STAFF	NO. OF EMPLOYEES	MONTHLY SALARIES	ANNUAL SALARIES
1	Project Manager	1	80,000	960,000
2	Accounts Officer	1	40,000	480,000
3	Marketing Officer	1	40,000	480,000
4	Drivers	2	10,000	240,000
5	Peon	2	10,000	240,000
6	Security Guards	3	10,000	360,000
	Total	10	190,000	2,760,000

Electricity

Electricity needs will be catered from Generator cost already accounted for in Operating Expenses.

Communication

Communication includes telephone, telex and fax charges of office and managers. These are taken @ 2500 per month with 5% increase in coming years.

Printing & Stationary

Printing and stationery includes leaflets, cards, and stationery required by administration staff. These are taken @ Rs. 3,000 per month with 5% increase in coming years.

Vehicle up – keep

Fuel, repair and maintenance of vehicles @ 8,000/- per month

Legal and Professional Charges

These include audit, tax and consultancy charges and are taken @ Rs. 200,000/- per annum with 5% increase in coming years.

Newspapers and Periodicals

These are taken @ Rs. 6,000/- per month with 5% increase in coming years.

Entertainment

Refreshment for customers and employees of office @ Rs. 10,000/- per month

Bank Charges

Bank charges include TT, DD and other bank charges. These are taken @ 0.5% of sales.

6.7. DEPRECIATION ON ASSETS

Depreciation on the assets has been charged at the following rates:

Plant and Machinery - 20%

Building - 5%

Furniture & Fixtures - 10%

Vehicles - 20%

6.8. Production Schedule

Sale price per ton has been taken as Rs. 12,000/-, Rs. 10,000/- and Rs. 8,000/- for large medium and small squared blocks respectively. Quarry at 100% efficiency will produce following tons.

Sale Price		
Description	Production (tons)	Sales price per ton
Squared Blocks (Large) 20% of Production	1,600	12,000
Squared Blocks (Medium) 40% of Production	3,200	10,000
Squared Blocks (Small) 40% of Production	3,200	8,000
Total Production	8,000	

PRODUCTION SCHEDULE						
Description		Years				
		1	2	3	4	5
Capacity Utilization	100%	50%	60%	80%	90%	95%
Production per year	8,000	4,000	4,800	6,400	7,200	7,600
Squared Blocks (Large) 20% of Production	1,600	800	960	1,280	1,440	1,520
Squared Blocks (Medium) 40% of Production	3,200	1,600	1,920	2,560	2,880	3,040
Squared Blocks (Small) 40% of Production	3,200	1,600	1,920	2,560	2,880	3,040

8,000	4,000	4,800	6,400	7,200	7,600
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TAXATION

No tax has been taken in the first three years as initial depreciation allowance is available. In 4th and 5th year tax @ 25% of net profits is taken.

7. The Financials

7.1. Projected Income Statement

MODEL QUARRY - PROJECTED PROFIT AND LOSS ACCOUNT					
	Year 1	Year 2	Year 3	Year 4	Year 5
SALES	38,400,000	48,384,000	67,737,600	80,015,040	88,683,336
Operating cost	(28,153,700)	(30,184,070)	(34,403,571)	(36,922,180)	(38,628,013)
GROSS PROFIT	10,246,300	18,199,930	33,334,030	43,092,860	50,055,323
Administration marketing and other expenses	5,472,500	5,832,820	6,259,308	6,682,081	7,121,576
Income from training institute	-	-	-	-	-
NET PROFIT BEFORE TAX	4,773,800	12,367,110	27,074,722	36,410,779	42,933,747
Provision for taxation 25%	-	-	-	(9,102,695)	(10,733,437)
PROFIT / (LOSS) AFTER TAX	4,773,800	12,367,110	27,074,722	27,308,084	32,200,310
Un- appropriated profit / (loss) b/f	-	4,773,800	17,140,910	17,686,253	17,997,735
	4,773,800	17,140,910	44,215,632	44,994,337	50,198,045
Appropriation of profits	-	-	26,529,379	26,996,602	50,198,045
Un-appropriated profit / (loss) carried forward to balance sheet	4,773,800	17,140,910	17,686,253	17,997,735	-

7.2. Projected Cash Flow Statement

MODEL QUARRY - PROJECTED CASH FLOW STATEMENT

CASH FLOW FROM OPERATING ACTIVITIES	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Profit / (Loss) before taxation		4,773,800	12,367,110	27,074,722	36,410,779	42,933,747
Adjustment for - Depreciation		13,550,000	13,550,000	13,550,000	13,550,000	13,550,000
Adjustment for - Financial charges		192,000	241,920	338,688	400,075	443,417
Profit before working capital changes		18,515,800	26,159,030	40,963,410	50,360,854	56,927,164
Change in working capital:						
Increase/(Decrease) in current assets						
Accounts receivable		(3,200,000)	(832,000)	(1,612,800)	(1,023,120)	(722,358)
Stores and Spares		(283,500)	(14,175)	(14,884)	(15,628)	(16,409)
		(3,483,500)	(846,175)	(1,627,684)	(1,038,748)	(738,767)
Increase/(Decrease) in accrued liabilities		737,500	7,125	73,806	81,154	89,235
		15,769,800	25,319,980	39,409,532	49,403,260	56,277,631
Payment of financial charges		(192,000)	(241,920)	(338,688)	(400,075)	(443,417)
Payment of tax		-	-	-	(9,102,695)	(10,733,437)
Net cash flow from operating activities		15,577,800	25,078,060	39,070,844	39,900,490	45,100,778
CASH FLOW FROM INVESTING ACTIVITIES						
Purchase of fixed assets	(72,500,000)	-	-	-	-	-
Net cash flow from Investing activities	(72,500,000)	-	-	-	-	-
CASH FLOW FROM FINANCING ACTIVITIES						
Equity contribution	81,700,600	-	-	-	-	-
Payment of Profits	-	-	-	(26,529,379)	(26,996,602)	(50,198,045)
Net cash flow from financing activity	81,700,600	-	-	(26,529,379)	(26,996,602)	(50,198,045)
Net cash flow for the year	9,200,600	15,577,800	25,078,060	12,541,465	12,903,888	(5,097,267)
Cash and bank balances at the beginning of year	-	9,200,600	24,778,400	49,856,460	62,397,925	75,301,813
Cash and bank balances at the end of the year	9,200,600	24,778,400	49,856,460	62,397,925	75,301,813	70,204,546

7.3. Projected Balance Sheet

Model Quarry Projected Balance Sheet - Granite

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
<u>CAPITAL AND LIABILITIES</u>	(PKR)					
CAPITAL AND RESERVES						
Equity	81,700,600	81,700,600	81,700,600	81,700,600	81,700,600	81,700,600
Accumulated profit / loss		4,773,800	17,140,910	17,686,253	17,997,735	-
	81,700,600	86,474,400	98,841,510	99,386,853	99,698,335	81,700,600
CURRENT LIABILITIES						
Accrued liabilities	-	737,500	744,625	818,431	899,585	988,820
	81,700,600	87,211,900	99,586,135	100,205,284	100,597,920	82,689,420
	<u>ASSETS</u>					
FIXED ASSETS						
Fixed Assets	72,500,000	72,500,000	72,500,000	72,500,000	72,500,000	72,500,000
Less: Accumulated depreciation	-	13,550,000	27,100,000	40,650,000	54,200,000	67,750,000
	72,500,000	58,950,000	45,400,000	31,850,000	18,300,000	4,750,000
CURRENT ASSETS						
Accounts receivable	-	3,200,000	4,032,000	5,644,800	6,667,920	7,390,278
Store and spares	-	283,500	297,675	312,559	328,187	344,596
Cash and bank balances	9,200,600	24,778,400	49,856,460	62,397,925	75,301,813	70,204,546
	9,200,600	28,261,900	54,186,135	68,355,284	82,297,920	77,939,420
	81,700,600	87,211,900	99,586,135	100,205,284	100,597,920	82,689,420

IMPORTANT CONTACTS

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