

**MINING PLAN FOR COLOURED GRANITE**  
Over an extent of 5.00 Hectares, Sy.No 1,  
Adukonda(V), Tekkali(M), Srikakulam Dist.  
A.P.



**APPROVED**

For  
**M/s Dinesh Granite Exports**  
**Hyderabad**

Prepared by

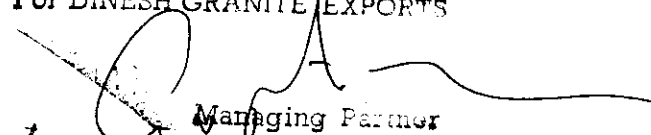
V.T.Chander  
Consultant Geologist & RQP  
(RQP/DMG/HYD/02/20J1)  
#202, H.No 10-1 Mahalaxmi Ganapathi Complex,  
P&T Colony, Dilsukhnagar, Hyderabad 500 60.



**CERTIFICATE**

***This is to certify that Mining Plan in respect of Quarry Lease area over an extent of Over an extent of 5.00 Hectares, Sy.No 1, Adukonda(V), Tekkali(M), Srikakulam Dist.. Andhra Pradesh. Has been prepared by Sri V.T. Chander, Consultant Geologist & RQP and we agree to follow the same in accordance to the provision of Law***

For DINESH GRANITE EXPORTS

  
Managing Partner  
For M/s Dinesh Granite Exports  
Hyderabad

Date:  
Place:

CERTIFICATE



The provision of Granite Conservation and Development Rules 1999 have been observed in the Mining Lease of COLOURED GRANITE, over extent of Over an extent of 5.00 Hectares, Sy.No 1, Adukonda(V), Tekkali(M), Srikakulam Dist.. Andhra Pradesh.. For M/s Kunnam Granite Works, Hderabad. Whenever specific permissions are required the applicant will approach the concerned authorities.

Date: 26<sup>th</sup> March 2003

Place: Hyderabad

  
RQP  
( V.T.Chander)



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- I Copy of the Notice 36890/R1-3/2002 dated 2-11-2002
- II Year wise Production for 5 years



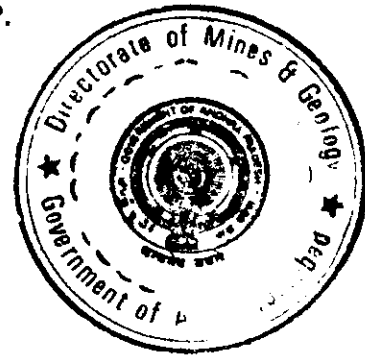
**MINING PLAN ON COLOUR GRANITE**  
Over an extent of 5.00 Hectares, Sy.No 1,  
ADUKONDA (V), TEKKALI (M), SRIKAKULAM Dist. A.P.

For

**M/s Dinesh Granite Exports  
Hyderabad**

By

**V.T Chander, Consultant Geologist & RQP**



**I. Introduction**

M/s Trinity Granites were holding the prospecting license for Colour Granites in Sy.No 1 of Addukonda (V), Tekkali (M), Srikakulam District, A.P. over an extent of 5.00 Hectares.

Subsequently the applied area was transferred to M/s Dinesh Granite Exports, Hyderabad, for the un-expired period of lease (i.e. upto 7-12-2002) vide Director of Mines & Geology, Hyderabad proceedings No 32765 /R1-3 dated 19-11-2001. The transfer of lease deed was executed on 21-12-2001, Vide Asst. Director, Mines & Geology Srikakulam dist., proceedings No 5888 / Q /2001 dated 21-12-2001.

M/s Dinesh Granite Exports, Hyderabad. Approached Sri V.T.Chander Consultant Geologist and RQP (RQP/DMG/Hyd/02/2001) for Carrying out prospecting operations and to prepare prospecting report.

M/s Dinesh Granites Exports, Hyderabad has applied for quarry lease. The Director Mines & Geology, Hyderabad after scrutinizing the application has issued a notice vide letter No. 36890/R1-3/2002 dated 2 -11 -2002 to submit approved Mining Plan for grant of Mining lease. This Mining Plan is prepared in accordance with the GCDR rules 1999.

This Mining Plan is Approved subject to the  
Conditions/Stipulations Indicated in the  
Mining Plan Approval Letter No.....  
1047/mg.2403....., dated.....4.03

**APPROVED**

*P. Dayasankar*  
**Dr. P. DAYASANKAR**  
JOINT DIRECTOR  
DEPT. OF MINES & GEOLOGY  
GOVT. OF A.P. HYDERABAD.

## II. GENERAL

- 2.1. Name and address of the applicant : M/s Dinesh Granite Exports  
3A, Siva Sai Sannidhi  
Opp Shirdi Sai Baba Temple  
Hindinagar, Panjagutta  
Hyderabad - 500 034.
- 2.2 Status of the applicant : Private Firm
- 2.3. Mineral for which applicant intends to mine : Colour granite
- 2.4 Name and address of the RQP who prepared the Prospecting report : V.T. Chander  
RQP/ DMG/Hyd/02/2001  
H.No. 10-1 Flat No. 202  
Mahalakshmi Ganapathi  
Complex, P&T colony,  
Dilsuknagar.  
Hyderabad - 500 060.  
Ph : 4068218, 6618351
- 2.5 Name and address of the Prospecting Agency : M/s Dinesh Granite Exports
- 2.6 Details of the Area :

The applied area falls in the Survey of India Toposheet No.74 B/2 and is bounded East Longitude 84°- 12'-00" and North Latitude 18° - 38'-00". It is situated 5 Km North West of Tekkali. The road leading from Tekkali to temburu will lead to the site. The location of the area is indicated in key cum location Map (Plate I).

Table No.1 Details of the Area

Dist.	State.	Mandal	Village	S.No.	Extent	Ownership Of Occupancy Govt. Land
Srikakulam	Tekkali		Addukonda	1	5.00 Hec	

- 2.7. Period for which Quarry lease required = 20 years

Cadastral Map certified by the Asst. Director of Mines & Geology, Srikakulam in favor of M/s Dinesh Granite Exports is given as Plate No II.



## 2.8. Infrastructure and Communication

- The applied area is 5 Km North West of Tekkali. The area can be approached by road from Tekkali –Temburu will lead to site.
- Amenities like Post & Telegraph office; Police station, Primary Health center etc. are available at Tekkali.
- Tekkali is the Mandal headquarters.
- Vishakapatnam port is about 150 km from area.
- Electricity is available at the applied area. The area is having good ground water potential.
- The ground water level is about 6 to 7.0 Mts below ground level.

Further vast potential exists for the employment of unskilled labour in the existing Granite quarries and allied Small-scale industries. The area experiences Semi - arid climatic conditions with an average Annual rainfall of 1000 mm. The local day temperature varies from 25° C in November to 48° C in April & May months. The general wind direction reported is SW to NE and SE to NW.

### Boundaries

North : Barren Lands  
East : Gomati Minerals & Granites

South : Barren lands  
West : Bay Rock Granites.

## III. GEOLOGY AND EXPLORATION

### 3.1 Physiography

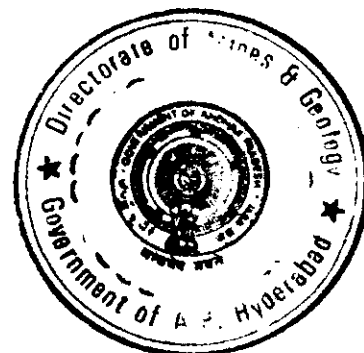
Regionally the area constitutes a part of the NW- SE trending hill range with Peaks rising to 353,540 & 465 M above sea level.

The applied area forms a part of the southern edge of the hill " Addukonda" steeply sloping due south, the relief of the area is 110 Mts above with in the applied area Vegetation is developed in between the boundaries. Drainage is well developed (dendritic drainage pattern) in general, all these streams developed on the hills culminate in the tank located 2.5 Km west of Tekkali town & Mandal HQ's.

### REGIONAL GEOLOGY

The Eastern Ghat Mobile Belt [EGMB] is more than 600 Km in length from Srikakulam in the North to Ongole in the South. This belt is more than 100 Km in width in Northern part and tapers down to less than 20Km in the South, it has broad actuate trend with west ward convexity. The NNE –SSW trend in the southern part of the belt changes NE-SW in the North. EGMB is divided into 3 longitudinal zones viz.

1. Western - Charnockitic Zone
2. Central - Kondalite Zone
3. Eastern - Migmatite Zone





While in the northern parts in Srikakulam, Vizianagaram & Vishakapatnam Districts the central Khondalite Zone occupies major part of the area. Where as Western Charnockite Zone occurs in the Southern part. The rocks in this belt are represented high-grade Granulite facies of Metamorphism and suffered by complex deformation. The stratigraphic succession of EGMB is as follows:

INTRUSIVES	Layered Anorthisites and associated Mafics and Chromiferous Ultra Mafics.
CHARNOCKITE GROUP	Charnockites with Mega Crystic K- Felspar Charnockite Two Pyroxene granulite / Amphibolites.
KHONDALITE GROUP	Calc-Sillicate-Granulites. Garnet-Silliminite-Quartz-Biotite-K-Felspar- Graphite Gneiss (Khondalite) Quartzite-Garnet-Silliminite
GRANITOID SUITE	Granitoid with mega crystic K-Felspar. Un differentiated (with Migmatitic Dia Tectite, Augen) perferoblastic granite and Gniesses. Garnet - Biotite Homophanus Granite/Gniess. Leptinite, Local Charnockite Neosomes and Relics.

In Srikakulam district the EGMB is represented by wide range of litho units Viz: Charnockites, Khondalites, Twopyroxene Granulites, Migmatites, Leptinites and Intrusive porphyroblastic Charnockites. Large enclaves of Acid Charnockites, Khondalites and Meta-Basic rocks occur within Migmatites, which are largely seen in the area lying between R.Vamsadhara and Coastline.

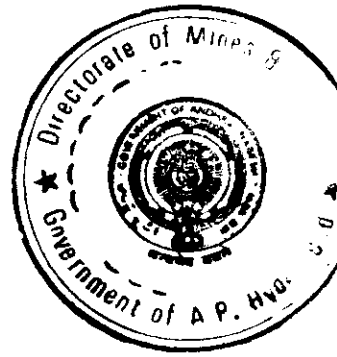
### Local Geology

The Migmatites and Migmatized Charnockite deposits are commercially known as "SRIKAKULAM BLUE". The Migmatite essentially consists of Blue Quartz and Bluish Grey to Light Grey Felspar with accessory minerals like Hypersthene, Homeblende and Biotite. The rock displays wavy banding, pygmatic folding of bands, paleosom - mesosom - leucosom and minimal lineation. A number of parallel slips trending N-S, NNW-SSE and NNE-SSW cut across the wavy banding, pinching and displacing the bandings which imparts additional beauty to the stone besides its blue colour. The arrested enclaves of Charnockite (locally known as oil patches) and healed hairline fractures (known as white and coloured lines) cutting across the wavy banding are considered defects.

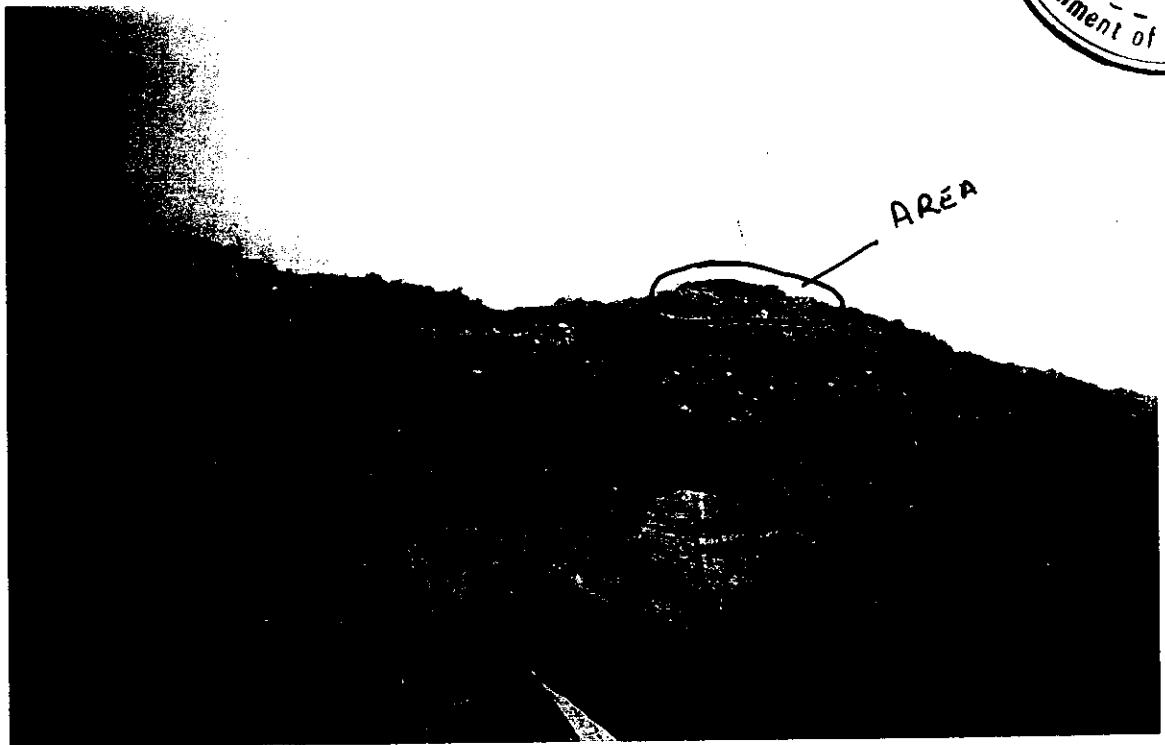
Two sets of major joints :

N 70° E - S70°W  
N 20° E - S20°W

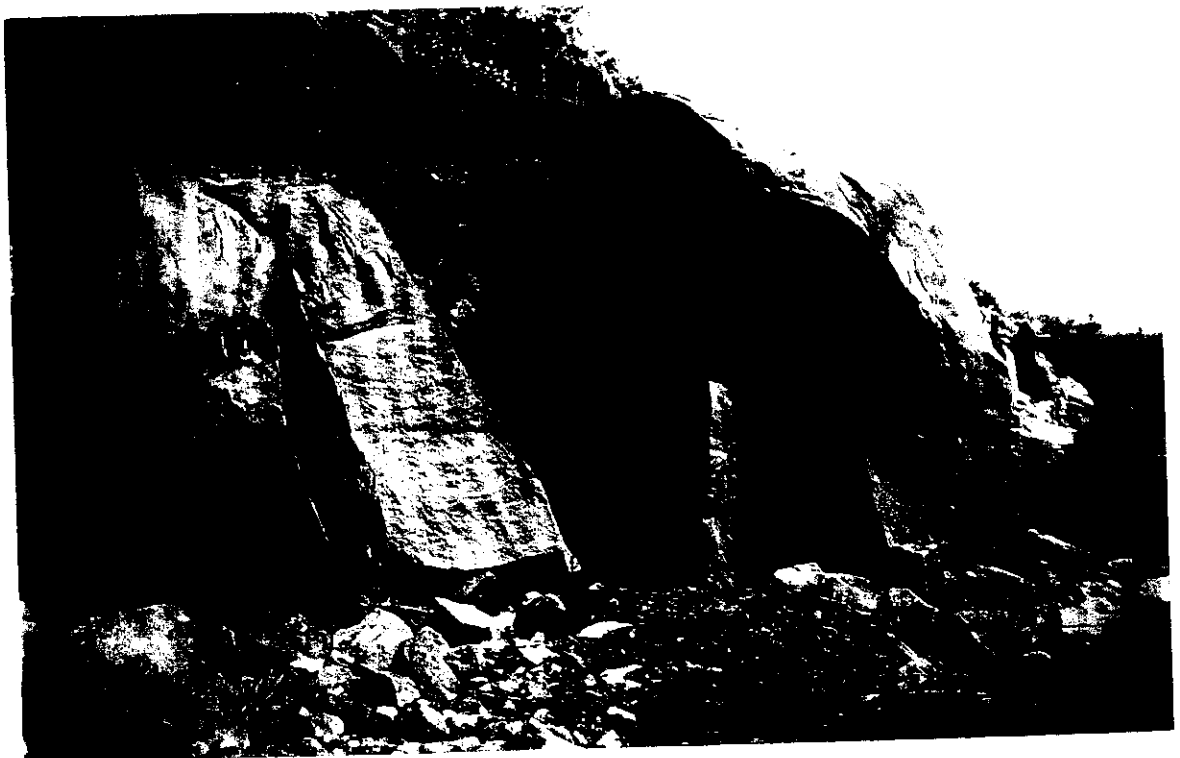




Photographs showing view of the Hill Deposit



Photograph showing splitting of the insitu boulders



### 3.3 Details of Exploration:

#### 3.3.1 Prospecting operations carried out

The following prospecting operations were carried out in applied area.

1. Geological traverses and mapping of the area on 1: 1000 scales.
2. Topographic survey using Theodolite surveying instrument was used for preparation of surface/work plan and preparation of topographic maps.
3. Exploratory mining, excavation of 1 pit for exploratory mining.

##### 3.3.1-1 Geological Traverses and Mapping :

The applied area was traversed to demarcate the exposures of the colour Granite and to record the structural features in the outcrops, the data regarding litho units collected and surface geological map on 1:1000 scale prepared (Plate III). 5nos of samples were collected for polishing test.

##### 3.3.1-2 Topographic Survey :

A micro optic theodolite is used for conducting the topographic survey. An assumed benchmark of 100 M used to measure the elevation differences in the applied area and also to prepare the surface elevation contour map on 1: 1000 scale.

##### 3.3.1-3 Exploratory Mining:

Geological mapping of the applied area revealed the Migmatites forms as a hill rising up to 110 M above ground level. Therefore mining operations were carried out at Western edge of the hill. The exposed sheet was drilled by Jack Hammers and 2 benches of 7 & 5M height were developed. The quarrying advances South to North. benches facing South East wards, a steep ramp is formed from south to the quarry. The mining is of semi-mechanised type.

In the trial pit of 12.5 x 10.25 x 3 M a total of 384 rock mass was retrieved from mother rock and after secondary cutting and dressing 115 M<sup>3</sup> of economic grade and marginal grade rough blocks recovered showing the recovery percentage of about 30.

The following machines are used:

1. Poclain -1no.
2. Compressor -1no..
3. Jack Hammers- 5 no.s

### 3.4 Estimation of geological reserve

#### 3.4.1 Geometry of deposit

Geological traverses and the study exposures on the hill facilitated to assess the shape and size of the deposit in the area. It is in irregular shape. The surface of sheet rock is wavy and irregular.



### 3.4.2 Method of Estimation of Reserves

The exposed deposit is found to be irregular in shape as it is exposed on hill, the volume is computed by multiplying area with the average height of 58 M.

#### 3.4.2-1 Categorization of reserves

The deposit is exposed on hill with an average height of 58 Mts rock is considered for computing the reserves. The deposit exposed on the surface and RL100 to RL205 in section A – B is classified under "Proved"

Total area	50,000M <sup>2</sup>
Area covered with Soil	4,982 M <sup>2</sup>
Area covered with Rock Mass	45,018 M <sup>2</sup>

Average thickness of Rock Mass            58M

As the hill is high with boulders and inter mixed with soil and tallus and weathered boulders, 30% of the total quantity is treated as deposit hence

Total geological reserves estimated    = 26,11,044 M<sup>3</sup> x 30% = 7,83,313 M<sup>3</sup>

#### 3.4.2-2 Total Mineable Reserves

The Rock mass blocked under buffer zone, a corridor of 7.5 M width around the applied area boundary, not available for mining. Deduction of reserves blocked above under different areas from total geological reserves indicate total mineable reserves, which are as follow.

North	280 x 7.5 x 58	=	1,21,800 M <sup>3</sup>
East	165 x 7.5 x 58	=	71,775 M <sup>3</sup>
West	175 x 7.5 x 58	=	76,125 M <sup>3</sup>
South	No deposit will be in the South		
		=	2,69,700 M <sup>3</sup>

Total Mineral Reserves            = Total Geological reserves – Deposit  
Blocked under Buffer zone & Roads.  
= 7,83,313 M<sup>3</sup> – 2,69,700  
= 5,13,613 M<sup>3</sup>

#### 3.4.2. -3 Economic Marketable Reserves

The Granites, having good export market, rough blocks free of defects like fractures, joints, shears, hair line cracks, segregation veins, drastic colour variation and having 120 up size (Gang saw size) are mostly preferred by exporters and international buyers, These are known as Economic or market grade, Exploratory mining carried out in applied area revealed 30% of recovery of 1.2 cu.m (gang saw) Therefore,

Economic marketable reserves            = 1,54,084 M<sup>3</sup>



## IV. MINING

### 4.1 Opening of Mine

The Colour Granite in this area is proposed to be mined by open cast, semi-mechanized method the Granite deposit in this area is exposed as a hill raising upto 110 M above GL, with in the applied area with boulders and sheet beneath it.

**The following method of working is proposed:**

#### Stage 1

Over burden removal :

Consists of development which includes removal of Weathered, undersized and defective boulders using proclain/excavator and using tipper, this waste is dumped at dumping yard. A ramp already constructed during exploratory. Mining will be further developed to reach the working pits.

#### Stage 2

Extracting boulder and cutting them into blocks with conventional methods :

After removal of Weathered, undersized and defective boulders the fresh boulders exposed will be split into two or three pieces so that blocks can be made out of them. As the production is only for gang saw size, the boulders are split to the required size at the insitu stage. The undersized and defective blocks are removed. Usually, the advantage of natural joints present in the boulders are taken for splitting them or a line of drill holes are drilled vertically and horizontally at 10 – 15 Cm distance and the primary blocks will be wedged out or split it with the help of feathers and wedges. If the boulder or big enough one or two holes are drilled and blasted with a small charge of gunpowder. Sometimes feather and wedges are placed in series of holes drilled for splitting the boulder, except a middle hole and a small quantity of gunpowder is charged and blasted after tightening with the wedges.

The separated pieces are examined for defects and lines, then the block or blocks are marked in clear area and holes are drilled along the line of marking, with the help of feathers and wedges the waste portions are separated forming a rectangular blocks. Any bulges are removed by drilling and wedging making it perfect blocks. A perfect block is that all the sides shall make with each other 90°.

#### Dressing :

After primary separation the rock mass will be carefully examined to avoid hairline cracks, mineral segregation's and veins etc. The dressing of the rough blocks will be made by chipping the edges and geometrically equating the edges of the block at the dressing yard. The rough blocks obtained after primary cut it will be dressed for obtaining good geometric shape of coloured granite.

### 4.1 Scheme of Mining & Year wise production :

During mining operations the applicant proposes to produce 1102.5 Cu.Mts. of Coloured granite per year. In order to produce this quantity an area of 1225 Sq.Mts. will be utilized.



## I Year :

The mining operations start from Eastern side of the existing pit in N-S, located in the grid E 50-100 and N 100-150 forming a bench height of 3 M and the bench will advanced towards East, During the first year a total area of 1225 Sq.M will be utilized.

**In the First year** it is planed to produce 1102.5 M<sup>3</sup> of economic grade rough blocks. To produce this quantity an area of 1225 {35x 35M } Sq.Mts. will be utilised. Producing 3675 Cu.M of rock from which 30% (1012.5 Cu.M) economic grade rough blocks will be obtained and 70%(2572.5 Cu.M) of waste rock will be realised.

## II Year :

In the 2<sup>nd</sup> year the Mining advances East of first year working in the grid E 100-150 and N 100-150. The mining starts ENE – WSW oriented faces advance further South West maintaining average of 3 M bench Height. An area of 1225 Sq.M will be covered during this year.

**In the Second year** it is planed to produce 1102.5 M<sup>3</sup> of economic grade rough blocks. To produce this quantity an area of 1225 {35x 35M } Sq.Mts. will be utilised. Producing 3675 Cu.M of rock from which 30% (1012.5 Cu.M) economic grade rough blocks will be obtained and 70%(2572.5 Cu.M) of waste rock will be realised.

## III Year :

In the 3<sup>rd</sup> year the mining further advance east of second year pit between grids East 150-200, North 50-100. ENE – WSW oriented faces advance further South East maintaining average of 3 M bench Height. An area of 1225 Sq.M will be covered during this year.

**In the third year** it is planed to produce 1102.5 M<sup>3</sup> of economic grade rough blocks. To produce this quantity an area of 1225 {35x 35M } Sq.Mts. will be utilised. Producing 3675 Cu.M of rock from which 30% (1012.5 Cu.M) economic grade rough blocks will be obtained and 70%(2572.5 Cu.M) of waste rock will be realised.

## IV Year :

In the 4<sup>th</sup> year the Mining will continue East of the third year pit in the grids East 200-300 North 50-100. Maintaining average of 3 M bench Height. An area of 1225 Sq.M will be covered during this year

**In the fourth year** it is planed to produce 1102.5 M<sup>3</sup> of economic grade rough blocks. To produce this quantity an area of 1225 {35x 35M } Sq.Mts. will be utilised. Producing 3675 Cu.M of rock from which 30% (1012.5 Cu.M) economic grade rough blocks will be obtained and 70%(2572.5 Cu.M) of waste rock will be realized

## V Year :

In the 5<sup>th</sup> year the mining will continue east of 4<sup>th</sup> year pit in the grids East 200-300 North 50-100. North - West oriented faces advance further South- East maintaining average of 3 M bench Height. An area of 1225 Sq.M will be covered during this year

**In the fifth year** it is planed to produce 1102.5 M<sup>3</sup> of economic grade rough blocks. To produce this quantity an area of 1225 (35x 35M) Sq.Mts. will be utilised. Producing 3675 Cu.M of rock from which 30% (1012.5 Cu.M) economic grade rough blocks will be obtained and 70%(2572.5 Cu.M) of waste rock will be realised.

The mine layout for production of coloured granite rough blocks first five years is showed in plate No.V and VI.



## Quantum of Excavation

The deposit occurs as large size and sheet exposed on hill, hence no over burden removal is involved, however during production it is estimated that at the rate of 3675 Cu.M of rockmass will be removed per year with a total of 18375 M<sup>3</sup> in five years to retrieve 5512.50 M<sup>3</sup> market grade rough blocks, there by generating 12860 M<sup>3</sup> of waste rock.

### 4.2 Year Wise development for First Five Years :

The deposit in this area is exposed to a height of 135 M from the surface. In the first five-year plan period the applicant proposes to produce 1102.5 Cu.Mts. of Coloured granite per year. In order to produce this quantity an area of 1225 Sq.Mts. will be utilized.

### 4.3 Drilling & Blasting :

A) Drill hole pattern for primary and secondary smooth blasting boreholes of 3M depths will be drilled in a single row with spacing of less than 0.3Mts and burden of 1.6Mts or more shall be maintained uniformly. This arrangement will yield rock size of 3M x 2M cross section. A bench height of 6.0Mts will be tackled in two steps.

### 4.4 Handing of blocks within the quarry :

Blocks from mother rock separated by excavator and since the quarry is located on the ridge, the rough blocks will be brought to the dressing yard by poclain.

*Transportation of blocks from quarry to yard and to destination :*

As mentioned in the para4.3, the rough blocks in the mine area handled using proclain and brought to dressing yard. Here, after proper dressing blocks are transported to destination by trucks.

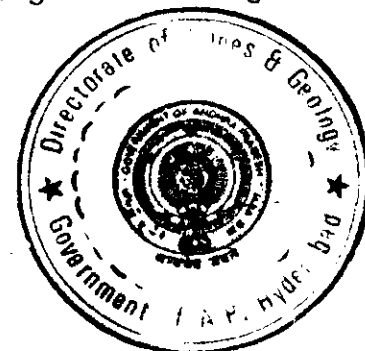
## V. STORAGE AND HANDLING EXPLOSIVES :

The explosive shall be handled as per the provisions of Indian explosive act for the procurement and transportation. The proposed site for Magazine will be in the SE of the Quarry where the applicant proposes to acquire the land. (Plate V)

## VI. WASTE MANAGEMENT PLAN :

### 6.1 Solid Waste

Mining of coloured granite is general, faces serious problem of generation huge quantity of waste rock. In the area though coloured granite occurs as exposed deposit with loose under sized boulders on the surface. With the closely spaced joints and sheared joints contribute a great extent of waste generation in the form of side burden. Further natural defects like moles, dark patches and veins are present in the rock, effects of blasting also contribute to generation of huge waste material during coloured granite mining.



**6.2. Estimated wastage quantities that will be generated over the entire the lease period**

At the rate of 2572 Cu.M average generation of waste per year for 20years lease period the total volume of waste generated is estimated to be 51,440 Cu.M .

**6.3. Measures to be adopted for solid waste :**

- 1) *Reduction of waste at source :-*
  - a) Where the defect less and defective bands are distinct in the mine resorting to strip mining may be helpful in reduction of waste.
  - b) Controlled and cushion blasting may be helpful in generation of less blasting waste.
  - c) Employing experienced and skilled workers in the production and dressing of rough blocks may help in generation of less waste rock.
    - i) *Utilitisation of waste if not prevented:*
      - i) Separation of over burden and side burden in to different categories such as soil, weathered rock and dumping separately so that:
        - Soil is absent
        - Weathered rock if it is sufficiently soft and devoid of rock fragments can be utilized the filling of roads, side ditches, formation of approach roads to quarries, construction works etc.
      - ii) Waste rock of generated during production, blasting and dressing having large and medium sized can be used as break water stones, deep cut streams, river sections, for preventing the soil erosion.
      - iii) Recovery of waste material from the rejected block. Small size rough blocks can be obtained from large size rejected blocks and can be sold in the local market for the tiles etc.
      - iv) Disposal of waste as last resort :
 

The waste, which is useless, has to be removed and stored in separate dumps. Dumping site is year marked between East 0 – 50 North 250 – 300 in the South – western corner of the lease area. (Plate V).
      - v) Use for back fillings the quarried out mines and other landfill operation of a source of road building material etc.:

As the Coloured Granite in this area is an exposed deposit, underlain by thin veneer of overburden and as the life of the ultimate pit level will not be deep enough the waste generated during mining may be sufficient to back filling of the left over quarry. Granite waste generated during production and dressing after reducing to proper size can be utilized in the road construction, etc.





#### 6.4 Liquid Waste :

##### i) Mine Drainage

The drainage system of mine in this area consists of only of surface run off generated from rainfall. As the deposit forms a ridge, the groundwater occurrence is absent, therefore mine drainage may not be a problem in this area.

- ##### ii) Run off from waste dumps and measures proposed to arrest run off.
- Rainfall over the lease area affected differently by waste dumps, mine pits, roads etc. The rain cuts the dumps small rills formed and there by a small amount of run off is generated.

The following measures proposed to arrest surface runoff.

- a) Garland drains around pit and waste dump
- b) Retention wall at the foot of the dump
- c) Growing vegetation on the slopes of the dumps

*Excavation drainage ditches all around the quarry to direct surface drainage :*

Garland drains proposed around pit to divert the runoff in to natural drainage channels.

*Utilization of runoff for general surface use or discharge in to surface drainage networks only after meeting with prescribed discharge standards and further the agricultural purposes on the surface :*

Surface runoff general during rainfall event cannot be utilized for the general use, hence through the garland drains proposed runoff will be diverted in to drainage network. Granite mines or dump have no pollutants or toxic substances, hence, no contamination is expected, except siltation.

Further no agricultural lands exist surrounding the lease area hence water from the drains cannot be utilized for agricultural purpose.

*Treating waste - water to obtain the desired quality for industrial use as may be required :*

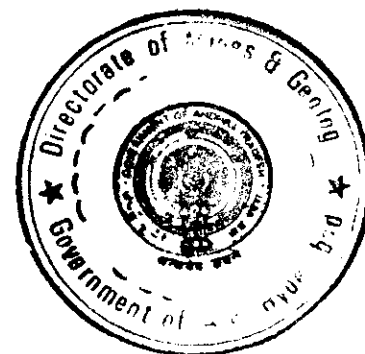
No industries exist in the vicinity of the lease area. Hence, no treatment is required for the runoff.

#### VII. DESCRIPTION OF GRANITE PROCESSING PLANT :

Not applicable.

#### VIII. MARKET ANALYSIS

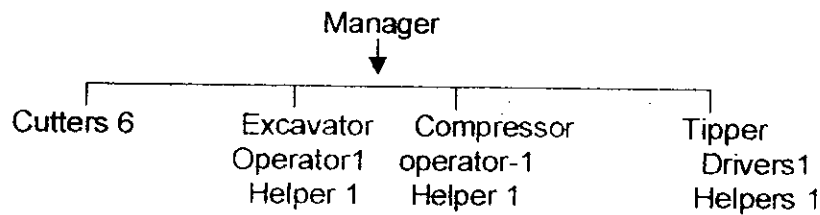
- ##### i) Assured and expected supply contracts :
- During exploratory mining operation, the licensee has dispatched total of 7 cu m of economic grade to the International Market there by established the marketability of rough blocks from this mine.



- ii) Ability to supply consumer in time :  
Licensee is having sufficient men and machinery, besides huge and good quality rock at shallow depth. Therefore He is able to supply the material to the consumer in time.
- iii) Pattern of demand :  
Coloured granite of this is having very good demand in both international as well as in domestic market. The prices of rough blocks of 1.20 up size ranging between Rs.20,000 to 25,000 depending upon the colour of the rock.

**IX. ORGANIZATION CHART FOR THE QUARRY AND CAPTIVE PROCESSING PLANT IF ANY AND AT THE CORPORATE LEVEL**

The organogram of the quarry in this area is as follows :



Besides above managerial and skilled staff

- Semi-skilled of about 10 members.
- Unskilled workers 4 members are required for the quarry work.



**X. ENVIRONMENTAL MANAGEMENT PLAN:**

**10.1 Baseline Information :**

**i. Existing land use pattern :**

The applied area is a part of hill land, sloping due North and East. The whole land is covered by sparse vegetation. The soil existing in the applied area is bouldery and unfertile. The deposit is exposed 90 M above GL and occupies entire quarry lease area.

**ii. Water Regime:**

No Streams or Drainage lines exist in and around Quarry Lease area.

**iii. Flora and Fauna:**

The whole area is occupied by scattered sparse vegetation of thorny trees and small bushes. In the applied area no wild animals are witnessed as per the statements collected from the local population, since 50 years.

**iv Climatic Conditions:**

The area is falling under semi-arid tropical zone. The area is having dry climate. The temperature recorded in this area is 25°C, in winter and about 48°C. in summer seasons. The wind direction is in SW to NE. The average annual Rainfall of the area is 1000mm.

## v) Human settlement:

The village Gopalapuram is situated 2 Km due South East of the QL area. The population of this village is about 500. The village is surrounded by agricultural lands. The details of the villages in 2 Km, surrounding from the applied area is given in following table.

**Table No. II: Human Settlement (Plate No.I)**

S.No.	Village	Direction	Distance	Population
1.	Gopalapuram	South East	2 Km.	500
2.	Kothuru	North West	1.2 Km.	500
3.	Bheempuram	North West	2 Km.	500
4.	Dubbaguddi	North	1 Km.	300
5.	Sidipeta	South West	1.75 Km.	300

The main occupation of the local population is agriculture and sheep rearing / Breeding.

## vi) Public building, palace and monuments:

No of public buildings, palaces and monuments are witnessed in and at the vicinity of the area.

## vii) Quality of air and water

The air and water of the area are free from any kind of pollution, since no industries are established in the area. The Mining in the area gives rise to dust. But as the mining is confined to Hill, Hence pollution is limited.

## viii) Whether the area falls under notified area under water act. 1974:

The area will not fall under notified area under water Act. 1974.

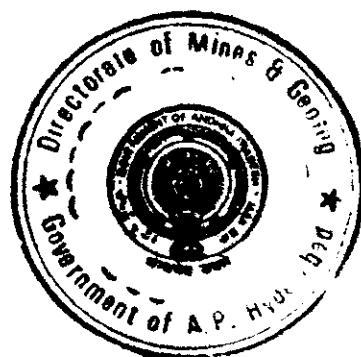
## 10.2 Environmental Impact Assessment :

## I. Land scape Changes

The mineral deposit. Is exposed, raising 135 M above GL. In 5 years plan period it is proposed to produce 5,510 M<sup>3</sup> of rough blocks. To meet this production an area of 6125 Sq.m. will be utilized. The mining will alter the shape of the present hill with the quarry pits.

## II. Aesthetic environment:

There is no aesthetic environment prevailing in and around the applied area.



III. Soil and land use pattern:

The soil cover is absent in the high-elevated areas. However, soil mixed with boulders, which are unfertile, is deposited along the east margin of the lease area. Hence, the land is not being used for agriculture purpose. Therefore the mining in this area will initiate utility of the land.

IV. Agriculture:

The applied area is barren land and far away from agricultural lands. Therefore there is no adverse effect on agriculture.

V. Forest:

The applied area is not coming under forest zone. However, the applicant is proposing to undertake afforestation in the area.

VI. Vegetation:

The applied area is covered with scattered vegetation of small shrubs, herbs and Thorny bushes. However, no cutting of trees is involved in mining activity.

vii) Water Environment:

No Streams or Drainage lines exist in and around Quarry Lease area.

viii) Air Environment:

a) Noise

The mining activity in this area involves blasting. The applicant intends to employ low explosive and the quantity of charge and number of blast holes will be very less to win the required production. Therefore, the probable noise will be negligible in this area.

The noise generated by compressors, drilling & machinery like proclain / excavators and tippers will be high. The workers in the quarry area will be provided suitable headgear and noise reducing protective gear (like cotton mufflers etc.) The machinery will be properly maintained.

b) Air

The mining in this area does not involve any dust creation. The air pollution occurred due to transportation in summer season would be suppressed by sprinkling the water on the roads and the dust generated while drilling will be suppressed by cloth covering the drill rods and dust extractors will be deployed.

ix) Socio Economic Environment

5 villages within a distance of 2 Kms surround the applied area. The main occupation of villagers is agriculture and sheep raring. The commencement of mining activity in this area improves the socio-economic status of the local people by creation of employment.



x) Occupation Health and safety:

The mining in this area does not involve any hazardous methods. The mining is simple and open cast mining method. In this the possibilities of small injuries is anticipated. This applicant will be providing First Aid facilities at quarry site.

xi) Human Settlement:

The nearest village Dhubaguda is situated 1 Km from the area. Therefore there is no anticipation of adverse affect on the human settlement.

xii) Recreational Facility:

The surrounding villages people will go to Tekkali Town for purchases, medical & recreation.

### 11.3. MANAGEMENT PLAN:

1. Soil Conservation Methods

The soil cover is absent. However, soil mixed with boulders is unfertile, Hence, the land is not being used for agriculture purpose. Therefore the mining in this area will initiate utility of the land

2. Proposed for Reclamation of Land affected by Mining activity during and at the end of mining:

Even after 20 years the hill remains except the reduction of elevation and slopes by the pits that will be formed.

3. In case of forest programme for phased compensatory afforestation;  
The applied area will not come under forest zone.

4. Measures for dust suppression:

The mining will not involve dust rising methods. The dust anticipated during dry seasons, by transportation on road will however be suppressed by sprinkling water on roads. For this purpose, tractor mounted sprinklings will be deployed at this place. The dust rises during blasting will be negligible because of less production and rare blasting. The Mining in the area gives rise to dust. But as the mining is confined to Hill, Pollution is limited.

5. Measures to minimum use vibrations due to blasting and check noise pollution:

It is proposed to use low explosive and less quantity to meet the production requirement and also to minimize the affects & feeble vibration generated during blasting.

The noise generated by compressors, drilling & machinery like proclain / excavators and tippers will be high. The workers in the quarry area will be provided suitable headgear and noise reducing protective gear (like cotton mufflers etc.) The machinery will be maintained properly, so that generation of noise will be less.



6. Treatment and disposal of water from the mine at beneficiation plant

Granite Mines does not require beneficiation.

7. Measures for minimising adverse effect on water regime

No Streams or Drainage lines exist in and around Quarry Lease area. In this area, the mining is confined to elevated place. Therefore no adverse effect is anticipated to water regime

8. Afforestation Programme

Since the entire Quarry Lease area is occupied by the deposit excepts small part in the southern border of the applied area with soil mixed with boulders is deposited Afforestation program is proposed in this region by planting suitable type with 2 M spacing. (Plate V).

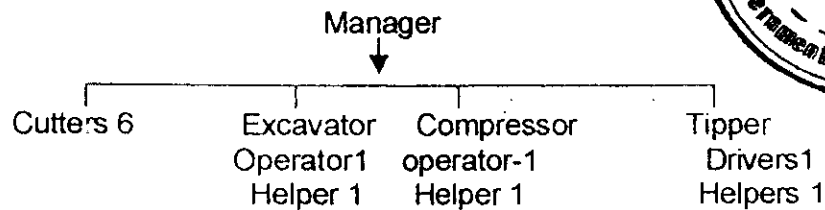
9. Preparation of dumping ground for stacking toxic mineral substance

No toxic minerals are present

XII. Employment and site services

A. Employment

The organogram of the quarry in this area is as follows:



Besides above managerial and skilled staff

- Semi-skilled of about 10 members,
- Unskilled workers 4 members are required for the quarry work.

B. Site Services

Office, Rest rooms, Storeroom, First-Aid room will be provided at the Quarry site. Further, Drinking water will be provided in the land proposed to be acquired by the applicant [Plate V].

**XIII. ANY OTHER RELEVANT INFORMATION:**

All the statutory provisions applicable to granite mining leases, such as Mines & Mineral Concessional Rules, Granite Conservation and Development Rules 1999, Mineral and Mining rules, Indian explosive act, Payment and Wage act, Workmen Welfare act, Employees Provident fund act shall be adhered.

For DINESH GRANITE EXPORTS

*[Signature]*  
Managing Partner  
APPLICANT

*[Signature]*  
RQP  
(V.T.Chander)



This Mining Plan is Approved subject to the  
Conditions/Stipulations Indicated in the  
Mining Plan Approval Letter No.....  
...1047/mf/202, dated...19-4-03

**APPROVED**

*[Signature]*  
**Dr. P. DAYASANKAR**  
JOINT DIRECTOR  
DEPT. OF MINES & GEOLOGY  
GOVERNMENT OF KARNATAKA

ANNEXURE I

GOVERNMENT OF ANDHRA PRADESH,  
DEPARTMENT OF MINES AND GEOLOGY: HYDERABAD.

NOTICE NO: 36890/R1-3/2002.

DATED: 2.11.2002.

Sub: Mines and Quarries - Quarry Lease application -  
Extent: 5.000 Hectares - Survey Number: 1 -  
Village: Addukonda - Mandal: Tekkali  
Dist: Srikakulam - infavour of M/s. Dinesh Granite  
Exports for a period of 20 years - A.M.P. Called for  
Reg.



Ref: 1. From M/s. Dinesh Granite Exports, Q.L. Application  
dt: Nil, received by the ADM&G., Srikakulam.  
2. From the ADM&G., Srikakulam File/Lr. No.4835/Q/2002,  
dt: 16.10.2002.

\*\*\*\*\*

M/s. Dinesh Granite Exports in the reference 1<sup>st</sup> cited, have applied for grant of Quarry Lease for Colour Granite over an extent of 5.000 Hectares in S.No. 1 of Addukonda Village, Tekkali Mandal, Srikakulam District.

2. The Asst. Director of Mines and Geology, Srikakulam in the reference 2<sup>nd</sup> cited, has stated that the applied area is held under P.L. by the applicant. The applicant has submitted the prospecting report on the subject area. Further the Assistant Director has recommended for grant of Quarry Lease for Colour Granite over an extent of 5.000 Hectares in S.No. 1 of Addukonda Village, Tekkali Mandal, in Srikakulam District in favour of M/s. Dinesh Granite Exports for a period of 20 years.

3. The Director of Mines and Geology, Hyderabad after careful examination of the above proposals of the Asst. Director of Mines and Geology, Srikakulam has proposed to grant the Quarry Lease over an extent of 5.000 hectares in S.No. 1 of Addukonda Village, Tekkali Mandal, Srikakulam District in favour of M/s. Dinesh Granite Exports for a period of 20 years subject to the submission of Approved Mining Plan within six months from the date of receipt of this Memo.

4. Therefore, M/s. Dinesh Granite Exports are requested to submit the Approved Mining Plan for the above area referred at Para 2 for a period of 20 years within a period of six months from the date of receipt of this notice for consideration of their Quarry Lease application.

5. Further, they are also informed that if they fail to submit the A.M.P. within a period of six months from the date of receipt of notice it will be presumed that they have no interest in their Quarry Lease application and further action will be taken based on the material available with the Director of Mines and Geology.

Sd/- T. Devendranath.  
DIRECTOR OF MINES AND GEOLOGY.

//f.c.f.b.o.//

*G. V. dya Bajay*  
SUPERINTENDENT.

To:  
M/s. Dinesh Granite Exports,  
3-A, Siva Sai Sanadhi, Plot.No.32, Opp. Shiridi Sai Baba  
Temple, Hindi Nagar, Panjagutta, Hyderabad-500034.  
Copy to Asst. Director of Mines and Geology, Srikakulam.  
Copy to Approved Mining Plan Section.



**ANNEXURE II**

YEAR	L X W X BENCH M M M HEIGHT	VOLUME IN M <sup>3</sup>	MARKET GRADE ROUGH BLOCKS WITH 30% RECOVERY	WASTE GENERATED IN M <sup>3</sup>
1 <sup>ST</sup>	35 X 35 X 3	3675	1102.5	2572.5
2 <sup>ND</sup>	35 X 35 X 3	3675	1102.5	2572.5
3 <sup>RD</sup>	35 X 35 X 3	3675	1102.5	2572.5
4 <sup>TH</sup>	35 X 35 X 3	3675	1102.5	2572.5
5 <sup>TH</sup>	35 X 35 X 3	3675	1102.5	2572.5
	TOTAL		5512.5	14362.5
	AVERAGE		1102.5	2572.5

