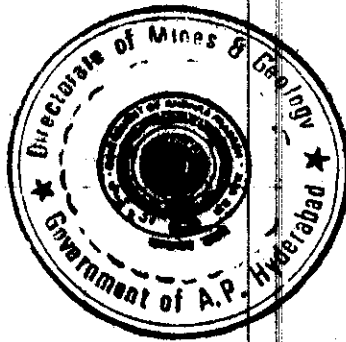


**MINING PLAN FOR COLOUR GRANITE  
Over an extent of 1.93 Hectares, Sy.No. 284,  
Repaka (V), Ponduru (M), Srikakulam Dist. A.P.**

**For**

**M/s Sri Divya Sai Granites  
Srikakulam**



**APPROVED**

**Prepared by**

**V.T. CHANDER  
Consultant Geologist & RQP  
(RQP/DMG/HYD/02/2001)  
#202, H.No. 10-1, Mahalaxmi Ganapathi Complex,  
P & T Colony, Dilukhnagar, Hyderabad 500 060.**

**CERTIFICATE**

This is to certify that mining plan for Colour Granite over an extent of 1.93 Hectares spread over in Sy. No. 284 of Repaka Village, Ponduru Mandal, Srikakulam Dist. A.P. 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.

Date :

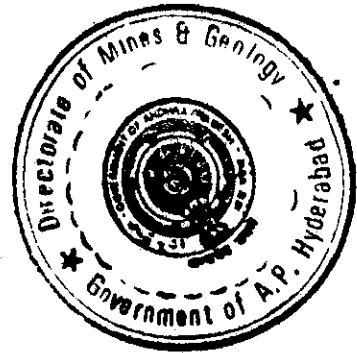
Place :

For SRI DIVYA SAI GRANITES



Authorised Signatory

For M/s Sri Divya Sai Granites



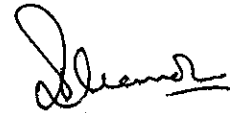
**CERTIFICATE**

The provision of Granite Conservation and Development Rules 1999 have been observed in the mining plan of Coloured Granite, over an extent of 1.93 Hectares spread over in Sy. No. 284 of Repaka Village, Ponduru Mandal, Srikakulam Dist. A.P. leased to M/s Sri Divya Sai Granites, Srikakulam. Whenever specific permissions are required the applicant will approach the concerned authorities.

This is to certify that the information provided in the mining plan is correct to the best of my knowledge

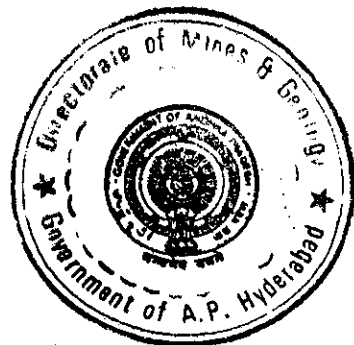
Date : 29.7-03

Place : Hyderabad



RQP

(V.T. Chander)

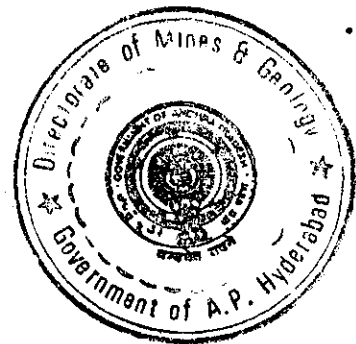


### LIST OF PLATES

PLATE	TITLE	SCALE
I	LOCATION & KEY PLAN	1 : 50,000
II	LEASE AREA PLAN	1 : 1,600
III	GEOLOGICAL PLAN	1 : 500
IV	GEOLOGICAL CROSS SECTIONS	H 1 : 500 V 1 : 500
V	MINE LAY OUT & YEAR WISE PRODUCTION PLAN	1 : 500
VI	MINE LAY CROSS ECTIONS	H 1 : 500 V 1 : 500
VII	ENVIRONMENTAL PLAN	1 : 5000

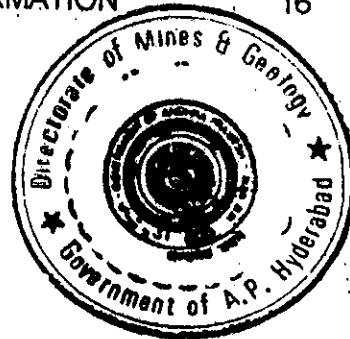
### LIST OF ANNEXURES

1. Copy of the DMG, Hyderabad Notice No 9105/R1-3/2003  
Dated 29-4-2003



**INDEX**

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9	EMPLOYMENT & SITE SERVICES	16
9	ANY OTHER RELEVANT INFORMATION	16



This Mining Plan is Approved subject to the  
Conditions/Stipulations Indicated in the  
Mining Plan Approval Letter No.....  
16680/M.P.F./03, dated..... 6-08-2003

**MINING PLAN FOR COLOUR GRANITE**  
Over an extent of 1.93 Hectares, Sy.No. 284,  
Repaka (V), Ponduru (M), Srikakulam Dist. A.P.

For

**M/s Sri Divya Sai Granites**  
Srikakulam

By

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

**1.0 Introduction**

M/s. Sri Divya Sai Granites, Srikakulam, Private Firm, was granted Prospecting License for 2 years for Colour Granite over an extent of 1.93 Hectares spread over in Sy. No. 284 of Repaka Village, Ponduru Mandal, Srikakulam Dist. A.P. Vide Director, Department of Mines and Geology, Hyderabad. Proceedings No. 35876/R1-3/2002 dated 23-12-2002

After establishing the quality of the deposit the firm has applied for grant of quarry lease. The Director, Mines & Geology, after scrutinizing the application has proposed to grant the quarry lease for 20 years, subject to submission of the approved mining plan within 6 months period, vide Proceedings No. 9105/R1-3/2003 dated 29-4-2003.

M/s Sri Divya Sai Granites, Srikakulam, Approached Sri V.T. Chander Consultant Geologist and RQP (RQP/DMGHyd/02/2001) For preparation of mining plan in the above mentioned quarry. Accordingly mining plan IS prepared as per the guidelines given by Govt. India. Ministry of Steel & Mines, GCDR Rules 1999.



**APPROVED**

*[Signature]*  
**P. DAYASANKAR**  
JOINT DIRECTOR  
DEPT. OF MINES & GEOLOGY  
GOVT. OF A.P. HYDERABAD.

- 2.0 **General**
- 2.1 **Name and address of the applicant** : Sri Divya Sai Granites,  
Prop: V. Sree Hari Naidu,  
S/o. Appala Naidu,  
1-5-38, Govt. Hospital Road,  
Balaga, Srikakulam Dist. - 532 001
- 2.2 **Status of the applicant** : Private Firm
- 2.3 **Mineral for which applicant intends to mine** : Coloured 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, Diluknagar,  
Hyderabad - 500 060.  
☎ : 24068218, 55618351
- 2.5 **Name and address of the prospecting agency** : M/s Sri Divya Sai Granites
- 2.6 **Details of the Area :**

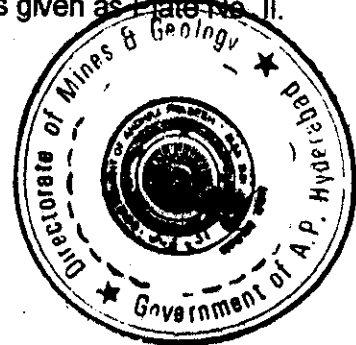
The applied area falls in the Survey of India Toposheet No.65 N/15 and is bounded East Longitude 83° - 47' - 04" and North Latitude 18° - 20' - 46". It is situated 1.0 Km South of Repaka (V), 2 Km South East of Ponduru Town. The road leading from Srikakulam to Ponduru will take to the applied area by taking a diversion at Vavilipallepeta (V) road towards East. 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
Srikakulam Andhra Pradesh	Ponduru	Repaka	284	1.93 Ha	Govt. Land

- 2.7 **Period for which Quarry Lease is required** = 20 years

Cadastral Map certified by the Asst. Director of Mines & Geology, Srikakulam in favour of M/s. Sri Divya Sai Granites is given as Plate No. II.



## 2.8 Infrastructure and Communication

It is situated 1.0 Km South of Repaka (V), 2 Km South East of Ponduru Town. The road leading from Srikakulam to Ponduru will take to the applied area by taking a diversion at Vavilpallepeta (V) Road towards East. The location of the area is indicated in Key Cam Location Map (Plate - I)..

- Amenities like Post & Telegraph Office, Police Station, Primary Health Center etc. are available at Ponduru.
- Ponduru is the Manual Head Quarters.
- Vishakapatnam port is about 150 km from area.
- Electricity is available at Repaka (V). The area is having good ground water potential.

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:

- The applied area is surrounded by agricultural fields.
- This is the first quarry, which started producing the blocks.
- The area around is bustling with mental quarrying.
- After seeing this quarry, applications are now submitted new entrepreneurs.

## III GEOLOGY AND EXPLORATION

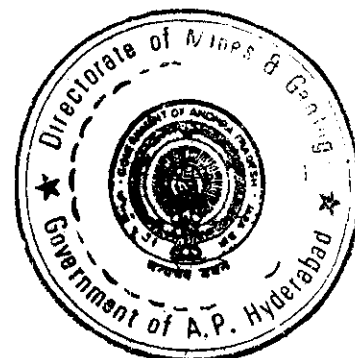
### 3.1 Physiography

The applied area is a part of rugged terrain with low-level ridges crisis crossed by first and second order streams. The local relief is 6 Mts. The surrounding areas all around the applied area are bustling with quarrying activity for road metal.

### 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 20 Km in the South, it has broad arcuate trend with westward 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 Archaicites 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) periferoblastic 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, Two pyroxene 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 Coast Line.

**Local Geology**

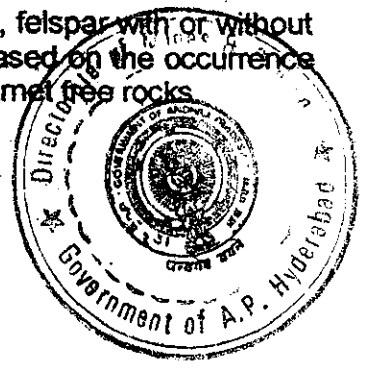
The area forms a part of Archaean Metamorphic complex of Eastern Ghats and predominantly occupied by Quartzo Felspathic Gniessic rocks with Khondalite suite of rocks. The generalized sequence of the rock types is as follows:

Archaean	Quartzo Felspathic Gneiss Kondalite, Quartzites
----------	--

Quarzo Fespathic rocks are predominant lithological unit in the area and are found as hillocks. These rocks can be divided into porphyroblastic and non-porphyroblastic types these are melanocratic to leucocratic rocks based on the abundance of mfic and felsic minerals.

The rock shows greasy lusture consisting of quartz, felspar and hypersthene with minor amounts of biotite mica, garnet and opaques. These are coarse grained and when rocks are devoid of garnets they appear dark grey in colour. Alternate layering of mafic and felsic minerals exhibit gneissic structure. The general trend of foliation is NNE-SSW.

The non-porphyro blastic gneiss in the area contains quartz, felspar with or without garnet. These are medium grained, hard and compact. Based on the occurrence of garnet, the rocks can be divided into garnetiferous and garnet free rocks



## Deposit

The deposit in this area is exposed as low-level mound. Sloping in all directions, with the local relief of 6M. The rock type is Porphyroblastic Gneiss feldspar crystals giving rise to porphyritic texture whose sizes ranging from few mm to as big as 6cm. The feldspar crystals are euhedral showing perfect cleavages but they are irregularly distributed hence, no distinct foliation developed. The rock is grayish in colour at times showing a lighter tinge where ever they are in contact with acidic veins like pegmatites. Owing to its porphyritic texture and large variation in crystallinity it is susceptible for weathering. The following joint pattern recorded in the outcrop

1. N30° W-S 30° E Vertical Nature
2. N 30° E-S 30° W Sub Vertical Nature
3. E-W Vertical

### 3.2 Details of Exploration

#### 3.2.1 Prospecting operations carried out

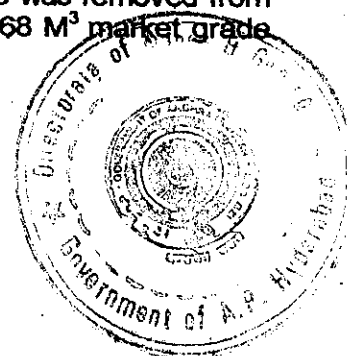
##### A. Exploratory Mining

The applicant has carried out exploratory mining in the applied area, 2 working pits are developed.

Pit No.1 is opened in the northern part of the area between grids E50 - 125, N 125-175. The quarrying started from north and advanced towards south, a bench of 6M height was developed, aligned E-W direction facing north. with 13 X 13M blocks were tackled and dislodged from the sheet rock. By using the Wire saw, 100 holes are drilled at 3" to 6" spacing in a line to a depth of 6M depth. AGFRACT chemical compound was poured in to all the shot holes and were left alone for 6-8 hours for the consolidation to take place to split the rock. Further the this loosend block was removed and examined for lineation and the inherent defects, the secondary splitting and dressing of blocks were resorted for removal of un wanted bulges etc.

Pit No. 2 was opened in the western part of the area between grids E00 - 50, N50-100. the quarrying started from the west and advanced towards east, a bench o6M height was developed, aligned in N-S direction and facing east.

During this period a total of 1578.151 M<sup>3</sup> of rock mass was removed from the mother rock and after squaring and dressing 710.168 M<sup>3</sup> market grade rough blocks were obtained, with a recovery of 45%



## B. Drilling

A DTH bore hole was drilled in the northern part of the area between grids E 100-125 and N150-175, to a depth of 22M, the following is the litholog is recorded

GL - 13 M	Massive Rock
13 - 13.2 M	Discontinuity / Joint
13.2 - 22 M	Massive Rock

### Exploration proposed

A core drilling may be taken up beside the DTH Bore Hole for evaluating the deposit below 13 M or otherwise after reaching 13 M. The rock may be examined for the quality.

### 3.2.2 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 : 500 Scale prepared (Plate - III).

## 3.3 Estimation of Geological Reserves

### 3.3.1 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. The estimation is made by volumetric method.

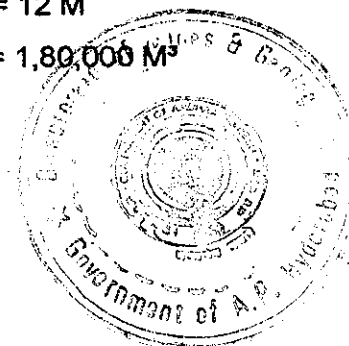
### 3.3.2 Method of Estimation of Reserves

The exposed deposit is found to be irregular in shape as it is exposed on mound; the volume is computed by multiplying area with the average height of 12 M. As observed in the drilling there is a discontinuity at 13 M. The rock below has to be established whether it is the same or other variety of rock. Hence only 12 M is considered for reserve estimation.

### 3.3.3 Categorization of Reserves

The deposit is exposed on mound with an average height of 8 Mts and the drill hole data indicates it is extending upto 13 M depth, however an average of 12 M is considered for computing the reserves. This entire deposit is classified under "Proved"

Total area	1.93 Ha.	= 19300 M <sup>2</sup>
Area occupied by deposit		= 15000 M <sup>2</sup>
Area covered with soil		= 4300 M <sup>2</sup>
Average thickness of rock exposed and considered for reserve estimation		= 12 M
Total Reserves		= 15,000 x 12 = 1,80,000 M <sup>3</sup>



**3.3.4 Total Mine able Reserves**

The deposit blocked under safety slopes, from the ground level. The exposed mound after reaching the ground level. The further quarrying will maintain the safety slopes. Deduction of reserves blocked above under different areas from total geological reserves indicates total mine able reserves, which are as follow :

Total Reserves Below Ground Level = 15,000 x 6 = 90,000 M<sup>3</sup>

Area blocked under safety slope (length x average width x height)

South West Boundary	120 x 6 x 6	= 4,320 M <sup>3</sup>
Southern Boundary	30 x 6 x 6	= 1,080 M <sup>3</sup>
East Boundary	210 x 6 x 6	= 7,560 M <sup>3</sup>
Northern boundary	135 x 6 x 6	= 4,860 M <sup>3</sup>

Total Deposit Blocked = 17,820 M<sup>3</sup>

Total Mineral Reserves = Total Geological Reserves – Deposit Blocked Under Buffer Zone

= 1,80,000 M<sup>3</sup> – 17,820 M<sup>3</sup>

= 1,62,180 M<sup>3</sup>

@ 45% Recovery of Market Grade Reserve = 72,981 M<sup>3</sup>

Life of the Mine 71280 / 1319 = 55 Years

**4.0 MINING**

**4.1 Opening of Mine**

The Coloured Granite in this quarry mined out by open cast, Semi-mechanized method.

**1 Brief description of method of Mining Proposed:**

**(a) Over Burden Removal :**

As the deposit is exposed as sheet, no over burden removal is involved.

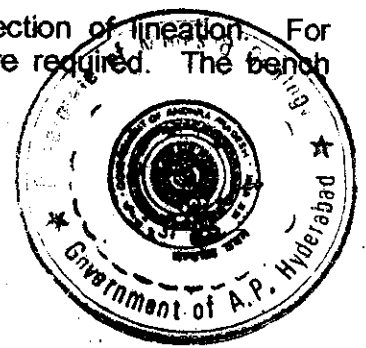
**(b) Primary Splitting :**

**SEPARATION PRIMARY BLOCKS FROM THE MOTHER ROCK :**

Diamond wire Saw is in use for separation of primary block from the mother rock.

**Diamond Wire-Saw Cutting :**

Working faces are developed parallel to the direction of lineation. For effective use of wire saw two sides free faces are required. The bench



height depends on the reach of the excavator. here 6 Mtrs. Height is comfortable (for 30 T capacity excavator). The main cut will be planned at 6m height x 13 m x 13 m lengths.

Horizontal hole drilled is connected at right angle with a vertical hole drilled. The holes are drilled with a special drill called Slim Drill, which is capable of drilling, horizontal and vertical holes. A very accurate drilling and skill is necessary to connect the holes.

The Diamond-Wire is passed through two holes drilled at 90° and the bottom is cut first; then the wire is passed through the vertical hole and one of the horizontal hole and vertical face is cut. Thus the entire block of 13 m x 9 m x 9 m size is separated from the mother rock.

The drill holes will be drilled closely at regular intervals of 10 – 15 Cm apart up to 6 M depth and the holes are filled with AGFRACT Powder (Imported from South Africa) being mixed with water and poured into holes. After 6 to 7 hours the reaction of this chemical compound a crack develops. Then straight cut will be formed in the primary rock, releasing the block from the primary splitting

The block is divided into number of slices. The block thus released will be subjected to secondary splitting to the required size of blocks.

**(c) Secondary Splitting :**

Further the this loosed block will be removed and examined for lination and the inherent defects, the secondary splitting of blocks will be resorted for removal of unwanted bulges, defects like white lines black patches and Hairline cracks etc

Further splitting into required sizes are also conducted in the similar operation for blocks.

**(d) Dressing :**

Dressing is the final phase wherein the secondary rough blocks are squared into perfect rectangular shape i.e. all the sides will have 90° angle. These blocks will be made into different sizes for marketability using jackhammers, feathers and wedges and sledgehammers.

**4.2 Blasting**

As the rock is showing the porphyro plastic texture with large variation in grain sizes make the rock susceptible for splitting in an irregular form due to blasting. Hence no blasting is required, the exploratory mining in this area has confirmed this.

Blasting is not applicable in this particular rock, as the blasting will develop multi Fractures/Fissures



a) Drill hole pattern for primary and secondary smooth holes of 6 M depth will be drilled in a single row with spacing of 3-6 inches and burden of 6 Mts or more shall be maintained uniformly. This arrangement will yield rock size of 13 M x 13 M x 6M cross section. A bench height of 6.0Mts will be developed

i) Drill Hole Diameter 32 MM up to 6 Mts Long

ii) Depth and Inclination of Drill Hole

Generally drilled vertically in an alignment, however in primary cutting in the absence of sheet joints to develop bottom level horizontal holes also is drilled.

iii) Spacing and Burden

The spacing shall be about 0.1 M to 0.3 M from hole to hole and burden goes up to 6 Mt for the splitting of the rock.

iv) Stemming & charging of bore hole : AGFRACT Powder is poured into drill holes and kept for 6 to 7 hours for consolidation to take place so as to split the entire sheet under influence..

v) Explosive Type

Not applicable

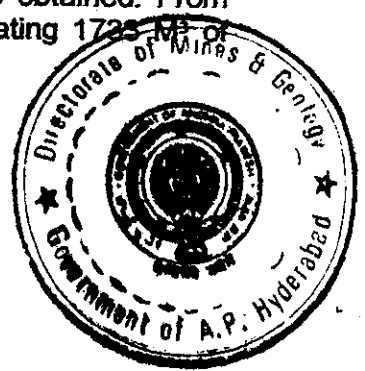
**4.3 Details Of Production So Far Mined From The Quarry**

Year	Size	Volume in Cu. M	No.
I	299 x 130 x 121	18.706	36
II	292 x 192 x 148	101.085	42
III	322 x 182 x 163	590.377	40
		<b>710.168</b>	<b>118</b>

**4.4 Mining Programme For The Next 5 Years**

It is proposed to produce 1320 M<sup>3</sup> of rough blocks on an average per year in the first five years. Total 6596 M<sup>3</sup> rough blocks will be produced in five years utilizing an area of 4887.5 M<sup>2</sup>.

In the first year mining starts from the southern part of the Pit No. 1, a bench of 3 M height will be formed between the grid East 50 - 125 and North 125 - 175, covering an area of 1050 M<sup>2</sup>. There by 3150 M<sup>3</sup> of rock will be obtained. From which 1417 M<sup>3</sup> market grade rough blocks are produced, generating 1735 M<sup>3</sup> of rock debris.



In the second year the mining will continue further south of 1<sup>st</sup> year pit, a bench of 3 M height will be formed between the grid East 50 - 125 and North 100 - 150 covering an area of 1181M<sup>2</sup>, producing 1594 M<sup>3</sup> of market grade rough blocks and 1948.65 M<sup>3</sup> of wastage.

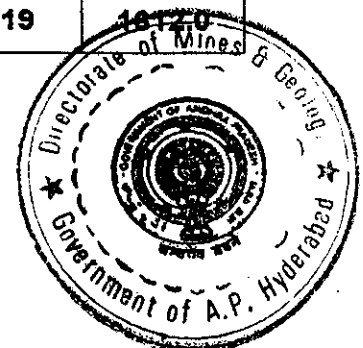
In the third year mining shifts to pit no 2; a bench of 3 M height will be formed between the grid East 00 - 50 and North 50 -125 covering an area of 800 M<sup>2</sup>. There by 2,400 M<sup>3</sup> of rock will be obtained. From which 1080 M<sup>3</sup> market grade rough blocks are produced, generating 1320 M<sup>3</sup> of rock debris.

In the fourth year the mining extends further east of previous year bench with a height of 3 M height will be formed between the grid East 00 - 75 and North 25 - 125, covering an area of 800 M<sup>2</sup>, producing 1080 M<sup>3</sup> of market grade rough blocks and 1320 M<sup>3</sup> of wastage.

In the fifth year the mining will continue further east 4<sup>th</sup> Year Pit a bench of 3 M height will be formed between the grid East 50 - 100 and North 50 - 100, covering an area of 1056 M<sup>2</sup>, producing 1425 M<sup>3</sup> of market grade rough blocks and 1742 M<sup>3</sup> of wastage.

The year wise production of Economically marginal grade as follows (Mine layout plan and mine layout sections shown in Plates - V and VI.)

Year	Grid	Dimensions L x W in M	Bench Height in M	Total Volume in M <sup>3</sup>	Market Grade @ 45 % in M <sup>3</sup>	Waste in M <sup>3</sup>
1 (Pit - 1)	E 50 - 125 N 125 - 175	65 x 10 40 x 10	3 3	1950 1200 3150	1417	1733
2 (Pit - 1)	E 50 - 125 N 125 - 175	75 x 12.5 32.5 x 7.5	3 3	2812.5 731.25 3543	1594	1948.65
3 (Pit - 2)	E 00 - 50 N 50 - 125	45 x 10 35 x 10	3 3	1350 1050 2400	1080	1320
4 (Pit - 2)	E 00 - 75 N 50 - 125	45 x 10 35 x 10	3 3	1350 1050 2400	1080	1320
5 (Pit - 2)	E 50 - 100 N 50 - 100	32.5 x 32.5	3	3168.75	1425	1742
			<b>TOTAL</b>	<b>14661</b>	<b>6596</b>	<b>8063</b>
			<b>Average</b>	<b>2932.2</b>	<b>1319</b>	<b>1612.6</b>



### Quantum of Excavation

In the next five years it is proposed to produce a total of 659627 Cu. M of commercial grade rough blocks, to obtain this at the rate of 45% recovery, a huge mass of 14661 Cu. M rock will be generated. It is estimated that a total of 8063 Cu. M waste will be generated for the next 5 years period with an average of 1612 Cu. M of waste / year.

### 5.0 Market Analysis

The company has established its deposit in the international market. The Peacock Green rough blocks of gang saw size are having good demand in the international market. With price ranging from \$ 600-800 per Cu. M.

### 6.0 Production Schedule

The production of Colour Granite continuous to through out year expect during monsoon. That is 10 working months, 20 working days per month are considered. The production of 1319 Cu. M per year can be easily achieved in a single shift with sufficient men and machinery.

#### A Magazine Type and Capacity

Not applicable as no blasting is required.

#### B Description of Processing Plant

The firm doesn't possess a processing plant

#### C Organizational Chart

##### Man Power at Quarry

Manager	1 No's
Supervisors	2 No's
Compressor Operators	2 No's
Tipper Drivers	2 No's
Hitachi Operators	1 No
Rig Operator	1 No
Crane Operator	1 No
Drivers	2 No's
Helpers	2 No's
Watch Man	2 No's
Cutters	14 No's
Drillers	25 No's

Besides 20 No's Unskilled Labourers are employed on daily wages





**Machinery Proposed**

Excavator (200)	1
Tipper	1
Compressors	2
Jack Hammers	6
Tractor with Tanker	1
Power Generator 125 - Kv	2
Wire Saw - 60 Kv	2
Rig (Slotter) - 80'	1
Crane - Suka - 12 Tones	1 No.
Mono Block Pump - 2 HP	1
Welding Machine	1 No.
Mahindra Jeep	1 No.

**D Site Services**

Rest Rooms, First Aid Room, Shelters, Lavatory, Bore Well for Drinking Water are available at the acquired land adjacent to the applied area..

**7.0 SCHEME OF WASTE MANAGEMENT PLAN ( SOLID & LIQUID)****i) Solid waste for the first Five Years :**

The granite body exposed to the surface. Hence, the weathering on the surface of the rock closely spaced joints and shears along with inherent defects like Moles, Dark patches and acidic veins contribute a large extent of waste generation during the mining.

It is estimated that in the next five years a total of 8063 Cu. M of waste is expected to be generated with an average of 1612 Cu. M per annum. (The year wise waste generation in next 5 years is given in table in Page -11)

**ii) Dumping Site Particulars :**

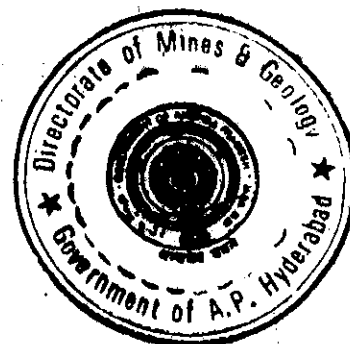
For dumping of waste generated during mining will be dumped in the acquired land procured by the applicart, adjacent to applied area.

**iii) Estimated Waste Quantity that will be generated in the Entire Period :**

At the rate of 1612 Cu. M per year the volume of waste generated during lease period i.e. 20 years is estimated to be 32,240 Cu. M.

**iv) Utilisation of Waste if not Prevented :**

- Weathered rock if it is sufficiently soft and devoid of rock fragments can be utilised for roads, filling of road side ditches, formation of approach roads to quarries, construction works etc.



- Large and medium sized waste rock can be used as revetment for deep cut stream sections from preventing from soil erosion.
- The waste generated during the mining will also be used for back filling of the mine pit after completion of mining.

## 8.0 ENVIRONMENTAL MANAGEMENT PLAN

### 8.1 Baseline Information

#### a. Existing Land Use Pattern :

The applied area is a small mound; with sparse vegetation small bushes form the vegetal cover. The areas around are agricultural lands. Quarrying is in operation on the near by hills for road metal.

#### b. Water Regime :

No rivers or stream courses are present adjacent to the applied area.

#### c. Flora & Fauna :

Vegetation is Moderate, No wild animals reported.

#### d. Quality of Air, Ambient Noise Level and Water :

- Air quality is good. As the quarrying is limited in this particular belt not much of dust is expected.
- The noise generated due to blasting, drilling, vehicular traffic.
- Granite mining will not affect water quality.

#### e. 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

#### f. Human Settlement :

The human settlements located near around the lease area are



S.No.	Habitation	Direction & Distance	Population
1	Vavilipalleteta	0.5 Km East	500
2	Ponduru	2 Km NorthWest	1500
3	Krishnapuram	1 Km SouthWest	500
4	Venkatravunigudem	1 Km SouthEast	700
5	Repaka	1 Km North	500

in addition to these at least 25 small to medium dwellings / settlements are located in the 5 km radius.

**g. Public Buildings, Places & Monuments**

No public buildings important places and monuments are seen in and around the area.

**h. Does area (Partly or Fully) fall under notified area under water (Prevention and Control of Pollution) Act 1974 :**

Not Applicable

**8.2 Environmental Impact Assessment**

**i) Land Degradation :**

Granite Mining will alter the physiographic scene; a small portion of the mound will alter its shape. After the completion of mining lease period a deep pit of 6-7 M will be formed.

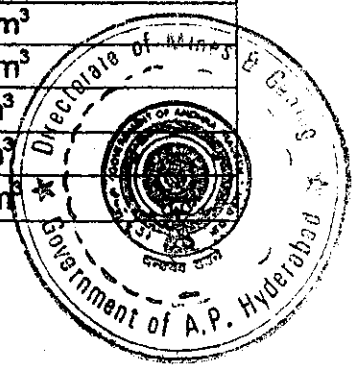
During quarrying the solid waste generated will be dumped in the acquired land.

**ii) Air Quality :**

The quarrying operations shall increase the SPM, RPM, SO<sub>2</sub>, No<sub>x</sub> and CO levels to some extent. But as the baseline quality is very good having these parameters much lower, the marginal increase without an EMP can be expected. The increase in SPM levels of ambient air quality predicted shall not be more than 5 µg/m<sup>3</sup>. Similarly, SO<sub>2</sub>, and No<sub>x</sub> levels may increase not more than 1 µg/m<sup>3</sup> from the baseline levels.

**AIR QUALITY**

Base Level	Allowable Level
SPM = 140µg/m <sup>3</sup>	360µg/m <sup>3</sup>
RSPM = 60µg/m <sup>3</sup>	120µg/m <sup>3</sup>
SO <sub>2</sub> = 40µg/m <sup>3</sup>	80µg/m <sup>3</sup>
NO <sub>2</sub> = 40µg/m <sup>3</sup>	80µg/m <sup>3</sup>
CO = 1.0µg/m <sup>3</sup>	5.0µg/m <sup>3</sup>



## iii) Water Regime :

The mining of Coloured Granite has no adverse effect on the water regime of the area.

## iv) Noise Levels :

The noise levels for various activities are

- |    |               |                |                                |
|----|---------------|----------------|--------------------------------|
| 1. | Compressor -  | 84 to 98 dB(A) |                                |
| 2. | Tipper Empty- | 88 to 91 dB(A) | Tipper Loaded - 95 – 103 dB(A) |
| 3. | Poclaim -     | 90 to 96 dB(A) |                                |
| 4. | Blasting -    | 89 to 95 dB(A) |                                |

The lessee for protecting will maintain suitable precautions. The workers by providing suitable protective gear. And the machinery will be properly maintained.

## v) Vibration Levels :

It is proposed to use low explosives and less quantity to minimise the effects so that the vibration generated will be feeble within 8 Hz

## vi) Socio Economics :

The applied area is surrounded by many villages within a distance of 2.5 Kms. Agriculture is important profession of the people living in the village besides involving themselves in Quarrying activity.

**8.3 Environmental Management**

## i) Temporary utilisation of top soil :

No soil will be generated during quarrying. The rubble will be used for laying roads.

## ii) Year wise proposal for reclamation of Land effected by mining activities in first 5 years :

Since the quarry is active with mining and located on a mound. Hence, no reclamation is envisaged.

## iii) In case of abandoned Quarries / Pits are proposed to be used as Reservoir, their size, water holding capacity and proposal for utilisation of such water be given :

Granite Mining will alter the physiographic scene, deep pits will be formed after completion of the quarry license period. These pits will useful for water harvesting structures.



- iv) Program of afforestation year wise for the initial five years indicating number of plants with name of species to be afforested under different areas in hectares :  
As mentioned above the lease area is not suitable for Afforestation.
- v) Stabilisation and vegetation of dumps along with waste dump Management year wise for first five years :  
Since the waste generated is only rock debris and boulders vegetal growth is not possible on the waste dumps.
- vi) Measures to control erosion / sedimentation of water courses :  
Not Applicable
- vii) Treatment and disposal of water from Mines :  
Not Applicable
- viii) Measures for Minimising adverse effects on water Regime :  
No adverse effects on water regime are anticipated.
- ix) Protective Measures for Ground Vibrations :  
It is proposed to use low explosives and less quantity to minimise the effects so that the vibration generated will be feeble.
- x) Measures for protecting Historical monuments and for rehabilitation of human settlements likely to be disturbed due to mining activity :  
No historical monuments exist in the area and as the human settlements are far away from the mining area no disturbances are likely to be fore seen.
- xi) Socio - Economic benefits arising from the Mining :
  - Employment generation.
  - Infrastructure development viz roads, power & water supply, medical facilities in villages etc.

**9.0 Employment and site services**

- A. Employment : Given in Para - 6  
B. Site Services : Given in Para - 6

**10.0 ANY OTHER INFORMATION**

1. No violations are noticed by the Department of Mines and Geology.
2. No violations were pointed out by the Director General of Mines Safety.
3. No objections were raised by the either Villagers, Revenue Officials and other Government Departments.

For SRI DIVYA SAI GRANITES

For M/s Sri Divya Sai Granites Authorized Signatory

**APPROVED**

RQP  
(V.T. Chander)



**Dr. F. DATASANKAR**  
JOINT DIRECTOR  
DEPT. OF MINES & GEOLOGY  
GOVT. OF A.P., HYDERABAD.

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

NOTICE NO. PJ05/R1-M/2003.

DATED: 29.4.2003.

Sub: Mines and Quarries - Quarry Lease application - Extent: 1.930 Hectares -  
S.No.284 - Village: Ponduru Village, Ponduru Mandal,  
Srikakulam Dist in favour of M/s. Divya Sai Granites  
for a period of 20 years - Approved Mining Plan Called for - Reg

Ref: 1. From M/s. Divya Sai Granites, QL Application dated: 28.2.2003.  
2. From the Asst. Director of Mines and Geology, Srikakulam Lr./File No.  
1966/Q/2002, dated: 13.3.2003.

\*\*\*\*\*

M/s. Divya Sai Granites, in the reference 1<sup>st</sup> cited, have applied for grant of Quarry Lease for Colour Granite over an extent of 1.930 Hectares in S.No. 284 of Ponduru Village, Ponduru Mandal, Srikakulam Dist

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 Prospecting Licence by the applicant. Further, the Asst. Director has recommended for grant of Quarry Lease for Colour Granite over an extent of 1.930 Hectares in S.No. 284 of Ponduru Village, Ponduru Mandal, in Srikakulam District in favour of M/s. Divya Sai Granites 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 1.930 Hectares in S.No.284, of Ponduru Village, Ponduru Mandal, Srikakulam District in favour of M/s. Divya Sai Granites 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. Divya Sai Granites 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 Approved Mining Plan 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 & GEOLOGY.

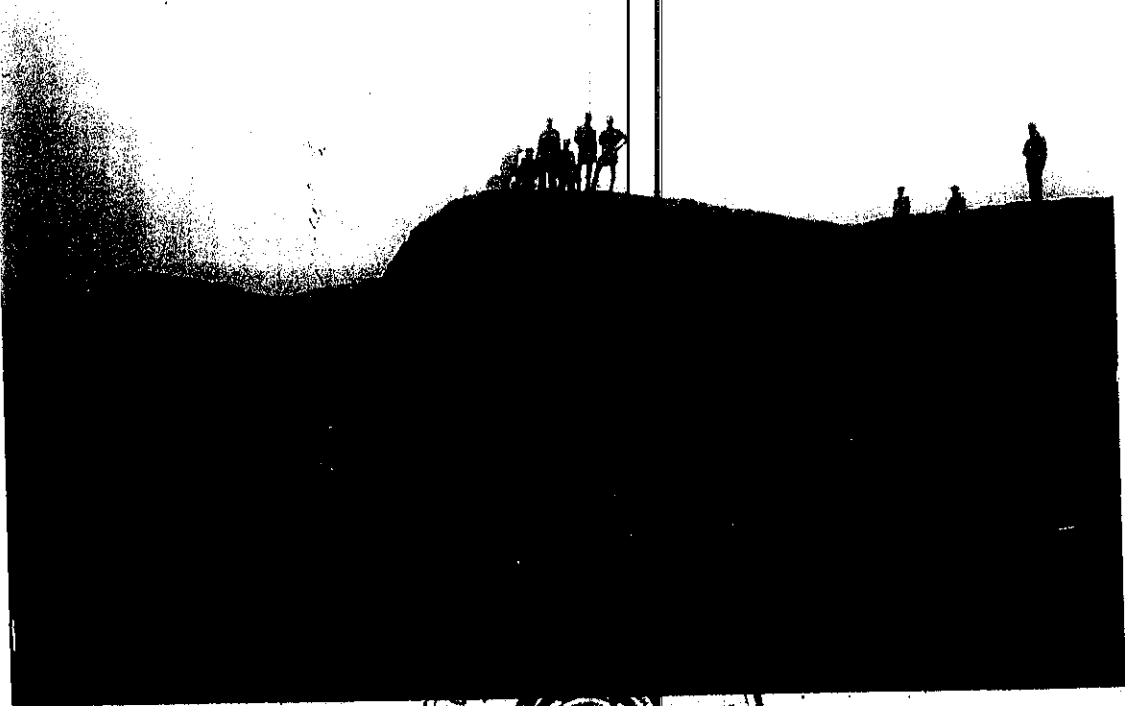
To:  
M/s. Divya Sai Granites, Prop. Sri. V. Srihari Naidu.  
Dr.No. 1-3-38, Govt. Hospital Road, Balaga, Srikakulam Dist-532001.  
Copy to Asst. Director of Mines and Geology, Srikakulam.  
Copy to Approved Mining Plan Section

//Attested//

For DIRECTOR OF MINES AND GEOLOGY



PHOTOGRAPH SHOWING FACES DEVELOP BY WIRE SAW



PHOTOGRAPH SHOWING  
SPLITTING OF MOTHER  
ROCK BY HORIZONTAL &  
VERTICAL DRILLING



GOVERNMENT OF ANDHRA PRADESH

Letter No. 16680/MP-I/2003

Dated 5.8.2003

From:-

Sri P Dayasankar, M.Sc., (Tech) P.h.d.,  
Joint Director of Mines & Geology,  
O/o. Director of Mines and Geology,  
8<sup>TH</sup> Floor, BRKR Complex,  
Hyderabad.

To:

M/s Divya Sai Granites  
Prop: V. Sree Hari Naidu  
S/o Appala Naidu  
1-5-38, Govt. Hospital Road  
Balaga,  
Srikakulam.

Sir,

Sub:- Approval of Mining Plan - Quarry Lease for <sup>Color</sup>~~Black~~ Granite over an extent of 1.930 Hects in Sy.No. 284 of Ponduru Village - Rapaka Mandal - Srikakulam District - in favour of M/s Divya Sai Granites - Mining Plan Approved - Reg.

Ref:- 1) DM&G. Notice No. 9105/R1-3/2003, dated. 29.4.2003.  
2) Letter dated.30.7. 2003 along with 5 sets of Mining Plans from M/s Divya Sai Granites.

\*\*\*\*\*

In exercise of the powers conferred as per sub rule 5 of Rule. 7 of Granite Conservation and Development Rules, 1999, I here by approve the Mining Plan for <sup>Color</sup>~~Black~~ Granite over an extent of 1.93 Hects in S.No.284 of Ponduru Village, Rapaka Mandal, Srikakulam District in favour of M/s Divya Sai Granites. This approval is subject to the following conditions:-

1. This Mining Plan is approved without prejudice to any other laws applicable to the mine area from time to time whether made by the Central Government, State Government or any other authority.
2. It is clarified that this approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Act, 1957 or the Mineral Concession Rules, 1960 and any other laws including the Forest Conservation Act, 1980.
3. The lease holder have to take up plantation in the area covered by soil cover.

Yours faithfully,

Sd/- P. DAYASANKAR

JOINT DIRECTOR OF MINES AND GEOLOGY

Encl:- (AMP - 2 No.)

Copy along with Approved Mining Plan is sent to R2 section in Head Office.

Copy to Sri V.T. Chander, RQP  
# 202, Mahalaxmi Ganapathi Complex  
P&T Colony, Dilsukhaga,  
Hyderabad.

Copy to the Regional Controller of Mines, IBM, Sultanbazar, Hyderabad  
along with Approved Mining Plan.

Copy submitted to Director of Mines Safety, Hyderabad.

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

*[Signature]*  
Superintendent