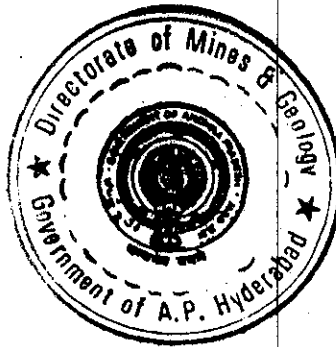


**MINING PLAN FOR COLOUR GRANITE**  
Over an extent of 1.620 Hectares, Sy.No 270,  
Singupuram (V), Srikakulam (M), Srikakulam Dist. A.P.

For

**M/s Dyana Granite Exports,  
Srikakulam**



**APPROVED**

Prepared by

**V.T.CHANDER**

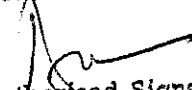
**Consultant Geologist & RQP  
(RQP/DMG/HYD/02/2001)**

**# 202, H.No 10-1, Mahalaxmi Ganapathi Complex,  
P & T Colony, Dilsukhnagar, Hyderabad - 500 060**

**CERTIFICATE**

This is to certify that Mining Plan in respect of Quarry lease area over an extent of 1.62 Hectares, Sy. No 270, Singhupuram (V), Srikakulam Mandal & District. 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.

For DYANA GRANITE EXPORTS.

  
Authorised Signatory.

Date :

Place :

For M/s Dyana Granite Exports



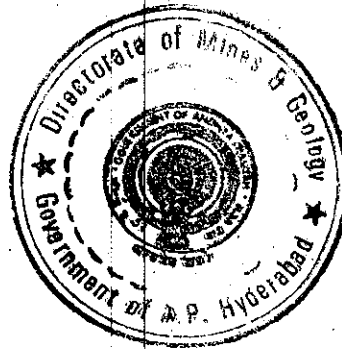
## CERTIFICATE

The provision of Granite Conservation and Development Rules 1999 have been Observed in the Mining Lease of COLOURED GRANITE, area over an extent of 1.62 Hectares, Sy. No 270, Singhupuram (V), Srikakulam Mandal & District. A.P. leased to M/s Dyana Granite Exports, 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 :

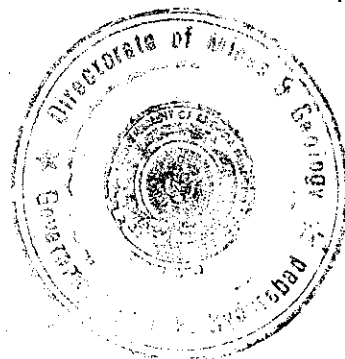
Place : Hyderabad



(V.T. Chander)

## INDEX

S.NO	CONTENTS	PAGE NO
I	INTRODUCTION	1
II	GENERAL	2
III	GEOLOGY	3
IV	MINING	7
V	MARKET ANALYSIS	10
VI	PRODUCTION	10
VII	SCHEME OF WASTE MANAGEMENT PLAN	11
VIII	ENVIRONMENTAL MANAGEMENT PLAN	11
IX	EMPLOYMENT & SITE SERVICES	15
X	ANY OTHER RELEVANT INFORMATION	18



### LIST OF PLATES

PLATE	TITLE	SCALE
I	LOCATION & KEY PLAN	1 : 50,000
II	LEASE AREA PLAN	1 : 8000
III	GEOLOGICAL PLAN	1 : 1000
IV	GEOLOGICAL CROSS SECTIONS	H 1 : 1000 V 1 : 500
V	MINE LAY OUT & YEAR WISE PRODUCTION PLAN	1 : 500
VI	MINE LAY CROSS ECTIONS	H 1 : 1000 V 1 : 500
VII	ENVIRONMENTAL PLAN	1 : 5000.

### LIST OF ANNEXURES

1. Copy of the DMG, Hyderabad Notice No 9069/R1-3/2003  
Dated 29-4-2003



**MINING PLAN FOR COLOUR GRANITE**  
Over an extent of 1.620 Hectares, Sy.No 270,  
Singupuram (V), Srikakulam (M), Srikakulam Dist. A.P.

For

M/s Dyana Granite Exports,  
Srikakulam

By

V.T Chander, Consultant Geologist & RQP

This Mining Plan is Approved subject to the  
Conditions/Stipulations Indicated in the  
Mining Plan Approval Letter No.....  
16679/MPJ/2003, dated 5-11-2003

I Introduction

M/s. Dyana Granite Exports, Srikakulam, a private firm was granted Prospecting license for Colour Granite over an extent of 1.620 hectares spread over in Sy.No 270 of Singupuram Village, Srikakulam Mandal, Srikakulam Dist. A.P. for a period of 2 years. Vide Director, Department of Mines and Geology, Hyderabad. Proceedings No.3162640864/R1-3/99 Dated 18-11-2002.. The prospecting deed was executed by the Asst. Director, Mines and Geology, Srikakulam on 26-11-2002, vide proceedings N 5370/Q/99 dated 26-11-2002.

M/s. Dyana Granite Exports, Srikakulam, after establishing the quality of the deposit the firm has applied for grant of quarry lease in the above said area..

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. 9069/R1-3/2003 dated 29-4-2003.

M/s. Dyana Granite Exports, 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**



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

- 2.0 General
- 2.1 Name and address of the applicant : M/s. Dyana Granite Exports,  
Prop. Routhu Appala Naidu,  
S/o. Veera Naidu, Dr.No.1-5-38,  
Govt. Hospital Road, Balago,  
Srikakulam -532 009.
- 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,  
Dilsuknagar,  
Hyderabad - 500 060.  
☎ : 24068218, 55618351
- 2.5 Name and address of the prospecting agency : M/s. Dyana Granite Exports,  
Srikakulam
- 2.6 Details of the Area

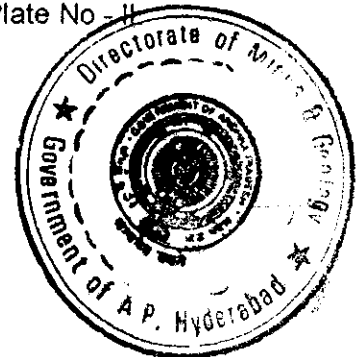
The applied area falls in the Survey of India Toposheet No. 65N/15 and is bounded East Longitude 83°-53'- 40' and North Latitude 18° - 21'-20". It is situated 1 Km West of Singupuram (V), 11 Km N-E of Srikakulam Town (Mandal & Dist. Head Quarters). The road leading from Srikakulam to Kolkatta (NH 5) passes 1.5 km due east of the applied area. A diversion at singupuram due west will lead to the area. will(Plate I).

**Table No.1 Details of the Area**

Dist. State.	Mandal	Village	S.No.	Extent	Ownership of Occupancy
Srikakulam Andhra Pradesh	Srikakulam	Singupuram	270	1.620'Ha	Govt. Land

- 2.7 Period for which Quarry Lease granted = 20 years

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



## 2.8 Infrastructure and Communication

- It is situated 1 Km West of Singupuram (V), 11 Km N-E of Srikakulam Town (Mandal & Dist. Head Quarters). The road leading from Srikakulam to Kolkatta (NH 5), passes 1.5 km due east of the applied area. A diversion at singupuram village due west will lead to the area.
- Amenities like Post, Primary Health Center, Local Market Facilities (Sunday Market) etc. are available at Singupuram.
- Vishakapatnam port is about 150 Km from area. Nearest Rail head is Amudalavasa located 16 Km south
- Electricity is available at Singupuram (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.

## 3.0 Geology and Exploration

### 3.1 Physiography

The applied area is a part of hill, The highest peak is 25 M above ground level. The hill is covered with boulders. The vegetative growth of shrubs and bushes are in the soil intercalated with in the boulders. The local relief is due North & South gently slopping. The surrounding areas all around the license area are agricultural fields.

### Topography

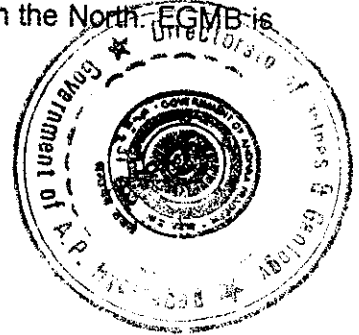
The applied area is located on the northern side of the hill with highest peak of 25M sloping towards North. The colour of the granite is varying from medium to light blue colour. The outcrops of Granite boulders are embodied in the soil burden.

The low level hill appears as Tors, with Boulders of massive thickness, the horizontal sheet joints present in the boulders give shape as sheet.

### 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 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 :

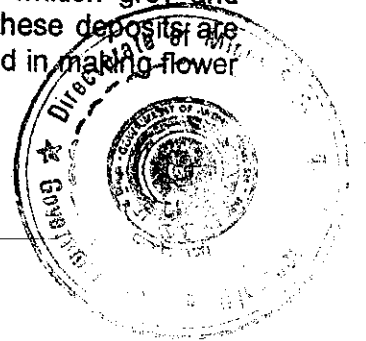
INTRUSIVES	Layered Anorthisites and associated Mafics and Chromiferrous Ultra Mafics.
CHARNOCKITE GROUP	Charnockites with Mega Crystic K- Felspar Charnockite Two Pyroxene Granulite / Amphibolites.
KHONDALITE GROUP	Calc-Sillicate-Granulites. Garnet-Silliminite-Quartz-Biotite-K-Felspar. Graphite Gneiss (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 Coast line.

#### Local Geology

PORPHYROBLASTIC GRANITE DEPOSITS occurring particularly in Srikukulam Mandal in Singapuram village. The hillocks comprise of mounds and boulders consisting of Porphyroblastic granite gneiss comprising Quartz, Feldspar, Biotite, Hornblende and other mafic minerals. The rock is coarse grained, hard and the rock exhibits porphyritic texture. Compact. the crystals of feldspar are light to dark grey and look predominantly in the black back ground with random orientation. The presence of euhedral feldspar phenocrysts ranging in size from 0.5 cm to 6 cm in length and with an average width of 1 cm to 3 cm in a ground mass of whitish grey and occasional dark grey looks beautiful after polishing and these deposits are exploited and used for table tops, flooring, monuments and in making flower vases.

The commercial name coined is "Flash Blue" Granite.



### 3.2 Details of Exploration

#### 3.2.1 Prospecting operations carried out

##### 3.2.1-1 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 1:500 scale prepared (Plate - III).

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.

#### Exploratory Mining

An approach road was laid from ground level to mid area of the hill for movement & haulage.

- The rubble and small boulders were cleared for quarrying. They are separated from the side burden using blasting
- Large boulders were extracted, since the demand is for large blocks only quarrying is restricted to larger size boulders.
- The large boulders were subjected to splitting with line drills vertically and horizontally and were subjected feathering and wedging to dislodge the primary block. After dressing the 100 Cu. M of rough blocks were retrieved and blocks dispatched.

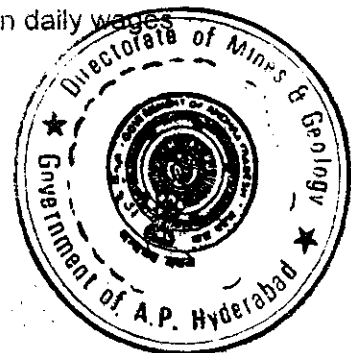
#### Man Power Deployed

Supervisor	1 No's
Compressor Operator	2 No's
Tipper Drivers	2 No's
Hitachi Operators	1 No.
Drillers	9 No's

Besides 20 No's unskilled labourers are employed on daily wages

#### Machinery Used

Excavator	1 No.
Compressor	1 No.
Tipper	1 No.
Jack Hammers	3 No's.



### 3.3 Estimation of Geological Reserve

#### 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 cross-sectional method.

#### 3.3.2 Method of Estimation of Reserves

6 Cross Sections A - A1, B - B1, C - C1, D - D1, E - E1, F - F1 were drawn at equal intervals, the volume is calculated by multiplying the Sectional area x Sectional influence.

Section	Sectional Area in M <sup>2</sup>	Sectional Influence in M	Total Volume in M <sup>3</sup>	Deduct 40% Voids & Soil Creep in M <sup>3</sup>	Balance Rock Mass 60% in M <sup>3</sup>
A - A1	922	50	46,105	18,442	27,663.00
B - B1	947.742	50	47,387.1	18,954.84	28,432.26
C - C1	1008.787	50	50,439.35	20,175.74	30,263.61
D - D1	1101.8	50	55,090	22,036	33,054.00
E - E1	924.9	50	46,245	18,498	27,747
F - F1	561.743	23	12,920.089	5,168.04	7752.05
Total :			2,58,187.34	1,03,274.93	1,54,912.41

#### 3.3.3-1 Categorization of Reserves

The rock mass is exposed on hill is considered for computing the reserves. The entire rock mass exposed on the surface is classified under "Proved"

#### 3.3.4-2 Total Mine able Reserves

The Rock mass blocked under safety slopes on the western margin alone is not available for mining. No deposit will be blocked in south that is extension of Quarry of sister concern, due East and North sloping of Hill. Deduction of rock mass blocked above total insitu reserves indicate total mine able reserves, which are as follow :

Area Blocked under Safety Slope

West Boundary  $316.75 \times 25 = 7,285.25 \text{ M}^3$

Mineable Reserves  $1,54,912.41 - 7,285.25 = 1,47,627.16$

Life of the Mine  $= 1,47,627.16 / 828 = 178 \text{ Years}$



### 3.3.5-3 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 Gang saw size are mostly preferred by exporters and international buyers. These are known as Economic or market grade. The Srikakulam Blue Granite is totally export oriented. Hence, all the blocks of Gang Saw size are only demanded by the exporters.

Economic Marketable Reserves = 1,47,627.16 M<sup>3</sup>

## 4.0 MINING

### 4.1 Opening of Mine

The Coloured Granite in this quarry will be mined out by open cast, Semi-mechanized method. Presently the soft mixed weathered boulders are removed in this quarry and the quarrying operations are in progress. The details are as follows :

The Mining / Extraction started all over the lease area by extracting only the loose boulders of sizes 2-5 M which are all most floating in nature. They were subjected to primary splitting and dressing and dispatched to the market. It was reported that recovery % was nearly 35% from these Boulders. The sheet is likely to be occurring below ground level.

#### 4.A. Brief description of method of future Mining :

(A) **Over Burden Removal** : The over burden and the side burden will be extracted with the help excavator of 300 LC capacity. After, loosing the compact weathered rock by blasting and drilling, the excavator will be deployed to remove the material and to load into the tippers for transporting to dumping yard.

#### (B) **Primary Splitting** :

- After removal of over burden & side burden. The excavator will remove the boulders. The under size, weathered and defective boulders will be hauled to dumping yard.



- The large sized boulders will be subjected to splitting with the help of line drills.
- The waste portions are separated forming rectangular blocks. Bulges will be removed if any found.
- If the sheet rock underlying the boulder is exposed this will be tackled by developing benches, working faces, etc, along the lination benches of 3 – 6 M will be developed. The drill holes will be drilled closely at regular intervals of 30 – 40 Cm apart up to 2 – 3 M depth with the help of feathers, wedges and hammering and the holes are charged with Agfract chemical compound for 6-7 hours to form a crack connecting all the drill holes releasing the block from the mother rock / Boulder. The block thus released will be shaped into rectangular block and hauled to dressing yard for further process.
- The sizes of the primary blocks vary from batch to batch because of quality of rock mass, average sizes range from 4.5 X 3 X 2.5 to 3x 2x 1

#### 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.B. Drilling & Blasting:

As the rock is showing the porphyro blastic 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

However little blasting will be required to remove side burden wherever required but the requirement is very less / negligible.

- 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 6 M x 6 M x 6M cross section.
  - 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 : gun powder only used for separation of large boulders from rock mass.

**4. C Details Of Production So Far Mined From The Quarry**

Dimensions	Stock at Quarry	Despatches
270 Cm x 180 Cm x 150 Cm	= 191.711 M <sup>3</sup>	240.072 M <sup>3</sup>
250 Cm x 160 Cm x 140 Cm	= 65.195 M <sup>3</sup>	7.645 M <sup>3</sup>
200 Cm x 120 Cm x 60 Cm	= 72.114 M <sup>3</sup>	13.371 M <sup>3</sup>

**4. D Mining Programme For The Next 5 Years**

It is proposed to produce 828 M<sup>3</sup> of rough blocks on an average per year in the first five years. Total 4140 M<sup>3</sup> rough blocks will be produced in five years utilizing an area of 2250 M<sup>2</sup>.

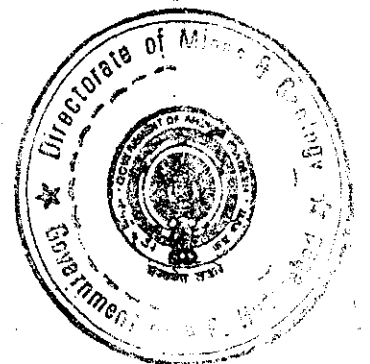
**In the first year** mining starts from South eastern corner of the area towards west, a bench of 3 M height will be formed between RL 115 and RL 112, in the grid East 125 - 175 and North 00 - 50, covering an area of 450 M<sup>2</sup>. There by 1350 M<sup>3</sup> of rock will be obtained. From which 810 M<sup>3</sup> market grade rough blocks are produced, generating 540 M<sup>3</sup> of rock debris.

**In the second year** the mining continuous in the same pit below of 1<sup>st</sup> year, a bench of 3 M height will be formed between RL 112 - 109, in the grid East 125 - 175 and North 00 - 50, covering an area of 360 M<sup>2</sup>, producing 648 M<sup>3</sup> of market grade rough blocks and 432 M<sup>3</sup> of wastage.

**In the third year** mining extends further West, a bench of 3 M height will be formed between RL 115 and RL 112, in the grid East 125 - 150 and North 00 - 50, covering an area of 540 M<sup>2</sup>. There by 1620 M<sup>3</sup> of rock will be obtained. From which 972 M<sup>3</sup> market grade rough blocks are produced, generating 648 M<sup>3</sup> of rock debris.

**In the fourth year** the mining extends further depth of previous year bench with a height of 3 M height will be formed between RL 112 - 109, in the grid East 125 - 150 and North 00 - 50, covering an area of 450 M<sup>2</sup>, producing 810 M<sup>3</sup> of market grade rough blocks and 540 M<sup>3</sup> of wastage.

**In the fifth year** the mining extends further West and bench of 3 M height will be formed between RL 115 - 112, in the grid East 100 - 125 and North 50 - 75, covering an area of 500 M<sup>2</sup>, producing 900 M<sup>3</sup> of market grade rough blocks and 600 M<sup>3</sup> of wastage.



The year wise production of Economic grade as follows (Mine layout plan and mine layout sections shown in Plates VI and VII.)

Year	Grid	Dimensions L x W in M	Bench Height in M	Total Volume in M <sup>3</sup>	Market Grade @ 60% in M <sup>3</sup>	Waste in M <sup>3</sup>
1	E 125-175 N 00 -50	30 x 15	3	1350	810	540
2	E 125-175 N 00 -50	30 x 12	3	1080	648	432
3	E 125-150 N 00 -50	30 x 18	3	1620	972	648
4	E 125-150 N 00 -50	30 x 15	3	1350	810	540
5	E 100-125 N 50 -75	25 x 20	3	1500	900	600
			<b>Total</b>	<b>6,900</b>	<b>4,140</b>	<b>2,760</b>
			<b>Average</b>	<b>1,380</b>	<b>828</b>	<b>552</b>

#### Quantum of Excavation

In the next five years it is proposed to produce a total of 6900 Cu.M of commercial grade rough blocks, to obtain this at the rate of 60% recovery, a huge mass of rock waste will be generated. It is estimated that a total of 2760Cu.M waste will be generated for the next 5 years period with an average of 552 Cu.M of waste / year.

#### 5.0 Market Analysis

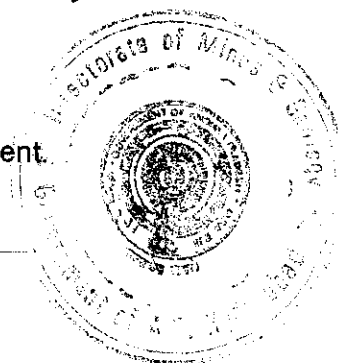
The Company has established its deposit in the international market. The Coloured Granite(Flash Blue) rough blocks of gang saw size are having good demand in the international market with prices ranging from \$ 500 - 600.

#### 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 828 Cu.M per year can be easily achieved in a single shift with sufficient men and machinery.

#### A. Magazine Type and Capacity

The lessee will apply for explosive license to the Government.



**B. Description of Processing Plant**

The firm doesn't possess a processing plant

**C. Organizational Chart****Man Power at Quarry**

Manager	.1 No's
Production Manager	1 No's
Supervisors	2 No's
Compressor Operator	2 No's
Tipper Drivers	2 No's
Hitachi Operators	1 No

Besides 20 No's unskilled labourers are employed on daily wages

**Machinery Proposed**

Excavator	1
Tipper	1
Compressors	2
Jack Hammers	6
Tractor with Tanker	1

**D. Site Services**

Rest Rooms, First Aid Room, Shelters, Lavatory, Bore well for Drinking water are available at Quarry Site.

**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 2760 Cu.M of waste is expected to be generated with an average of 552Cu.M per annum. (The year wise waste generation in next 5 years is given in table in Page -9).
- ii) **Dumping Site Particulars :**  
For dumping of waste generated during mining will be dumped in the dump located between the grids E 75-100 and N 25- 75.
- iii) **Estimated Waste Quantity that will be generated in the Entire Period :**  
At the rate of 552 Cu.M per year the volume of waste generated during lease period i.e. 20 years is estimated to be 11,040 Cu.M.





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

- Soil can be utilised for reclamation of degraded area.
- 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 hill, with sparse vegetation small bushes form the vegetal cover. The deposit is occupying the lease area.

**b. Water regime**

R. Vamsadhara is 4 Km NE of the applied area, number of small to medium tanks are present all around the quarry.

**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, which is minimum as the production is very less. Hence, the noise pollution is comparatively negligible. However, suitable precautions will be maintained by the lessee for protecting the workers by providing suitable protective gear.
- Granite mining will not affect water quality.

**e. Climatic Conditions**

The area is falling under semi-arid tropical zone. 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.



f. **Human Settlement**

The human settlements located near around the lease area are

S.No	Habitation	Direction & Distance	Population
1	Singupuram	1 Km East	750
2	Tandemvalasa	1 Km West	300
3	Mamidivalasa	2 Km South	300

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. **The samples are collected for polishing from the existing working Quarry. The same is shown in Plate IV.**

i) **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 :**

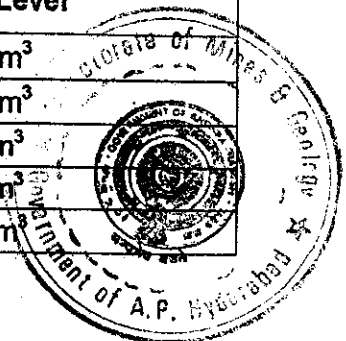
Granite Mining will alter the physiographic scene; a small portion of the hill will alter its shape.

ii) **Air Quality :**

Air quality will not be disturbed, as the quarrying is very limited.

**AIR QUALITY**

Base Level	Alloable Level
SPM = $140\mu\text{g}/\text{m}^3$	$360\mu\text{g}/\text{m}^3$
RSPM = $60\mu\text{g}/\text{m}^3$	$120\mu\text{g}/\text{m}^3$
SO <sub>2</sub> = $40\mu\text{g}/\text{m}^3$	$80\mu\text{g}/\text{m}^3$
NO <sub>2</sub> = $40\mu\text{g}/\text{m}^3$	$80\mu\text{g}/\text{m}^3$
CO = $1.0\mu\text{g}/\text{m}^3$	$5.0\mu\text{g}/\text{m}^3$



## iii) Water Regime :

The mining of Coloured Granite, no adverse effect is anticipated on the water regime of the area.

## IS 10 500 - 1944

Sl.No.	Characteristic	Desirable Limit	Maximum Permissible Limit
1	Colour	5	25
2	Order & Taste	Un Objectionable	
3	Turbidity	5 NTU	10 NTU
4	pH Value	6.5 to 8.5	No Relaxation
5	TDS	500 mg. per ltr.	2000 mg. per ltr.
6	Total Hardness	300 mg. per ltr.	600 mg. Per ltr.

## 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)

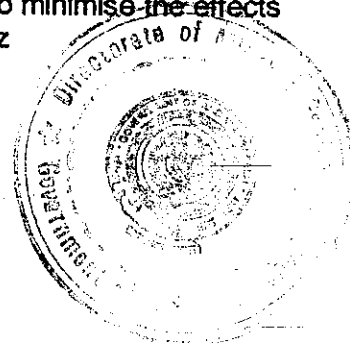
Permissible noise exposure for different period of time is given below :

Duration Per Day (Hrs)	Sound Level dBA
16	80
8	85
4	90
2	95
1	100
1/2	105
1/4	110
1/8	115

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 Hill. 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 not be 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 the entire area is strewn with boulders afforestation program is not possible at present.

## 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 :

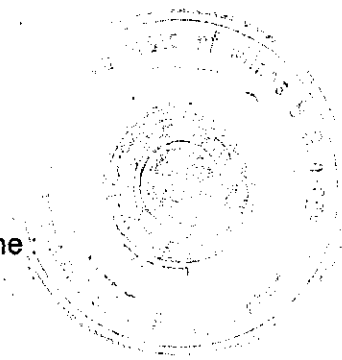
Not Applicable.

## 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 is 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 :**

**Man Power at Quarry**

Manager	1 No's
Production Manager	1 No's
Supervisors	2 No's
Compressor Operator	2 No's
Tipper Drivers	2 No's
Hitachi Operators	1 No

Besides 20 No's unskilled labourers are employed on daily wages

**B. Site Services :**

Rest Rooms, First Aid Room, Shelters, Lavatory, Bore well for Drinking water are available at Quarry Site.



This Mining Plan is Approved subject to the  
Conditions/Stipulations Indicated in the

17

X Any Other Information

Mining Plan Approval Letter No.....

166791 MPT/2003 dated 11-11-2003

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.

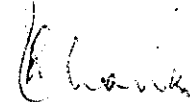
For DYANA GRANITE EXPORTS

Authorized Signatory:

For M/s Dyana Granite Exports

  
RQP  
(V.T. Chander)

APPROVED



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



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

NOTICE NO. 9069/R1-3/2003.

DATED: 29.4.2003.

Sub: Mines and Quarries - Quarry Lease application - Extent: 1.620 Hectares -  
S.No. 270 - Village: Singupuram Village, Srikakulam Mandal,  
Srikakulam Dist in favour of M/s. Dyana Granite Exports  
for a period of 20 years - Approved Mining Plan Called for - Reg

Ref: 1. From M/s. Dyana Granite Exports, QL Application dated: 28.2.2003.  
2. From the Asst. Director of Mines and Geology, Srikakulam Lr/File No.  
1014/Q/2003, dated: 13.3.2003.

M/s. Dyana Granite Exports, in the reference 1<sup>st</sup> cited, have applied for grant of Quarry Lease for Colour Granite over an extent of 1.620 Hectares in S.No. 270 of Singupuram Village, Srikakulam 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 1.620 Hectares in S.No. 270 of Singupuram Village, Srikakulam Mandal, in Srikakulam District in favour of M/s. Dyana 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 1.620 Hectares in S.No.270, of Singupuram Village, Srikakulam Mandal, Srikakulam District in favour of M/s. Dyana 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. Dyana 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.

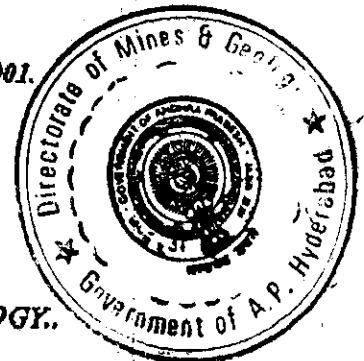
5. Further, they are also informed that if they fail to submit the Approved Mining Plan within a period of six months from the date of receipt of notice it will be presumed that they have no interest in their Quarry Lease application and further action will be taken based on the material available with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

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

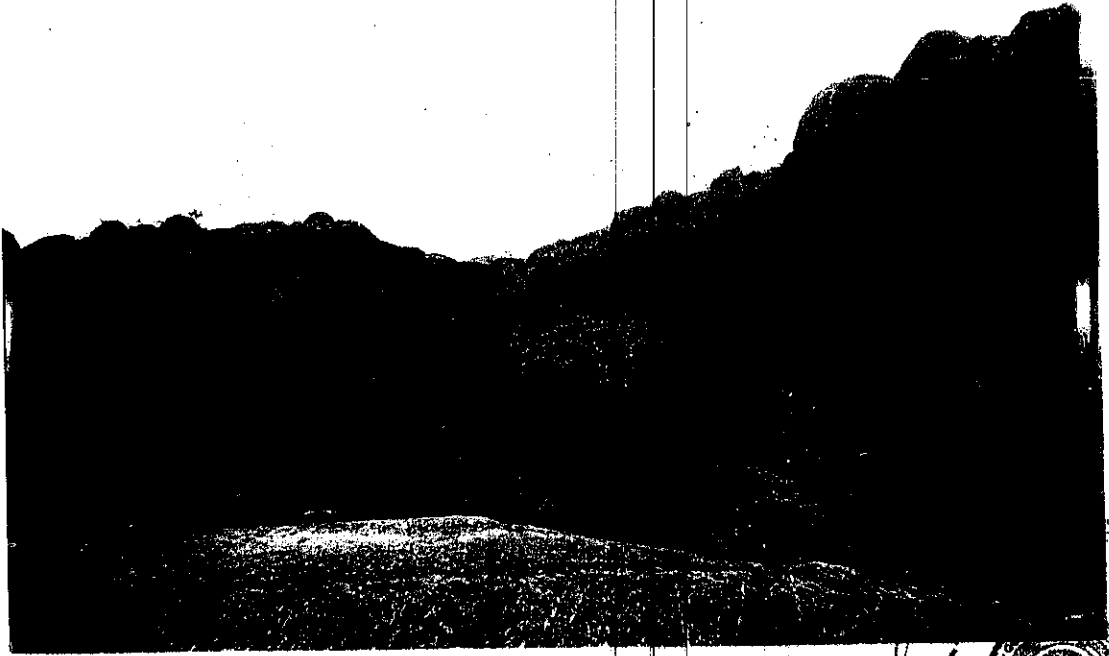
To:  
Sri. R. Appala Naidu, Prop. of M/s. Dyana Granite Exports.  
Dr.No. 1-5-38, Govt. Hospital Road, Balaga, Srikakulam Dist-532001.  
Copy to Asst. Director of Mines and Geology, Srikakulam.  
Copy to Approved Mining Plan Section

//Attested//

  
For DIRECTOR OF MINES AND GEOLOGY.



Photograph showing the view of the Quarry



Photograph showing the view of the Blocks

