

MINING PLAN FOR COLOUR GRANITE
OVER AN EXTENT OF 4.00 Hectare, IN S.No. 1 OF ADDUKONDA VILLAGE, TEKKALI
MANDAL, SRIKAKULAM DISTRICT, ANDHRA PRADESH STATE, INDIA
(SUBMITTED UNDER RULE 12 OF G.C.& D.R. 1999)

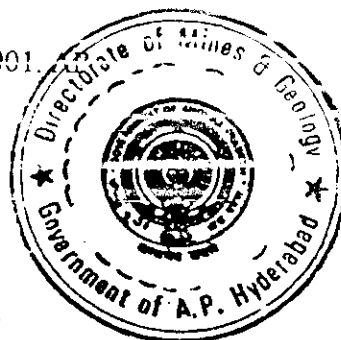
APPLICANT

M/s. Madhucon Granites Limited.

Regd. Office : Madhu Complex,

Jublipura,

Khammam- 507 001.



APPROVED

PREPARED BY

Sri. S.N. SURESHA, M.Sc., (Geo),
Recognised Geologist,

22-1/77/7, Mounika Apartments,
Bhagyanagar Colony, Opp. KPHB.

HYDERABAD - 500 072

(Ph: 040 - 2306 8543)

Cell: 98491 62562

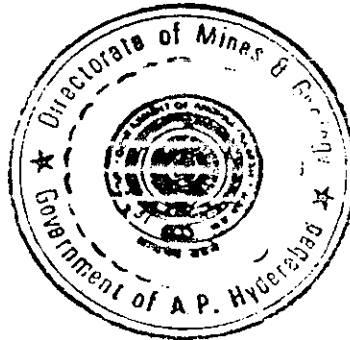
(2004)

DECLARATION

Certified that the Mining Plan for Colour Granite,
In S.No. 1 of Addukonda Village, Tekkali Mandal, Srikakulam District,
Andhra Pradesh State, has been prepared
in full consultation with me and I have understood its
contents and agree to implement the same in
accordance with the law.

Place : Hyderabad,

Date : 7/7/2004.



[Handwritten Signature]
Applicant

CERTIFICATE

This is to certify that the provisions of Mines Act, Rules & Regulations and
Also Granite Conservation and Development Rules, 1999
have been observed in the Mining Plan for Black Granite
over an extent of 4.000 Hectares.
at S.No. 1 of Addukonda Village, Tekkali Mandal, Srikakulam District,
of Andhra Pradesh State,
and wherever specific permissions are required,
the Applicant will approach the concerned authorities of
Directorate of Mines and Geology for granting the permission.

It is also certified that the information furnished in the Mining Plan
are true and correct to the best of my knowledge.

Place : Hyderabad

Date : 7/07/2004.



S.N. Suresha M.Sc.,
Recognized Geologist
(RQP/HYD/106/94/A)
(RQP/DMG/HYD/001/2001)
Hyderabad.

S. N. Suresha
M.Sc.

Recognized Geologist
RQP/HYD/106/94/A

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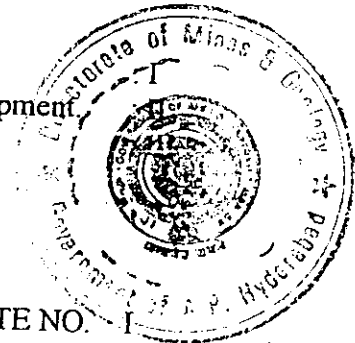
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This Mining Plan is Approved subject to the
Conditions/Stipulations Indicated in the

Mining Plan Approval Letter No.....

20342/MP-1/2004, dated 29-11-2004

MINING PLAN FOR COLOUR GRANITE

OVER AN EXTENT OF 4.00 Hectare, IN S.No. 1 OF ADDUKONDA VILLAGE, TEKKALI
MANDAL, SRIKAKULAM DISTRICT, ANDHRA PRADESH STATE, INDIA.

(SUBMITTED UNDER RULE 12 OF G.C.& D.R. 1999)

1.0 INTRODUCTION :

M/s Madhucon Granites Ltd., Khammam, is a versatile company having lot of experience in granite mining industry and earning foreign exchange by exporting the granite from different parts of our country. They have got several quarry leases in Andhra Pradesh and elsewhere in India. They have applied for quarry lease for Srikakulam blue Granite over an extent of 4.00 Hectare at S. No. 1 of Addukonda Village, Tekkali Mandal, Srikakulam Dt. AP State.

Initially the granite was identified in this area by M/s T.S.Rocks, Prop. Sri. T. Sambasiva Rao, Chennai. After field study they have applied for Prospecting License. The Director of Mines and Geology Hyderabad has granted PL in their favour vide Proceeding No. 2107/R1-3/98 dated 24/7/2000 for a period of 2 years from the date of Execution. The PL was executed at office of A.D.M & G Srikakulam vide their proceeding No. 746/Q/98 dated 14/5/2003. Subsequently the PL has been transferred in favour of M/s Madhucon Granites Ltd., as per Office of D.M & G Hyderabad Proceeding No. 24934/ R1-3/2003, dated 6/9/2003 for the remaining period ending on 30/9/2003. The transfer deed was executed at office of A.D.M & G Srikakulam, vide their Proc. No. 1407/Q/2003 dated 23/9/2003. The PL holder has submitted the Report along with QL application requesting the Director of Mines and Geology to convert their PL into QL. Then the Office of ADM&G Srikakulam recommended their Q. L. application. After careful study of recommendations the Director of Mines & Geology asked the applicant, to submit approved Mining Plan vide their letter No. 44/R1-3/2004 dated 28/06/2004 for grant of Quarry Lease. There fore this mining plan has been prepared by following the guidelines prescribed by the Director of Mines & Geology, in confirmation with Granite Conservation and Development Rule 1999.

2.0 GENERAL :

2.1 *Name of the applicant :*

M/s. Madhucon Granites Limited.

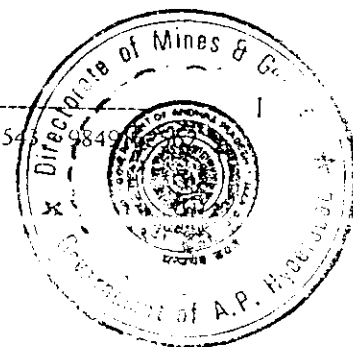
Regd. Office : Madhu Complex,

Jublipura, Khammam- 507 001. AP

APPROVED

Dr. P. Dayasankar
Dr. P. DAYASANKAR
DIRECTOR

DEPT. OF MINES & GEOLOGY
GOVT. OF A.P., HYDERABAD,



S.N. Suresha, 22-1/7/7, Mounica, Bhagyanagar Colony, Opp. KPHB Hyd.72, 040 2306 8543

2.2 Status of the Applicant:

The Applicant is a Limited Company of which Sri N. Nageshwar Rao is the Chairman & Managing Director. The company is versatile granite producers and having lot of experience in granite industry. The overall operation of granite industry, mines and company business is functioning under excellent guidance of Sri N. Krishnaiah, the Executive Director, of the company.

2.3 Type of Granite Which the Applicant Intends To Mine : Colour Granite (Srikakulam Blue)

2.4 Name, Address And Registration Number Of The Recognized Person Who Prepared The Mining Plan:

Sri. S.N. SURESHA, M.Sc., (Geo),
Recognised Geologist,
2-22-1/777, Mounika Apartments,
Bhagyanagar housing Colony,
KPHB. HYDERABAD

(Ph: 040 - 23068543)
98491 62562.

2.5 Name And Address Of The Prospecting Agency:

The prospecting was done by the applicant under the guidance of R Q P.

2.6 Details Of The Area:

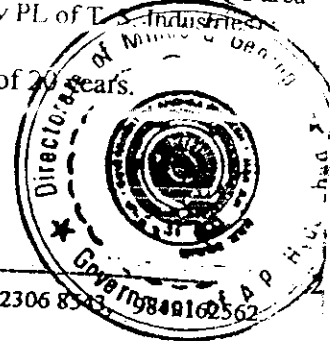
(a) The applied area is a remote and barren land. It is located in Topo sheet No.7 B/2 between 84° 10' 13" Longitude and 18° 36' 20" Latitude.

(b) The Details of the area is given in following Table.

District & State	Taluka Mandal	Village	S.No.	Area in Hectare	Owner Ship & Occupancy Status
Srikakulam A.P	Addukonda	Tekkali	1	4	Govt. Land

Boundaries : Boundaries :- North & West : Patta land of M/s Madhucon Granite Ltd.; East : QL area of M/s Agrawal Granites ; South : M/s Madhucon Granite Ltd. (previously PL of T. Industries)

2.7 Period for which the Mining Lease is Required: For a period of 20 years.



S.N. Suresha, 22-1/777, Mounica, Bhagyanagar Colony, Opp. KPHB Hyd.72, 040 2306 8543.

S.N. Suresha, 2

2.8 *Infrastructure :*

The applied area is having very good Infrastructure like road, rail and drinking water etc. It is well connected by jeepable road from Tekkali at a distance of 6 Km. The village Tekkali is connected to National Highway No. 5 at a distance of 2 Kms. connecting vizag - Culcatta. The nearest Railway Station is situated at Palasa, air port and harbor are situated at Vizag. At a distance of 160 Kms. The mine is surrounded by few villages among which Tekkali is the nearest village which is having working category population, hospital, post & telegraph office, schools etc., The power line and telephone line is passing near by area at a distance of 1 Km at Anjinapuram village. The drinking water is available from the open well situated at 500 m away south.

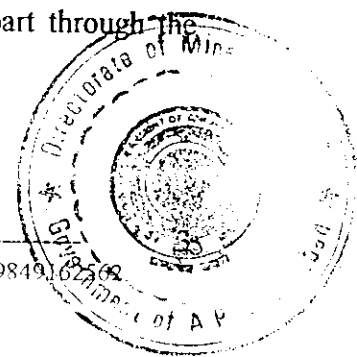
3.0 GEOLOGY AND RESERVES:

3.1 *Brief description of Topography (Physiography) :*

The applied area is elongated hilly area having slope from north - south. The gradient is gently towards south in direction. The highest level observed at northern side is 145 m RL. Whereas lowest level is recorded to be 75 RL at south. The height ranges from 70 to 75 m from the ground level.

3.2 *Regional Geology:*

The rock formation belong to eastern ghat mobile belt of Archaean age. The mobile belt is divided into three zones viz Western Charnockites Zone (WCZ), Central Khondalite Zone (CKZ) and the Eastern Migmatite zone (EMZ). The EMZ is well developed in northern parts of the belt in Vishakapatnam, Vijaya nagaram, Srikakulam and partly in Krishna Districts. The broad distribution of rock types of rocks in Srikakulam district are Granite Gneiss, Kondalites, Charnokites, Leptynites, Rajamundry Sand Stone, Alluvium deposits and quartzite at some places. The eastern part of the belt forms a plan country with isolated hillocks and rises as continuous hill range towards west presenting a rugged topography with lush green vegetation. The area is drained by two prominent rivers originating from Orissa, namely Nagavali and Vamsnadhara passing almost parallel to one another at a distance of 8 Km part through the district and joins the Bay of Bengal.



The Srikakulam - Vizianagaram- Vishakapatnam area exposes mainly Khondalite - Charnokite suite of rocks forming a part of the EGGB which include Charnokite, Khondalite - Charnokite to pyroxene granulite, migmatite, Leptynites and intrusive porphyroblastic charnokite and granite. Out these migmatite charnokite and leptynite are extensively quarried out as dimensional stone granite and traded as 'Srikakulam Blue' due to the presence of bluish opalescent quartz and bluish grey feldspar. Actually these are migmatite and migmatite- charnokites. The leptynites are called as 'Kashmir White'. The wavy structure forms due to migmatitisation of Charnokites. The general geological succession of the area is as follows.

Geological Era	Geological Units
Phenerozoic	Tertiary Sedimentary Rocks, Quaternary deposits
Proterozoic	Granites and Epidote Gneiss
Late Archaean to Proterozoic	Unclassified Granites and Migmatites
Archean	Peninsular Gneiss with older granites and migmatites. Migmatite complex. Charnokite group. Khondalite group

3.3 Local Geology :

The local geology of the area is as follows :

Soil cover	:	Recent
Quartz feldspathic rock Khondalites (granite) Sillimanite gneiss	:	Archacons
Basement Rock	:	Not Encountered.



The subject area is having height of 75 m towards south from northern boundary. The average height is measured to be 30 m from contact of lease boundary. The granite is bluish gray in colour, medium to coarse grained, hard, compact, massive and crudely foliated. The rock occurs on small hillock with large bouldery outcrops concealed and embedded in soil. It contains concealed quartz-feldspathic rock with subordinate amount of garnet, hyperstherne, biotite and magnetite. The feldspar shows kaiolinisation effect. The magnetite is oxidized at places. The

garnet and Hypersthene show pyroblastic growth. The rock shows penetrative cracks and hairline fractures. The rock is considered to be archaean age falling under Eastern Ghat hill range

The lithological units of the area is Mesocratic quartz feldspathic gneiss which are bluish grey in colour. These are consisting of blue quartz and feldspar constituents varying in proportions. The garnet and pyroxenes are in little quantity. Biotite mica under aphenitic Ferro magnesium are also observed as accessories. The granite in this area is hard and compact with medium-course grain in texture. The alternative arrangement of felsic & mafic minerals of the rock mass gives decorative pattern with bluish gray back-ground. The trend of mineral is varying in alignment with NNW- SSE, N-S and NNE- SSW with moderate dips, which forms wavy banding. This kind of design increases the cost of blocks in blue granite. The rock is having vertical and horizontal joints are there. The applied area is slightly weathered and having lot of boulders on surface. The boulders are embedded in thin layer of lateritic soil. Due to presence of soil in between boulders shrubs and bushes are grown all around. The granite has vertical and oblique joints which are spaced allowing production of large stones.

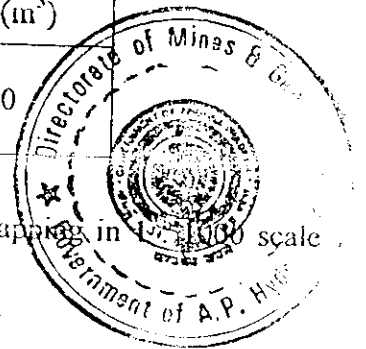
3.4 *Brief description of Lithology* : (not uniform)

- Soil Cover : 0 - 0.2 m on surface (along with joints the soil cover is there, which ranges from 0.2 to 2 m)
- Boulders Zone : 0 - 10 m (thickness varying from 8 to 10 m at different places)
On the surface start from bottom of the hill to top of the hill.
- Sheet rock. : 10 - 30 m to 35 m (average height) from top of the hillock (geologically confirmed).

3.5 Details of Prospecting: (i) Already carried out: The applicant has done prospecting work such as cutting of boulders at surface at elevated area. In PL period they have produced 40 m³ of dimensional granite blocks by cutting number of boulders in an area of 120 m² at southern side elevated area. The size of blocks varies from 2.5 x 2 x 1.5 to 1.5 x 1 x 1 m.

Location	Size of the Pit Trench			
	Length(m)	Width (m)	Depth (m)	Volume (m ³)
Southern side heights of the area	40	3	2.5	300

The applicant has conducted Theodolite survey, geological mapping in 1:1000 scale with the help of Surveyor in presence of RQP.



(i) Proposed to be carried out : In this area granite is exposed to total height. Therefore the applicant is not proposed any exploration work.

3.6 Geological Reserves And Their Categorisation:

In this area the granite is exposed to surface from 75 RL north to 145 RL south with boulders of varying sizes from lease boundary. As witnessed in the area 10 m thickness of rocks at surface along the contour level is containing different size boulders and sheet rock. Therefore the reserves exposed to surface is arrived as proved reserves. Most of the boulders are useful and anticipated to be yielding maximum recovery of dimensional granite. Below that level 5 m thickness is considered for arriving probable reserves. Further below that level another 5 m is taken for arriving possible reserves. The granite in this area is having big joints and voids filled with soil hence during calculation 10 % voids is considered. In this area 15 % recovery is experienced, therefore for arriving recoverable reserves 15 % is taken into consideration. The details of Geological Reserves is given in Annexure No. 1, the brief description of reserves is as following:

Details of Reserves and their categorization:

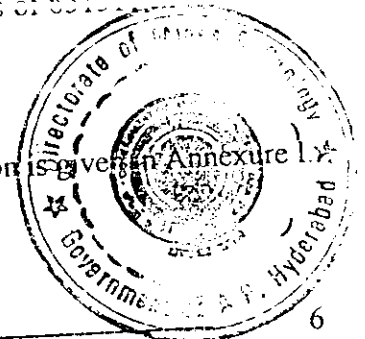
Zone	Vol. (m ³)	(-) 10 % Voids (m ³)	Net vol.	% of Rev.	Prime Volume (m ³)	Waste (m ³)
Proved Reserve	361950	36195	325755	15	48863	276892
Probable Reserves	180975	18097	162878	„	24432	138446
Possible Reserves	180975	18097	162878	„	24432	138446
Total			651511	„	97727	553784

3.8 Mineable reserves and the life of the mine:

The granite in this area is having elevation, therefore during production depletion of height will occur. In this mine the granite boulders will be cut at surface. Hence no reserves are considered as locked in mines safety slope and total geological reserves of 651511 m³ are taken as mineable reserves.

Prime Mineable Granite : $651511 \times 15\% \text{ recovery} = 97727 \text{ m}^3$

Waste Expected : $651511 - 97727 = 553784 \text{ m}^3$. The details of calculation is given in Annexure 1.



Life of the mine : The applicant is proposed to produce 1662 m³ of prime dimensional granite per year. There fore the life of the mine is arrived as below:

$$\frac{\text{Prime Mineable reserves}}{\text{Annual prime Granite production}} = \frac{97727 \text{ m}^3}{1662 \text{ m}^3} = 58.8 \text{ yrs, Say 59 Years.}$$

4.0 MINING:

in this area partially mechanized open cast mining is adopted.

4.1 *Opening up of the quarry (stages of quarry development)* :

The granite in this area is exposed to surface. The surface of the area is full of boulders, therefore initially the production will be won by cutting boulders to required size blocks.

(i) Removal/Excavation of O/B and other quarry wastes if any and its disposal :

In this area the boulders of different size are having good quality, therefore they will be cut to produce required size blocks under production programme. The granite in this area is exposed to surface, therefore development work is not expected. However the development work such as removal of soil existing in between boulders, small stones and weathered granite on surface will be done simultaneously along with production. Such kind of work is negligible in this area. During production the stony waste will be produced by chipping and cutting of granite. The wastes produced during production is anticipated to be 9419 m³ per year. In first 5 years total quantity of 47095 m³ of waste will be generated. Such kind of waste will be disposed off at low levels of the hillock. The details of waste removed during development and production in this mine is given in Annexure II.

ii) Separation of Primary blocks from mother rock : The surface of the area is covered with varying size boulders and soil in joints and in between boulders. In this area the granite production is incorporated only cutting of boulders to required size depending on quality. Small boulders of 0.66 x 0.66 x 0.66 m size and soil cover are easily removed from insitu with the help of poclain. Where as massive boulders the dimensional blocks will be cut by employing Line drilling with 6" gap and blasting by using mild explosives. After blasting, the primary blocks will be loosened and separated from mother rock with the help of poclain. The same blocks will be dressed as required by the market (3.2 x 2 x 2 m, 3 x 2 x 1.8 m, 2.6 x 2 x 1.5 m, 2

x 1.5 x 1 m & 0.66 x 0.66 x 0.66 m), then it will be transported to consumer point. The blocks will be used for manufacture of monuments at their factory situated at Khammam.

iii). Subdivision of large (primary) block in to secondary blocks: In this area the granite production is incorporated only cutting of boulders to required size depending on quality during primary cutting itself, therefore the secondary cutting will not arise in this type of granite. The blocks will be used for manufacture of monuments at their factory situated at Khammam.

iv) Production of commercial blocks: The blocks finally dressed by chipping the corners and uneven surfaces to get the commercial blocks with right angle corners for good look and correct measurement. In this area maximum possible dimensional block are ranging to 3.2 m x 2 m x 2 m size. Regular sizes dimensional stones that can be retrieved from this quarry ranges from 180 c m to 260 c m length, 120 to 200 c m width and 100 c m to 180 c m height.

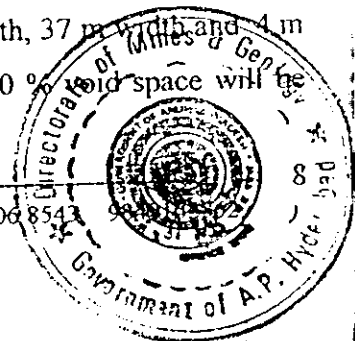
v) Production for first five years period :

In first 5 years period it is proposed to continue the mining to produce granite at 140 to 136 RL southern part of the area where the feasibility of mining is good. In first year the production will be resumed by cutting boulders in first bench of 66 m length, 35 m width and 3 m average depth to produce 6930 m³ volume. In that volume 10 % voids i.e. 693 m³ will be removed, then the net quantity of 6237 m³ of granite will be produced. Anticipating 15 % recovery the recoverable granite of 936 m³ will be produced. During this process 5301 m³ of stony waste will be generated. At the end of the year the bottom level will reach 135 RL.

In second year the mining will be done at same place but with little extension of length towards east. The bench of 74 m length 36 m width and 5 m height will be cut to excavate 13320 m³ of volume. Deducting 10 % void space net quantity of 11988 m³ will be produced. Anticipating 15 % recovery the prime granite of 1798 m³ will be produced. At the end of the year 10190 m³ of waste will be produced. The bottom RL will reach 130 m.

In 3rd year it is proposed to produce 1538 m³ of prime granite by cutting bench of 77 m length, 37 m width and 4 m height. The length of the bench will move upto 126 m bench level. At the end of the year 8717 m³ of waste will be generated. In this year the bottom RL is expected to reach 126 m RL.

In 4th year it is proposed to work by extending the bench towards western side of the pit upto 122 RL to produce 1978 m³ of prime granite by utilising 99 m length, 37 m width and 4 m height. The volume of 13187 m³ will be excavated, in that volume 10 % void space will be



deducted to win granite of 13187 m³. In this area the waste granite of 11209 m³ will be generated during production of prime granite. The bottom level will reach 122 m RL.

In 5th year the production will be done at 122 to 188 RL. In this year it is proposed to produce 2061 m³ of prime granite, by cutting 4 m bench in an area of 106 m length and 36 m width. At the end of the year 10677 m³ of waste will be generated, the bottom RL of 188 m at northern side. The details of production of granite, waste and weathered granite removal in first 5 years is given in Annexure II.

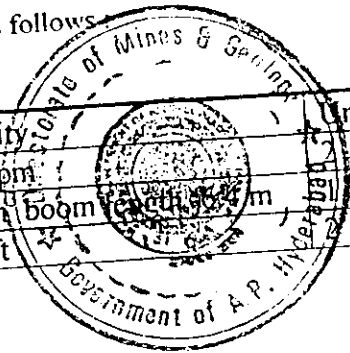
vi-(a) Reclamation Programme :

The applied area is a part of big hillock, therefore except degradation of height to negligible extent, the mining in this area don not have much impact. Hence no reclamation programme is planed at this place in first lease period of 20 years. However plantation will be made at ground level surface at northern side and on dumps where soil is there.

Vi-(b) Type, capacity and number of equipment for the type of mechanization proposed:

The details of machineries being utilised at mines is as follows

Sl. No.	Type of machinery	Capacity	Unit
01	Compressors	600 cpm	
02	Poclaim	2.75 m boom reach	504 m
03	Tippers	200 sft	



4.2 Drilling and Blasting :

The shallow hole blasting will be conducted at the surface to remove the waste and overburden without disturbing the economical blocks. The drill holes will be done in parallel line with 6 inches regular gap preferably at joint planes, and shot hole will be filled with gunpowder and blasted with the help of blue-sump safety fuse. The disintegrated granite pieces will be removed with the help of poclaim and removed from insitu to dumping yard by tippers. Then the sheet rock or big boulders of granite will be produced.

4.3 *Handling of blocks within the Quarry. Type and number of equipment deployed to handle the primary and secondary blocks* : The primary blocks will be displaced with the help of poclain with 6.4 m boom length, from insitu mother rock. After separation by line drilling and mild explosive blasting. The secondary blocks produced from primary blocks will be shifted from quarry with the help of poclain and dumper/ trucks.

5.0. STORAGE AND HANDLING OF THE EXPLOSIVES:

As given in above para the utility of the explosive at this mine is very less. The lessee will take explosives license for portable M & S Type Magazines and it will be stationed at dump proposed at northern side out side the area in their own land. The proposed capacity of the magazine is as follows:

Class 2&3, Division I = 100 Kgs.
6 " I = 1500 mtrs.
6 " I = 1000 Nos.

6.0 WASTE MANAGEMENT PLAN TO BE PREPARED IDENTIFYING THE SOURCES OF WASTE (SOLID, LIQUID) GENERATION AND THEIR CONTROL:

6.1 *Solid Wastes:* As given in previous para the generation of solid waste such as highly weathered granite etc., is anticipated. The quantity of such waste is anticipated to be about 47095 m³ in first 5 years period.

Estimated waste quantities that will be generated over the entire period:

The life of the mine is arrived to be 59 years. In this period the quantity of waste is anticipated to be about 553784 (mineable reserves of 651511 x 85 % waste) m³ is anticipated to be stony waste generates during production.

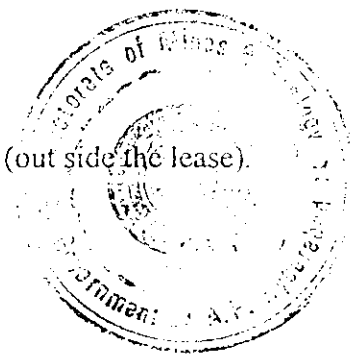
6.2 *Measures to be adopted for Solid Waste:*

The waste produced will be stacked at northern side of the area (out side the lease).

6.3 *Liquid Wastes:* In this area no Liquid waste is anticipated.

7.0 DRESSING:

In this area the dimensional blocks of granite will be done at pit – head by chipping the sides etc., However in rope cutting the dressing problem will not arise in most of the time.



Sit

vii) Quality of air, ambient noise level and water : The quality of water is good. Naturally the air is pollution - free, but due to transportation pollution of air occurs. The noise is expected due to drilling and compressor operation, it is recorded to be tolerable (80-100 db).

viii) Does area (partly or fully) fall under notified area under water (prevention and control of pollution) Act. 1974.:

The area is not falling under notified area under water Act. 1974.

11.2. *Environmental impact assessment statement :*

i) Land degradation : In this area the anticipated extent of quarrying is limited to 3.26 Hectare only. Therefore the impact of mining activity on environment of the local area is negligible except land degradation from high elevation to low elevation.

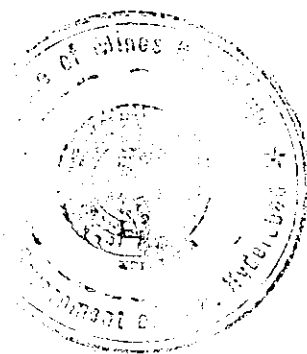
ii) Water regime: The applied area is not having any water reservoir within 500 m radius. However in rainy season water falls on surface will flow down ward and flows to plane lands. The mining activity will not disturbed flow of water.

iii) Water quality : The water quality is good since the flow of aesthetic mineralised water is not expected in this area. There will be no change in quality of water. The norms are as follows.

Sl.No.	Charectoristics	Desirable Limit	Maximum Permissible Limit
1.	Colour	5	25
2.	Odor & Taste	Un Objectionable	Un Objectionable
3.	Turbidity	5 NTU	10 NTU
4.	pH value	6.5 to 8.5	No relaxation
5.	TDS	500 mg. Per Ltre.	2000 mg. Per Ltre.
6.	Total Hardness	300 mg. Per Ltre.	600 mg. Per Ltre.

iv) Ambient air quality : In the mine certain amount of air pollution is anticipated. The base level and permissible levels of pollution is given as below.

Base Levels		Allowable Levels	
SPM =	140 mg/m ³		360 mg/m ³
RSPM =	60 mg/m ³		120 mg/m ³
SO ₂ =	40 mg/m ³		80 mg/m ³
NO ₂ =	40 mg/m ³		80 mg/m ³
CO =	1.0 mg/m ³		5.0 mg/m ³



v) Noise levels: The noise produced due to machinery operation and vehicles will not be continuous throughout the day. Therefore the noise in this area will be less. However the permissible noise levels and working hours is given as below.

Duration Per Day (Hrs):	16	8	4	2	1	½	¼	1/8
Sound Level dBA :	8	85	90	95	100	105	110	115

vi) Vibration levels : There is going to be hardly any impact on surroundings, as there are no much blasting and no utility of more explosives in this mine. The vibration causes due to movement of poclain and vehicles is under control.

vii) Socio-Economic conditions: There shall have positive impact in the rural area as there will be organized employment with social security and financial benefits.

viii) Historical monuments etc., : The area is free of any historical monuments within the distance of 5 km.

11.3 Environmental Management :

i) Temporary Storage & Preservation of top soil: The soil mixed with small granite boulders is preserved in the form of dumps and part of it will be utilized for plantation.

ii) Year wise proposal for reclamation of land affected by mining activity during first five years: In this area except degradation of land no impact is expected on the area. The proposals for reclamation will be made after complete excavation of granite.

iii) Programme of Afforestation, year wise for the initial five years. Indicating number of plants with name of species to afforested under different areas in hectares: The plantation will be undertaken in soil cove existing in between gaps of boulders (joints) at lease borders and around the dumps to avoid run – off of material in the lease area in first five years period. The details of plantation is as follows.

Year	No. of plants (Seedlings)	No. of Rows	Location	Type of Plants
1 st Year	20	1	75 RL West	Eucalyptus
2 nd Year	20	1	North –western side	Eucalyptus
3 rd Year	20	1	North –western side	Gulmohar

4 th Year	20	1	Northern side	Eucalyptus
5 th Year	20	2	North-eastern side	Gulmohar

The plantation undertaken on dumps are temporary since the dumps may be removed from site as and when the area is required for mining. The plants will be grown in joint planes and fractures zones also.

iv) Stabilisation and vegetation of dumps along with waste dump management year wise for the first five years:

As explained in above para the plantation will be undertaken to avoid run off of waste. The dumps are stabilized and shaped trapezoid ally. The angle of repose is in such a manner that the run off is avoided. The trench will be dug around the dump to avoid run off

v) Measures to control erosion/sedimentation of water regime: The aerial erosion and erosion due to water flow by rain water will affect the surface but no water regime is observed.

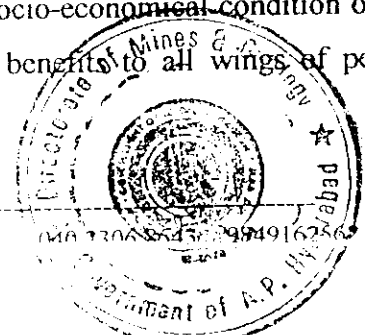
vi) Measures for dust suppression: Water sprinkling will be carried out on mine benches and haulage roads regularly. The dust arises at drilling hole will be suppressed by putting cloth at drilling hole. The laborers will be provided with Respirators etc., for using during drilling.

vii) Protective Measures to minimise ground vibrations and noise: To minimise ground vibrations it is proposed to use less quantity of explosives for blasting, reduce movement of heavy vehicles, maintain sufficient gradient of road, keeping good condition of machineries. To minimise noise it is proposed to keep compressor far from working spots and maintain machineries in good condition. However the ear-plugs will be provided to jack hammer operators.

viii) Treatment and disposal of water from the mine and beneficiation plant: In this area no water will be discharged from the mine.

ix) Measures for protection of historical monuments and for rehabilitation of human settlements likely to be disturbed due to mining activity. No historical monuments or human settlements are there in or around the mine within 4 Km radius.

x) Socio-economic benefits arising out of mining: The local people are engaged in mining. Due to establishment of these mines in this area the socio-economical condition of the area is developed enormously. There is a direct or indirect benefits to all wings of people including non mining professionals.



This Mining Plan Is Approved subject to the Conditions/Stipulations Indicated in the Mining Plan Approval Letter No. 20342/MF-1/2004, dated 29.11.2004

12.0 ANY OTHER RELEVANT INFORMATION:

The lessee company is following the minor mineral concession rules and metalliferous mines regulations 1961 and mines rules etc., The mining operations in this area is providing socio economical support to the local people. Therefore the existence of mining operations and quarry lease for commercial, dimensional block granite will be additional support for self employment as well as employment to the local people. The colour granite of Srikakulam district is a unique product available only at this part of the world. The granite has got its own world popularity and enormous commercial demand. This granite is reaching far away places like China, Japan, Malaysia, Australia, Italy, Germany, America and Russian countries. Therefore this industry should be supported as the national interest.

The mining plan is prepared by

[Signature]
APPLICANT
(Authorised Signatory)

Place: Hyderabad.
Date: 10/5/2004.

[Signature]
S.N. SURESHA, RQP
(Reg.No.RQP/HYD/106/94/A)
(RQP/DMG/HYD/001/2001)
HYDERABAD

[Signature]
M. Sc.,
Recognised Geologist
RQP/DMG/HYD/001/2001

APPROVED

[Signature]
Dr. P. DAYASANKAR
DIRECTOR
DEPT. OF MINES & GEOLOGY
GOVT. OF A.P., HYDERABAD.



GEOLOGICAL RESERVES -
(4.00 H. - M/s Madhucon Granites Ltd.)

Annexure : I

CS	Cat	CSA x (m ²)	CSI (m)	Vol. (m ³)
(1)	(2)	(3)	(4)	(5)
AA'	PVD	1200	50	60000
	PRB	600	..	30000
	POS	600	..	30000
BB'	PVD	1650	60	99000
	PRB	825	..	49500
	POS	825	..	49500
CC'	PVD	1650	..	99000
	PRB	825	..	49500
	POS	825	..	49500
DD'	PVD	1650	63	103950
	PRB	825	..	51975
	POS	825	..	51975

Zone	Vol. (m ³)	(-) 10 % Voids (m ³)	Net vol.	% of Rev.	Prime Volume (m ³)	Waste (m ³)
Proved Reserve	361950	36195	325755	15	48863	276892
Probable Reserves	180975	18097	162878	..	24432	138446
Possible Reserves	180975	18097	162878	..	24432	138446
Total			651511	..	97727	553784

* Voids and fracture area volume is deducted from the total (boulders) reserves.

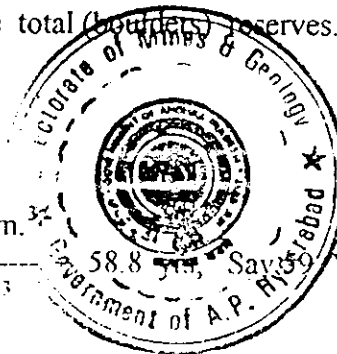
Total applied area : 40,000 m²;

Total granite bearing area : 40,000 m²

Life of the mine is arrived as below:

Prime Mineable reserves 97727 m³

Annual production of Prime Granite 1662 m³



S.N.SURESHA RQP

(Signature)

Date: 11/7/2017

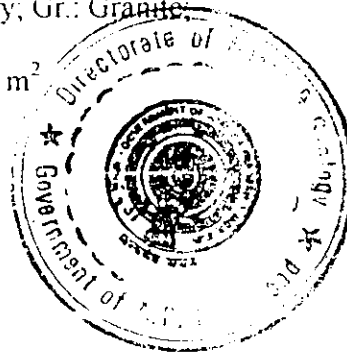
PRODUCTION AND DEVELOPMENT SCHEME
FOR FIRST 5 YEARS PERIOD
(40 H. - M/s Madhucon Granites Ltd.,)

PRODUCTION:

(Please refer plate No. IV)

Yr.	Bench	SIZE OF THE PIT:			Volume (m ³)	% of Rec.	Prime Gr. Produced (m ³)	Stony Waste (m ³)
		Length (m)	Width (m)	Depth (m)				
I	2	3			4	5	6	7
I	I	66	35	3	6930			
(-)	10 %	Voids			693			
Net	Prod.				6237	15	936	5301
II	I	74	36	5	13220			
(-)	10 %	Voids			1332			
Net	Prod.				11988	15	1798	10190
III	I	77	37	4	11396			
(-)	10 %	Voids			1140			
Net	Prod.				10256	15	1538	8717
IV	I	99	37	4	14652			
(-)	10 %	Voids			1465			
Net	Prod.				13187	15	1978	11209
V	I	106	36	4	15264			
(-)	10 %	Voids			1526			
Net	Prod.				13738	15	2061	11677
5	Years	Total	Net	Prd.	55406	15	8311	47095
I	Year	Total	11081	15	1662	9419

Yr/B : Year / Bench; Rec. : Recovery; Gr.: Granite

Area proposed for production : 3816 m²

S.N.SURESHA
RQP

S. N. Suresha
M.Sc.
Recognised Geologist
MPT/DMG/HYD/03

M/s Madhukon Granite Ltd.

Annexure III

Granite Processing Plant :

Cutting Machineries		Polishing Machineries	
1.	Block Saw 3 Nos.	1.	G.B. 530 1 Nos.
2.	Edge Cuttings 2 Nos.	2.	G.B. 615 1 Nos.
3.	Notch- Cuttings 1 Nos.	3.	Jenlin 2 Nos.
4.	Millings 1 Nos.	4.	BGM Machines 1 Nos.
5.	Hand Cuttings 1 Nos.	5.	Devick 1 Nos.
6.	Dia- Deck 1 Nos.	6.	Hand Polishing 4 sets.
		7.	Chambering 1 Nos.

Workers :

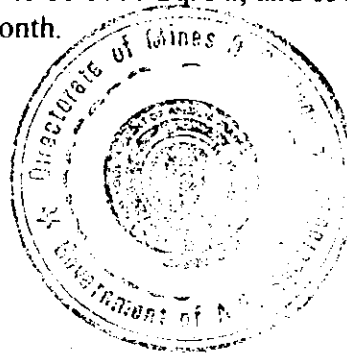
For Cutting Machines : 30 Nos.

For Polishing Machines : 20 Nos.

For Miscellaneous : 15 Nos.

Annual turn-over : Rs. 2.5 Crore.

The approximate annual production is said to be 1000 Sq. Ft., and 150 Tons (6 containers) of granite monuments and tomb stones in a month.



S.N. Suresha RQP

S.N.SURESHA RQP

S. N. Suresha
Recognised Geologist
RQP/DMG/HYD/00112

S.N. Suresha
RESHA
QP

S.N. Suresha
M. Sc.
I Geol.
YD/G

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

Notice No. 44 / R1-3/ 2004,

Dt: 28-6-2004

Sub: Mines & Quarries – Quarry lease application for Colour Granite – Extent 4.000 Hects. – S.No. 1 of Addukonda Village, Tekkali Mandal, Srikakulam District – infavour of M/s.Sri. Madhucon Granites Ltd. for a period of 20 years – Approved Mining Plan Called for – Reg.

**Ref: 1. From M/s Madhucon Granites Ltd. , Quarry Lease application dt: 2-12-2003.
2. From the ADM&G, Tekkali Letter NO. 2018/Q/2003, dt: 30-1-2004.**

M/s Madhucon Granites Ltd. in the reference 1st cited have applied for grant of Quarry lease for Balck Granite over an extent of 4.000 hecets. in S.No. 1 of Addukonda Village, Tekkali Mandal, Srikakulam District.

The Asst. Director of Mines & Geology, Srikakulam in the reference 2nd cited, has stated that the applied area is held under Prospecting Licence by the applicant. Further the Asst. Director of Mines & Geology, Tekkali has recommended for grant of Quarry Lease for colour Granite over an extent of 4.000 hecets. in Sy.No. 1 of Addukonda Village, Tekkali Mandal, in Srikakulam District in favour of M/s Madhucon Granites Ltd. for a period of 20 years.

The Director of Mines & Geology, Hyderabad after careful examinations of the above proposals of the Asst. Director of Mines & Geology, Tekkali has proposed to grant the Quarry Lease over an extent of 4.000 hecets. in Sy.No. 1 of Addukonda Village, Tekkali Mandal, Srikakulam District in favour of M/s Madhucon Granties Ltd. for a period of 20 years subject to the submission of Approved Mining Plan within Six months from the date of receipt of this Notice.

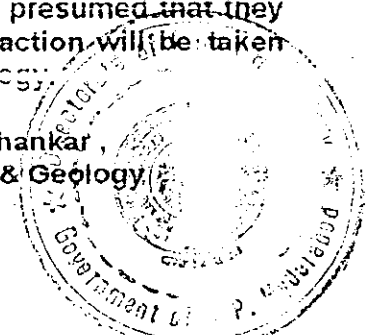
Therefore, M/s Madhucon Granites are requested to submit the Approved Mining Plan for the above area referred at para 2 for a period of 20 years within a period of six months from the date of receipt of this notice for consideration of their Quarry lease application.

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 & Geology.

// Attested //

for Director of Mines & Geology


Sd/- Dr.P.Daya Shankar,
Director of Mines & Geology



To

M/s Madhucon Granites Ltd.
1-7-70, Jublipura,
Khammam.

Copy to the ADM&G, Tekkali.
Copy to RQP/A.M.P. section


S. N. Suresh
M.Sc.
Recognised Geologist
RQP/DMG/HYD/001/2001

M/S Madhucon Granite LTD, ADDUKONDA-1.

Fig.1: EXPOSURE OF BOULDERS AT SLOPE.

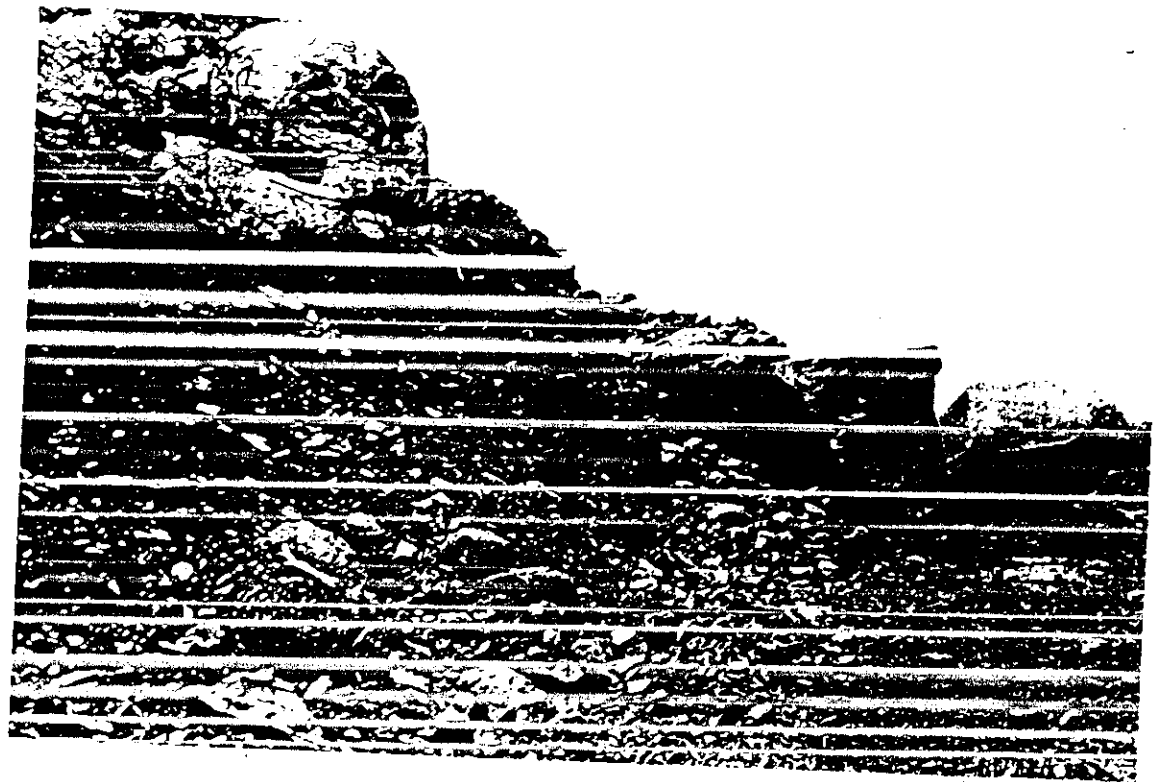
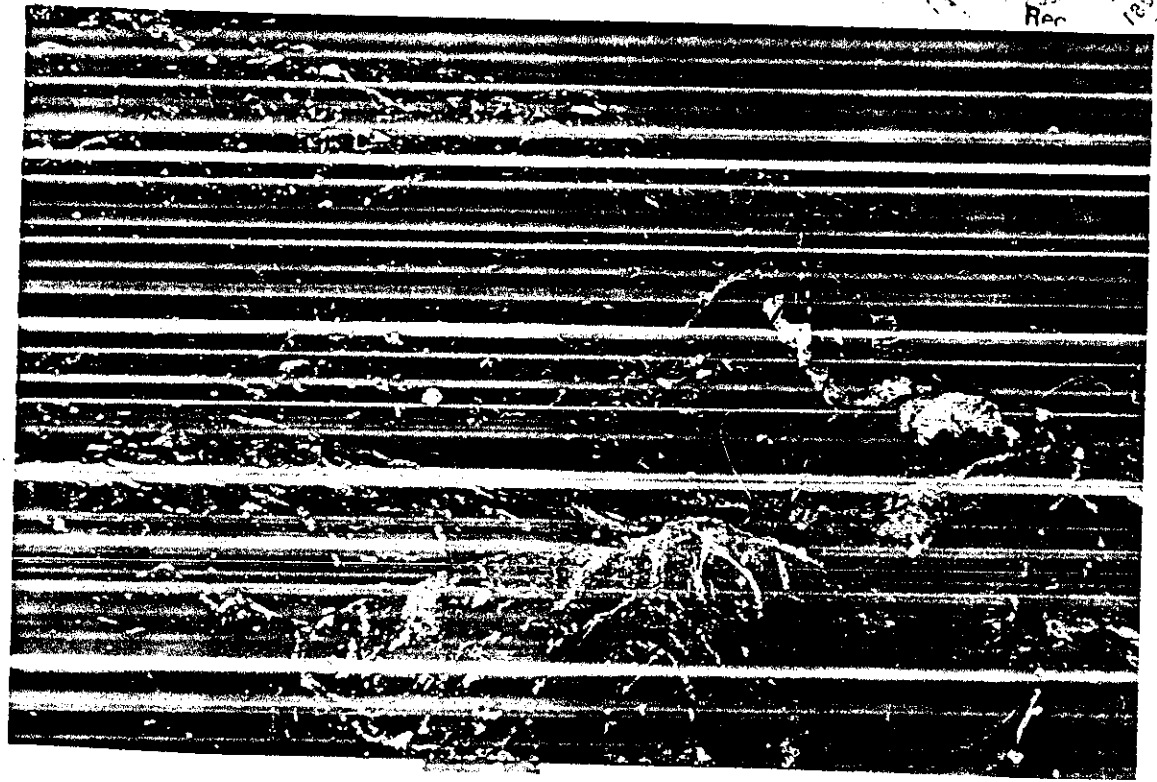


Fig.2 : BOULDERS AT TOP-Boulder cutting



Director
M. Sc.
Geologist
1200

Director
M. Sc.
Geologist
1200