Pre-Feasibility Report of Black Granite (Dolerite) Quarry

(Under the Guidelines of Ministry of Environment and Forest in terms of the provisions of EIA notification 20051, 52 & 127 and specifically in circular No J-11013/41/20051, 52 & 127 -IA.II (I) dated 30th December, 2010)

Location of the Quarry

S.F.No. 91/2, 95/1A (Part), 95/1B, 95/2A, 95/2B, 95/2C and 97/1B (Part),
Panchapalli Village,
Palacode Taluk, Dharmapuri District,
Extent: 3.70.0Ha (less than 5Ha)
Category: B2 Project

Applicant

Tvl. JR Granites Private Limited,
Door No.106, JR Nivas,
Venkateswara Nagar Layout,
Denkanikottai Road, Hosur Taluk,
Krishnagiri District,
Tamil Nadu – 635 109
1. EXECUTIVE SUMMARY

This present Mining Plan is prepared in respect of Black Granite (Dolerite) quarry belongs to Tvl. JR Granites Private Limited. The Precise area Communication has been granted as per Govt. letter No. 670/MME.2/2017-1 Dated: 08.03.2017 for an over an Extent of 3.70.0Ha located in S.F.Nos. 91/2, 95/1A (Part), 95/1B, 95/2A, 95/2B, 95/2C and 97/1B (Part) of Panchapalli Village, Palacode Taluk and Dharmapuri District for during this period subjected to submission of Environmental clearance from DEIAA, Dharmapuri District, consent for Establishment and Consent for operation from TNPCB.

SALIENT FEATURES OF THE PROJECT

<table>
<thead>
<tr>
<th>S.NO</th>
<th>PARTICULAR</th>
<th>DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Name of the Proponent</td>
<td>Tvl. JR Granites Private Limited</td>
</tr>
<tr>
<td>2.</td>
<td>Type of Project</td>
<td>Black Granite (Dolerite)</td>
</tr>
<tr>
<td>3.</td>
<td>Location</td>
<td>Survey No. 91/2, 95/1A (Part), 95/1B, 95/2A, 95/2B, 95/2C, 97/1B (Part)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Panchapalli Village,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Palacode Taluk,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dharmapuri District,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tamilnadu State.</td>
</tr>
<tr>
<td>4.</td>
<td>Mining lease area</td>
<td>3.70.0Ha</td>
</tr>
<tr>
<td>5.</td>
<td>Type of land</td>
<td>It is a Patta land - Non forest</td>
</tr>
<tr>
<td></td>
<td>Patta/forest/PWD</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Precise area communication</td>
<td>The Precise area Communication has been granted as per Govt.</td>
</tr>
<tr>
<td></td>
<td>approved by the District collector</td>
<td>letter No. 670/MME.2/2017-1 Dated: 08.03.2017.</td>
</tr>
<tr>
<td>7.</td>
<td>Mining plan approved</td>
<td>The Mining Plan was Approved by the Commissioner</td>
</tr>
<tr>
<td></td>
<td>by the Deputy/Assistant Director of the District</td>
<td>of Geology and Mining, Chennai vide Letter. No:</td>
</tr>
<tr>
<td>8.</td>
<td>Life of period</td>
<td>Mining license applied for period of <strong>twenty years</strong> only.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mining plan period for the first <strong>five years</strong>.</td>
</tr>
</tbody>
</table>
9. Existing capacity/Area etc.

The proposed quantity of reserves (40%) is about 20316 m³ (or) 3589 Lorry Loads of Black Granite for during this period of five years.

The quarry operation is proposed up to depth for 36 mts (3m topsoil + 3m Weathered Rock + 30m Black Granite) at present scenario considering for the entire lease period. The applicant proposed up to a depth of 16 m during this period.

<table>
<thead>
<tr>
<th>Description</th>
<th>ROM (m³)</th>
<th>Reserves 40% (m³)</th>
<th>Granite waste 60% (m³)</th>
<th>Weathered Rock (m³)</th>
<th>Top soil in m³</th>
<th>Side Burden in m³</th>
<th>Total Waste in m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geological resources</td>
<td>395700</td>
<td>158280</td>
<td>237420</td>
<td>110325</td>
<td>110325</td>
<td>707550</td>
<td>1055295</td>
</tr>
<tr>
<td>Mineable Reserves</td>
<td>197615</td>
<td>79046</td>
<td>118569</td>
<td>40881</td>
<td>46800</td>
<td>41835</td>
<td>201285</td>
</tr>
<tr>
<td>Five years of mining plan</td>
<td>50790</td>
<td>20316</td>
<td>30474</td>
<td>21696</td>
<td>26538</td>
<td>2675</td>
<td>54845</td>
</tr>
</tbody>
</table>

10. Top soil & overburden (quantity in m³)

The thickness of topsoil is about 3m. There will be generation of topsoil is about 26538 m³ for the present period.

11. Method of Mining

The quarrying operation will be carried out by Open cast semi mechanized mining method with 5.0m vertical bench with a bench width of 5.0m is being proposed.

12. Ultimate depth of Mining

The quarry operation is proposed up to depth for 36 mts (3m topsoil + 3m Weathered Rock + 30m Black Granite) at present scenario considering for the entire lease period. The applicant proposed up to a depth of 16 m during this period.

13. Latitude

12°28’29.29’’N to 12°28’37.25’’N

14. Longitude

77°57’19.94’’E to 77°57’27.59’’E

15. Topo sheet No.

57 H/15

16. Topography of MSL area

635 m from above MSL

17. Land use classification

It is New proposal Black Granite quarry Project in Panchapalli Village.

18. Ground water level

The Ground water occurrence in this area is 59 m depth from general ground profile
19. Climatic condition  
   - Rainfall: 760-910mm  
   - Temperature: 42ºC - 25ºC

20. Land use pattern for a radius of 1km

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trees</td>
<td>15%</td>
</tr>
<tr>
<td>Road</td>
<td>10%</td>
</tr>
<tr>
<td>Agricultural land</td>
<td>45%</td>
</tr>
<tr>
<td>Dump / Quarry Pit</td>
<td>15%</td>
</tr>
<tr>
<td>Habitation</td>
<td>10%</td>
</tr>
<tr>
<td>Barren Land</td>
<td>05%</td>
</tr>
</tbody>
</table>

21. Nearest habitation  
   - Palayam - 1km - S

22. Nearest Town  
   - Rayakottai - 10km - NE

23. Nearest Railway station  
   - Rayakottai Railway station - 10km - NE

24. Nearest Airport  
   - Bangalore Airport - 75km - NW

25. Nearest National Highways & State Highways  
   - NH7 - Bangalore - Kanniyakumari - 21km - NE  
   - SH17 - Hosur - Nallampalli - 8km - E

26. Nearest Hospital  
   - Rayakottai - 10km - NE

27. Aerial distance to the nearest Eco sensitive areas, CRZ, forest, wild life sanctuary, Interstate boundary, critically polluted area if the quarry site is within 500m of these areas.  
   - More than 500m from Eco sensitive areas, CRZ, forest, wild life sanctuary, Interstate boundary, critically polluted area.

28. Details of other quarries for a radius of 500m around the quarry site  
   - There are few quarry located within the radius of 500m

29. Man power  
   - About 40 employees

30. Water requirement & source  
   - Total water requirement for 1.0KLD from water vendors & existing bore well.
<table>
<thead>
<tr>
<th>31.</th>
<th>Cost of the project</th>
<th>The Project cost:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A. Fixed Asset cost = Rs. 17,00,000/-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Operational cost = Rs. 2,11,50,000/-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. EMP cost = Rs. 2,65,000/-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total cost = Rs. 2,31,15,000/-</td>
</tr>
</tbody>
</table>


- Cauvery wild life sanctuary is situated 1.0km from the North western side of the area.
- There is an odai located about 80m on the eastern side of the applied area in S.F.Nos.89, 90 and 96/2.
- Sanatkumaru nadi or China River is passing 1.5km from the South western side of the area.
- Panchapalli Dam is situated 2.5km from the North western side.
- The lease area does not falls in Western Ghats region.
- There is no HACA region within the radius of 10km.
- There is no interstate boundary within the radius of 10km.
- There is no CRZ within the radius of 10km.
- There are no Bird sanctuaries, wild life sanctuaries and National park as Act 1972, within the radius of 10kms.
The following information provided by the applicant

We have applied for Environment Clearance to DEIAA, Dharmapuri District for quarry lease for quarrying of Black Granite (Dolerite) in S.F.No: 91/2, 95/1A (Part), 95/1B, 95/2A, 95/2B, 95/2C and 97/1B (Part) for over an extent of 3.70.0Ha in Panchapalli Village, Palacode Taluk and Dharmapuri District.

- We swear to state and confirm that within 10km area of the quarry site, we have applied for environmental clearance; none of the following is situated.
- Protected areas notified under the wild life (Protection) Act, 1972
- Critically polluted areas as notified by the central pollution control board constituted
- Eco-Sensitive areas as notified
- Interstate boundaries and international boundaries within 10km radius from the boundary of the proposed site.
- There are few quarry located within the radius of 500m from periphery of our quarry site, detail is shown in affidavit.
- There will not be any hindrance or disturbance to the people living no enroute / nearby our quarry site while transporting the mineral our material and due to quarrying activities.
- There is few habitations located at 750m away from the South western side of the area.
- We swear that Afforestation will be carried out during the course of quarrying operation and maintained.
- The required insurance will be taken in the name of the labourers working in our quarry site.
- Approach road belongs to government only and no other private patta roads encountered.
- we will not engage any child labour in our quarry site and we aware that engaging child labour is punishable under the law.
- All types of safety / protective equipment will be provided to all the labourers working in my quarry.
- No permanent structures, temples etc., are located within 500m radius from the periphery of our quarry.
2.0 INTRODUCTION OF THE PROJECT OR BACKGROUND INFORMATION

(i) Identification of project and project proponent. In case of mining project, a copy of mining lease/letter of intent should be given

Identification of Project

<table>
<thead>
<tr>
<th>Name of the Project</th>
<th>Panchapalli Black Granite (Dolerite) quarry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lease area</td>
<td>3.70.0Ha (Patta land) - Non forest</td>
</tr>
<tr>
<td></td>
<td>Survey No. 91/2, 95/1A (Part), 95/1B, 95/2A,</td>
</tr>
<tr>
<td></td>
<td>95/2B, 95/2C and 97/1B (Part)</td>
</tr>
<tr>
<td>Location</td>
<td>Panchapalli Village, Palacode Taluk,</td>
</tr>
<tr>
<td></td>
<td>Dharmapuri District and Tamilnadu State.</td>
</tr>
<tr>
<td></td>
<td>Topo sheet No. 57 H/15</td>
</tr>
</tbody>
</table>

Project Proponent Name with Address

Tvl. JR Granites Private Limited,
Door No.106, JR Nivas,
Venkateswara Nagar Layout,
Denkanikottai Road,
Hosur Taluk,
Krishnagiri District,
Tamil Nadu – 635 109
Mobile No: 99943 06663
Email id: infogeoexploration@gmail.com

In case of mining project, a copy of mining lease/letter of intent should be given

I. The Precise area Communication has been granted as per Govt. letter No. 670/MME.2/2017-1 Dated: 08.03.2017.

(ii) Brief description of nature of the project

Mining:

The quarry lease area is almost flat terrain. The slope of the area is a gentle scope towards south side. The Black Granite (Dolerite) Exposures are well exposed along the linear strike Direction. The quarrying operation will be carried out by Open cast semi mechanized mining method with 5.0m vertical bench with a bench width of 5.0m is being proposed.

The quantity of Mineable reserves of Black Granite:

The total quantity of Mineable reserves of Black Granite (40%) block is about \( 79046 \text{m}^3 \) and the Total waste is \( 201285 \text{m}^3 \) (118569\text{m}^3 of Granite waste (60%) and 40881\text{m}^3 of WR and 41835\text{m}^3 of SB) up to depth of \text{36m}ts (3m topsoil + 3m Weathered Rock + 30m Black Granite) for the entire life of period.

The proposed quantity of Black Granite:

The proposed quantity of the Black Granite (40%) blocks to be quarried for during this period (as in the mining plan) would be about \( 20316 \text{m}^3 \) and anticipated for total waste is \( 54845 \text{m}^3 \) (30474\text{m}^3 of Granite waste (60%) and 21696\text{m}^3 of WR and 2675\text{m}^3 of SB) up to depth of \text{16m} during this period of five years.

(iii) Need for the project and its importance to the country and or region

At Present, both in domestic and international market, Black Granite having gang saw size fetches well price and is in good demand. The smaller domestic sales will also bring returns financially to state government and central government in the forms of taxes, Cesses, duties, etc.,

As the Black Granite quarry mining operations in the proposed mine will employ about 40 members directly and 10 members indirectly basis through allied opportunities in logistics, trading, repairing works etc., good employment potential will arise in this internal rural backward area, which will provide a great fillip for raising income levels and standards of living in the area.

Mineral Industries of the state of Tamilnadu provides employment opportunities for the people of the state as well as in the specific project area. The Mining and Quarrying is one among the major core sector industries which plays a vital process of country’s economic development and foreign exchange.
### (iv) Demand and supply gap

Black Granite (Dolerite) is one among the most used Granite Dimensional Blocks for building and construction in the form of Rough block, Slabs, Tiles, fancy items and precession plates besides catering monument industries. The requirement of Black Granite due to its stability and color which always requires a huge demand of every house, Industries, Factories, Colleges, Hospitals and all major infrastructure industries. This specific Black Granite area has already achieved a considerable place in the domestic and international markets of Granites for the past three decades.

### (v) Imports vs indigenous production

There is no import of Black Granite (Dolerite) at present in India. India especially the peninsular India (southern India) has good resource of Black Granite and has a great demand in the international supermarket of Granites. Indigenous Black Granite almost shares more than 30% requirement in the world.

### (vi) Export Possibility

The Black Granite (Dolerite) blocks approved for export market are shipped from Chennai Harbour to various countries and if required blocks may be shifted to Tuticorin Harbour which depend upon the exporters destination.

### (vii) Domestic/Export Markets

There are many Granite processing industries inside the district and all over Tamilnadu. There is a huge demand of Black Granite (Dolerite) for construction, infrastructure and Housing Industries as these Granite slabs are Eco friendly and has less maintenance besides giving an aesthetic appearance in the floor and walls.

India is a Global player in the supply of Black Granite to the international supermarket of Granite for the past three decades. At present there is a huge requirement of this Black Granite Blocks for the domestic construction industries depends upon the size, Clarity, Purity, rarity the commercial aspects are decided, the applicant proposed to ensure that the Granite is quarried in a scientific and systematic way to attain the maximum recovery of Granite blocks from the area applied for lease. There is a considerable demand of Black Granite in domestic as well as for export.
(viii) Employment Generation (Direct and Indirect) due to the project

It is proposed to deploy about 40 employees directly and indirectly about 10 people will be benefited from the nearby local villages. The above man power is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and also to comply with the stationary provisions of quarry safety regulation.

It is been ensured that the labors will not be deployed less than 18 years, No Child labors will engaged or entertained for any kind of quarrying operations. All the labors engaged for quarrying operations will be insured till the end of life of quarry.

3.0 PROJECT DESCRIPTION
(i) Type of project including interlinked and interdependent projects, if any

The Panchapalli Black Granite (Dolerite) quarry, it is an opencast semi mechanized quarry. There is no interlinked & interdependent project.

(ii) Location (map showing general location, specific location, and project boundary & project site layout) with coordinates

- The area is located in S.F.No. 91/2, 95/1A (Part), 95/1B, 95/2A, 95/2B, 95/2C and 97/1B (Part) at Panchapalli Village, Palacode Taluk and Dharmapuri District.
- The entire quarry lease area falls in the Patta land with lease area is almost flat terrain.
- The Altitude of the area is above 635m (Maximum) from MSL.
- The area is mentioned in GSI Topo sheet No. 57 H/15
- The Latitude between of 12°28’29.29”N to 12°28’37.25”N
- The Longitude between of 77°57’19.94”E to 77°57’27.59”E on WGS 1984 datum.

GOOGLE IMAGE SHOWING THE LEASE BOUNDARY AREA
Location:
Village : Panchapalli
Taluk : Palacode
District : Dharmapuri
Topo Sheet No: 57 H/15
Latitude : 12°28’29.29”N to 12°28’37.25”N
Longitude : 77°57’19.94”E to 77°57’27.59”E
DRAWING SHOW THE SURFACE PLAN WITH CO-ORDINATES
DRAWING SHOW THE ENVIRONMENTAL PLAN
(iii) Details of alternate sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted

There is no alternative sites are examined, the entire Black Granite will be transported from quarry head to customers destination which will be done by hired truck or by trailers. This Black Granite quarry project is site specific.

(iv) Size or magnitude of operation

The total area of the project is about 3.70.0 Ha. It is proposed quantity (40%) is 20316m³ of Black Granite for during this period. The quarry operation is proposed up to depth for 16m during this period of five years.

(v) Project description with process details (a schematic diagram/flow chart showing the project layout, components of the project etc. should be given)

Details regarding topography, Geology of the area, Method of mining, Machineries required and production details area given below

Physiography.

The area is an almost flat terrain. The gradient is gentle towards south and the altitude of the area is about 635m (maximum) above from MSL. The Black granite is mostly concealed under topsoil with small detached boulders are found in few places along the linear strike direction. The black granite exposures and detached boulders are observed with Spheroidal weathering and cubodial joints (which is the characteristic feature of the Dolerite). The Dolerite dyke is intruded between the batholithic formations of Granite gneiss. The area receives rainfall about 760-910 mm/per annum and the rainy season is mainly from Oct – Jan during North East monsoon. The water level is found to occur at a depth of 59m in summer and 55m in rainy season below from ground level.

Geology of the area.

The black granite mostly concealed under reddish gravelly soil with thickness of 3m and 3m weathered rock below from the topsoil, totally overburden having thickness of 6m and followed by fresh black granite. The Granite gneiss forms the country rock of the area with trending of North-South with a dip of 80°East and “Black Granite” (Dolerite) intruded between the batholithic formation of pre-existing country rock of Granite gneiss discordantly with trending of N85°E - S85°W with Vertical dipping with an average width of 80 meters (The width of the dyke is identified by Geophysical prospecting) which stretches about the entire area (Please refer Plate No-
The black granite (Dolerite dyke) rock is brownish black in color, inequigranular, fine to medium grained texture. It shows sub-ophitic texture. The color of the rock changes depending on the texture of the rock. The Dykes is fine grained at the contact of country rock. The Dolerite is composed of laths of plagioclase embedded in the plates of Augite (Ophitic texture), Apatite, magnetite and pyrite forms the secondary mineral.

Strike and dip joints are observed at the surface level which is likely to decrease in deep seated condition. The recovery of black granite may vary from 25% to 40% hence, taking in to consideration of the above geological factors, an average recovery of 40% upto 36m depth (3m Topsoil +3m weathered rock + 30m Black granite) has been computed as economically viable at present market scenario. This mining plan is discussed based on 40% recovery factor. If there is considerable increase or decrease in the recovery factor a modified mining plan will be prepared and will be submitted to relevant authorities for subsequent clearance and approval.

The Physical attitude of the Black Granite deposit in this area is given below:-

- Strike Direction = N85°E - S85°W
- Dip direction and amount = Vertical dip.

The northwestern part of Tamilnadu is characterized by the occurrences of a number of Dolerite dykes. The dolerite dykes in general trending is in NNE- SSW direction and rarely in NNW– SSE directions.

Order of superposition:-

<table>
<thead>
<tr>
<th>ROCK TYPE</th>
<th>GROUP</th>
<th>AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reddish Gravelly Soil</td>
<td></td>
<td>Pleistocene to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recent</td>
</tr>
<tr>
<td>Unconformity--------------</td>
<td>-----------</td>
<td>------------------</td>
</tr>
<tr>
<td>Carbonatite and alkaline dykes</td>
<td>Alkali complex</td>
<td>Late Archaean to</td>
</tr>
<tr>
<td>Syenite complex</td>
<td></td>
<td>Proterozoic</td>
</tr>
<tr>
<td>Ultrabasic complex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hornblende Biotite gneiss</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Granite Gneiss</td>
<td>Migmatite Complex</td>
<td></td>
</tr>
<tr>
<td>Charnockite,</td>
<td>Charnockite group</td>
<td>Late Archaean</td>
</tr>
</tbody>
</table>
Method of Mining.

The quarrying operation will be carried out by Open cast semi mechanized mining method with 5.0m vertical bench with a bench width of 5.0m is being proposed by deploying excavator and Eco friendly dimensional wires saw cutting for liberation and splitting up of blocks from parent sheet rocks.

Open Cast Working.

It is a open cast working where the ore body forms hard rock, the working faces and sides should be adequately benched and sloped; a bench height not exceeding 5m and a bench width not less than the bench height has to be maintained. The slope angle of such benches and sides should not exceed 60° from horizontal. However, observance of these statutory provisions in granite dimensional stone mining is seldom possible due to the field difficulties and technical reasons as below:

1. Recovery of the granite mineral is to be as undamaged rectangular dimensional blocks. In the attempt to form the benches and sides with the above statutory parameters haphazard blasting may be involved. In which case the commercial granite body may get spoiled in suitably due to generation of blasting cracks.

2. In the exercise of forming the benches with 60° slope within the granite deposit, the portion confined within the 60° as well as its complimentary part in the extricated block will become as mineral waste while shaping them into rectangular blocks.

3. The granite industry need blocks as huge as a few cubic meter volumes with measurements up to 3 m x 2 m x 2 m. Production of such huge blocks with a moving bench of 5m height is not possible. Production of such huge blocks in turn increases the recovery and reduces the mineral waste during dressing. Blocks of smaller size of certain varieties of granite are not marketable now-a-days (or) has a less commercial value.

4. Formation of too many benches with more height and the width equal to the height may lead to mineral lock up.

Hence in order to avoid granite waste and to facilitate economical mining operations, it is proposed to obtain relaxation to the provisions of Regulation 106 (2) (b) up to a bench parameter of 5.0 mtr height & 5.0 mtr width with vertical faces. Such a provision of relaxation of the Regulation has been provided within the regulation 106 (2) (b). Further, it is to be note worthy
that open cast granite mining operations with the above proposed bench parameters may not be detrimental to Department of mines safety, since the entire terrain is made up of hard rock, compact sheet and possess high stability on slope even at higher vertical angles.

**Machinery Required.**

**I. Drilling Machine.**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Type</th>
<th>Nos</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Jack hammer</td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>Compressor</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>Diamond Wire saw set</td>
<td>2</td>
</tr>
</tbody>
</table>

**II. Loading Equipment.**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Type</th>
<th>Nos</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Hydraulic crane</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Excavator</td>
<td>2</td>
</tr>
</tbody>
</table>

**III. Transport Equipment.**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Type</th>
<th>Nos</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Tipper</td>
<td>3</td>
</tr>
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</table>
Manpower requirement:

The tentative manpower required for the proposed Black Granite (Dolerite) quarry shall be as follows.

<table>
<thead>
<tr>
<th>Designation</th>
<th>No’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mines Manager</td>
<td>1</td>
</tr>
<tr>
<td>Mines Foreman</td>
<td>1</td>
</tr>
<tr>
<td>Machinery operators</td>
<td>4</td>
</tr>
<tr>
<td>Skilled labour</td>
<td>8</td>
</tr>
<tr>
<td>Semi skilled</td>
<td>23</td>
</tr>
<tr>
<td>Unskilled</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

Reserves:

<table>
<thead>
<tr>
<th>Description</th>
<th>ROM (m³)</th>
<th>Reserves 40% (m³)</th>
<th>Granite waste 60% (m³)</th>
<th>Weathered Rock (m³)</th>
<th>Top soil in m³</th>
<th>Side Burden in m³</th>
<th>Total Waste in m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geological resources</td>
<td>395700</td>
<td>158280</td>
<td>237420</td>
<td>110325</td>
<td>110325</td>
<td>707550</td>
<td>1055295</td>
</tr>
<tr>
<td>Mineable Reserves</td>
<td>197615</td>
<td>79046</td>
<td>118569</td>
<td>40881</td>
<td>46800</td>
<td>41835</td>
<td>201285</td>
</tr>
<tr>
<td>Five years of mining plan</td>
<td>50790</td>
<td>20316</td>
<td>30474</td>
<td>21696</td>
<td>26538</td>
<td>2675</td>
<td>54845</td>
</tr>
</tbody>
</table>

Estimated Life of the Quarry:

- Mineable ROM = 197615m³
- Mineable Reserves @ 40% = 79046m³
- Average Production per year @ 40% = 4063m³
- Estimated Life of the Quarry = 79046/4063 = 20 Years

(vi) Raw material required along with estimated quantity, likely source, marketing area of final products, Mode of transport of raw Material and Finished Products

This is a quarrying project for exploiting Black Granite; hence there is no requirement for raw material. The final product (Black Granite) will be well dressed and chiseled by experience chisel man to ensure the required size and to remove the defect free strains in Black Granite Dimensional Blocks fit for processing and polishing.

Uses:

The quarried Black granite blocks are either exported as raw blocks or processed as value added products such as slabs, tiles, fancy items, monuments, precision surface plates for engineering applications.
(vii) **Resource optimization/recycling and reuse envisaged in the project, if any, should be briefly outlined**

Water will be accumulated in the excavated quarry out pit area during rainy season. The water collected in the sump will be used in various purposes at quarry like plantation and dust suppression etc.

**(viii) Availability of water its source, Energy/power requirement and source should be given**

This Black Granite (Dolerite) quarry project does not require huge water and Electricity.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Quantity</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drinking &amp; Domestic purpose</td>
<td>0.3 KLD</td>
<td>Packaged drinking water will be brought from nearby approved water vendors.</td>
</tr>
<tr>
<td>Dust suppression</td>
<td>0.3 KLD</td>
<td>From existing borehole on nearby quarry</td>
</tr>
<tr>
<td>Green belt</td>
<td>0.4 KLD</td>
<td>From existing borehole on nearby quarry</td>
</tr>
<tr>
<td>Total</td>
<td>1.0 KLD</td>
<td></td>
</tr>
</tbody>
</table>

The diamond wire saw cutting will be mainly utilized only for liberating the parent rock mass, this type of cutting is not carried out continuously during the course of quarrying operation. Wire saw cutting is only to split from the parent rock mass for a Short period. The water requirement for diamond wire saw cutting is around 0.2KLD which will be sourced from the existing borehole.

**Energy**

Electricity for Mines office and Lights only at nights (working is restricted on day time only between 9Am to 5Pm). Diesel (HSD) will be used for quarrying machineries around **81264 liters** of HSD will be used for during this period. Diesel will be brought from nearby diesel pumps. No power is required for the project. Lightings on the Night will be taken from nearby electric poles after obtaining permission from concerned authorities.

Per hour Excavator will consume = 16 liters / hour
Per hour Excavator will excavate = 10m$^3$
For 197615m$^3$ (for the entire life period) = 197615/10
Diesel consume 19762 working hours = 19762 hours x 16 liters = 316192 liters of HSD for entire project life
For 50790m$^3$ (for during this period) = 50790/10
Diesel consume 5079 working hours = 5079 hours x 16 liters = **81264** liters of HSD for during this period
(ix) Quantity of wastes to be generated (liquid and solid) and Mining plan for their management/disposal.

Top soil:

The thickness of topsoil is about 3m. There will be generation of topsoil about 26538m$^3$ which will be utilized for construction of bund, haul road and afforestation purpose for the present period.

Overburden/Waste:

The total quantity of waste to be proposed during this period is around 54845m$^3$ (30474m$^3$ of Granite waste (60%) and 21696m$^3$ of WR and 2675m$^3$ of SB) will be proposed to dumped on the Northwestern side Dumps are properly terraced systematically by Multi – level dumping.

Disposal:

The excavated waste will be proposed to dump on the Northwestern side of the lease area with an area of 97m x 61m x 9.3m (H). It is proposed to backfill when the mine reaches the ultimate pit limit or at the end of the life of quarry.

Waste water:

There will not be any process effluent generation from the quarry lease area. Domestic effluent from the mine office is discharged in septic tank and soak pit. There is no toxic effluent expected to generate in the form of solid liquid and gases and the no requirement of treatment of waste.
(i) Connectivity

The lease applied area is situated at 2km northeast of Panchapalli Village and 1km northern side of Palayam Village.

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Location</th>
<th>Approximate Aerial distance from the area (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nearest Post Office</td>
<td>Panchapalli</td>
<td>2</td>
</tr>
<tr>
<td>Nearest Dispensary</td>
<td>Panchapalli</td>
<td>2</td>
</tr>
<tr>
<td>Nearest Town</td>
<td>Rayakottai</td>
<td>10</td>
</tr>
<tr>
<td>Nearest Police Station</td>
<td>Panchapalli</td>
<td>2</td>
</tr>
<tr>
<td>Nearest govt. Hospital</td>
<td>Rayakottai</td>
<td>10</td>
</tr>
<tr>
<td>Nearest School</td>
<td>Palayam</td>
<td>1</td>
</tr>
<tr>
<td>Nearest D.S.P.Office</td>
<td>Palacode</td>
<td>24</td>
</tr>
<tr>
<td>Nearest Railway Station</td>
<td>Rayakottai</td>
<td>10</td>
</tr>
<tr>
<td>Nearest Airport</td>
<td>Bangalore</td>
<td>75</td>
</tr>
<tr>
<td>Nearest Seaport</td>
<td>Chennai</td>
<td>260</td>
</tr>
</tbody>
</table>
(ii) Land Form, Land use and Land ownership

**Land form.**

The lease applied area is characterized by almost flat terrain. Lease area is dry land. The area does not fall in forest land.

**Land use.**

There are no water courses flowing through the applied lease area. There is no vegetation/plantation in this area. Some thorny bushes and shrubs are observed.

The conceptual land use pattern is as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Area to be required during the mining plan period (Ha.)</th>
<th>Area at the end of life of quarry (Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area under Quarrying</td>
<td>0.92.6</td>
<td>1.93.4</td>
</tr>
<tr>
<td>Waste dump</td>
<td>0.58.6</td>
<td>0.91.0</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>0.03.0</td>
<td>0.03.0</td>
</tr>
<tr>
<td>Roads</td>
<td>0.01.0</td>
<td>0.05.0</td>
</tr>
<tr>
<td>Green Belt</td>
<td>0.16.0</td>
<td>0.64.0</td>
</tr>
<tr>
<td>Stocking Blocks</td>
<td>1.98.8</td>
<td>0.13.6</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>3.70.0</strong></td>
<td><strong>3.70.0</strong></td>
</tr>
</tbody>
</table>

**Land Ownership.**

Applicant’s own patta land, vide patta No.1002. (Refer Annexure No. IV).
(iii) Topography (along with map)

The area is an almost flat terrain. The gradient is gentle towards south and the altitude of the area is about 635m (maximum) above from MSL. The Black granite is mostly concealed under topsoil with small detached boulders are found in few places along the linear strike direction. The black granite exposures and detached boulders are observed with Spheroidal weathering and cubodial joints (which is the characteristic feature of the Dolerite). The Dolerite dyke is intruded between the batholithic formations of Granite gneiss. The area receives rainfall about 760-910 mm/per annum and the rainy season is mainly from Oct – Jan during North East monsoon. The water level is found to occur at a depth of 59m in summer and 55m in rainy season below from ground level.

Google map view of the Quarry lease applied area
**GOOGLE IMAGE SHOWING THE LEASE BOUNDARY AREA**

**For Panchapalli Black Granite (Dolerite)**

**Location:**
- Village: Panchapalli
- Taluk: Palacode
- District: Dharmapuri
- Topo Sheet No: 57 H/15
- Latitude: 12°28'29.29''N to 12°28'37.25''N
- Longitude: 77°57'17.94''E to 77°57'27.59''E
(iv) Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ), shortest distances from the periphery of the project to periphery of the forests, national park, wildlife sanctuary, eco sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case of notified industrial area, a copy of the Gazette notification should be given.

- Cauvery wildlife sanctuary is situated 1.0km from the North western side of the area.
- There is an odai located about 80m on the eastern side of the applied area in S.F.Nos.89, 90 and 96/2.
- Sanatkumaru nadi or China River is passing 1.5km from the South western side of the area.
- Panchapalli Dam is situated 2.5km from the North western side.
- The lease area does not falls in Western Ghats region.
- There is no HACA region within the radius of 10km.
- There is no interstate boundary within the radius of 10km.
- There is no CRZ within the radius of 10km.
- There are no Bird sanctuaries, wildlife sanctuaries and National park as Act 1972, within the radius of 10kms.
- There are few quarry located within the radius of 500m.

(v) Existing Infrastructure

A permanent mine office has been present in the lease area. A well-equipped first aid facility will be made available. Permanent rest shelter is proposed. At the quarry site, urinal and latrine are proposed.

Water for drinking purpose be supplied form the approved water vendors. A small water tank is also proposed which will be used for water sprinkling, plantation etc.

(vi) Soil Classification

The thickness of topsoil is about 3m. There will be generation of topsoil about 26538m³ which will be utilized for construction of bund, haul road and afforestation purpose for the present period. This land does not sustain any type of vegetation or Agriculture purpose.
(vii) Climatic data form secondary sources
The area receives rainfall of about 760-910mm /per annum and the rainy season is mainly from Oct–January during North East monsoon. The summer is hot with maximum temperature of 42°C and winter encounters a minimum temperature of 25°C.

(viii) Social infrastructure available
There is no social infrastructure within the radius of 1Km like schools, universities, hospitals, prisons and community housing etc.

5. PLANNING BRIEF
(i) Planning Concept (type of industries, facilities, transportation etc) Town and Country Planning/Development authority Classification

➢ This quarrying project is to exploit Black Granite (Dolerite) by opencast semi mechanized method.
➢ Hydraulic excavators will be used for the development and production in Granite Benches.
➢ Eco friendly diamond wire saw cutting will be used for splitting and liberation of Black Granite from the parent sheet mass.
➢ Transportation of Black Granite shall be done through road by trailers and trucks.
➢ The project land is devoid of vegetation and lies in the backward town of Dharmapuri District.
➢ There are no specific industries or factories in and around the project area.

(ii) Population projection
There are few villages located in the 5km radius of mine site and approximate distance and population are given below.

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name of the Village</th>
<th>Approximate Distance &amp; Direction from lease area</th>
<th>Approximate population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Sivagamipatti</td>
<td>4.0km - NE</td>
<td>400</td>
</tr>
<tr>
<td>2.</td>
<td>Singampalli</td>
<td>3.0km -SE</td>
<td>500</td>
</tr>
<tr>
<td>3.</td>
<td>Vedamapatti</td>
<td>2.0km - E</td>
<td>300</td>
</tr>
<tr>
<td>4.</td>
<td>Nammandahalli</td>
<td>3.0km - SE</td>
<td>500</td>
</tr>
<tr>
<td>5.</td>
<td>Palayam</td>
<td>1.0km - S</td>
<td>500</td>
</tr>
<tr>
<td>6.</td>
<td>Panchapalli</td>
<td>2.0km - SW</td>
<td>1000</td>
</tr>
</tbody>
</table>

Basic human welfare Amenities such as Health Center, Schools, Communication Facilities, and Commercial Centers etc are available at Rayakottai located at a distance of 10kms from the Northeastern side of the quarry site.
(iii) Land use planning (breakup along with green belt etc.)

The safety distance along the west and northern side lease boundary has been identified to be utilized for subsequent Afforestation.

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of trees proposed to be planted</th>
<th>Area to be covered in m²</th>
<th>Name of the species</th>
<th>Survival rate expected in %</th>
<th>No. of trees expected to be grown</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>30</td>
<td>320</td>
<td>Neem, Casuarina, Pongamia pinnata, etc.,</td>
<td>80</td>
<td>24</td>
</tr>
<tr>
<td>II</td>
<td>30</td>
<td>320</td>
<td></td>
<td>80</td>
<td>24</td>
</tr>
<tr>
<td>III</td>
<td>30</td>
<td>320</td>
<td></td>
<td>80</td>
<td>24</td>
</tr>
<tr>
<td>IV</td>
<td>30</td>
<td>320</td>
<td></td>
<td>80</td>
<td>24</td>
</tr>
<tr>
<td>V</td>
<td>30</td>
<td>320</td>
<td></td>
<td>80</td>
<td>24</td>
</tr>
</tbody>
</table>

(iv) Assessment of Infrastructure Demand (Physical & Social)

The existing road facilities are already available which shall be used and maintained. The labors requirement is drawn from the nearest villages. The labors will be brought by jeeps and vans to the quarry site. Medical facilities are available near the project site, Government and private hospitals and other basic amenities and infrastructure facilities like communication center, school supermarket, bus stand are also available in Rayakottai at a distance of 10kms (NE). This quarry project will provide employment for about 40 persons directly.

(v) Amenities/Facilities

The simple methods adopted and the limited scale of activities involved in Black Granite quarrying does not require High Tension Electric Power supply or huge worship facilities. Major Machinery repair works are attended at Dharmapuri minor repairs are carried out by the nearby mechanics. All facilities and amenities are available in Dharmapuri which is 45km Southeastern side of the area.

Packaged drinking water is available from the approved water vender in nearby village. Mine office, storeroom, toilet and first-aid room will be provided on permanent structures within the lease area after the grant of lease.

6. PROPOSED INFRASTRUCTURE

(i) Industrial Area (Processing area)

There is no industrial or processing area proposed within the lease applied area.

(ii) Residential area (Non processing area)

At the local person will be given employment. There are no habitations within 500m radius from the area.
(iii) Green Belt

All along the boundary barrier is selected for Green belt development by planting and maintaining native species. The total area for proposed for Green belt is around 0.160Ha out of 3.70.0Ha. The estimated budget for plantation and maintenance of Green belt development would be around Rs. 40,000/-

(iv) Social infrastructure

About 40 employees will be directly benefited and 10 persons will be indirectly benefited, the lease ensure to share all responsible for special benefits like water, health care, Education benefits, and promotion of socio cultural activities of the nearby villages.

(v) Connectivity (traffic and transportation road/ Rail/ Metro/ Water ways etc.,)

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road connectivity</td>
<td>1. The existing village road available in the quarry area. This road leads</td>
</tr>
<tr>
<td></td>
<td>to the Palayam village – Ullatti Village Road which is about 500m on</td>
</tr>
<tr>
<td></td>
<td>Northeastern side of the area.</td>
</tr>
<tr>
<td></td>
<td>2. The Nearest National Highway (NH-7) Bangalore - Kanniakumari -21km-</td>
</tr>
<tr>
<td></td>
<td>Northeastern side.</td>
</tr>
<tr>
<td></td>
<td>3. The Nearest State Highway (SH-17) Hosur - Nallampalli - 8km- Eastern</td>
</tr>
<tr>
<td>Railway station &amp; Railway</td>
<td>1. Nearest Railway station Rayakottai - 10km -Northeastern side.</td>
</tr>
<tr>
<td>line</td>
<td>2. Nearest Railway line is Salem - Hosur - 6km - Northwestern side.</td>
</tr>
<tr>
<td>Air port</td>
<td>1. Nearest Airport is Bangalore - 75km – Northwestern side.</td>
</tr>
</tbody>
</table>

(vi) Drinking Water management (Source & Supply of water)

This proposed Black Granite quarry project does not require huge water either for beneficiation or processing. Water required for drinking and domestic consumption for labors is around 0.3KLD. The Packaged drinking water will be brought from nearby village approved water vendors.

(vii) Sewerage System

Toilets will be constructed as permanent structure within the area and sewage will be discharged once in three months. The sewage waste will be collected in soak pit and the sludge will be discharged.
(viii) Industrial Waste Management

No industrial waste will be generated from the project.

(ix) Solid Waste Management

There is no solid waste anticipated. The waste material includes granite waste.

(x) Power Requirement & Supply / source

The proposed Black Granite (Dolerite) quarrying does not require any power supply for the quarrying operation. It is proposed to operate in day time only from 9 Am to 5Pm with 1 Hour lunch interval between 1Pm to 2Pm. The domestic consumption for the lights at the night is only for the century room, mines office etc,

7. REHABILITATION AND RESETTLEMENT (R & R PLAN)

(i) Policy to be adopted (Central/State) in respect of the project affected persons including home oustees, land oustees and landless laborers (a brief outline to be given)

There is no Rehabilitation and resettlement is involved. The deployed labours will be insured as per the Government norms till the end of the life of the quarry. Periodical medical test will be conducted for the labors to monitor the occupational disease. The salaries and benefits will be paid as specified by the instruction given by the labor enforcement officers.

8. PROJECT SCHEDULE & COST ESTIMATES

(i) Likely date of start of construction and likely date of completion (Time schedule for the project to be given)

- The applicant has applied for permission to quarry Black Granite (Dolerite) for a period of twenty years. The Mining plan preparation for first five years.
- The Precise area Communication has been granted as per Govt. letter No. 670/MME.2/2017-1 Dated: 08.03.2017.
- The proposed quantity of reserves (40%) is around $20316m^3$ of Black Granite (Dolerite) for a period of first five years.
(ii) **Estimated project cost along with analysis in terms of economic viability of the project:**

### A. Fixed Asset Cost
- Land cost = Rs. 12,00,000/-
- Labor shed = Rs. 2,00,000/-
- Sanitary facilities = Rs. 1,00,000/-
- Fencing cost = Rs. 2,00,000/-
- **Total cost = Rs. 17,00,000/-**

### B. Operational cost:
- Excavator on rental (Per annum) = Rs. 1,00,00,000/-
- Tippers (3 Nos) = Rs. 75,00,000/-
- Wire saw = Rs. 8,00,000/-
- Compressor with loose tools = Rs. 27,00,000/-
- Drinking water facility for the labors = Rs. 1,00,000/-
- Safety kits = Rs. 50,000/-
- **Total Operation cost = Rs. 2,11,50,000/-**

### C. EMP Cost:
- Afforestation = Rs. 40,000/-
- Water sprinkling = Rs. 50,000/-
- Water Quality test = Rs. 25,000/-
- Air Quality test = Rs. 25,000/-
- Noise/Vibration test = Rs. 25,000/-
- Cost towards charity = Rs. 1,00,000/-
- **Total EMP cost = Rs. 2,65,000/-**

### The Project cost:
- A. Fixed Asset cost = Rs. 17,00,000/-
- B. Operational cost = Rs. 2,11,50,000/-
- C. EMP cost = Rs. 2,65,000/-
- **Total cost = Rs. 2,31,15,000/-**

- The total project cost including EMP cost (A+B+C) is about **Rs. 2,31,15,000/-** (Rupees two crores thirty one lakhs and fifteen thousand only)
- The total EMP cost is about **Rs. 2,65,000/-** (Rupees Two lakhs sixty five thousand only)
**Population Benefit**

The applicant ensures to take social responsibilities like providing School Note books, Uniforms to the Students below poverty level beside if the villages require any borehole for public use the applicant ensure to do so.

The applicant will also take part and contribute the native cultural activities in the nearby villages. During summer seasons packaged drinking water will be kept will be kept in the village for public and for tress passers. The applicant will involve and contribute all the socio cultural allocation in and around the area. The budget provisions and allocation for all the above activities will be around Rs. 1, 00,000/- for during this period.

**Mine Closure Plan:**

Steps proposed for phased restoration, reclamation of already mined out areas:

- The proposal for the project is fresh Black Granite (Dolerite) quarry.
- After the exploitation of Black Granite up to the ultimate pit limit the waste will be backfilled in the worked out pits and fencing will be constructed around the pit to prevent inherent entry of public.
- There is a proposal only for back filling the Granite waste. The remaining voids will be allowed to collect rain water. The quarry pit will be fenced to prevent inherent entry of public.

Measures to be undertaken on mine closure as per Act & Rules:

- Measure will be taken as per Act & Rules.

Mitigation measure to be undertaken for safety and restoration / reclamation of the already mined out area:

- Drilling will be carrying out by wet drilling to control the dust into the air.
- Minimum blasting will be carrying out on limited scale.
- Mist spray on haul road will be proposed to prevent the dust propagation into the air.
- The plantation will be carried out on the safety barriers to prevent Noise, besides wet drilling will be practiced to prevent dust.
- All the machineries will be maintained in good conditions as per RTO and TNPCB Norms to prevent Noise, Smoke and vibration.
- Machineries will be periodically maintained by experienced mechanic to minimize noise, Smoke and ground vibration.
9. ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)

(i) Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any, in the area.

The lease area is Patta land. There are few tribal populations in and around the area about 40 personals directly will be benefited by these projects, besides the government. Will get good revenue by taxes, seigniorage fees etc., and if the applicants find the suitable export market the Government will have a good foreign exchange to the nation.

The socio- Economic conditions of the village and distance will enhance due to the project, hence, the project should be allowed after considering all the parameters. The detail furnished in this mining plan is based on information provided by the State Government and the lessee. By considering the merit of the project the permission may be granted.

Date : 18.07.2017
Place : Dharmapuri

1. Signature of the proponent
For Tvl. JR Granites Private Limited.,

(R.Sarath)
Managing Director

2. Signature of the Qualified Person

Dr. P. Thangaraju, M.Sc., Ph.D.,
RQP/MAS/206/2007/A
Base Line Studies is Prepared for
Panchapalli Black Granite (Dolerite)
Quarry
BASE LINE STUDIES

The base line a study is prepared for *Panchapalli Black Granite (Dolerite) quarry*. Base line studies provide a base data for regular Environmental Monitoring and Environmental Impact Assessment (EIA). The international Association for Impact Assessment (IAIA) defines the base line studies as the process of identifying, predicting, evaluating and mitigating the Bio physical, Social and other relevant effect of development proposals prior to major decision has been taken and commitment mode. Hence the baseline study provides a bench mark for carrying out environmental Impact assessment due to the course of quarrying and mining activities. The purpose of these studies is to evaluate the benefited and adverse effect of developing activities on the neighborhood environment and the area where the quarrying is proposed to carry out.

*Tvl. JR Granites Private Limited* has applied for Black Granite (Dolerite) quarry lease for over an extent of **3.70.0Ha** in S.F.No. 91/2, 95/1A (Part), 95/1B, 95/2A, 95/2B, 95/2C and 97/1B (Part) at Panchapalli Village, Palacode Taluk and Dharmapuri District. The area proposed for mining for the present mining period is about **0.92.6Ha** which is below 25% of the total area applied for lease; hence the impact assessment due to quarrying may be considerably low.

*As per the Gazette notification 2006 the proposed project falls under B2 Category.*

The area proposed for quarrying is a fresh area and there are no factories, industries within the radius of 1Km hence the atmospheric air is quite fresh. The quarry lease area is almost flat terrain which is devoid of vegetation and Agriculture. In some small patches small agricultural activities are been carried out by drift irrigation some thorny bushes and wild gars are found in the area with scanty Palm trees (*Borassus falabellifer*). *Tridax procumbens* and *Lucus aspera* are some of the common species along with *Julia flora* trees. The density of these about 20% to 40% in the area and the remaining area is dry barren land.

The rest of the workforce is employed in agriculture, mining, quarrying, raising livestock, manufacturing, construction, trade and commerce. There is agricultural activity in the town on account of weather and irrigation facilities. The project in this area will fetch a quit considerable employment to nearby village which in turn enhance the earning source of the nearby villages. The comprehensive base line studies and standards constitute of collecting data on Ambient Air quality, Dust fall rate, Water quality, Soil analyze, Noise level and Ground vibration study in the area proposed for quarrying along with Flora and Fauna statistics.
The Methodology adopted in this project is based on the basic principles of capitalization identification analysis and preparation of action plan to Mitigate negate or adverse impact. Baseline studies adverse the significant environmental Issue and also provide necessary information pertaining to the Environmental Attributes in the project area. Monitoring and evaluating the effect of the works environment factors on health of people working on granite quarry.

Collection and analysis of Baseline Environmental Data.

Baseline Environmental Data plays a key role in the EIA procedure as it provides the important information on the Environmental parameters which are likes to be affected due to the Black Granite (Dolerite) quarrying activities.

Physiography

The area is an almost flat terrain. The gradient is gentle towards south and the altitude of the area is about 635m (maximum) above from MSL. The Black granite is mostly concealed under topsoil with small detached boulders are found in few places along the linear strike direction. The black granite exposures and detached boulders are observed with Spheroidal weathering and cubodial joints (which is the characteristic feature of the Dolerite). The Dolerite dyke is intruded between the batholithic formations of Granite gneiss. The area receives rainfall about 760-910 mm/per annum and the rainy season is mainly from Oct – Jan during North East monsoon. The water level is found to occur at a depth of 59m in summer and 55m in rainy season below from ground level.

Geology of the area

The black granite mostly concealed under reddish gravelly soil with thickness of 3m and 3m weathered rock below from the topsoil, totally overburden having thickness of 6m and followed by fresh black granite. The Granite gneiss forms the country rock of the area with trending of North-South with a dip of 80°East and “Black Granite” (Dolerite) intruded between the batholithic formation of pre-existing country rock of Granite gneiss discordantly with trending of N85°E - S85°W with Vertical dipping with an average width of 80 meters (The width of the dyke is identified by Geophysical prospecting) which stretches about the entire area (Please refer Plate No-III and IV). The black granite is clearly exposed at surface and few small detached boulders are observed with linear strike direction of the dyke with spheroidal weathering and cuboidal joints. The black granite (Dolerite dyke) rock is brownish black in color, inequigranular, fine to medium grained texture. It shows sub-ophitic texture. The color of the rock changes depending on the texture
of the rock. The Dykes is fine grained at the contact of country rock. The Dolerite is composed of laths of plagioclase embedded in the plates of Augite (Ophitic texture), Apatite, magnetite and pyrite forms the secondary mineral.

Strike and dip joints are observed at the surface level which is likely to decrease in deep seated condition. The recovery of black granite may vary from 25% to 40% hence, taking in to consideration of the above geological factors, an average recovery of 40% upto 36m depth (3m Topsoil +3m weathered rock + 30m Black granite) has been computed as economically viable at present market scenario. This mining plan is discussed based on 40% recovery factor. If there is considerable increase or decrease in the recovery factor a modified mining plan will be prepared and will be submitted to relevant authorities for subsequent clearance and approval.

The Physical attitude of the Black Granite deposit in this area is given below:-

\[ \text{Strike Direction} = \text{N85°E - S85°W} \]
\[ \text{Dip direction and amount} = \text{Vertical dip.} \]

The northwestern part of Tamilnadu is characterized by the occurrences of a number of Dolerite dykes. The dolerite dykes in general trending is in NNE-SSW direction and rarely in NNW–SSE directions.

Order of superposition:

<table>
<thead>
<tr>
<th>ROCK TYPE</th>
<th>GROUP</th>
<th>AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reddish Gravelly Soil</td>
<td></td>
<td>Pleistocene to Recent</td>
</tr>
<tr>
<td>Carbonatite and alkaline dykes</td>
<td></td>
<td>Unconformity</td>
</tr>
<tr>
<td>Syenite complex</td>
<td>Alkali complex</td>
<td></td>
</tr>
<tr>
<td>Ultrabasic complex</td>
<td>Late Archaean to Proterozoic</td>
<td></td>
</tr>
<tr>
<td>Hornblende Biotite gneiss</td>
<td>Migmatite Complex</td>
<td></td>
</tr>
<tr>
<td>Granite Gneiss</td>
<td>Charnockite group</td>
<td>Late Archaean</td>
</tr>
<tr>
<td>Charnockite,</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Vegetation

The lease area almost flat terrain, Black Granite exposes in the lease area and it is strewn with boulders of various sizes ranging from a few cm to one to half meter in diameter. Except some small bushes there are no other trees in the applied area. Crops are only seasonal cultivation with lift irrigation is practiced. The main crops are Neem, Palm, Mango, Pulse, Cotton, ground nut, Gingelly, Millet, Paddy and Sugar cane.

General approach to Environment

The Environmental besides data comprise of the features present of the site area its includes environmental features such as forest area, conservation area, water bodies, industries, wild life and fauna place of historic and importance etc.,

The data collected to cover the following.

1. Air environment
2. Noise Environment
3. Water environment
4. Ecology (Biological and Cultural Environment)
5. Physical Environment.

Air Environment

Air environment is responsible for the health of human beings, animals, wild life and vegetation. Air pollutants emitted by project and non point source are transported dispersed or concentrated by meteorological and topographical conditions.

The atmosphere is dynamic system which absolute range of solid, Liquid or gases from both Natural and Manmade source. There substances travel through the air disappear and reveal among themselves and also with other substances both physically and chemically which result in air pollution.

The Black Granite propose to quarry is non toxic which does not emit any undesirable pollutants in the form of solid liquid or gas. The dust emitted during the transportation of vehicles the drilling will be carried out in wet condition to prevent dust into air and the haul roads will be periodically sprinkled with mist water spray to prevent dust into the atmosphere.

The area in and around is quit fresh and the impact an air environment will always be under controlled and will be monitored. No processing or beneficiation is proposed except quarrying hence the impact an air will be controlled monitored and mitigated.
The ambient air quality within the study area on both core and buffer zone forms the baseline information. The air quality monitoring points selected based on the Meteorological conditions, topography of the study area and likely impact boundary location of the ambient air quality monitoring stations was selected on the basis of wind pattern. The ambient Air quality monitoring stations are shown in the map. Four major pollutions were consideration significantly.

I. Particle matter - PM
II. Suspended Particle Matter - SPM
III. Sulphur dioxide - SO$_2$
IV. Nitrogen dioxide - NO$_2$

Respectively the overall of emission we identified the direction of the wind in the majority observed time was predominantly south west to North East direction. The Air quality monitoring data is enclosed as Annexure No-I.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Test Parameters</th>
<th>Unit</th>
<th>Protocol</th>
<th>Results</th>
<th>CPCB Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Particulate matter less than 10 micron size (PM$_{10}$)</td>
<td>µg/m$^3$</td>
<td>IS 5182 Part 23-2006</td>
<td>42.3</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Particulate matter less than 2.5 micro size (PM$_{2.5}$)</td>
<td>µg/m$^3$</td>
<td>IS 5182 part 4-1999 (Reaff 2010)</td>
<td>31.2</td>
<td>60</td>
</tr>
<tr>
<td>3</td>
<td>Sulphur dioxide - SO$_2$</td>
<td>µg/m$^3$</td>
<td>IS 5182 part 2-2001 (Reaff 2006)</td>
<td>4.1</td>
<td>80</td>
</tr>
<tr>
<td>4</td>
<td>Nitrogen Dioxide - NO$_2$</td>
<td>µg/m$^3$</td>
<td>IS 5182 Part 6-2006</td>
<td>5.2</td>
<td>80</td>
</tr>
</tbody>
</table>

**Noise Environment**

Sound/Noise can be defined as atmospheric or airborne vibration perceptible to the ear. Noise is usually unwanted or undesired sound. Sound loud enough to be harmful is called noise without regard to its other characteristics hence noise has a significant impact on the quality of life and in that sense it is a health problem in accordance with the (WHO) definition of health.

Impact of noise on environment depends on various factors such as intensity distance from the source type of exposure and nature (Impulse or continuous), the type of activities movement of machineries, traffic density etc., hence it is to measure the levels so as to adjust the environment Impact and undertake amendment measures if warranted. Standard precession noise level meter were used for the purpose. The readings in the form of instantaneous sound measures levels were taken in the time brackets of two hours in order to here carry out assessment of noise level in the area.
There are no heavy industries nearby; the noise level of the area will be as same as the regional level. More over the noise level measurements does not rise for this area since very low explosives will be used for mining and the machineries to be used shall hydraulic types, it does not create much noise except the compressor, drilling and jet bummers. The traffic density in the area is very little. The average noise level in that area is less then 90dB (A) in and around 1Km radius. This noise level survey was carried out as per MOEF norms i.e., 1.5m above the ground level and 2mts away from the noise emit source. At present the noise is only through the movement of Vehicles in that area. No other significant noise emitting source found.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Location</th>
<th>Results dB (A)</th>
<th>CPCB Standard Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Project site – Centre area</td>
<td>43.3</td>
<td>70’</td>
</tr>
<tr>
<td>2</td>
<td>Project Site SW corner</td>
<td>42.1</td>
<td>70’</td>
</tr>
<tr>
<td>3</td>
<td>Project site SE Corner</td>
<td>41.2</td>
<td>70’</td>
</tr>
<tr>
<td>4</td>
<td>Project site NE Corner</td>
<td>45.2</td>
<td>70’</td>
</tr>
</tbody>
</table>

**Ground vibration studies**

Hence the vibration source are only through the movement of vehicles where the frequency is also very less. Hence the vibration is well below the standard permissible by MOEF. Displacement, Velocity and acceleration of the three kinematics descriptions which are to be studies to describe ground motion. The peak particle velocity is the more referred since the area is virgin there is no significant measured velocity found in the area.

**Water Environment**

Geo Physical investigation was carried out by signal stacking resistivity meter 3 profiling was carried out in the area applied for lease and 15 Vertical electrical sounding was carried out to find out the lateral variation and vertical in homogeneity’s it was observed that the water table is found to be 59mts below ground level.
<table>
<thead>
<tr>
<th>Test</th>
<th>Protocol</th>
<th>Results</th>
<th>Limits as per IS 10500 : 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acceptable Limit</td>
</tr>
<tr>
<td>Colour</td>
<td>IS : 3025 part : 4-1983 (Reaff : 2006)</td>
<td>10 Hazen</td>
<td>5</td>
</tr>
<tr>
<td>Total Dissolved solids</td>
<td>IS : 3025 part : 16-1984 (Reaff : 2006)</td>
<td>1356mg/l</td>
<td>500 mg/l</td>
</tr>
<tr>
<td>Aluminium as Al</td>
<td>IS : 3025 part 2:2004 (Reaff : 2009)</td>
<td>BDL (DL:0.004 mg/l)</td>
<td>0.04 mg/l</td>
</tr>
<tr>
<td>Barium as Ba</td>
<td>IS : 3025 Part 2:2004 (Reaff : 2009)</td>
<td>0.31mg/l</td>
<td>0.7mg/l</td>
</tr>
<tr>
<td>Boran as B</td>
<td>IS : 3025 Part 2:2004 (Reaff : 2009)</td>
<td>BDL (DL: 0.1 mg/l)</td>
<td>0.4mg /l</td>
</tr>
<tr>
<td>Calcium as Ca</td>
<td>IS : 3025 Part 2: 2004 (Reaff : 2009)</td>
<td>161 mg/l</td>
<td>70mg/l</td>
</tr>
<tr>
<td>Chloride as Cl</td>
<td>IS : 3025 Part 32-1988 (Reaff : 2009)</td>
<td>477mg/l</td>
<td>250mg/l</td>
</tr>
<tr>
<td>Copper as Cu</td>
<td>IS : 3025 part 2: 2004 (Reaff : 2009)</td>
<td>BDL (DL:0.01 mg/l)</td>
<td>0.05mg/l</td>
</tr>
<tr>
<td>Fluoride as F</td>
<td>IS : 3025 Part 60: 2008</td>
<td>0.71mg/l</td>
<td>1.0mg/l</td>
</tr>
</tbody>
</table>

**METHODOLOGY AND DATA ACQUISITION:**

Electric Resistivity Method is well established for delineating lateral as well vertical discontinuities in the resistive structure of the Earth’s subsurface. The present study makes use of vertical electric sounding (VES) to delineate the Vertical Resistivity structure at depth. Schlumberger electrode set up was employed for making sounding measurements. Since it is least influenced by lateral in homogeneities and is capable of providing higher depth of investigation. This is four electrodes collinear set up where in the outer electrodes send current into the ground and the inner electrodes measure the potential difference.
The present study utilizes maximum current electrode separation AB/2. The data from this survey are commonly arranged and contoured in the farm of Pseudo-section that gives an approximate of the subsurface resistivity. This technique is used for the inversion of Schlumberger VES data to predict the layer parameter namely layer resistivity and Geo electric layer thickness. The main goal of the present study is to search the vertical in homogeneities that is consistent with the measured data.

For a Schlumberger among the Apparent resistivity can be calculated as follows

\[ \rho_a = \frac{G \Delta V}{I} \]

\( \Delta V \) = potential difference between receiving electrodes

G = Geometric Factor.

Rocks show wide variation in resistivity ranging from 10-8 more than 10+14 ohmmeter. On a broad classification, one can group the rocks falling in the range of 10-8 to 1 ohmmeter as good conductors. 1 to 106 ohmmeter as intermediate conductors and 106 to 1012 ohmmeter as more as poor conductor. The resistivity of rocks and subsurface lithology, which is mostly dependent on its porosity and the pore fluid resistivity is defined by Archie’s Law,

\[ \rho_r = F \rho_w = a \Omega^m \rho_w \]

\( \rho_r \) = Resistivity of Rocks

\( \rho_w \) = Resistivity of water in pores of rock

F = Formation Factor

\( \Omega \) = Fractional pore volume

A = Constants with values ranging from 0.5 to 2.5

**SURVEY LAYOUT:**

The layout for a resistivity survey depends on the choice of the current and potential electrode arrangement, which is called electrode array. Here the present study is considered with Schlumberger array. In which the distance may be used for current electrode separation while potential electrode separation is kept on third to one fifth of the same. One interesting aspect in VES is the principle of reciprocity, which permits interchange of the potential and current electrode without any effect on the measured apparent resistivity.
EQUIPMENT:

The field equipment deployed for the study is in a deep resistivity meter with a model of SSR – MP – AT. This Signal stacking Resistivity meter is a high quality data acquisition system incorporating several innovation features for Earth resistivity. In the presence of random earth Noises the signal to noise ration can be enhanced by $\sqrt{N}$ where N is the number of stacked readings. This SSR meter in which running averages of measurements $[1, (1+2)/2, (1+2+3)/3 \ldots (1+2\ldots+16/16)]$ up to the chosen stacks are displayed and the final average is stored automatically, in memory utilizing the principles of stacking to achieve the benefit of high signals to noise ratio. Based on these above significations the signal stacking resistivity meter was used for (VES) Vertical Electric Resistivity Sounding.

MEASUREMENTS:
Measurements of ground Resistivity is essentially done by sending a current through two electrodes called current electrodes (C₁ & C₂) and measuring the resulting potential by two other electrodes called potential electrode (P₁ & P₂). The amount of current required to be sent into the ground depends on the contact resistance at the current electrode, the ground resistivity and the depth of interest (Here 1000 feet).

**DATA PRESENTATION:**

The field data obtained from a Vertical Electrical Resistivity Sounding is conventionally plotted on a paper with the help of slum software. (A computer aided diagram).

**GEOPHYSICAL DATA INTERPRETATION**

The geophysical data’s was obtained to study the lateral variations, vertical in homogeneities in the sub-surface with respect to the availability of groundwater. From the interpreted data, it has inferred that the area has moderate groundwater potential in the investigated area.

There is an odai located about 80m on the eastern side of the applied area in S.F.No.89, 90 and 96/2, except there are no other Rivers, Lakes, and Reservoir within the 500m distance to the lease applied area. The average rainfall is about 760-910mm as recorded by the meteorological department in the last three years. In some areas of the District there was no Rainfall recorded for the last 3 years. The underground water is portable without any adverse health effects. There are no boreholes or open wells in the project area hence the water collected in the area for analysis.

In summer the water drains and the well will be in dry condition. The quality of the water from well has been analyzed for records. The granite quarrying does not require any water for its operation. No beneficiation or processing is proposed in the project. The water required is only for drinking and domestic purpose for which the water will be brought out from authorized water vendors from the nearby towns.

As water is very vital natural resource and most essential for the survival of human beings, the same will be consumed only after carrying out scientific studies and will be allowed if it is within the prescribed standards.
**Soil Analysis**

As mentioned earlier the area exhibits almost flat terrain. The soil is the main unit for the eco system because of the dependence of flora and fauna. As the soil is acidic there are no thick flora noticed except some common species which are native of the terrain.

The quarrying activities may have impact on soil. The soil samples were called in 50mts grid fashion by average and after coning and quartering the same was send to laboratory for investigation. The following sources are obtained from Agricultural department.

The soil analysis report is as below

<table>
<thead>
<tr>
<th>S.No</th>
<th>Test parameters</th>
<th>Method</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PH @25°C</td>
<td>Is 2720 part 26 (Reaff:2011)</td>
<td>7.2</td>
</tr>
<tr>
<td>2</td>
<td>Conductivity @25°C</td>
<td>Is 14767 : 2000 (Reaff : 2010)</td>
<td>345µmhos/Cm</td>
</tr>
<tr>
<td>3</td>
<td>Moisture content</td>
<td>Is 2720 part 2: 1973 (Reaff : 2010)</td>
<td>6.1%</td>
</tr>
<tr>
<td>4</td>
<td>Organic matter</td>
<td>Is 2720 part 22: 1972 (Reaff : 2010)</td>
<td>0.32%</td>
</tr>
</tbody>
</table>

**Climate**

The area receives rainfall about 760-910 mm/per annum and the rainy season is mainly from Oct – Jan during North East monsoon. The summer is hot with maximum temperature of 42°C and winter records a minimum temperature of 25°C. Temperature is maximum during May – July in a year.

**Flora and fauna in and around the area**

The Black Granite (Dolerite) Quarry projects like this which involves very limited operations like secondary drilling and blasting, Conservation of Flora and Fauna along with ecology does not have significant impact of the overall eco system. A detail study related to flora and fauna was carefully observed physically by environmental engineers, Botanist and zoologist. The following table shows the flora and Fauna available at the region.
### List of Faunas

<table>
<thead>
<tr>
<th>S.No</th>
<th>Common Name</th>
<th>Scientific name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Goat</td>
<td><em>Capra hircus</em></td>
</tr>
<tr>
<td>2.</td>
<td>rat</td>
<td><em>Rattus norvegicus</em></td>
</tr>
<tr>
<td>3.</td>
<td>Crow</td>
<td><em>Corvus splenders</em></td>
</tr>
<tr>
<td>4.</td>
<td>Squirrel</td>
<td><em>Rodentia scrurus,</em></td>
</tr>
<tr>
<td>5.</td>
<td>Ant</td>
<td><em>Hymenopterous formicida,</em></td>
</tr>
<tr>
<td>6.</td>
<td>Cat</td>
<td><em>Felsis catus</em></td>
</tr>
<tr>
<td>7.</td>
<td>Cow</td>
<td><em>Bos taurus indicus</em></td>
</tr>
</tbody>
</table>

### List of Floras

<table>
<thead>
<tr>
<th>S.No</th>
<th>Common Name</th>
<th>Botanical name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Neem</td>
<td><em>Azadirachata indica</em></td>
</tr>
<tr>
<td>2.</td>
<td>Palm tree</td>
<td><em>Borassusfalabellifer</em></td>
</tr>
<tr>
<td>3.</td>
<td>Mango</td>
<td><em>Mangifera indica</em></td>
</tr>
<tr>
<td>4.</td>
<td>Ground nut</td>
<td><em>Arachis hypogaea</em></td>
</tr>
<tr>
<td>5.</td>
<td>Coconut</td>
<td><em>Cocos nucifera</em></td>
</tr>
<tr>
<td>6.</td>
<td>Millet</td>
<td><em>Pennisetum glaucum</em></td>
</tr>
<tr>
<td>7.</td>
<td>Cotton</td>
<td><em>Gossypium Hirsutum</em></td>
</tr>
<tr>
<td>8.</td>
<td>Sugar cane</td>
<td><em>Saccharum officinarum</em></td>
</tr>
<tr>
<td>9.</td>
<td>Kuppaimeni</td>
<td><em>Acalypha indica</em></td>
</tr>
</tbody>
</table>
Conclusion

The base line studies relents no hazardous levels of dust and noise and prevailing at the project area. A well implemented environmental Management plan as discussed in the mining plan will help in mitigation the adverse effects due to quarrying activities.

The project is a small operation were limited activities are being carried on the noise creating device will be only jack hammer drilling which will always be mitigated in wet condition to prevent noise and dust in the air. The movement of vehicles is very minimal. The entire vehicle used will be periodically maintained by well experienced mechanic and kept under TNPCB standards, emission testing will be carried out periodically and water will be sprinkled periodically to prevent dust into air. The small quantity of non humus rich surface soil will be removed and preserved in the boundary barrier to facilitate the Afforestation.

Blasting will be used for heaving effect and not shattering effect hence the fly rock problem will not arise. This is because the granite industry requires only huge blocks which are free from induced cracks and fissures. The flora in the area is only small bushes as much of the area exhibits almost flat terrain. No trees are proposed to uproot for the project and Infect Trees will be planted on boundary barrier which will act as acoustic sound barriers. Environmental care and attitude of preventing environment is inducted to the proponent and advice to carry out and mitigate the minor impacts due to quarrying. Appropriate persons are advice to get employed to protect the Environment and Ecology of the area.

Date : 18.07.2017
Place : Dharmapuri

1. Signature of the proponent
   For Tvl. JR Granites Private Limited.,

   (R.Sarath)
   Managing Director

2. Signature of the Qualified Person

   Dr. P. Thangaraju, M.Sc., Ph.D.,
   RQP/MAS/206/2007/A
From
Dr.P.Jayapal,
Assistant Director,
Geology and Mining,
Dharmapuri.

To
Tvl.J.R.Granites Private Limited,
Door. No.106, JR Nivas,
Denkanikottai Road,
Hosur Taluk,
Krishnagiri District - 635 109.

Roc.No.248/2014 (Mines)
Dated. 27.04.2017.

Sir,

Sub: Mines and Quarries – Minor Mineral – Black Granite -
Dharmapuri District – Palacode Taluk – Panchapalli
village – patta land – S.F.Nos.91/2(0.46.0), 95/1A(P)
(0.29.0), 95/1B(0.33.0), 95/2A(0.47.5), 95/2B(0.88.0),
95/2C(0.27.0) and 97/1B(P) (0.99.5) over an extent of
3.70.0 Hects – Quarry lease application of Tvl.J.R.Granite
Private Limited, Hosur - existing/proposed/abandoned
quarries situated within 500 mts. radial distance -
requested by the lessee - details furnished - reg.

Ref: 1. Quarry lease application preferred by Tvl.J.R.Granites
Private Limited, Hosur dated 10.11.2014.

2. This office letter Roc.No.248/2014 (Mines) dated
24.08.2016 addressed to the Government through the
Commissioner and Director of Geology and Mining,
Chennai – 32.


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Tvl.J.R.Granites Private Limited, Hosur has preferred application
for grant of quarrying lease for Black granite, over an extent of 3.70.0
Hects. of Patta lands in S.F.Nos. 91/2(0.46.0), 95/1A(P) (0.29.0),
95/1B(0.33.0), 95/2A(0.47.5), 95/2B(0.88.0), 95/2C(0.27.0) and
97/1B(P) (0.99.5) in Panchapalli Village, Palacode Taluk, Dharmapuri
District for a period of 20 years under Rule 19(A) of the Tamil Nadu

The quarry lease application has been forwarded to Government
through the Commissioner of Geology and Mining, Chennai vide
reference 2nd cited.
TOPOGRAPHICAL VIEW OF PANCHAPALLI BLACK GRANITE QUARRY LEASE APPLIED AREA

NAME OF THE APPLICANT WITH ADDRESS
Name: Tvl. JR Granites Private Limited,
Address: Door No. 106, JR Nivas,
Venkateswara Nagar Layout,
Denkanikottai Road,
Hosur Taluk,
Krishnagiri District,
Tamilnadu - 635 109.

LOCATION:
S.F.Nos.: 91/2, 95/1A(P), 95/1B, 95/2A, 95/2B, 95/2C and 97/1B(P),
Extent: 3.70.0 Hectares
Village: Panchapalli
Taluk: Palacode
District: Dharmapuri

Signature of Applicant
For Tvl. JR Granites Private Limited

Managing Director

Attestation
(Village Administrative Officer)
In the reference 3rd cited, Tvl.J.R.Granites Private Limited, Hosur has requested to furnish the details of all mines/quarry located within 500 mts. radius from the lease area for obtaining environmental clearance from SEIAA/DEIAA.

In this regard, it is informed that at present the following existing/abandoned quarries are located within 500 mts. radial distance from the periphery of the applied area.

### Existing Quarries

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name and address of the lessee</th>
<th>G.O. No. and date</th>
<th>District, Taluk &amp; Village</th>
<th>S.F.No.</th>
<th>Extent (in Hects.)</th>
<th>Period of lease</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Thiru.C.Sathishkumar, Plot.NO.247, Sarveswaran Kovil St, Annanagar, Madurai.-20</td>
<td>G.O.3(D) 81 Ind (MME2) dept dated.25.10.2000</td>
<td>Panchapalli (v)</td>
<td>Palacode (Tk),</td>
<td>S.F.No. 98/1A, 1B etc.,</td>
<td>4.62.0</td>
</tr>
</tbody>
</table>

### Abandoned Quarry

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name and address of the lessee</th>
<th>G.O. No. and date</th>
<th>District, Taluk &amp; Village</th>
<th>S.F.No.</th>
<th>Extent (in Hects.)</th>
<th>Period of lease</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Tvl.Sakethi India Limited, 60, Sipcot, Industrial Complex, Hosur, Krishnagiri Dt.</td>
<td>G.O.2(D) No.151, Ind (MMC1) Dept, dated 04.01.1991</td>
<td>Palacode Taluk, Panchapalli (v)</td>
<td>30 (Part)</td>
<td>1.28.5</td>
<td>05.01.1992 to 04.01.2002</td>
</tr>
</tbody>
</table>

Assistant Director,
Geology and Mining,
Dharmapuri.
DEPARTMENT OF GEOLOGY AND MINING

From
Dr. R. Palaniswamy, I.A.S.,
Commissioner of Geology and Mining,
Industrial Estate,
Guindy, Chennai-600 032.

To
The Principal Secretary to Government,
Industries Department,
Secretariat,
Chennai-600 009


Sir,

Sub: Mines and Quarries – Black granite - Dharmapuri District – Palacode Taluk – Panchapalli Village - S.F.Nos.91/2 (0.46.0) 95/1A (P) (0.29.0), 95/1B (0.33.0), 95/2A (0.47.5), 95/2B (0.88.0), 95/2C (0.27.0) and 97/1B (P) (0.99.5) - over an extent of 3.70.0 hectares of patta lands – Quarry lease application preferred by Tvl. J.R. Granites Private Limited – precise area communicated by the Government - Approved Mining Plan called for – Mining Plan submitted for approval – approval accorded – Approved Mining Plan forwarded to Government - Regarding.


5) Tvl. J.R. Granites Private Limited, Hosur letter dated nil received on 29.07.2016 in the O/o. Assistant Director (G&M), Dharmapuri.

6) Assistant Director (G&M), Dharmapuri letter No. 248/ 2014 (Mines) dated 28.03.2017.

The Government in the reference 4th cited have communicated the precise area to Tvl. J.R. Granites Private Limited, Hosur with a direction to produce an Approved Mining Plan in respect of the area applied for grant
of quarry lease for quarrying Black Granite over an extent of 3.70.0 hecats.
of patta lands in S.F.Nos. 91/2 (0.46.0) 95/1A (P) (0.29.0), 95/1B (0.33.0),
95/2A (0.47.5), 95/2B (0.88.0), 95/1C (0.27.0) and 97/1B (P) (0.99.5) of
Panchapalli Village, Palacode Taluk and Dharmapuri District within a
period of 3 months as per sub-rule (13) of Rule 19-A of Tamil Nadu Minor
Mineral Concession Rules, 1959 by incorporating the conditions stipulated
in the Government letter dated 08.03.2017.

2) In response to the precise area communicated, the applicant
firm in the reference 5th cited has submitted 6 copies of draft mining plan
duly prepared by the Recognized Qualified Person for approval.

3) The Assistant Director of Geology and Mining, Dharmapuri in
the reference 6th cited has forwarded the draft mining plan for approval
stating that the mining plan has been verified with reference to field
conditions and the details such as Geological Reserves, Mineable
Reserves, year wise production and development programme have been
incorporated in the draft mining plan. He has further reported that the
mineable reserves in the draft mining plan has been estimated as 79,046
cu.mtrs. for a depth persistence of 36 mts. with a recovery of 40%. The
Assistant Director (G&M), Dharmapuri has forwarded the draft mining plan
recommending for approval.

4) The draft mining plan submitted in respect of the precise area
communicated and the report of the Assistant Director of Geology and
Mining, Dharmapuri have been examined with reference to the provisions
of Rule 12, 13 and 15 of Granite Conservation and Development Rules,
1999 and the followings are observed:-

i) All the conditions stipulated in the Government letter
No.670/MME-2/2017-1 Ind. (MME-2) Dept dated
08.03.2017 have been incorporated in the mining plan.
ii) The required safety distance of 7.5 meters has been provided to the adjacent patta lands and the same has been demarcated in the mining plan.

iii) The required safety distance of 10 meters has been provided to the for the podukal poromboke land in S.F.No. 97/2 and 95/3 and kallankuthu poromboke land (UAW) in S.F.No. 92 on the southern side of the applied area and the same has been demarcated in the mining plan.

iv) The DGPS readings for the entire boundary pillars of the area have been incorporated and shown in the mining plan.

v) The total quantity of mineable reserves has been estimated as 79,046 cu.m with a recovery of 40% for a depth persistence of 36 mts.

vi) The total quantity of recoverable reserves of granite for the first 5 years has been estimated as 20,316 cbm for a depth persistence of 16 mtrs. with a recovery of 40%.

5) In the light of the above, in exercise of the powers conferred under Rules 12,13 and 15 of Granite Conservation and Development Rules, 1999 read with G.O.Ms.No.87, Industries (MMC1) Department Dated 22.2.2001, I hereby approve the mining plan subject to the following conditions:-

i) The mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such Laws are made by the Central Government, State Government or any other authority.

ii) The 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

iii) The mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.

iv) The applicant should obtain Environment Clearance from the Competent Authority as per Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959.

v) The applicant should fence the lease granted area with barbed wire before the execution of lease deed and the pillar post shall be firmly grounded with concrete foundation of height not less than 2m with a distance between two pillars shall not be more than 3mts.

vi) The lessee shall strictly adhere to the statutory and safety requirements.

vii) Waste materials generated during quarrying operations shall be dumped within the lease applied area earmarked for this purpose.

viii) The applicant should leave a safety distance of 7.5 meters to the adjacent patta lands and should not cause any hindrance to them while quarrying.

ix) The applicant should leave a safety distance of 10 mts. for the for the podukal poromboke land in S.F. No. 97/2 and 95/3 and kallankuthu poromboke land (UAW) in S.F. No. 92 on the southern side of the applied area.

x) No hindrance shall be caused to the adjacent pattadars lands while quarrying and transportation of granite.

xi) The proposed area for quarrying should be demarcated by using DGPS before executing the lease deed.

xii) Quarrying operations shall be carried out as per the Approved Mining Plan.
xiii) The production of granite shall be done as per the Approved Mining Plan.

xiv) Scheme of mining along with the progressive mine closure plan shall be submitted within the time stipulated in the rules.

xv) The District Collector, Dharmapuri shall obtain a sworn-in-affidavit from the applicant containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government letter 12789/MMB2/2002-7, Industries Department, dated 09.01.2003 are complied with.

A copy of the Approved Mining Plan is sent herewith for further necessary action.

Encl: Approved mining plan.

Sd/- R. Palaniswamy,
Commissioner of Geology and Mining

[Signature]
Additional Director of Geology and Mining

To

1) Tvl. JR. Granites Private Limited,
   Door No. 105, JR Nivas,
   Venkateswara Nagar Layout,
   Hosur Taluk,
   Krishnagiri District,
   Tamilnadu-635 109.

2) The District Collector, Dharmapuri (with AMP)

3) The Directorate of Mines Safety,
   Chennai-40 (with AMP).