

## 1. EXECUTIVE SUMMARY

### 1.1 Introduction

The mining lease area for Colour Granite over an extent of 9.0 Hectares is located in Sy. No. 45 of Khazipur Village, Karimnagar Mandal, Karimnagar District, Telangana State.

**M/s. SRI VENKATESH GRANITES**, Karimnagar District, was granted the quarry lease for Colour Granite by Director of Mines & Geology, Hyderabad, Notice No. 32697/R6-3/09 dated 27-12-2010. The Mining Plan is approved subject to the conditions/Stipulations indicated in the Mining plan Approval Letter No.8580/MP-KMNR/2012 dated23-03-2013.The Director has granted Q.L for Colour Granite for a period of 20 years subject to submission of Approved Mining Plan within a period of 6 months from the date of issue of notice. The salient features of the project are given Table 1.1.

**TABLE 1.1: Salient features of the project**

Project Name	Colour Granite Mine of M/s. Sri Venkatesh Granites (P) Ltd.
Mining Lease Area	9.0Hectares
Location	Sy. No. 45, Khazipur Village, Karimnagar Mandal, Karimnagar District, Telangana State.
Toposheet No.	56N/3
Topography	The lease area is a small mound.
Minerals of mine	Colour Granite Mine
Proposed production of mine.	1,921Cu. m/ Annum
Method of mining	Open cast Semi-mechanization as mining
No. of working days	300 days
Water demand	6.0KLD
Sources of water	Tankers
Ultimate depth of Mining	10 m
Man power	34
Nearest railway station	Karimnagar Railway Station – 11.91 km (E)
Nearest state highway/national highway	SH-11 (Sirisilla -Karimnagar Road) – 0.79 km (N)
Nearest Airport	RGIAP (Shamshabad)Airport– 145.00km(SW)
Nearest Seaport	Kakinada Seaport –126.00km (SE)
Project Cost	Rs.24.00Lakhs

## 2. INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

### 2.1 Identification of Project and Project Proponent

M/s. Sri Venkatesh Granites (P) Ltd is a private lessee having past experience in granite business and vast experience in quarry. The Colour Granite mine is located in Sy. No. 45 of Khazipur Village, Karimnagar Mandal, Karimnagar District, Telangana State over an area of 0.47Hectares.The Colour

granite has got good demand in the domestic and international market. It is being marketed since 30 years and can expect good market demand will continue for years to come with improved technology. The owner has contacted the buyers at Chennai and other important trade centers to export colour granite from this area.

## **2.2 Brief Information about the Project**

The mining lease area of 9.0 Hectares Opencast Semi-mechanised mining is followed and it has been proposed to produce approximately 1,921 Cu.m/Annum of Colour Granite. The nearest habitation Khazipur is located at a distance of 1.36km due SW from lease area.

## **2.3 Need for the Project and Its Importance to the Country or Region**

The demand for granite increased due to rapid industrialization and growth in infrastructure. So the number of granite producing quarries is increasing in India. Granite is the chief material for the export industries like monuments, flooring slabs, Kitchen articles, sculptures & export. Based on the demand of Granite, the lessee intends to produce the required quantity of Colour Granite for domestic market. As per EIA notification 2006 the project falls under Category- B, the proponent is submitting the proposal to get Clearance for production capacity of 1,921Cu.m/Annum of granite blocks from SEAC, SEIAA, Telangana State for the purpose of grant of quarry lease.

The demand and supply for the Colour granite is growing which makes a lot of scope for revenue generation. The granite is further processed and supplied to industries after quarrying.

India is amongst the leading exporter countries of stones in the world. The major importers of Indian stones are USA, China, UK, Italy, Belgium, Germany, UAE, Hong Kong, Spain, Taiwan, Netherlands, Canada, Turkey, France, Russia and CIS countries. The growth is continuing and the demand for marble, granite, sandstone and other dimensional stones and stone products is anticipated to grow at around 15% CAGR.

## **2.4 Employment Generation**

Open cast semi- mechanized mining is going to be used except for transport. About total 34 workers are going to be engaged for at least 300 days in a year for loading colour granite in to trucks / tractors/ tippers. It will provide indirect employment to several workers in the area. The occupation of the local inhabitants in surrounding villages of the mine area is Agriculture. The mining activity in this belt will benefit the locals both directly and indirectly. The directly beneficiaries will be those who get employed in the mines as skilled and unskilled workers. The indirect beneficiaries will be those who open small business to sell goods required by the residents whose “per capita” income will be enhanced by the mining activity, and thereby their purchasing power will be increased. In the long run a lot of social goods are expected in the comparatively backward area when the inhabitants will be able to send their children to school.

## **3. PROJECT DESCRIPTION**

### **3.1 Type of Project Including Interlinked and Interdependent Projects, If Any.**

No interlinked projects were associated with this project.

### **3.2 Location**

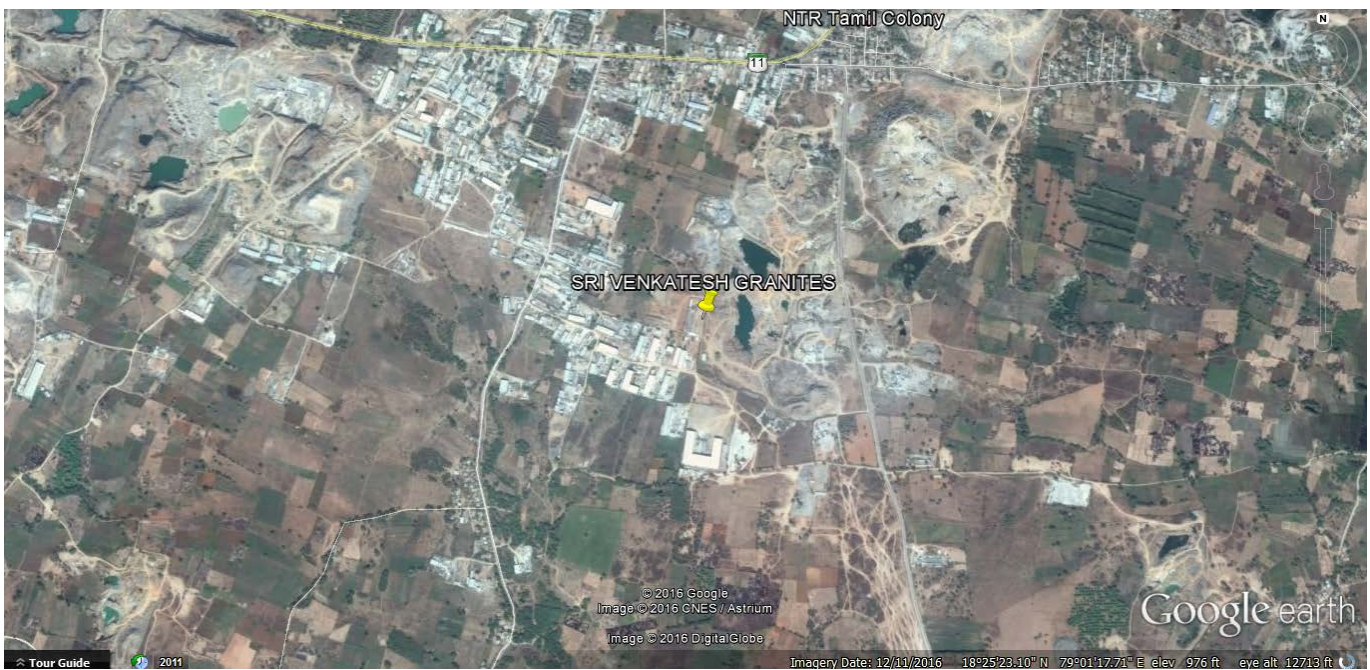
The proposed project is located in Sy. No. 45 of Khazipur Village, Karimnagar Mandal, Karimnagar District, Telangana State over an area of 9.0 Hectares. The mining lease area falls in Survey of India Toposheet No.56N/3.

The Geo Co-ordinates of the mine lease are:

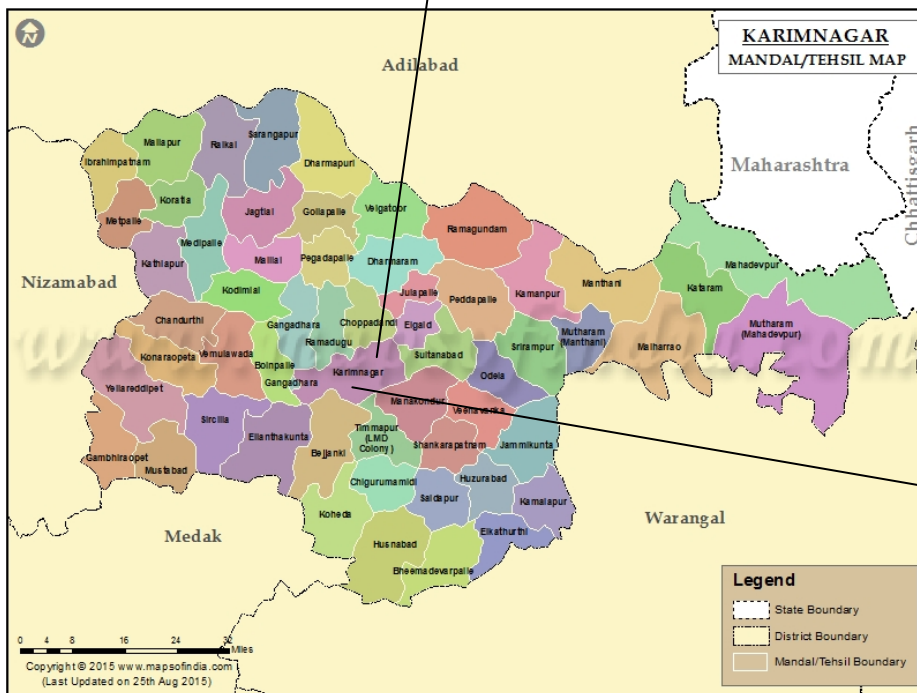
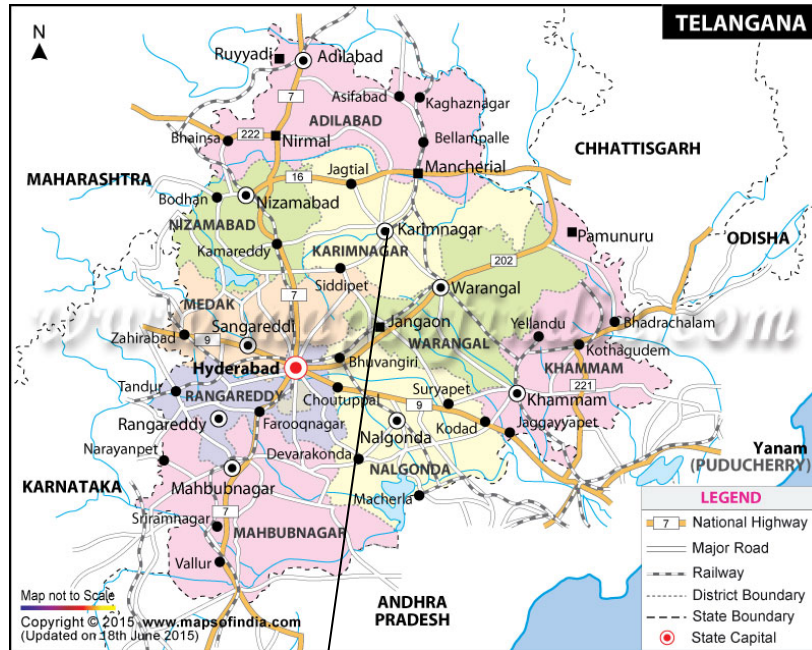
GCP	Latitude	Longitude
1	18° 25' 27.0" N	79° 01' 03.1" E
2	18° 25' 21.4" N	79° 01' 02.4" E
3	18° 25' 18.6" N	79° 01' 09.5" E
4	18° 25' 16.8" N	79° 01' 08.6" E

Topo Map Showing Google Image of Mine lease area is enclosed as **Fig - 1**.  
Location of the mining lease in Karimnagar District is shown in **Fig - 2**.

**FIG - 1**  
**GOOGLE IMAGE SHOWING THE MINE LEASE AREA**



**FIG – 2**  
**LOCATION MAP**



MINE SITE

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### 3.3 Details of Alternate Sites

No alternate site was considered as the project is mineral specific and site specific.

### 3.4 Size or magnitude of operation

The proposed mine has lease over an area of 9.0 Hectares and the production rate is 1,921 Cu.m per Annum of Colour Granite. The lease follows open cast semi- mechanized mining.

### 3.5 Geology

The quarry lease area is located on a low N - S trending barren mound steeply sloping on both sides, rising 47 M above ground level. The area is unfit for agriculture as it is strewned with boulders.

The drainage network is due South. Manner river flows at the distance of 2.50 Km due South. The area is surrounded by numerous water bodies.

#### 3.5.1 Topography

The quarry lease area is sub undulatory terrain with denudation hillock with the domal hills with forms the prominent topographical features. Hillocks which are mostly migmatized gneisses passing through NW - SE. The maximum relief of the hill is falling within the quarry lease hold area is noticed around 68 Mts height, which present towards due South Western part of the hill. The quarry lease area is occupied by massive boulders and sheet rock occurring one above the others, striking along NW- SE direction. Lowering of the height (slope) is noticed towards the North Western side. Widening of the hill is observed towards the South Eastern part decrease in width is observed towards Western, Northern and Eastern part of the hills surrounded with agricultural lands crops like maize corn, pulse, cotton and partially paddy grown due to shallow bed rock. Ground water resource are from flow - moderate yield. Hence, paddy is cultivated partially majority - agricultural crops are raised on rain feed source.

The quarry lease area is a part of barren mound raised 4 M above ground level within the quarry lease area with topo relief in East direction. The exposures of rock out crops are abundant in E- E. The lowest contour is 295 M and highest contour is 299 M in topo plan

#### 3.5.2 Regional Geology

The quarry lease area comprise of Granites and Granitic Gneiss of Archean Age. Pink and Grey Granites, Pink Alkali Feldspar Granites and Gneissic Granodiorite - Quartz Diorite with enclaves of Supracrustal like Quartzite, Chlorite Schist, Hornblende - Biotite Schist etc. constitute the Granitoid - Migmatite complex. These Litho units exhibit various geomorphic expressions like Domes, Inselbergs, Castle Koppies and Whaleback and Basic Dykes forms Linear Ridges with moderate relief.

### 3.6 Exploration/ Prospecting

#### Details of Exploration Carried Out

No Exploration or Mining is carried out in the area as the subject area is applied for grant of quarry lease.

### 3.7 Reserves

Geological traverses in the quarry and the study exposures in the quarry facilitated to access the shape and size of the deposit in the area. It is a mound deposit raised 4 M above ground level. The surface of sheet rock is wavy and irregular.

**Mineable Reserves****Total Geological Reserves**

<b>Geological Reserves M<sup>3</sup></b>	<b>Recoverable Market Grade Blocks@40%</b>
5,28,692.00	2,11,476.80

Extraction of Market Grade Reserves@ 40% Recovery = **2,11,476.80 M<sup>3</sup>**

**Life of the Mine = 2, 11,476.80M<sup>3</sup> /1,921.00M<sup>3</sup>**

**= 110.09 or SAY 110Years**

**TOTAL LIFE OF THE MINE=110 YEARS**

**3.8Project Description with process details****3.8.1 Method of Mining**

The Colour Granite in the quarry lease area is exposed on the surface with boulders. Hence, it is proposed to mine the boulders I sheet by open cast, semi mechanized methods, by developing the benches of 3 M height in 2 phases of 3 M each. Wire Saw cutting will be deployed based on the favorable conditions-. The development of benches in the sheet rock will be maintained @ 60° safety slopes.

The separation of blocks from the mother rock will be carried out by drilling and chiseling with hammers with small pressure after Wire Saw operations, drilling and dousing with excavators will be done by through proclaim teeth or with bucket separating from the mother rock.

The secondary splitting, dressing of blocks will be done manually

Therefore, mining operations to be carried out in this area in 2 stages.

- 1) Development
- 2) Production

**3.8.2 Mining program for next five years****Stage- 1**

The removal of weathered and under sized boulders will be cleared in the quarry lease area for the next one year by using excavator .The sheet exposed will be subjected to drilling with compressors and tam rocks, chiseling with hammers applying pressure by proclaim teeth and splitting from mother rock.

**Rock Splitting I Wedging:**

Thus 20' x 20' to 40' x 20' to 40' mass will be separated from mother rock by drilling the slotter holes on both sides of the mass and a top hole intersecting these two holes and wire saw rope is passed through and cutting is done horizontally and vertically and by this there will be mass opening on all the sides from the mother mass.

**Stage -2**

After removal of weathered and under sized boulders.

- The large boulders will be subjected to splitting into required sizes of blocks by using Jack Hammers by drilling series of deep holes at right angles at regular intervals, later by inserting feather and wedges in these holes and hammering with sledge hammer will release the blocks .
- The boulders will be splitted to the required sizes with drilling and if required by using chemical compound at the source only. The boulders separated will be brought to the dressing yard for dressing.
- If the boulders, which fit into the required market grade size will be transformed into cuboids.

**TABLE 3.8.2: Year wise Production for 5 years.**

Year Wise Production For 5 Years					
Year	Area (M <sup>2</sup> )	Bench Height (M)	Volume (M <sup>3</sup> )	Production@ 20 % (M <sup>3</sup> )	Waste @ 80% (M <sup>3</sup> )
1 <sup>st</sup>	564.00	9.00	5,076.00	2,030.40	3,045.60
2 <sup>nd</sup>	583.00	9.00	5,247.00	2,098.80	3,148.20
3 <sup>rd</sup>	535.00	9.00	4,815.00	1,926.00	2,889.00
4 <sup>th</sup>	510.00	9.00	4,590.00	1,836.00	2,754.00
5 <sup>th</sup>	476.00	9.00	4,284.00	1,713.60	2,570.40
<b>TOTAL</b>	<b>2,668.00</b>		<b>24,012.00</b>	<b>9,604.80</b>	<b>14,407.20</b>
<b>AVERAGE</b>	<b>533.60</b>		<b>4,802.40</b>	<b>1,920.96</b>	<b>2,881.44</b>

(Source: Mining plan)

**Quantum of Excavation:** A total of 24,012.00 M<sup>3</sup> of Rock Mass will be excavated during first five years to retrieve 9,604.80 M<sup>3</sup> of Market Grade Rough Blocks, there by generating 14,407.20 M<sup>3</sup> of Rock Waste.

(Source: Mining plan)

### **3.9 Raw Material Required Along With Estimated Quantity, Likely Source, Marketing Area of Final Product/S, Mode of Transport of Raw Material and Finished Product**

No raw material will be required in the proposed project. The operation involves the extraction of Colour Granite in its existing form and it will be transported to the Local market through Lorry's. The existing roads will be utilized for the transport of Colour Granite from mine site to market.

#### **3.9.1 Use of Mineral**

Colour Granite is used for construction. The colour granite has got good demand in the domestic and international market. The Colour granite is being marketed since 8 years and can expect good market demand will continue for years to come with improved technology. The owner has contacted the buyers at Chennai and other important trade centers to export colour granite from this area.

#### **3.9.2 Processing**

Processing of colour Granite is not involved.

#### **3.10 Resource Optimization/ Recycling and Reuse**

Not envisaged.

#### **3.11 Availability of Water Its Source, Energy/ Power Requirement and Source**

##### **3.11.1 Water Requirement**

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Water is required only for drinking purposes and dust suppression. The number of working people is around 34. So the total water requirement will be around 6.0 KLD. Source of water is bore wells.

### **3.11.2 Power**

- Estimated Power: 80KVA
- Source: D.G. set of 80KVA
- Fuel consumption: 100LPD

### **3.12 Quantity of wastes to be generated (liquid and solid) and scheme for their management/ disposal**

#### **3.12.1 Solid Waste Generation & its Disposal**

In this type of extraction the recovery factor is as medium as 20% so only 80% comes out as waste. This waste shall be stacked in the dump yard to reuse for reclamation purpose. Waste will be shocked over an area with height of 3 m, in the West & North Westside of the area. During the next five years about 14,407.20 Cu. m of waste material will be generated.

#### **3.12.2 Liquid Effluent**

No liquid effluent will be generated at the mine site.

## **4. SITE ANALYSIS**

### **4.1. Nearest Railway Station**

Karimnagar Railway Station – 11.91 km (E)

### **4.2 Nearest Airport**

RGIAP (Shamshabad) Airport is about 145.00 km SW from lease area.

### **4.3 Nearest Seaport**

Kakinada Seaport is about 126.00km (SE).

### **4.4 Landform, Land Use and Land ownership**

The mining lease is located in Government land. The working project portion is devoid of any vegetation. It comprises shrubs only. In general the area is plain land.

## **5. PLANNING BRIEF**

### **5.1 Planning Concept**

It is proposed to produce total of 1,921 Cu.m per Annum of Colour Granite from the proposed mining lease.

### **5.2 Population projection**

The project will employ mostly workers from nearby villages. About 34 persons will be employed as workers for this proposed mine. There will not be any increase in population due to the project.

### **5.3 Land use planning**

The project is located in 9.0 Hectares of Government land. There will be change in land use as the Colour granite mine will be excavated. An extent of about area will be sliced down during next five years to a depth of 3 m.

#### **5.4 Assessment of Infrastructure Demand (Physical & Social)**

On the basis of the preliminary site visit, the infrastructure demand in the villages was assessed on the basis of need and priority. The assessment will be made in the socio economic survey and will be submitted at the time of final presentation regarding EC.

#### **5.5 Amenities/Facilities**

It is proposed to provide the site services like Mines office and other statutory constructions like rest shelter, first aid, work shed and drinking water as required near the quarry lease. Drinking water will be supplied to the workers from the bore well opened in the adjacent quarry site & agricultural fields.

### **6. PROPOSED INFRASTRUCTURE**

#### **6.1 Residential Area (Non Processing Area)**

As the local persons will be given employment, no residential area/ housing is proposed within the mining lease area.

#### **6.2 Water Management**

The total water requirement is 6.0 KLD. There are no chances for changes in quality of surface water or ground water the quarry operations will be carried out on slopes of the rocky terrain. Hence neither the ground water table nor the general surface drainage pattern is affected. No water will be discharged from the quarry. `

Following measures shall be taken:

- Garland drain with sedimentation pit will be constructed all along the working pit and dump to arrest the silt.
- It shall be ensured that silt discharged from the mine area will be minimized to the utmost extent.
- Pumps of adequate capacity shall be installed to lift the accumulated rain water.
- It shall be ensured that good quality potable water is provided for drinking purposes. Good sanitation facilities (toilets with septic tank followed by soak pits) shall be provided and maintained for good hygienic conditions.
- The spillages from fueling of machinery shall be avoided and in case of any spillage the same shall be handled properly. Likewise the spent lubricating oils etc. shall be safely collected and properly disposed off.

#### **6.3 Sewerage System**

Disposal in to soak pit shall be done.

#### **6.4 Industrial Waste Management**

Not applicable.

#### **6.5 Solid Waste management**

The most significant waste generating activities will occur during the operation phase, which requires the movement of large quantities of overburden, weathered and fractured rocks and other waste material.

During mining in next 5 years waste will be generated and dumped at the dumping yard. This waste shall be stacked in the dump yard to reuse for reclamation purpose. Waste will be shocked overran

area with height 3 m, in the SE border of the quarry lease area. During the next five years about 14,407.20 Cu.m of waste material will be generated. A retaining wall will be constructed around the dump for preventing the slanting of boulders.

Management of waste material shall include the following:

- Soil can be utilized for reclamation of degraded area.
- Weathered rock if it is sufficiently soft and devoid of rock fragments can be utilized for roads, filling of road side ditches, formation of approach roads to quarries, construction works etc.
- Large and medium sized waste rock can be used as revetment for deep cut stream sections from preventing from soil erosion.

The waste generated during the mining will also be used for back filling of the mine pit after completion of mining.

## **6.6 Socio-economic Environment**

The occupation of the local inhabitants in surrounding villages of the mine area is Agriculture. The mining activity in this belt will benefit the locals both directly and indirectly. The directly beneficiaries will be those who get employed in the mines as skilled and unskilled workers. The indirect beneficiaries will be those who open small business to sell goods required by the residents whose “per capita” income will be enhanced by the mining activity, and thereby their purchasing power will be increased. In the long run a lot of social goods are expected in the comparatively backward area when the inhabitants will be able to send their children to school.

## **6.7 Occupational Safety & Health Management**

- Periodical Medical Examination (PME) of all workers before recruitment and during mining operations.
- Total workers in the mine – 34.
- Mine operators were provided with personal protective equipment’s (PPEs) include safety helmets and footwear, in addition to ear, eye, and hand protection devices.
- Dust masks were provided for workers.
- Potable drinking water & shelter for mine workers will be provided.

## **6.8 Monitoring during Project Phase (active mining)**

Pollution monitoring program includes periodic analysis of air, noise levels and groundwater samples. Groundwater samples at representative locations within and nearby the lease area shall be periodically analyzed to detect contamination if any. In the event of any contamination, concerned authorities shall be notified immediately and appropriate corrective measures shall also be initiated. The monitoring shall also help in knowing the effectiveness of abatement measures and also be a guide for further steps to be taken, if required.

### **6.8.1 Monitoring Strategy**

The monitoring of various environmental parameters is necessary and is a part of environmental protection measures. Monitoring is as important as that of control of pollution since the efficiency of control measures can only be determined by monitoring. A well-defined environmental monitoring program would be employed with trained and qualified staff to monitor the ambient air quality to check whether the quality of emissions/effluents is maintained within the permissible limits.

Environmental attributes should be monitored as given below:

- Ambient Air quality

- Water quality
- Noise levels
- Soil characteristics

Locations and frequency of monitoring should be as per the guidelines of APPCB.

### **6.8.2 Ambient Air Monitoring**

As per MoEF there is a need to identify 3 ambient air stations at 120° angle keeping the main source in the center. The ground level concentrations of suspended particulate matter, sulphur dioxide and nitrogen oxides in the ambient air within the project boundaries will be monitored at regular intervals.

### **6.8.3 Noise Monitoring**

Noise levels in the workspace environment will be monitored periodically. If any deviation is observed necessary corrective measures will be taken. Monitoring noise levels is essential to assess the efficacy of maintenance of schedules undertaken to reduce noise levels and noise protection measures. A good quality sound pressure level meter is essential for this purpose. This work can be handled by plant authorities themselves or by hiring services of an external agency. Noise surveillance is for the benefit of the workers wellbeing and to keep track of machinery wear and tear.

### **6.8.4 Water Quality Monitoring**

Groundwater near the project site will be routinely tested for its quality. No contamination of groundwater is expected. Groundwater is recommended to be monitored in at least other wells/ bores in the area adjacent to the QL area in the direction of ground water flow to keep surveillance on the groundwater quality.

### **6.8.5 Use of Explosives**

Blasting activities that may result in safety impacts are typically related to accidental explosion and poor coordination and communication of blasting activities. The proponent will be using low explosives and silent non explosive demolishing agents will be used to minimize the effects of vibration.

Control measures to be taken during blasting are:

- Specific warning devices (e.g. horn signals, flashing lights) and procedures should be implemented before each blasting activity to alert all workers and third parties in the surrounding areas (e.g. the resident population). Warning procedures may be needed to include traffic limitation along local roadways.
- Actively managing blasting activities in terms of loading, priming, and firing explosives, drilling near explosives, misfired shots and disposal.
- Adoption of consistent blasting schedules, minimizing blast- time changes.
- Rules and regulations laid down for safe storage and handling of the explosives as per the explosives Act will be strictly maintained.
- Specific personnel training on explosives handling and safety management should be conducted.
- Blasting sites should be checked post-blast by qualified personnel for malfunctions and unexploded blasting agents, prior to resumption of work.

### **6.8.6 Machine and Equipment Safety**

To prevent and control hazards related to machine and equipment use, measures for the enhancement of visibility should be applied throughout the mine. Specific visibility management practices may include the following:

- Use of reflective markings on structures, traffic junctions, and other areas with a potential for accidents.
- Use of contrast Coloring on equipment / machinery, including the provision of reflective markings to enhance visibility.
- Use of moving equipment / machinery equipped with improved operator sight lines.
- Installing safety barriers in high-risk locations of internal roads / transport corridors. Barriers may be constructed with refuse or other materials capable to stopping vehicles.

### **6.8.7 Greenbelt Development**

Every year about 30m length of buffer zone will be planted around the boundary of the mine lease area. The Saplings consisting of Neem , Teak will be planted per year over an area of 150.00at 7.5 m grid interval Year wise plantation area .

## **7. REHABILITATION AND RESETTLEMENT (R&R) PLAN**

An extent of about area will be sliced down during next five years to a depth of 3 m. The proposal for reclamation of land affected by mining activity will be done at the end of mining lease. No reclamation is proposed in the first five years period because, the mining will be continued to further depths and reclamation will be possible only after completion of mining up to the proposed depths.

Reclamation and rehabilitation of the lands affected by mining will be done by back filling, soil amelioration and afforestation. This will be taken up on need basis before the conclusion of mining operations. The backfilling of the mine starts from the Eastern end proceeds towards Western side. Drainage will be developed. Reclamation of the affected land includes back filling, drainage development, spreading and fertilization of soil, leveling and re-vegetation etc. Care will be taken to implement the said factors.

## **8. PROJECT SCHEDULE & COST ESTIMATES**

M/s. Sri Venkatesh Granites (P) Ltd. have allocated budget of ₹ 1.97 Lakhs (Capital Cost) and ₹ 0.99 Lakhs (Recurring Cost) for the environmental protection measures.

## **9. ANALYSIS OF PROPOSAL (FINAL RECOMMENDATIONS)**

### **9.1 Financial and Social Benefits with Special Emphasis on the Benefit to the Local People Including Tribal Population, If Any, In the Area.**

The project involves collection of Colour Granite. It is a major contributor in foreign exchange earnings. India is the second largest exporter of raw granite after China and ahead of Brazil and South Africa.

This project will also provide employment to local people helping them earn livelihood.

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