

**EXECUTIVE SUMMARY FOR  
PROPOSED ROUGH STONE & GRAVEL QUARRY  
(CATEGORY – B1)**

(Submitted for Public Hearing as per the provisions of EIA Notification 2006 & its amendments thereof)

APPROVED TOR Lr.No.SEIAA-TN/F.No.9684/SEAC/ToR-1424/2022 Dated: 18.04.2023

<b>PROPOSED QUARRY LEASE DETAILS</b>	
<b>SURVEY NOS</b>	<b>507 &amp; 508</b>
<b>VILLAGE</b>	<b>THERKUKARSERI</b>
<b>TALUK</b>	<b>SRIVAIKUNDAM</b>
<b>DISTRICT</b>	<b>THOOTHUKUDI</b>
<b>EXTENT</b>	<b>4.21.5 HA</b>
<b>PROPOSED PRODUCTION FOR FIVE YEARS</b>	<b>4,64,760 m<sup>3</sup> OF ROUGH STONE 84,222 m<sup>3</sup> OF GRAVEL</b>
<b>LAND</b>	<b>OWN PATTA LAND</b>

(Sector No. 1(a) (Sector no.1 as per NABET)  
Category of the Project: B1 Cluster Mining, Total Cluster Area – 8.81 Ha  
Baseline Monitoring Period – March to May 2023

**APPLICANT**

**THIRU. K.SUBBAIAH  
S/o.KARUNAKARAN,  
DOOR NO.8/11, NADU THERU, MAVADI PANNAI, THIRUCHENDUR TALUK  
AND THOOTHUKUDI DISTRICT.**

PIN CODE – 628 623.

**ORGANIZATION**

**M/s. GLOBAL MINING SOLUTIONS  
(NABET ACCREDITED & ISO 9001 CERTIFIED CONSULTANT)  
PLOT NO. 6, SF NO. 13/2, A2, VS CITY, RC CHETTYPATTY,  
KOTTAMETTUPATTY, OMALUR, SALEM, TAMIL NADU – 636 455  
NABET ACCREDITATION NO – NABET/EIA/2326/IA 0110**

**DECEMBER -2023**



## **EXECUTIVE SUMMARY**

### **1.0 Introduction**

Environmental Impact Assessment (EIA) is a tool used to identify the environmental, social and economic impacts of a project prior to decision-making. It aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision-makers.

This EIA Report is prepared for Thiru. K. Subbaiah Rough Stone & Gravel Quarry over an extent of 4.21.50 Ha. patta lands in S.F. No. 507 & 508, Therkukarseri Village, Srivaukundam Taluk, Thoothukudi District Tamil Nadu.

As per EIA notification, 2006 and its subsequent amendments the proposed "**Rough Stone & Gravel Quarry of Thiru. K. Subbaiah**" cluster falls under Schedule 1(a) Mining of Minerals. It is further classified under Category B1 due to the overall extent of cluster area is 8.81.00 Ha which is >5 Ha. The ToR for preparation of EIA/EMP was approved vide letter No. Lr No.SEIAA-TN/F.No.9684/SEAC/TOR-1424/2022 Dated 18.04.2023. This report has been prepared in line with the approved TOR for production of maximum excavation of 4,64,760 Cu.m of rough stone & 84,222 cu.m. of Gravel and the annual peak production 93620 cu.m. of Rough Stone (4th Year) & 21945 Cu.m of Gravel (1st year) and for the period of 5 years with ultimate depth upto 33m.

### **1.1 Details of Project Proponent**

Name of the proponent	Thiru.K.Subbaiah
Status of the Proponent	Individual
Address	S/o. Karunakaran 8/11, Nadu Theru, Mavadi Pannai, Then Thirupperai Post, Tiruchendur Taluk, Thoothukudi District – 628 623. Mail id: <a href="mailto:subbiahroughstone@gmail.com">subbiahroughstone@gmail.com</a>

**Executive Summary of Proposed Rough stone and Gravel Quarry of Mr. K. Subbaiah at SF No 507 & 508 over a Extent of 4.21.5 Ha in Therkukarseri Village, Srivaikundam Taluk, Thoothukudi District, Tamil Nadu**

Mobile No.

9444206840

## 1.2 Size and Location of the Project

Proposed project details		
Sl. No.	Feature	Description
1	Co-ordinates of the project	Latitude: 8°35'53.36"N to 8°36' 05.57"N Longitude 77°48'19.34"E to 77°48'29.55"E.
2	Type of land	Private Patta land
3	Extent of lease area	4.21.50 Ha
4	Type of lease	Fresh lease
5	Toposheet No.	58 H/14
6	Geological Resource	Rough Stone - 12,62,820 m <sup>3</sup> Gravel - 1,26,282 m <sup>3</sup>
7	Mineable Resource	Rough Stone - 4,64,760 m <sup>3</sup> Gravel - 84,222 m <sup>3</sup>
8	Proposed production quantity for five years	Rough Stone - 4,64,760 m <sup>3</sup> Gravel - 84,222 m <sup>3</sup>
9	Proposed depth of mining	33 m BGL

## 1.3 Statutory Details

This is a fresh Rough Stone & Gravel Quarry project. There is no litigation/court cases pending against this project.

(a) Precise Area Communication:

The Precise area Communication has been granted by District Collector vide Rc.No.GM.1/387/2022, dated 10.11.2022 to get approval of Mining Plan and Environment Clearance from SEIAA, TN. Enclosed in Annexure -1.

(b) Mining Plan Approval:

The mining plan was approved by Assistant Geologist/ Assistant Director (i/c), Geology and Mining, Thoothukudi vide Roc.No. G.M.1/387/2022, dated 22.11.2022. Enclosed in Annexure -2.

(c) 500m radius quarry features:

The project proponent has obtained an official letter from Assistant Geologist/ Assistant Director(i/c), Dept. of Geology & Mining, Thoothukudi for 500 m radius

features vide Roc.No.G.M.1/387/2022, dated 19.12.2022. The letter copy enclosed as Annexure – 3.

(d) VAO certification regarding 500 meter features of the project area.

There are no historical places, schools, cemeteries, temples, bird sanctuaries, and wildlife sanctuaries within 500 metres of the proposed project area. In this regard, the project proponent has received an official letter from the Village Administrative Officer, Therkukarseri village. The letter copy enclosed as Annexure – 4.

(e) DFO Letter

Letter from DFO stating the distance of the Eco sensitive zone and sanctuary vide C.No.D/5878/2022, Dated 23.11.2022. Enclosed in Annexure – 8.

(f) Project Proponent undertaking affidavit:

The project proponent has issued an affidavit under MoEF & CC O.M. No. 3-50/2017-IA.III(Pt.) dated 30.05.2018 to comply with the direction of the Hon'ble SC made on 2.08.2017 in W.P. (C) 114 of 2014 in matter of Common Cause vs Union of India & Ors. The Affidavit copy is enclosed as Annexure – 5.

(g) Blasting Agreement:

The Project Proponent have agreement with National Trading Company to carry out the blasting operation for the proposed quarry. The Blasting Agreement is enclosed as Annexure – 6.

(h) Land document of the proposed lease area:

Entire mine lease area is a Patta land and is in applicant name. The copy of the Land document are enclosed as Annexure -7.

## **2.0 Project Description**

The type of the project is opencast semi-mechanized mining method to excavate Rough Stone & Gravel within the proposed Mine Lease area with drilling, blasting, loading and transportation.

### **2.1 Location details**

The proposed Quarry lease area is situated about 1km south of Therkukaraseri – Sivanthipatti sub road and at S.F.Nos. 507 & 508, Therkukaraseri Village, Srivaukundam Taluk, Thoothukudi District Tamil Nadu. The area lies in the north

**Executive Summary of Proposed Rough stone and Gravel Quarry of Mr. K. Subbaiah at SF No 507 & 508 over a Extent of 4.21.5 Ha in Therkukarseri Village, Srivaikundam Taluk, Thoothukudi District, Tamil Nadu**

latitude of 8°35'53.36"N to 8°36'05.57"N and eastern longitude of 77°48'19.34"E to 77°48'29.55"E.

## 2.2 Quarry details within 500m radius

The cluster Quarries include the two existing Quarries and one proposed Quarry. The existing and proposed quarries located within 500m radius are detailed in below Table.

<b>Table – 1.1 Cluster Mines Details</b>			
<b>Sl. No</b>	<b>Extent</b>	<b>Proponent</b>	<b>Status of lease</b>
1	4.59.50 Ha	K.Vijayakumar	Existing
2	4.21.50 Ha	K.Subbaiah	Proposed
3	0.88.0 Ha	K.Krishnasamy	Abandoned
4	0.78.0 Ha	G.Chithiraivel	
5	0.92.5 Ha	S.Prammasakthi	
6	0.47.5 Ha	M.Manickkavel	
Total extent is 8.81.00 Ha including this proposed project and excluding Abandoned quarries			

## 2.3 Geological and Mineable resources

Geological Resources is estimated at 12,62,820 m<sup>3</sup> of Rough Stone, 1,26,282 m<sup>3</sup> of Gravel and Mineable Reserves is estimated at 4,64,760 m<sup>3</sup> of Rough Stone, 84,222 m<sup>3</sup> of Gravel and after leaving necessary safety distance from the lease boundary as indicated in the Precise area letter and relevant mining laws in force.

## 2.4 Year wise production resources

<b>Year</b>	<b>Rough stone in m<sup>3</sup></b>	<b>Gravel in m<sup>3</sup></b>
I	92,450	21,945
II	93,150	15,939
III	92,750	15,198
IV	93,620	19,044
V	92,790	12,096
<b>Total</b>	<b>4,64,760</b>	<b>84,222</b>

## 2.5 Land use of the project area

The proposed Mine Lease area is dry barren Patta land and the Land use pattern of the project site is given below.

LAND USE PATTERN		
Description	Present Area in Ha.	Area at the end of life of Quarry in Ha.
Quarrying pit	NIL	2.55.0
Infrastructure	NIL	0.01.0
Roads	NIL	0.03.0
Greenbelt	NIL	0.52.5
Unutilized	4.21.5	1.10.0
<b>Total</b>	<b>4.21.5</b>	<b>4.21.5</b>

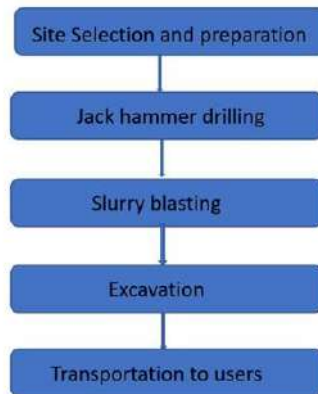
The ultimate pit dimension at the end of conceptual period is given below.

ULTIMATE PIT DIMENSION			
Pit	Length in m (Max)	Width in m (Max.)	Depth in m (Max.)
I	76	57	23 bgl
II	118	72	33 bgl
III	198	77	33bgl

## 2.6 Method of mining

Opencast Semi-mechanized mining with a bench height of 5m and bench width of 5m and 80° Slope is proposed. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, loading and transportation of Rough Stone to the needy customers. Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting.

**Executive Summary of Proposed Rough stone and Gravel Quarry of Mr. K. Subbaiah at SF No 507 & 508 over a Extent of 4.21.5 Ha in Therkukarseri Village, Srivaikundam Taluk, Thoothukudi District, Tamil Nadu**



**PROPOSED MINING OPERATION**

**2.7 Project requirement**

**Machinery Details**

S.NO	Name of the Equipment	Capacity	Requirement
1	Excavator with Rock breaker attachment	1.0 m3	1
2	Tractor mounted compressor with jack hammer	-	1
3	Tipper	5/10 T	8

**Water requirement**

Activity	Water Requirement in KLD
Drinking	0.4
Dust Suppression	1.5
Greenbelt Development	1.5
Domestic	0.6
<b>Total</b>	<b>4.0</b>

**2.8 Power, fuel & other requirements**

All the equipment will be diesel operated. No electricity is needed for mining operation. The minimum power requirement for office, etc will be met from state grid.

The Total fuel consumption is around 1,57,140 litres of HSD for the entire period of life (5 years) and site services like mine office, first aid room, toilets etc. will be

provided as semi-permanent structures. The project will provide employment opportunities totally to 20 persons directly and 20 indirectly.

The total project cost of this Rough stone and Gravel Quarry is Rs. 2,84,51,760/-.

### 3.0 Description of the Environment

#### 3.1 Land Environment

##### Core Zone

- The entire project site of 4.21.50 Ha is Patta land and is in applicant name.
- At the end of life of mine, the excavated mine pit / void of 2.55.0 Ha. will act as a water harvesting pit and collected water will be used for plantation and dust suppression during dry season.
- A greenbelt of 0.52.5 hectares will be developed along the safety barrier.
- Remaining 1.11 ha. of land will be covered with vegetation.

##### Buffer Zone

Land use pattern of the area was studied through LISS III imagery of Bhuvan (ISRO). The 10 km radius map of study area was taken for analysis of Land use cover. The land use map of the study area is given below.

Sl.No.	LULC_CLASS	Area in Sq.km	Percentage (%)
1	Crop Land	12.61	3.879
2	Built-up Land	10.53	3.239
3	Canal	0.01	0.003
4	Plantations	73.56	22.628
5	Fallow Land	6.13	1.887
6	Hill and Forest	2.67	0.822
7	Land with scrub	34.69	10.671
8	Land without scrub	147.48	45.370
9	Mining process	2.98	0.917
10	River	2.86	2.862
11	Tanks	31.54	9.703
<b>Total</b>		<b>325.06</b>	<b>100</b>



### **3.2 Soil Characteristics**

Results of the soil samples show that the pH values were found to be 7.35 to 7.89 and Electrical Conductivity values were ranging between 111.0 – 145  $\mu\text{mhos/cm}$ . Soils are generally Silt Loam. Organic matter values were ranging between 0.87 – 2.55 %. Total Nitrogen values were ranging between 231- 751mg/kg. Phosphorus values were ranging between 0.57 – 3.26  $\mu\text{g/g}$ . Potassium values were ranging between 596 – 766 mg/kg. Sodium values were ranging between 121 – 199 mg/kg. Total Sulphur values were observed to be BDL.

### **3.3 Ambient Air Quality**

The results of ambient air quality monitoring for the period (March to May 2023) are presented in Chapter 3. The ambient air quality data for PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub>, CO studied at 5 locations as per prescribed guidelines/ methods. As per the monitoring data, the PM<sub>10</sub> values were in the range of 34.9 – 54.62  $\mu\text{g/m}^3$ . PM<sub>2.5</sub> values were in the range of 17.4 – 28.9  $\mu\text{g/m}^3$ . SO<sub>2</sub> levels were ranging from 3.1– 4.1  $\mu\text{g/m}^3$ . NO<sub>2</sub> levels were ranging from 5.7 – 13.3  $\mu\text{g/m}^3$ . While comparing with the NAAQ Norms laid by MoEF, all monitored values of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub>, NO<sub>2</sub> & CO were found to be well within the prescribed standards. The CO values in the all locations found to be below detectable limit (DL – 1144  $\mu\text{g/m}^3$ ).

### **3.4 Water Environment**

#### **Surface Water**

The pH varied from 7.8 to 8.1 while turbidity found within the standards (Optimal pH range for sustainable aquatic life is 6.5 to 8.5 pH). Total Dissolved Solids varied from 90 to 120 mg/l. Chloride varied between 11 mg/l and 19 mg/l. Nitrates varied from 1.4 to 3.3 mg/l, while sulphates varied from 4 to 7 mg/l.

#### **Ground Water**

Suitability of ground water for drinking/irrigation/industrial purposes is determined keeping in view the effects of various chemical constituents present in water as

required human use, plant use. Though many ions are very essential for the growth of plants and human body but when present in excess, have an adverse effect on health and growth.

As Per the data it has been observed that the pH value varies from 7.7- 8.3, Chlorides Ranges From 21-155 mg/l, Sulphates value found to be between 18.1-81.5 mg/l, Fluoride Ranges low in lease area i.e. 0.29 – 0.75, Hardness varies from 9.6-194 mg/l, and Total dissolved solid 298-416 mg/l. The ground water has been analyzed as per IS10500: 2012 and found to be suitable for drinking purpose. So the results of chemical and bacteriological analysis of water samples are classified under good class for drinking purpose with respect to total dissolved solids. Total hardness of the samples ranged from soft to moderately hard waters and can be fairly used for drinking. Regular ground water monitoring is suggested as the quality of ground water may fluctuate with groundwater consumption and seasonal variations.

### **3.5 Noise Environment**

The day Equivalent Noise (Leq-d) level were ranging from 46.3 to 49.2 dB(A) and Night Equivalent Noise (Leq-n) level were ranging from 37.3 to 43.1 dB(A). Day and Night Equivalent Noise (Leq-n) level were ranging from 45.1 to 48.9 dB(A). While comparing with the MoEF Norm of 55 dB(A) for day time and 45 dB(A) for night time in Residential areas, the monitored ambient noise levels are within the limit values.

### **3.6 Biological Environment**

There is no schedule I species of animals observed within study area as per Wildlife Protection Act 1972 as well as no species is in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area. Hence this small operation over short period of time will not have any significant impact on the surrounding flora and fauna.

### **3.7 Socio-Economic Environment**

**Executive Summary of Proposed Rough stone and Gravel Quarry of Mr. K. Subbaiah at SF No 507 & 508 over a Extent of 4.21.5 Ha in Therkukarseri Village, Srivaikundam Taluk, Thoothukudi District, Tamil Nadu**

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An attempt has been made to assess the impact of the proposed mining project at Therkukaraseri Village on Socioeconomic aspect of the study area. The various attributes that have been taken into account are population composition, employment generation, occupational shift, household income and consumption pattern. Implementation of the Proposed Mine Project will generate both direct and indirect employment. Besides, Mining operation will be legally valid and it will bring income to the state exchequer.

#### **4.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for each individual leases. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in Chapter 4 of this report.

The project proponent will adopt all the necessary mitigation measures and management plan mentioned in this report and also comply the conditions stipulated in Environmental clearance and CTO of this project.

#### **4.1 Land Environment**

In the rough stone and gravel quarrying operation, land degradation is minimal. After completion of the quarrying operation, the land will be allowed to collect rainwater, this rough stone does not produce any toxic effluents in the form of solids, liquids, or gases. It is a simple quarrying operation where 100% of stones will be removed systematically, according to the approved Mining Plan. The periphery of the mining lease area will be converted to a greenbelt to prevent Noise and sound propagation to the nearby lands.

#### **4.2 Soil Environment**

- Garland drains will be constructed around the project area with silt traps to control the soil erosion during rainy seasons.
- Greenbelt development (0.40.0 Ha.) all along the periphery of the project area (i.e., 7.5 m safety barrier) will ensure binding strength and minimizes soil erosion.
- Soil sampling will be carried out in the core zone for every season to ensure the soil quality is not affected due to the quarrying activities.

### **4.3 Water Environment**

- There is an odai crossing the project site from west to east (64m and 63m AMSL, respectively). All project activities are carried out on the southern side of the project area, with a safety distance of 50m provided.
- No other water bodies close to the project site, The Thambraparani River is situated eight km to the northeast, flowing from north to north-east. Vellore Channal in 5km – NNE. There is no proposal for discharging of wastewater outside the project area. There is no proposal for a rough stone processing or workshop within the project area, so no effluent is anticipated in the mine.
- During rainy season rain water will be collected in the quarry pit and later used for greenbelt development and for the water sprinkling in the haul roads.
- The total water requirement per project will be 4.0 KLD comprising Drinking 0.4 KLD, Dust suppression 1.5 KLD, Greenbelt 1.5 KLD and Domestic purpose 0.6 KLD. The water will be sourced initially from outside agencies. Later the rainwater collected in the mine pit sump will be used for this purpose.
- Rainwater will be collected in lower part of the quarry pit by construction of garland drains to divert surface run-off and will be connected to setting tank of 6 m (l) x 6m (w) x 3m (d) to allow suspended solids to settle down if any. This collected water will act as a rain water harvesting system and will be used for dust suppression and greenbelt development.
- Regular water quality will be carried in nearby villages to ensure the water quality is not affected due to the quarrying activities.

**Executive Summary of Proposed Rough stone and Gravel Quarry of Mr. K. Subbaiah at SF No 507 & 508 over a Extent of 4.21.5 Ha in Therkukarseri Village, Srivaikundam Taluk, Thoothukudi District, Tamil Nadu**

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- Domestic sewage from site office & urinals/latrines provided in project area will be discharged through septic tank followed by soak pit system.
- Only clear and settled water free from silt content will be used for dust suppression and greenbelt development.
- De-silting will be carried out before and immediately after the monsoon season and the settling tank and drains will be cleaned weekly, especially during monsoons.

#### **4.4 Air environment**

- Tippers will not be overloaded and covered properly so that the material loaded will not get spilled.
- Before loaded vehicles are allowed to go outside the premises, they will be covered with tarpaulin to prevent spillage.
- Speed breakers will be constructed to restrict the speed of transporting vehicles. However, limiting of vehicular speed will be adopted.
- Water tankers for sprinkling of water will be used regularly (daily thrice) on haul roads.
- Greenbelt/ plantation will be carried out along the roads, periphery of the mine to prevent the spread of dust.
- Personal Protective Equipment's like dust mask will be provided to all the workers.
- Every season monitoring of fugitive dust emission and ambient air monitoring by collecting samples and their analysis will be carried out, documented in order to assess the effectiveness of the dust control measures

##### **4.4.1 AIR QUALITY MODELING**

The air quality modeling report seems that, even in the worst-case scenario, the resultant added concentrations with baseline figures show that the values of ambient air quality for PM<sub>10</sub> are in the range of 55.0 µg/m<sup>3</sup> to 65.9 µg/m<sup>3</sup> and for PM<sub>2.5</sub> are in the range of 27.1 µg/m<sup>3</sup> to 29.9 µg/m<sup>3</sup> which are within the statutory limits in each case.

#### **4.5 NOISE ENVIRONMENT**

- Usage of sharp drill bits while drilling which will help in reducing noise;
- Secondary blasting will be totally avoided and hydraulic rock breaker are utilized for breaking boulders;
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will reduce noise;
- The blasting will be carried out during favourable atmospheric condition and less human activity timings by using nonelectrical initiation system;
- Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise;
- Provision of sound insulated chambers for the workers working on machines (HEMM) producing higher levels of noise;
- Green Belt will be developed around the project areas and along the haul roads. The plantation minimizes propagation of noise;
- Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM and their use will be ensured through training and awareness.
- Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects

#### **4.6 Socio economic environment**

- Air pollution controls will be implemented and maintenance of roads on weekly basis will be carried out to ensure there are no spillage and pot holes in the access road.

**Executive Summary of Proposed Rough stone and Gravel Quarry of Mr. K. Subbaiah at SF No 507 & 508 over a Extent of 4.21.5 Ha in Therkukarseri Village, Srivaikundam Taluk, Thoothukudi District, Tamil Nadu**

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- CSR & CER funding from the project proponent will be prepared to provide assistance to the local villagers.
- Skill development training of local people will be promoted by the project proponent.
- There is a possibility of creation of direct (27 nos.) and indirect (30 nos.) employment opportunities due to working of this mine.
- Towards the socio economic development of the surrounding area, the proponent has earmarked an amount of Rs.5.75 Lakhs under Corporate Environmental Responsibility.

#### **4.7 Greenbelt development plan**

Nearly 0.52.5 Ha. of area is proposed for Greenbelt development by planting 80 Nos of trees during every year and expected growth is around 64 Nos @ survival rate of 80%.

#### **4.8 Occupational Health Measures**

The proposed mining will be operated by opencast mechanised mining method deploying man and machines. Hence, it is envisaged to take up the following precautionary measures:

- Strict observance of the provisions of DGMS Acts, Rules and Regulations in respect of safety both by management and the workers.
- Proper planning and designing of work in order to reduce the risk of hazards.
- Specific instructions and supervisions of working where danger due to fall of side (overhanging, undercutting of bench, fall of objects from higher benches/places, working at height is apprehended).
- Training of work persons and the officials.
- The width of road will be maintained more than thrice the width of the vehicle.
- A code of traffic rules will be implemented.
- In respect of contract work, safety code for contractors and workers will be implemented. They will be allowed to work under strict supervision of statutory

person/officials only after they will impart training at vocational training centres. All personal protective equipment's will be provided to them.

- A safety committee meeting every month will be organized to discuss the safety of the mines and the persons employed.
- Celebration of annual mines safety week and environmental week in order to develop safety awareness amongst employees.
- Pre joining medical check-up shall be done and regular health check-up in 6 monthly intervals is planned for the employees.

## **5.0 Environmental Monitoring Program**

Environmental Monitoring program will be conducted for various environmental components as per conditions stipulated in Environmental Clearance Letter issued by SEIAA & Consent to Operate issued by TNPCB. Post project monitoring program is detailed in Chapter 6.

PP will supervise the overall environmental management plan of the project during operation. The capital cost of Rs. 28,35,400/- and the recurring cost of Rs. 12,19,510/- have been allocated under the EMP budget.

## **6.0 Additional Studies**

Terms of Reference with Public Hearing (ToR) for the project was issued vide Lr No.SEIAA-TN/F.No.9684/SEAC/ToR-1424/2022 Dated: 18.04.2023. Now, this Draft EIA / EMP Report is prepared for conducting Public Hearing as the projects falls under B1 Category.

No high-risk accidents are anticipated as it is small scale semi-mechanized Quarry with essential light machinery. The area is not prone for landslides, seismic activities, subsidence, floods, inundation etc. As there are no rivers and habitation in the vicinity of probable disaster from the mine lease area. Elaborate description in respect of Risk Assessment and Mine closure plan are given in Chapter – 7.

Although the individual lease area of this project is less than 5 Ha, the other existing and proposed quarries within the 500m radius along with this subject project works out to >5 Ha. A Cumulative impact study is conducted to determine the impact of the



**Executive Summary of Proposed Rough stone and Gravel Quarry of Mr. K. Subbaiah at SF No 507 & 508 over a Extent of 4.21.5 Ha in Therkukarseri Village, Srivaikundam Taluk, Thoothukudi District, Tamil Nadu**

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existing and proposed quarries located within 500m radius on the environment and are detailed in Section 7.4.

## **7.0 PROJECT BENEFITS**

The project area is located on barren land, thereby causing no impact on the loss of agriculture or forest land. The project will create employment opportunities in the area. There will be no adverse effect of mining on the socioeconomic status of the people; rather, mining activities will improve their standard of living. The mining activity creates employment opportunities for the local people, and this definitely raises their economic status. Apart from the overall beneficial impact of the project on the local people of the region, it is felt necessary to augment facilities in the fields of education, health, and social awareness, including concern for the environment and ecosystem.

The mining activity at proposed Rough Stone & Grave of Thiru. A.V. Sarathy will create direct employment opportunity for 20 local people. The PP has proposed CER amount of Rs. 5.75 Lakhs for fulfilling the needs of Govt. School.

## **8.0 CONCLUSION**

EIA study was performed as per the approved ToR. Various environmental attributes were studied relating with aspects of mining activities. The related impacts were identified and evaluated. Considering all the possible ways to mitigate the environmental concerns, Environmental Management Plan was prepared and accordingly fund was allocated. The EMP has been dynamic, flexible and subject to periodic review.

The project will increase the revenue of the State Govt. as well as it will help in the social upliftment of the local community. The green belt development programme will help in increasing the green cover in the area. Thus, the proposed project is not likely to affect the environment or adjacent ecosystem adversely.

The Mine Management will be responsible for the project review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the

proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

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