

# **SUMMARY**

**OF**

# **DRAFT EIA/EMP REPORT**

**FOR**

# **ROUGHSTONE AND GRAVEL QUARRY**

## **EXTENT – 4.80HA**

<b>YEAR</b>	<b>ROUGH STONE (m3)</b>	<b>GRAVEL (m3)</b>	<b>DEPTH(m)</b>
<b>1 to 5</b>	<b>6,12,800</b>	<b>2,00,905</b>	<b>25</b>
<b>6 to 10</b>	<b>4,43,975</b>	<b>-</b>	<b>25</b>
<b>TOTAL</b>	<b>10,56,775</b>	<b>2,00,905</b>	<b>50</b>

**VILLAGE –PERUNGUDI PART-1, TALUK- RADHAPURAM**  
**DISTRICT- TIRUNELVELI, STATE – TAMIL NADU**

### **PROJECT PROPONENT**

## **PANCHAMEE ENGINEERING CONSTRUCTION**

**D.No.1589, Main Road, Vadakkankulam Village and Post,  
Radhapuram Taluk, Tirunelveli District, Pin code – 627116.**

### **CONSULTANT**

## **CREATIVE ENGINEERS & CONSULTANTS**

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CREATIVE ENGINEERS & CONSULTANTS

**JUNE 2022**

**ROUGHSTONE, JELLY AND GRAVEL QUARRY OF PANCHAMEE ENGINEERING CONSTRUCTION OVER AN AREA OF 4.80 Ha IN SURVEY NO. 420/1(P) AND 421/1(P) IN PERUNGUDI PART-1 VILLAGE, RADHAPURAM TALUK, TIRUNELVELI DISTRICT, TAMIL NADU.**

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**SUMMARY**

**1.1 INTRODUCTION:**

**Panchamee Engineering Construction** proposes to operate a **Rough Stone, Jelly and Gravel Quarry 420/1(P) AND 421/1(P)** over an extent of 4.80.0Ha in Perungudi Part-1 village, Radhapuram Taluk, Tirunelveli District, Tamil Nadu.

Although individual lease area of this project is less than 5 Ha, the other existing quarries within the 500m radius along with this subject project works to >5 Ha. As such this proposal is considered under Category–B1 and public hearing is to be conducted as per MoEF&CC notifications Details of other quarries within 500m radius is given below:

S.No	Name and address of the lessee	Quarry location	Extent in Hectare	Lease Period
<b>a. Existing Quarries</b>				
1.	S.Somasundaram, S/o Subbaiah, Akka salai Pilayar Kovil Street, Valliyur, Radhapuram Taluk, Tirunelveli District.	Perungudi Part- 1, 423/2(P) & 439/1 & 440(P).	4.90.5	Proceeding No. M1/41046/2017 dated 20.03.2018. 04.04.2018 to 03.04.2023
<b>Total Extent of Existing Quarry</b>			<b>4.90.5</b>	
<b>b. Abandoned Quarries</b>				
2.	PBA Infrastructure Limited, Kanniyakumarai	Perungudi Part- 1, 420/1 & 421/1	8.50.5	Proceeding No. M1/59525/2004 dated 28.07.2004. 28.07.2004 to 27.07.2009
<b>Total Extent of Abandoned Quarry</b>			<b>8.50.5</b>	
<b>a. Proposed Quarries</b>				
3.	M/s.Panchamee Engineering Construction, Vadakkankulam Village, Radhapuram Taluk & Tirunelveli District	Perungudi Part- 1, 420/1 & 421/1	4.80.0	Proposed Quarry
<b>Total Extent of Proposed Quarry</b>			<b>4.80.0</b>	

**1.2 STATUTORY APPROVALS:**

1.	Precise Area Communication Letter	Rc.No:M1/41683/2017, dated 07.01.2021.
2.	Mining Plan Approval	Rc.No: M1/41683/2017, dated 01.03.2021.
3.	Terms of Reference	SEIAA-TN/F.No.8963/SEAC/ToR-1135/2022 dated 25.03.2022.



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Based on the ToR granted by SEIAA, Tamil Nadu and in conformance with the MOEF&CC 2006 guidelines, EIA/EMP report has been prepared. The impact assessment and mitigative measures is carried out for the peak annual production of the mine lease period and the entire area of quarry operation and can be construed as applicable for the entire lease period.

The proposed production for 10 years period is 10,56,775 m<sup>3</sup> of Roughstone and 2,00,905 m<sup>3</sup> of gravel for the depth of 50m. ( In the first 5 years 6,12,800m<sup>3</sup> of Roughstone and 2,00,905m<sup>3</sup> of Gravel up to a depth of 25m + balance 4,43,975 m<sup>3</sup> of Roughstone up to 50m in second 5 years) .

Salient details of the EIA/EMP report are as follows:

**2.1 SITE DESCRIPTION:**

**Table No.1: SITE DETAILS**

S.No	Particulars	Details
1.	Name of the Project	Rough Stone and Gravel Quarry of Panchamee Engineering Construction
2.	Location of the project	Perungudi Part-1 Village, Radhapuram Tehsil, Tirunelveli District, Tamil Nadu State.
3.	Latitude & Longitude	Latitude: 08 <sup>o</sup> 16' 12.95"N to 08 <sup>o</sup> 16' 21.70"N Longitude: 77 <sup>o</sup> 37' 13.33"E to 77 <sup>o</sup> 37' 21.80"E
4.	Mining Lease area	4.80 Ha
5.	Type of land	Private Patta Land
6.	Mine site topography	Almost Plain Terrain
7.	Accessibility	There is an existing road from the area leads to Vadakkankulam village road on Southern side of the area.
8.	Nearest Highway	(NH-44) Thoothukudi – Kanniyakumari 6.0 Km – (W) (SH-92) Thoothukudi – Kanniyakumari 4.0 Km –(NE)
9.	Nearest Railway station	Kavalkinaru R S – 5.0km – (W)
10.	Nearest Airport	Thoothukudi – 70.0km – (NE)
11.	Nearest water bodies	<ul style="list-style-type: none"> <li>• Odai--80m- (S),</li> <li>• Drainage channel -120m (W),</li> <li>• Odai-330m –(SW),</li> <li>• Tank-600m –(S),</li> <li>• Tank-540m (NE),</li> <li>▪ Hunuman Nadi-650m-(SW).</li> </ul>
12.	Environmental sensitive areas, Protected areas as per Wildlife	Kanniyakumari Wild life sanctuary - 6.2 km and as per the



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	Protection Act, 1972 (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	MOEF & CC final Notification S.O 3236 (E) dated 22.09.2020, ESZ of Kanniyakumari Wild Life Sanctuary is 6.2Km away from the lease area hence NBWL is not applicable.
13.	Local Places of Historical and Tourism Interest	Nil within 10 Km radius
14.	Reserved / Protected Forests	Poigaimalai RF-6.3 km (SW)
15.	Seismic Zone	Zone – II (Least Active)

**Table No.2: TECHNICAL DESCRIPTION**

S.No	Particulars	Details		
1.	Geological reserve	Roughstone – 22,71,960 m <sup>3</sup> , Gravel – 2,52,440 m <sup>3</sup>		
2.	Mineable reserve	Roughstone – 10,56,775 m <sup>3</sup> , Gravel - 2,00,905 m <sup>3</sup>		
3.	Production	<b>YEAR</b>	<b>ROUGHSTONE (m3)</b>	<b>GRAVEL (m3)</b>
		I	1,07,680	53,835
		II	1,24,640	36,290
		III	1,24,640	36,290
		IV	1,24,640	36,290
		V	1,31,200	38,200
		<b>Total 1 to 5</b>	<b>6,12,800</b>	<b>2,00,905</b>
		Total 6 to 10	<b>4,43,975</b>	-
	<b>Total 1 to 10</b>	<b>10,56,775</b>	<b>2,00,905</b>	
4.	Lease period	10 Years		
5.	Waste Generation and Management	There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized. The top Gravel will be loaded into tipper and marketed to needy customers. Excavated rough stone will be loaded into tipper to the needy buyers for producing crusher aggregates, M Sand.		
6.	Method of Mining	Opencast semi mechanized mining using jackhammer drilling, blasting, excavation through excavator & mineral transport through tippers.		
7.	Ultimate Mine depth	50m bgl.		
8.	Manpower	Direct – 18, Indirect – 50		
9.	Water Requirement & source	Total water – 10 KLD Will be procured from outside agencies initially. Later, water collected in the mine pit will be used to meet the needs.		



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10.	Power Requirement	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.
11.	Site services	Mine office, first aid room, rest shelters, toilets etc. will be provided as semi-permanent structures.
12.	Project cost	Rs.1.58 Crores
13.	CER cost	Rs.5.0 Lakhs

**3.1 EXISTING ENVIRONMENTAL SCENARIO:**

The studies and data collection have been carried out systematically and meticulously as per relevant IS codes, CPCB and MoEF&CC guidelines and as per approved ToR during **Winter Season, December 2021 to February 2022**) For the purpose of this study, the area has been divided into two zones, namely, core and buffer zones. Core zone is considered as the total lease area, while buffer zone encompasses an area of 10 km radius distance from the periphery of core zone. Based on 2011 census data, in the 10km radius there are 16 Rural villages from Radhapuram Taluk, Tirunelveli District.

**Table No.3: SOCIAL, ECONOMIC AND DEMOGRAPHIC PROFILE OF THE STUDY AREA**

Details	Population	Percentage
<b>A. Gender-wise distribution</b>		
Male Population	70676	49.33
Female Population	72607	50.67
<b>Total</b>	<b>143283</b>	<b>100</b>
<b>B. Caste-wise population distribution</b>		
Scheduled Caste	28833	20.12
Scheduled Tribes	1299	0.91
Others	113151	78.97
<b>Total</b>	<b>143283</b>	<b>100</b>
<b>C. Literacy Levels</b>		
Total Literate Population	111388	77.74
Others	31895	22.26
<b>Total</b>	<b>143283</b>	<b>100</b>
<b>D. Occupational structure</b>		
Main workers	49483	34.50
Marginal workers	8562	6.00



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Details	Population	Percentage
Total Workers	58045	40.50
Total Non-workers	85238	59.50
Total	143283	100

**3.2.1 EXISTING ENVIRONMENTAL QUALITY:**

**AMBIENT AIR QUALITY:**

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 6 locations as per prescribed guidelines/ methods. The AAQ monitored data for all locations for above parameters are shown in below.

**Table No.4: AMBIENT AIR QUALITY DATA**

					Values in µg/m <sup>3</sup>
S.No	PARAMETERS	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>2</sub>
1	CORE ZONE (1 Location)	46.3 – 58.2	22.5 – 28.6	4.8 – 7.2	7.3 – 9.4
2	BUFFER ZONE (5 Locations)	42.6 – 63.1	19.2 – 32.2	3.8 – 7.6	6.2 – 10.2
<b>CPCB LIMITS</b>		<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>SO<sub>2</sub></b>	<b>NO<sub>2</sub></b>
<b>2009 Notification</b>		100	60	80	80
<i>* Note: BDL- Below Detectable Limit, DL- Detectable Limit.</i>					
<b>Conclusion:</b> The existing Ambient Air Quality levels for PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> and NO <sub>2</sub> , are within the NAAQ standards prescribed CPCB limits of 100 µg/m <sup>3</sup> , 60 µg/m <sup>3</sup> , 80 µg/m <sup>3</sup> & 80 µg/m <sup>3</sup> . The CO values in all the locations were found to be below detectable limit.					

**Table No.5: WATER QUALITY DATA**

Monitoring Location – 6 locations		
PARAMETER	Result	*LIMIT (µg/m <sup>3</sup> )
pH at 25 °C	7.01 – 7.7	6.5-8.5
Total Dissolved Solids, mg/L	386 – 1204	2000
Chloride as Cl-, mg/L	56.7 – 478	1000
Total Hardness (as CaCO <sub>3</sub> ), mg/L	169 – 557	600
Total Alkalinity (as CaCO <sub>3</sub> ), mg/L	155– 362	600
Sulphates as SO <sub>4</sub> <sup>2-</sup> , mg/L	36.2 – 323	400
Iron as Fe, mg/L	0.02 – 0.14	0.3
Nitrate as NO <sub>3</sub> , mg/L	BDL (D.L – 1.0)– 5.21	45
Fluoride as F, mg/L	0.22 – 0.58	1.5
<b>Conclusion:</b> The water quality of ground water is found to be within the prescribed Permissible limits of IS: 10500 Norms in the absence of an alternative source as per Drinking Water Specifications.		

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**Table No.6: NOISE LEVEL DATA**

No of locations – 6				
Noise Level In dB(A)	Core Zone dB(A) (1 Location)	*Work zone exposure limit dB(A)	Buffer Zone dB(A) (5 Locations)	MOEF&CC Norms dB(A)
Day Equivalent	50.6	90	45.5 – 49.2	55
Night Equivalent	39.0		37.3 – 43.1	45
*Permissible noise for industrial workers as laid down by CPCB (at 8 hrs Exposure Time)				
<b>Conclusion:</b> While comparing with the MoEF&CC Norms, the monitored ambient noise levels are within the limit values for Residential areas.				

**Table No.7: SOIL DATA**

PARAMETER	Range of values
pH	4.32 – 7.78
Electrical Conductivity (µmho/cm)	38.47 – 80.59
Organic matter (%)	94.58 – 98.24
Total Nitrogen (mg/kg)	68.0 – 120
Phosphorus (mg/kg)	1.32 – 2.05
Sodium (mg/kg)	386 – 452
Potassium (mg/kg)	513 - 740
<b>Conclusion:</b> The soil quality data for the 3 samples collected and analyzed and found that it is generally of clayey loam type.	

**3.2.2 LAND ENVIRONMENT:**

Landuse pattern study carried out through remote sensing satellite data around the 10km buffer zone shows that 24.88 % of the study area is agriculture land and 37.53 % are fallow land. Land with scrub constitutes 21.17 % and others constitute 16.42%.

**3.2.3 BIOLOGICAL ENVIRONMENT:**

**Flora:** The lease area is a non-forest, private land with patches of thorny bushes. Part of lease area is dominated with *Prosopis juliflora*.

The Dominated species in the buffer zone *Bauhinia purpurea*, *Cassia fistula*, *Cocus nucifera*, *Prosopis juliflora*, *Albizia lebbeck*, *Thespesia populnea*, *Acacia auriculiformis*, *Borassus flabellifer* and *Azadirachta indica* etc. Patches of Coconut and Moringa oleifera farms are also observed.



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**Fauna:** Kanniyakumari Wild life sanctuary is at 6.2 km - (W) and as per the MOEF & CC final Notification S.O 3236 (E) dated 22.09.2020, ESZ of Kanniyakumari Wild Life Sanctuary is 6.2 Km away from the lease area hence NBWL is not applicable.

Domesticated animals like Cows, Buffalos, Dogs, Cats etc., are commonly found. No wild mammalian species was directly sighted during the field survey within the study area. However in the deep forest area beyond the study area it is reported.

### **3.2.4 HYDROLOGICAL STUDY:**

The area applied for mining lease is a gentle plain terrain. Geologically the study area is mainly dominated by Charnockite Gneissic complex . The water levels studied show that shallow water levels are observed in the wells during post monsoon days and it becomes deeper or even dry during peak summer. Deeper bore wells in the area reflects that the yield is only better at deeper water levels.

In the study area, the shallow aquifer is developed through dug wells and deeper aquifer through tube wells. The groundwater has revealed that potential fractures are encountered at deeper levels. The occurrence of groundwater mainly in the porous soil are weathered layers, very negligible amount of groundwater percolated through the poorly fractured layer, after that there is no existence of groundwater. Besides, the mining area consists of hard compact rock, no major water seepage within the mine is expected. From the nearby working mines no such seepage is observed.

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

This is a proposed project and Semi – Mechanized Open Cast mining will be carried out to quarry out Rough Stone, & Gravel. The identified impacts due to this mine during mining and associated activities have been studied in relation to various environmental components like Air, water, noise, vibration, land, transport etc.

### **4.1.1 AIR ENVIRONMENT:**

The principal sources of air pollution in general due to mining and allied activities will be Excavation, Drilling, Movement of HEMM such as Excavators, tippers etc., Loading and unloading operation and transportation. In case of this mine, the following measures will be adopted to control impact on the air quality due to mining operations in the lease area:

- Deployment of mobile water sprinkler for fugitive dust suppression in haul roads.





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- Wet drilling / Covering of drill holes with wet clothes
- Proper maintenance of roads.
- Transportation of material by tarpaulin covered trucks
- Proper maintenance of HEMM to minimize gaseous emission
- Setting up of tyre washing facility in the lease area exit.
- Vehicular emission tests with digital smoke meter.
- Provision of green net around the lease periphery.
- Development of green belt/ plantation in various areas within the mine lease area etc.

By adoption of all these measures, no adverse impact on air quality is envisaged due to this proposed opencast mining operation.

The impact on air quality due to the proposed project is estimated using AERMOD View Gaussian Plume Air Dispersion Model developed by Lakes Environmental Software which is based on steady state Gaussian plume dispersion.

The resultant added concentrations with baseline figures even at worst scenario, show that the values of ambient air quality with respect to PM<sub>10</sub> are in the range of 52.9 µg/m<sup>3</sup> to 67.9 µg/m<sup>3</sup> and with respect to PM<sub>2.5</sub> are in the range of 25.9 µg/m<sup>3</sup> to 32.2 µg/m<sup>3</sup> which are within the statutory limits in each case. For preservation of environment in this mine strict enforcement of management schemes will be undertaken for taking corrective actions, as needed. By adopting the effective implementation of all the mitigative measures, no adverse impact on Air quality due to the mining operation in this lease area is expected.

#### **4.1.2 WATER ENVIRONMENT:**

The total water requirement for this project will be 10.0 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.

The domestic effluent to be generated from the project will be collected in septic tank with soak pits arrangements. This being a mining project there will not be any process effluent. The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet.



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etc. Towards surface runoff management, garland drain will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users.

There are no drainage course near the lease area. There is no proposal to discharge any effluent into nearby water body. No major impact is envisaged on the nearby water bodies due to project operations

**4.1.3 NOISE ENVIRONMENT:**

During mining operation there will be noise generation due to working of excavators, movement of vehicles, etc. However, it will be felt near the active working area only and at away from its source it will get reduced. There will also be attenuation due to vegetation and as such there will not be any adverse noise propagation outside the lease boundary Due to natural attenuation effects, by proper green belt development, design / maintenance of machines, etc., the impact on noise levels will be negligible and are expected to be well within the prescribed limits.

**4.1.4 VIBRATION:**

To reduce ground vibratory conditions, various control measures will be implemented such as controlled blasting using NONEL delay detonator, optimum design for burden and spacing, reducing explosive charge per delay to minimum, not carrying out blasting during strong winds, etc. By adoption of above measures, it will be ensured that ground vibrational levels due to blasting will be maintained within the prescribed DGMS conditions of 10 mm/s for the domestic houses/structures.

**4.1.5 IMPACT ON LAND ENVIRONMENT:**

In the post mining stage, entire 4.145 Ha of mined out area will be left as water body, 0.02 Ha will be the mine roads, 0.635 Ha will be covered with vegetation. Entire mined out area will be properly fenced to prevent inadvertent entry of men and animals. In the post mining stage the rainwater harvested in the mined out void shall be utilized.

**4.1.6 BIOLOGICAL ENVIRONMENT:**

Other than clearing the shrubs and bushes withthin the lease area, no clearance of major vegetation is involved. Necessary mitigative measures like dust suppression, proper maintenance of equipments etc., will be carried out to prevent dust generation & any further

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impact on the vegetation. Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area.

**4.1.7 SOCIO ECONOMIC ENVIRONMENT:**

The entire lease area is in the proponent's possession. There are no habitations or hutments in the core zone area and no rehabilitation or resettlement problems will arise here.

The mining operations in the proposed mine will provide the following socio-economic benefits:

- Direct Employment for about 16 persons.
- Besides through allied opportunities in logistics, trading, repairing works etc. good employment potential will arise in this area, which will provide raising income levels and standards of living in the area through various service-related activities connected with the project operations.
- Improvement in medical care system for the locals.
- Benefit to State and central exchequer by way of royalty, taxes.

Towards the socio-economic development of the surrounding area, the proponent has earmarked an amount of Rs.5.0 Lakhs under Corporate Environmental Responsibility. The activities identified under CER will be implemented in the nearby Government school.

By carrying out systematic and scientific mining and implementing all the environmental mitigative measures it will be ensured that there will be no adverse impact on this front.

**4.1.8 IMPACT ON LOCAL LOGISTICAL SYSTEM DUE TO PROJECT:**

The material mined out from this lease area will be directly transported to the required customers. During the project operations, there will be 9 trips/hr. The transport route will be properly maintained to absorb this traffic due to this project. The following mitigative measures are suggested for mitigation of adverse impacts on the logistical aspect of the project:

- ❖ Water sprinkling on material in the transport vehicles before transporting, so that no dust nuisance during transport will arise.
- ❖ Plantation on either side of the transport road in consultation with the concerned department.



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- ❖ Proper maintenance of transport roads
- ❖ Proper maintenance of transport vehicles.
- ❖ Avoiding overloading of material
- ❖ Covering of loaded vehicles with tarpaulins sheet if warranted.
- ❖ Keeping traffic regulators at vulnerable locations.
- ❖ Distribution of transport vehicles
- ❖ Limiting of speed
- ❖ Installation of barriers at vulnerable locations
- ❖ Provision of tyre washing facility at the mine outlet

#### **4.1.9 WASTE MANAGEMENT:**

There is no process effluent generation from this mine. Hence no liquid waste is generated. Single use plastics/ use and throwaway plastics will be banned in the site as directed by the Tamil Nadu Government vide GO(Ms)No.84 regarding ban on use of plastic products. The employees will be encouraged to use compostable material or reusable material.

#### **5.1 ENVIRONMENTAL MONITORING PROGRAMME:**

Regular, systematic and sustained programme schedules for implementation and monitoring of various control measures are devised with clear cut guidelines of various concerned plans for keeping a continuous surveillance on the various environmental quality parameters in the area. The Mines Manager in the mine project site will be directly responsible for various environmental activities in the mine and will undertake effective monitoring and implementation of various environmental control measures promptly and effectively and to oversee various environmental management schemes for air quality control, water quality status, noise level control, plantation programme, social development schemes, etc in the mine. Towards EMP measures, Rs.14.65 lakhs is allocated under capital cost. Besides, Rs.15.55 lakhs per annum will be spent under recurring cost. The baseline monitoring carried out for this project reflects the cumulative impact of this existing quarry.



**ROUGHSTONE, JELLY AND GRAVEL QUARRY OF PANCHAMEE ENGINEERING CONSTRUCTION OVER AN AREA OF 4.80 Ha IN SURVEY NO. 420/1(P) AND 421/1(P) IN PERUNGUDI PART-1 VILLAGE, RADHAPURAM TALUK, TIRUNELVELI DISTRICT, TAMIL NADU.**

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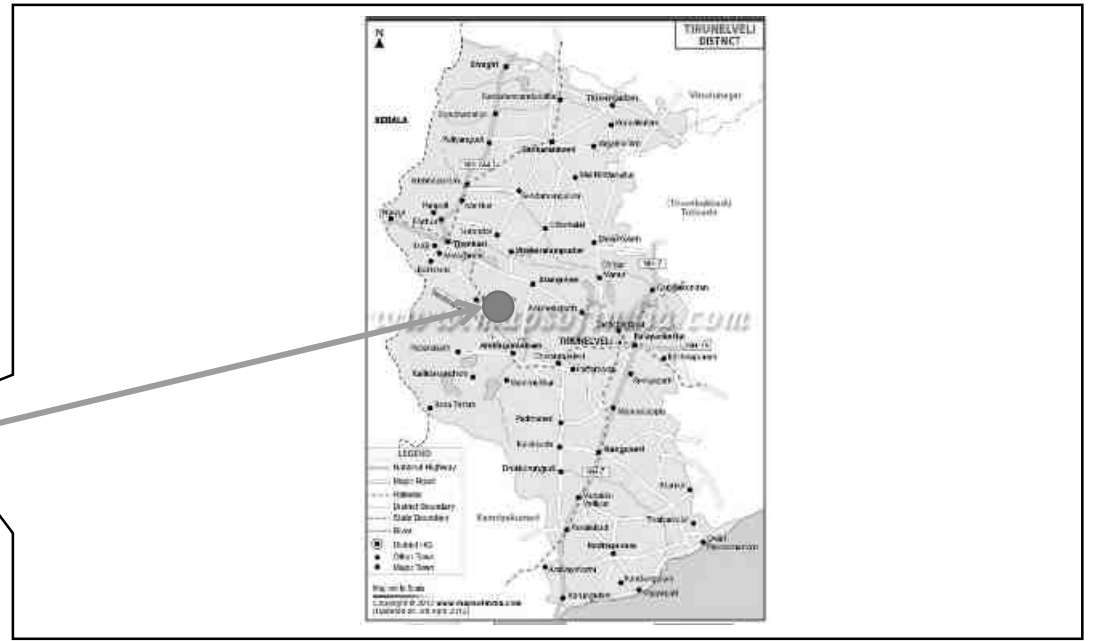
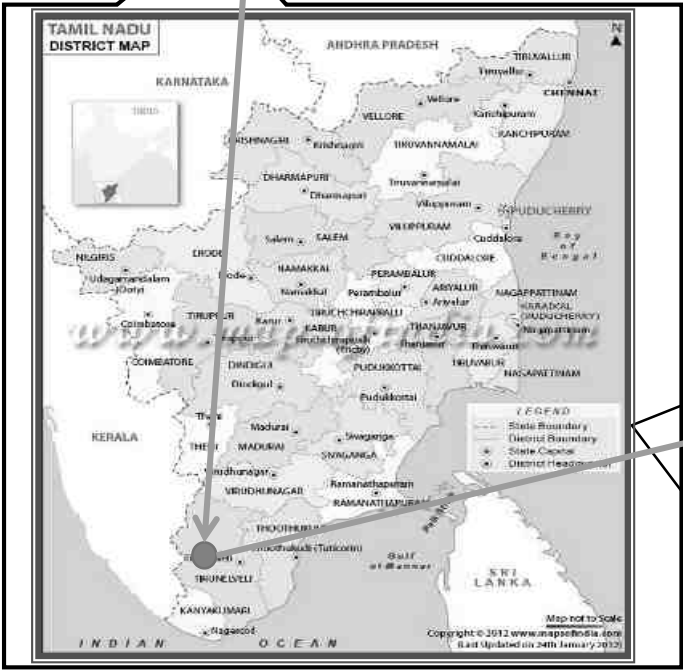
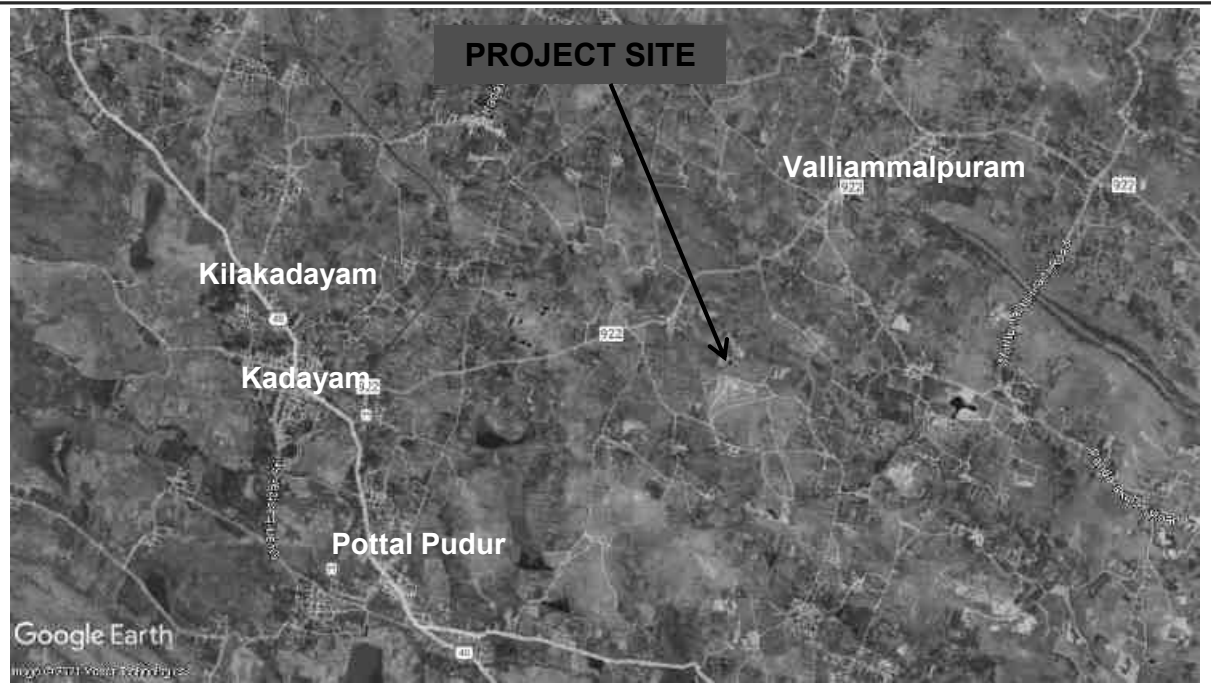
**6.1 CONCLUSION:**

By systematic and scientific mining adhering to all the statutory norms and enforcing and strictly implementing the above said mitigation measures mentioned in this report, no adverse impact is envisaged. The proposed mining project will benefit this region in the fields of potential employment opportunities (both direct & indirect) , improved income for local people, improved social welfare facilities in respect of education, medical healthcare systems, etc. in its own way and also revenue to Government through royalty, taxes etc.

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# LOCATION PLAN





**AREA DETAILS**

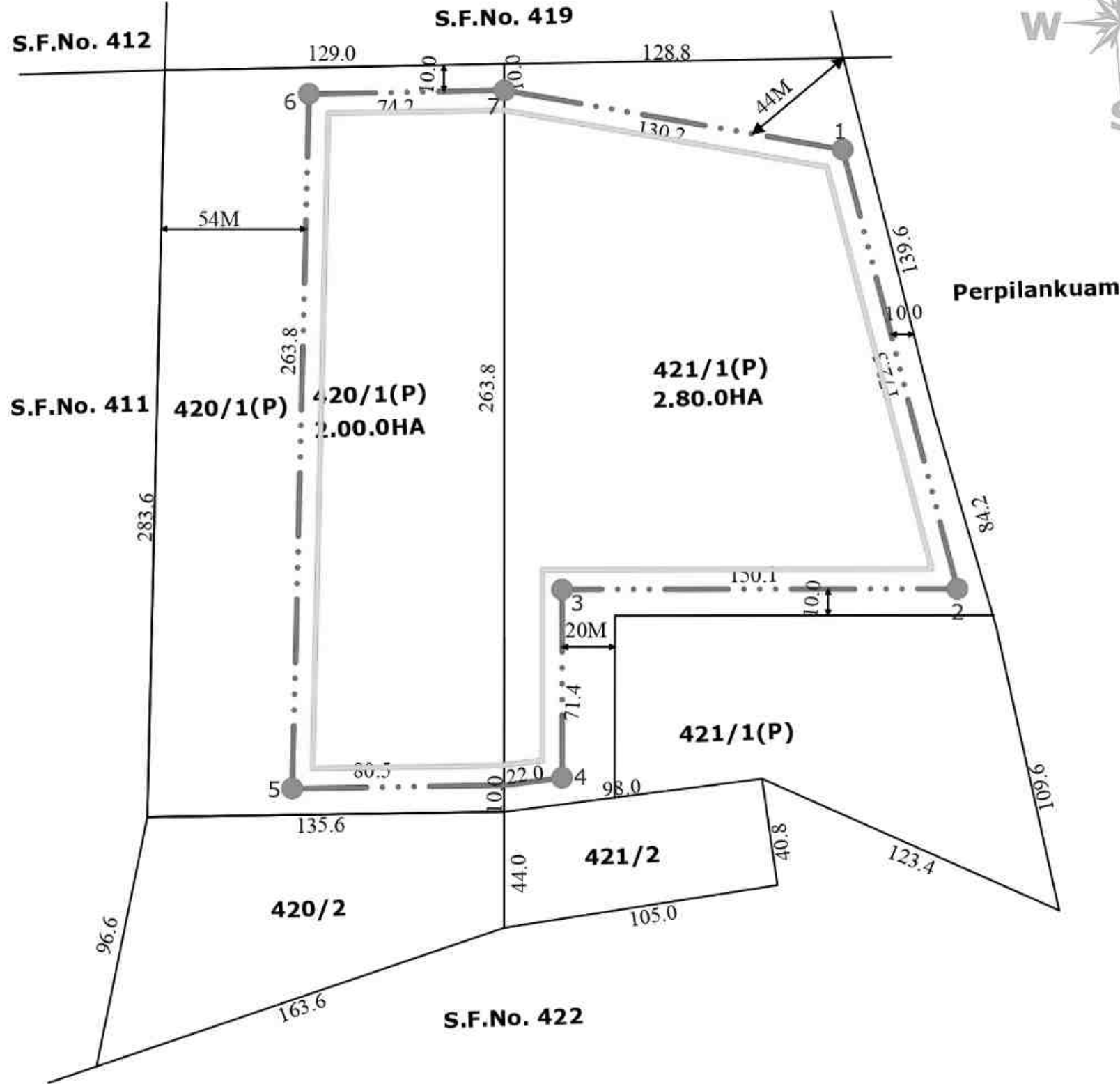
S.F.Nos.	EXTENT(Ha)
420/1(P)	2.00.00
421/1(P)	2.80.00
TOTAL	4.80.00

**GPS CO-ORDINATES**

PILLAR	LATTITUDE	LONGITUDE
1	8 16' 19.90" N	77 37' 21.20" E
2	8 16' 15.25" N	77 37' 21.80" E
3	8 16' 15.20" N	77 37' 16.80" E
4	8 16' 12.95" N	77 37' 16.65" E
5	8 16' 13.27" N	77 37' 13.33" E
6	8 16' 21.70" N	77 37' 14.80" E
7	8 16' 21.45" N	77 37' 17.20" E



**PLATE : III**



**NAME OF THE APPLICANT:-**  
 Tvi. PANCHAMEE ENGINEERING CONSTRUCTION  
 No.1589, MAIN ROAD,  
 VADAKKANKULAM,  
 RADHAPURAM TALUK,  
 TIRUNELVELI DISTRICT.

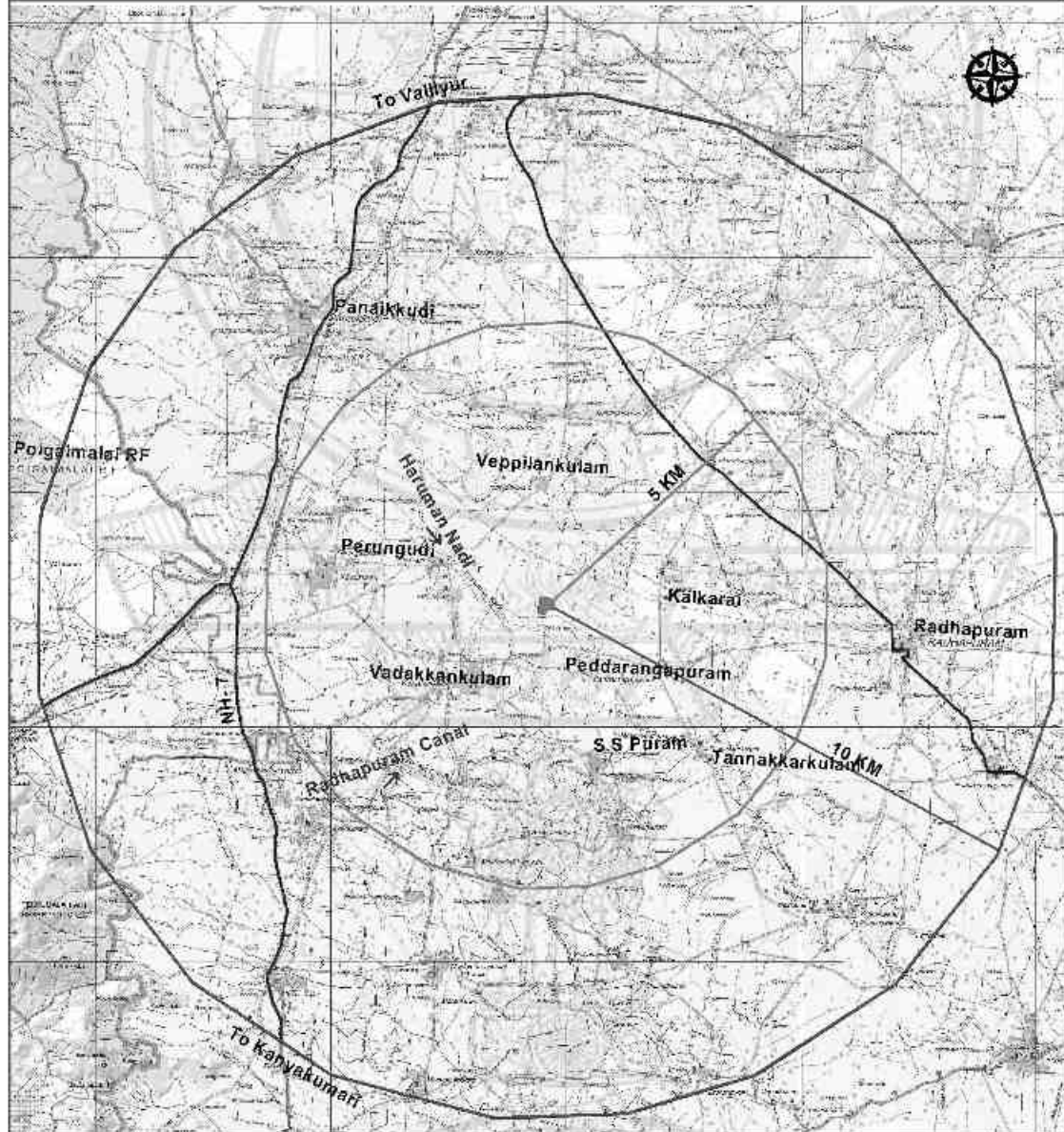
**LOCATION OF THE MINE:-**  
**S.F.No.** :420/1(P)&421/1(P)  
**EXTENT** :4.80.0Ha  
**VILLAGE** :PERUNGUDI(PART-I)  
**TALUK** :RADHAPURAM  
**DISTRICT** :TIRUNELVELI

**INDEX:-**  
 LEASE BOUNDARY ———  
 BOUNDARY PILLARS ●  
 SAFETY LINE ———

**MINING LEASE PLAN**  
 SCALE:- 1: 2,000

ALL PLANS AND SECTIONS ARE PREPARED  
 BASED ON THE LEASE MAP AUTHENTICATED  
 BY STATE GOVERNMENT.





**LEGEND**

CORE ZONE AREA	
HIGHLIGHTS	
ROAD	
FOREST	
RIVER	

TOPO SHEET NO - 58H-11-12

**INDEX PLAN**

**ROUGH STONE AND GRAVEL QUARRY OF M/S.PANCHAWEE ENGINEERING CONSTRUCTION**

LEARN NAME - CHIRUKALAPPA CHAKKILAI, SUDHAKARASUBRAMANIAM, SIVAKUMAR

**STUDY AREA WITH IN 10KM RADIUS.**

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