

Draft Environmental Impact Assessment

**Thiru. P.Ramachandran Multi Colour Granite
Quarry
2.84.5 Ha**

At

**S.F.Nos. 407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4
(P) of K.Pitchampatti Village, Karur Taluk, Karur
District.**

**Sector No. 1(a) (Sector No. 1 as per NABET)
Category of the Project: B1 (Cluster Mining)**

Project Proponent:

**P.Ramachandran,
S/O Paramasivam,
12, Bharathiyar 5th street,
SS Colony Ward- 18,
Madurai District – 625 016**

Prepared By:

**M/s Ecotech Labs Pvt. Ltd.  
NABET Accredited EIA Consultant
48, 2nd Main road, Ram Nagar South Extension,
Pallikaranai, Chennai -600100**

ETL/EAQM/03/July/1(a)/ P.Ramachandran

JULY 2023

P. Ramachandran,
S/o. Paramasivam,
12, Bharathiyar 5th Street,
SS Colony Ward -18,
Madurai District – 625 016.

UNDERTAKING

I, Thiru. P. Ramachandran, undertaking that the Environmental Impact Assessment (EIA) Report for Scheme of Mining for Multi Colour Granite quarry over an extent of 2.84.5 Ha at S.F.No.407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4 (P) K. Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu State under project category B1 and Schedule S.No.1(a) TOR issued by the State Expert Appraisal Committee, TN vide Letter No. SEIAA-TN/F.No.9616/SEAC/ToR-1327/2023 dt. 10.02.2023

I, hereby assure that all the information and data provided in the EIA report is accurate, true and correct and owns responsibility for the same.

Place :Karur

Yours faithfully

Date :

Thiru.P.Ramachandran

Plot No.48A, 2nd Main Road,
Ram Nagar, South Extension,
Pallikarantal, Chennai - 600 100.
GST NO. 33AADCE6103A22H
PAN NO: AADCE6103A



Eco Tech Labs Pvt Ltd

Cell No: 98400 87542
Email : info@ecotechlabs.in
Website : www.ecotechlabs.in
CIN : U74900TN2014PTC094895

UNDERTAKING

I, Dr. A. Dhamodharan, Managing Director confirms that this EIA Report of Multi Colour Granite quarry over an extent of 2.84.5 Ha at S.F.No.407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4 (P) K. Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu State has been prepared at M/s. Ecotech Labs Pvt. Ltd., Chennai.

I also confirm that I shall be fully accountable for any misleading information mentioned in this Report.

Signature:

Name: Dr. A. Dhamodharan

Designation: Managing Director

Name of the EIA Consultant Organization: M/s. Ecotech Labs Pvt Ltd.,

Chennai. NABET Certificate No: NABET/EIA/2124/SA 0147

Date: 3.7.2023

Place: Chennai

Project Name	Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha	Final EIA Report
Project Proponent	Thiru.P.Ramachandran	
Project Location	K.Pitchampatti Village, Karur taluk, Karur District.	

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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

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Abbreviation


- LU –Land use
- AP – Air Pollution monitoring, prevention and control
- AQ- Meteorology, Air quality modeling and prediction
- WP – Water pollution monitoring, prevention and control
- EB- Ecology and Biodiversity
- NV- Noise & Vibration
- SE- Socio-economics
- HG- Hydrology, ground water and water conservation
- GEO –Geology
- RH – Risk assessment and hazards management
- SHW –Solid and Hazardous waste management
- SC- Soil conservation

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Project Location	K.Pitchampatti Village, Karur taluk, Karur District.	

Declaration of Experts contributing to the EIA

Declaration by experts contributing to the EIA report for Proposed Multi Colour Granite Quarry mining project of Thiru.P.Ramachandran Multi Colour Granite Quarry over an extent of 2.84.50 Ha is situated at S.F.No. 407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P) of K.Pitchampatti Village, Karur taluk, Karur District, Tamil Nadu State.




I, hereby certify that I was a part of the EIA team in the following capacity that developed the above EIA.

Project	Thiru.P.Ramachandran Multi Colour Granite Quarry - 2.84.50 Ha
Type & Category	1 (a) Mining of Minerals
Project Proponent	Thiru.P.Ramachandran
Environment Consultant with their Accreditation Status	M/s. Eco Tech Labs Pvt. Ltd., QCI Accredited
NABET Certificate No.	NABET/ EIA/2124/ SA 0147
EIA Coordinator Name	Dr. A. Dhamodharan (Mining of Minerals)
Signature	 Dr. A. DHAMODHARAN (NABET APPROVED EIA COORDINATOR) NABET/EIA/2124/SA 0147 Environmental Consultant Eco Tech Labs Pvt. Ltd Plot No.48A, 2nd Main Road, Ram Nagar South Extn. Pallikaranai, Chennai - 600 100.
Period of Involvement	July 2022 - Till date
Contact Information	M/s. Eco Tech Labs Pvt. Ltd. No. 48, 2nd Main Road, Ram Nagar South Extension Pallikaranai, Chennai - 600 100 Mobile: +91 9789906200 E-mail: dhamo@ecotechlabs.in

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Project Location	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

Functional Area Experts

The basic fact division that environment and laboratory are accredited by NABL and Ministry of Environment and Forests, India and by other international bodies, stand testimony to its emphasis.

S. No.	Functional areas	Name of the experts	Involvement (period and task)	Signature and date
1	AP	Mrs. K. Vijayalakshmi	1. Selection of Baseline Monitoring stations based on the wind direction 2. Interpretation of Baseline data by comparing it with standards prescribed by CPCB against the type of area 3. Identification of sources of air pollution and suggesting mitigation measures to minimize impact Period: July 2022 - Till now	
2	WP	Dr. A. Dhamodharan	1. Selection of baseline Monitoring Locations for Ground water analysis and also identifying nearest surface water to be studied. 2. Interpretation of baseline data collected 3. Identification of impacts based on the baseline study conducted and also to the ground water and nearby surface water due to the proposed project 4. Preparation of suitable and appropriate mitigation plan. Period: July 2022 - Till now	
3	SHW	Dr. A. Dhamodharan	1. Identification of nature of solid waste generated 2. Categorization of the generated waste and estimating the quantity of waste to be generated based on the per capita basis. Identification of impacts of SHW on Environment 3. Suggesting suitable mitigation measures by recommending appropriate disposal method for each category of waste generated	

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			4. Top soil and refuse management Period: July 2022 - Till now	
4	SE	Mr. S. Pandian	1. Primary data collection through the census questionnaire 2. Obtaining Secondary data from authenticated sources and incorporating the same in EIA report. 3. Impact assessment & proposing suitable mitigation plan 4. CSR budget allocation by discussing with the local body and allotting the same for need based activity. Period: July 2022 - Till now *Involves Public Hearing	
5	EB	Dr. A. Dhamodharan	1. Primary data collection through field survey and sheet observation for ecology and biodiversity 2. Secondary Collection through various authenticated sources 3. Prediction of anticipated impacts and suggesting appropriate mitigation measures. Period: July 2022 - Till now	
6	HG	Dr. T. P. Natesan	1. Study of existing surface drainage arrangements in the core and buffer zone, impact due to mining on these drainage courses and suggestion of mitigative measures 2. Determination of groundwater use pattern, development of rainwater harvesting program. Storm water management through garland drainage system. Period: July 2022 - Till now	
7	GEO	Dr. T. P. Natesan	1. Field survey for assessing regional and local geology, aquifer distribution, Determination of groundwater use pattern, development of rainwater harvesting program. Period: July 2022 - Till now	

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8	SC	Dr. A. Dhamodharan	<p>1. Interpretation of baseline report</p> <p>2. Identification of possible impacts on soil, prediction of soil conservation and suggesting suitable mitigation measures.</p> <p>Period: July 2022 - Till now</p>	
9	AQ	Mrs. K. Vijayalakshmi	<p>1. Collection of Meteorological data for the baseline study period</p> <p>2. Plotting wind rose plot and thereby selecting the monitoring locations based on the wind pattern</p> <p>3. Estimation of sources of air emissions and air quality modeling is done</p> <p>4. Interpretation of the results obtained</p> <p>5. Identification of the impacts and suggesting suitable mitigation measures.</p> <p>Period: July 2022 - Till now</p>	
10	NV	Mrs. K. Vijayalakshmi	<p>1. Selection of monitoring locations</p> <p>2. Interpretation of baseline data</p> <p>3. Prediction of impacts due to noise pollution and suggestion of appropriate mitigation measures</p> <p>Period: July 2022 - Till now</p>	
11	LU	Dr. T. P. Natesan	<p>1. Collection of Remote sensing satellite data to study the land use pattern.</p> <p>2. Primary field survey and limited field verification for land categorization in the study area</p> <p>3. Preparation of Land use map using Satellite data for 10km radius around the project site.</p> <p>Period: July 2022 - Till now</p>	
12	RH	Mrs. K. Vijayalakshmi	<p>1. Identification of the risk</p> <p>2. Interpreting consequence contours</p> <p>3. Suggesting risk mitigation measures</p> <p>Period: July 2022 - Till now</p>	

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Project Proponent	Thiru.P.Ramachandran	
Project Location	K.Pitchampatti Village, Karur taluk, Karur District.	

Declaration by the Head of the accredited consultant organization/ authorized person

I, Dr. A. Dhamodharan, hereby confirm that the above mentioned experts prepared the EIA report of mining project at Survey number. 407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P) of K.Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu State.

I also confirm that the consultant organization shall be fully accountable for any misleading information mentioned in this statement.

Signature:



Name: Dr.A.Dhamodharan

Designation: Managing Director

Name of the EIA consultant organization: M/s. Eco Tech Labs Private Limited

NABET Certificate No: NABET/EIA/2124/SA 0147

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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

EXECUTIVE SUMMARY

1. Project Background:

Proposed proposal pertains to Multi Colour Granite mining project by open cast semi mechanized method on allotted mine lease area at K.Pitchampatti Village, Karur taluk of Karur District, Tamil Nadu. It is a Plain terrain.

Proposed quarry was existing quarry and lease was granted in favour of P. Ramachandran, the Lessee had obtained lease for quarrying granite vide Government Order.(3D) No. 37, Industries (MMB.2) Department dated 19.07.2016 for a period of twenty years and the lease deed was executed on 05.08.2016 and the lease will expire on 04.08.2036.

The Proposed Multi Colour Granite Quarry over an extent of 2.84.50 Ha at S.F.No. 407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P) of K.Pitchampatti Village, Karur taluk, Karur District, Tamilnadu. Based on the 500m radius letter obtained from geology of mining, Karur vide letter no Rc.No.248/Mines/2021 dated 27.10.2022 proposal coming under Cluster of mine exceeding more than 5 Ha and the total cluster area is 9.52 Ha. We have submitted our fresh application for ToR to SEIAA vide Proposal No: SIA/TN/MIN/408532/2022 on 29.11.2022.

The category of the project is B1 (cluster), the lease area exhibits Plain terrain and sloping towards south-west side covered with Multi Colour Granite. The quarry operation is proposed to carry out with conventional open cast semi mechanized mining with 5.0-meter vertical bench with a bench width of 5.0 meter. In addition to the above the Quarry operation involves Diamond wire saw cutting, loading and transportation.

The quarry operation is proposed up to depth for 25 m (1.0 m Top Soil + 4 m Weathered granite + 20 m Multi colour Granite) below ground level. The total Geological Reserves is 98680 m³ and Mineable Reserves is 49220 m³. The Geological reserve in ROM is about 98680 m³. Geological reserve at 35% reserves is about 34538 m³. The Mineable Reserves in ROM is about 49,220 m³. Mineable reserve at 35% reserves is about 17228 m³ and Proposed Yearwise production is carried out as 7559 m³ at 35 % reserves to be mined for (Sixty months) Five years only.

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Project Location	K.Pitchampatti Village, Karur taluk, Karur District.	

The Mining Plan was approved by Director of Geology and Mining, Guindy, Chennai-32 vide letter No. 503/MM2/2016 dated 06.02.2016. The lessee has obtained Environmental clearance from SEIAA-TN vide letter no. Lr.No.SEIAA-TN/F.No.5073/1(a)/EC.No.3293/2016 dated 11.07.2016.

The 1st scheme of mining for the period from 05.08.2021-04.08.2022 to 05.08.2025-04.08.2026 is now being prepared and submitted under rule 18(2) of GCDR 1999 for approval on 29.03.2021.

The project area does not fall in Hill Area Conservation Authority region. There is no interstate boundary, CRZ zone, Western Ghats, notified Bird sanctuaries, wild life sanctuaries as per Wild life protection Act 1972, within the radius of 15Km.

2. Nature & Size of the Project

The proposed Multi Colour Granite Quarry over an extent of 2.84.50 Hectares land is located at K.Pitchampatti Village of Karur taluk, Karur District.

Mineral intends to quarry	: Multi Colour Granite
District	: Karur
Taluk	: Karur
Village	: K.Pitchampatti
S. F. Nos.	: 407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P)
Extent	: 2.84.50 Hectares

Table 1: Brief Description of the Project

S. No.	Particulars	Details
1	Latitude	10°46'54.76"N to 10°46'47.80"N
2	Longitude	78°04'07.23"E to 78°04'15.25"E
3	Site Elevation above MSL	206 m from MSL
4	Topography	Plain terrain
5	Land use of the site	Patta land
6	Extent of lease area	2.84.50 Ha
7	Nearest highway/Road	<ul style="list-style-type: none"> ➤ SH74 – Dindugal- Karur Road 6.3 km, E ➤ NH 44 – Karur Main Road – 12.6km, NW

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8	Nearest railway station	Palaiyam Railway Station – 9.3 km, SE
9	Nearest airport	Tiruchirapalli International Airport – 68.8km, E
10	Nearest town / city	Town - K.Pitchampatti-2.3 km -NE City - Karur-11.8Km -NE District - Karur-11.8 Km -NE
11	Rivers / Canal	Amaravathi river- 9 km, W Kudaganar River- 8.8 km, NW Kudaganar Check Dam- 10.4 km, W
12	Lake	<ul style="list-style-type: none"> • Kandedutha Manickam Lake- 3.1 km, SW • Edayapatti Lake- 5.7 km, SW • Vellaiyanai Kulam- 7.5 km- NE • Poove Kulam – 11.7 km, E • Alamarathupatti Kanmai- 0.6 km- N • Pitchampatti Kanmai- 0.9 km, N • Seasonal Odai- 40 m, E • Vellariyan Kulam- 8.2 km, N
13	Hills / valleys	Nil in 15 km radius
14	Archaeologically places	Nil in 15 km radius
15	National parks / Wildlife Sanctuaries	Kadavur Slender Loris Sanctuary- 14.8 km, S
16	Reserved / Protected Forests	Nil in 15 km radius
17	Seismicity	Proposed Lease area come under Seismic zone-II (low risk area)
18	Defense Installations	Nil in 15 Km radius

3. Need for the Project

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

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on the demand of Granite, the lessee intends to produce the required quantity of Multi Colour Granite for domestic market.

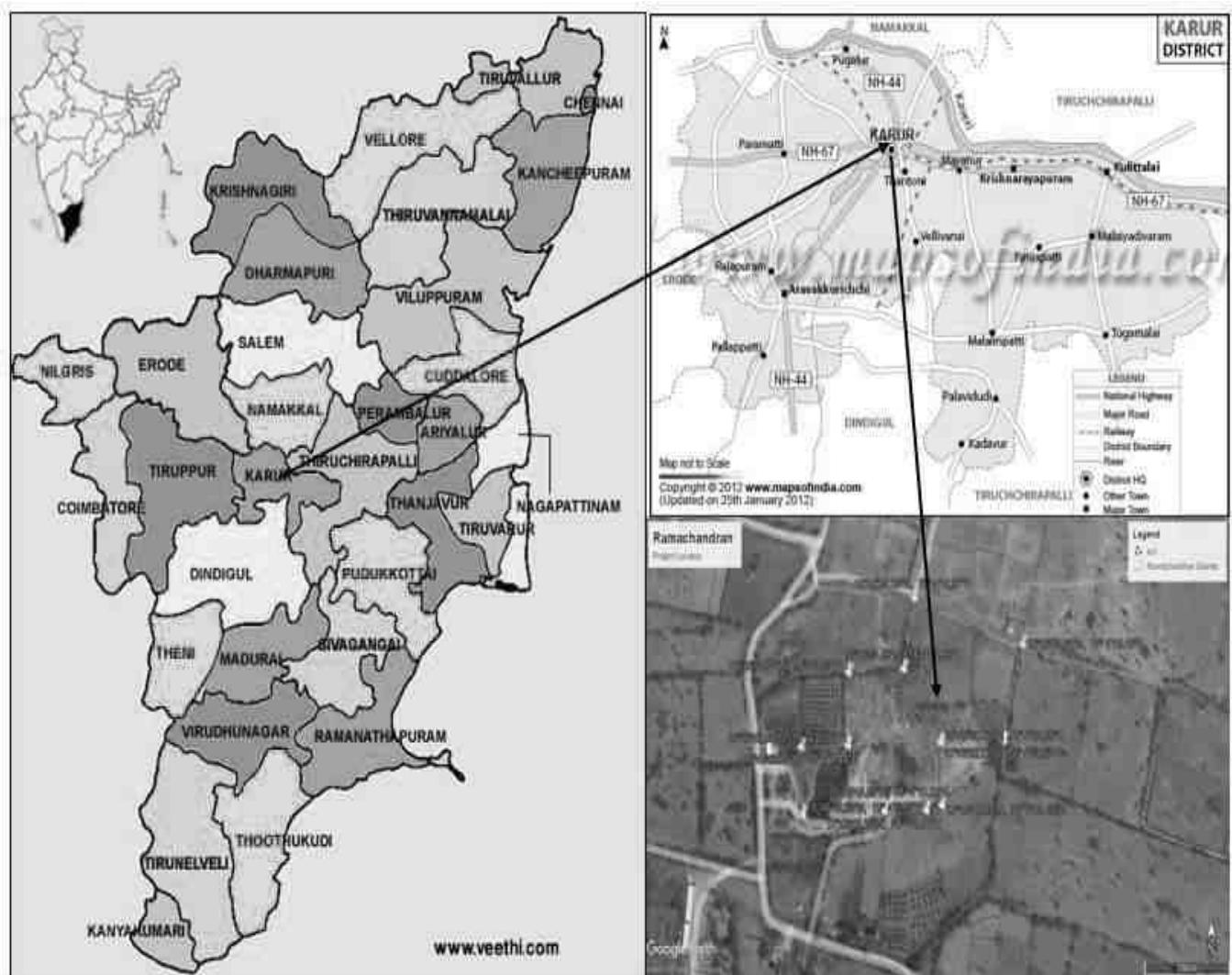


Figure 1: Location Map of the Project Site

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Figure 2: Google Image of the Project Site

4. Multi Colour Granite

The Multi Colour Granite and granite gneiss is mainly composed of medium to fine grained with feldspar and quartz are main constituents, garnet and other mafic minerals are secondary minerals. It has commercially called as 'Paradiso' which is widely used for Slabs, Tiles and Monuments after cutting and polishing.

5. Geological Resources

The Geological reserve is estimated as **98680 m³** upto a depth of 25.0m (1.0m Top Soil + 4.0m Weathered Granite + 20.0m Multi Colour Granite), by area cross sectional method.

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Table 2. Geological resources

Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Multi-Colour Granite Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Top soil
XY-AB	I	63	148	1						9324
	II	63	148	4					37296	
	III	63	24	5	7560	7560	2646	4914		
	IV	63	24	5	7560	7560	2646	4914		
	V	63	24	5	7560	7560	2646	4914		
	VI	63	24	5	7560	7560	2646	4914		
	TOTAL					30240	30240	10584	19656	37296	9324
X1Y1-A1B1	I	83	141	1						11703
	II	83	141	4					46812	
	III	83	24	5	9960	9960	3486	6474		
	IV	83	24	5	9960	9960	3486	6474		
	V	83	24	5	9960	9960	3486	6474		
	VI	83	24	5	9960	9960	3486	6474		
	TOTAL					39840	39840	13944	25896	46812	11703
X1Y1-A2B2	I	15	42	1						630
	II	15	42	4					2520	
	III	26	4	5	520	520	182	338		
	IV	78	24	5	9360	9360	3276	6084		
	V	78	24	5	9360	9360	3276	6084		
	VI	78	24	5	9360	9360	3276	6084		
	TOTAL					28600	28600	10010	18590	2520
GRAND TOTAL					98680	98680	34538	64142	86628	21657

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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

Table 3. Mineable Resources

Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Multi-Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Side Burden	Topsoil
XY-AB	I	36	36	1							1296
	II	34	33	4					4488		
	III	27	10	5						1350	
	IV	17	5	5						425	
	III	27	15	5	2025	2025	709	1316			
	IV	17	10	5	850	850	298	552			
	TOTAL					2875	2875	1007	1868	4488	1775	1296
X1Y1-A1B1	I	73	73	1							5329
	II	72	71	4					20448		
	III	68	39	5						13260	
	IV	63	29	5						9135	
	V	58	19	5						5510	
	VI	53	9	5						2385	
	III	68	24	5	8160	8160	2856	5304			
	IV	63	24	5	7560	7560	2646	4914			

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	V	58	24	5	6960	6960	2436	4524			
	VI	53	24	5	6360	6360	2226	4134			
	TOTAL				29040	29040	10164	18876	20448	30290	5329
X1Y1- A2B2	I	1	16	1							16
	II	1	15	4					60		
	III	12	22	5						1320	
	IV	64	17	5						5440	
	V	59	12	5						3540	
	VI	54	7	5						1890	
	III	12	4	5	240	240	84	156			
	IV	64	24	5	7680	7680	2688	4992			
	V	59	19	5	5605	5605	1962	3643			
	VI	54	14	5	3780	3780	1323	2457			
	TOTAL				17305	17305	6057	11248	60	12190	16
GRAND TOTAL					49220	49220	17228	31992	24996	44255	6641

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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

Table 4. Year wise Production Plan

Year	Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Side Burden	Topsoil	
05.08.2021 to 04.08.2022	XY-AB	I	36	36	1							1296	
		II	34	33	4					4488			
		III	27	10	5						1350		
		IV	17	5	5						425		
		III	27	15	5	2025	2025	709	1316				
		IV	17	10	5	850	850	298	552				
	X1Y1-A1B1	I	10	44	1								440
		II	10	42	4						1680		
		III	10	10	5							500	
		III	10	24	5	1200	1200	420	780				
TOTAL						4075	4075	1427	2648	6168	2275	1736	
05.08.2022 to 04.08.2023	X1Y1-A1B1	I	36	44	1							1584	
		II	36	42	4					6048			
		III	36	10	5						1800		
		III	36	24	5	4320	4320	1512	2808				
		TOTAL						4320	4320	1512	2808	6048	1800

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Year	Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Side Burden	Topsoil
05.08.2023 to 04.08.2024	X1Y1-A1B1	I	28	44	1							1232
		II	27	42	4					4536		
		III	35	10	5						1750	
		III	35	24	5	4200	4200	1470	2730			
		TOTAL				4200	4200	1470	2730	4536	1750	1232
05.08.2024 to 04.08.2025	X1Y1-A1B1	IV	36	24	5	4320	4320	1512	2808			
		TOTAL				4320	4320	1512	2808			
05.08.2025 to 04.08.2026	X1Y1-A1B1	IV	39	24	5	4680	4680	1638	3042			
		TOTAL				4680	4680	1638	3042			
GRAND TOTAL						21595	21595	7559	14036	16752	5825	4552

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6. Mining

Opencast mining

The quarry operation is proposed to carry out with conventional open cast semi mechanized mining with 5.0 meter vertical bench with a bench width of 5.0 meter. The Quarry operation involves Diamond wire saw cutting, loading and transportation.

Process Description

The proposed mining is planned to be carried out by open cast-semi mechanized method of mining, in this proposed mining area by using compressor operated jack hammer drills, excavators and dumpers etc.

Hydraulic excavator will be used to remove the over burden, Shifting of Blocks and waste removal etc. Compressor operated jack hammers will be used to drill the holes as preparatory work before cutting the Block by using Wire saw.

The diamond wire saw has many advantages to its credit such as

- 1) Reduced Consumption of Explosives.
- 2) Reduced noise level
- 3) Reduced Loss of material
- 4) Simple to use and saves squaring operation.

7. Water Requirement

Total water requirement for the mining project is 2 KLD. Domestic water will be sourced from nearby K.Pitchampatti Village and other water will be source from nearby road tankers supply.

Table 5. Water Balance

Purpose	Quantity	Source
Domestic & Flushing	1.0 KLD	Drinking water will be brought from the approved water vendors in the nearby villages.
Green belt	0.5 KLD	Other domestic activities through road tankers supply
Dust suppression	0.5 KLD	From road tankers supply
Total	2.0 KLD	

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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

8. Man Power and Organization Chart

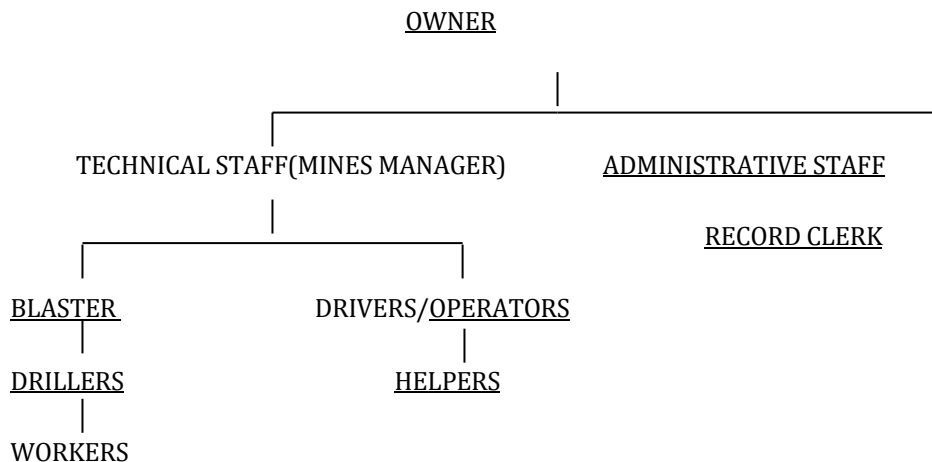
Total manpower required for the project is approximately 20 persons. Workers will be from nearby villages.

Table 6. Man Power

1.	Project Manager, Supervisor and record Clerk		3 Nos
2.	Skilled	Drill Operator	1 No.
		Drillers/ Workers	4 No.
		Excavator/ Rock Breakers	3 Nos
		Vehicle Drivers	2 No.
3.	Semi-skilled- Watchman		1 No.
4.	Unskilled (Dresser/cutter)		6 Nos
	Total =		20 Nos

No child less than 18 years will be entertained during quarrying operations.

ORGANISATION CHART



Project Name	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Draft EIA Report</i>
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Project Location	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

9. Solid Waste Management

Table 7. Solid Waste Management

S. No	Type	Quantity	Disposal Method
1	Organic	4.86 kg/day	Municipal bin including food waste
2	Inorganic	3.24 kg/day	TNPCB authorized recyclers

As per CPCB guidelines: MSW per capita/day =0.45 kg/day

Table 8. 500m Radius Cluster Mine

1) Existing quarries:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent
1	Thiru.P.Ramachandran	K.Pitchampatti Village and Karur Taluk	407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P)	2.84.5 Ha
2	Tvl.Ananta Granites LLP	K.Pitchampatti Village and Karur Taluk	468/1B (P), 417/8, 468/2	2.22.5 Ha

2) Abandoned/Old quarries:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent
Nil				

3) Details of Proposed/Applied quarries:

S. No.	Name of the lessee / Permit Holder	Village & Taluk	S. F. No.	Extent	Lease Period
1.	M/s Dahlia Granites Pvt Ltd	K.Pitchampatti Village and Karur Taluk	417/2, 417/5, 417/7 (P), 454/2	2.65.0	Proposed Area

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2.	Smt.P.Sujeetha	K.Pitchampatti Village and Karur Taluk	404/1(P), 404/2(P), 404/3(P), 404/4(P), 404/5(P), 404/6(P), 404/7(P), 404/8, 405/1, 405/2, 405/3(P), 405/4, 405/5(P), 405/6A(P)	1.80.0	--
				9.52.0	

The Total extent of the Existing / Lease expired / Proposed quarries are 9.52.0 Ha

10. Land Requirement

The total extent area of the project is 2.84.50 Ha, Patta land in K.Pitchampatti Village of Karur taluk, Karur District.

Table 9. Land Use Breakup

Description	Present Area (Ha.)	Area to be required at the present scheme period (Ha)	End of life of Quarrying Period (Ha.)
Area under Quarry	0.18.0	0.40.0	0.85.0
Dumps	0.20.0	0.41.0	0.61.5
Stockyard	Nil	Nil	Nil
Infrastructure	Nil	0.02.0	0.02.0
Roads	0.03.0	0.04.0	0.07.0
Green Belt	Nil	0.27.0	0.32.0
Unutilized Area	2.43.5	1.70.5	0.97.0
Grand Total	2.84.5	2.84.5	2.84.5

11. Human Settlement

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Project Location	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

There are no habitations within 500m radius. There are villages located in this area within 5km radius of the quarry.

Table 10. Habitation

Direction	Village	Population	Distance in Kms
North	K.Pitchampatti	200	2.3kms
West	Papanayakanoor	350	3.0km
East	Gudalur	250	5.0kms
South	Vasanthakathirpalayam	250	1.0km

12. Power Requirement

The proposed granite building stone quarrying does not required any power supply for the quarrying operation.16 Litres diesel per hour required for excavator whenever needed.

13. Scope of the Baseline Study

This chapter contains information on existing environmental scenario on the following parameters.

1. Micro - Meteorology
2. Water Environment
3. Air Environment
4. Noise Environment
5. Soil / Land Environment
6. Biological Environment
7. Socio-economic Environment

13.1 Micro - Meteorology

Meteorology plays a vital role in affecting the dispersion of pollutants, once discharged into the atmosphere. Since meteorological factors show wide fluctuations with time, meaningful interpretation can be drawn only from long-term reliable data.

- i) Average Minimum Temperature : 26.3⁰C

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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

ii) Average Maximum Temperature. : 40 °C

iii) Average Annual Rainfall of the area : 806 mm

13.2 Air Environment

Ambient air monitoring was carried out on monthly basis in the surrounding areas of the Mine Lease area to assess the ambient air quality at the source. To know the ambient air quality at a larger distance i.e. in the study area of 5 km. radius, air quality survey has been conducted at 5 locations. Major air pollutants like Particulate Matter (PM10), Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO₂) were monitored and the results are summarized below.

The baseline levels of PM10 (51-37(µg/m³)), PM 2.5(14-22 (µg/m³)), SO_x 5-9 (µg/m³) ,NO_x (10-22 (µg/m³)), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from July to September, 2022

13.3 Noise Environment

Ambient noise levels were measured at 5 locations around the proposed project site. The noise level during day varies from 41-65 dB(A) and during night varies between 36-50 dB(A).

13.4 Water Environment

- The average pH ranges from 7.32-7.82
- TDS value varied from 720 mg/l to 1515 mg/l
- Hardness varied from 385 to 767 mg/l
- Chloride varied from 155 to 420 mg/l

13.5 Land Environment

The analysis results shows that the majority of soil in the project and surrounding area is slightly alkaline in nature and pH value ranges from 6.9 to 8.05 with organic matter 0.67 % to 1.92 %. The concentration of Nitrogen, Phosphorus & Potassium has been found to be in good amount in the soil samples.

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13.6 Biological Environment

The proposed Mining lease area is mostly dry barren ground with small shrubs and bushes. No specific endangered flora & fauna exist within the mining lease area.

14. Rehabilitation/ Resettlement

- The overall land of the mine is private patta land. There are no displacement of the population within the project area and adjacent nearby area. Social development of nearby villages will be considered in this project.
- The mine area does not cover any habitation. Hence the mining activity does not involve any displacement of human settlement.

15. Greenbelt Development

1. The development of greenbelt in the peripheral buffer zone of the mine area.
2. Green belt has been recommended as one of the major component of Environmental Management Plan, which will improve ecology, environment and quality of the surrounding area.
3. Local trees like Neem will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 60 trees per annum with interval 5m.
4. The rate of survival expected to be 70% in this area

Table 11 Plantation/ Afforestation Program

Year	No. of trees proposed to be planted	Name of the species	Survival rate expected in %	No. of trees expected to be grown
I	270	Neem	70	189
II	270	Neem	70	189
III	270	Neem	70	189
IV	270	Neem	70	189
V	270	Neem	70	189

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<i>Project Proponent</i>	<i>Thiru.P.Ramachandran</i>	
<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

16. Anticipated Environmental Impacts

16.1 Air Environment and Mitigation Measures

1. Water sprinkling will be done on the roads & unpaved roads.
2. Proper mitigation measures like water sprinkling will be adopted to control dust emissions.
3. Plantation will be carried out on approach roads, solid waste site & nearby mine premises.
4. To control the emissions regular preventive maintenance of equipments will be carried out.

16.2 Noise Environment and Mitigation Measures

1. Periodical monitoring of ambient noise will be done as per CPCB guidelines.
2. No other equipment except the transportation vehicles and excavator for loading will be allowed.
3. Noise generated by these equipments shall be intermittent and does not cause much adverse impact

17. Responsibilities for Environmental Management Cell (EMC)

The responsibilities of the EMC include the following:

- i. Environmental Monitoring of the surrounding area
- ii. Developing the green belt/Plantation
- iii. Ensuring minimal use of water
- iv. Proper implementation of pollution control measures

18. Environmental Monitoring Program

A monitoring schedule with respect to Ambient Air Quality, Water & Wastewater Quality, Noise Quality as per Tamil Nadu State Pollution Control Board (TNPCB), shall be maintained.

Project Name	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Draft EIA Report</i>
Project Proponent	<i>Thiru.P.Ramachandran</i>	
Project Location	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

19. Project Cost

The total project cost is **Rs.1,32,30,000** for deployment of machinery and creation of infrastructural facilities like approach road, Mine office / Workers Shed, First Aid Room etc., including electrifications and water supply

Table 12 Project Cost details

S. No.	Description	Cost
1	Fixed ,Asset Cost	33,50,000
2	Operational Cost	95,00,000
3	EMP Cost	3,80,000
	Total	1,32,30,000

20. Corporate Environmental Responsibility

The Corporate Environment Responsibility (CER) fund will be provided to the below activity.

Table 13 CER Cost

S.No.	CER Activity	CER (Rs.)
1.	Panchayat Union Primary School, K.Pitchampatti, Panchayat Union Primary School, Alampadi Activity: Provision of <ul style="list-style-type: none"> ➤ Green Belt Development ➤ Solar powered Smart Classroom, ➤ Solar lights to the School, ➤ Environmental Awareness related books to the school library, ➤ Basic amenities such as safe Drinking Water, Hygienic Toilet facilities. ➤ Greenbelt development in and around the school 	5,00,000

21. Benefits of the Project,

- There is positive impact on socio-economics of people living in the villages. Mining operations in the subject area has positive impact by providing direct and indirect jobs opportunities

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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

- The project is environmentally compatible, financially viable and would be in the interest of construction industry thereby indirectly benefiting the masses.
- Quarrying in this area is not going to have any negative impact on the social or cultural life of the villagers in the near vicinity.

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Thiru.P.Ramachandran</i>	
<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

1 Introduction

1.1 Preamble

Environment Impact Assessment (EIA) is a process used to identify the environmental, social & economic impacts of a project prior to decision making. It is a decision-making tool, which guides the project proponent in taking appropriate decisions for proposed projects. It aims to predict environmental impacts at an early stage of project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the prediction options to the proponent. By using EIA, both environmental & economic benefits can be achieved. By considering environmental effects - prediction & mitigation, early benefits in project planning, protection of the environment, optimum utilization of resources, thus saving overall time & cost of the project. EIA also lessens conflicts by promoting community participation, informs project proponent, and helps to lay the base for environmentally sound projects.

The Ministry of Environment & Forests, Govt. of India, made environmental clearance (EC) for certain development projects mandatory through its notification of 27/01/1994 under the Environment Protection Act, 1986 and subsequently the MoEF came out with Environment Impact Notification, S.O.1533(E), and dt.14/09/2006. It has been made mandatory to obtain environmental clearance for different kinds of developmental projects (Schedule of notification). The proposed project falls under item 1(a) of the EIA notification, 2006.

1.2 General Information on Mining of Minerals

The Karur District forms part of the Archean complex of peninsular gneiss. The general rock types of this area are Charnockite, Biotite gneiss, Migmatites and Anorthosites. Karur District is blessed with good reserves of Crystalline Limestone known as "Palayam belt" in Varavanai, Thennilai, Gudalur etc., villages in Kulithalai Taluk and the occurrences of good quality of pegmatite veins constituting with glassy Quartz and potash Feldspar in lensoid patches in Nagampalli and Pungambadi areas in Aravakurichi Taluk. The major mineral such as Limestone, Quartz and Feldspar and Magnesite and Dunite are exploited in Karur District and utilized in the mineral based industries.

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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

The Charnockite and Granite Gneiss rocks are found to occur in K.Paramathi, Athur, Thennilai, Punnam, Kuppam, Munnur, Karudayampalayam, Anjur villages in Karur and Aravakurichi Taluk are exploited to produce building materials and road metal (Jelly) and over burden soil appear as gray to reddish in colour called as gravel.

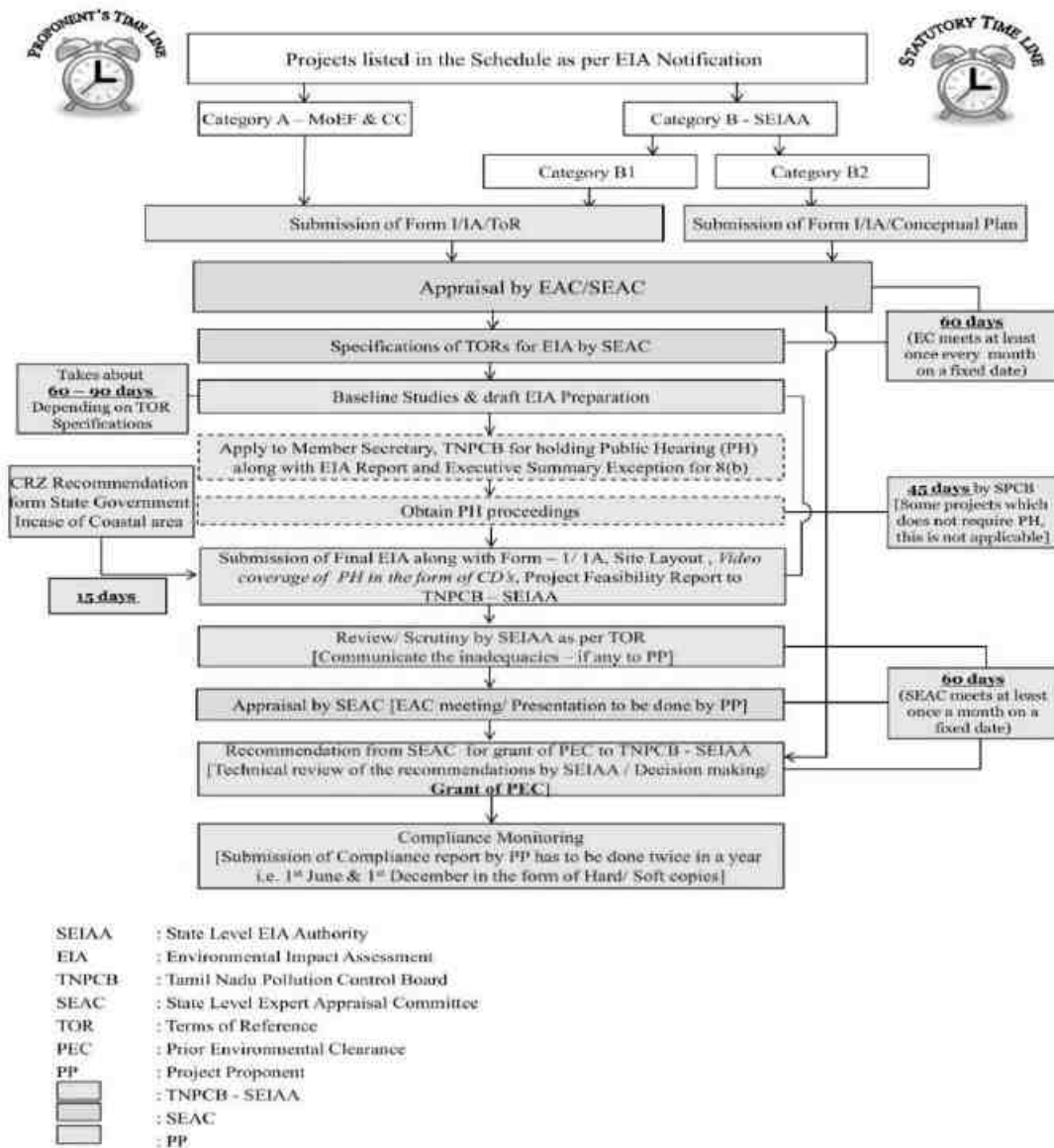
The commercially known “Coloumbo Zubrana” the unique type in the Multicoloured Granite / Granite Gneiss category is occurring in Thogamalai, Naganur and Kazhugur Villages in Kulithalai Taluk. These rock type belong to minor mineral category. The arrangement of alternate layers of felsic and mafic minerals in linear pattern and exhibits wavy pattern in the rock and giving very good structure for the rock type. The well developed gneissic pattern with linear arrangement, the rock type have attracted the granite market and found to be suitable for the exploitation of granite blocks. Calc-Gneiss (called as colonial white occurs in Pitchampatti Village of Karur Taluk are of export worthy quality commodity known at K.Pitchampatti Village.

1.3 Environmental Clearance

As per EIA Notification, 2006 and its subsequent amendments (O.M vide No.F.No.L- 11011/175/2018-IA-II(M) Govt of India MOEF&CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1

The proposed project is categorized under Category “B1” 1(a) (Cluster) - {Mining of Minerals} as the 500m radius area is more than 5 Ha including the mine lease area. Hence, the project will be considered at SEAC, Tamil Nadu.

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Project Proponent	Thiru.P.Ramachandran	
Project Location	K.Pitchampatti Village, Karur taluk, Karur District.	



1.4 Terms of Reference (ToR)

The terms of Reference has been issued by SEAC TN vide Letter No. SEIAA-TN/F.No.9616/SEAC/ToR-1327/2023 dt. 10.02.2023 (Annexure I). Additional ToR points were recommended by SEAC TN in addition to the Standard ToR Points. The replies for the same were addressed in this report and compliance is attached as Annexure I.

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Thiru.P.Ramachandran</i>	
<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

1.5 Post Environmental Clearance Monitoring

1.5.1 Methodology adopted

Post project monitoring will be carried out as per conditions stipulated in environmental clearance letter issued by SEIAA, consent issued by SPCB as well as according to CPCB guidelines. The lease area is considered as core zone and the area lying within 10 km radius from the lease boundary is considered as buffer zone, where some impacts may be observed on physical and biological environment. In the buffer zone slight impact may be observed and that too is occasional.

Table 1-1: Post Environmental Clearance Monitoring

S. No.	Description	Frequency of Monitoring
1.	Ambient Air Quality Monitoring	Quarterly/ Half Yearly
2.	Water level & Quality Monitoring	Quarterly/ Half Yearly
3.	Noise Level Monitoring	Quarterly/ Half Yearly
4.	Soil Quality Monitoring	Yearly
5.	Medical Check-up	Yearly

1.6 Generic Structure of the EIA Document

Chapter 1: Introduction. This chapter contains the general information on the mining of minerals, major sources of environmental impacts in respect of mining projects and details of environmental clearance process.

Chapter 2: Project Description. In this chapter the proponent should also furnish detailed description of the proposed project, such as the type of the project, need for the project, project location, layout, project activities during construction and operational phases, capacity of the project, project operation i.e., land availability, utilities (power and water supply) and infrastructure facilities such as roads, railways, housing and other requirements. If the project site is near a sensitive area it is to be mentioned clearly why an alternative site could not be considered. The project implementation schedule, estimated cost of development as well as operation etc should be also included.

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Thiru.P.Ramachandran</i>	
<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

Chapter 3: Analysis of Alternatives (Technology and Site). This chapter gives details of various alternatives both in respect of location of site and technologies to be deployed, in case the initial scoping exercise considers such a need.

Chapter 4: Description of Environment. This chapter should cover baseline data in the project area and study area.

Chapter 5: Impact Analysis and mitigation measures. This chapter describes the anticipated impacts on the environment and mitigation measures. The method of assessment of impacts including studies carried out, modelling techniques adopted to assess the impacts where pertinent should be elaborated in this chapter. It should give the details of the impacts on the baseline parameters, both during the construction and operational phases and suggests the mitigation measures to be implemented by the proponent.

Chapter 6: Environmental Monitoring Program. This chapter should cover the planned environmental monitoring program. It should also include the technical aspects of monitoring the effectiveness of mitigation measures.

Chapter 7: Additional Studies. This chapter should cover the details of the additional studies required in addition to those specified in the ToR and which are necessary to cater to more specific issues applicable to the particular project.

Chapter 8: Project Benefits. This chapter should cover the benefits accruing to the locality, neighbourhood, region and nation as a whole. It should bring out details of benefits by way of improvements in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

Chapter 9: Environmental Cost Benefit Analysis. This chapter should cover on Environmental Cost Benefit Analysis of the project.

Chapter 10: Environmental Management Plan. This chapter should comprehensively present the Environmental Management Plan (EMP), which includes the administrative and technical setup, summary matrix of EMP, the cost involved to implement the EMP, both during the construction and operational phase and provisions made towards the same in the cost estimates of project construction and operation. This chapter should also describe the proposed post-monitoring scheme as well as inter-organizational arrangements for effective implementation of the mitigation measures.

Project Name	Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha	Draft EIA Report
Project Proponent	Thiru.P.Ramachandran	
Project Location	K.Pitchampatti Village, Karur taluk, Karur District.	

Chapter 11: Summary and Conclusions. This chapter gives the summary of the full EIA report condensed to ten A-4 size pages at the maximum. It should provide the overall justification for implementation of the project and should explain how the adverse effects have been mitigated.

Chapter 12: Disclosure of Consultants. This chapter should include the names of the consultants engaged with their brief resume and nature of consultancy rendered.

1.7 Details of Project Proponent

Project Proponent : Thiru.P.Ramachandran
Status of the Proponent : Individual
Proponent's Name & Address : S/o. Paramasivam,
12, Bharathiyar 5th street,
SS Colony Ward- 18,
Madurai District – 625 016

1.8 Brief Description of the Project

1.8.1 Project Nature, Size & Location

As per EIA Notification, 2006 and its subsequent amendments (O.M vide No.F.No.L-11011/175/2018-IA-II(M) Govt of India MOEF&CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1.

Proposed proposal pertains to Multi Colour Granite mining project by semi mechanized open cast method on allotted mine lease area at K.Pitchampatti Village, Karur taluk of Karur District, Tamil Nadu. It is an Plain terrain. The total allotted mine lease for the proposed project is 2.84.50 Ha with their production capacity i.e. 7559 m³ of Multi Colour Granite for first Five years only (Sixty months) and total reserve of 21595 m³

Project Name	Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha	Draft EIA Report
Project Proponent	Thiru.P.Ramachandran	
Project Location	K.Pitchampatti Village, Karur taluk, Karur District.	

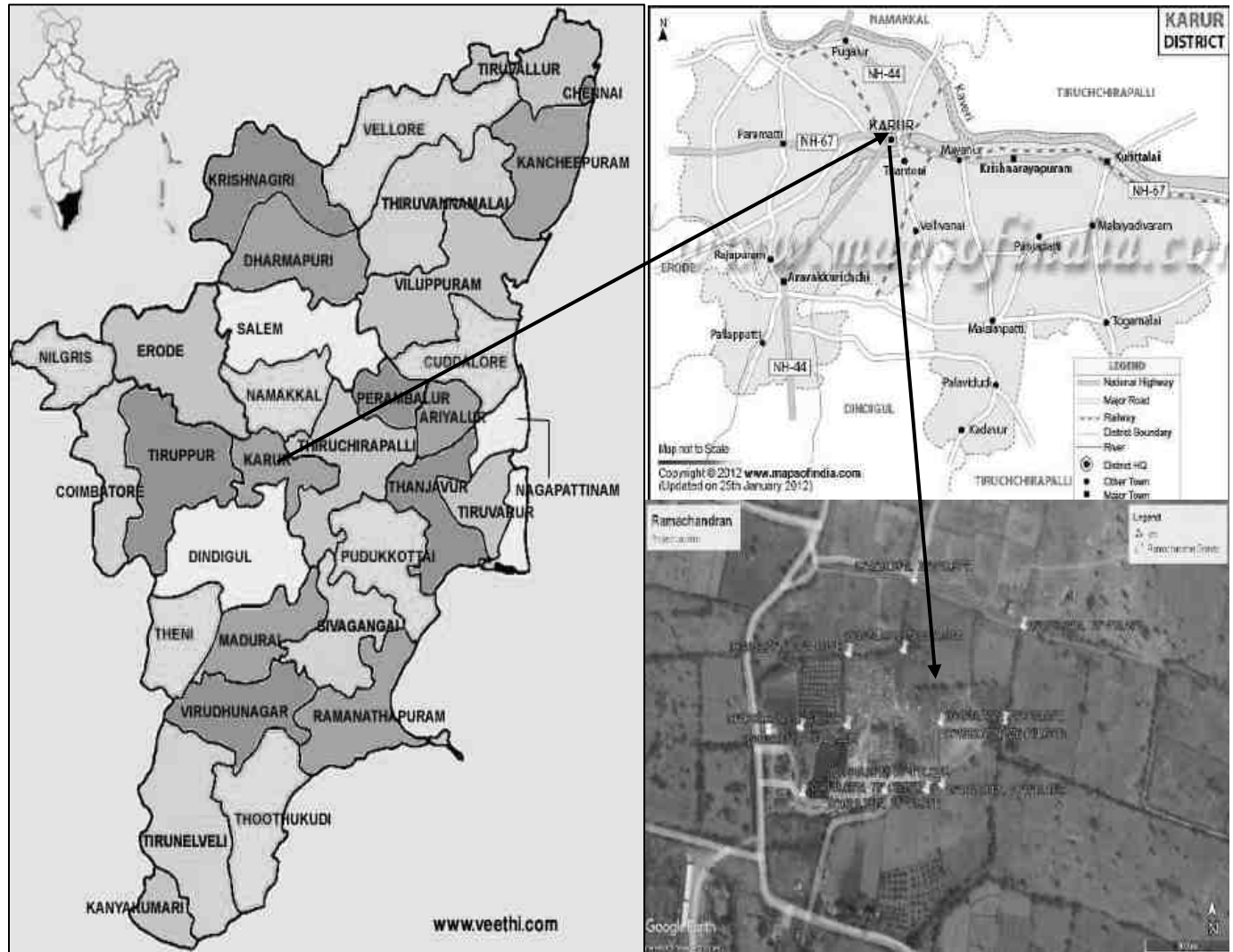


Figure 1-1: Location Map of the Project site

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Thiru.P.Ramachandran</i>	
<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

2 Project Description

This chapter furnishes detailed description of the proposed project, such as the type of the project, need for the project, project location, layout, project activities during mining, capacity of the project, project operation i.e., land availability, utilities (power and water supply) and infrastructure facilities such as roads, railways, housing and other requirements. The project implementation schedule estimated cost for carrying out entire mining activity is included.

2.1 General

- ❖ Proposed proposal pertains to Multi Colour Granite mining project by open cast mechanized method on allotted mine lease area at K.Pitchampatti Village, Karur taluk of Karur District, Tamil Nadu. It is a Plain terrain.
- ❖ The 1st scheme of mining for the period from 05.08.2021-04.08.2022 to 05.08.2025-04.08.2026 is now being prepared and submitted under rule 18(2) of GCDR 1999 for approval on 29.03.2021.
- ❖ The quarry operation is proposed up to depth for 25 m (1.0 m Top Soil + 4 m Weathered granite + 20 m Multi colour Granite) below ground level. The total Geological Reserves is 98680 m³ and Mineable Reserves is 49220 m³. The Geological reserve in ROM is about 98680 m³. Geological reserve at 35% reserves is about 34538m³. The Mineable Reserves in ROM is about 49,220 m³. Mineable reserve at 35% reserves is about 17228 m³ and Proposed Yearwise production is carried out as 7559 m³ at 35 % reserves to be mined for (Sixty months) Five years only.

Type of the project:

As per EIA Notification, 2006 and its subsequent amendments (O.M vide No.F.No.L-11011/175/2018-IA-II(M) Govt of India MOEF&CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1. The project required to be appraised at state level by State Environment Impact Assessment Authority, Tamil Nadu. Environment Clearance study will involve preparation of final EIA report on the basis of baseline & impact assessment study is carried out. Also, before appraisal, under 7(III) of EIA notification 2006, the project involves the Public Consultation and the same will be

Project Name	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Draft EIA Report</i>
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Project Location	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

conducted under SPCB (TN) in Karur District. The proceedings of the same has been incorporated in the Draft EIA Report.

The mines within 500m radius from the project site is listed below.

Table 2-1: Quarry within 500m Radius

1) Existing quarries:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent
1	Thiru.P.Ramachandran	K.Pitchampatti Village and Karur Taluk	407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P)	2.84.5 Ha
2	Tvl.Ananta Granites LLP	K.Pitchampatti Village and Karur Taluk	468/1B (P), 417/8, 468/2	2.22.5 Ha

2) Abandoned/Old quarries:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent
Nil				

3) Details of Proposed/Applied quarries:

S. No.	Name of the lessee / Permit Holder	Village & Taluk	S. F. No.	Extent	Lease Period
1.	M/s Dahlia Granites Pvt Ltd	K.Pitchampatti Village and Karur Taluk	417/2, 417/5, 417/7 (P), 454/2	2.65.0	Proposed Area
2.	Smt.P.Sujeetha	K.Pitchampatti Village and Karur Taluk	404/1(P), 404/2(P), 404/3(P), 404/4(P), 404/5(P), 404/6(P), 404/7(P), 404/8,	1.80.0	--

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			405/1, 405/2, 405/3(P), 405/4, 405/5(P), 405/6A(P)		
				9.52.0	

The Total extent of the Existing / Lease expired / Proposed quarries are 9.52.0 Ha

2.1.1 Need for the project:

Multi Colour Granite is specifically used for the buildings, paving, monuments, aesthetics and many other exterior projects. This project will give employment opportunities to the nearby villagers directly and indirectly. The products of Multi Colour Granite is well known in the international supermarket which will fetch a good foreign exchange to the nation. The Multi Colour Granite quarry provides perennial employment to the villages and improves their standard of living. The product manufacturing industry from Multi Colour Granite improves the technical skill of the local people. This provides economic development and earn foreign exchange to our country

2.2 Brief Description of the project

Table 2-2 Salient Features of the Project

S. No.	Description	Details
1	Project Name	Proposed Multi Colour Granite Quarry- 2.84.50 Ha
2	Proponent	Thiru.P.Ramachandran
3	Mining Lease Area Extent	2.84.50 Ha
4	Location	S.F.No. 407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P), K.Pitchampatti Village, Karur taluk, Karur District.
5	Latitude	10° 46' 54.76"N to 10° 46' 47.80"N
6	Longitude	78° 04' 07.23"E to 78° 04' 15.25"E
7	Topography	Plain terrain
8	Site Elevation above MSL	262 m from MSL

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Thiru.P.Ramachandran</i>	
<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

9	Topo sheet No.	58 J/1
10	Minerals of Mine	Multi Colour Granite
11	Proposed production of Mine	Proposed capacity of Multi Colour Granite : 21595 m ³ Recoverable Reserve of Multi Colour Granite : 7559 m ³
12	Ultimate depth of Mining	25 m below ground level
13	Method of Mining	Open cast, mechanized mining
14	Water demand	2.0 KLD
15	Source of water	Water will be supplied through tankers supply and drinking water will be purchased from vendors
16	Man power	Direct :11 nos, Indirect :9 nos
17	Mining Lease	The Lessee had obtained lease for quarrying granite vide Government Order.(3D) No. 37, Industries (MMB.2) Department dated 19.07.2016 for a period of twenty years and the lease deed was executed on 05.08.2016 and the lease will expire on 04.08.2036.
18	Mining Plan Approval	The Mining Plan was approved by Director of Geology and Mining, Guindy, Chennai-32 vide letter No. 503/MM2/2016 dated 16.02.2016. The lessee has obtained Environmental clearance from SEIAA-TN vide letter no. Lr.No.SEIAA TN/ F.No.5073 /1(a) /EC.No.3293 /2016 dated 11.07.2016. The 1st scheme of mining for the period from 05.08.2021-04.08.2022 to 05.08.2025-04.08.2026 is now being prepared and submitted under rule 18(2) of GCDR 1999 for approval on 29.03.2021.
19	Production details	Geological reserves of Multi Colour Granite : 98680 m³ Proposed year wise recoverable reserves of Multi Colour Granite : 21595 m ³

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Draft EIA Report</i>
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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

		(Multi Colour Granite Recovery @ 35% for first five years – 7559 m ³ and Granite Waste @ 65% - 14036 m ³)
20	Boundary Fencing	7.5m barrier all along the boundary, Fencing will be provided.
21	Disposal of overburden	The top soil of the lease area is 4552 m ³ . Multi Colour Granite waste forms nearly 65% of ROM and the quantity of granite waste in the five years will be around 14036 m ³ . Total waste to be generated in five years is 41165 m ³ . This rejected wastes are stored in the non-mineable part of the lease area in scattered manner.
22	Ground water	The quarry operation is proposed up to a depth of 25 m below ground level. The water table is below 52 from ground level which is observed from the nearby open wells and bore wells. Hence the ground water will not be affected in any manner due to the quarrying operation during the entire lease period.
23	Habitations within 500m radius of the Project Site	There is no Habitation within 500m radius of the project site.
24	Drinking water	Water will be supplied through tankers and drinking water can be purchased from nearby vendors of village K.Pitchampatti which is approx. 2.3 km from the project site in North Side.

Project Name	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	Draft EIA Report
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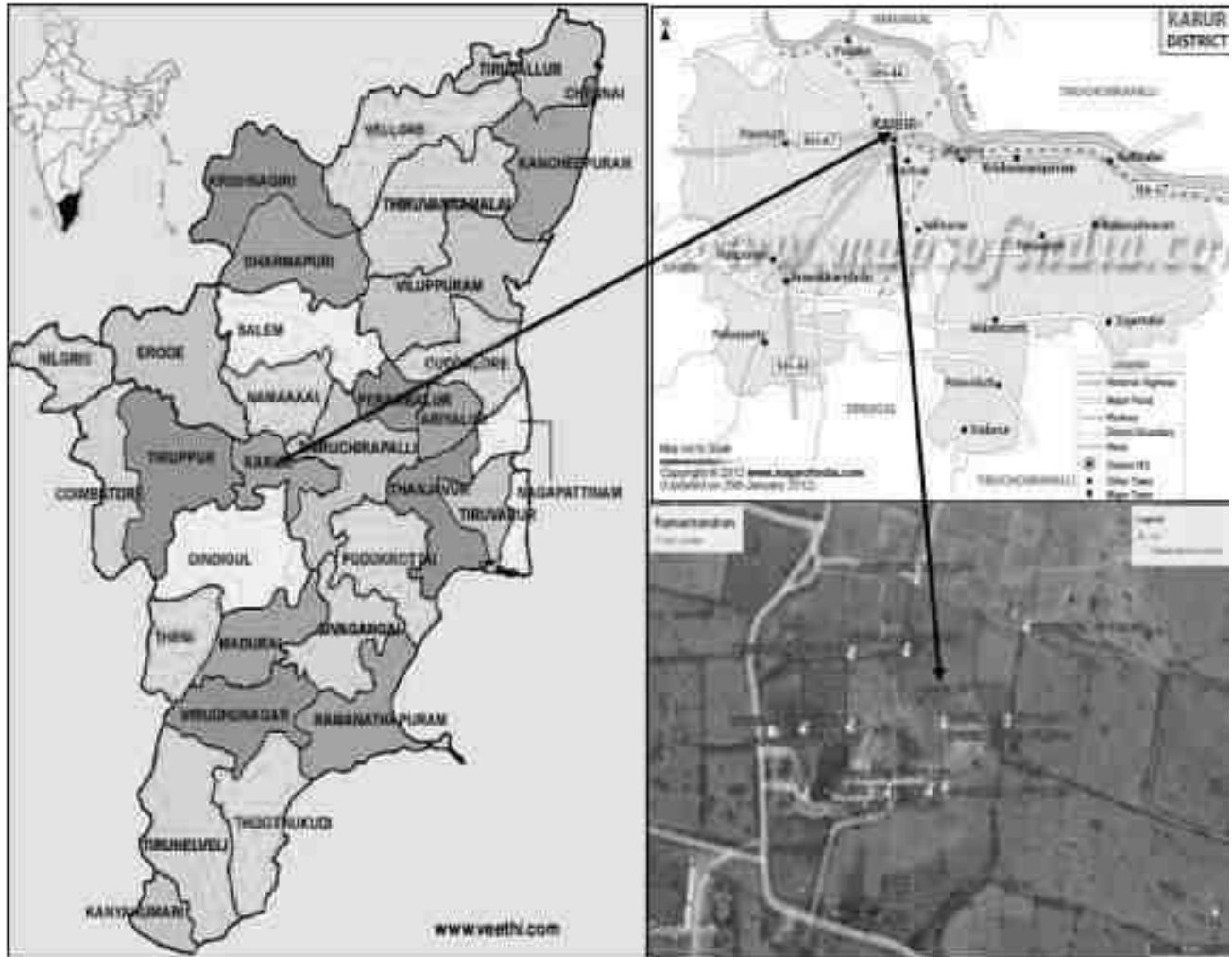


Figure 2-1: Location Map of the Project Site

Project Name	Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha	Draft EIA Report
Project Proponent	Thiru.P.Ramachandran	
Project Location	K.Pitchampatti Village, Karur taluk, Karur District.	



Figure 2-2: Google Earth Image of the Project Site

2.2.1 Site Connectivity:

The site is connected through

- SH 74 – Dindugal- Karur Road 6.3 km, E
- NH 44 – Karur Main Road – 12.6 km, NW

2.3 Location Details:

Table 2-3: Location Details

S. No	Particulars	Details
1.	Latitude	10° 46' 54.76"N to 10° 46' 47.80"N
2.	Longitude	78° 04' 07.23"E to 78° 04' 15.25"E
3.	Site Elevation above MSL	216 m AMSL
4.	Topography	Plain Terrain
5.	Land use of the site	Patta Land (Consent Registered)
6.	Extent of lease area	2.84.50 Ha

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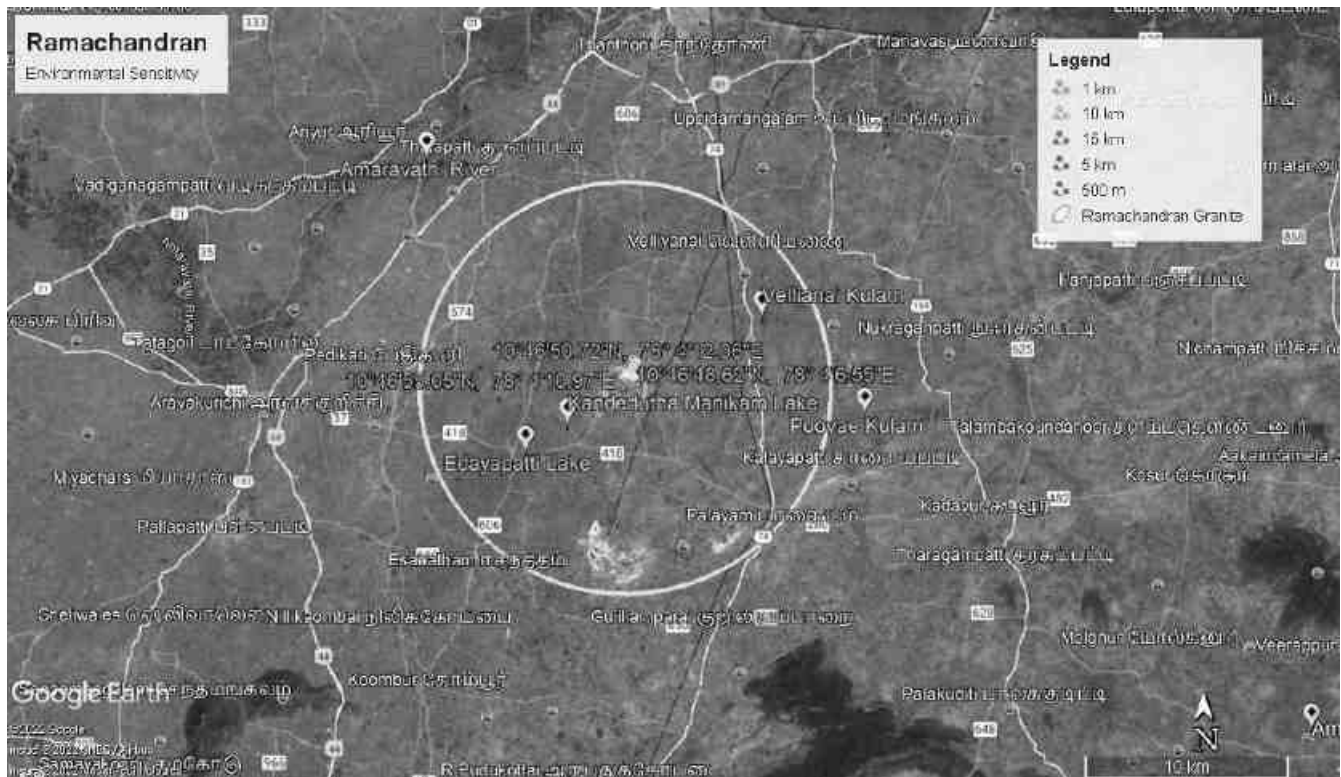


Figure 2-4: Environmental Sensitivity within 15km radius

2.3.1 Site Photographs

The site photographs of the project site are as follows.

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Project Location	K.Pitchampatti Village, Karur taluk, Karur District.	

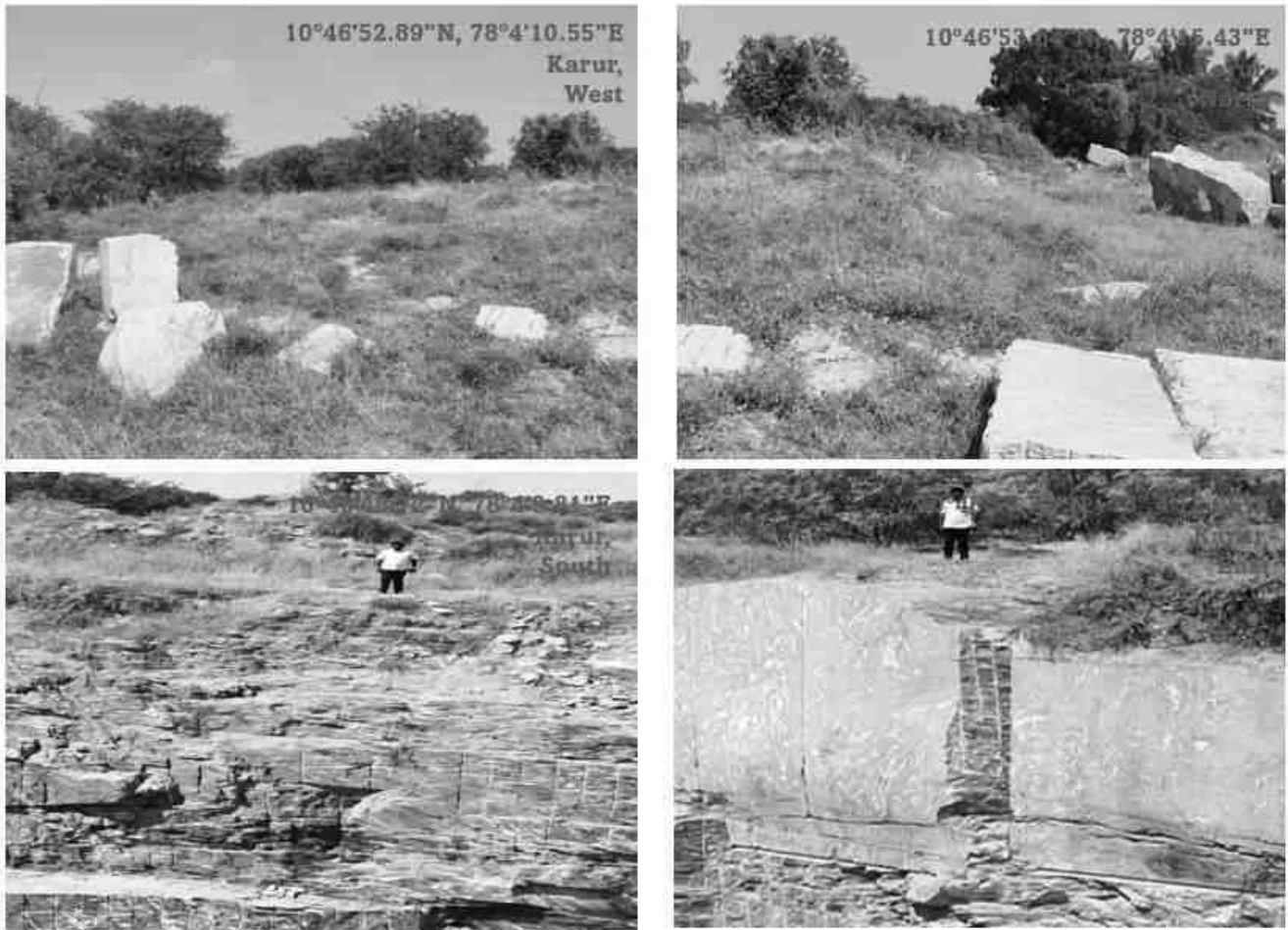


Figure 2-5: Site Photographs

2.3.2 Land Use Breakup of the Mine Lease Area

The Mine Lease area is undulated terrain. The land use pattern of the mine lease area as follows.

Table 2-4: Land use pattern

Description	Present Area (Ha.)	Area to be required at the present scheme period (Ha)	End of life of Quarrying Period (Ha.)
Area under Quarry	0.18.0	0.40.0	0.85.0
Dumps	0.20.0	0.41.0	0.61.5
Stockyard	Nil	Nil	Nil

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Infrastructure	Nil	0.02.0	0.02.0
Roads	0.03.0	0.04.0	0.07.0
Green Belt	Nil	0.27.0	0.32.0
Unutilized Area	2.43.5	1.70.5	0.97.0
Grand Total	2.84.5	2.84.5	2.84.5

2.3.3 Human Settlement

There are no habitations within the radius of 500m. The nearby habitations are as follows

Table 2-5: Habitation

Sl. No	Direction	Village	Population	Distance
1	North	K.Pitchampatti	200	2.3kms
2	West	Papanayakanoor	350	3.0km
3	East	Gudalur	250	5.0kms
4	South	Vasanthakathirpalayam	250	1.0km

2.4 Leasehold Area

The proposed Multi Colour Granite Quarry mine of 2.84.50 Ha is a Patta (Consent registered) land. The lease area falls in S.F.No. 407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P), K.Pitchampatti Village, Karur taluk, Karur District.s There is no reserve forest or protected forest land within the lease area. There is neither human settlement within 500m radius from the lease area.

2.5 Geology

Karur District is comprised of Achaeon peninsular gneisses such as Charnockites, Hornblende gneisses, Biotite gneisses and migmatites, dolerites and is intruded by younger formations like pegmatite and quartz veins. The peninsular gneiss/migmatite consists of biotite mica, plagioclase and orthoclase feldspars and Quartz and are found as sheet rocks running to several kms from NNE-SSW as a massive rock formation.

Project Name	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Draft EIA Report</i>
Project Proponent	<i>Thiru.P.Ramachandran</i>	
Project Location	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

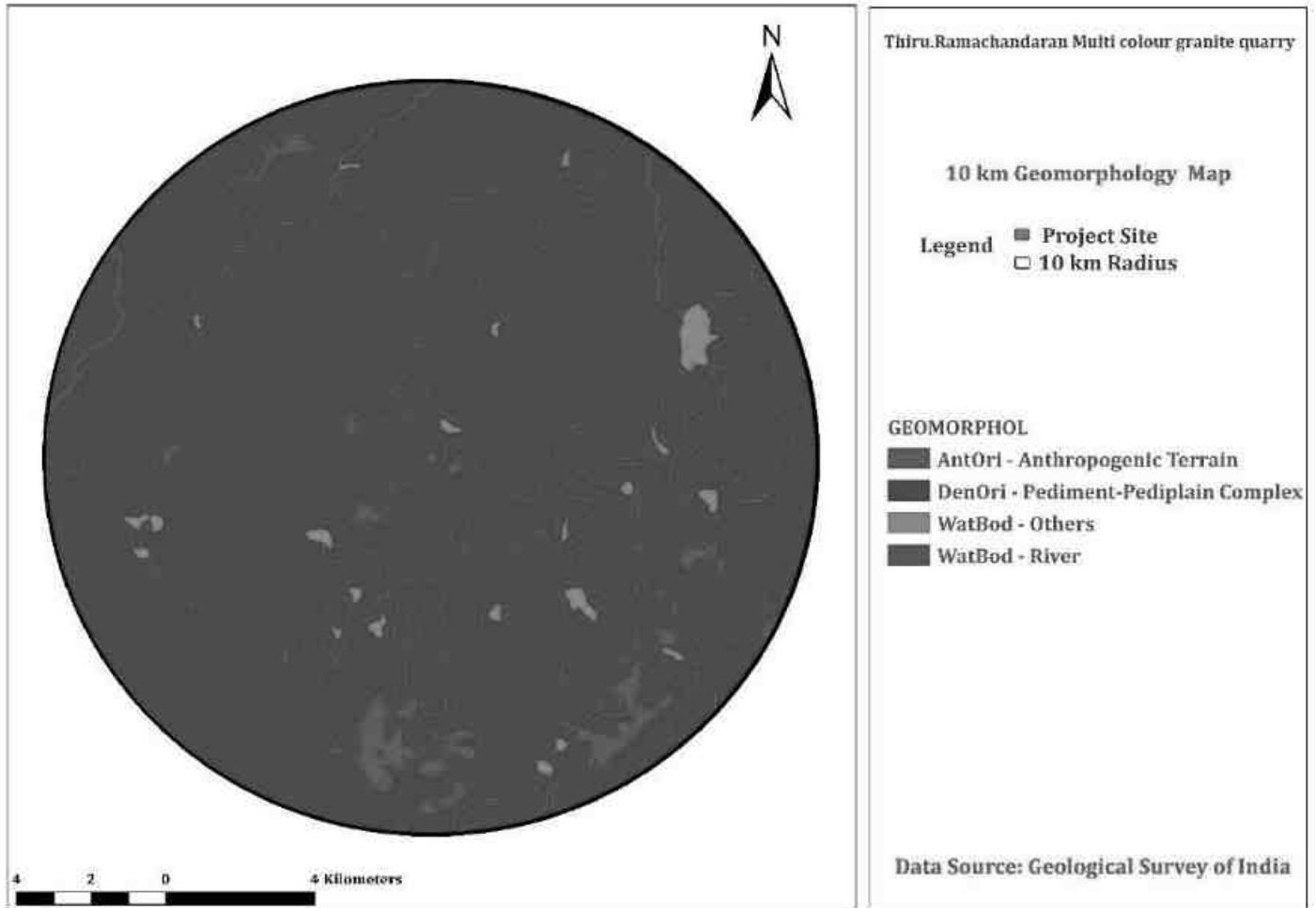


Figure 2-6: Geomorphology

The area applied for quarry lease is a plain ground sloping towards South. The general geological sequences of the rocks in this area are given below.

Description	Geological Age
Top soil	- Recent Age
Pegmatite and Quartz veins	- Archaean Age
Dolerite Dyke	- Archaean Age
Peninsular gneisses and Migmatites	- Archaean (Kolar Group)
Biotite gneisses	- Archaean complex

The regional rocks mostly composed of Quartz, plagioclase feldspar, Orthoclase feldspar and accessories like mica.

Description	Geological Age
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Top Soil gravelly earth	- Recent Age
Pegmatite and Quartz veins	- Archaean Age
Dolerite Dyke	- Archaean Age
Migmatites (Paradiso& Multi)	- Archaean Age (Kolar Group)
Biotite Gneisses	- Archaean Complex

The Regional rocks mostly composed of quartz, plagioclase feldspar, orthoclase feldspar and accessories like mica.

2.6 Quality of Reserves:

The mining lease area is of 2.84.50 Ha, with production capacity of **21595 m³** of Multi Colour Granite , Due to significant role in the domestic as well as infrastructural market, making the mining of Stone along with associated minor minerals is economically viable.

Table 2-6: Details of Mining

S. No	Particulars	Details
1	Method of Mining	Open Cast mechanized
2	Geological Reserves	Multi Colour Granite – 98680 m ³
3	Mineable Reserves	Multi Colour Granite – 49220m ³
4	Proposed Production	Total Reserve – 21,595 m ³ Recoverable Reserve – 7559 m ³
5	Elevation Range of the Mine Site	262 m from MSL

2.6.1 Estimation of Reserves

The geological plan demarcating the commercially viable granite body has been prepared in 1:1000 scale (Plate No. IV). Four sections have been drawn, One along the strike direction as (X-Y) Length wise and another three sections are drawn perpendicular to strike as (A-B), (A1-B1) & (A2-B2) drawn as widthwise. These Sections are suitably chosen to cover maximum area.

The proved depth persistence of 25.0m (1.0m Top Soil +4.0m Weathered Granite + 20.0m Multi Colour Granite). has been worked out for each cross sectional area. The cross sectional area multiplied by its length of influence on the longer axis gives the volume. The total of the insitu reserves available within the individual cross sectional area gives the Geological Resources of the quarry lease area.

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From the total Geological in situ Reserves, the quantity of saleable granite stones and quantity of granite waste generation are computed by applying recovery factor of about 60% by volume.

As the saleable Multi Colour Granite stone are in terms of cubic meters (Volume) only and not in terms of tonnage as in the case of major industrial mineral, the geological Reserves, mineable reserves and quantum of waste generated etc, are given only in terms of cubic meters. (Volume).

The details of estimation of Geological Reserves and Mineable Reserves with reference to the Geological Plan & section and Conceptual Plan & Section as shown in (Plate no.IV and VII) respectively.

2.6.2 Geological Reserves

The Geological reserve is estimated as 98680 m³ upto a depth of 25.0m (1.0m Top Soil + 4.0m Weathered Granite + 20.0m Multi Colour Granite), by area cross sectional method.

Table 2-7: Geological Reserves

Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Multi-Colour Granite Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Top soil
XY-AB	I	63	148	1						9324
	II	63	148	4					37296	
	III	63	24	5	7560	7560	2646	4914		
	IV	63	24	5	7560	7560	2646	4914		
	V	63	24	5	7560	7560	2646	4914		
	VI	63	24	5	7560	7560	2646	4914		
	TOTAL					30240	30240	10584	19656	37296
	I	83	141	1						11703

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X1Y1- A1B1	II	83	141	4					46812	
	III	83	24	5	9960	9960	3486	6474		
	IV	83	24	5	9960	9960	3486	6474		
	V	83	24	5	9960	9960	3486	6474		
	VI	83	24	5	9960	9960	3486	6474		
	TOTAL				39840	39840	13944	25896	46812	11703
X1Y1- A2B2	I	15	42	1						630
	II	15	42	4					2520	
	III	26	4	5	520	520	182	338		
	IV	78	24	5	9360	9360	3276	6084		
	V	78	24	5	9360	9360	3276	6084		
	VI	78	24	5	9360	9360	3276	6084		
TOTAL				28600	28600	10010	18590	2520	630	
GRAND TOTAL				98680	98680	34538	64142	86628	21657	

Top Soil = 21657 m³

Weathered Granite = 86628 m³

Total Geological Reserves in ROM = 98680 m³

Reserves @ 35% = 34538 m³

(Multi Colour Granite)

Granite Waste @ 65% = 64142 m³

Total Waste = 172427 m³

Granite waste ratio: = 1:4.99

(* Total Waste- Top soil + weathered granite + Granite waste)

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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

2.6.3 Mineable Reserves

The Mineable reserves are calculated by deducting 7.5m Safety distance and Bench Loss.

The Mineable Reserve is calculated upto a depth of 25.0m (1.0m Top Soil + 4.0m Weathered Granite + 20.0m Multi Colour Granite).

Table 2-8: Mineable Reserves

Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Multi-Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Side Burden	Topsoil
XY-AB	I	36	36	1							1296
	II	34	33	4					4488		
	III	27	10	5						1350	
	IV	17	5	5						425	
	III	27	15	5	2025	2025	709	1316			
	IV	17	10	5	850	850	298	552			
	TOTAL					2875	2875	1007	1868	4488	1775	1296
X1Y1-A1B1	I	73	73	1							5329
	II	72	71	4					20448		
	III	68	39	5						13260	
	IV	63	29	5						9135	
	V	58	19	5						5510	
	VI	53	9	5						2385	
	III	68	24	5	8160	8160	2856	5304			
	IV	63	24	5	7560	7560	2646	4914			
	V	58	24	5	6960	6960	2436	4524			
	VI	53	24	5	6360	6360	2226	4134			

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	TOTAL				29040	29040	10164	18876	20448	30290	5329
X1Y1- A2B2	I	1	16	1							16
	II	1	15	4					60		
	III	12	22	5						1320	
	IV	64	17	5						5440	
	V	59	12	5						3540	
	VI	54	7	5						1890	
	III	12	4	5	240	240	84	156			
	IV	64	24	5	7680	7680	2688	4992			
	V	59	19	5	5605	5605	1962	3643			
	VI	54	14	5	3780	3780	1323	2457			
	TOTAL				17305	17305	6057	11248	60	12190	16
GRAND TOTAL				49220	49220	17228	31992	24996	44255	6641	

Top Soil = 6641 m³

Weathered Granite = 24996 m³

Side burden = 44255 m³

Total Mineable Reserves ROM = 49220 m³

Recoverable Reserves @ 35% = 17228 m³

(Multi Colour Granite)

Granite Waste @ 65% = 31992 m³

Total Waste = 107884 m³

Granite Waste ratio: = 1:6.26

(* Total Waste- Top soil + weathered granite + side burden+ Granite waste)

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Draft EIA Report</i>
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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

2.6.4 Year wise Production Plan

The year-wise development for the ensuing Five Years period is shown in the plates with cross sections. In view of the development, year wise proposal for the present scheme period is from existing pit towards Middle side of the lease area.

The Proposal for the next five Years reserves are calculated upto a depth of 15.0m.

Table 2-9: Year wise Production Plan

Year	Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Side Burden	Topsoil	
05.08.2021 to 04.08.2022	XY-AB	I	36	36	1							1296	
		II	34	33	4					4488			
		III	27	10	5						1350		
		IV	17	5	5						425		
		III	27	15	5	2025	2025	709	1316				
		IV	17	10	5	850	850	298	552				
	X1Y1-A1B1	I	10	44	1								440
		II	10	42	4						1680		
		III	10	10	5							500	
		III	10	24	5	1200	1200	420	780				
TOTAL						4075	4075	1427	2648	6168	2275	1736	
05.08.2022 to	X1Y1-A1B1	I	36	44	1							1584	
		II	36	42	4					6048			

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04.08.202 3		III	36	10	5						1800	
		III	36	24	5	4320	4320	1512	2808			
		TOTAL				4320	4320	1512	2808	6048	1800	1584

Year	Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Side Burden	Topsoil
05.08.202 3 to 04.08.202 4	X1Y1- A1B1	I	28	44	1							1232
		II	27	42	4					4536		
		III	35	10	5						1750	
		III	35	24	5	4200	4200	1470	2730			
		TOTAL				4200	4200	1470	2730	4536	1750	1232
05.08.202 4 to 04.08.202 5	X1Y1- A1B1	IV	36	24	5	4320	4320	1512	2808			
		TOTAL				4320	4320	1512	2808			
05.08.202 5 to 04.08.202 6	X1Y1- A1B1	IV	39	24	5	4680	4680	1638	3042			
		TOTAL				4680	4680	1638	3042			
GRAND TOTAL						21595	21595	7559	14036	16752	5825	4552

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Draft EIA Report</i>
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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

Top Soil	= 4552 m ³
Weathered Granite	= 16752 m ³
Side burden	= 5825 m ³
Total Reserves ROM	= 21595 m ³
Total production for the next Five Years (35%) (Multi Colour Granite)	= 7559 m ³
Granite waste (65%)	= 14036 m ³
Total Waste	= 41165 m ³
Granite: Waste ratio is	= 1:5.44

(* Total Waste- Top soil + weathered granite + side burden+ Granite waste)

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Project Location	K.Pitchampatti Village, Karur taluk, Karur District.	

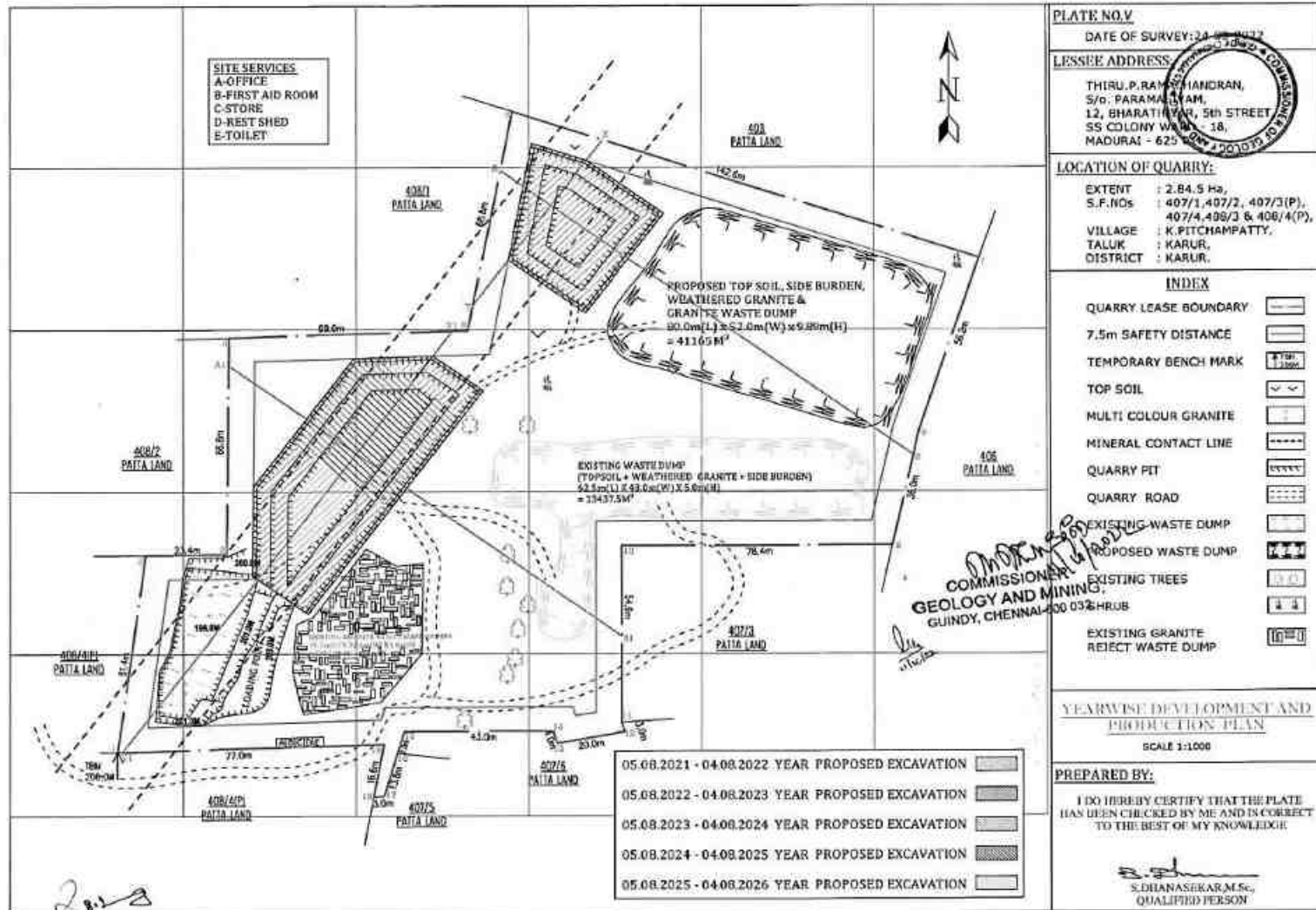


Figure 2-7 Year wise Production Plan

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<i>Project Proponent</i>	<i>Thiru.P.Ramachandran</i>	
<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

2.7 Type of Mining

The proposed project is an open cast mechanized mining with one 1.0 m bench for Top soil followed by 5.0m vertical bench with a bench width not less than the bench height. However, as far as the quarrying of Granite is concerned, observance of the provisions of regulations 106(2) (b) as above is seldom possible due to various inherent petro genetic factors coupled with mining difficulties. Hence, it is proposed to obtain relaxation to the provisions of the above regulation from the Director of Mines Safety for which necessary provision is available with the Regulation 106(2) (b) of MMR-1961, under Mines Act- 1952.

2.7.1 Method of Working:

In mechanized mining help of compressor, drilling, machine, various diamond saws, wire saws, channeling machines, wedges and broaching tools, cranes, dumpers etc., is taken. Endless braided steel wires and diamond saws are employed for cutting blocks. Jet channeling or jet piercing is quite common. In some mines flame cutting is done to cut the rocks.

In this proposed Quarry area under consideration mining will be done by opencast semi-mechanized method.

2.7.2 Overburden

The Top soil of the lease area is 4552 m³ for the next five years. Weathered granite is 16752m³. Side Burden is 5825 m³ Multi Colour Granite waste forms nearly 35 % of ROM and the quantity of granite waste in the five years will be around 14036 m³. Total waste generated will be 41165 m³. Granite Waste will be dumped in the South Western side of the lease area for the next five years. The generated top soil during the entire life of the quarry will be utilized for construction of bunds, road and afforestation purpose. Suitable specific trees to be grown over in such soil dumps will be identified with the help of agriculture experts to evolve proper afforestation plan. Weathered Granite will be dumped in the western side of the lease area

Description	Top Soil, Side burden, Weathered Granite and Granite Waste Dump
Length (m)	80.0
Width (m)	52.0

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Height (m)	9.89
Total Quantity (m ³)	41165

2.7.3 *Machineries to be used*

Type of machineries proposed for quarrying operation for the entire project is listed below.

Table 2-10: List of Machineries used

S.No	Type	Nos	Dia Hole mm	Size Capacity	Make	Motive power
1	Jack hammer & Accessories	3	35	1.2m to 6m	Atlas Copco	Compressed air
2	Compressor	1	7.5kgs/cm ²	400 psi	ELGI	Diesel Drive
3	Diamond wire saw	1	-	30m ³ /Day	Optima	Diesel Generator
4	Gen set	1	-	Powerica	-	CP 125 D5P (H.P)
5	Excavator	1	-	1.7m ³	Tata Hitachi	Diesel Drive
6	Tippers	2	-	10 tonnes	Tata	Diesel Drive

2.7.4 *Blasting:*

2.7.4.1 **Blasting Pattern:**

During future development of quarrying, removal of Top soil will be done by excavator and mild blasting with explosives in holes drilled by jack hammer of 35 mm dia especially. No deep hole blasting is proposed. Portable magazine has been proposed to install in the ear marked places. Authorized explosive dealers supply the explosive at site as per the requirement.

2.7.4.2 **Drilling & Blasting:**

The drilling and blasting parameters are in correlation with the proposals laid down in the approved mining plan. Shallow holes of 32mm dia. holes are drilled and the depth of hole will be generally about 1.0m. Water sprinkled for suppression of air borne dust on Mine haulage roads and waste dumps on regular intervals by water tankers. Drilling of blast holes will be always under wet condition to prevent flying of dust. In the unloading point of Tippers, water was sprinkled and further the drillers were provided with respirators in accordance with mines regulations.

Conventional low explosives were used. Since the dimensional stones, which are needed to be without internal cracks, high explosives were not used. The scale of blasting was however very less

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considering the rate of production. Muffle blasting was not necessary as the area was free from dwelling houses, public utilities etc., Now wire saw machine is being utilized for primary cutting to liberate the required sizes of block from the parent rock The secondary splitting of the blocks been done by pressure-split method with the help of feather and wedges. In view of above, there is no adverse effect on dust, noise and ground vibration by mining activities.

2.7.4.3 Storage & Safety measures taken during blasting:

The project proponent “Thiru.P.Ramachandran” will engage an authorized explosive agency to carry out the small amount of blasting (if necessary) and it will be supervised by Permit Mines Manager.

2.8 Man Power Requirements and Organization Chart

The manpower requirement to meet out the production Schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations is as follows.

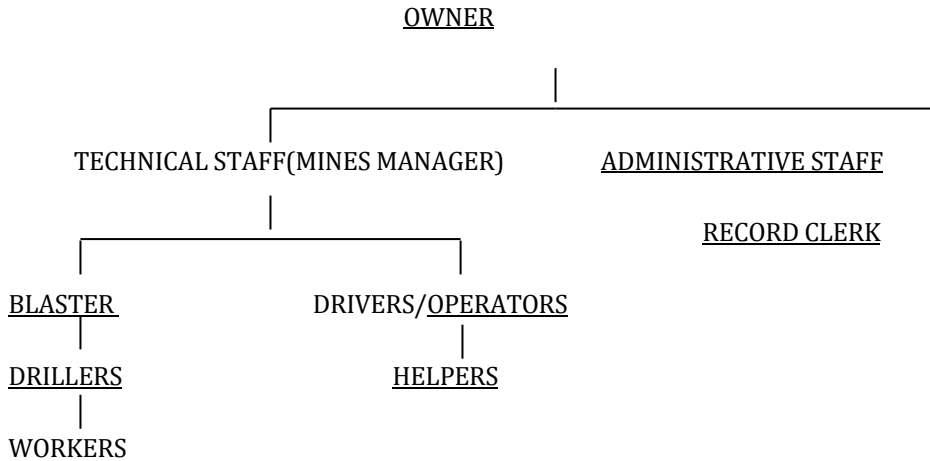
Table 2-11: Man Power Requirements

S.No.	Name of the Employment	No. of Employees
1.	Project Manager	1 No.
2.	Record Clerk	1 No.
3.	Skilled	
	Supervisor Cum Blaster	1 No.
	Compressor and Wagon Drill operators	1 No.
	Drillers /Workers	4 No.
	Excavator / Rock Breaker Operators	3 No.
	Vehicle Drivers	2 No.
4.	Semi – skilled	
	Watchman	1 No.
5.	Unskilled	
	Cleaner	6 Nos.
	Total	20 Nos.

No child less than 18 years will be entertained during quarrying operations.

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ORGANISATION CHART



2.8.1 Water Requirement

Total water requirement for the mining project is 2.0 KLD. Domestic water will be sourced from nearby K.Pitchampatti Village and other water will be source from nearby road tankers supply.

Table 2-12: Water Requirement

Purpose	Quantity	Sources
Domestic & Flushing	1.0 KLD	Packaged Drinking water vendors available in K.Pitchampatti Village which is about ≈ 2.3 km on North side of the area.
Green belt	0.5 KLD	Other domestic activities through road tankers supply
Dust suppression	0.5 KLD	From road tankers supply
Total	3.0 KLD	

2.9 Project Implementation Schedule

The implementation schedule of the proposed Mine Lease of Thiru.P.Ramachandran (2.84.50 Ha) is as follows.

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Project Location	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

Table 2-13: Mining Schedule

MINING SCHEDULE					
Activity	Oct-23	Oct -24	Oct -25	Oct -26	Oct -27
Site Clearance					
Excavation - Top Soil Removal/Overburden					
I Year Production - 4075 Cum - Multi Colour Granite					
II Year Production - 4320 Cum - Multi Colour Granite					
III Year Production - 4200 Cum - Multi Colour Granite					
IV Year Production - 4320 Cum - Multi Colour Granite					
V Year Production - 4680 Cum - Multi Colour Granite					

2.9 Solid Waste Management

Table 2-14: Solid Waste Management

S.No	Type	Quantity	Disposal Method
1	Organic	4.86 kg/day	Municipal bin including food waste
2	Inorganic	3.24 kg/day	TNPCB authorized recyclers

As per CPCB guidelines: MSW per capita/day =0.45 kg/day

2.11 Mine Drainage

The quarry operation is proposed up to a depth of 25 m below ground level. The water table is below 52-60m from the ground level which is observed from the nearby bore wells and bore wells of this area. Hence the ground water will not be affected in any manner due to the quarrying operation during the entire lease period.

2.12 Power Requirement

The proposed Multi Colour Granite Building Stone quarrying does not required any power supply for the quarrying operation. **16 Liter** diesel per hour used for excavator whenever needed.

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Project Location	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

2.13 Project Cost

a. Fixed Asset Cost

Sl. No.	Description	Amount (Rs)
1	Land cost	30,00,000
2	Labour shed	1,20,000
3	Sanitary facility	70,000
4	Fencing cost	1,60,000
Total		29,90,000

b. Operational Cost:

Sl. No.	Description	Approximate Amount (Rs)
1	Excavator	55,00,000
2	Tippers	20,00,000
3	Wire saw	10,00,000
4	Compressor with loose tools	10,00,000
Total		95,00,000

c. EMP Cost:

SL.No	Description	Approximate Amount (Rs)
1	Drinking water facility	1,00,000
2	Safety kits	80,000
3	Water sprinkling	50,000
4	Afforestation	30,000
5	Water quality test	40,000
6	Air quality test	40,000
7	Noise / Vibration test	40,000
Total		4,05,000

Grand Total project Cost = Rs. 1,32,30,000/-

2.14 Greenbelt

1. The development of greenbelt in the peripheral buffer zone of the mine area.
2. Green belt has been recommended as one of the major component of Environmental Management plan, which will improve ecology, environment and quality of the surrounding area.

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3. Local trees (Neem) will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 80 trees per annum with interval 5m.

4. The rate of survival expected to be 70% in this area

Table 2-15 Plantation/ Afforestation Program

Year	No. of tress proposed to be planted	Name of the species	Survival rate expected in %	No. of trees expected to be grown
I	270	Neem	70	189
II	270	Neem	70	189
III	270	Neem	70	189
IV	270	Neem	70	189
V	270	Neem	70	189

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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

3 Description of the Environment

3.1 General:

The method of mining for extracting Multi Colour Granite quarry is required to be selected in such a manner to ensure sustainable development. Mining activities invariably affect the existing environmental status of the site. It has both adverse and beneficial effects. In order to maintain the environmental commensuration with the mining operation, it is essential to undertake studies on the existing environmental scenario and assess the impact on different environmental components. This would help in formulating suitable management plans and sustainable resource extraction.

To understand the existing environmental scenario, Baseline data helps in identification, prediction and evaluation of impacts in Environmental Impact assessment. Through field study, baseline data are collected considering various factors of the project. This includes-

- Physical- the area, the soil properties, the geological characteristics, the topography, etc
- Chemical- water, air, noise and soil pollution levels, etc.
- Biological- the biodiversity of the area, types of flora and fauna, species richness, species distribution, types of ecosystems, presence or absence of endangered species and/or sensitive ecosystems etc.
- Socioeconomic- demography, social structure, economic conditions, developmental capabilities, displacement of locals, etc.

3.1.1 Study Area:

The study area for the mining projects is as follows:

- Mine lease area as the “core zone”
- A study area of 10 km radius from the project boundary is designated as buffer Zone and for the study of Socio-economic status, 10 km radius from the boundary limits of the mine lease area has been selected.

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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

We have obtained Terms of Reference from SEIAA vide Letter No. SEIAA-TN/F.No.9616/SEAC/ToR-1327/2023 dt. 10.02.2023

. The baseline monitoring is carried out in July to Sept 2022 and the analysis is briefed in the EIA report. The proponent has engaged M/s. Ecotech labs Pvt. Ltd for carrying out the existing baseline study.

3.1.2 Instruments Used

The following instruments were used at the site for baseline data collection.

1. Respirable Dust Sampler with attachment for gaseous Pollutants, Envirotech APM 460, APM411.
2. Fine Particulate Matter (FPM) Sampler, APM 550
4. Sound Level Meter Model SL-4010
5. 2000 series watchdog automatic weathering monitoring station

3.1.3 Baseline Data Collection Period:

The baseline data is collected in accordance with the CPCB Guidelines. The Baseline study is carried out from July to September 2022.

3.1.4 Frequency of Monitoring

Table 3-1: Frequency of Sampling and Analysis

Attributes	Sampling	Frequency
Air environment – Meteorological (wind speed, wind direction, rainfall, humidity, temperature)	Project site	1 hourly continuous
Air environment – Pollutants PM 10 PM 2.5 SO ₂ NO _x Lead in PM	5 locations	24 hourly twice a week 4 hourly. Twice a week, One non-monsoon season 8 hourly, twice a week 24 hourly, twice a week

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Noise	5 locations	24 hourly Once in 5 locations
Water (Ground water) pH, Temperature, Turbidity, Magnesium Hardness, Total Alkalinity, Chloride, Sulphate, Fluoride, Nitrate, Sodium, Potassium, Salinity, Total nitrogen, Total Coliforms, Fecal Coliforms	5 locations	Once in 5 locations
Water (surface water) pH, Temperature, Turbidity, Magnesium Hardness, Total Alkalinity, Chloride, Sulphate, Fluoride, Nitrate, Sodium, Potassium, Salinity, Total nitrogen, Total Coliforms, Fecal Coliforms	1 location Sample from nearby lakes/river	One-time Sampling
Soil (Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)	5 locations	Once in 5 locations
Ecology and biodiversity Study	Study area covering 10 km radius	One-time Sampling
Socio- Economic study (Population, Literacy Level, employment, Infrastructure like	Villages around 10 km radius	One-time Sampling

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school, hospitals & commercial establishments)		
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3.1.5 Secondary data Collection

Apart from the primary data, Secondary data is also used for the collection; collation; synthesis and interpretation

- Flora & Faunal Study
- Land use study
- Demography and socio-economic analysis
- Meteorological data, from Indian Meteorological Department (IMD)

3.1.5.1 Study area details

Table 3-2 Study area details

S. No	Description	Details	Source
1.	Project Location	S.F.No. 407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P), K.Pitchampatti Village, Karur taluk, Karur District.	Field Study
2.	Latitude & Longitude	Latitude: : 10°46'54.76"N to 10°46'47.80"N Longitude : 78°04'07.23"E to 78°04'15.25"E	Topo Sheet
3.	Topo Sheet No.	58 G/1	Survey of India Toposheet
4.	Mine Lease Area	2.84.50 Ha	--
Demography in the study area (as per Census 2011)			
5.	Total Population	3808	Census Survey of India
6.	Total Number of Households	1093	

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7.	Maximum Temperature (°C)	40	IMD
8.	Minimum Temperature (°C)	26.3	
9.	Ecological Sensitive Areas - Wetlands, watercourses or other waterbodies, coastal zone, biospheres, mountains, forests	Nil	Google Earth/Field Study
10.	Densely Populated area	K.Pitchampatti (3 km, S)	
11.	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Schools & Colleges 1. Pichampatti elementary school-NE-1.88kms 2. Panchayat union primary school-NE-2.23kms 3. kongunadu polytechnic college-5.87 kms-E 4. vengatrama polytechnic college-8.46kms, NE	Google Earth/Field Study

3.1.6 Site Connectivity:

- SH 101 – Devathanapatti - Varusanadu Road, 0.6 km, E
- NH 183 – Kollam-Theni Road – 7.2 km, N

3.2 Land use Analysis

3.2.1 Land Use Classification

Land Use / Land Cover - Land Use refers to man's activity and the various uses, which are carried on land. Land Cover refers to natural vegetation, water bodies, rock/soil, artificial cover and others, resulting due to land transformation. The present Land Use/Land Classification map is developed with following objectives. The main objective of the study is to classify the different land use within 10 km from the project boundary.

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3.2.2 Methodology

Information of land use and land cover is important for many planning and management activities concerning the surface of the earth (Agarwal and Garg, 2000). Land use refers to man's activities on land, which are directly related to land (Anderson et al., 1976). The land use and the land cover determine the infiltration capacity. Barren surfaces are poor retainers of water as compared to grasslands and forests, which not only hold water for longer periods on the surface, but at the same time allow it to percolate down.

The terms 'land use' and 'land cover' (LULC) are often used to describe maps that provide information about the types of features found on the earth's surface (land cover) and the human activity that is associated with them (land use). Satellite remote sensing is being used for determining different types of land use classes as it provides a means of assessing a large area with limited time and resources. However, satellite images do not record land cover details directly and they are measured based on the solar energy reflected from each area on the land. The amount of multi spectral energy in multi wavelengths depends on the type of material at the earth's surface and the objective is to associate particular land cover with each of these reflected energies, which is achieved using either visual or digital interpretation. In the present study the task is to study in detail the land use and land cover in and around the project site. The study envisages different LULC around the proposed project area and the procedure adopted is as below.

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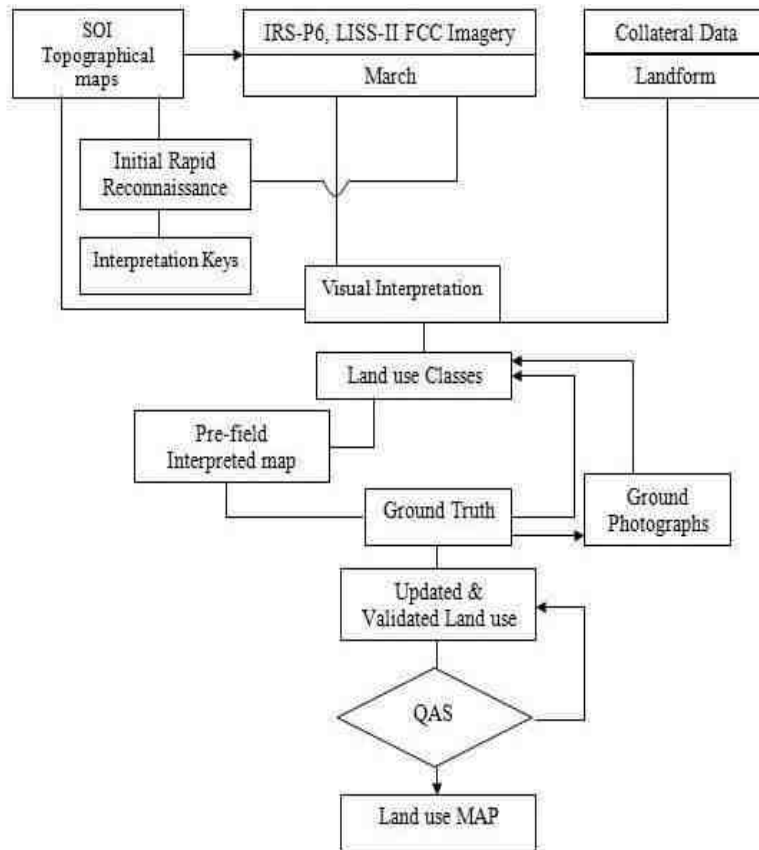


Figure 3-1 Flow Chart showing Methodology of Land use mapping

3.2.3 Satellite Data

IRS Resourcesat-2 LISS-III multispectral satellite data of 05th March 2016 was utilized for the present study. Details of satellite data is given below. The rectification of imagery was carried out on to bring the digital data on the earth coordinate system by means of ground control point (GCP) assignments/SOI topo sheets.

3.2.4 Scale of mapping

Considering the user defined scale of mapping, 1:50000 IRS-P6, LISS-III data on 1:50000 Scale was used for Land use / Land cover mapping of 10 km radius for proposed site. The description of the land use categories for 10 km radius and the statistics are given for 10 km radius.

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3.2.5 Interpretation Technique

Standard on screen visual interpretation procedure was followed. The various Land use / Land cover classes interpreted along with the SOI topographical maps during the initial rapid reconnaissance of the study area. The physiognomic expressions conceived by image elements of color, tone, texture, size, shape, pattern, shadow, location and associated features are used to interpret the FCC imagery. Image interpretation keys were developed for each of the LU/LC classes in terms of image elements.

February 2016 FCC imagery (Digital data) of the study area was interpreted for the relevant land use classes. On screen visual interpretation coupled with supervised image classification techniques are used to prepare the land use classification.

1. Digitization of the study area (10 km radius from the proposed site) from the topo maps
2. In the present study the IRS -P6 satellite image and SOI topo sheets of 47-F/01,02,03 have been procured and interpreted using the ERDAS imaging and ARC-GIS software adopting the necessary interpretation techniques.
3. Satellite data interpretation and vectorization of the resulting units
4. Adopting the available guidelines from manual of LULC mapping using Satellite imagery (NRSA, 1989)
5. Field checking and ground truth validation
6. Composition of final LULC map

The LULC Classification has been done at three levels where level -1 being the broad classification about the land covers that is Built-up land, agriculture land, waste land, wet lands, and water bodies. These are followed by level -II where built-up land is divided into towns/cities as well villages. The Agriculture land is divided into different classes such as cropland, Fallow, Plantation, while wastelands are broadly divided into, Land with scrub and without Scrub and Mining and Industrial wasteland. The wetlands are classified into inland wetlands, coastal wetlands and islands. The water bodies are classified further into River/stream, Canal, Tanks and bay. In the present study level II classification has been undertaken. Field Verification

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Field verification involved collection, verification and record of the different surface features that create specific spectral signatures / image expressions on FCC. In the study area, doubtful areas identified in course of interpretation of imagery is systematically listed and transferred on to the corresponding SOI topographical maps for ground verification. In addition to these, traverse routes were planned with reference to SOI topographical maps to verify interpreted LU/LC classes in such a manner that all the different classes are covered by at least 5 sampling areas, evenly distributed in the area. Ground truth details involving LU/LC classes and other ancillary information about crop growth stage, exposed soils, landform, nature and type of land degradation are recorded and the different land use classes are taken.

3.2.6 Description of the Land Use / land cover classes

3.2.6.1 Built-up land

It is defined as an area of human settlements composed of houses, commercial complex, transport, communication lines, utilities, services, places of worships, recreational areas, industries etc. Depending upon the nature and type of utilities and size of habitations, residential areas can be aggregated into villages, towns and cities. All the man-made construction covering land belongs to this category. The built- up in 10 km radius from the proposed project site is as follows.

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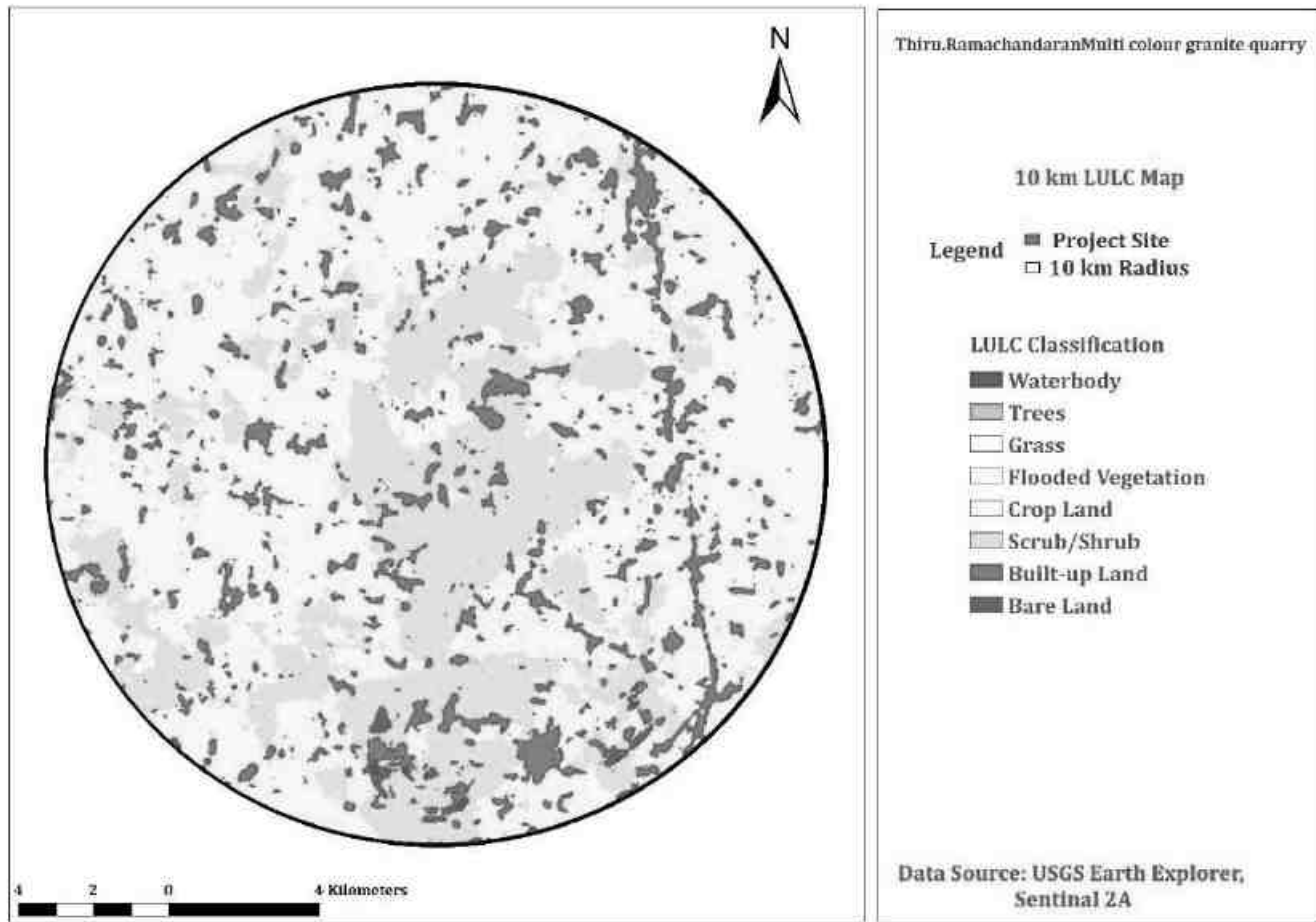


Figure 3-2 Land use classes around 10 km radius from the project site

3.2.6.2 Different Land use classes around 10 km radius from the project site

Table 3-3 Land use pattern in 10 km Radius

Sl.No	Categories	Area in Hectares
1	Water Body	0.11
2	Trees	0.07
	Grass	0.005
3	Flooded vegetation	0.004
4	Crops	199.48
5	Scrub/Shrub	84.48
6	Built-up Area	36.41
7	Barren Land	1.86

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3.3 Water Environment

3.3.1 Contour & Drainage

The project site is 206m from MSL. The drainage pattern within in the 10 km of the project site is dendritic.

3.3.2 Geomorphology

Karur District is comprised of Archaean peninsular gneisses such as Charnockites, Hornblende gneisses, Biotite gneisses and migmatites, dolerites and are intruded by younger formations like pegmatite and quartz veins. The peninsular gneisses/migmatite consists of biotite mica, plagioclase and orthoclase feldspar and quartz and are found as heat rocks running to several kms from NNE-SSW as a massive rock formation. The order of superposition of geological sequence are given as under,

ROCK TYPE:

Top Soil gravelly earth	- Recent Age
Pegmatite and Quartz veins	- Archaean Age
Dolerite Dyke	- Archaean Age
Migmatites (Paradiso& Multi)	- Archaean Age (Kolar Group)
Biotite Gneisses	- Archaean Complex

The Regional rocks mostly composed of quartz, plagioclase feldspar, orthoclase feldspar and accessories like mica.

The geological formations of the district belong mainly to Archaean age along with rock of Proterozoic age. The former is represented by Khondalite Group of rocks, Charnockite Group of rocks, Migmatites Complex, Sathyamangalam Group of rocks, while the latter is represented by Alkaline rocks. The Khondalite Group includes garnet sillimanite gneiss and quartzite which occur as small patches. The migmatite complex includes garnetiferous quartzofeldspathic gneiss and hornblende biotite gneiss, the former exposed on the western part of the district. The Sathyamangalam Group includes fuchsite quartzite, sillimanite mica schist and amphibolites. The Bhavani Group in this area includes fissile hornblende-biotite gneiss, granitoid gneiss and pink migmatite. Amphibolites with barbed ferruginous quartzite and associated quartzo- feldspathic rocks (Champion Gneiss) represent the Kolar group and are found west and southwest of Veppanapalli. Following this there are basic intrusions occurring as dykes.

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The Charnockite Group occupies a major part of the south-west portion of this district with small bands of Garnetiferous quartzo-feldspathic gneiss, Granite gneiss and dolerite dykes. The North-East and Northern part of the District mainly consist of granite gneiss with small patches of Pink Migmatite, hornblende-biotite gneiss and dolerite dykes. The Eastern part of the district consists of Epidote-Hornblende Gneiss, Ultra Mafics, Syenite and Carbonatite.

The Alkaline Complex is represented by epidote-hornblende gneiss, ultramafics, syenite and carbonatite and these are distributed in the eastern part of the district. Innumerable basic dykes and felsites, quartz, barites and pegmatite veins form part of the Alkali Complex.

The geomorphologic study is done within 10 km from the project site. The major formations are

- Denudational Origin- Pediment Pediplain Complex: The groundwater condition in pediments generally varies depending upon the type of underlying folded structures, fracture systems and degree of weathering. Groundwater prospecting in pediments is considered as normal to poor.

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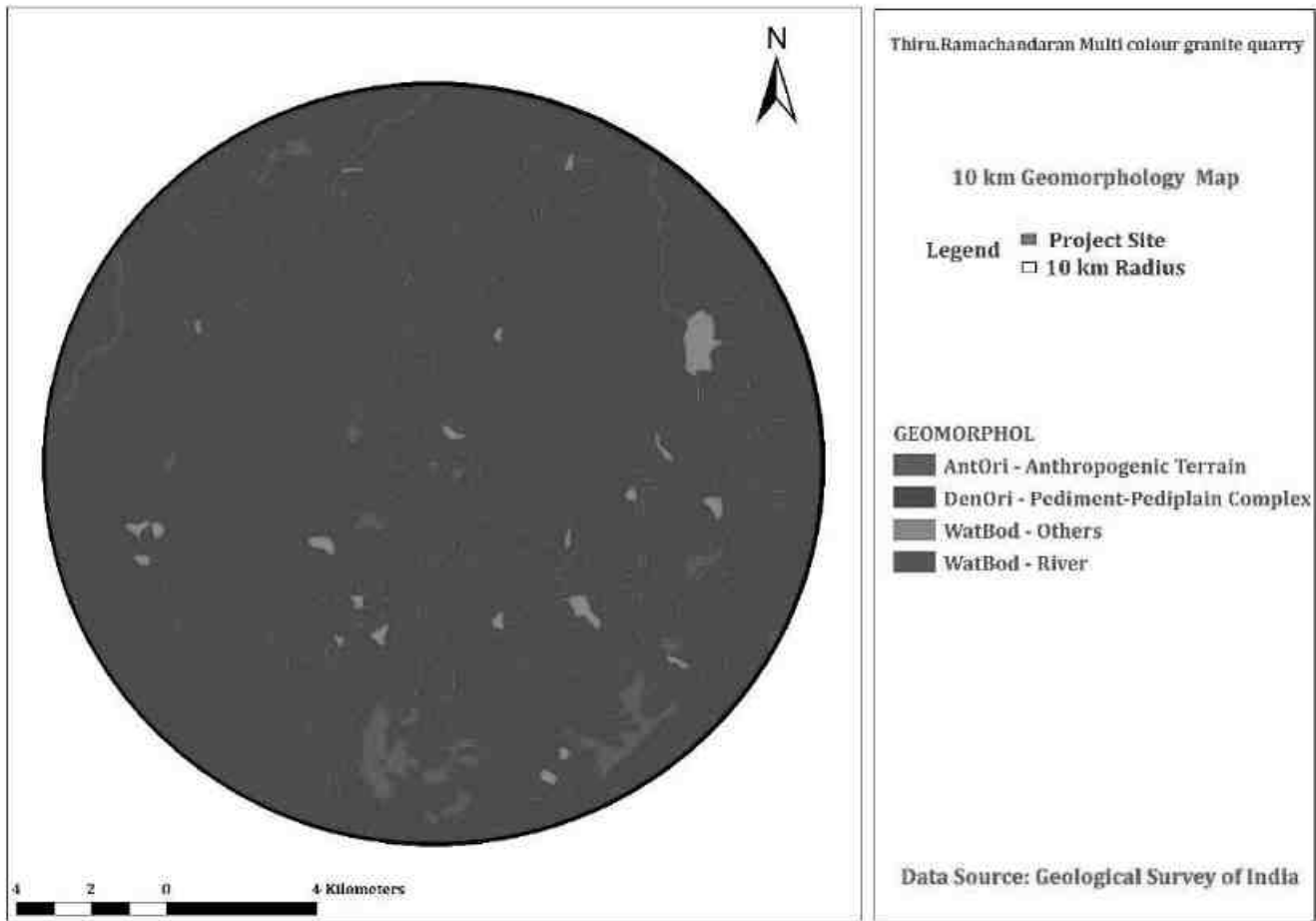


Figure 3-3 Geomorphology within 10km from the project site

3.3.3 Geology:

The area of mining lease comprised of Migmatite, a type of Multi Colour Granite. Its mineral constituents are biotite, Quartz, orthoclase feldspar, and plagioclase feldspar. The biotite is fine grained and other minerals are medium grained. The graphic texture and intergrowth of quartz and feldspar indicates that younger intrusive were invaded into the pre-existing country rock, which preferably would have been biotite gneisses (Peninsular Gneisses), Flowage structure and texture of rock indicates deep seated metamorphism at high temperature and pressure. Xenolith of schistose rock is also found in the adjacent Peninsular Gneisses which indicates assimilation of older rocks by the younger intrusive. Therefore, it is clear from the regional flow structure and texture of Xenolith, the rock would be a type of Migmatite. Since the fine-grained biotite is rich in assemblages shows a

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Grey shade to the Granite. The pinkish colour of the rock is due to rich fresh orthoclase feldspar. Dimensional cutting and polishing of these types of hard and compact rocks exhibits an attractive pinkish and Grey shades of background with attractive wave patterns. It is a part of peninsular gneisses migmatized by younger intrusive. It is commercially called as Paradiso by the buyers in view of its wave pattern of accessory minerals.

The rock is hard, compact and sheet in nature so as to cut required sizes of blocks.

The mineral constituents of the rock mass shall be about Orthoclase feldspar 40%, quartz roughly 25%, Plagioclase feldspar 25%, mica 15% and others 5%.

Lease Area

The area applied for lease is situated in a Plain terrain with an average height of 5.0 meters gently sloping towards southwest. The rock type available in the area is granite gneiss having a general trend of N30°E to S30°W with dipping towards 80° West. Surface level outcrops of multi-colour granite deposits is observed on the north eastern side and in other areas concealed under top soil + weathered Rock and overburden having an average thickness of 3.0 meters. Below which massive formation may encounter. This rock type is having wavy pattern with quartz, orthoclase feldspar as major constituents, pyroxene, mica, garnet and other mafic minerals as accessories. The average recovery percentage is around 60%.

The Multi Colour Granite deposits of this area are rich in orthoclase feldspar with excellent wave pattern. It is commercially called as Paradiso. It is mainly composed of mineral constituents such as biotite, Quartz, orthoclase feldspar and less plagioclase feldspar. It is a type of para gneiss with alternative bands of orthoclase and dark minerals. The biotite is fine grained and other minerals like alkaline and soda feldspars are medium grained. The flow structure, equigranular texture and presence of fresh orthoclase feldspars indicates that it is a type of Migmatite with purple colour feldspar. Presence of Xenoliths is common in this Multi Colour Granite. Dimensional cutting and polishing of these type of hard and compact rocks exhibits an attractive alternative bands of light pink and dark minerals with excellent wave patterns.

It is a Multi Colour granite covered partly by gravelly soil. The rock is hard, compact and sheet in nature so as to cut required sizes of blocks. The mineral constituents of the rock mass shall be about Orthoclase feldspar 45%, Quartz roughly 20%, Plagioclase feldspar 15%, mica 15% and others 5%.

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Geological setting and structure:

The order of geological sequence are,

Description	Geological Age
Top Soil- (Intermittent)	- Recent
Migmatite (Paradiso) with wave Pattern	- Archaean
Biotite Gneisses (Peninsular Gneisses)	- Archaean

The Top soil cover is found all around the exposures of outcrops of Multi Colour Granite. The trend of the rock formation is N300E – S300W direction dipping towards 800 West. The regional trend is shown in the geological plan. The Multi-Colour Granite that occur in this area is massive with less boulders of fractures. It is suitable for commercial exploitation of gang saw size rough blocks.

3.3.4 Hydrogeology

Karur district is underlain by Archaean crystalline formations with Recent alluvial deposits of limited areal extent and thickness along the courses of major rivers. The occurrence and movement of ground water are controlled by various factors such as physiography, climate, geology and structural features. Weathered, and fractured crystalline rocks constitute the important aquifer systems in the district. Ground water generally occurs under phreatic conditions in the weathered mantle and under semi-confined conditions in the fractured zones at deeper levels. The thickness of weathered zones in the district ranges from less than a meter to more than 28 m. The yield of large diameter dug wells in the district, tapping the weathered mantle of crystalline rocks ranges from 100 to 500 lpm. These wells normally sustain pumping for 2 to 6 hours per day, depending upon the local topography and characteristics of the weathered mantle. The depth to water level (DTW) during pre monsoon (May 2006) ranged between 0.5 and 9.9 m bgl in the district. In major part of the district the DTW is more than 5.5 mbgl. Whereas it ranged between 2 and 9.9 m bgl during post monsoon, in the district and the DTW is in the range of 5 – 10 m bgl in the entire district except a few isolated pockets. The yield of successful exploratory wells drilled in the district ranged from 0.78 lps to 26 lps. As per the studies the wells drilled in granitic gneiss have higher yields than the wells drilled in charnockites. The specific capacity of the wells ranged from 1.2 to 118.0 lpm/m/dd. The piezometric head of fracture zones varied between 0.50 and 18.45 m bgl.

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3.3.5 Ground water quality monitoring

Ground water quality monitoring is done in the following locations and analysis will be done for physical, chemical & Biological parameters.

Table 3-4 Ground water Quality Analysis

Environmental Parameters: Ground water Quality Analysis	
Monitoring Period	July to September 2022
Design Criteria	Based on the Environmental settings in the study area
Monitoring Locations	Project Site – GW Karuppasamy Temple -GW 2 Chettinad Rani Meyammai Matric -GW 3 Government park and Gym -GW 4 Sri shivalaya maligai store -GW 5
Methodology	Water Samples were collected in 5 Litre fresh cans as per IS 3025 Part I and transported to the laboratory in Iceboxes
Frequency of Monitoring	Once in a season

3.3.5.1 Sampling Procedure

Quality of ground water was compared with IS: 10500: 1991 (Reaffirmed 1993 With Amendment NO -3 July 2010) for drinking purposes. Water samples were collected as Grab sample from five sampling locations in a 5-liter plastic jerry can and 250 ml sterilized clean glass/pet bottle for complete physico-chemical and bacteriological tests respectively. The samples were analyzed as per standard procedure / method given in IS: 3025 (Revised Part) and standard method for examination of water and wastewater Ed. 21st, published jointly by APHA.

Table 3-5: Standard Procedure

S. No	Parameters	Test Method
1	pH (at 25°C)	IS:3025(P -11)1983 RA: 2012
2	Electrical Conductivity	IS:3025(P -14) 2013
3	Colour	IS:3025 (P -4)1983 RA: 2012
4	Turbidity	IS:3025(P -10)1984 RA: 2012

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5	Total Dissolved Solids	APHA 22 nd Edn.2012-2540-C
6	Total Suspended Solids	IS:3025(P-17)-1984 RA:2012
7	Total Hardness as CaCO ₃	APHA 22 nd Edn.2012-2340-C
8	Calcium as Ca	APHA 22 nd Edn.2012.3500 Ca-B
9	Magnesium as Mg	APHA 22 nd Edn.2012-3500 Mg-B
10	Chloride as Cl	IS:3025(P -32)-1988 RA: 2014
11	Sulphate as SO ₄	APHA 22 nd Edn.2012-4500 SO ₄ -E
12	Total Alkalinity as CaCO ₃	APHA 22 nd Edn.2012-2320-B
13	Iron as Fe	IS:3025(P -53):2003 RA: 2014
14	Silica as SiO ₂	IS:3025(P -35)1988 RA: 2014
15	Fluoride as F	APHA 22 nd Edn.2012-4500-F-D
16	Nitrate as NO ₃	IS:3025(P -34):1988 RA: 2014
17	Sodium as Na	IS:3025(P -45):1993 RA: 2014
18	Potassium as K	IS:3025(P -45):1993 RA: 2014
19	Coliform	IS:1622:1981:RA:2014
20	E.coli	IS:1622:1981:RA:2014

Table 3-6 Ground water sampling results

S. No	Parameters	Units	Project Site	Karuppasamy Temple	Chettinad Rani Meyammai Matric School, Alambadi	Government Park and Gym, Venjamingudalur East	Sri Shivalaya Maligai Store, Gudalur
1	pH (at 25°C)	-	7.32	7.5	7.69	7.82	7.63
2	Electrical Conductivity	µS/cm	1293	1091	1865	2330	2615
3	Colour	Hazen Unit	2	2	3	2	2
4	Turbidity	NTU	BQL(LOQ:1)	BQL(LOQ:1)	BQL(LOQ:1)	BQL(LOQ:1)	BQL(LOQ:1)
5	Total Dissolved Solids	mg/L	865	720	1112	1405	1515

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6	Total Suspended Solids	mg/L	BQL(LOQ:2)	BQL(LOQ:2)	BQL(LOQ:2)	BQL(LOQ:2)	BQL(LOQ:2)
7	Total Hardness as CaCO ₃	mg/L	465	385	590	490	767
8	Calcium Hardness as CaCO ₃	mg/L	300	200	355	238	395
9	Magnesium Hardness as CaCO ₃	mg/L	165	185	235	252	372
10	Calcium as Ca	mg/L	120	80	142	95.5	158
11	Magnesium as Mg	mg/L	40.1	44.9	57.1	61.1	90.4
12	Chloride as Cl	mg/L	214	155	217	420	199
13	Sulphate as SO ₄	mg/L	129	18.3	320	221	636
14	Total Alkalinity as CaCO ₃	mg/L	137	335	165	170	225
15	Iron as Fe	mg/L	BQL(LOQ:0.1)	BQL(LOQ:0.1)	BQL(LOQ:0.1)	BQL(LOQ:0.1)	BQL(LOQ:0.1)
16	Silica as SiO ₂	mg/L	32.2	40.2	35.5	56.6	60.2
17	Fluoride as F	mg/L	BQL(LOQ:0.2)	BQL(LOQ:0.2)	BQL(LOQ:0.2)	BQL(LOQ:0.2)	BQL(LOQ:0.2)
18	Nitrate as NO ₃	mg/L	38.5	51.1	42.2	42.9	51.2
19	Potassium as K	mg/L	19.1	10.7	12.7	89.1	13.6
20	Sodium as Na	mg/L	192	142	186	318	169

3.3.6 Interpretation of results:

3.3.6.1 Physical parameters of water:

The basic physical parameters of water include

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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

Colour:

Value observed in Project Site (True/Apparent Color): 2 Hazen unit. Value of color at Ganpati temple is 25 Hazen and this value is more than permissible limit of IS:10500.

Acceptable and permissible limits: 5 Hazel units and 15 Hazel units respectively. The value in the project site is as same as the acceptable limits prescribed by IS 10500:2012 (referred as “Standards” from herein).

Odour & Taste:

The water is odourless. The taste of the water is slightly salty which is due to the presence of hardness in water, which is attributed to the presence of calcium and magnesium in the water. As per the standards, the odour and taste should be agreeable.

pH:

Value observed in the Project Site: 7.32

Acceptable and permissible limits: 6.5-8.5. The pH value is the measure of acid – base equilibrium. The value of pH in the project site clearly indicates that water is slightly alkaline in nature.

Turbidity:

Value observed in the Project Site: BQL(LOQ :1) NTU.

Acceptable and permissible limits: 1 NTU & 5 NTU respectively. The value of turbidity generally indicates the presence of phytoplanktons and other sediments. The value in the project site indicates the water is less turbid and no any physical treatment is required to treat the turbidity of the water.

Total Dissolved Solids:

Value observed in the Project Site: 865 mg/L.

Acceptable and permissible limits: 500 mg/L and 2000 mg/L respectively.

The TDS is the presence of the inorganic salts and small amounts of organic matter present in the water. This is mainly due to the result of surface runoff as the cations and anions in the top soil is carried away by the water. The value in the project site indicates the water is less turbid.

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3.3.6.2 Chemical parameters of water:

The chemical parameters of the drinking water include,

Calcium:

Value observed in the Project Site: 120 mg/L.

Acceptable and permissible limits: 75mg/L and 200 mg/L respectively.

Calcium is the essential macronutrient. The value of the calcium is within the prescribed permissible standards. The higher level of calcium may cause hardening in domestic equipment and will also reduce the detergent efficiency. Higher levels of calcium will lead to constipation, gas, and bloating. Apart from that, extra calcium may also increase the risk of kidney stones. If the calcium deposit in blood is high, it may lead to hypercalcemia.

Magnesium:

Value observed in the Project Site: 40.1 mg/L.

Acceptable and permissible limits: 30 mg/L and 100 mg/L respectively.

The value of Magnesium in the project site is higher than acceptable limit and within the permissible limit. The increase in the level of magnesium will cause diarrhea and vomiting in children.

Chloride

Value observed in the project site: 214 mg/L.

Acceptable and permissible limits: 250 mg/L and 1000 mg/L respectively.

The chloride level in the project site is within the acceptable and permissible limit. If the level of chloride is more, it may cause galvanic and pitting corrosion, increases level of metals. It imparts bitter taste to the water.

Hardness:

Value observed in the Project Site: 465 mg/L.

Acceptable and permissible limits: 200 mg/L and 600 mg/L respectively.

The value of Hardness in the project site is lesser than the acceptable limit and permissible limit. The increase in the level of hardness may cause corrosion and scaling problems, increased soap consumption and it also contributes to the salty taste of water.

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3.3.7 Surface Water Analysis

Surface water samples were taken from pond at Project site. The results are summarized below.

Table 3-7 Surface Water Sample Results

S. No.	Parameters	Units	Edayapatti lake
1	pH (at 25°C)	-	8.11
2	Electrical Conductivity	µS/cm	2310
3	Colour	Hazen Unit	12
4	Turbidity	NTU	18.5
5	Total Dissolved Solids	mg/L	1555
6	Total Suspended Solids	mg/L	22.5
7	Total Hardness as CaCO ₃	mg/L	407
8	Calcium as Ca	mg/L	59.4
9	Magnesium as Mg	mg/L	62.8
10	Chloride as Cl	mg/L	432
11	Sulphate as SO ₄	mg/L	286
12	Total Alkalinity as CaCO ₃	mg/L	332
13	Iron as Fe	mg/L	BQL(LOQ:0.1]
14	Silica as SiO ₂	mg/L	82.1
15	Fluoride as F	mg/L	0.55
16	Nitrate as NO ₃	mg/L	6.82
17	Potassium as K	mg/L	108
18	Sodium as Na	mg/L	312

Inference: The surface water quality is compared with the CPCB Water Quality Criteria against A, B, C, D & E class of water.

3.3.8 Climatology & Meteorology:

Climate and meteorology of a place can play an important role in the implementation of any developmental project. Meteorology is also the key to understand local air quality as there is an essential relationship between meteorology and atmospheric dispersion involving wind in the broadest sense of the term.

The year may broadly be divided into four seasons:

Winter season : December to February

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Pre-monsoon season : March to May
 Monsoon season : June to September
 Post-monsoon season : October to November

i) Climate

High temperature throughout the year. Generally a dry and hot climate prevails in the District. The district receives the rainfall under the influence of northeast monsoon. The heaviest rainfall in the district used to be received in the year of 2017 was 1145.9 mm.

ii) Temperature

The average daily temperature ranges from a maximum of 40 °C to a minimum of 26.3 °C

iii) Rainfall:

The total rainfall received during 2017 is 1130mm against the Normal rainfall of 842mm with average of 59 rainy days.

KARUR DISTRICT -NORMAL AND ACTUAL RAINFALL (2013 TO 2017)

Unit in mm.

Actual Rainfall In Mm					Normal Rainfall In Mm
2013	2014	2015	2016	2017	
766.0	757.6	1049.7	590.6	1145.9	850.58

Source: TWAD Board

Metrological Data

The meteorological data – Temperature, rainfall, Wind Speed, Wind direction are recorded through AWS by setting it up in the site.

vi) Wind Rose Diagram

The wind rose denotes a class of diagrams designed to display the distribution of wind direction at a given location over a period of time. Wind roses are also useful as they project a large quantity of data in a simple graphical plot.

The wind speed & wind direction data are taken and wind rose is plotted for July to September, 2022.

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Windrose Plot for [VOTR] Tiruchirappalli
 Obs Between: 01 Jul 2022 12:30 AM - 29 Sep 2022 11:30 PM Asia/Kolkata

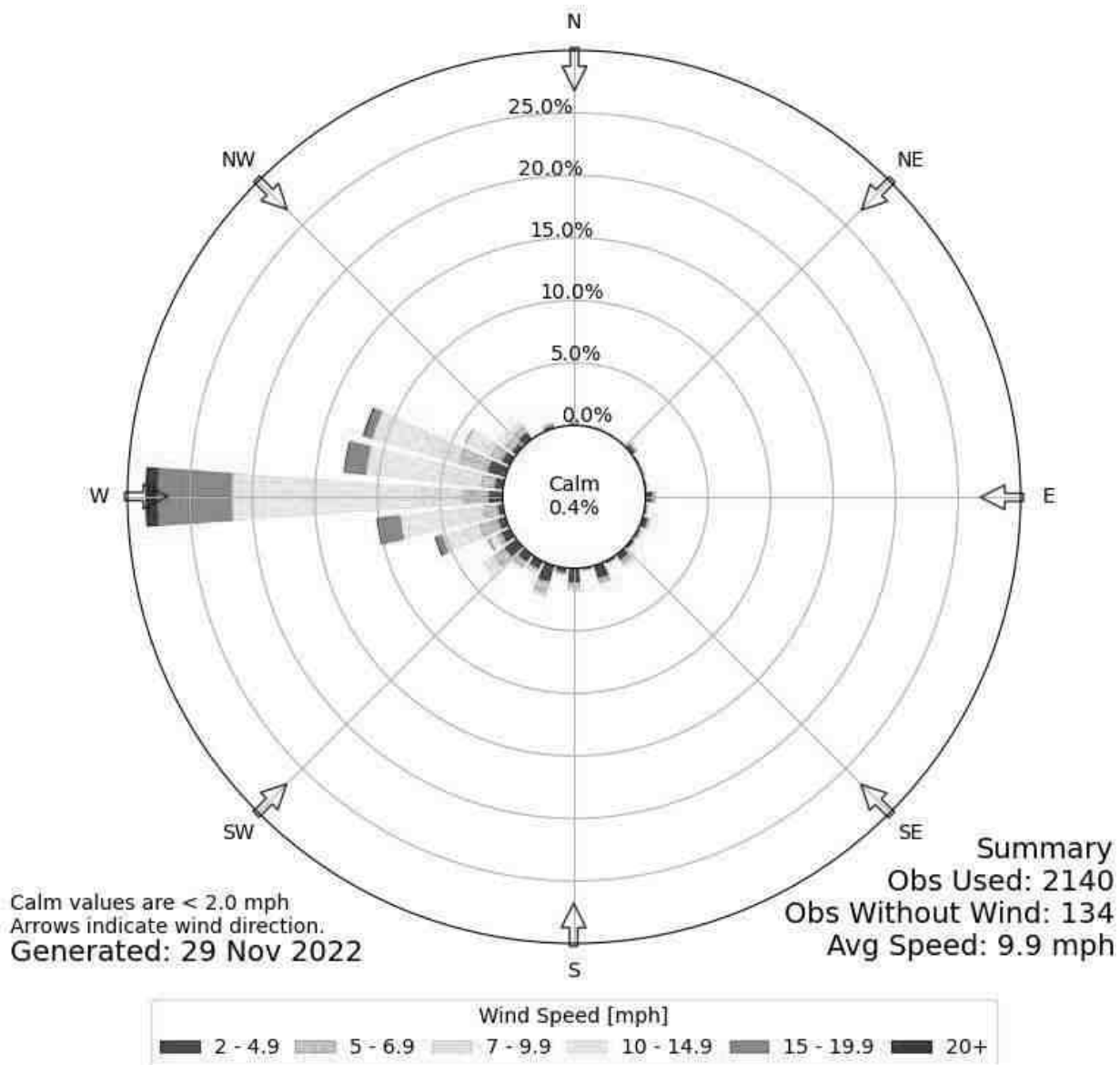


Figure 3-4 Wind-Rose

3.3.9 Selection of Sampling Locations:

Four Monitoring locations along with the project site is selected based on Wind Direction & Wind Speed. All the monitoring locations are chosen in the downwind direction.

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3.4 Ambient Air Quality

Table 3-8: Selection of Sampling Location

Environmental Parameters: <i>Ambient Air</i>			
Monitoring Period	July to September, 2022		
Design Criteria	The monitoring stations are selected based on factors like topography/terrain, prevailing meteorological conditions like predominant wind direction, etc, play a vital role in the selection of air sampling stations. Based on these criteria, 5 air sampling station were selected in the area as shown below.		
Monitoring Locations	Location & Code	Distance (km)	Direction
	Project Site - AAQ 1	-	-
	Karuppasamy Temple – N-2	2.3	N
	Chettinad Rani Meyammai Matric – N-3	6.5	S
	Government park and Gym, Venjamangudalur- N-4	3.8	W
	Sri Shivalaya Maligai Store – N-5	4.2	E
Methodology	Respirable Particulate Matter (PM10) - Gravimetric (IS 5182: Part 23:2006) Particulate Matter PM2.5 - Gravimetric (Fine particulate matter) Sulphur Dioxide - Calorimetric (West & Gaeke Method) (IS 5182: Part 02: 2001) Nitrogen Dioxide - Calorimetric (Modified Jacob & Hocheiser Method) (IS 5182: Part 06:2006)		
Frequency of Monitorin	2 days in a week, 4 weeks in a month for 3 months in a season.		

3.4.1 Ambient Air Quality: Results & Discussion

The test results of the ambient air quality monitored in project site and other four locations is summarized below.

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Table 3-9 Ambient Air Quality

Code	Location	PM 10 ($\mu\text{g}/\text{m}^3$)				PM 2.5 ($\mu\text{g}/\text{m}^3$)				SO2 ($\mu\text{g}/\text{m}^3$)				NOx ($\mu\text{g}/\text{m}^3$)			
		Max	Min	Avg	98 percentile	Max	Min	Avg	98 percentile	Max	Min	Avg	98 percentile	Max	Min	Avg	98 percentile
AAQ 1	Project Site - AAQ 1	51	37	43	50	22	14	19	22	9	5	7	9	22	10	16	22
AAQ 2	Karuppu swamy temple-AAQ 2	55	43	50	55	26	18	22	26	15	7	10	14	28	15	20	27
AAQ 3	Sri shivalaya mallikai store-AAQ 3	61	53	56	60	31	21	25	30	21	12	15	21	35	22	26	34
AAQ 4	Crow park park & Gym-AAQ 4	57	47	53	57	28	21	24	28	16	9	12	16	28	15	21	28
AAQ 5	Chettinad Ranimaliyum Matric school-AAQ 5	64	54	59	63	33	25	28	32	21	15	17	21	38	23	30	38
NAAQ Standards - Residential Area		100 ($\mu\text{g}/\text{m}^3$)				60($\mu\text{g}/\text{m}^3$)				80 ($\mu\text{g}/\text{m}^3$)				81 ($\mu\text{g}/\text{m}^3$)			

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Project Location	K.Pitchampatti Village, Karur taluk, Karur District.	

3.4.2 Interpretation of ambient air quality:

To assess the impact, AAQ were monitored in project site and four locations.

Observation:

The Maximum value of PM10 (61(µg/m3), PM 2.5(33 (µg/m3), SOx 21 (µg/m3) ,NOx (38(µg/m3) is observed in different places.

Inference:

The monitoring results for PM10, PM2.5, NOx was found to be high in Chettinad Ranimaliyum Matric school . The only contributing factor to the higher values is due to the vehicular movement. In the absence of vehicular movement, the values of PM10, PM2.5, NOx was found to be less.

The observed values are all well within the Standards prescribed by NAAQ.

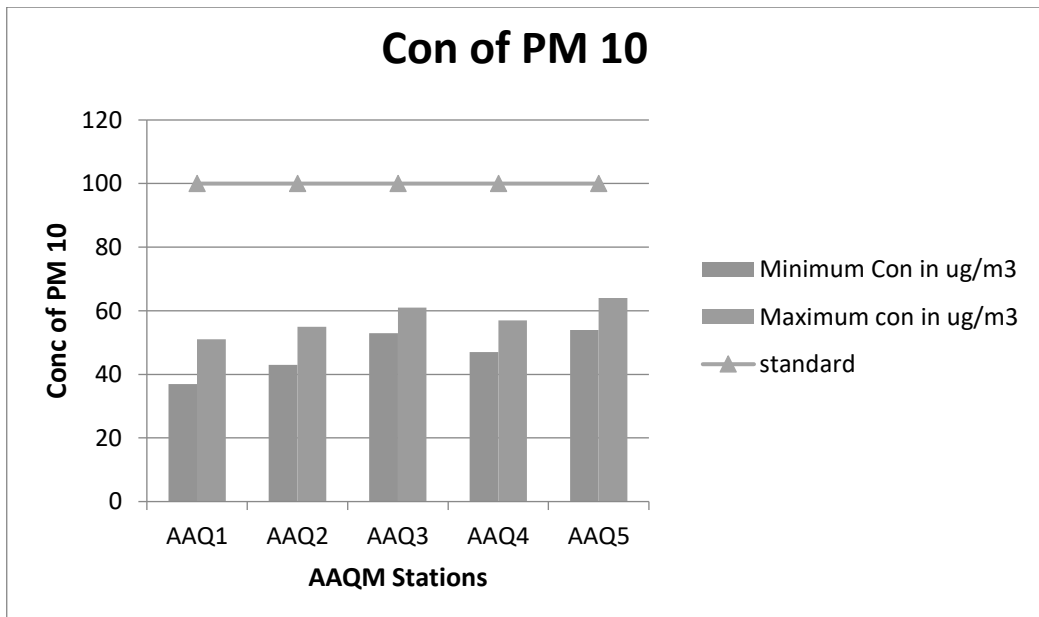


Figure 3-5 Concentration of PM10 (µg/m3) in Study Area

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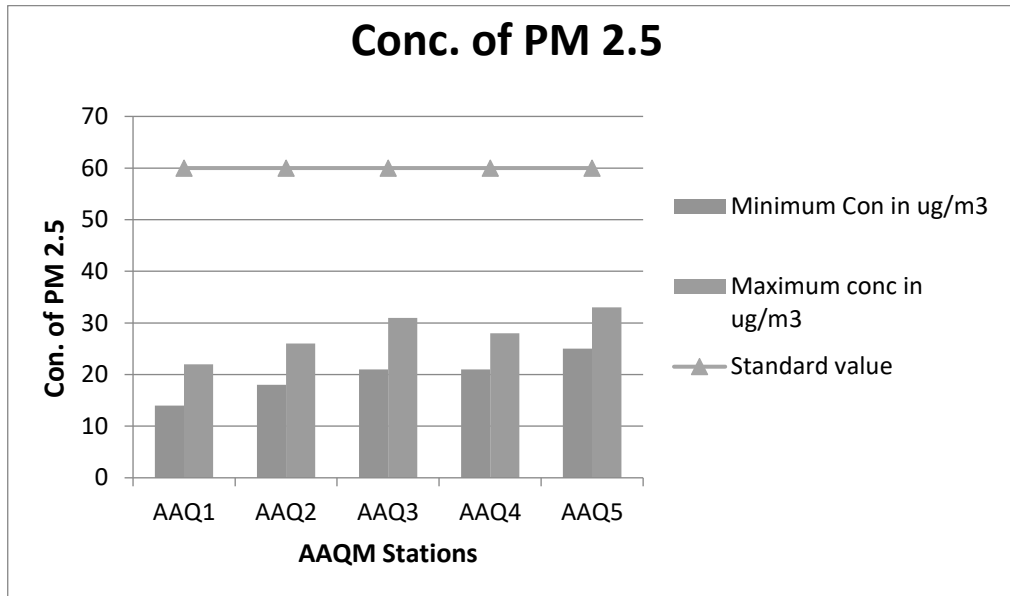


Figure 3-6 Concentration of PM2.5 (µg/m3) in Study Area

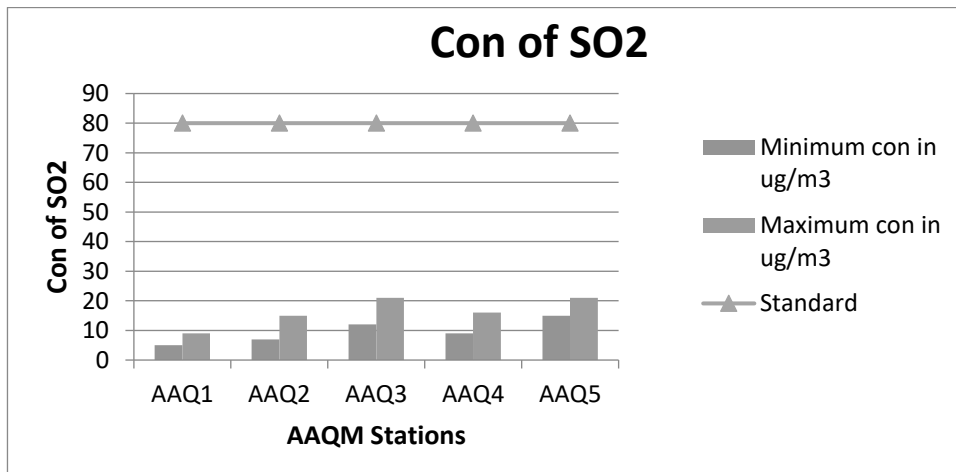


Figure 3-7 Concentration of SOx (µg/m3) in Study Area

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Project Location	K.Pitchampatti Village, Karur taluk, Karur District.	

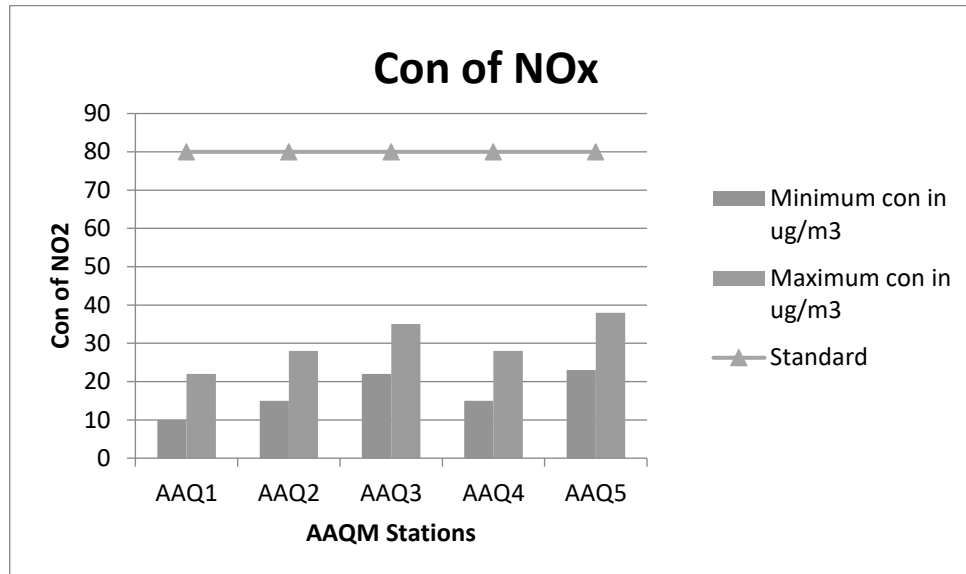


Figure 3-8 Concentration of NOx ($\mu\text{g}/\text{m}^3$) in Study Area

3.5 Noise Environment:

Table 3-10 Noise Analysis

Environmental Parameters: Noise Analysis	
Monitoring Period	July to September 2022
Design Criteria	Based on the Sensitivity of the area
Monitoring Locations	Project Site – N-1 Karuppasamy Temple – N-2 Chettinad Rani Meyammai Matric – N-3 Government park and Gym, Venjamangudalur- N-4 Sri Shivalaya Maligai Store – N-5
Methodology	Noise level measurements were taken at the selected locations using noise level meter both during day and night time. Noise level measurements were taken continuously for 24 hours at hourly intervals
Frequency of Monitoring	Noise samples were collected from 5 locations - Once season

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Ambient Noise Levels are monitored in the chosen 5 Locations including the project Site and the monitoring results are summarized below

3.5.1 Day Noise Level (Leq day)

Table 3-11 Day Noise Level (Leq day)

Location	Noise level dB(A)		
	Max	Min	Average
Project Site - N-1	55	40	50
Karuppasamy Temple - N-2	57	46	53
Chettinad Rani Meyammai Matric - N-3	62	48	57
Government park and Gym, Venjamanguda N-4	58	46	54
Sri Shivalaya Maligai Store - N-5	65	50	60

3.5.2 Night Noise Level (Leq Night)

Table 3-12 Night Noise Level (Leq Night)

Location	Noise level dB(A)		
	Max	Min	Average
Project Site - N-1	41	36	38
Karuppasamy Temple - N-2	43	37	40
Chettinad Rani Meyammai Matric - N-3	49	40	44
Government park and Gym, Venjamangudalur- N-4	47	38	42
Sri Shivalaya Maligai Store - N-5	51	44	47

Observation:

The noise level during day varies from 55-65 dB(A) and during night varies between 41-51 dB(A).

3.6 Soil Environment

Soil environment is studied for 10 km radius from the project site. The 10 km radius image shows that the soil is not affected by any kind of erosion.

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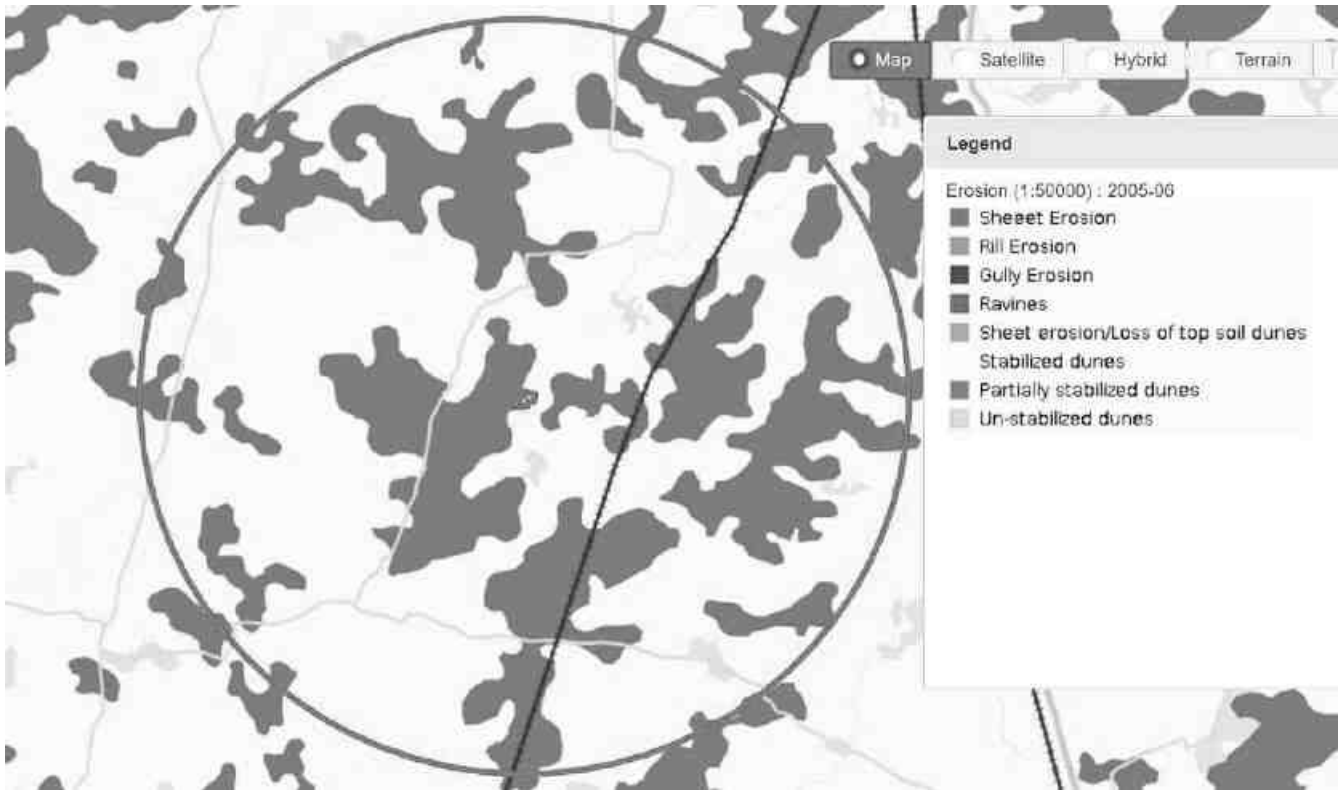


Figure 3-9 Soil Erosion pattern within 5 km radius of the project site

3.6.1 Baseline Data:

The present study of the soil quality establishes the baseline characteristics which will help in future in identifying the incremental concentrations if any, due to the operation Phase of the proposed project. The sampling locations have been identified with the following objectives:

- To determine the impact of proposed project on soil characteristics and
- To determine the impact on soils more importantly from agricultural productivity point of view.

Table 3-13 Soil Quality Analysis

Environmental Parameters: Soil Quality Analysis	
Monitoring Period	July to September 2022
Design Criteria	Based on the environmental settings of the study area

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Monitoring Locations	Project Site – SQ-1 Karuppasamy Temple – SQ-2 Chettinad Rani Meyammai Matric – SQ-3 Government park and Gym, Venjamangudalur- SQ-4 Sri Shivalaya Maligai Store – SQ-5
Methodology	Composite soil samples using sampling augers and field capacity apparatus
Frequency of Monitoring	Soil samples were collected from 5 locations Once in a season

To assess the soil quality of the study area, 5 monitoring stations were selected and the results are summarized below.

Table 3-14 Soil Quality Analysis Results

Parameters	Unit	SQ 1	SQ 2	SQ 3	SQ 4	SQ 5
pH (at 25°C)	-	7.77	7.02	6.99	8.05	7.92
Specific Electrical Conductivity	mS/cm	1.82	0.21	0.29	2.42	0.39
Water Holding Capacity	ml/l	10.4	11.5	10.1	13.6	15.5
Chloride	Meq/kg	897	882	980	1624	439
Calcium as Ca	g/cm ³	360	232	189	331	92
Sodium as Na	mg/kg	1266	989	1041	1835	479
Potassium as K	mg/kg	1601	1014	1121	1942	510
Organic matter	%	1.83	1.92	1.32	1.41	0.67
Magnesium as Mg	mg/kg	111	98.2	115	210	63.9
Sulphate	mg/kg	1022	191	209	810	177
Cation exchange capacity	meg/ 100g	10.2	11.1	11.9	13.6	10.1
Carbonate	mg/kg	Nil	Nil	Nil	Nil	Nil

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Bi-carbonate	mg/kg	215	190	180	280	99.9
TKN	mg/l	0.043	0.031	0.027	0.039	0.044
Bulk Density	mg/kg	1.51	1.43	1.32	1.45	1.22
Available Phosphorous	mg/kg	580	461	492	791	535
Sand	%	52	55	46	44	45
Clay	%	10	6	6	11	4
Silt	%	38	39	48	45	51
SAR	meg/kg	15.0	13.7	14.7	19.4	9.4
Silicon	%	0.099	0.091	0.096	0.089	0.094

3.6.1.1 Physical Properties:

Regular cultivation practices increase the bulk density of soils thus inducing compaction. This results in reduction in water percolation rate and penetration of roots through soils. The soils with low bulk density have favorable physical conditions whereas those with high bulk density exhibit poor physical conditions for agriculture crops. The bulk density of the soil in the study area ranged between 1.22 to 1.51 g/cc which indicates favorable physical condition for plant growth. The water holding capacity was found in the range of 0.21 ml/l to 2.42 ml/l.

3.6.1.2 Chemical Properties:

Chemical characteristics of soils include pH, exchangeable cations and fertility status in the form of NPK values and organic matter. The value of the pH ranges from 6.99 to 8.05, which it indicates majority of pH of the soil is slightly alkaline. The soil in the project site is sodic in nature, which challenges because they tend to have very poor structure which limits or prevents water infiltration and drainage. The organic matter varies from 0.67 to 1.83 mg/kg, which indicates the soil is slightly unfertile.

3.7 Ecology and Biodiversity

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Ecology and Biodiversity is studied for 10 km radius around the project site. Project site and 2 km around the project site is considered as core zone and from 2 km to 10 km radius, it is considered as buffer zone.

- Primary field survey is carried out for the assessment of flora and fauna in the core zone
- Secondary data from Journals/Literature were studied and compiled to understand the species present in the buffer zone

3.7.1 Methods available for floral analysis:

3.7.1.1 Plot Sampling Methods

- Quadrat – 2D shape (e.g. square or rectangle, or other shape) used as a sampling unit
- Transect
 - Line transects feature only a length dimension, usually defined by a tape stretched across the area to be sampled.
 - Belt transects have a width as well as length.
 - Pace-transects are established when the observer strides along an imaginary line across the sample site and uses their foot placement to determine specific sampling points.

3.7.1.2 Plot less Sampling Methods

- Closest individual method - Distance is measured from each random point to the nearest individual.
- Nearest neighbour method - Distance is measured from an individual to its nearest neighbour.
- Random pairs method - Distance is measured from one individual to another on the opposite side of the sample point.
- Point-centered quarter (PCQ) method - Distance is measured from the sampling point to the nearest individual in each quadrat.

3.7.2 Field study& Methodology adopted:

To assess the suitability of the methodology, random field survey was done. Field survey was conducted around 2 km radius from the project site and five locations were chosen based on the species density. Quadrat method is chosen for the proposed study as compared to other sampling methods, because they are relatively simple to use. Quadrat plots are uniform in size and shape and distributed randomly

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throughout the sample area, which makes the study design straightforward. They are also one of the most affordable techniques because they require very few materials.

3.7.3 Study outcome:

Phyto-sociological parameters, such as *Density, Frequency, Basal Area, Abundance and Importance Value Index* of individual species (Trees) were determined in randomly placed quadrates of different sizes in the study area. Relative frequency, relative basal area and relative density were calculated and the sum of these three represented Importance Value Index (IVI) for various species. For shrubs, herbs and grasses, *Density, Frequency, Relative Density & Relative Frequency were found.*

Sample plots were selected in such a way to get maximum representation of different types of vegetation and plots were laid out in different part of the study area of 2 km radius. Analysis of the vegetation will help in determining the relative importance of each species in the study area and to reveal if any economically valuable species is threatened in the process.

Table 3-15 Calculation of Density, Frequency (%), Dominance, Relative Density, Relative Frequency, Relative Dominance & Important Value Index

Parameters	Formula
Density	Total No. of individuals of species/ Total No. of Quadrats used in sampling
Frequency (%)	(Total No. of Quadrats in which species occur/ Total No. of Quadrats studied) * 100
Dominance	Total Basal Area /Total area sampled
Abundance	Total No. of individuals of species/ No. of Quadrats in which they occur
Relative Density	(Total No. of individuals of species/Sum of all individuals of all species) * 100
Relative Frequency	(Total No. of Quadrats in which species occur/ Total No. of Quadrats occupied by all species) * 100
Relative Dominance	Dominance of a given species/Total Dominance of all species
Important Value Index	Relative Density + Relative Frequency + Relative Dominance

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Table 3-16 Tree Species in the core Zone

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abundance	Dominance	Relative Density	Relative Frequency	Relative Dominance	IVI	IUCN Conservation Status
1	Ficus Carica	Athi Maram	2	2	6	0.33	33.33	1	0.28	1.68	2.17	4.45	8.31	Least Concern
2	Cassia siamea	ManjalKonrai	3	2	6	0.50	33.33	1.5	0.07	2.52	2.17	1.11	5.81	Least Concern
3	Acacia nilotica	Karuvelai	4	4	6	0.67	66.67	1	0.28	3.36	4.35	4.45	2.16	Least Concern
4	Bambusa vulgaris	Moongil	4	4	6	0.67	66.67	1	0.50	3.36	4.35	7.92	5.63	Not assessed
5	Anacardium occidentale	Cashew	1	1	6	0.17	16.67	1	0.44	0.84	1.09	6.92	8.88	Not assessed
6	Alstonia scholaris	Elilaipalai	2	2	6	0.33	33.33	1	0.27	1.68	2.17	4.3	8.16	Least Concern
7	Psidium guajava	Guava	3	3	6	0.50	50.00	1	0.23	2.52	3.26	3.61	9.39	Not assessed
8	Aegle marmelos	Vilvam	1	1	6	0.17	16.67	1	0.16	0.84	1.09	2.5	4.43	Not assessed
9	Causuarina equisetifolia	Savukku	2	2	6	0.33	33.33	1	0.21	1.68	2.17	3.34	7.20	Not assessed
10	Albizia amara	Wunja	1	1	6	0.17	16.67	1	0.20	0.84	1.09	3.22	5.14	Not assessed
11	Cocos nucifera	Thennai	10	6	6	1.67	100.0	1.67	0.15	8.40	6.52	2.39	7.32	Not assessed

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1	Artocarpus heterophyllus	Palaa	2	2	6	0.3	33.33	1	0.18	1.6	2.17	2.8	6.70	Not assessed
1	Bombax ceiba	Sittan	4	4	6	0.6	66.67	1	0.08	3.3	4.35	1.2	8.98	Not assessed
1	Azadirachta indica	Veppam	17	6	6	2.8	100.0	2.83	0.13	14.29	6.52	1.9	22.79	Not assessed
1	Delonix regia	Cemmayir-Konrai	1	1	6	0.1	16.67	1	0.21	0.8	1.09	3.3	5.27	Least Concern
1	Delonix elata	Perungondrai	1	1	6	0.1	16.67	1	0.17	0.8	1.09	2.6	4.5	Least Concern
1	Dalbergia sissoo	Shisham	1	1	6	0.1	16.67	1	0.15	0.8	1.09	2.2	4.2	Not assessed
1	Ficus benghalensis	Alai	2	2	6	0.3	33.33	1	0.08	1.6	2.17	1.1	5.0	Not assessed
1	Annona squamosa	Sitapalam	1	1	6	0.1	16.67	1	0.23	0.8	1.09	3.6	5.5	Not assessed
2	Pithecellobium dulce	Kodukapuli	1	1	6	0.1	16.67	1	0.14	0.8	1.09	2.1	4.1	Not assessed
2	Ficus religiosa	Arasa maram	3	3	6	0.5	50.00	1	0.09	2.5	3.26	1.3	7.1	Not assessed
2	Couroupita guianensis	Nagalingam	5	3	6	0.8	50.00	1.67	0.14	4.2	3.26	2.1	9.6	Not assessed
2	Musa paradise	Vaazhai	3	3	6	0.5	50.00	1	0.08	2.5	3.26	1.1	6.9	Not assessed
2	Prosopis juliflora	Vaelikaruvai	3	3	6	0.5	50.00	1	0.21	2.5	3.26	3.3	9.1	Not assessed
2	Mangifera indica	Mamaram	7	6	6	1.1	100.0	1.16	0.07	5.8	6.52	1.1	13.5	Data insufficient
2	Mimusops elengi	Magizham	2	2	6	0.3	33.33	1	0.18	1.6	2.17	2.8	6.7	Not assessed

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27	Morinda pubescens	Nuna	6	6	6	1.00	100.0	1	0.24	5.04	6.52	3.74	5.31	Not assessed
28	Thespesia populnea	Poovarasam	3	3	6	0.50	50.00	1	0.15	2.52	3.26	2.39	8.18	Not assessed
29	Tectona grandis	Thekku	3	3	6	0.50	50.00	1	0.12	2.52	3.26	1.88	7.66	Not assessed
30	Tamarindus indica	Puli	10	6	6	1.67	100.0	1.66	0.20	8.40	6.52	3.09	8.02	Not assessed
31	Syzygium cumini	naval	5	1	6	0.83	16.67	5	0.11	4.20	1.09	1.79	7.07	Not assessed
32	Carica papaya	Papaya	3	3	6	0.50	50.00	1	0.09	2.52	3.26	1.43	7.21	Not assessed
33	Ziziphus mauritiana	Elandai	1	1	6	0.17	16.67	1	0.28	0.84	1.09	4.45	6.38	Not assessed
34	Citrus medica	Elumichai	2	2	6	0.33	33.33	1	0.23	1.68	2.17	3.61	7.46	Not assessed
Total			119	92					6.35					

Table 3-17 Shrubs in the Core Zone

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abundance	Relative Density	Relative Frequency	IUCN Conservation Status
1	Jatropagossypifolia	Kaatamanaku	28	17	24	1.17	0.71	1.65	14.43	17.17	Not Assessed
2	Lantana trifolia	Shrub verbana	10	3	24	0.42	0.13	3.33	5.15	3.03	Not Assessed

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3	Robiniapseudoacacia	Black locust	17	5	24	0.71	0.21	3.4	8.76	5.05	Least Concern
4	Lantana camara	Unnichedi	9	6	24	0.38	0.25	1.5	4.64	6.06	Not Assessed
5	Calotropis gigantea	Erukam	14	12	24	0.58	0.50	1.17	7.22	12.12	Not Assessed
6	Stachytarphaurticifolia	Rat tail	15	9	24	0.63	0.38	1.67	7.73	9.09	Not Assessed
7	Datura metal	Ummattangani	5	4	24	0.21	0.17	1.25	2.58	4.04	Not Assessed
8	Hibiscus rosa sinensis	Sembaruthi	3	2	24	0.13	0.08	1.5	1.55	2.02	Not Assessed
9	Tabernaemontanadivaricata	Crepe Jasmine	3	3	24	0.13	0.13	1	1.55	3.03	Not Assessed
10	Chloromolaena odorata	Venapacha	9	6	24	0.38	0.25	1.5	4.64	6.06	Least Concern
11	Euphorbia geniculata	Amman Pacharisi	3	3	24	0.13	0.13	1	1.55	3.03	Not Assessed
12	Catharanthus roseus	Nithyakalyani	3	3	24	0.13	0.13	1	1.55	3.03	Not Assessed
13	Woodfordiafruiticosa	Velakkai	3	3	24	0.13	0.13	1	1.55	3.03	Least Concern
14	Morindapubescens	Mannanunai	2	2	24	0.08	0.08	1	1.03	2.02	Not Assessed
15	Acalypha indica	Kuppaimeni	20	8	24	0.83	0.33	2.5	10.31	8.08	Not Assessed
16	Parthenium hysterophorous	Vishapoond	50	13	24	2.08	0.54	3.85	25.77	13.13	Not Assessed

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Table 3-18 Herbs & Grasses in the core zone

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants	Total No. of	Density	Frequency (%)	Abundance	Relative Density	Relative Frequency	IUCN Conservation status
1	Plumbago zeylanica	Chittiramoolam	3	3	30	0.10	0.10	1	1.19	3.23	Not assessed
2	Mimosa pudica	Thottacherungi	6	5	30	0.20	0.17	1.2	2.38	5.38	Least concern
3	Sida acuta	Malaidangi	10	3	30	0.33	0.10	3.33	3.97	3.23	Not assessed
4	Scrophularia nodosa	Sarakkothini	15	7	30	0.50	0.23	2.14	5.95	7.53	Not assessed
5	Helicteresisora	Valampuri	2	2	30	0.07	0.07	1	0.79	2.15	Not assessed
6	Cynodondactylon	Arugu	12	6	30	0.40	0.20	2	4.76	6.45	Not assessed
7	Sporobolus fertilis	Giant Parramatta Grass	9	4	30	0.30	0.13	2.25	3.57	4.30	Not assessed
8	Viburnum dentatum	Viburnum	5	5	30	0.17	0.17	1	1.98	5.38	Least concern
9	Heraculem spondylium	Hog Weed	20	10	30	0.67	0.33	2	7.94	10.75	Not assessed
10	Laportea canadensis	Peruganchori	30	20	30	1.00	0.67	1.5	11.90	21.51	Not assessed
11	Euphorbia hirta	Amman Pacharisi	5	4	30	0.17	0.13	1.25	1.98	4.30	Not assessed

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12	Tridax procumbens	Vettukaayathalai	5	4	30	0.17	0.13	1.25	1.98	4.30	Not assessed
13	Tephrosia purpurea	Kavali	20	4	30	0.67	0.13	5	7.94	4.30	Not assessed
14	Sida cordifolia	Maanikham	45	4	30	1.50	0.13	11.25	17.86	4.30	Not assessed
15	Tridax procumbens	Cuminipachai	15	4	30	0.50	0.13	3.75	5.95	4.30	Not assessed
16	Ruellia strepens	Grandinayagam	25	4	30	0.83	0.13	6.25	9.92	4.30	Not assessed
17	Senna occidentalis	Nattamsakarai	25	4	30	0.83	0.13	6.25	9.92	4.30	Not assessed

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3.7.4 Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef:

Biodiversity index is a quantitative measure that reflects how many different type of species, there are in a dataset, and simultaneously takes into account how evenly the basic entities (such as individuals) are distributed among those types of species. The value of biodiversity index increases both when the number of types increases and when evenness increases. For a given number of type of species, the value of a biodiversity index is maximized when all type of species are equally abundant. Interpretation of Vegetation results in the study area is given below.

Table 3-19 Calculation of species diversity

Description	Formula
Species diversity – Shannon – Wiener Index	$H = \sum [(p_i) * \ln(p_i)]$ Where p_i : Proportion of total sample represented by species i : number of individuals of species i / total number of samples
Evenness	H/H_{max} $H_{max} = \ln(s) =$ maximum diversity possible $S =$ No. of species
Species Richness by Margalef	$RI = S - 1 / \ln N$ Where $S =$ Total Number of species in the community $N =$ Total Number of individuals of all species in the community

3.7.5 Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef for trees

i. Species Diversity

Scientific Name	Common Name	No. of Species	Pi	ln (Pi)	Pi x ln (Pi)
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Ficus Carica	Athi Maram	2	0.017857	- 4.02535	-0.07188
Cassia siamea	ManjalKonrai	2	0.017857	- 4.02535	-0.07188
Acacia nilotica	Karuvelai	4	0.035714	-3.3322	-0.11901
Bambusa vulgaris	Moongil	4	0.035714	-3.3322	-0.11901
Anacardium occidentale	Cashew	2	0.017857	- 4.02535	-0.07188
Alstonia scholaris	Elilaipalai	2	0.017857	- 4.02535	-0.07188
Psidium guajava	Guava	3	0.026786	- 3.61989	-0.09696
Aegle marmelos	Vilvam	1	0.008929	-4.7185	-0.04213
Causuarina equisetifolia	Savukku	2	0.017857	- 4.02535	-0.07188
Albizia amara	Wunja	1	0.008929	-4.7185	-0.04213
Cocos nucifera	Thennai	15	0.133929	- 2.01045	-0.26926
Artocarpus heterophyllus	Palaa	2	0.017857	- 4.02535	-0.07188
Bombax ceiba	Sittan	4	0.035714	-3.3322	-0.11901
Azadirachta indica	Veppam	10	0.089286	- 2.41591	-0.21571
Delonix regia	Cemmayir- Konrai	1	0.008929	-4.7185	-0.04213
Delonix elata	Perungondrai	1	0.008929	-4.7185	-0.04213
Dalbergia sissoo	Shisham	1	0.008929	-4.7185	-0.04213
Ficus benghalensis	Alai	2	0.017857	- 4.02535	-0.07188
Annona squamosa	Sitapalam	1	0.008929	-4.7185	-0.04213
Pithecellobium dulce	Kodukapuli	1	0.008929	-4.7185	-0.04213
Ficus religiosa	Arasa maram	3	0.026786	- 3.61989	-0.09696
Couroupita guianensis	Nagalingam	5	0.044643	- 3.10906	-0.1388
Musa paradise	Vaazhai	3	0.026786	- 3.61989	-0.09696
Prosopis juliflora	Vaelikaruvai	3	0.026786	- 3.61989	-0.09696
Mangifera indica	Mamaram	8	0.071429	- 2.63906	-0.1885
Mimusops elengi	Magizham	2	0.017857	- 4.02535	-0.07188

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Morinda pubescens	Nuna	6	0.053571	-	-0.15679
				2.92674	
Thespesia populnea	Poovarasam	3	0.026786	-	-0.09696
				3.61989	
Tectona grandis	Thekku	3	0.026786	-	-0.09696
				3.61989	
Tamarindus indica	Puli	8	0.071429	-	-0.1885
				2.63906	
Syzygium cumini	naval	1	0.008929	-4.7185	-0.04213
Carica papaya	Papaya	3	0.026786	-	-0.09696
				3.61989	
Ziziphus mauritiana	Elandai	1	0.008929	-4.7185	-0.04213
Citrus medica	Elumichai	2	0.017857	-	-0.07188
				4.02535	
Total		112			-3.22

H (Shannon Diversity Index) =1.76

Shrubs

Scientific Name	Common Name	No. of Species	Pi	ln (Pi)	Pi x ln (Pi)
Jatropagossypifolia	Kaatamanaku	28	0.14433	-1.93565	-0.27937
Lantana trifolia	Shrub verbana	10	0.051546	-2.96527	-0.15285
Robiniapseudoacacia	Black locust	17	0.087629	-2.43464	-0.21335
Lantana camara	Unnichi	9	0.046392	-3.07063	-0.14245
Calotropis gigantea	Erukam	14	0.072165	-2.6288	-0.18971
Stachytarphaurticifolia	Rat tail	15	0.07732	-2.55981	-0.19792
Datura metal	Ummattangani	5	0.025773	-3.65842	-0.09429
Hibiscus rosa sinensis	Sembaruthi	3	0.015464	-4.16925	-0.06447
Tabernaemontanadivaricata	Crepe Jasmine	3	0.015464	-4.16925	-0.06447
Chloromolaena odorata	Venapacha	9	0.046392	-3.07063	-0.14245
Euphorbia geniculata	Amman Pacharisi	3	0.015464	-4.16925	-0.06447
Catharanthus roseus	Nithyakalyani	3	0.015464	-4.16925	-0.06447
Woodfordiafruticosa	Velakkai	3	0.015464	-4.16925	-0.06447
Morindapubescens	Mannanunai	2	0.010309	-4.57471	-0.04716
Acalypha indica	Kuppaimeni	20	0.103093	-2.27213	-0.23424
Parthenium hysterophorous	Vishapoundu	50	0.257732	-1.35584	-0.34944
Total		194			-2.3656

H (Shannon Diversity Index) =1.97

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Herbs

Scientific Name	Common Name	No. of Species	Pi	ln (Pi)	Pi x ln (Pi)
Plumbago zeylanica	Chittiramoolam	3	0.011905	-4.43082	-0.05275
Mimosa pudica	Thottacherungi	6	0.02381	-3.73767	-0.08899
Sida acuta	Malaidangi	10	0.039683	-3.22684	-0.12805
Scrophularia nodosa	Sarakkothini	15	0.059524	-2.82138	-0.16794
Helicteresisora	Valampuri	2	0.007937	-4.83628	-0.03838
Cynodondactylon	Arugu	12	0.047619	-3.04452	-0.14498
Sporobolus fertilis	Giant Parramatta Grass	9	0.035714	-3.3322	-0.11901
Viburnum dentatum	Viburnum	5	0.019841	-3.91999	-0.07778
Heraculem spondylium	Hog Weed	20	0.079365	-2.5337	-0.20109
Laportea canadensis	Peruganchori	30	0.119048	-2.12823	-0.25336
Euphorbia hirta	Amman Pacharisi	5	0.019841	-3.91999	-0.07778
Tridax procumbens	Vettukaayathalai	5	0.019841	-3.91999	-0.07778
Tephrosia purpurea	Kavali	20	0.079365	-2.5337	-0.20109
Sida cordifolia	Maanikham	45	0.178571	-1.72277	-0.30764
Tridax procumbens	Cuminipachai	15	0.059524	-2.82138	-0.16794
Ruellia strepens	Grandinayagam	25	0.099206	-2.31055	-0.22922
Senna occidentalis	Nattamsakarai	25	0.099206	-2.31055	-0.22922
Total		252			-2.56298

H (Shannon Diversity Index) =2.39

i. Evenness

Details	H	Hmax	Evenness	Species Richness (Margalef)
Trees	3.22	3.5	0.9	7
Shrubs	2.36	2.77	0.85	2.84
Herbs	2.56	2.83	0.9	2.89

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From the above, it can be interpreted that herb community has higher diversity. While the tree community shows less diversity. It is also observed that most of the quadrates have controlled generation of plant species with older strands. Higher herb species diversity can be interpreted as a greater number of successful species and a more stable ecosystem where more ecological niches are available, environmental change is less likely to be damaging to the ecosystem as a whole. Species richness is high for herb community when compared with tree and shrubs.

3.7.6 Frequency Pattern

To understand the frequency pattern, the observed frequency is compared with the Raunkiaer's frequency. Any deviation from Raunkiaer's frequency implies disturbed community. Classes of species in a community and normal value of class according to Raunkiaer.

Table 3-20 Frequency Pattern

Class	Frequency (%)	Normal Value in the class
A	1-20	53
B	21-40	14
C	41-60	9
D	61-80	8
E	81-100	16

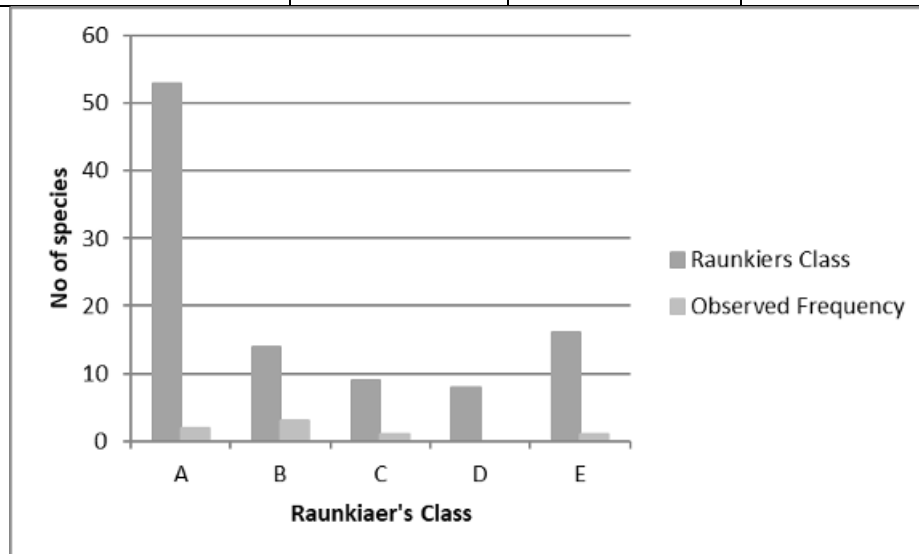
Where A>B>C>=D<E

Raunkiaer's class for the observed species

S. No.	Scientific Name	Local Name	Frequency (%)	Class as per Raunkiaer's Law
1.	Ficus Carica	Athi Maram	33.33	B
2.	Cassia siamea	ManjalKonrai	33.33	B
3.	Acacia nilotica	Karuvelai	66.67	D
4.	Bambusa vulgaris	Moongil	66.67	D
5.	Anacardium occidentale	Cashew	33.33	B
6.	Alstonia scholaris	Elilaipalai	33.33	B
7.	Psidium guajava	Guava	50.00	C
8.	Aegle marmelos	Vilvam	16.67	A
9.	Causuarina equisetifolia	Savukku	33.33	B
10.	Albizia amara	Wunja	16.67	A
11.	Cocos nucifera	Thennai	100	E

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12.	Artocarpus heterophyllus	Palaa	33.33	B
13.	Bombax ceiba	Sittan	66.67	D
14.	Azadirachta indica	Veppam	100	E
15.	Delonix regia	Cemmayir-Konrai	16.67	A
16.	Delonix elata	Perungondrai	16.67	A
17.	Dalbergia sissoo	Shisham	16.67	A
18.	Ficus benghalensis	Alai	33.33	B
19.	Annona squamosa	Sitapalam	16.67	A
20.	Pithecellobium dulce	Kodukapuli	16.67	A
21.	Ficus religiosa	Arasa maram	50.00	C
22.	Couroupita guianensis	Nagalingam	50.00	C
23.	Musa paradise	Vaazhai	50.00	C
24.	Prosopis juliflora	Vaelikaruvai	50.00	C
25.	Mangifera indica	Mamaram	100	E
26.	Mimusops elengi	Magizham	33.33	B
27.	Morinda pubescens	Nuna	100	E
28.	Thespesia populnea	Poovarasam	50.00	C
29.	Tectona grandis	Thekku	50.00	C
30.	Tamarindus indica	Puli	100	E
31.	Syzygium cumini	naval	16.67	A
32.	Carica papaya	Papaya	50.00	C
33.	Ziziphus mauritiana	Elandai	16.67	A
34.	Citrus medica	Elumichai	33.33	B



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Figure 3-10 Raunkiaer's class for the observed species

Interpretation: The observed frequency is $A < B > C > D < E$, which does not follow Raunkiaer's Distribution Frequency and hence the ecology is disturbed.

3.7.7 Floral study in the Buffer Zone:

Economically important Flora of the study area

Agricultural crops: Paddy, Maize are the main crop grown. Different fruits like Banana, papaya, mangoes, guava and vegetables like brinjal, drumsticks, onion, Coriander also grown by the local people.

Medicinal species: The nearby area is also endowed with the several medicinal species which are commonly available in the shrub forest and waste lands. The common medicinal species of the region are Asparagus racemosus (satamulli), Aegle marmelos (golden apple), Azadirachta indica (Neem) etc.

Rare and endangered floral species: There are no rare or endangered or threatened (RET) species of in the study area. During the vegetation survey, there are no any species which are endangered or threatened under IUCN (International Union for Conservation of Nature and Natural resources) guidelines.

3.7.8 Faunal Communities

Both direct and indirect observation methods were used to survey the fauna.

- Point Survey Method: Observations were made in each site for 28 minutes duration.
- Road Side Counts: The observer traveled by motor vehicles from site to site, all sightings were recorded (this was done both in the day and night time). An index of abundance of each species was also established.
- Pellet and Track Counts: All possible animal tracks and pellets were identified and recorded (South Wood, 1978).

Additionally, survey of relevant literature was also done to consolidate the list of fauna distributed in the buffer zone.

Based on the Wildlife Protection Act, 1972 (WPA 1972, Anonymous. 1991, Upadhyay 1995, Chaturvedi and Chaturvedi 1996) species were short-listed as Schedule II or I and considered herein as endangered species. Species listed in Ghosh (1994) are considered as Indian Red List species.

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Methodology Adopted:

Point Survey method was adopted for this development project where observations were made in each site for 28 minutes duration (10 times).

Study in the core zone:

Point Survey method was adopted for the study within 2 km radius and the following species were observed.

Mammals: No wild mammalian species was directly sighted during the field survey. Discussion with local villagers located around the study area also could not confirm presence of any wild animal in that area. Three striped Palm Squirrel, Common Indian Hare, Common mongoose, Common Mouse etc were observed during primary survey.

Avifauna: Since birds are considered to be the indicators for monitoring and understanding human impacts on ecological systems (Lawton, 1996) attempt was made to gather quantitative data on the avifauna by walk through survey within the entire study area and surrounding areas. From the primary survey, a total of 26 species of avifauna were identified and recorded in the study area. The diversity of avifauna from this region was found to be quite high and encouraging.

The list of fauna species found in the study area is mentioned in Table below.

Table 3-21 List of fauna species

Scientific Name	Common Name	Schedule of wild life protection act	IUCN conservation status
Mammals			
Funambulus pennanti	Palm Squirrel	IV	Least Concern
Mus rattus	Indian rat	IV	Not listed
Bandicota bengalensis	Indian mole rat	IV	Least Concern
Funambulus palmarum	Three striped palm squirrel	IV	Least Concern
Herestes edwardsii	Common Mongoose	IV	Not listed
Mus musculus	Common Mouse	IV	Least Concern
Bandicota indica	Rat	IV	Least Concern

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Lepus nigricollis	Indian Hare	IV	Least Concern
Felis catus	Cat	Not listed	Not listed
Canis lupus familiaris	Indian dog	Not listed	Not listed
Bos Indicus	Indian Cow	Not listed	Not listed
Bubalus bubalis	Buffalo	I	Not listed
Sus scrofa domesticus	Domestic pig	Not listed	Not listed
Birds			
Milvus migrans	Black kite	IV	Least concern
Saxicoloides fulicatus	Indian Robin	IV	Least concern
Pycnonotus cafer	Red vented Bulbul	IV	Least concern
Phragmaticola aedon	Thick billed warbler	IV	Least concern
Pericrocotus cinnamomeus	Small Minivet	IV	Least concern
Eudynamys scolopaceus	Koel	IV	Least concern
Psittacula krameni	Rose ringed parakeet	IV	Least concern
Dicrurus marcocercus	Black drongo	IV	Least concern
Columba livia	Rock pigeon	IV	Least concern
Corvus splendens	House crow	IV	Least concern
Alcedo atthis	Small blue kingfisher	IV	Least concern
Cuculus canorus	Common Cuckoo	IV	Least concern
Reptiles & Amphibians			
Chameleon zeylanicum	Chameleon	IV	Not listed
Calotes versicolor	Common garden lizard	II	Not listed
Bungarus caeruleus	Common krait	IV	Not listed
Ophisops leschenaultia	Snake eyed lizard	--	Not listed
Bufo melanostictus	Toad	IV	Least concern
Ptyas mucosa	Rat snakes	IV	Least concern
Hemidactylus sp.	House lizard	--	Not listed
Butterflies			

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Danaus chrysippus	Plain Tiger	--	Not listed
Papilio demoleus	Common lime	--	Not listed
Euploea core	Common crow	--	Least concern
Danaus genutia	Common tiger	--	Not listed
Eurema brigitta	Small grass yellow	--	Least concern

3.8 Demography and Socio Economics

The demography survey study is done within 10km radius from the project site. The population, Household, Sex ratio, Literacy rate, SC, ST details for all the villages in the study area is listed below:

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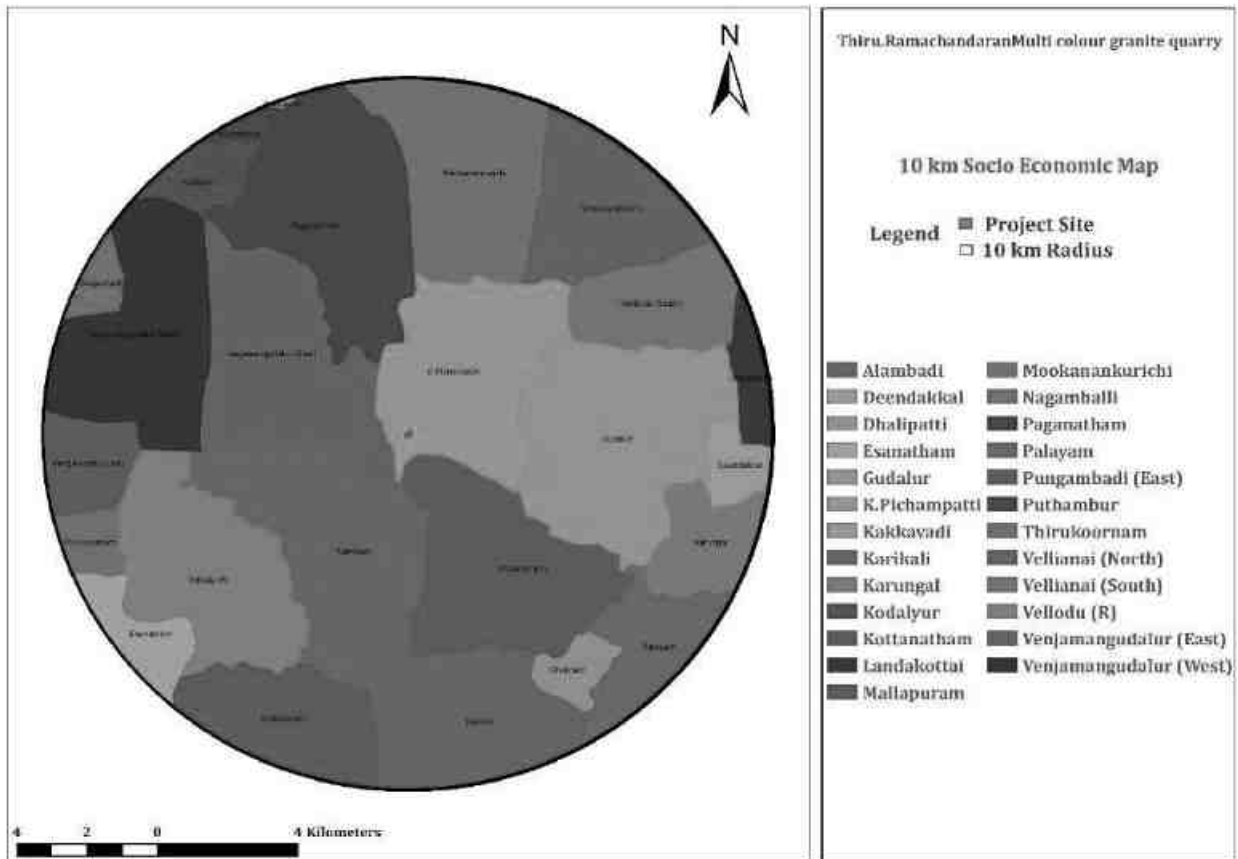


Figure 3-11 Socio Economic map around 10km radius from the project site

Table 3-22: Demography Survey Study Source: Census of India, 2011

Villages	Household	Population	Sex Ratio		Literacy Rate		SC	ST
			Male	Female	Male	Female		
Kodaiyur	914	3214	1576	1638	1273	1042	1255	0
Venjamangudalur(East)	955	3816	1896	1920	1209	815	798	0
Venjamangudalur(West)	734	2367	1198	1169	924	590	491	0
Pungambadi(East)	543	1961	1001	960	721	483	495	0
Kakkavadi	506	1614	791	823	568	369	263	0
Vellianai(north)	1952	6982	3486	3496	2669	1982	1925	9

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3.9 Traffic Impact Assessment

Traffic data collected continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., heavy motor vehicles, light motor vehicles and two/three wheelers. As traffic densities on the roads are high, two skilled persons were deployed simultaneously at each station during each shift- one person on each of the two directions for counting the traffic. At the end of each hour, fresh counting and recording was undertaken. Total numbers of vehicles per hour under the three categories were determined.

Table 3-23: No. of Vehicles per Day

S. No	Vehicles Distribution	Number of Vehicles Distribution/Day	Passenger Car Unit (PCU)	Total Number of Vehicle in PCU
		MDR-	-	MDR-
1	Cars	850	1	850
2	Buses	315	3	945
3	Trucks	321	3	963
4	Two wheelers	834	0.5	417
5	Three wheelers	318	1.5	477
Total		2638	-	3652

Table 3-24: Existing Traffic Scenario and LOS

Road	V (Volume in PCU/hr)	C (Capacity in PCU/hr)	Existing V/C Ratio	LOS
MDR	3652/24=152	460	0.33	B

Note: The existing level may be "Very Good" for MDR.

V/C	LOS	Performance
0.0-0.2	A	Excellent
0.2-0.4	B	Very Good
0.4-0.6	C	Good/ Average/ Fair
0.6-0.8	D	Poor
0.8-1.0	E	Very Poor

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4 Anticipated Environmental Impacts & Mitigation Measures

This chapter describes the anticipated impacts on the environment and mitigation measures. The method of assessment of impacts including studies carried out, modeling techniques adopted to assess the impacts where pertinent should be elaborated in this chapter. It should give the details of the impacts on the baseline parameters, both during the construction and operational phases and suggests the mitigation measures to be implemented by the proponent.

4.1 Introduction

An environmental impact is defined as any change to the environment, whether adverse or beneficial, resulting from a facility's activities, products, or services. The anticipation of the possible & potential Environmental impact due to the proposed project is a key step in EIA. Based on the impacts assessed, appropriate mitigation measures should be adopted to maintain the environment with less or no damage.

Environmental Impacts can be group into Primary impacts & Secondary Impacts

Primary Impacts: These impacts are directly attributed by the project

Secondary Impacts: These are those which are induced by primary impacts and include the associated investments and changed patterns of the social and economic activities by the action.

Assessment of impacts is done for the following Environmental Parameters:

- Land Environment
- Water Environment
- Air Environment
- Noise Environment
- Biological Environment
- Socio Economic Environment

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4.2 LAND ENVIRONMENT:

Aspect	Impact	Mitigation Measures									
<i>Mining of Granite</i>	<p>The proposed 2.84.50 Ha mine located in K.Pitchampatti Village, Multi Colour Granite of recoverable reserve of 7559 m³ at a depth of 25 m BGL for the period of five years respectively. The quarry operation is proposed to carry out with conventional open cast semi mechanized mining with 5.0 meter vertical bench and bench width of 5.0 meter. At the end of 5 years, mining lease area will be converted into ultimate pit.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="3" style="text-align: center;">ULTIMATE PIT DIMENSIONS</th> </tr> <tr> <th style="text-align: center;">Length(m)</th> <th style="text-align: center;">Width(m)</th> <th style="text-align: center;">Depth(m)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">88.0</td> <td style="text-align: center;">54.0</td> <td style="text-align: center;">25.0</td> </tr> </tbody> </table>	ULTIMATE PIT DIMENSIONS			Length(m)	Width(m)	Depth(m)	88.0	54.0	25.0	<p>The proposed project site is not prone to any kind of soil erosion (Source: Bhuvan).</p> <p>In addition, garland drainage of 1m x 1m will be provided to avoid storm water run-off.</p> <p>It is proposed to plant 270 Nos of local tree species per year (Neem, Pungam etc) along the roads, outer periphery of the mining area which enhances the binding property of the soil.</p> <p>It is proposed to improve the affected land wherever possible for better land use, so as to support vegetation and creation of water reservoir in the ultimate pit after quarrying.</p> <p>Top soil of the lease area is Nil for the next five years. Multi Colour Granite waste forms nearly 65 % of ROM and the quantity of waste in the five years will be around 14036 m³. This rejected wastes were stored in the non-mineable part of the lease area in scattered manner for the next five years. Other waste include top-soil of 4552 m³ and Weathered</p>
ULTIMATE PIT DIMENSIONS											
Length(m)	Width(m)	Depth(m)									
88.0	54.0	25.0									

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	<p>The main impact of open cast mining on land-use is land degradation. The land is bound to be excavated for mining of Multi Colour Granite Quarry.</p> <p>Impact on soil of the study area will be minimal as there are no wastewater generated, heavy metal infusion, stack emissions.</p> <p>Impact due to transformation of terrain characteristics over the large area results in soil degradation.</p> <p>Solid waste will be generated from the mining activity as there will be refuse also generation of domestic</p>	<p>granite is 16752 m³ and Side burden is 5825 m³. The generated top soil during the entire life of the quarry will be utilized for construction of bunds, road and afforestation purpose. Suitable specific trees to be grown over in such soil dumps will be identified with the help of agriculture experts to evolve proper afforestation plan. Weathered Granite will be dumped in the western side of the lease area</p> <p>The source of dust generation is majorly due to drilling, blasting (mild blasting if necessary), loading & unloading of the mined out mineral, the impact will be mitigated by water sprinkling regularly once in 3hrs.</p> <p>The proposed mining activity is carried out in almost Plain terrain.</p> <p>After removal of minerals, undulating portion will be created. Excavated area or ultimate pit at the end of the mine period will be converted into water reservoir. Two tier tree belts will be planted along the safety distance.</p>
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	waste. If it is not properly managed, may cause odor and health problem to the workers.	There will be no refuse generation due to the mining activity. Apart from that, a very meagre quantity of domestic waste will be generated in the project, which will be handed over to the local body on daily basis.
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4.3 WATER ENVIRONMENT:

Aspect	Impact	Mitigation Measures
<i>Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.</i>	<p>The mining in the area may cause ground water contamination due to intersection of the water table and mine runoff.</p> <p>The ground water depletion may occur due to mining activity</p>	<p>The water table will not be intersected during mining, as the ultimate depth is limited upto 25 meter below the ground level, whereas the ground water table is at 52 m below the ground level. The municipal wastewater will be disposed into septic tanks of 5 cum and soak pit. No chemicals consisting of toxic elements will be used for carrying out mining activity.</p> <p>The ground water table is at a depth of 52 m BGL, the mining operation will not affect the aquifer. The ultimate pit at the end of the mining operation will be used for rain water storage, the stored water will be used for green belt development and further the stored water will</p>

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	<p>Chemicals consisting of nitrate used for blasting (if necessary) may pollute the surface run off.</p> <p>Improper management of Domestic wastewater in the Mine lease may create unhygienic conditions in the site thereby causing health impacts to the labours.</p>	<p>be used for domestic purposes (other than drinking) after proper treatment.</p> <p>Further, the run-off water will be stored in sumps and after proper treatment; water will be used in the mining operation for dust suppression.</p> <p>Provision of urinals/Latrines along with septic tank followed by soak pit arrangement will be provided in the Mine Lease area for the proper management of wastewater</p>
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4.4 AIR ENVIRONMENT:

Aspect	Impact	Mitigation Measures
<i>Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.</i>	<p><i>Impacts during Operation Phase</i></p> <p>During mining operation, fugitive dust and other air pollutants like particulate matter (PM10 & PM 2.5) will be generated.</p> <p>The main source of pollutants arises due to drilling and blasting. 2 No of Tipper will be used for loading</p>	<p><i>Mitigation Measures during Operation Phase</i></p> <p>It is proposed to plant 1350 Nos of local species (with 60 Nos each year) along the haul roads, outer periphery within the lease area to prevent the impact of dust in consultation with Forest department for the plantation of trees (Neem)</p>

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	<p>and unloading, 1 No of Excavator (1.2 m³ bucket capacity (with rock breaker attachment) will be used for excavation of the mineral which contributes to the generation of fugitive dust. In addition, blasting will be done using explosives leading to the generation of dust.</p> <p><u><i>Effect on Human</i></u></p> <ul style="list-style-type: none"> • Adverse effect on human health of working labourers and neighbouring villagers like effect on breathing and respiratory system, damage to lung tissue, influenza or asthma. • Dust generation due to loading and unloading of mineral and due to transportation can also affect the workers as well as nearby villagers. 	<p>in two tier to combat air pollution and with herbs (Nerium) in between the tree species.</p> <p>Planning transportation routes of the mined out mineral, so as to reach the nearest paved roads (an approach road) by shortest route connecting to MDR-588.</p> <p>Alternatively, gravelled road may be constructed between mine lease area and nearest paved road connectivity. The speed of trucks plying on the haul road will be limited to 20km/hr to avoid generation of dust.</p> <p>The trucks will be covered by tarpaulin.</p> <p>Overloading will be avoided.</p> <p>Personal Protective Equipments (PPEs) like eye goggles, dust mask, leather gloves, safety shoes & boots will be provided to the workers engaged at dust generation points like excavation and loading points.</p>
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	<u><i>Effect on Plants</i></u> <ul style="list-style-type: none"> • Stomatal index may be minimized due to dust deposit on leaf. 	<p>1.0 KLD of water will be proposed for sprinkling on unpaved roads to avoid dust generation during transportation.</p>
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Air Quality Modeling:

The AERMOD is actually a modeling system with three separate components:

- AERMOD (AERMIC Dispersion Model),
- AERMAP (AERMOD Terrain Preprocessor)
- AERMET (AERMOD Meteorological Preprocessor)

Special features of AERMOD include its ability to treat the vertical inhomogeneity of the planetary boundary layer special treatment of surface releases, irregularly shaped area sources, a plume model for the convective boundary layer, limitation of vertical mixing in the stable boundary layer, and fixing the reflecting surface at the stack base.

The AERMET is the meteorological preprocessor for the AERMOD. Input data can come from hourly cloud cover observations, surface meteorological observations and twice-a-day upper air soundings. Output includes surface meteorological observations and parameters and vertical profiles of several atmospheric parameters.

The AERMAP is a terrain preprocessor designed to simplify and standardize the input of terrain data for the AERMOD. Input data include receptor terrain elevation data. Output includes, for each receptor, location and height scale, which are elevations used for the computation of airflow around hills.

4.4.1 Source Characterization

A detailed listing of all emission sources and their corresponding modelling input release parameters and emission rates is listed in this report. A general description of how each source type was treated is presented below.

The emission Sources from the proposed operation are

Point Sources:

Point sources for mining operations are typically include dust collectors, hot water heaters, and emergency generator(s). Since at the present project the following sources are anticipated.

1. Hydraulic excavator – 1.2 Cum Bucket Capacity (with Rock Breaker Attachment)
2. Jack Hammer 25.5mm Dia
3. Tipper

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4. Tractor Mounted - Compressor
5. Drilling and excavation with Accessories

Road Sources:

A road network was developed to depict the anticipated haul truck routes and truck discharge locations during the mine operations. The anticipated emissions from the road sources and corresponding anticipated impact during the monitoring period of July to September 2022 emissions were estimated. Emissions due to haul road and general plant traffic on the unpaved road network were modelled as volume sources. The model volume source parameter for the haul roads initially utilized USEPA developed emission factors for hauling trucking. The haul road sources utilized source to source spacing of 6 meters along the simulated haul roads. The initial lateral dimension of the sources were set to 3 m were used as an input to replicated a 2 truck travel adjacent for a typical mining scenario.

The parameters considered for the hauling operation include the following,

- size of haul trucks commonly used
- degree of dust control/compaction of permanent haul roads

Other fugitive particulate emission sources:

Other fugitive particulate emission sources that were modelled as volume sources include the following:

- Fugitive emissions from trucks unloading at the primary crusher were represented by a single volume source. The release height was set to 0 meters (dump pocket is at grade level).
- Fugitive emissions due to wind erosion is not considered as the mining area is predominately rocky surface with minimal wind erosion. If an wind erosion is anticipated to occur, it would be localized.
- Fugitive emissions from transfer points were represented by single volume sources. The release heights for these sources were set to the actual height of the truck transfer process.

Post Project Scenario

Emissions from operations will result from process equipment and mining operations. Process equipment was modeled at maximum capacity. Emissions from mining were based

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upon the mining rate and haul truck travel necessary to transport the stones and waste from the pit to the storage area.

Predicted maximum ground level concentrations considering micro meteorological data of July to September 2022 are superimposed on the maximum baseline concentrations obtained during the study period to estimate the post project scenario, which would prevail at the post operational phase. The overall scenario with predicted concentrations over the maximum baseline concentrations is shown in the following table along with isopleths.

4.5 NOISE ENVIRONMENT:

Aspect	Impact	Mitigation Measures
<i>Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.</i>	<p>Usage of Equipments (Excavator, Tipper, Jack Hammer), Machinery and trucks used for transportation will generate noise.</p> <p>Noise from the machinery can cause hypertension, high stress level, hearing loss, sleep disturbance etc due to prolonged exposure.</p> <p>Number of vehicles will be increased due to the proposed mining activity hence vehicle may collate which may result in</p>	<ul style="list-style-type: none"> • The machinery will be maintained in good running condition so that noise will be reduced to minimum possible level. • Awareness will be imparted to the workers once in six months about the permissible noise level and effect of maximum exposure to those levels. Adequate silencers will be provided in all the diesel engines of vehicles. • It will be ensured that all transportation vehicles carry a valid PUC Certificates. • Speed of trucks entering or leaving the mine will be limited to moderate speed (20km/hr)

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	<p>unwanted sound and can also cause impact on human health like breathing and respiratory system, damage to lung tissue, influenza or asthma.</p>	<p>to prevent undue noise from empty vehicles.</p> <p>The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments.</p> <ul style="list-style-type: none"> • It is proposed to plant 300 Nos. of local species (Neem) to reduce the impact of noise in the study area. The development of green belts around the periphery of the mine will be implemented to attenuate noise. • The trucks will be diverted on two roads viz. MDR-588 and a District road to avoid traffic congestion. • Health check-up camps will be organized once in six month. • Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas. • Provision of quiet areas, where employees can get relief from workplace noise.
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4.6 BIOLOGICAL ENVIRONMENT:

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Aspect	Impacts	Mitigation Measures
Site Clearance	Loss of habitat due to site clearance which may lead to ecological disturbance.	The proposed mining lease is already a dry land hence no site clearance is required. Only few shrubs and herbs like parthenium sp., prosopis juliflora were present.
Planting of trees	Development of afforestation in the mine lease area will have a positive impact as the land was initially a barren.	7.5m safety distance will be provided all along the boundary of the mine lease area and safety. Around 0.27 Ha of land is utilized for greenbelt development (1350 Nos - 5 years). This will attract avifauna thus enhancing the existing ecological environment.

4.7 SOCIO ECONOMIC ENVIRONMENT:

Aspect	Impact	Mitigation Measures
Proposed implementation of Mining activity	Land acquisition for the implementation of the project may result in loss of assets, which in return will make the PAP to shift, losing their normal routine and livelihood	The proposed project is a Consent Patta Land and the land is vacant where there are no human settlement within 500m radius. Hence the project does not involve Rehabilitation and resettlement
Drilling, Blasting, Loading and Transportation	The mining activities may cause dust emission, noise pollution thereby causing disturbance to the local habitat	No human activity is envisaged near the project site. The nearest human settlement is observed in K.Pitchampatti village which is 3 km-W away from the project site.

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of the mined out mineral		
Grazing and Rearing activities in the nearby villages	The Grazing and rearing of local animals like Sheep, Goat and cows is observed in the nearby villages, which may be affected due to the project as the movement of the vehicles may affect/injure the animals	It is proposed to use gravelled road and nearest paved road and preferred not to use unpaved roads. In addition to that, the speed of trucks will be limited to 20km/hr to avoid any accidents.
Employment opportunity	The project will improve the livelihood of the local people	After the development of the proposed mine, it will improve the livelihood of local people and also provide the direct and indirect employment opportunities. The Multi Colour Granite building stone for the infrastructural development in the area will be made available from the local markets at reasonably lower price.
Corporate Environmental Responsibility	The proposed project will help in natural resource augmentation & Community resource development.	As a part of CER, 5 Lakhs will be allocated. Developing the library, Sports/Drinking water facilities in nearby school.

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4.8 Other Impacts:

S. No	Aspect	Impact	Mitigation measure
1.	Risk due to the proposed mining	Accidents may occur in the mine area	Proper PPE kit (Safety jacket, Helmet, Safety Shoes, Gloves) etc will be provided to each and every employee in the mine lease concerning the safety of each labor
2.	Blasting	Injury to the labours due to the blasting activity	Alarm system in the form of Siren will be engaged in the project site to caution the blasting activity. In addition to that, the blasting activity (if necessary) will be scheduled at particular time – 5 P.M to 6 P.M (or whenever required) so that the employees will be aware of the activity. Smoking will be banned in the site and sign boards will be displayed in various places at site.
3.	Screening of Labors	Labors will be checked for health condition before employing them in mining activity	All the labors will be checked and screened for health before employing them. After employing them, periodical medical checkups will be held once in every six months.

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5 Analysis Of Alternatives

5.1 General

Analysis of alternative is a significant aspect in planning and designing any project. Cost benefit analysis should be work out along with other parameters while choosing an alternative in such a way that the production is maximum and the mining operation is environment friendly and cost effective. The first scheme of mining plan has been approved by the Commissionerate of Geology and Mining, Guindy prior to submission of the Form-1 and PFR.

ToR issued by the SEIAA-TN vide Letter No. SEIAA-TN/F.No.9616/SEAC/ToR-1327/2023 dt. 10.02.2023. The study for alternative analysis involves in-depth examination of site and technology.

5.1.1 Analysis for Alternative Sites and Mining Technology

5.1.1.1 Alternative Site

The proposed project is the mining of Multi Colour Granite Quarry and is proposed after prospecting the area. In other words, these can be implemented in the mineral available zone. Since the mining block has been allotted in principal by the State Government, there is no case for studying and exploring any other site as an alternative.

5.1.1.2 Alternative Technology

The open cast mining could be manual/semi-mechanized/mechanized depending upon the geological and topographical setup of the mineral (ROM) to be won and the daily/annual targeted production.

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Table 5-1: Alternative for Technology and other Parameters

S. No.	Particular	Alternative Option 1	Alternative Option 2	Remarks
1.	Technology	Opencast semi mechanized mining	Opencast mechanized mining	Opencast semi mechanized Involving drilling and blasting are preferred. Benefits: Material is hard so to make it loose and to bring it to appropriate size.
2.	Employment	Local employment.	Outsource employment	Local employment is preferred Benefits: Provides employment to local people along with financial benefits No residential building/ housing is required.
3.	Labour transportation	Public transport	Private transport	Local labours will be deployed from K.Pitchampatti village so they will either reach mine site by bicycle or by foot. Benefits: Cost of transportation of labors will be negligible
4.	Material transportation	Public transport	Private transport	Material will be transported through trucks/trolleys on the contract basis Benefits: It will give indirect employment.
5.	Water	Tanker supplier	Ground water	Tanker supply will be preferred. Water will be sourced from K.Pitchampatti Village which is located in 3 km in North side from the project site.

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6. Environmental Monitoring Program

6.1 General:

This chapter covers the planned environmental monitoring program. It also includes the technical aspects of monitoring the effectiveness of mitigation measures.

Monitoring is important to measure the efficiency of control measures. Post project monitoring of environmental parameters is of key importance to assess the status of environment. The monitoring program will serve as an indicator for identifying environmental degradation due to operation of the project and help in selection of appropriate mitigation measures to safeguard the environment.

Regular monitoring is as important as control of pollution since the efficacy of control measures can only be determined by monitoring. The project proponent has awarded **M/s. Ecotech Labs Pvt. Ltd.** for carrying out the post project environmental monitoring (PPM) and timely compliance report submission to various regulatory authorities.

Therefore, regular monitoring programme of the environmental parameters is essential to take into account the changes in the environmental quality. The objectives of monitoring are to:-

- Verify effectiveness of planning decisions;
- Measure effectiveness of operational procedures;
- Confirm statutory and corporate compliance; and
- Identify unexpected changes.

Table 6-1: Environmental Monitoring Programme

Parameters	Sampling	Frequency	Location
Air environment - Pollutants PM 10 PM 2.5	5 locations	24 hourly twice a week 4 hourly.	Project Site, Karuppusamy Temple K.Pitchampatti,

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SO ₂ NO _x Lead in PM		Twice a week, One non monsoon season 8 hourly, twice a week 24 hourly, twice a week	Chettinad Rani Meyammai Matric School, Alambadi, Government Park and Gym, Venjamangudalur East, Sri Shivalaya Maligai Store, Gudalur
Noise	5 locations	24 hourly Once in 5 locations	Project Site, Karuppusamy Temple K.Pitchampatti, Chettinad Rani Meyammai Matric School, Alambadi, Government Park and Gym, Venjamangudalur East, Sri Shivalaya Maligai Store, Gudalur
Water (Ground water) <ul style="list-style-type: none"> • pH • Temperature • Turbidity • Magnesium Hardness • Total Alkalinity • Chloride • Sulphate • Fluoride • Nitrate • Sodium • Potassium • Salinity 	5 locations	Once in 5 locations	Project Site, Karuppusamy Temple K.Pitchampatti, Chettinad Rani Meyammai Matric School, Alambadi, Government Park and Gym, Venjamangudalur East, Sri Shivalaya Maligai

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<ul style="list-style-type: none"> • Total nitrogen • Total Coliforms • Fecal Coliforms 			Store, Gudalur
<p>Water (surface water)</p> <ul style="list-style-type: none"> • pH • Temperature • Turbidity • Magnesium Hardness • Total Alkalinity • Chloride • Sulphate • Fluoride • Nitrate • Sodium • Potassium • Salinity • Total nitrogen • Total Coliforms • Fecal Coliforms 	Sample from nearby lakes/river	One time Sampling	
<p>Soil (Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)</p>	5 locations	Once in 5 locations	Project Site, Karuppusamy Temple K.Pitchampatti, Chettinad Rani Meyammai Matric School, Alambadi, Government Park and Gym, Venjamangudalur East, Sri Shivalaya Maligai Store, Gudalur
Ecology and biodiversity Study	Study area covering 5 km radius	One time Sampling	

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Socio- Economic study (Population, Literacy Level, employment, Infrastructure like school, hospitals & commercial establishments)	Villages around 5 km radius	One time Sampling	
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Table 6-2: Monitoring Schedule during Mining

S. No.	Attributes	Parameters	Frequency	Location
1.	Ambient Air Quality at Mine Site & Fugitive Dust Sampling	PM 10 PM 2.5 SO ₂ NO _x	Once in a Month	Project Site
2.	Ground water Quality	Drinking Water Parameters, As per IS - 10500: 2012	Half yearly	Project Site
3.	Surface Water Quality	Class will be assessed as per the CPCB Guidelines	Half yearly	Project Site
4.	Soil Quality	(Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)	Half yearly	Project Site
5.	Noise Level Monitoring	Noise level in dB(A) Quarterly/half yearly	Half yearly	Project Site

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7 Additional Studies

7.1 General

This chapter covers the details of the additional studies viz. Risk assessment, Disaster Management, Public Hearing, Rehabilitation and Resettlement.

7.1.1 Public Hearing:

As the proposed mining project falls under 1(a), Category B1 – Cluster Mining

1) Existing quarries:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent
1	Thiru.P.Ramachandran	K.Pitchampatti Village and Karur Taluk	407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P)	2.84.5 Ha
2	Tvl.Ananta Granites LLP	K.Pitchampatti Village and Karur Taluk	468/1B (P), 417/8, 468/2	2.22.5 Ha

2) Abandoned/Old quarries:

S. No.	Name of the applicant	Village & Taluk	S. F. No.	Extent
Nil				

3) Details of Proposed/Applied quarries:

S. No.	Name of the lessee / Permit Holder	Village & Taluk	S. F. No.	Extent	Lease Period
1.	M/s Dahlia Granites Pvt Ltd	K.Pitchampatti Village and Karur Taluk	417/2, 417/5, 417/7 (P), 454/2	2.65.0	Proposed Area
2.	Smt.P.Sujeetha	K.Pitchampatti Village and Karur Taluk	404/1(P), 404/2(P), 404/3(P), 404/4(P), 404/5(P), 404/6(P), 404/7(P), 404/8,	1.80.0	--

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			405/1, 405/2, 405/3(P), 405/4, 405/5(P), 405/6A(P)		
				9.52.0	

The Total extent of the Existing / Lease expired / Proposed quarries are 9.52.0 Ha

Hence under 7(III) of EIA notification 2006 and its subsequent amendments, the project involves the Public Consultation and the same will be conducted under SPCB (TN) in Virudhunagar District. The proceedings of the same will be incorporated in the Final EIA Report

7.1.2 Risk assessment:

For mining projects to be successful, it should meet not only the production requirements, but also maintain the highest safety standards for all the workers. The industry has to identify the hazards, assess the associated risks and bring the risks to tolerable level regularly. Mining has considerable safety risk to miners. Unsafe conditions and practices in mines lead to a number of accidents and causes loss and injury to human lives, damages the property, interrupt production etc. Risk assessment is a systematic method of identifying and analyzing the hazards associated with an activity and establishing a level of risk. The hazards cannot be completely eliminated, and thus there is a need to define and estimate an accident risk level possible to be presented either in quantitative or qualitative way.

7.1.3 Identification of Hazard

7.1.3.1 Blasting Pattern:

The quarrying operation will be carried out by Opencast Semi Mechanized method in conjunction with conventional method of mining using Jack Hammer drilling and blasting (if necessary) for shattering effect and loosen the Granite.

7.1.3.2 Drilling and Blasting:

Drilling and Blasting parameters are as follows:

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S.No	Type	Nos	Dia Hole mm	Size Capacity	Make	Motive power
1	Jack hammer Accessories	3	35	1.2m to 6m	Atlas Copco	Compressed air
2	Compressor	1	7.5kgs/cm2	400 psi	ELGI	Diesel Drive
3	Diamond wire saw	1	-	30m3/Day	Optima	Diesel Generator
4	Gen set	1	-	Powerica	-	CP 125 D5P (H.P)
5	Excavator	1	-	1.7m3	Tata Hitach	Diesel Drive
6	Tippers	2	-	10 tonnes	Tata	Diesel Drive

Heavy Machineries: The following heavy machineries will be used in the proposed area:

- For Mining – Excavator of 1.2 Cum Bucket capacity (with Rock Breaker attachment), Jack Hammers (25.5 mm Dia) of 3Nos.
- Loading Equipment – Excavator of 1.2 Cum Bucket Capacity (with Bucket attachment)
- Transportation (includes within the mine and mine to destination) – Tipper 2 No of 10 M.T capacity (from quarry to needy peoples and local crushers)

a. Risk:

Most of the accidents during transport of mined out mineral using other heavy vehicles are often attributed to mechanical failures and human errors.

b. Mitigation measures to minimize the risk

- At the time of loading no person will be allowed within the swing radius of the excavation.
- The dumpers/ trucks will stand near the loading equipment and fully braked when the muck is filled in it.
- The truck would be brought to a lower level so that the loading operation suits to the ergonomic condition of the workers.
- The workers will be provided with helmets, gloves and safety boots; loading and unloading operations will be carried out only during daylight

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- All the mining machineries will be regularly maintained and checked such as brakes, lights and horns to keep in the efficient working order.

7.1.4 General Precautionary measures for the Risk involved in the proposed mine:

- In order to take care of above hazard/disaster, the following control measures will be adopted:
- All safety precautions and provisions of Mine Act,1952, Metalliferous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations;
- Entry of unauthorized persons will be prohibited;
- Firefighting and first-aid provisions in the ECC and mining area;
- Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the workers (18 Nos.) and regular inspection for their use;
- In case of eventuality, first aid will be given by the senior safety office in the mine area initially to the injured person. The safety officer will give notice of accident as per Rule-23 of Mines Act-1952;
- The safety officer will be responsible for coordination between management district authorities/DGMS etc. Regarding general safety as per Rule-181 of MMR 1961, "No person shall negligently or will fully do anything likely to endanger life or limb in the mine, or negligible or will fully omit to do anything necessary for the safety of the mine or of the persons employed there in". The workers will be provided with protective foot wear and safety helmets;
- Cleaning of mine faces will be regularly done;
- Handling of explosives, charging and blasting will be carried out by highly skilled labours only;
- Regular maintenance and testing of all mining equipment as per manufacturer's guidelines;
- Suppression of dust by sprinkling water on the haulage roads;

7.1.5 Safety Team:

The effective implementation of compliance of Safety Rules/ Statutory Provisions will be ensured. The safety officer will be engaged, meeting the requirement of Mines Act and their duties and

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responsibilities. The safety officer will be responsible for identification of the hazardous conditions and unsafe acts of workers and advice on corrective actions, conduct safety audit, organize training programs and provide professional expert advice on various issues related to occupational safety and health. Organizing safety training will be conducted to employees and contractor labors periodically.

7.1.6 Emergency Control Centre

The emergency control center will be provided to handle the emergency. The site main controller, key personnel and the senior officers of the fire and police services will attend it. The center will be equipped to receive and transmit information and directions from and to the incident controller and other areas of the works, as well as outside. The emergency control center will be sited in an area of minimum risk. This common Emergency control centre will be used for the mines around the 500m radius

7.2 Disaster Management:

The possible risks in the case of stone along with associated minor minerals mining projects are fly rock, vibration failure of pit, slope and waste dump, accidents due to transportation. Mining and allied activities are associated with several potential hazards to both the employees and the public at large. Safety of the mine and the employees is taken care of by the mining rules & regulations, which are well defined with laid down procedure for safety, which when scrupulously followed, safety is ensured not only to manpower but also to machines & working environment.

7.2.1 Emergency Management Plan For Proposed Mines On Site- Offsite Emergency Preparedness Plan:

The emergency plan delineates the procedures for dealing with accidents or unexpected events and natural calamities arising from mining activity. An experience of any accidents that have occurred in other manufacturing/mining projects is considered to prepare this plan. This Emergency plan should be periodically reviewed and modified. It should also be changed based on the observations of emergency mock drills and experience of handling actual emergencies.

Major objectives of this onsite – offsite emergency plan are:

- To take necessary proactive and preventive actions to avoid the emergency.

The main aim of any emergency plan should be to prevent emergency situations.

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To train the manpower to handle the emergencies of the following nature:

- Onsite (Within ML boundary)
- Offsite (Outside ML boundary)

7.2.2 Onsite off-site emergency Plan:

1- Emergency on account of:

- Fire
- Explosion
- Major accidents involving man-made collapse of the mining edges.
- Snake bites, attack by honey bees or attack by wild animals.

2- Disaster due to natural calamities like:

- Flood/ heavy rains which can involve natural landslides.
- Earth quake
- Cyclone
- Lightening

7.2.3 Emergency Plan:

- The mining operations should be immediately stopped in case of any emergency. A siren will be sounded during emergency time.
- An emergency assembly point will be created and all the workers will guide visitors or contractors to approach assembly point.
- Emergency vehicle (Ambulance) will be available in the nearby place, in proximity to the three mines and will rush to the emergency control centre at the blowing of emergency siren. The driver of emergency vehicle will follow the instructions of Incident Controller/Site Main Controller.
- Workers will be trained for the precautions to be taken during natural disasters like heavy rain, floods, earthquake and cyclone.
- All escape routes from mines to the assembly point or any other safe location will be made and the escape plan will be displayed in many places in the mine area

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7.2.4 Emergency Control:

- Shut down of mining operations: Raising the alarm or siren followed by immediate safe shut down of the power supply, and isolation of affected areas.
- Treatment of injured: First aid and hospitalization of injured persons
- Protection of environment and property: During mitigation, efforts will be made to prevent impacts on environment and property to the extent possible.
- Preserving all evidences and records: This will be done to enable a thorough investigation of the true causes of the emergency.
- Ensuring safety of personnel prior to restarting of operations: Efforts required will be made to ensure that work environment is safe prior to restarting the work.

7.3 Natural Resource Conservation

There are no natural resources within the premises. The conservation strategies for energy will be followed in the proposed mine lease area. The pollutants of the mine will be minimized by adopting appropriate mitigation measures as mentioned Chapter 5 to prevent the effects on nearest water bodies. No surface runoff from the project site will be let into the nearest water bodies.

7.4 Resettlement and Rehabilitation:

The proposed Mine lease area is not habitated. There is no displacement of the population within the project area and adjacent nearby area and hence Rehabilitation & Resettlement is not applicable.

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8 Project Benefits

8.1 General

This chapter covers the benefits accruing to the locality, neighborhood, region and nation as a whole. It brings out the details of benefits by way of improvements in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

8.1.1 Physical Benefits

The opening of the proposed project will enhance the following physical infrastructure facilities in the adjoining areas:

- a. Market:** Generating useful economical resource for construction. Due to demand supply chain, excavated mineral (Multi Colour Granite) will sold in the market in the affordable price.
- b. Infrastructure:** The excavated Multi Colour Granite will be used for ***Building & Construction Projects.***
- c. Enhancement of Green Cover & Green Belt Development:** As a part of reclamation plan, native tree species will be planted along the safety boundary (0.32.0 Ha) of the mine lease area. A suitable combination of trees that can grow fast and also have good leaf cover will be adopted to develop the green belt. It is proposed to plant 60 numbers of native species along with some fruit bearing and medicinal trees during the mining plan period.

8.2 Social Benefits

The mining in the area will create rural employment. During site visit, it has been observed that the economic conditions of the villages in the study area is quite normal. After the development of the proposed mine, it will improve the livelihood of local people and also provide the indirect employment opportunities. The granite for the infrastructural development in the area will be made available from the local markets at reasonably lower price.

As a part of CER, 5.00 Lakhs will be allocated. The detailed agenda, which is to be executed has been framed. The salient features of the programme are as follows:

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Activity:

Provision of

- Solar powered Smart Classroom,
- Solar lights to the School,
- Environmental Awareness related books to the school library,
- Basic amenities such as safe Drinking Water, Hygienic Toilet facilities.

Greenbelt development in and around the school

8.3 Project Cost / Investment Details

(a) Fixed Asset Cost :

SL.No	Description	Amount (Rs)
1	Land cost	30,00,000
2	Labour shed	1,20,000
3	Sanitary facility	70,000
4	Fencing cost	1,60,000
Total		33,50,000

(b) Operational Cost:

SL.No	Description	Approximate Amount (Rs)
1	Excavator	55,00,000
2	Tippers	20,00,000
3	Wire saw	10,00,000
4	Compressor with loose tools	10,00,000
Total		95,00,000

(c) EMP Cost :

SL.No	Description	Approximate Amount (Rs)
1	Drinking water facility	1,00,000
2	Safety kits	80,000
3	Water sprinkling	50,000

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4	Afforestation	30,000
5	Water quality test	40,000
6	Air quality test	40,000
7	Noise / Vibration test	40,000
Total		3,80,000

GRAND TOTAL PROJECT COST = Rs. 1,32,30,000/-

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9 Environmental Cost Benefit Analysis

Not Applicable, Since Environmental Cost Benefit Analysis not recommended at the Scoping stage.

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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

10 Environmental Management Plan

10.1 Introduction

This chapter comprehensively presents the Environmental Management Plan (EMP), which includes the administrative and technical setup, summary matrix of EMP, the cost involved to implement the EMP, during various Mining activities and provisions made towards the same in the cost estimates of project. This chapter describes the proposed monitoring scheme as well as inter-organizational arrangements for effective implementation of the mitigation measures.

10.2 Subsidence

Mining will be carried out by opencast semi mechanized mining method as per scheme of mining plan approved by Commissionerate of Geology and Mining, Guindy. Subsidence/slope failures are not envisaged because there are no loose strata overlying the deposit (mineral to be excavated). The bench height will be average 5m. The individual bench slope has been proposed to be kept at 60° from horizontal. Moreover, all safety standards/ safeguards will be implemented as per guidelines prescribed by Director General of Mines Safety.

10.3 Mine Drainage

10.3.1 Storm water Management

The following measures will be taken with respect to the prevailing site conditions.

- Storm water drains with silt traps of size 1m x 1m will be suitably constructed all along the periphery of the pit area to collect the run-off from the mine area and divert into the pit.
- All measures will be taken not to disturb the existing drainage pattern adjacent to the mine lease area.
- The storm water collected from the mine area will be utilized for dust suppression on haul roads, plantation within the premises, etc.,

10.3.2 Drainage

Local workers will be deployed for the project. But, urinals and Latrines will be provided and the same will be connected to septic tank followed by soak pit arrangement. No domestic waste will be deposited into the nearby area. Regular checking will be carried out to find any blockage due to

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Final EIA Report</i>
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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

silting or accumulation of loose materials. The drains will also be checked for any damage in lining / stone pitching, etc.

10.3.3 Administrative and Technical Setup

The Environment Management Plan (EMP) will consist of all mitigation measures for each component of the environment due to the activities increased during mining operation to minimize adverse environmental impacts resulting from the activities of the project.

To carry out the above activities, Thiru.P.Ramachandran will work in association with M/s. Ecotech Labs Pvt Ltd.

Project Name	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Final EIA Report</i>
Project Proponent	<i>Thiru.P.Ramachandran</i>	
Project Location	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

Table 10-1: Impacts and mitigation measures

S. No	Impacts on Environment	Activity /Aspect	Anticipated impacts	Mitigation measures	Budgetary Allocation
1.	Air	Fugitive Emission	During mining operation, fugitive dust and other air pollutants like particulate matter (PM10 & PM 2.5) will be generated.	<ul style="list-style-type: none"> Planting of trees along the safety distance of the Mine Lease Area Water will be sprinkled in the site as dust suppression measure. 	Rs.50,000 Rs.1,50,000
2.	Water	Wastewater Generation	Improper management of Domestic wastewater in the Mine lease may create unhygienic conditions in the site thereby causing health impacts to the labors	<ul style="list-style-type: none"> Provision of urinals/Latrines along with septic tank followed by soak pit arrangement will be provided in the Mine Lease area for the proper management of wastewater. 	Rs.55,000
3.	Noise	Mining activities like drilling, blasting, loading and transportation	Noise from the machinery can cause hypertension, high stress level, hearing loss, sleep disturbance etc due to prolonged exposure. Apart from Mining activities like drilling, blasting may generate noise	<ul style="list-style-type: none"> Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas. 	Rs.10,000

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4.	Land	Improper management of Storm water Runoff	Storm water Runoff may result in Soil Erosion	<ul style="list-style-type: none"> Garland drainage of 1m x 1m will be provided to avoid storm water run-off. 	Rs.1,00,000
5.	Social Responsibility	Mining workers	Unhygienic site sanitation facilities may cause health damage to workers.	<p>The objective is to ensure health and safety of the workers with effective provisions for the basic facilities of sanitation, drinking water, safety of equipments or machinery etc. The following will be done in the site</p> <ul style="list-style-type: none"> ✓ By complying with the safety procedures, norms and guidelines (as applicable) as outlined in the National Building Code of India, Bureau of Indian Standards. ✓ Provide adequate number of decentralized latrines and urinals ✓ Providing Septic tank along with Soak pit arrangement ✓ Providing First Aid room, conducting frequent health checkups to labor and conducting free medical camps ✓ Providing safety helmet, Gloves, Jacket & Boots ✓ Providing measures to prevent fires. Fire fighting extinguishers and buckets of sand 	<p>Rs.25,000</p> <p>Rs.30,000</p> <p>Rs.1,00,000</p> <p>Rs.36,000</p> <p>Rs.50,000</p>

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				will be provided in the construction site	
6.	Building materials resource conservation	Building Material consumption	Use of farfetched construction materials than the locally available construction materials may lead to over exploitation of natural resources & increase in carbon footprint.	<ul style="list-style-type: none"> • Use of locally available construction materials. 	

Table 10-2: Budgetary Allocation for EMP during Mining

S. No.	Description	Budgetary Allocation (in Rs.)
1.	EMP COST	
i.	Drinking water facility	1,50,000
ii.	Safety Kits	80,000
iii.	Water Sprinkling	60,000
iv.	Afforestation	25,000
2.	Environmental Monitoring	
i.	Air Quality Monitoring	30,000
ii.	Water Quality Monitoring	30,000
iii.	Noise/Vibration Monitoring	30,000
Total Cost		4,05,000

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Final EIA Report</i>
<i>Project Proponent</i>	<i>Thiru.P.Ramachandran</i>	
<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

11 Summary & Conclusion

This chapter summarizes the overall justification for implementation of the project and explains how the potential impacts are mitigated.

11.1 Introduction

P.Ramachandran site is a cluster of three mining project. The individual mine lease area is 2.84.50 Ha of Multi Colour Granite Quarry located at S.No. 407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P) of K.Pitchampatti Village, Karur taluk in Karur District.

11.2 Project Overview

Table 11-1: Project Overview

S. No.	Description	Details
1	Project Name	Proposed Multi Colour Granite Quarry- 2.84.50 Ha
2	Proponent	Thiru.P.Ramachandran
3	Mining Lease Area Extent	2.84.50 Ha
4	Location	S.F.No. 407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P), K.Pitchampatti Village, Karur taluk, Karur District.
5	Latitude	10° 46' 54.76"N to 10° 46' 47.80"N
6	Longitude	78° 04' 07.23"E to 78° 04' 15.25"E
7	Topography	Plain terrain
8	Site Elevation above MSL	216 m from MSL
9	Topo sheet No.	58 J/1
10	Minerals of Mine	Multi Colour Granite
11	Proposed production of Mine	Proposed capacity of Multi Colour Granite : 21595 m ³ Recoverable Reserve of Multi Colour Granite : 7995 m ³
12	Ultimate depth of Mining	25 m below ground level
13	Method of Mining	Open cast, mechanized mining
14	Water demand	2.0 KLD

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Final EIA Report</i>
<i>Project Proponent</i>	<i>Thiru.P.Ramachandran</i>	
<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

15	Source of water	Water will be supplied through tankers supply and drinking water will be purchased from vendors
16	Man power	Direct :11 nos, Indirect :9 nos
17	Mining Lease	The Lessee had obtained lease for quarrying granite vide Government Order.(3D) No. 37, Industries (MMB.2) Department dated 19.07.2016 for a period of twenty years and the lease deed was executed on 05.08.2016 and the lease will expire on 04.08.2036.
18	Mining Plan Approval	The Mining Plan was approved by Director of Geology and Mining, Guindy, Chennai-32 vide letter No. 503/MM2/2016 dated 16.02.2016. The lessee has obtained Environmental clearance from SEIAA-TN vide letter no. Lr.No.SEIAA TN/ F.No.5073 /1(a) /EC.No.3293 /2016 dated 11.07.2016. The 1st scheme of mining for the period from 05.08.2021-04.08.2022 to 05.08.2025-04.08.2026 is now being prepared and submitted under rule 18(2) of GCDR 1999 for approval on 29.03.2021.
19	Production details	Geological reserves of Multi Colour Granite : 98680 m³ Proposed year wise recoverable reserves of Multi Colour Granite : 21595 m ³ (Multi Colour Granite Recovery @ 35% for first five years – 7559 m ³ and Granite Waste @ 65% - 14036 m ³)
20	Boundary Fencing	7.5m barrier all along the boundary, Fencing will be provided.
21	Disposal of overburden	The top soil of the lease area is 4552 m ³ . Multi Colour Granite waste forms nearly 65% of ROM and the quantity of granite waste in the five years will be around 14036 m ³ . Total waste to be generated in five years is 41165 m ³ .

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Final EIA Report</i>
<i>Project Proponent</i>	<i>Thiru.P.Ramachandran</i>	
<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

22	Ground water	The quarry operation is proposed up to a depth of 25 m below ground level. The water table is below 52 from ground level which is observed from the nearby open wells and bore wells. Hence the ground water will not be affected in any manner due to the quarrying operation during the entire lease period.
23	Habitations within 500m radius of the Project Site	There is no Habitation within 500m radius of the project site.
24	Drinking water	Water will be supplied through tankers and drinking water can be purchased from nearby vendors of village K.Pitchampatti which is approx. 2.3 km from the project site in North Side.

11.3 Justification of the proposed project

The said project plays a significant role in the domestic as well as infrastructural market. To achieve a huge infrastructure being envisaged by Government of India, particularly in road and housing sector, there is a need for basic building materials. The granite form the primary building material.

Multi Colour Granite is one of the most valuable natural building materials. Aggregates are mostly used for building roads and footpaths. Aggregates – stone used for its strong physical properties – crushed and sorted into various sizes for use in concrete, coated with bitumen to make asphalt or used 'dry' as bulk fill in construction. Mostly used in roads, concrete and building products. Aggregates represent about 98% of quarry output, most of which is used in road construction, maintenance and repair. Much of this goes to the production of asphalt; the remainder is used 'dry' without the addition of other materials to provide a sturdy base for roads.

Since Karur, a city known for its small-scale industries and also the soil in the area near project site is not very fertile making it unsuitable for carrying out agricultural activities. The topography near the lease area is barren dry lands showing only less chance for crop growth and development of vegetation. In addition to that, geological reserves of granite is abundant in the lease area which is evident from the mine activities carried out in the nearby sites.

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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

Table 11-2: Anticipate Impacts & Appropriate Mitigation Measures

S. No.	Potential Impact	Mitigation Measure
1	The main impact in the air environment is dust emission during various mining activities such drilling, blasting, excavation, loading and transportation. The dust emission may affect the quality of ambient air in the and around the mine area. The increased emission may cause respiratory & Cardiovascular problems in human health	Proper mitigation measures like water sprinkling on haul roads will be adopted to control dust emissions. To control the emissions regular preventive maintenance of equipments will be carried out on contractual basis. Plantation will be carried out along approach roads & mine premises.
2	Waste water will be generated due to mining activity and from other domestic activities. These may contaminate the ground water leading to ground water. The mining activity may affect the ground water table	No waste water will be generated from the mining activity of minor minerals as the project only involves lifting of over burden from mine site. The wastewater generated from the domestic activity will be disposed off safely through the proposed septic tank. Mining will not intersect ground water table. Hence the water table will not be impacted due to the proposed project
3	Noise will be generated in the mine area during various mining activities such as blasting, drilling, excavation. During transportation of the mined out mineral, there may be noise generation due to the movement of vehicles. This may impact the	Periodical monitoring of noise will be done. No other equipments except the transportation vehicles and Excavator (as & when required) for loading will be allowed at site.

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Final EIA Report</i>
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<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

	health condition of the workers by creating headache	Noise generated by these equipments shall be intermittent and does not cause much adverse impact. Plantation will be carried out along approach roads. The plantation minimizes propagation of noise and also arrest dust.
4	Solid waste will be generated from the mining activity as there will be refuse after 95% recovery and also generation of domestic waste	The 100% recovery is achieved by extracting the entire mineable reserve. Hence there will be no refuse generation due to the mining activity. Apart from that, a very meagre quantity of domestic waste will be generated in the project, which will be handed over to the local body on daily basis.
5	During mining activities, there are chances of workers getting health issues or may be prone to accidents	Dust masks will be provided as additional personal protection equipment to the workers working in the dust prone area. Periodical trainings will be conducted to create awareness about the occupational health hazards due to activities like blasting, drilling, excavation Workers health related problem if any, will be properly addressed.

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Final EIA Report</i>
<i>Project Proponent</i>	<i>Thiru.P.Ramachandran</i>	
<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

12. Disclosure of Consultant

12.1 Introduction

This chapter presents the details of the environmental consultants engaged, their background and the brief description of the key personnel involved in the project. Specific studies on the mining project have been carried out by engaging engineers/experts of Ecotech Labs Pvt. Ltd, Chennai. Ecotech Labs Pvt. Ltd (ETL), Chennai is NABET accredited consultancy organization. ETL is equipped with in-house, spacious laboratory, accredited by NABL (National Accreditation Board for Testing & Calibration Laboratories), Department of Science & Technology, Government of India and MoEF & CC.

12.2 Eco Tech Labs Pvt. Ltd – Environment Consultant

Eco Tech Labs Pvt. Ltd is a multi-disciplinary testing and research laboratory in India. Eco Tech labs provides high quality services in environmental consultancy, engineering solution, chemical and microbiological laboratory analysis of food, water and environment (Air, Water, Soil) with highest accuracy.


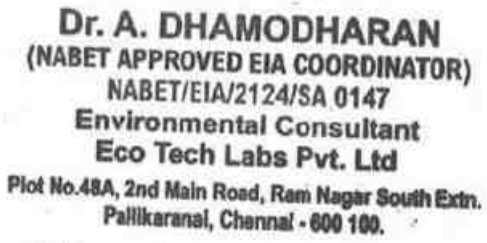
12.2.1 The Quality policy

- We, at Eco Tech Labs Pvt. Ltd. engaged in providing Environmental consulting services and we are committed to strengthen our capabilities in all areas of our operations in line with customer requirements & expectations, applicable legal requirements & stakeholders expectations.
- We are committed to establish and maintain Quality Management System (QMS) for continual improvement in processes and Services
- We are committed to provide customized solutions in realistic, time bound and cost effective to achieve highest degree of customer satisfaction and Environmental improvement.
- We shall establish, maintain & periodically review our documented management systems, objectives and performance in consultation with our employees and prevailing best practices.
- Effective communication of organization’s policy and objectives to employees and seeking feedbacks from all our employees and concerned stakeholders for continual improvement.

Project Name	Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha	Final EIA Report
Project Proponent	Thiru.P.Ramachandran	
Project Location	K.Pitchampatti Village, Karur taluk, Karur District.	

Declaration by experts contributing to the EIA report for Proposed Multi Colour Granite Quarry mining project of Thiru.P.Ramachandran Multi Colour Granite Quarry over an extent of 2.84.50 Ha is situated at S.F.No. 407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P) of K.Pitchampatti Village, Karur taluk, Karur District, Tamil Nadu State.




I, hereby certify that I was a part of the EIA team in the following capacity that developed the above EIA.

Project	Thiru.P.Ramachandran Multi Colour Granite Quarry - 2.84.50 Ha
Type & Category	1 (a) Mining of Minerals
Project Proponent	Thiru.P.Ramachandran
Environment Consultant with their Accreditation Status	M/s. Eco Tech Labs Pvt. Ltd., QCI Accredited
NABET Certificate No.	NABET/ EIA/2124/ SA 0147
EIA Coordinator Name	Dr. A. Dhamodharan (Mining of Minerals)
Signature	 
Period of Involvement	July 2022 - Till date
Contact Information	M/s. Eco Tech Labs Pvt. Ltd. No. 48, 2nd Main Road, Ram Nagar South Extension Pallikaranai, Chennai - 600 100 Mobile: +91 9789906200 E-mail: dhamo@ecotechlabs.in




<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Final EIA Report</i>
<i>Project Proponent</i>	<i>Thiru.P.Ramachandran</i>	
<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

Functional Area Experts




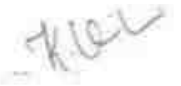

The basic fact division that environment and laboratory are accredited by NABL and Ministry of Environment and Forests, India and by other international bodies, stand testimony to its emphasis.

S. No.	Functional areas	Name of the experts	Involvement (period and task)	Signature and date
1	AP	Mrs. K. Vijayalakshmi	4. Selection of Baseline Monitoring stations based on the wind direction 5. Interpretation of Baseline data by comparing it with standards prescribed by CPCB against the type of area 6. Identification of sources of air pollution and suggesting mitigation measures to minimize impact Period: July 2022 - Till now	
2	WP	Dr. A. Dhamodharan	5. Selection of baseline Monitoring Locations for Ground water analysis and also identifying nearest surface water to be studied. 6. Interpretation of baseline data collected 7. Identification of impacts based on the baseline study conducted and also to the ground water and nearby surface water due to the proposed project 8. Preparation of suitable and appropriate mitigation plan. Period: July 2022 - Till now	
3	SHW	Dr. A. Dhamodharan	5. Identification of nature of solid waste generated 6. Categorization of the generated waste and estimating the quantity of waste to be generated based on the per capita basis. Identification of impacts of SHW on Environment	

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<i>Project Proponent</i>	<i>Thiru.P.Ramachandran</i>	
<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

			<p>7. Suggesting suitable mitigation measures by recommending appropriate disposal method for each category of waste generated</p> <p>8. Top soil and refuse management</p> <p>Period: July 2022 - Till now</p>	
4	SE	Mr. S. Pandian	<p>5. Primary data collection through the census questionnaire</p> <p>6. Obtaining Secondary data from authenticated sources and incorporating the same in EIA report.</p> <p>7. Impact assessment & proposing suitable mitigation plan</p> <p>8. CSR budget allocation by discussing with the local body and allotting the same for need based activity.</p> <p>Period: July 2022 - Till now</p> <p>*Involves Public Hearing</p>	
5	EB	Dr. A. Dhamodharan	<p>4. Primary data collection through field survey and sheet observation for ecology and biodiversity</p> <p>5. Secondary Collection through various authenticated sources</p> <p>6. Prediction of anticipated impacts and suggesting appropriate mitigation measures.</p> <p>Period: July 2022 - Till now</p>	
6	HG	Dr. T. P. Natesan	<p>3. Study of existing surface drainage arrangements in the core and buffer zone, impact due to mining on these drainage courses and suggestion of mitigative measures</p> <p>4. Determination of groundwater use pattern, development of rainwater harvesting program. Storm water management through garland drainage system.</p> <p>Period: July 2022 - Till now</p>	

<i>Project Name</i>	<i>Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha</i>	<i>Final EIA Report</i>
<i>Project Proponent</i>	<i>Thiru.P.Ramachandran</i>	
<i>Project Location</i>	<i>K.Pitchampatti Village, Karur taluk, Karur District.</i>	

7	GEO	Dr. T. P. Natesan	2. Field survey for assessing regional and local geology, aquifer distribution, Determination of groundwater use pattern, development of rainwater harvesting program. Period: July 2022 - Till now	
8	SC	Dr. A. Dhamodharan	3. Interpretation of baseline report 4. Identification of possible impacts on soil, prediction of soil conservation and suggesting suitable mitigation measures. Period: July 2022 - Till now	
9	AQ	Mrs. K. Vijayalakshmi	6. Collection of Meteorological data for the baseline study period 7. Plotting wind rose plot and thereby selecting the monitoring locations based on the wind pattern 8. Estimation of sources of air emissions and air quality modeling is done 9. Interpretation of the results obtained 10. Identification of the impacts and suggesting suitable mitigation measures. Period: July 2022 - Till now	
10	NV	Mrs. K. Vijayalakshmi	4. Selection of monitoring locations 5. Interpretation of baseline data 6. Prediction of impacts due to noise pollution and suggestion of appropriate mitigation measures Period: July 2022 - Till now	
11	LU	Dr. T. P. Natesan	4. Collection of Remote sensing satellite data to study the land use pattern. 5. Primary field survey and limited field verification for land categorization in the study area 6. Preparation of Land use map using Satellite data for 10km radius around the project site. Period: July 2022 - Till now	

Project Name	Thiru.P.Ramachandran Multicolour Granite Quarry - 2.84.50 Ha	Final EIA Report
Project Proponent	Thiru.P.Ramachandran	
Project Location	K.Pitchampatti Village, Karur taluk, Karur District.	

12	RH	Mrs. K. Vijayalakshmi	4. Identification of the risk 5. Interpreting consequence contours 6. Suggesting risk mitigation measures Period: July 2022 - Till now	<i>7/10/22</i>
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Declaration by the Head of the accredited consultant organization/ authorized person

I, Dr. A. Dhamodharan, hereby confirm that the above mentioned experts prepared the EIA report of mining project at Survey number. 407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P) of K.Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu State.

I also confirm that the consultant organization shall be fully accountable for any misleading information mentioned in this statement.

Signature:




Name: Dr.A.Dhamodharan

Designation: Managing Director

Name of the EIA consultant organization: M/s. Eco Tech Labs Private Limited

NABET Certificate No: NABET/EIA/2124/SA 0147

ANNEXURE-I

**STANDARD TOR CONDITIONS WITH
ADDITIONAL TOR POINTS**



THIRU.DEEPAK S.BILGI, I.F.S.
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT
ASSESSMENT AUTHORITY-TAMILNADU
3rd Floor, PanagalMaaligai,
No.1, Jeenis Road, Saidapet,
Chennai - 600 015.
Phone No. 044-24359973
Fax No. 044-24359975

TERMS OF REFERENCE (ToR)

Lr No.SEIAA-TN/F.No.9616/SEAC/ToR-1327/2023 Dated:10.02.2023

To

P.Ramachandran
S/O Paramasivam,
No 12, Bharathiyar 5th street,
SS Colony Ward-18,
Madurai District- 625 016

Sir / Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference with Public Hearing (ToR) for the Proposed Multi Colour Granite quarry over an extent of 2.84.5 Ha (Patta land) at Survey No. 407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4(P) in K.Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu by Thiru.P.Ramachandran - under project category – "B1" and Schedule S.No. 1(a) – ToR issued along with Public Hearing- preparation of EIA report – Regarding.

- Ref:**
1. Online proposal No.SIA/TN/MIN/408532/2022, Dated: 29.11.2022.
 2. Your application submitted for Terms of Reference dated: 02.12.2022
 3. Minutes of the 346th Meeting of SEAC held on 12.01.2023
 4. Minutes of the 591st meeting of Authority held on 10.02.2023.

Kindly refer to your proposal submitted to the State Level Impact Assessment Authority for Terms of Reference.


MEMBER SECRETARY
SEIAA-TN



The proponent, Thiru.P.Ramachandran has submitted application for ToR, in Form-I, Pre-Feasibility report for the Proposed Multi Colour Granite quarry over an extent of 2.84.5 Ha (Patta land) at Survey No. 407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4(P) in K.Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu

Discussion by SEAC and the Remarks:-

Proposed Multi Colour Granite quarry over an extent of 2.84.5 Ha Patta land at Survey No. 407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4(P) in K.Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu by Thiru.P.Ramachandran - for Terms of Reference (SIA/TN/MIN/408532/2022, Dated: 29.11.2022).

The proposal was placed in this 346th meeting of SEAC held on 12.01.2023. The details of the project furnished by the proponent are available in the website (parivesh.nic.in).

The SEAC noted the following

1. The Project Proponent, Thiru.P.Ramachandran has applied for Terms of Reference for the Proposed Multi Colour Granite quarry over an extent of 2.84.5 Ha of Patta land at Survey No. 407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4(P) in Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu.
2. The proposed quarry/activity is covered under Category "B1" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. The precise area communication was issued for the period of 20 years (2016-2036). The lease deed was executed on 05.08.2016. The approved 1st scheme of mining plan is for the period of five years (05.08.2022 to 04.08.2026) & production should not exceed 21595cu.m of RoM (as per approved mining plan letter - 17,520 cu.m of RoM) 7559 Cu.m of recoverable multicolour granite @35% & 14036 cu.m of Granite wastes. The proposed depth is 15m BGL (1m Topsoil + 4m Weathered Rock + 10m multicolour granite).
4. Quarrying in this lease area was earlier carried out by during earlier lease period from 15.07.2016 to 22.07.2021. Environmental clearance was obtained from SEIAA, Tamil Nadu vide letter no Lr.No. SEIAA-TN/F.No.5073/EC/1(a)/3293/2015 dated 11.07.2016 for Multi Colour Granite quarrying at Survey No. 407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4(P) in Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu. Existing pit - 11m.


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Based on the presentation made by the proponent, SEAC decided to recommend grant of Terms of Reference (TOR) with Public Hearing subject to the following additional TORs, in addition to the standard terms of reference for EIA study for non-coal mining projects and details issued by the MOEF & CC to be included in EIA/EMP Report:

1. The proponent must submit certified compliance report obtained from IRO of MoEF&CC as per OM IA3-22/10/2022-IA.III Dated 08.06.2022.
2. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
3. The proponent is requested to submit the valid registered consent document from the pattadhars during the EIA appraisal.
4. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc.
5. The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.
6. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.
7. In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall prepare and submit an 'Action Plan' for carrying out the realignment of the benches in the proposed quarry lease after it is approved by the concerned Asst. Director of Geology and Mining during the time of appraisal for obtaining the EC.
8. The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent.
9. The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced


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ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site.

10. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.
11. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,
 - a. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
 - b. Quantity of minerals mined out.
 - c. Highest production achieved in any one year
 - d. Detail of approved depth of mining.
 - e. Actual depth of the mining achieved earlier.
 - f. Name of the person already mined in that leases area.
 - g. If EC and CTO already obtained, the copy of the same shall be submitted.
 - h. Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
12. All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
13. The PP shall carry out Drone video survey covering the cluster, Green belt, fencing etc.,
14. The PP shall furnish the revised manpower including the statutory & competent persons as required under the provisions of the MMR 1961 for the prosed quarry based on the volume of rock handled & area of excavation.
15. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
16. The Project Proponent shall provide the details of mineral reserves and mineable reserves.



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- planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment and the remedial measures for the same.
17. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.
 18. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.
 19. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.
 20. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.
 21. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
 22. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
 23. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine


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- lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.
24. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.
 25. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
 26. Impact on local transport infrastructure due to the Project should be indicated.
 27. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.
 28. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.
 29. Public Hearing points raised and commitments of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF& CC accordingly.
 30. The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.
 31. The PP shall produce/display the EIA report, Executive summary and other related information with respect to public hearing in Tamil Language also.
 32. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.
 33. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the **appendix-I** in


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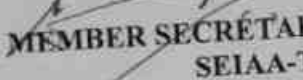
- consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
34. Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site-specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner
35. A Disaster Management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
36. A Risk Assessment and Management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
37. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
38. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
39. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
40. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
41. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
42. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions


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- given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.
43. The PP shall prepare the EMP for the entire life/lease of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.
44. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.




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Appendix -I
List of Native Trees Suggested for Planting

No	Scientific Name	Tamil Name	Tamil Name
1	<i>Aegle marmelos</i>	Vilvam	விவம்
2	<i>Adenanthera pavonina</i>	Manjadi	மஞ்சாடி, ஆனைக்குன்றிமணி
3	<i>Albizia lebbek</i>	Vaagai	வாகை
4	<i>Albizia amara</i>	Usai	உசை
5	<i>Bauhinia purpurea</i>	Mantharai	மந்தாரை
6	<i>Bauhinia racemosa</i>	Aathi	ஆதி
7	<i>Bauhinia tomentosa</i>	Iravathu	இருவாத்தி
8	<i>Buchanania axillaris</i>	Kattuna	காட்டுமர
9	<i>Borassus flabellifer</i>	Panai	பனை
10	<i>Butea monosperma</i>	Murukkamaram	முருக்கமரம்
11	<i>Bobax coiba</i>	Ilavu, Sevvilavu	இலவு
12	<i>Calophyllum inophyllum</i>	Punnai	புள்ளை
13	<i>Cassia fistula</i>	Sarakondrai	சர்க்கொண்டரை
14	<i>Cassia roxburghii</i>	Sengondrai	செங்கொண்டரை
15	<i>Chloroxylon swietenia</i>	Puracamaram	புரகமரம்
16	<i>Cochlospermum religiosum</i>	Kongu, Marijallavu	கோங்கு, மஞ்சள் இலவு
17	<i>Cordia dichotoma</i>	Naruvuli	நருவுளி
18	<i>Creteva adansonii</i>	Mavalingum	மாவலிங்கம்
19	<i>Dillenia indica</i>	Uva, Uzha	உவா
20	<i>Dillenia pentagyna</i>	SuruUva, Sitruzha	சிறு உவா
21	<i>Diospyro sebenum</i>	Karungali	கருங்காலை
22	<i>Diospyro chloroxylon</i>	Vaganai	வாகனை
23	<i>Ficus amplissima</i>	Kallitchi	கல் இச்சி
24	<i>Hibiscus tiliaceou</i>	Aatrupoovarasu	ஆறுநாட்டாரசு
25	<i>Hardwickia binata</i>	Aacha	ஆச்சா
26	<i>Holoptelia integrifolia</i>	Aayili	ஆயிலி மரம், ஆயிலி
27	<i>Lantana coromandolica</i>	Odhiam	ஓதியம்
28	<i>Lagerstroemia speciosa</i>	Poo Marudhu	பூ மருது
29	<i>Lepisanthus tetrphylla</i>	Neikottaimaram	நெய் கொட்டை மரம்
30	<i>Limonia acidissima</i>	Vila maram	விலா மரம்
31	<i>Litsea glutinos</i>	Pisinpattai	பிசிப்பட்டை
32	<i>Madhuca longifolia</i>	Iluppai	இலுப்பை
33	<i>Manilkara hexandra</i>	Uiakkaipaalai	உலக்கை பாலை
34	<i>Mimusops elengi</i>	Magizhamaram	மகிழமரம்
35	<i>Mitragyna parvifolia</i>	Kadambru	கடம்பு
36	<i>Morinda pubescens</i>	Nuna	நுணா
37	<i>Morinda citrifolia</i>	Vellai Nuna	வெள்ளை நுணா
38	<i>Phoenix sylvestre</i>	Eachai	ஏச்சமரம்
39	<i>Pongamia pinnat</i>	Pungam	புங்கம்


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40	<i>Premna mollissima</i>	Munnai	முனை
41	<i>Premna serratifolia</i>	Narumunai	நறு முனை
42	<i>Premna tomentosa</i>	Malapootarasu	மலை புறா
43	<i>Prosopis cinerea</i>	Varu maram	வையி மரம்
44	<i>Pterocarpus marsupium</i>	Vengai	வேங்கை
45	<i>Pterospermum canescens</i>	Vennangu, Tada	வேணாங்குடி
46	<i>Pterospermum xylocarpum</i>	Polavu	பலவு
47	<i>Putranjiva roxburghii</i>	Karipala	கரிபலா
48	<i>Salvadora persica</i>	Ugaa Maram	உகை மரம்
49	<i>Sapindus emarginatus</i>	Marupungan, Soapukai	மாறுபுங்கை சோபுகை
50	<i>Saraca asoca</i>	Asoca	அசுகை
51	<i>Strobilus asper</i>	Piray maram	பிராய் மரம்
52	<i>Strychnos nuxvomica</i>	Yetti	யெட்டி
53	<i>Strychnos potatorum</i>	Therthang Kottai	தேத்தங்கு கோட்டை
54	<i>Syzygium cumini</i>	Naval	நாவல்
55	<i>Terminalia belleric</i>	Thandri	தாண்டரி
56	<i>Terminalia arjuna</i>	Ven marudhu	வேண மருது
57	<i>Toona ciliata</i>	Sandhana vembu	சந்தன வேம்பு
58	<i>Thespesia populnea</i>	Puvarasu	புவரா
59	<i>Walsuratrifoliata</i>	valsura	வால்சூரா
60	<i>Wrightia tinctoria</i>	Veppalai	வேப்பலை
61	<i>Pithecellobium dulce</i>	Kodukkapuli	கோடுக்கப்பூளி


Discussion by SEIAA and the Remarks:-

The proposal was placed in the 591st Authority meeting held on 10.02.2023. The authority noted that this proposal was placed for appraisal in this 346th meeting of SEAC held on 12.01.2023. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) along with Public Hearing** under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions in addition to the conditions in 'Annexure B' of this minute.

1. The EMP should include mine closure plan using topsoil and weathered rock. It should be used for site restoration.

Annexure 'B'

1. Cluster Management Committee, which must include all the proponents in the cluster as members including the existing as well as proposed quarry.


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2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,
3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.
4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.
5. The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.
6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.
7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.
8. The committee shall furnish the Emergency Management plan within the cluster.
9. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.
10. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following
 - a) Soil health & bio-diversity.
 - b) Climate change leading to Droughts, Floods etc.
 - c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people.
 - d) Possibilities of water contamination and impact on aquatic ecosystem health.
 - e) Agriculture, Forestry & Traditional practices.
 - f) Hydrothermal/Geothermal effect due to destruction in the Environment.
 - g) Bio-geochemical processes and its foot prints including environmental stress.


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- h) Sediment geochemistry in the surface streams.
11. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.
 12. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.
 13. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.
 14. Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.
 15. Impact on surrounding agricultural fields around the proposed mining Area.
 16. Erosion Control measures.
 17. Impact on soil flora & vegetation around the project site.
 18. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.
 19. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.
 20. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.
 21. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.
 22. The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.
 23. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.
 24. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.


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25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.
26. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.
27. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.
28. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.
29. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.
30. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.
31. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.
32. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.
33. The project proponent shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.
34. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.
35. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.
36. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.
37. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies


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due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.

38. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.
39. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.
40. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.
41. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.

A. STANDARD TERMS OF REFERENCE

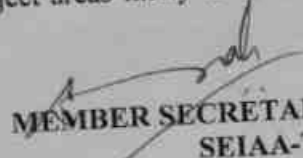
- 1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
- 2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- 3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
- 4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).


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- 5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
- 6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
- 7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
- 8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
- 9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
- 10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- 11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- 12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any


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- contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- 13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
 - 14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
 - 15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
 - 16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
 - 17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
 - 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
 - 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under

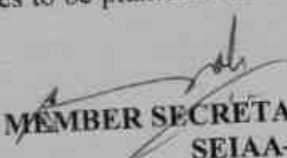

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- the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- 20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
- 23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for


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- transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
- 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
 - 25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
 - 26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
 - 27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
 - 28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
 - 29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
 - 30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
 - 31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of



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- plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- 32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
 - 33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
 - 34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
 - 35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
 - 36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
 - 37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
 - 38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
 - 39) Public Hearing points raised and commitment of the Project Proponent on the same along with


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- time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- 43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
- 44) Besides the above, the below mentioned general points are also to be followed:-
- Executive Summary of the EIA/EMP Report
 - All documents to be properly referenced with index and continuous page numbering.
 - Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
 - Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.
 - Where the documents provided are in a language other than English, an English translation should be provided.
 - The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
 - While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
 - Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.


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- i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
- j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

In addition to the above, the following shall be furnished:-

The Executive summary of the EIA/EMP report in about 8-10 pages should be prepared incorporating the information on following points:

1. Project name and location (Village, District, State, Industrial Estate (if applicable).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.


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13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of its acquisition, nearby (in 2-3 km.) water body, population, within 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given
23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should


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strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.

Besides the above, the below mentioned general points should also be followed:-

- a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
- b. All documents may be properly referenced with index, page numbers and continuous page numbering.
- c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.
- d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.
- e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of approvals etc. In this regard circular no F. No.J -11013/77/2004-IA-II(I) dated 2nd December, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 & 30th September 2011 posted on the Ministry's website <http://www.moef.nic.in/> may be referred.
 - After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
 - The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
 - The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.


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Copy to:

1. The Additional Chief Secretary to Government, Environment & Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi 110032.
3. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-600 032.
4. The APCCF (C), Regional Office, MoEF& CC (SZ), 34, HEPC Building, 1st& 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai -34.
5. Monitoring Cell, IA Division, Ministry of Environment, Forests & CC, Paryavaran Bhavan, CGO Complex, New Delhi 110003
6. The District Collector, Karur District.
7. Stock File.

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

COMPLIANCE OF TOR CONDITIONS

Point wise compliance of TOR points issued by SEIAA, TN vide Letter No. SEIAA-TN/F.No.9616/SEAC/ToR-1327/2023 dt. 10.02.2023 for Mining of Minor Minerals in the Mine of “Thiru. P. Ramachandran Multi Colour Granite Quarry in S.F.Nos. 407/1, 407/2, 407/3 (P), 407/4, 408/3, 408/4 (P) of K.Pitchampatti Village, Karur Taluk, Karur District.

ToR Ref.	Description	Response	Page Ref. in EIA Report
1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification, 1994 came into force w.r.t. the highest production achieved prior to 1994.	<p>The Lessee had obtained lease for quarrying granite vide Government Order.(3D) No. 37, Industries (MMB.2) Department dated 19.07.2016 for a period of twenty years and the lease deed was executed on 05.08.2016 and the lease will expire on 04.08.2036.</p> <p>The Mining Plan was approved by Director of Geology and Mining, Guindy, Chennai-32 vide letter No. 503/MM2/2016 dated 16.02.2016. The lessee has obtained Environmental clearance from SEIAA-TN vide letter no. Lr.No.SEIAA TN/F.No.5073/1(a)/EC.No.3293/2016 dated 11.07.2016.</p> <p>The 1st scheme of mining for the period from 05.08.2021-04.08.2022 to 05.08.2025-04.08.2026 is now being prepared and submitted under rule 18(2) of GCDR 1999 for approval on 29.03.2021.</p> <p>Proposed Production of Rough Stone & Gravel for five years is proposed in the</p>	Chapter-2 Table No.2.2 Page No.38

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

		EIA/EMP in chapter no-2.	
2.	A copy of document in support of the fact that the Proponent is the rightful lessee of the mine should be given.	The mine lease area of 2.84.5 hectare in K.Pitchampatti Village for Multi Colour Granite quarry approved by Director of Geology and Mining, Guindy, Chennai vide letter No. 503/MM2/2016 dated 16.02.2016	Annexure-III
3	All documents including approved mine plan, EIA and public hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management and mining technology and should be in the name of the lessee.	All the documents i.e., Mining Plan, EIA and public hearing are compatible with each other in terms of ML area production levels, waste generation and its management and mining technology are compatible with one another. The mining plan of the project site has been submitted to Director of Geology and Mining, Guindy	Annexure-VI Chapter-II
4	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/toposheet should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	Details of coordinates of all corners of proposed mining lease area have been incorporated in mining plan and Chapter 2 of EIA/ EMP Report.	Chapter-2, Fig no. 2.2 Page. no. 42
5	Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, important water	Topo map as attached in Chapter-2	Chapter-2, Fig no. 2.4 Page. no.

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

	bodies, streams and rivers and soil characteristics		44
6.	Details about the land proposed for mining activities should be given with information as to whether conforms to the land use policy of the state; land diversion for mining should have approval from State land use board or the concerned authority	Details about the land proposed for mining activities should be given Chapter 2.	Chapter-2 Page 43
7	<p>It should be clearly stated whether the proponent company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions?</p> <p>The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be</p>	Noted.	

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

	<p>given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large may also be detailed in the EIA report.</p>		
8	<p>Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.</p>	<p>It is an open cast mining project. Blasting details are incorporated in chapter 2</p>	<p>Chapter-2, Page no.56</p>
9	<p>The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc should be for the life of the mine / lease period.</p>	<p>Study area comprises of 10 km radius from the mine lease boundary. Key Plan showing core zone (ML area).</p>	<p>Chapter-2 Fig no. 2.5 Page no.45</p>
10	<p>Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human</p>	<p>Land Use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, National park, migratory routes of fauna, water bodies, human settlements and other ecological features has been prepared and incorporated in Chapter-3 of</p>	<p>Chapter-2, Table no. 2.4 Page no.47</p>

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

	<p>settlements and other ecological features should be indicated.</p> <p>Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.</p>	<p>EIA/ EMP Report.</p> <p>There is no wildlife sanctuary and national park, migratory routes of fauna in the study area.</p>	
11	<p>Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.</p>	<p>Top soil formation will be removed and transported to the needy end user only after obtaining permission and paying necessary signiorage fees to the Government.</p>	<p>Chapter-2, Page no.53</p>
12	<p>A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area.</p> <p>In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may</p>	<p>Complied.</p> <p>The proposed mining lease area is not falling under forest land.</p>	

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

	<p>be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.</p>		
13	<p>Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.</p>	<p>The proposed mining lease area is not falling under forest land.</p>	
14	<p>Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006</p>	<p>Not Applicable.</p> <p>There is no involvement of forest land in the project area.</p>	

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

15	The vegetation in the RF / PF areas in the study area, with necessary details, should be	Details of flora have been discussed in Chapter-3 of the EIA/EMP Report.	Chapter-3 Pg No. 64
16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly detailed mitigative measures required, should be worked out with cost implications and submitted.	There is a relatively poor sighting of animals in the core and buffer areas of the mining lease. No significant impact is anticipated	

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

<p>17</p>	<p>Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/Elephant Reserves/ (existing as well as proposed), if any, within 10km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the State Wildlife Department/Chief</p>	<p>There is no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger / Elephant Reserves / Critically Polluted areas within 10 km radius of the mining lease area.</p>	
<p>18</p>	<p>A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found</p>	<p>Details biological study (flora & fauna) within 10 km radius of the project site have been incorporated in Chapter-3 of EIA/ EMP Report.</p> <p>No flora & fauna listed in scheduled I have been found in study area so there is no need of conservation plan. However, all care will be taken for protection of flora & fauna, if any in the lease hold area.</p>	<p>Chapter - 3 Pg No. 98</p>

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

	<p>in the study area, the necessary plan for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.</p>		
19	<p>Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered.</p>	<p>The proposed mining lease area is not falling under critically polluted area.</p>	
20	<p>Similarly, for coastal projects, A CRZ map duly authenticated by one of the authorized agencies Similarly, for coastal projects, A</p>	<p>There is no Coastal Zone within 15km radius of the project site.</p>	

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

	<p>CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)</p>		
<p>21</p>	<p>R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State</p>	<p>There is no Rehabilitation and resettlement is involved. Land classified as Consent Patta land.</p>	

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

	<p>Government. It may be clearly brought out whether the village located in the mine lease area will be shifted or not. The issues relating to shifting of Village including their R&R and socio-economic aspects should be discussed in the report.</p>		
22	<p>One season (non-monsoon) and (Summer Season), (Post monsoon) primary baseline data on ambient air quality CPCB Notification of 2009 water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report.</p> <p>Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre- dominant downwind direction and location of sensitive receptors. There</p>	<p>Baseline data collected during Pre-Monsoon Season and Monsoon (July to September 2022) has been incorporated in EIA/EMP report.</p> <p>The key plan of monitoring station has been discussed in Chapter-4. Locations of the monitoring stations have been selected keeping in view the pre- dominant downwind direction and location of the sensitive receptors and also that they represent whole of the study area.</p>	Chapter 3

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	<p>should be at least one monitoring station within 500m of the mine lease in the pre- dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.</p>		
<p>23</p>	<p>Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided.</p> <p>The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing predominant wind direction may also be indicated on the map.</p>	<p>Air quality modelling & Impact of Air quality will be furnished in Final EIA report</p> <p>Transportation of mineral during operation of mines will be done by road through dumpers and the impact of movement of vehicles are incorporated in EIA/EMP report.</p> <p>Air quality modelling & Impact of Air quality will be furnished in Final EIA report</p>	<p>Chapter-4</p> <p>Page No.116</p>

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24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	Total water requirement: 2.0 KLD Dust Suppression: 0.75 KLD Domestic Purpose: 1.0 KLD Plantation :0.5 KLD Domestic Water will be sourced from nearby village of the project site.	Chapter-2 Page no.59
25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Not Applicable Water will be taken from nearby villages	
26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	At the last stage of mining operation, almost complete area will be worked to restore the land to its optimum reclamation for future use as water reservoir.	
27	Impact of the project on the water quality, both surface and groundwater should be assessed and necessary safeguard measures, if any required, should be provided.	Impact of the project on the water quality & its mitigation measures has been incorporated in Chapter-4 of EIA/EMP report.	Chapter-4 Page No.117
28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and	Maximum working depth: 25 m BGL The ground water table is reported as 50 m below surface ground level in nearby wells of this area. Now, the present quarry shall be	Chapter-2 Page no. 40

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	documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	proposed above the water table and hence, quarrying may not affect the ground water So mine working will not be intersecting the ground water table.	
29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.	There is no any stream crossing in the proposed quarry	Executive Summary
30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.	Highest elevation: 206 m AMSL Depth: 25 m Below Ground Level	Chapter-2 Table no. 2.2 Page no. 40
31	A time bound Progressive Greenbelt Development Plan shall be	Green Belt Development plan is proved given in Chapter 2.	Chapter-2

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	<p>prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant pollution</p>		
32	<p>Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating</p>	<p>Impact on local transport infrastructure due to the project has been assessed. There shall not be much impact on local transport. Traffic density from the proposed mining activity has been incorporated in EIA/EMP report.</p>	<p>Chapter-3 Page No.114</p>

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	<p>whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project proponent shall conduct impact of Transportation study as per Indian Road Congress Guidelines</p>		
33	<p>Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA report.</p>	<p>Adequate infrastructure & other facilities shall be provided to the mine workers. Details are given in chapter-2 of EIA/EMP</p>	Chapter-2
34	<p>Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.</p>	<p>Conceptual post mining land use and Reclamation and restoration sectional plates are given in Mining Plan followed by Scheme of mining.</p>	<p>Mining plates Annexure VII</p>
35	<p>Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical</p>	<p>Suitable measure will be adopted to minimize occupational health impacts of the project. The project shall have positive impact on local environment. Details are given in chapter-10 of EIA/EMP.</p>	<p>Chapter-10 Pg No. 151</p>

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	<p>medical examination schedules should be incorporated in the EMP. The project in the mining area may be detailed.</p>		
36	<p>Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.</p>	<p>Suitable measure will be adopted to minimize occupational health impacts of the project.</p>	<p>Chapter-10 Pg No. 143</p>
37	<p>Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.</p>	<p>Suitable measures has been discussed in Chapter 4</p>	<p>Chapter-4 Pg No. 116</p>
38	<p>Detailed environmental management plan to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts</p>	<p>Environment Management Plan has been described in detail in Chapter-9 of the EIA/EMP Report.</p>	<p>Chapter-9 Pg No. 145</p>

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	besides other impacts specific to the proposed Project.														
39	Public hearing points raised and commitment of the project proponent on the same along with time bound action plan to implement the same should be provided and incorporated in the final EIA/EMP Report of the Project.	Public Hearing proceedings will be furnished in Final EIA report													
40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the project should be given.	Not applicable No. litigation is pending against the project in any court.													
41	The cost of the project (capital cost and recurring cost) as well as the cost towards implementation of EMP should clearly be spelt out.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">S. No</th> <th style="text-align: center;">Description</th> <th style="text-align: center;">Cost</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Fixed Asset Cost</td> <td style="text-align: right;">29,90,000</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Operational Cost</td> <td style="text-align: right;">95,00,000</td> </tr> <tr> <td></td> <td>Total</td> <td style="text-align: right;">1,32,30,000/-</td> </tr> </tbody> </table> <p>EMP Cost: 4,05,000/-</p>	S. No	Description	Cost	1	Fixed Asset Cost	29,90,000	2	Operational Cost	95,00,000		Total	1,32,30,000/-	Chapter-8 Pg No. 151
S. No	Description	Cost													
1	Fixed Asset Cost	29,90,000													
2	Operational Cost	95,00,000													
	Total	1,32,30,000/-													
42	Disaster Management Plan shall be prepared and included in the EIA/EMP Report.	Disaster Management and Risk Assessment has been incorporated in Chapter-7	Chapter-7 Pg No. 136												
43	Benefits of the project if the project is implemented should be spelt out. The benefits of the	Benefits of the project has incorporated	Chapter-8 Pg No. 143												

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	project shall clearly indicate environmental, social economic, employment potential etc.		
44	Besides the above, the below mentioned general points are also to be followed:		
(a)	Executive Summary of the EIA/EMP report	Executive Summary of EIA Report is given from page No.10-25	
(b)	All documents to be properly referenced with index and continuous page numbering.	Complied	
(c)	Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.	Complied	
(d)	Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF & CC NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the project.	Complied	
(e)	Where the documents provided are in a language other than English, an English translation should be provided.	Complied	
(f)	The Questionnaire for	The complete questionnaire has been	

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	environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	prepared	
(g)	While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF vide O.M. No. J- 11013/41/2006-IA. II(I) dated 4th August 2009, which are available on the website of this Ministry, should also be followed.	The EIA report has been prepared and complying with the circular issued by MoEF vide O.M. No. J-11013/41/2006-IA. II(I) dated 4th August 2009.	
(h)	Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with	There are no changes in prepared EIA as per submitted Form-1 & PFR	

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	the revised documentation		
(i)	As per the circular no. J- 11011/618/2010-IA. II(I) dated 30.5.2012, report on the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project by the Regional Office of Ministry of Environment & Forests, if applicable.	Will be complied after grant environment clearance from SEIAA, Tamilnadu	
(j)	The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections (iii) sections of mine pit and external dumps, if any clearly showing the features of the adjoining area.	All Sectional Plates of Quarry is enclosed in Mining Plan.	

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Additional ToR Compliance by SEAC

S.No.	Condition	Compliance
1.	The PP shall provide a certified compliance report obtained from IRO of MOEF&CC as per OM IA3-22/10/2022-IA.III dated 08.06.2022	Furnished. Certified compliance in enclosed as Annexure X .
2.	The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	
3.	The proponent is requested to submit the valid registered consent document form the pattadhars during the EIA appraisal.	Consent document is enclosed as Annexure
4.	The structures within the radius of (i) 100 m, (ii) 200 m and (iii) 300 m shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc.	Will be Complied.
5.	The PP shall submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.	The PP will submit a detailed hydrological report indicating the impact of proposed quarrying operations on the waterbodies like lake, water tanks, etc are located within 1 km of the proposed quarry.
6.	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	The Proponent will carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.
7.	In the case of proposed lease in an	Agree to comply.

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	<p>existing (or old) quarry where the benches are non existent (or) partially formed critical of the bench geometry approved in the Mining Plan. the Project Proponent (PP) shall prepare and submit an 'Action Plan' for carrying out the realignment of the 'high wall' benches in the existing quarried pit and the proposed pit indicating the possible stabilizing measures to ensure slope stability as the depth of the planned working is extended beyond 30 m below ground level which shall be submitted as a part of the revised Mining Plan. during the time of appraisal for obtaining the EC.</p>	
<p>8.</p>	<p>The PP shall furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent</p>	<p>The PP will furnish the affidavit stating that the blasting operation in the proposed quarry is carried out by the statutory competent person as per the MMR 1961 such as blaster, mining mate, mine foreman, II/I Class mines manager appointed by the proponent</p>
<p>9.</p>	<p>The PP shall present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site</p>	<p>The PP will present a conceptual design for carrying out only controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled as well as no fly rock travel beyond 30 m from the blast site</p>

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10.	<p>The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.</p>	<p>The EIA Coordinators will obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.</p>
11.	<p>If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,</p> <ol style="list-style-type: none"> a. What was the period of the operation and stoppage of the earlier mines with the last work permit issued by the AD/DD mines? b. Quantity of minerals mines out. c. Highest production achieved in any one year. d. Details of approved depth of mining. e. Actual depth of the mining achieved earlier. f. Name of the person already mined in that leases area. g. If EC and CTO already obtained, the copy of the same shall be submitted. <p>Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.</p>	<p>Agreed to comply</p>
12.	<p>All corner coordinates of the mine lease area,</p>	<p>Complied.</p>

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	superimposed on a High Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological feature of the study area (core and buffer zone)	All corners with coordinates of the mine lease area has attached with EIA report in chapter 2
13.	The Project Proponent shall carry out Drone video survey covering survey covering the cluster, green belt, fencing etc.,	Drone video survey will be submitted in final EIA report.
14.	The PP shall furnish the revised manpower including the statutory and competent persons as required under the provisions of the MMR 1961 for the proposed quarry based on the volume of rock handled and area of excavation.	The PP will furnish the revised manpower including the statutory and competent persons as required under the provisions of the MMR 1961 for the proposed quarry based on the volume of rock handled and area of excavation.
15.	The Project Proponent shall furnish photographs of adequate fencing, green belt along periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Complied. The photographs of fencing and green belt attached as per SEAC recommendation.
16.	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justification, the anticipated impacts of the mining operations on the surrounding environment and the remedial measures for the same	The details of Geological reserves, Mineable reserves and Yearwise production reserves are tabulated in Chapter 2. The mining methodology and impacts are follow as on prescribed norms by Government.
17.	The PP shall provide the Organization chart	Complied.

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	<p>indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.</p>	<p>Manpower requirements table attached in EIA report chapter 2</p>
18.	<p>The PP shall conduct the hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface Water bodies such as rivers, tanks, canals, ponds etc., within 1km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD/TWAD so as to assess the impacts on the wells due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided.</p>	<p>Hydro geological study report will be submitted along final EIA report.</p>
19.	<p>The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.</p>	<p>The proponent has furnished the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study details attached in EIA report chapter 3</p>
20.	<p>The Proponent shall carry out the Cumulative impact study due to mining operations carried</p>	<p>Noted. Agree to comply.</p>

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	<p>out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.</p>	
21.	<p>Rainwater harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.</p>	<p>Noted. Agree to comply.</p>
22.	<p>Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given</p>	<p>Current land use of the study area has attached in EIA report chapter 3. Operational and post operational land use will be submitted.</p>
23.	<p>Details of the land for storage of Overburden/Waste dump (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.</p>	<p>The overburden is in the form of top soil and weathered rock formation. It will be quarried for filling purposes to nearby end users and part of soil will be preserved all along the boundary as barrier for afforestation.</p>
24.	<p>Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations,</p>	<p>Noted</p>

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	should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered	
25.	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	The ultimate pit at the end of the mining operation will be used for rainwater storage, the stored water will be used for green belt development and further the stored water will be used for domestic purposes (other than drinking) after proper treatment.
26.	Impact on local transport infrastructure due to the Project should be indicated.	Traffic impact assessment has given in EIA report chapter 3.
27.	A tree survey study shall be carried out (nos., name of the species, diameter, etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	No tree species were found inside the project site. only few shrubs and thorny bushes were present. Tree survey study details given in EIA report chapter 3.
28.	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	Noted. The mine plan and mine closure plan has been approved by the Assistant Director, Department of Mining and Geology, Virudhunagar District
29.	Public hearing points raised and commitments of the PP on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project and to be submitted to	Noted and will be complied in Final EIA report.

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	SEIAA/SEAC with regard to the Office Memorandum of MoEF & CC accordingly.	
30.	The Public hearing advertisement shall be published in on major National daily and one most circulated vernacular daily	Noted. Agree to comply.
31.	The PP shall produce/display the EIA report, Executive summary and other related information with respect to public hearing Tamil Language also.	Noted
32.	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.	Noted. Agree to comply
33.	The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	Noted. Agree to comply
34.	Taller/one year old Saplings raised in appropriate size of bags, preferably eco-	The green belt plan enclosed with mining plates in Annexure VII

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	friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meter wide and in between blocks in an organized manner.	
35.	A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Disaster management plan has prepared and enclosed in Chapter 7.
36.	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Risk assessment and management plan has prepared and enclosed in chapter 7.
37.	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational Health impacts of the project has prepared and incorporated in Environmental management plan.
38.	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with	Suitable measure will be adopted to minimize occupational health impacts of the project.

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	budgetary allocations.	
39.	The Socio-economic studies should be carried out within a 5km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	The socio-economic study has been discussed in chapter 3.
40.	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given	No. litigation is pending against the project in any court.
41.	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.,	Benefits of the project has incorporated in EIA report chapter 8
42.	If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB	Agree to comply.
43.	The PP shall prepare the EMP for the entire life/lease of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	The PP will prepare the EMP for the entire life/lease of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.

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44.	concealing any factual information or submission of false/fabricated data and failure to comply with any of the Condition mentioned above may result in withdrawal of this Terms of conditions besides attracting penal provisions in the Environment (Protection) Act, 1986	Noted.
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Additional TOR by SEIAA

1	Cluster Management Committee, which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	Noted All the proponents in the cluster is discussed in Chapter-2, Page number-35
2	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,	Green belt development, water sprinkling, tree plantation is discussed in chapter-2, Page number-58
3	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	Agreed to comply.
4	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	Agreed to comply. It will be furnished in final EIA report.

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5	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan	Risk management plan is discussed in Chapter-7, page number-135
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.	Agreed to comply. It will be furnished in final EIA report.
7	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	Agreed to comply. It will be furnished in final EIA report.
8	The committee shall furnish the Emergency Management plan within the cluster.	Emergency management plan is discussed in Chapter-7, page number-139
9	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	Health of workers and staff is discussed in Chapter-9 Page number-153
10	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following. a) Soil health & bio-diversity b) Climate change leading to Droughts,	The biodiversity has been studied and discussed in chapter 3. The soil erosion map 5km surrounding the project site has been given in chapter 3. The detailed study will be carried out and will be enclosed in the Draft EIA Report.

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

	<p>Floods etc.,</p> <p>c) Pollution leading to release Greenhouse gases (GHG), rise in Temperature & Livelihood of the local people.</p> <p>d) Possibilities of water containment and impact on aquatic ecosystem health.</p> <p>e) Agriculture, Forestry & Traditional practices.</p> <p>f) Hydrothermal/Geothermal effects due to destruction in the Environment.</p> <p>g) Bio-geochemical processes and its foot prints including environmental stress</p> <p>h) Sediment geochemistry in the surface streams</p> <p>Sediment geochemistry in the surface streams.</p>	
11	The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.	<p>Agreed to comply.</p> <p>It will be furnished in final EIA report.</p>
12	The committee shall furnish the fire safety and evacuation plan in the case of fire accidents	Fire safety and evacuation plan is discussed in chapter-7
13	The measures taken to control Noise, Air, water, Dust control and steps adopted to efficiently utilise the energy shall be furnished.	Measures taken to control Noise, Air, water, Dust control is discussed in Chapter-4
14	Details of type of vegetation no.of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.	Type of vegetation no.of trees & shrubs is discussed in Chapter-3 page number-100
15	Impact on surrounding agricultural fields around the proposed mining area.	There is no agricultural fields around the proposed mining area

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

16	Erosion control measures	Agreed to comply. Will be furnished in final EIA.
17	Impact on soil flora & vegetation around the project site	Impact on soil flora & vegetation around the project site discussed in Chapter-4 page number-110
18	Detailed study shall be carried out regard to impact of mining around the proposed mine lease area on the nearby villages, Water-bodies/Rivers, & any ecological fragile areas.	The detailed study will be carried out and will be furnished in the Final EIA Report.
19	The project proponent shall furnish VAO Certificate with reference to 300m radius regard to approved habitations, schools, Archaeological structures railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.	Obtained and same has been attached as Annexure.
20	As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	Noted and public hearing details will be included along with final EIA report.
21	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks, and temperature reduction including control of other emission and climate mitigation activities.	Noted and will be complied in Final EIA report.
22	The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and	The biodiversity has been studied and discussed in chapter 3 – Pg No. 113.

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

	suggest measures to maintain the natural Ecosystem.	
23	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	Noted. Agree to comply.
24	The project proponent shall study impact on fish habitats and the food WEB/food chain in the water body and reservoir.	There is no water bodies within 1km radius, The seasonal pond located 50m south from the project site. Water gets stagnant only during rainy season. Hence there won't be much impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
25	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	The soil erosion map 5km surrounding the project site has been given in chapter 3. The soil samples have been collected surrounding the project site and physical, chemical components and microbial components study has been carried out and the results are tabulated in chapter 3
26	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	The biological environment impacts, and its mitigation measures has been given in Chapter 4
27	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	There is no existing trees in the project site and surrounding the project site. Only thorny shrubs were present.
28	The Environmental Impact Assessment should	The water environment impacts and

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

	study on wetlands, water bodies, river streams, lakes and farmer sites.	its mitigation measures has been given in Chapter 4
29	The EIA should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	The EMP details has been given in Chapter 8
30	The EIA should study impact on climate change, temperature rise, pollution and above soil carbon stock.	Noted and will be complied in Final EIA report.
31	The EIA should study impact on protected areas, Reserve forests, National parks, Corridors and Wildlife pathways, near project site.	<p>There is no Reserve Forest within 1 km radius of the Project Site. Hence our project will not cause any damage to reserve forest. Also, we have received letter from DFO indicating the nearest reserve forest and attached with Annexures.</p> <p>There is no protected areas, National Parks, Corridors and Wildlife pathways near project site.</p>
32	The PP shall study and furnish the impact on plantations in adjoining Patta lands, Horticulture, Agriculture and livestock.	There is no plantation surrounding 500m from project site. Hence there won't be any impact in adjoining patta lands, Horticulture, Agriculture and livestock.
33	The PP shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.	Noted and will be complied in Final EIA report.
34	The PP shall study and furnish the impact on aquatic plants and animals in water bodies and	Noted.

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

	possible scars on the landscape, damages to nearby caves, heritage site and archaeological sites possible landform changes visual and aesthetic impacts	Agree to comply.
35	The PP shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impact of plastic & microplastic on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.	There will not be any plastic and microplastic pollution due to mining activity. Also, we ensure that we won't use any single use plastics in the project site.
36	The PP shall detailed study on impact of mining on Reserve forests free ranging wildlife.	There is no Reserve Forest within 1 km radius of the Project Site. Hence our project will not cause any damage to reserve forest. Also, we have received letter from DFO indicating the nearest reserve forest and attached with Annexures.
37	Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc., within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data and documentation in this regard may be provided, covering the entire mine lease period.	The hydro-geological study will be conducted and submitted in final EIA report.
38	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazard	Disaster Management and Risk Assessment has be incorporated in Chapter-7

TOR Reply of Proposed Multi Colour Granite Quarry over an Extent of 2.84.5 Ha

	& to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	
39	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of mining.	A Risk Assessment and management Plan will be prepared and included in the final EIA/EMP Report.
40	Detailed mine closure plan covering the entire mine lease period as per precise area communication order issued.	Mine closure plan has been attached along with mining plates as Annexure VI.
41	Detailed Environment Management plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	Environment Management Plan has been described in detail in Chapter-10 of the Draft EIA/EMP Report.

ANNEXURE-II
PRECISE AREA COMMUNICATION



Am. Culture - IV

ABSTRACT

Mines and Quarries - Minor Mineral - Multi Colour Granite - Karur District - Karur Taluk - K. Pitchampatti Village S.F. Nos 407/1 (1.09.0 Hects.), 407/2 (0.45.5 Hects.), 407/3 (P) (0.32.5 Hects.), 407/4 (0.05.5 Hects.), 408/3 (0.44.0 Hects.) and 408/4 (P) (0.48.0 Hects.) Over an extent of 2.84.5 Hectares of Patta land - Quarry Lease Application of Thiru. P. Ramachandran - Grant of quarry lease - Sanctioned - Orders - Issued

Industries (MMB.2) Department

G.O. (3D) No.37

Dated: 19.07.2016

தமிழக அரசு

துறைமுக அமைச்சர் அலுவலகம், சென்னை - 600 047

Read :

- 1) From Thiru. P. Ramachandran, Quarry Lease Application dated 31.12.2015.
- 2) From the District Collector, Karur, Letter No.1470/Mines/2015, dated: 20.1.2016.
- 3) From the Commissioner of Geology and Mining, Chennai, File No.503/MM2/2016, dated: 29.1.2016.
- 4) Government Letter No 1300/MMB.2/2016.1 dated 11.2.2016
- 5) From the Commissioner of Geology and Mining Letter No 503/MM2/2016 dated: 16.2.2016
- 6) From the Chairman, State Level Environment Impact Assessment Authority, Chennai-15, Letter No SEIAA-TN/F No 5073/1(a)EC.No 3293/2016, dated 11.7.2016

ORDER:

In the reference first read above, Thiru. P. Ramachandran has applied for grant of lease to quarry Multi Colour granite over an extent of 2.84.5 hectares in S.F. Nos 407/1 (1.09.0 Hects.), 407/2 (0.45.5 Hects.) 407/3 (P) (0.32.5 Hects.), 407/4 (0.05.5 Hects.), 408/3 (0.44.0 Hects.) and 408/4 (P) (0.48.0 Hects.) of K Pitchampatti Village, Karur Taluk, Karur District for a period of 20 years under rule 19A of Tamil Nadu Minor Mineral Concession Rules, 1959.

2. In the reference second and third read above, the Collector of Karur District and the Commissioner of Geology and Mining have recommended and forwarded the application of Thiru. P. Ramachandran to the Government for passing orders.

3. Based on the reports of the District Collector, Karur and the Commissioner of Geology and Mining, the Government have examined the quarry lease application of the individual and communicated the area recommended by the Commissioner of Geology and Mining as precise area and requested the applicant company in the reference fourth read above to furnish the approved Mining Plan as



... Tamil Nadu Minor Mineral Concession Rules
Commissioner of Geology and Mining and to produce
from the SEIAA. The Commissioner of Geology and
Mining read above has approved the mining plan as per sub-rule
Tamil Nadu Minor Mineral Concession Rules, 1959 subject to
the condition that the applicant company shall obtain the Environmental Clearance
as per the orders of the Hon'ble Supreme Court of India Order dated 27.2.2012 in
IA No. 12-13/2011 in SLP (C) No. 19629/2009 and as per the Office Memorandum
No. L 11011/47/2011-1A II (M) dated 18.5.2012 of Ministry of Environment and
Forest, Government of India. The State Level Environment Impact Assessment
Authority in their reference 6th read above have accorded Environment Clearance for
mining in the above said area subject to certain conditions.

4. The Government after careful examination have decided to grant lease
to quarry Multi Colour granite to Thiru. P. Ramachandran in the above patta lands.
Accordingly in exercise of the powers conferred under Rule 19A of the Tamil Nadu
Minor Mineral Concession Rules, 1959 the Governor of Tamil Nadu hereby grant
lease to Thiru. P. Ramachandran for quarrying Multi Colour granite over an
area of 2.845 hectares in S.F. Nos 407/1 (1.090 Hects), 407/2 (0.455 Hects),
407/3 (P) (0.325 Hects), 407/4 (0.055 Hects), 408/3 (0.440 Hects) and 408/4 (P)
(0.450 Hects) of K. Pitchampatti Village, Karur Taluk, Karur District for a period of
twenty years subject to the conditions specified in the annexure to this order and
also the following special conditions along with all the conditions imposed by the
State Level Environment Impact Assessment Authority in the reference 6th read
above.

- (1) A safety distance of 7.5 mts should be left out to the adjacent patta
lands all along the boundaries of the lease applied area.
- (2) No hindrance shall be caused to the adjacent pattadars lands while
quarrying and transportation of granite.
- (3) Since the low tension power line passing in the applied area is
already dismantled the E.B. pillar post should be displaced from the
lease applied area before execution of lease deed.
- (4) The applicant shall fence the lease granted area with Barbed wire
before the execution of lease deed as follows -
- The pillar posts shall be firmly grounded with concrete foundation of
height not less than 2 mts with a distance between two pillars shall
not be more than 3 mts
- The applicant shall incorporate the DGPS readings for the entire
boundary pillars of the area and the same should be clearly showed
in the mining plan.
- (5) Environment Clearance should be obtained from the State Level
Environment Impact Assessment Authority in respect of the subject
area as per the orders of the Hon'ble Supreme Court of India, dated
27.2.2012 in IA No. 12-13/2011 in SLP(C) No. 19629/2009 and Office
Memorandum No. L 11011/47/2011-1A II(M) dated 18.5.2012 of the
Ministry of Environment & Forests, Government of India.
- (6) The lessee shall strictly adhere to the statutory and safety
requirements.

[Handwritten signature]



- (7) The waste materials generated during quarrying operation shall be dumped only in the area granted under lease
- (8) Quarrying shall be done as per the approved Mining Plan. 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
- (9) The lease grantee shall submit scheme of mining, mine closure plan and other statutory requirements within the time stipulated for submission of the above, as per rules
- (10) The District Collector, Karur shall obtain a sworn-in-affidavit from the appellant containing the above conditions before execution of lease deed and also ensure that the instructions issued in Government Letter No. 12789 / MMB2 / 2002-7, Industries Department, dated 9.1.2003 are complied with

5. The Collector of Karur District is requested to take necessary further action for the execution of agreement in the prescribed form and communicate the date of execution of agreement to the Government and Commissioner of Geology and Mining

6. The District Collector, Karur is also directed to verify and furnish a certificate to the effect that all lease deed conditions and other conditions mentioned in paragraph 4 above have been complied with, duly incorporated in the lease agreement and send it to the Government. The District Collector, Karur is also instructed to include all the conditions imposed by State Level Environment Impact Assessment Authority in the reference 6th read above

(BY ORDER OF THE GOVERNOR)

C.V. SANKAR
ADDITIONAL CHIEF SECRETARY TO GOVERNMENT

To
Thiru P. Ramachandran,
S/o. Paramasivam,
12, Bharathiyar, 5th Street,
SS Colony, Ward-18, Madurai.

The Commissioner of Geology and Mining,
Guindy, Chennai-600 032.

The District Collector, Karur District

Copy to:
The Special Personal Assistant to Hon'ble Minister for Industries,
Chennai-600 009.
Industries (OP II) Dept, Chennai - 600 009
Stock File / Spare Copy

// FORWARDED / BY ORDER //

SECTION OFFICER



Annexure

G.O. (M) No.37 Industries (MMB.2) Department, Dated : 19.7.2016

- 1 The applicant shall execute an agreement within one month from the date of receipt of the Government order
- 2 The date of commencement of the period of lease shall be the date on which the agreement is executed
- 3 The applicant shall pay seignior age or dead rent whichever is more in respect of the actual quantity of granite removed at the rate prescribed from time to time in Appendix -II of the Tamil Nadu Minor Mineral Concession Rules, 1959
- 4 The applicant should keep correct accounts showing the quantities and other particulars of all minerals obtained from the lands permitted to quarry
- 5 The applicant should also allow any officer authorized by the District Collector or any other officer authorized by the State Government in this behalf to inspect the area and verify records and accounts and furnish such information under the terms as may be required by them.
- 6 The applicant shall carry out the quarrying operations in skilful, scientific systematic manner keeping in view the proper safety of the labour conservation of minerals and preservation of environment ecology.
- 7 The applicant shall allow any officer authorized by the District Collector and Director of Geology and Mining to enter upon the area and inspect for the purpose mentioned in conditions 4 and 6 above and also carry out the directions issued to the satisfaction of the above said authorities.
- 8 No quarrying activities connected there to shall be done before the execution of the agreement and registration is at the cost of the applicant.
- 9 No hindrance shall be caused to the adjoining pattadars or public.
- 10 The applicant should restrict his mining operation strictly within the permitted area as defined in the sketch.
- 11 The terms and conditions are also subject to such further modifications, deletion and additions alternation as may be ordered by the Government to be included in the agreement to be executed for this purpose
- 12 The applicant should maintain at his cost proper signboards indicating the survey numbers, years of the lease, name of the lease holder and the lease period to the satisfaction of the District Collector, Director of Geology and Mining and maintain it all time at the quarry site



13. No quarrying shall be done within a distance of 25 feet of the boundaries of the permitted area.
14. The applicant should make his own arrangements to form the road from the public road to the place of his quarry.
15. The lessee shall strictly adhere to the statutory and safety requirements.
16. The waste materials generated during quarrying operation shall be dumped only in the area granted under lease.
17. That 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.
18. That the approval of the mining plan does not in any way imply the approval of the Government in terms of any other provision, Mines and Minerals (Development and Regulation) Act, 1957, or any other connected Laws including Forest (Conservation) Act 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act, 1884, (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Minerals Concession Rules 1959.
19. That the mining plan is approved without prejudice to any other order or **direction from any court of competent jurisdiction.**

C.V. SANKAR
ADDITIONAL CHIEF SECRETARY TO GOVERNMENT

// True copy //

SECTION OFFICER


S.DHANASEKAR, M.Sc., (Geo)
Qualified Person



ANNEXURE-III
MINING PLAN APPROVED LETTER

500 mm

COMMISSIONERATE OF GEOLOGY AND MINING

From
Thiru.J.Jayakanthan, I.A.S.,
Commissioner of Geology and Mining,
Guindy, Chennai-32

To
Thiru.P.Ramachandran,
S/o.Paramasivam,
12,Bharathiyar 5th Street,
SS Colony Ward-18,
Madurai District.625 016.

Rc.No.4631/MM2/2021 dated: 11.10.2022

Sir,

Sub: Mines and Minerals - Minor Mineral - Multi-colour Granite - Karur District and Taluk - K.Pitchampatti Village - S.F.Nos.407/1 (1.09.0 hecets), 407/2 (0.45.5 hecets), 407/3 (Part) (0.32.5 hecets), 407/4 (0.05.5 hecets), 408/3 (0.44.0 hecets) and 408/4 (Part) (0.48.0 hecets)- Over an extent of 2.84.5 hecets of patta lands -Multi Colour Granite quarry lease granted to Thiru.P.Ramachandran - 1st Scheme of Mining submitted for approval - Recommended and forwarded by Deputy Director (G&M), Karur for approval- Approval Accorded - Regarding.

- Ref: 1) The Commissioner of Geology and Mining letter No. 503/MM2/2016, Dt. 16.02.2016
- 2) G.O.3(D) No.37, Industries (MMB2), Department, Dated:19.7.2016.
- 3) Thiru.P.Ramachandran, S/o.Paramasivam, 12, Bharathiyar 5th Street, SS Colony Ward, Madurai District, letter dated 29.03.2021.
- 4) The Deputy Director of Geology and Mining, Karur Letter No.248/Mines/2021 dated15.07.2021.
- 5) The Director, Geology and Mining letter No.4631/MM2/2021 dated17.01.2022.
- 6) Thiru.P.Ramachandran, S/o.Paramasivam, 12, Bharathiyar 5th Street, SS Colony Ward, Madurai District, letter dated25.07.2022
- 7) Deputy Director (G&M), Karur letter Rc.No.248/Mines/2021 dated 10.08.2022.

Kind attention is invited to the references cited above.

2) Thiru.P.Ramachandran has been granted lease for quarrying Multi Colour Granite in S.F.Nos.407/1 (1.09.0 hecets), 407/2 (0.45.5

hects), 407/3 (Part) (0.32.5 hects), 407/4 (0.05.5 hects), 408/3 (0.44.0 hects) and 408/4 (Part) (0.48.0 hects) over an extent of 2.84.5 hectares of patta lands in K.Pitchampatti Village, Karur Taluk and District vide G.O.3(D) No.37, Industries (MMB2), Department, Dated:19.7.2016. The lease deed was executed on 05.08.2016. The lease period is twenty years from 05.8.2016 to 04.8.2036.

3) The Mining plan for Multi-Colour Granite in K.Pitchampatti Village, Karur Taluk and District was approved by Commissioner of Geology and Mining, Industrial Estate, Guindy, Chennai-32 vide letter Rc.No. 503/MM2/2016 dated 16.02.2016.

4) The Deputy Director (G&M), Karur District in the reference 4th cited has forwarded the 1st Scheme of Mining Plan submitted by the lessee Thiru.P.Ramachandran for the period from 2021-22 to 2025-26 in time for approval in respect of quarry lease granted in S.F.Nos.407/1 , 407/2, 407/3 (Part), 407/4, 408/3 and 408/4 (Part) over an extent of 2.84.5 hectares of patta lands in K.Pitchampatti Village, Karur Taluk and District.

5) In the reference 5th cited, the 1st scheme of mining submitted by the lessee Thiru.P.Ramachandran was returned to the DD, Karur to rectify the defects and to resubmit the same for approval. Accordingly, vide the reference 7th cited above, the Deputy Director, Karur has furnished his report recommending the 1st Scheme of Mining submitted by the lessee Thiru.P.Ramachandran for approval as per Granite Conservation and Development Rules, 1999.

6) Based on the recommendation of the Deputy Director (G&M), Karur and in exercise of the powers conferred under Rule, 18(4) of Granite Conservation and Development Rules, 1999 read with G.O.(Ms).No.87, Industries (MMC.1) Department dated 22.02.2001, the 1st Scheme of Mining submitted by Thiru.P.Ramachandran is approved for the period 05.08.2022 to 04.08.2026 with the ROM of 17,520 Cbm of granite subject to the following conditions:

- i. A safety distance of 7.5 m should be left out to the adjacent patta lands all along the boundaries of the lease applied area.
- ii. This scheme of 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.
- iii. The approval of the scheme of mining (including progressive mine closure plan) does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Act 1957, or any other law including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1986, Indian Explosives Act, 1884 (Central Act IV of 1884) and the rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- iv. This scheme of mining including progressive mine closure plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- v. Provisions of the Mines Act, 1952 and the Rules and Regulations made there under including submission of notice of opening, appointment of manager and other statutory officials as required under Mines Act, 1952 shall be complied with.
- vi. Provisions made under Mines and Minerals (Development & Regulation) Act, 1957, MMDR Amendment Act, 2015 and Granite Conservation and Development Rules, 1999 made there under shall be complied with.
- vii. This approval of scheme of mining is restricted to the mining lease area only. The mining lease area is as shown on the statutory plan under Granite Conservation and Development Rules, 1999. The Directorate of Geology and

Mining does not take any responsibility regarding correctness of the boundaries of the lease shown on the ground with reference to the lease map and other plans furnished by the lessee.

- viii. If anything is found to be concealed as required by the Granite Conservation and Development Rules, 1999 and Tamil Nadu Minor Mineral Concession Rules, 1959 and proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.
- ix. Relaxation to be obtained under Rule 106(2)(a)&(b) of Metalliferous Mines Regulations, 1961 from the Director of Mines Safety, if necessary.
- x. The lessee should obtain environmental clearance from the appropriate authority.
- xi. This 1st Scheme of Mining is approved for the proposal contained therein and is applicable from the date of approval of the document for the quarrying activities to be carried out within the leasehold area.
- xii. The earlier instances of irregular / illegal quarrying, if any, shall not be regularized through the approval of this document.
- xiii. The lessee shall remit the penalty / cost of mineral / other dues if any as arrived by the Deputy Director/ Deputy Director (G&M), Karur District in future.
- xiv. The quarry labourers shall be registered with the Labour Board and shall be enrolled under the Insurance Scheme.
- xv. Non adherence to any condition set-out above, the approval shall be deemed to have been withdrawn with immediate effect.
- xvi. The applicant should comply with the conditions stipulated in the Government of India, Ministry of Mines order no.11/02/2020, dated 14.01.2020 issued as per the

orders of the Hon'ble Supreme Court of India dated 08.01.2020 that, "the mining lease holders shall after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to this mining activities and restore the land to a condition which is fit for growth of fodders, flora and fauna etc."

- xvii. The lessee has to pay the stamp duty for enhanced quantity in the 1st scheme of mining.
- xviii. Child labour should not be engaged.

Approved scheme of mining is sent herewith for further necessary action.

Encl: Approved scheme of mining

Sd/- J.Jayakanthan,
Commissioner of Geology and Mining

Forwarded / By Order

J. Jayakanthan
11/10/2022
Additional Director

Copy to

1. The Director of Mines Safety,
Lapis Lagoon, AA Block,
Shanthi Colony, Anna Nagar,
Chennai-40. (With AMP)
2. The Deputy Director,
Geology and Mining,
Karur. (With AMP)
3. The District Collector,
Karur.

Copy Submitted to:

Additional Chief Secretary to Government,
Industries, Investment Promotion &
Commerce Department,
Secretariat, Chennai-9.

ANNEXURE-IV
500M Radius letter

From

Dr.P.Jayapal M.Sc., Ph.D.,,
Deputy Director,
Geology and Mining,
Karur.

To

Thiru.P.Ramachandran,
S/o.Paramasivam,
12, Bharathiyar 5th Street,
SS Colony Ward,
Madurai District

R.C. No.248/Mines/2021, Dated:27.10.2022

Sir,

Sub: Mines and Minerals – Minor Mineral – Multicolour Granite – Karur District and Taluk – K.Pitchampatti Village – S.F.Nos.407/1 (1.09.0 hecets), 407/2 (0.45.5 hecets), 407/3 (Part) (0.32.5 hecets), 407/4 (0.05.5 hecets), 408/3 (0.44.0 hecets) and 408/4 (Part) (0.48.0 hecets)– Over an extent of 2.84.5 hecets of patta lands - quarry lease granted to Thiru.P.Ramachandran - Requested for Existing/proposed/abandoned quarries situated within 500 mts radial distance - details furnished – Regarding.

- Ref: 1. G.O.3(D) No.37, Industries (MMB2), Department, Dated:19.7.2016.
2. Thiru.P.Ramachandran letter dated: 18.10.2022.

In the reference 1st cited, Thiru.P.Ramachandran had been granted quarry lease for quarrying Multicoloured Granite in S.F.Nos.407/1 (1.09.0 hecets), 407/2 (0.45.5 hecets), 407/3 (Part) (0.32.5 hecets), 407/4 (0.05.5 hecets), 408/3 (0.44.0 hecets) and 408/4 (Part) (0.48.0 hecets)– Over an extent of 2.84.5 hecets of patta lands in K.Pitchampatti Village, Karur District and Taluk.

In this regard, Thiru.P.Ramachandran have requested the Deputy Director, Geology and Mining, Karur to provide the details of existing/proposed and expired/abandoned quarries situated within 500 meter radial distance from the lease granted area.

As requested by the lessee the particulars furnished as detailed below.

1. Existing Quarries:-

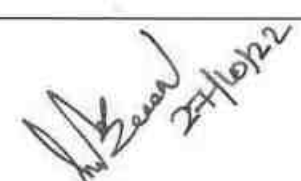
Sl No.	Name of the Owner	S.F.Nos.	Extent (hect)	Lease Period	Remarks.
1	Thiru.P.Ramachandran, S/o.Paramasivam, 12, Bharathiyar 5th Street, SS Colony Ward, Madurai District	407/1, 407/2, 407/3(P) 407/4, 408/3 408/4(P)	2.84.5	05.08.2016 to 04.08.2036	Scheme of Mining plan approved and proposed for Environmental Clearance
2	Tvl.Ananta Granites LLP, 8-2-293/82/A/501, Road No.36, Jubilee Hills, Hydrabad-500 033 Telengana.	468/1B (P) 417/8 468/2	2.22.5	21.08.2017 to 20.08.2037	Last permit obtained on 21.03.2022

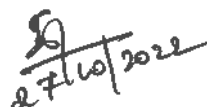
II. Proposed Area:-

Sl No.	Name of the Owner	S.F.Nos.	Extent (hect)	Lease Period	Remarks.
1	M/s.Dahlia Granites Pvt ltd., S.F.No.468/1A, R.Vellapatty, K.Pitchampatty Post, Karur District	417/2 417/5 417/7(P) 454/2	2.65.00	Proposed area	---
2	Smt.P.Sujeetha, D/o.Pandian, residing at No.33, K.P.Nagar, 5 th cross, Athur Post, Karur District.	404/1(P) 404/2(P) 404/3(P) 404/4(P) 404/5(P) 404/6(P) 404/7(P) 404/8 405/1 405/2 405/3(P) 405/4 405/5(P) 405/6A(P)	1.80.0	Proposed area	---

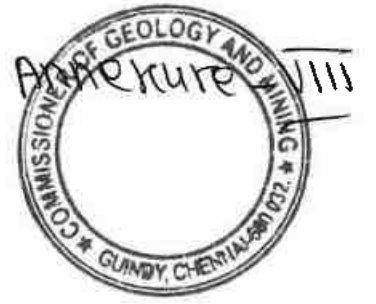
III. Lease Expired and abandoned Area:-

Sl No.	Name of the Owner	S.F.Nos.	Extent (hect)	Lease Period	Remarks.
Nil					


 Deputy Director,
 Geology and Mining,
 Karur.


 27/10/2022

ANNEXURE-V
FMB, A REGISTER, VILLAGE MAP AND
PATTA COPY



தமிழக அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : கரூர்

வட்டம் : கரூர்

வருவாய் கிராமம் : கா.பிச்சம்பட்டி

பட்டா எண் : 2926

உரிமையாளர்கள் பெயர்

1.	கருப்பண்ணாள்	மகன்		சக்திவேல்			
		நன்செய்		புன்செய்		மற்றவை	
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை
புல எண்	உட்பிரிவு	ஹெக்ட - ஏர்	ரூ - பை	ஹெக்ட - ஏர்	ரூ - பை	ஹெக்ட - ஏர்	ரூ - பை
407	1	--	--	1 - 9.00	1.50	--	--
408	1	--	--	1 - 33.00	2.66	--	--
				2 - 42.00	4.16		

குறிப்பு :



1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <http://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/01/044/02926/20479 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 31-12-2015 வரை வட்டாட்சியர் அலுவலகத்தில் இருந்து பெறப்பட்டவை.
3. இத் தகவல்கள் 31-12-2015 அன்று 11:56:25 AM நேரத்தில் அச்சடிக்கப்பட்டது.
4. கைப்பேசி கேமராவின் 2D barcode படப்பான் மூலம் டிடித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

2015



தமிழக அரசு

வசூலாயத் துறை

தலை உரிமை விபரங்கள் : தி. எண் 10(1) பிரிவு

மாவட்டம் : கரூர்

வட்டம் : கரூர்

வசூலாய விசாரணை : கா.பிச்சம்பட்டி

பட்டா எண் : 2917

உரிமையாளர்கள் பெயர்

1.	சிறப்பெண்	மகன்		சாமுவேல்			
		நன்செய்		புன்செய்		மற்றவை	
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை
புல எண்	உட்பிரிவு	ஹெக்ட - ஏர்	ரூ - பை'	ஹெக்ட - ஏர்	ரூ - பை	ஹெக்ட - ஏர்	ரூ - பை
407	2	--	--	0 - 45.50	0.63	--	--
				0 - 45.50	0.63		

குறிப்பு :



1. பெறக்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <http://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/01/044/02917/20489 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 10-10-2015 வரை வட்டாட்சியர் அலுவலகத்தில் இருந்து பெறப்பட்டவை.
3. இத் தகவல்கள் 15-12-2015 அன்று 12:48:30 PM நேரத்தில் அச்சடிக்கப்பட்டது.
4. கைப்பேசி கேமராவின் 2D barcode படப்பான் மூலம் படத்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

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தமிழக அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : கரூர்

வட்டம் : கரூர்

வருவாய் கிராமம் : கா.பிச்சம்பட்டி

பட்டர் எண் : 2887

உரிமைபாளர்கள் பெயர்

1.	கருப்பண்ணன்		மகன்		சக்திவேல்		
	நன்செய்		புன்செய்		மற்றவை		
	பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
புல எண்	உட்பிரிவு	ஹெக்ட - ஏர்	ரூ - பை	ஹெக்ட - ஏர்	ரூ - பை	ஹெக்ட - ஏர்	ரூ - பை
407	3	--	--	0 - 60.00	0.83	--	--
408	4	--	--	1 - 9.50	2.19	--	--
				1 - 69.50	3.02		

குறிப்பு :



1. மேற்கண்ட தகவல் / சான்றிதழ் தகவல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <http://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/01/044/02887/20485 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 19-02-2015 வரை வட்டாட்சியர் அலுவலகத்தில் இருந்து பெறப்பட்டவை.
3. இத் தகவல்கள் 15-12-2015 அன்று 12:49:56 PM நேரத்தில் அச்சடிக்கப்பட்டது.
4. கைப்பேசி கேமராவின் 2D barcode மூலம் படித்து 3G/GPRS வறி இணையதளத்தில் சரிபார்க்கவும்

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தமிழக அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : கரூர்

வட்டம் : கரூர்

வருவாய் கிராமம் : கா.பிச்சம்பட்டி

பட்டா எண் : 1453

உரிமையாளர்கள் பெயர்

1.	வேலுச்சாமி	மகன்	காளியப்பன்
2.	கருப்பண்ணன்	மகன்	சக்திவேல்

		நன்செய்		புன்செய்		மற்றவை	
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை
புல எண்	உட்பிரிவு	ஹெக்ட - ஏர்	ரூ - பை	ஹெக்ட - ஏர்	ரூ - பை	ஹெக்ட - ஏர்	ரூ - பை
407	4	--	--	0 - 5.50	0.08	--	--
				0 - 5.50	0.08		

குறிப்பு :



1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <http://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/01/044 /01453/10443 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 31-12-2015 வரை வட்டாட்சியர் அலுவலகத்தில் இருந்து பெறப்பட்டவை.
3. இத் தகவல்கள் 31-12-2015 அன்று 01:10:09 PM நேரத்தில் அச்சடிக்கப்பட்டது.
4. கைப்பேசி கோமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

8.4



தமிழக அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : கரூர்

வட்டம் : கரூர்

வருவாய் கிராமம் : காசிச்சம்பட்டி

பட்டா எண் : 2918

உரிமையாளர்கள் பெயர்

1.	சிமியோன்		மகன்		சாமுவேல்		
	நன்செய்		புன்செய்		மற்றவை		
	பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
புல எண்	உட்பிரிவு	ஹெக்ட - ஏர்	ரூ - பை	ஹெக்ட - ஏர்	ரூ - பை	ஹெக்ட - ஏர்	ரூ - பை
408	3	--	--	0 - 44.00	0.88	--	--
				0 - 44.00	0.88		

குறிப்பு :



1. மேற்கண்ட தகவல் / சான்றிதழ் தகவல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <http://eservices.tn.gov.in> என்ற இணைய தளத்தில் 14/01/044/02918/20490 என்ற குறிப்பு எண்ணை உள்ளிடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 10-10-2015 வரை வட்டாட்சியர் அலுவலகத்தில் இருந்து பெறப்பட்டவை.
3. இத் தகவல்கள் 15-12-2015 அன்று 12:48:08 PM நேரத்தில் அச்சடிக்கப்பட்டது.
4. கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

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அ-பதிவேடு விவரங்கள்

மாவட்டம் : கரூர்

வட்டம் : கரூர்

கிராமம் : கா.பிச்சம்பட்டி

1. புல எண்	407	9. மண் வயனமும் ரகமும்	8 - 4
2. உட்பிரிவு எண்	1	10. மண் தரம்	6
3. பழைய புல உட்பிரிவு எண்	407 ,	11. தீர்வை (ரூ - ஹெ)	1.38
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஏர்)	1 - 9.00
5. அரக / ரயத்துவாரி ரயத்துவாரி		13. மொத்த தீர்வை (ரூ - பை)	1.50
6. நிலத்தின் வகை	புஞ்சை	14. பட்டா எண்	2926
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	-	16. பெயர்	1.சக்திவேல்

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அ-பதிவேடு விவரங்கள்



மாவட்டம் : கரூர்

வட்டம் : கரூர்

கிராமம் : கா.பிச்சம்பட்டி

1. புல எண்	407	9. மண்வயனமும் ரகமும்	8 - 4
2. உட்பிரிவு எண்	2	10. மண் தரம்	6
3. பழைய புல உட்பிரிவு எண்	407 /	11. தீர்வை (ரூ - ஹெ)	1.38
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஏர்)	0 - 45.50
5. அரக / ரயத்துவாரி ரயத்துவாரி		13. மொத்த தீர்வை (ரூ - பை)	0.63
6. நிலத்தின் வகை	பஞ்சை	14. பட்டா எண்	2917
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. ஒரு பொகமா	-	16. பெயர்	1.சாமுவேல்

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அ-பதிவேடு விவரங்கள்

மாவட்டம் : கரூர்

வட்டம் : கரூர்

விரளம் : கா.பிச்சம்பட்டி

1. புல எண்	407	9. மண்வயனமும் ரகமும்	8 - 4
2. உட்பிரிவு எண்	3	10. மண் தரம்	6
3. பழைய புல உட்பிரிவு எண்	407 ,	11. தீர்வை (ரூ - ஹெ)	1.38
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஏர்)	0 - 60.00
5. அரசு / ரயத்துவாரி ரயத்துவாரி		13. மொத்த தீர்வை (ரூ - பை)	0.83
6. நிலத்தின் வகை	பஞ்சை	14. பட்டா எண்	2887
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	-	16. பெயர்	1.சக்திவேல்

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அ-பதிவேடு விவரங்கள்

மாவட்டம் : கரூர்

வட்டம் : கரூர்

கிராமம் : கா.பிச்சம்பட்டி

1. புல எண்	407	9. மண் வயனமும் ரகமும்	8 - 4
2. உட்பிரிவு எண்	4	10. மண் தரம்	6
3. பழைய புல உட்பிரிவு எண்	407 ,	11. தீர்வை (ரூ - ஹெ)	1.38
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஏர்)	0 - 5.50
5. அரக / ரயத்துவாரி ரயத்துவாரி		13. மொத்த தீர்வை (ரூ - பை)	0.08
6. நிலத்தின் வகை	புஞ்சை	14. பட்டா எண்	1453
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	-	16. பெயர்	1.காளியப்பன் 2.சக்திவேல்

(Handwritten signature)



அபதிவேடு விவரங்கள்

மாவட்டம் : கரூர்

வட்டம் : கரூர்

கிராமம் : கா.பிச்சம்பட்டி

1. புல எண்	408	9. மண்வயனமும் ரகமும்	8 - 3
2. உட்பிரிவு எண்	3	10. மண் தரம்	5
3. பழைய புல உட்பிரிவு எண்	408	11. தீர்வை (ரூ - ஹெ)	2.00
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஏர்)	0 - 44.00
5. அரசு / ரயத்துவாரி ரயத்துவாரி		13. மொத்த தீர்வை (ரூ - பை)	0.88
6. நிலத்தின் வகை	புஞ்சை	14. பட்டா எண்	2918
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. திரு போகமா	-	16. பெயர்	1.சாமுவேல்

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அ-பதிவேடு விவரங்கள்

மாவட்டம் : கரூர்

வட்டம் : கரூர்

கிராமம் : கா.பிச்சம்பட்டி

1. புல எண்	408	9. மண்வயனமும் ரகமும்	8 - 3
2. உட்பிரிவு எண்	4	10. மண் தரம்	5
3. பழைய புல உட்பிரிவு எண்	408 ,	11. தீர்வை (ரூ - ஹெ)	2.00
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஏர்)	1 - 9.50
5. அரசு / ரயத்துவாரி ரயத்துவாரி		13. மொத்த தீர்வை (ரூ - டை)	2.19
6. நிலத்தின் வகை	பஞ்சை	14. பட்டா எண்	2887
7. பாசன ஆதாரம்	-	15. குறிப்பு	விடு
8. திரு யோகமா	-	16. பெயர்	1.சக்திவேல்

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சி. எண். 53. காக்காபடி பிச்சம்பட்டி.

1	2	3	4	5	6	7	8	9	10	
13	405-பா	ர	4	...	8-4	6	1 38	2 30.0	3 18	504 ம. நகுல்சாமி.
								11 92.0	16 48	
1	406-பா	ர	4	...	8-4	6	1 38	0 06.0	0 08	1247 மா. ராஜு
2	-பா	ர	4	...	8-4	6	1 38	0 01.5	0 07	263 மா. காளிமுத்து.
3	-பா	ர	4	...	8-4	6	1 38	0 14.0	0 19	8 ம. அருணாசலம் பிள்ளை.
4	-பா	ர	4	...	8-4	6	1 38	0 10.0	0 14	1919 ம. அருணாசலம் பிள்ளையும் மற்றும் மூன்று போர்களும்.
5	-பா	ர	4	...	8-4	6	1 38	1 12.0	1 54	1810 மா. காளிமுத்து(1), வெள்ளைச்சாமி(2), ராஜு(3).
6	-பா	ர	4	...	8-4	6	1 38	0 39.0	0 54	8 ம. அருணாசலம் பிள்ளை.
7	-பா	ர	4	...	8-4	6	1 38	1 27.5	1 76	504 ம. நகுல்சாமி.
								3 13.0	4 32	
1	407-பா	ர	4	...	8-4	6	1 38	1 09.0	1 50	503 ரா. நகுல்சாமி.
2	-பா	ர	4	...	8-4	6	1 38	0 45.5	0 63	264 வெ. காளியப்பன்.
3	-பா	ர	4	...	8-4	6	1 38	0 60.0	0 83	1810 மா. ராஜு(1), காளிமுத்து(2), வெள்ளைச்சாமி(3).
4	-பா	ர	4	...	8-4	6	1 38	0 05.5	0 08	1453 வெ. காளியப்பன்(1), ரா. நாகுல்சாமி(2).
5	-பா	ர	4	...	8-4	6	1 38	0 32.0	0 44	503 ரா. நகுல்சாமி.
6	-பா	ர	4	...	8-4	6	1 38	0 53.0	0 73	394 வ. சேலாசன்.
7	-பா	ர	4	...	8-4	6	1 38	0 77.5	1 07	1038 ம. முத்துசாமி கவுண்டர்.
	-பா	ர	4	...	8-4	6	1 38	0 07.0	0 10	1038 ம. முத்துசாமி கவுண்டர்.
								3 89.5	5 38	

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1	2	3	4	5	6	7	8	9	10		
408	1	408-பா	ர	4	...	8-3	5	2 00	1 33.0	2 66	503 ரா. நகுல்சாமி
	2	-பா	ர	4	...	8-3	5	2 00	0 78.0	1 56	1038 ம. முத்துசாமி.
	3	-பா	ர	4	...	8-3	5	2 00	0 44.0	0 88	264 வே. காளியப்பன்
	4	-பா	ர	4	...	8-3	5	2 00	1 09.5	2 19	1810 மா. ராஜா(1), காளிமுத்து (2), வெள்ளைச் சாமி (3).
	5	-பா	ர	4	...	8-3	5	2 00	0 18.5	0 37	503 ரா. நகுல்சாமி.
	6	-பா	ர	4	...	8-3	5	2 00	0 26.0	0 52	1038 ம. முத்துசாமி.
	7	-பா	ர	4	...	8-3	5	2 00	0 15.0	0 30	2039 ரா. நகுல்சாமி யும் மற்றும் ஐந்து பேர் களும்.
	8	-பா	ர	4	...	8-3	5	2 00	0 53.0	1 06	1038 ம. முத்துசாமி.
	9	-பா	ர	4	...	8-3	5	2 00	0 10.5	0 21	1811 ரா. நகுல் சாமி (1), ம. முத்துசாமி கவுண்டர் (2).
									4 87.5	9 75	
409	...	409	அ	4	...	...	...	...	0 51.5	...	...
410	...	410	அ	4	...	...	...	...	0 35.5	...	...
411	...	411	அ	4	...	...	...	...	0 35.5	...	...
412	1	412-பா	ர	4	...	8-3	5	2 00	0 56.5	1 13	264 வே. காளியப்பன்.
	2	-பா	ர	4	...	8-3	5	2 00	0 55.5	1 11	1038 ம. முத்துசாமி.
	3	-பா	ர	4	...	8-3	5	2 00	0 40.0	0 80	502 தா. நகுல்சாமி.
	4	-பா	ர	4	...	8-1	5	2 00	0 36.5	0 73	1686 வே. நகுல் சாமி (1), காளியப்பன் (2).
	5	-பா	ர	4	...	8-3	5	2 00	0 18.0	0 36	951 மு. மாரப்ப கவுண்டர்.
	6	-பா	ர	4	...	8-3	5	2 00	0 02.0	0 06	951 மு. மாரப்ப கவுண்டர்.
	7	-பா	ர	4	...	8-3	5	2 00	0 03.5	0 07	1812 வே. நகுல் சாமி(1), காளியப்பன்(2), மு. மாரப்ப கவுண்டர்(3)
	8	-பா	ர	4	...	8-3	5	2 00	0 33.5	0 67	503 ரா. நகுல்சாமி

சாக்கவாடி பிச்சம்பட்டி
 கிராம நிர்வாக அலுவலர்
 18-கா.பிச்சம்பட்டி
 கரை.

1424- ஆம் பரவிடம்

கலைப் பரவிடம்

வினாக்கள் எதற்கும்
வினாக்கள் 18 சீர் பரவிடம்

நீர் வர்த்தகத்திற்குப்
புள்ளியின் விவரம்.

முதல் பரவிடம்.

(1) நீர் அமைவு எண்.	(2) உட்கிரை எண்.	(3) பகுதி.	(4) நிலம்.	(5) ஒரு பரவிடம் ஒன்றுக்கு ஒரு பரவிடம் ஒன்றுக்கு ஒரு பரவிடம் ஒன்றுக்கு	(6) கையாண்டுள்ள பரவிடம் கையாண்டுள்ள பரவிடம் கையாண்டுள்ள பரவிடம்	(7) பரவிடம் எண் பரவிடம் பரவிடம் எண் பரவிடம் பரவிடம் எண் பரவிடம்	(8) நீர் வர்த்தகம் பரவிடம் நீர் வர்த்தகம் பரவிடம் நீர் வர்த்தகம் பரவிடம்	(9) பரவிடம் பரவிடம்.	(10) பரவிடம் / பரவிடம். பரவிடம் / பரவிடம். பரவிடம் / பரவிடம்.	(11) பரவிடம் பரவிடம்.	(12) பரவிடம் பரவிடம்.
1424	2	2	2	2	2	2	2	2	2	2	2
1424	3	3	3	3	3	3	3	3	3	3	3

Handwritten notes in Tamil, including a signature and date.

நாள் 2
வினாக்கள் வகுப்புகள் பரவிடம் கையாண்டுள்ள பரவிடம்

(13) நீர் வர்த்தகம் பரவிடம் பரவிடம் / பரவிடம்.	(14) பரவிடம் பரவிடம்.	(15) பரவிடம் / பரவிடம்.	(16) பரவிடம் பரவிடம்.	(17) பரவிடம் பரவிடம்.	(18) பரவிடம் பரவிடம்.	(19) பரவிடம் பரவிடம்.

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**ANNEXURE-VI MINING PLAN REPORT &
PLATES**

SCHEME OF MINING
WITH
PROGRESSIVE MINE CLOSURE PLAN
FOR
MULTI COLOUR GRANITE QUARRY



(Under Rule 18(2) of Granite Conservation and Development Rules, 1999)

EXTENT : **2.84.5 HA.**
S.F. Nos. : **407/1, 407/2, 407/3(P), 407/4,**
408/3 & 408/4(P)
VILLAGE : **K.PITCHAMPATTI**
TALUK : **KARUR**
DISTRICT : **KARUR**
STATE : **TAMIL NADU**

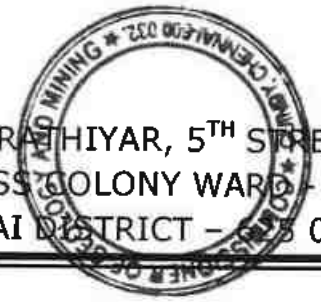
Scheme of Mining Period : 2021-2022 to 2025-2026

LESSEE
THIRU. P. RAMACHANDRAN,
S/o. PARAMASIVAM,
12, BHARATHIYAR, 5TH STREET,
SS COLONY WARD -18,
MADURAI DISTRICT – 625 016.

PREPARED BY :
S. DHANASEKAR, M.SC.,
QUALIFIED PERSON,
NO. 5/30-7 B, AVVAI NAGAR,
PONKUMAR MINES ROAD,
JAGIR AMMAPALAYAM,
SALEM DISTRICT – 636 302.
E-mail: geodhana@yahoo.co.in
CELL: 98946 28970 & 73733-74702.

P. RAMACHANDRAN,

12, BHARATHIYAR, 5TH STREET,
SS COLONY WARD - 18,
MADURAI DISTRICT - 625 016.



CONSENT LETTER FROM LESSEE

The Scheme of Mining with Progressive Mine Closure Plan in respect of Multi Colour Granite Quarry over an extent of 2.84.5 Ha. in S.F. Nos.407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4(P) in K.Pitchampatti Village, Karur Taluk, Karur District, Tamil Nadu State has been prepared by **Shri S. DHANASEKAR, M.Sc.,** Qualified Person.

I request the Commissioner of Geology and Mining, Chennai to make further correspondence regarding modification of the Scheme of Mining with Progressive Mine Closure Plan with the said qualified person in his following Address:

S.DHANASEKAR, M.Sc.,

QUALIFIED PERSON

No.5/30-7B, Avvai Nagar,

Ponkumar Mines Road,

Jagir Ammapalayam,

Salem District - 636302.

E-Mail: geodhana@yahoo.co.in

Cell: 98946-28970

I hereby undertake that all the modifications, if any, made in the Scheme of Mining with Progressive Mine Closure Plan by the qualified person may be deemed to have been made with our knowledge and consent and shall be acceptable to me and binding on me in all respects.


(P. RAMACHANDRAN.)
Signature of the Lessee

Place: Karur

Date: 22-03-2022



P. RAMACHANDRAN,

12, BHARATHIYAR, 5TH STREET
SS COLONY WARD - 18
MADURAI DISTRICT - 625 018



DECLARATION OF THE MINE OWNER

The Scheme of Mining with Progressive Mine Closure Plan in respect of Multi Colour Granite Quarry over an extent of 2.84.5 Ha. in S.F. Nos.407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4(P) in K.Pitchampatti Village, Karur Taluk , Karur District, Tamil Nadu State has been prepared in full consultation with us by **Shri S. DHANASEKAR, M.Sc.,** Qualified Person. I have understood its contents and agree to implement the same in accordance with Laws applicable to mines.

(P. RAMACHANDRAN.)
Signature of the Lessee

Place: Karur

Date: 22-03-2022

S.Dhanasekar, M.Sc.,
Qualified Person,

No.5/30-7B, Avvai Nagar,
Ponkumar Mines Road,
Jagirampalayam,
Salem- 636 300



CERTIFICATE

The provisions of Granite Conservations and Development Rules, 1999 have been observed in the Scheme of Mining with Progressive Mine Closure Plan for Multi Colour Granite Quarry over an extent of 2.84.5Ha. In S.F. Nos.407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4(P) in K.Pitchampatti Village, Karur Taluk, Karur District, Tamilnadu State and is prepared for Thiru. P. Ramachandran, S/o.Paramasivam, 12, Bharathiyar, 5th street, SS Colony Ward -18, Madurai District – 625 016.

Whenever specific permissions, approvals, exemptions or relaxations are required, the lessee will approach the concerned authorities of Directorate of Geology and Mining, Government of Tamilnadu, Guindy, Chennai – 600 032 for such permissions, exemptions, relaxations and approvals.

It is also certified that the information furnished in the above Scheme of Mining with Progressive Mine Closure Plan are true and correct to the best of our knowledge.

Certified


Signature of Qualified Person,
S.DHANASEKAR, M.Sc.,(Geo)
Qualified Person

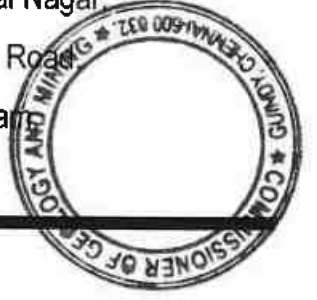
Place : Salem

Date : 31-03-22



S.Dhanasekar, M.Sc.,
Qualified Person,

No.5/30-7B, Avvai Nagar,
Ponkumar Mines Road,
Jagirammalayan,
Salem- 636 302.



CERTIFICATE

Certified that provision of Mines Act, Rules and Regulations and orders made there under have been observed in the Scheme of Mining with Progressive Mine Closure Plan for Multi Colour Granite Quarry over an extent of 2.84.5Ha. In S.F. Nos.407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4(P) in K.Pitchampatti Village, Karur Taluk, Karur District, Tamilnadu State and is prepared for Thiru. P. Ramachandran, S/o.Paramasivam, 12, Bharathiyar, 5th Street, SS Colony Ward -18, Madurai District – 625 016.

Whenever specific permissions, approvals, exemptions or relaxations are required, the lessee will approach D.G.M.S. for such permissions, approvals, exemptions or relaxations. Standard prescribed by D.G.M.S. in respect of miners health will be strictly implemented.

It is also certified that information furnished in the above Scheme of Mining with Progressive Mine Closure Plan are true and correct to the best of our knowledge.

Certified


Signature of Qualified Person.
S.DHANASEKAR, M.Sc., (Gec.)
Qualified Person

Place : Salem

Date : 31-03-2022



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LIST OF PLATES



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5.	Satellite Image (500m Radius)	ID	1:5000
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10.	Year wise Development and Production Plan	V	1:1000
11.	Year wise Development and Production Sections	V-A	Hor: 1:1000 Ver:1:500
12.	Mine Layout, Land Use Pattern and Afforestation Plan	VI	1:1000
13.	Environment Plan	VII	1:5000
14.	Conceptual/Final mine closure plan	VIII	1:1000
15.	Conceptual/ Final mine closure Sections	VIII-A	Hor: 1:1000 Ver:1:500
16.	Progressive Mine Closure Plan	IX	1:1000

B.U

**SCHEME OF MINING
WITH
PROGRESSIVE MINE CLOSURE PLAN
FOR
K. PITCHAMPATTI MULTI COLOUR GRANITE QUARRY**

(Under Rule 18(2) of GCDR 1999 & 41 of TNMMCR 1959)

@@@@@



1.0 General

The Mining Scheme has been prepared in respect of Multi Colour Granite Quarry in S.F. Nos.407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4(P) extent 2.84.5 Ha. of K.Pitchampatti Village, Karur Taluk, Karur District, for Thiru. P.Ramachandran, S/o.Paramasivam, 12, Bharathiyar, 5th Street, SS Colony Ward -18, Madurai District - 625 016.

Thiru. P. Ramachandran, the Lessee had obtained lease for quarrying granite vide Government Order.(3D) No.37 Industries (MMB.2) Department dated 19.07.2016 for a period of twenty years and the lease deed was executed on 05.08.2016 Mining operations commenced on 08.08.2016 and the lease will expire on 04.08.2036.

The Mining Plan was approved by Director of Geology and Mining, Guindy, Chennai vide letter No.503/MM2/2016 dated 16.02.2016.

Accordingly, the Lessee had obtained Environmental Clearance from SEIAA-TN vide order No. SEIAA-TN/F.No.5073/1(a)/EC.No.3293/2016 dated:11.07.2016. Please refer Annexure- X.

The 1st Scheme of Mining for the period of 05.08.2021-04.08.2022 to 05.08.2025-04.08.2026 is now being prepared and submitted under Rule 18(2) of GCDR 1999 for approval on 29.03.2021.

The 1st Scheme of mining was returned for rectification from the Director's office vide letter No.Rc.No.4631/MM2/2021 dated 17.01.2022. The entire lease area was resurveyed by the Qualified person and his team on 24.03.2022. It was pointed that the recovery percentage in the approved mining plan doesn't match with the actual production which was comparatively very less. This was substantiated by the fact that the quality of the granite is very low than what we expected during the preparation of mining plan. This was proved by the huge stock of the granite rejects.

Other rectifications pointed in the letter was rectified and corrected in the resubmitted Scheme.

Open cast method should be adopted to win the Multi Colour Granite dimensional stones occurring in this area. After removal of over burden soil, conventional blast hole method, wire saw cutting method is being proposed to produce granite dimensional stones from the parent rock mass.



S.DHANASEKAR, M.Sc.,(Geo)
Qualified Person

Cutting into required size, removal of defective portions are done manually using feather and wedges. The dressing of blocks into the required rectangular shaped dimensional stones are done manually by chiseling with experienced chisel men for the maximum recovery of defect free salable material. Marketing of these stone blocks to customers is being ensured by strict quality control measures adopted by the Lessee personals.



2.0 Review of Mining Plan:

a) Name of lessee : Thiru. P.Ramachandran,
Address : 12, Bharathiyar, 5th Street,
SS Colony Ward - 18,
Madurai District - 625 016.
District : Madurai
State : Tamil Nadu
Phone No : +91 9843073154

TABLE 1 - LEASE PARTICULARS

GO. No	Extent (Ha)	Date of Grant	Date of Execution	Period of lease	Date of Expiry
G.O. (3D)No. 3	2.84.5	19.07.2016	05.08.2016	20 Years	04.08.2036

2.1 DETAILS OF APPROVED MININGPLAN/SCHEME OF MINING:

Date and reference of earlier approved Mining Plan/Scheme of Mining under MCR (OR) MCDR: (Indicate Approval No. and Date)

The Mining Plan was approved by Commissioner of Geology and Mining, Guindy, Chennai vide letter No.503/MM2/2016 dated 16.02.2016.

2.2 Details of last modifications if any (for the previous approved period) of approved MP/SOM, indicating date of approval, reason for modification:

-Nil-

2.3 Give review of earlier approved proposal (If any) in respect of exploration, excavation, reclamation etc:

a) **Exploration:**

The Depth persistence of Multi Colour Granite deposit is already proved based on existing pit. This Multi Colour Granite quarry is in operation for last 5 Years. The Mineable Multi Colour Granite body is clearly visible from the existing quarry pit.

b) **Mine Development:**

During the previous approved mining plan period quarry Production & development was taken from Southwestern side of the lease area(Please refer plate No.III & IV.) Already have only one working pit in this lease area.

P. R. D.



The existing pit dimension is given below:

Table No: 2

	PIT
Length (m)	54.0
Width (m)	31.0
Depth (m)	11.0

The present workings had reached a depth of 11.0m. Overall existing pit dimension is 54.0m(L)x31.0m(W)x11.0m(D), where overall estimated quantity is 18414cum. Actual Granite excavated dimension is 49.0m(L)x17.0m(W)x6.0m(D) where in ROM is 4998cum. In ROM, Granite reject wastes are 2143.26cum. This rejected wastes were stored in the non-mineable part of the lease area in scattered manner. 1085.8cum of waste materials were utilized for haul roads and road filling purposes. The Topsoil, weathered Granite and sideburden waste quantity is 13437.5cum. This was dumped on the Eastern part of the lease area. Development of the pits has been done only in the areas where the Granite blocks could be easily mined.

The Multicolor Granite is pale white in colour and in deep-seated condition it may White in colour. Some slender pegmatite veins are intruded in a crisscross fashion, which is likely to be reduced at deeper levels.

Minor strike and dip joints were observed at the surface level, and also extended to deep-seated condition. Taking into consideration of the above geological factors, overburden, interburden, wastage during quarrying, other flaw and flower patches etc, the average recovery percentage has been computed as **35% from the ROM for this scheme period**. The proposed mine development in the ensuing Five Years period of mining scheme is furnished in the year wise development and production plans as shown in Annexure-III and in Plate Nos.V & V-A.

c) Exploitation (Production)

Production of Multi Colour Granite from 05.08.2016-04.08.2017 to 05.08.2020-04.08.2021 was 1747.44M³.

The Production proposed in the Mining Plan and the actual production achieved is given below:

Table No:3

Sl. No	Year	Production proposed in the Mining Plan			Actual production achieved (M ³)		
		ROM (M ³)	Recovery Percentage	Production	ROM (M ³)	Recovery percentage	Production
1	05.08.2016-04.08.2017	1000	60%	600	-	-	-
2	05.08.2017-04.08.2018	1000	60%	600	906	35%	317.028
3	05.08.2018-04.08.2019	1155	60%	693	1385	35%	484.791
4	05.08.2019-04.08.2020	1155	60%	693	1360	35%	476.082
5	05.08.2020-04.08.2021	1320	60%	792	1347	35%	469.539
	TOTAL	5630		3378	4998		1747.44

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The entire lease area was resurveyed by the Qualified person and his team. It was pointed that the recovery percentage in the approved mining plan doesn't match with the actual production which was comparatively very less. This was substantiated by the fact that the quality of the granite is very low than what we expected during the preparation of mining plan. This was proved by the huge stock of the granite rejects. Granite excavated dimension is 49.0m(L)x17.0m(W)x6.0m(D) where in ROM is 4998cum. In ROM, Granite reject wastes are 2143.26cum. This rejected wastes were stored in the non-mineable part of the lease area in scattered manner. 1085.8cum of waste materials were utilized for haul roads and road filling purposes. From ROM, only 1747.44cum of granite blocks were salable. Based on the survey conducted, it was arrived that at present only 35% of recovery will be available.

d) Waste Management:

In the Previous approved Mining Plan, the proposal of the waste dumps in the Middle side of the non-mineable lease area. But, presently, waste material was dumped in the Eastern side of the lease area. Please refer plate No.III & IV.

e) Afforestation:

In the previous approved mining plan, though afforestation programme is clearly stated to plant Casuarina, Eucalyptus, Teak and acacia trees in the lease area. But, lessee planted Pungan, neem trees in the lease area in scattered manner.

f) Land Reclamation and Rehabilitation:

Reclamation of Mined out area does not arise and has not reached the full extent of working. Dumps are properly utilized by planting trees. Reclamation and Rehabilitation of the mine pit shall be started after completion of quarrying.

g) Control of dust, noise and ground violations:

The drilling and blasting parameters are in correlation with the proposals laid down in the approved mining plan. Shallow holes of 32mm dia. holes are drilled and the depth of hole will be generally about 1.0m. Water sprinkled for suppression of air borne dust on Mine haulage roads and waste dumps on regular intervals by water tankers. Drilling of blast holes will be always under wet condition to prevent flying of dust. In the unloading point of Tippers, water was sprinkled and further the drillers were provided with respirators in accordance with mines regulations.

Conventional low explosives were used. Since the dimensional stones, which are needed to be without internal cracks, high explosives were not used. The scale of blasting was however very less considering the rate of production. Muffle blasting was not necessary as the area was free from dwelling houses, public utilities etc., Now wire saw machine is being utilized for primary cutting to liberate the required sizes of block from the parent rock The secondary splitting of the blocks been done by pressure-split method with the help of feather and wedges. In view of above, there is no adverse effect on dust, noise and ground vibration by mining activities.

PART -II



3.0. PROPOSAL UNDER SCHEME OF MINING FOR THE NEXT FIVE YEARS

a) Name of lessee : Thiru. P. Ramachandran,
Address : 12, Bharathiyar, 5th Street,
SS Colony Ward - 18,
Madurai District - 625 016.
District : Madurai
State : Tamil Nadu
Phone No : +91 9843073154

b) Status of lessee:

The lessee is a Private and Individual.

c) Mineral(s) which is / are included in the prospecting license (For Fresh grant):

-Nil-

d) Mineral(s) which is / are included in the letter of Intent / lease deed:

Multi Colour Granite occurs in the Lease area and the Lessee intends to Quarry the same.

e) Mineral(s), which is the lessee, intends to Quarry:

Multi Colour Granite occurs in the Lease area and the Lessee intends to Quarry the same.

f) Name and Address of the Qualified Person :

Name : **SHRI S. DHANASEKAR, M.Sc.,**
Address : No.5/30-7B, Avvai Nagar,
Ponkumar Mines Road,
Jagir Ammapalayam,
SALEM DISTRICT - 636 302.
Cell No. : 98946-28970 & 73733-74702.
Email : geodhana@yahoo.co.in

g) Details of the Area:

The details of the land covered by the area is given below: Table No:4

District & Area	Taluk	Village	S.F. Nos.	Area in Hec.	Occupancy
Karur TAMILNADU	Karur	K. Pitchampatti	407/1	1.09.0	Patta Land
			407/2	0.45.5	
			407/3(P)	0.32.5	
			407/4	0.05.5	
			408/3	0.44.0	
			408/4(P)	0.48.0	
Total				2.84.5	

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h) Existence of public road/railway line, if any nearby and approximate distance

Extent of the area is shown in the FMB. The District Head Quarter is at a distance about 19.0Kms(N) from Quarry site. The area is about 2.3kms, away from K.Pitchampatti Village. Quarry lease area is well connected with roadways, the nearest roadway is Palayam-karur Road (SH-75), 6.0km East. Nearest Railway station is Karur Railway station, which is located about 19 kms N, from the Quarry lease area. Air Port is available in Trichy Airport of about 80.0 kms E from the Quarry lease area. Nearest Port is Tuticorin at a distance of 240.0 kms NE. The Existing area is easily accessible by means of roadways (Lorries and trucks).

i) The Mining lease area is bounded by four corners and the coordinates are:

Table No:5

Toposheet No	:	58 J/1
Latitude	:	10° 46' 54.76"N to 10° 46' 47.80"N
Longitude	:	78° 04' 07.23"E to 78° 04' 15.25"E
North East	:	N 10° 46' 53.42" E 78° 04' 15.25"
South East	:	N 10° 46' 48.55" E 78° 04' 12.05"
North West	:	N 10° 46' 54.76" E 78° 04' 10.74"
South West	:	N 10° 46' 48.15" E 78° 04' 7.23"

j) A general location map showing area and access routes. It is preferred that the area be marked on a Survey of India topographical map or a cadastral map or forest map as the case may be. However, if none of these are available, the area may be shown on an administrative map:

A general location map showing area boundaries and existing access routes are shown on the Toposheet Plan (Key Plan) which is enclosed Plate No.Ib. Since existing routes are being followed to reach the lease area no fresh access routes are proposed hence not shown.

Top Sheet No. with : The area falls in Topo Sheet No.58 J/1

Latitude and longitude of Survey of India

Latitude : 10° 46' 54.76"N to 10° 46' 47.80"N

Longitude : 78° 04' 07.23"E to 78° 04' 15.25"E

k) Land use pattern :

Dry Mineral bearing land.

l) Location of the Area :

The area for Mining Lease of K. Pitchampatti Multi Colour Granite Quarry is located over an extent of 2.84.5Ha. in S.F.Nos.407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4(P)in K.Pitchampatti Village, Karur Taluk, Karur District, Tamilnadu State.

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4.0. GEOLOGY & RESERVES

4.1. PHYSIOGRAPHY:

The quarry lease area is in a plain terrain, gently sloping towards southeast. The altitude of the area is about 206 meters above MSL. It is a dry land and is found to be unfit even for seasonal cultivation.

Water table is located at a depth of 52m from the surface in the open wells in the neighbor areas. It is a waste land with rock exposure. Outcrops of Multi Coloured Granite are visible in some areas. Regional crops are ragi, paddy and maize.

The following villages are located within the 5km radius of quarry site and approximate distance with direction & population are given below. Table -6

S.No	Direction	Name of the Village	Approximate Distance	Approximate population
1	North	K.Pitchampatti	2.3kms	200
2	West	Papanayakanoor	3.0km	350
3	East	Gudalur	5.0kms	250
4	South	Vasanthakathirpalayam	1.0km	250

The area receives rainfall of about 600 - 1000 mm/per annum and the rainy period is mainly from Oct - Jan during North East monsoon. The summer is hot with maximum temperature upto 39°C and winter records a minimum temperature of 17°C.

The water table is about 60m below ground level during summer and 55m during rainy season. Electric power lines are available nearby and electrification of quarry operations is possible.

4.2. GEOLOGY

a) Regional Geology:

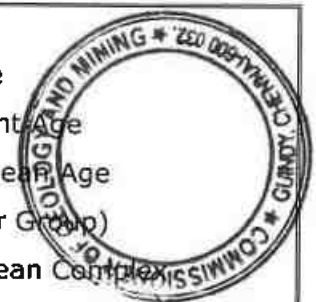
The area forms part of the peninsular gneiss, the most wide spread group of rocks in many parts of the southern India. They consist of a very heterogeneous mixture of different types of granites intrusive into the schistose rock after the latter were folded, crumpled and metamorphosed. They include granite granodiorites, gneissic granites and banded or composite gneisses. The banded gneiss consists of white bands of quartz-Feldspar alternating with dark bands containing hornblende, biotite and minor accessories. The peninsular gneissic variety rose in colour with less grey colour with intercalations of quartz-feldspathic material along gneissosity. Migmatization of varying kinds of rocks such as basic granulites; Charnockite and sillimanite gneiss has given rise to grey biotite gneiss. Subsequent invasion of rose pegmatite into biotite gneiss has rendered the grey gneiss to few vestiges within migmatite complex.

The rose feldspar pegmatite permeation is mostly parallel to the gneissosity along with the garnet, thereby giving a design to the rock. The rose feldspar dominate over grey feldspar giving yellowish white appearance to the rock type. The granite gneiss occurs as monad nocks and hillocks.

T. B. D.

The order of superposition of geological sequence are given as under,

Description	Age
↑ Top soil – Morum (1m Thick)	- Recent Age
Pegmatite and Quartz Veins	- Archaean Age
Red Multi/Grey Granite	- (Kolar Group)
Biotite gneiss	- Archaean Complex



The regional rocks mostly composed of quartz, plagioclase feldspar, orthoclase feldspar and accessories minerals like mica.

b) Geology of the Area

The area of mining lease comprised of Migmatite, a type of Multi granite with light colour and good wave patterns. Massive outcrop is found on the western sides (Red Multi). The eastern side of the area is covered by red soil concealing the outcrops. Granite on eastern side is appeared to be more weathered than the western side. The rate of recovery will be more on western side than eastern side.

The mineral constituents are biotite quartz, orthoclase feldspar and plagioclase feldspar. The biotite is fine grained and other minerals are medium grained. The graphic texture and intergrowth of quartz and feldspar indicates that younger intrusive were invaded into the pre-existing country rock, which preferably would have been a biotite gneisses (Peninsular Gneisses). Flowage structure and texture of rock indicates deep seated metamorphism at high temperature and pressure. Dimensional cutting and polishing of these type of hard and compact rocks exhibits an attractive pinkish and grey shades of background with attractive wave patterns.

It is a part of peninsular gneisses migmatized by younger intrusive. It is commercially called as "Red Multi" by the buyers in view of its wave pattern of accessory minerals.

The rock is hard, compact and sheet in nature so as to cut required sizes of blocks. The mineral constituents of the rock mass shall be about orthoclase feldspar 40%, quartz roughly 25%, Plagioclase feldspar 25%, mica 15% and others 5%.

The order of superposition of geological sequence are given as under,

Description	Age
↑ Top soil – Morum (1m Thick)	- Recent Age
Migmatite	- Archaean Age
Biotite gneiss	- Archaean Complex

The strike of the granite body is trending in NE-SW direction and dips vertically. The regional trend is shown in the geological plan.

4.3 Details Of Exploration:

4.3.1 Already Carried Out:

Qualified Person and his team of geologist had carried out a thorough exploration of the area. The Depth persistence of Multi Colour Granite deposit is already proved based on existing pit.

T. B. S.

This Multi Colour Granite quarry is in operation for last 5Years (05.08.2016-04.08.2017 to 05.08.2020-04.08.2021) and **1747.44M³** of Multi Colour Granite blocks have been removed and exported in raw form as well as in processed form (Tiles) till now. Moreover, there are few Multi Colour Granite quarries is in operation in the nearby areas.



4.3.2 Proposed study to be carried out:

Even though the depth persistence of the **Multi Colour Granite** Stone may be beyond depth from 25.0m (1.0m Top Soil + 4.0m Weathered Granite + 20.0m Multi Colour Granite) depth persistent has been taken as economically viable depth to calculate all the categories of proved Geological reserves. The recovery of saleable Multi Colour Granite stones (Gang saw size) has been taken as 35%.

The proposal for this quarry for the next five years is given upto 15.0m (1.0m Top Soil + 4.0m Weathered Granite + 10.0m Multi Colour Granite). The quarrying activities during the next five years with deep cut as envisaged in the Scheme of mining may render additional data as may be required for future planning.

4.4. METHOD OF ESTIMATION OF RESERVES

The geological plan demarcating the commercially viable granite body has been prepared in 1:1000 scale (Plate No. IV). Four sections have been drawn, One along the strike direction as (X-Y) Length wise and another three sections are drawn perpendicular to strike as (A-B), (A1-B1) & (A2-B2) Width wise which is suitably chosen to cover the maximum area, in the scale of Hori- 1:1000 & Vert- 1:500 respectively. (Plate No.IV & IV-A).

The cross sectional area for the proved depth persistence of 25.0m (1.0m Top Soil + 4.0m Weathered Granite + 20.0m Multi Colour Granite) has been worked out for each section. The cross sectional area multiplied by its length of influence on the longer axis gives the volume (insitu) in the cross sectional area. The sum total of the insitu reserves available within the individual cross sectional area gives the Geological Reserves of the quarry lease area.

From the total Geological insitu Reserves, the quantity of saleable granite stones and quantity of granite waste generation are computed by applying recovery factor of about 35% by volume. As the saleable Multi Colour Granite stone are in terms of cubic meters (Volume) only and not in terms of tonnage as in the case of major industrial mineral, the geological Reserves, mineable reserves and quantum of waste generated etc, are given only in terms of cubic meters. (Volume).

The details of estimation of Geological Reserves and Mineable Reserves with reference to the Geological Plan & section and Conceptual Plan & Section as shown in (Plate no.IV and VIII) have been furnished in Table - 7 & Table - 8 respectively.

4.5. Geological Reserves:

The Geological reserve is estimated as **98680M³** upto a depth of 25.0m (1.0m Top Soil + 4.0m Weathered Granite + 20.0m Multi Colour Granite), by area cross sectional method.

T. B. S.

Table -7

GRANITE GEOLOGICAL RESERVES										
Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Multi-Colour Granite Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Topsoil
XY-AB	I	63	148	1						9324
	II	63	148	4					37296	
	III	63	24	5	7560	7560	2646	4914		
	IV	63	24	5	7560	7560	2646	4914		
	V	63	24	5	7560	7560	2646	4914		
	VI	63	24	5	7560	7560	2646	4914		
	TOTAL				30240	30240	10584	19656	37296	9324
X1Y1-A1B1	I	83	141	1						11703
	II	83	141	4					46812	
	III	83	24	5	9960	9960	3486	6474		
	IV	83	24	5	9960	9960	3486	6474		
	V	83	24	5	9960	9960	3486	6474		
	VI	83	24	5	9960	9960	3486	6474		
	TOTAL				39840	39840	13944	25896	46812	11703
X1Y1-A2B2	I	15	42	1						630
	II	15	42	4					2520	
	III	26	4	5	520	520	182	338		
	IV	78	24	5	9360	9360	3276	6084		
	V	78	24	5	9360	9360	3276	6084		
	VI	78	24	5	9360	9360	3276	6084		
	TOTAL				28600	28600	10010	18590	2520	630
	GRAND TOTAL				98680	98680	34538	64142	86628	21657



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Top Soil	=	21657 m ³
Weathered Granite	=	86628 m ³
Total Geological Reserves in ROM	=	98680 m ³
Reserves @ 35% (Multi Colour Granite)	=	34538 m ³
Granite Waste @ 65%	=	64142 m ³
Total Waste	=	172427 m ³
Granite waste ratio:	=	1:4.99
(* Total Waste- Top soil + weathered granite + Granite waste)		

4.6. Mineable Reserves:

The Mineable reserves are calculated by deducting 7.5m Safety distance and Bench Loss.

The Mineable Reserve is calculated upto a depth of 25.0m (1.0m Top Soil + 4.0m Weathered Granite + 20.0m Multi Colour Granite).

Table-8

GRANITE MINEABLE RESERVES												
Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Multi-Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Side Burden	Topsoil	
XY-AB	I	36	36	1							1296	
	II	34	33	4				4488				
	III	27	10	5						1350		
	IV	17	5	5						425		
	III	27	15	5	2025	2025	709	1316				
	IV	17	10	5	850	850	298	552				
	TOTAL					2875	2875	1007	1868	4488	1775	1296
	XIV1-A1B1	I	73	73	1							5329
II		72	71	4					20448			
III		68	39	5						13260		
IV		63	29	5						9135		
V		58	19	5						5510		
VI		53	9	5						2385		
III		68	24	5	8160	8160	2856	5304				
IV		63	24	5	7560	7560	2646	4914				
V		58	24	5	6960	6960	2436	4524				
VI		53	24	5	6360	6360	2226	4134				
TOTAL					29040	29040	10164	18876	20448	30290	5329	



For

Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Multi-Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Side Burden	Topsoil	
X1Y1-A2B2	I	1	16	1							16	
	II	1	15	4				60				
	III	12	22	5						1320		
	IV	64	17	5						5440		
	V	59	12	5						3540		
	VI	54	7	5						1890		
	III	12	4	5	240	240	84	156				
	IV	64	24	5	7680	7680	2688	4992				
	V	59	19	5	5605	5605	1962	3643				
	VI	54	14	5	3780	3780	1323	2457				
	TOTAL					17305	17305	6057	11248	60	12190	16
	GRAND TOTAL					49220	49220	17228	31992	24996	44255	6641

Top Soil = 6641 m³
 Weathered Granite = 24996 m³
 Side burden = 44255 m³
 Total Mineable Reserves ROM = 49220 m³
 Recoverable Reserves @ 35% (Multi Colour Granite) = 17228 m³
 Granite Waste @ 65% = 31992 m³
 Total Waste = 107884 m³
 Granite Waste ratio: = 1:6.26
 (* Total Waste- Top soil + Weathered granite + Side burden + Granite waste)



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The geological Reserves computed based on the geological cross sections up to the economically workable depth of 25.0m (1.0m Top Soil + 4.0m Weathered Granite + 20.0m Multi Colour Granite) works out to 34538m³ (35% recovery) cubic meters (Table-7) and mineable reserves have been computed as 17228m³ (Table-8) at the rate of 35% recovery up to a depth of 25.0m (1.0m Top Soil + 4.0m Weathered Granite + 20.0m Multi Colour Granite). The above projections are for the next Five Years plan period.

The mineable reserve is found out by deducting the locked up area in safety distance all along the perimeter of the lease boundaries. Proved reserves are categorized up to 25.0m (1.0m Top Soil + 4.0m Weathered Granite + 20.0m Multi Colour Granite).

The Multi Colour Granite body occurring in this area exhibits more or less uniform color and texture and sold in par with commercial granite deposit. If any variations occur locally during mining such as cracks flaws and patches, the defective area is removed during dressing & marketed.

4.7. Category-wise (Proved, Probable and Possible) Reserves Estimated in the earlier Mining Plan with grades.

The geological reserves were calculated and estimated as **114408m³**. The Mineable reserve were calculated as **32590m³**. Actually the Geological and Mineable reserves was calculated by applying recovery percentage of 60% and depth is taken up to only 21.0mts.

4.8. Depletion of Reserves:

The geological reserves at the time of presentation of mining plan were **114408m³** and the mineable reserve was **32590m³**. The Planned production during the Mining Plan period was **3378m³** with a recovery of 60% only, the achieved production quantity is **1747.44m³** .i.e. (from 05.08.2016-04.08.2017 to 05.08.2020-04.08.2021) which is 35% recovery only based on the granite excavated portion at present.

4.9. Additional reserves established category wise (with basis and parameters considered).

Additional reserves have been established during the present plan period. Please refer Annexure I and II.

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4.10. Category-wise updated reserves with grade (indicate and use grade with analysis) as well as marginal grades based on above.

Table-9

Sl. No.	Details	Total reserve (quantity in M ³)	Recovery Percentage	Recoverable Reserve (quantity in M ³)
1.	Geological reserve calculated in the approved Mining Plan	114408	60%	68644
2.	Mineable reserve calculated in the approved Mining Plan	32590	60%	19554
3.	Year wise reserve calculated in the approved Mining Plan	5630	60%	3378
4.	Updated geological reserve calculated in this 1 st Scheme of mining period	98680	35%	34538
5.	Updated mineable reserve calculated in this 1 st Scheme of mining period	49220	35%	17228
6.	Updated Year wise reserve calculated in this 1 st Scheme of mining period	21595	35%	7559

The planned ROM was **5630m³** and year wise recoverable reserve during the approved mining plan period was **3378m³** with the recovery percentage of 60% but the actual production achieved during the period is only **1747.44m³** .i.e. (from 05.08.2016 – 04.08.2017 to 05.08.2020- 04.08.2021) which is 35% of recovery from ROM **4993m³**.

4.11. CONCEPTUAL MINING PLAN

Conceptual mining plan is prepared with an object of long-term systematic development of benches; lay outs, selection of permanent ultimate pit limit, depth of mining and ultimate pit, selection of sites for construction of infrastructure etc.

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area etc. The ultimate pit dimensions of the quarry are given below. (Please refer Plate No.VIII).

Table-10

ULTIMATE PIT DIMENSIONS		
Length(m)Avg	Width(m)Avg	Depth(m)
88.0	54.0	25.0

However, during extraction of blocks each bench will be of 5.0 mts height and 5.0m width with vertical slope for proper dimensional cutting. The quantum of excavation is estimated to be **125112m³** (ROM 49220 m³ + Top soil 6641 m³ + Sideburden 44255 m³ + Weathered Granite 24996 m³) upto the depth of 25.0m (1.0m Top Soil + 4.0m Weathered Granite + 20.0m Multi Colour Granite).(refer Table-8).

The Granite waste 65% is estimated at **31992m³**, (Table-8) and marketable granite blocks as **17228m³**. (Plate No-VIII). Topsoil, Weathered Granite, Sideburden and Granite waste will be dumped in the Northeastern side of the lease area. Please refer plate No.VIII.

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The Dump Dimensions are given below:

Table No:11

	Top Soil, Side burden, Weathered Granite and Granite Waste Dump
Length (m)	80.0
Width (m)	52.0
Height (m)	25.93
Total Quantity (m ³)	107884



Please refer Table No.8.

5.0. MINING

5.1. OPEN CAST WORKING

In this proposed Quarry area under consideration mining will be done by opencast semi-mechanized method.

The Granite to be mined is first examined for its suitability for forming blocks or slabs. For this textural uniformity, colour, strength, durability, presence of cracks joint planes and their frequency are noted before marking or channeling the blocks.

Well-spaced joints at right angles make the extraction easier. The Top Soil (weathered rock portion) is removed by drilling. The quarry is opened as trenches taking advantage of joint systems. As far as possible, rectangular blocks of standard size are marked either by hand channeling in manual mining or by channeling machines in mechanized mining. Efforts are made to develop vertical face and granite is quarried in rectangular blocks. The blocks are separated from the parent ledge by putting wire saw method of drilling.

A series of close space holes are drilled underneath the blocks, which are broken free with the use of feathers and wedges. Feathers are pieces of semi-circular steel wedges that are inserted into the holes. The steel wedges are driven between the features to produce a break to free a block of stone. The blocks are lifted manually with levels or by cranes and loaded into trucks.

In mechanized mining help of compressor, drilling, machine, various diamond saws, wire saws, channeling machines, wedges and broaching tools, cranes, dumpers etc., is taken. Endless braided steel wires and diamond saws are employed for cutting blocks. Jet channeling or jet piercing is quite common. In some mines flame cutting is done to cut the rocks.

In this proposed Quarry area under consideration mining will be done by opencast semi-mechanized method.

The Top Soil bench will be formed to a height of about 1.0m at a slope about 45°.

Benches in Granite body will be formed two benches to a height and width of about 5.0m and respectively at a slope about 90° in the Next five years. Haul roads will be made at a gradient of 1:10 to 1:16. Please refer Plate No.V, V-A Footpaths will be provided between benches for easy access of men. Compressor and jackhammers will be used for drilling purposes.

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Excavators, cranes, chain-pulley blocks and winch will be used for dislodging and lifting and loading the blocks.

The dislodged blocks from the sheet rock will be dressed by chisel men to the maximum possible size and then loaded by cranes or chain-pulley block or winch into the trucks for Despatch to the destination.

After excavating to the economic limit of depth, permission will be obtained from DGMS and DGM to work the deposit in the boundary barrier.

Topsoil, Weathered Granite, Side burden & Granite waste will be dumped in the North eastern side of the lease area. Please refer plate No.V & V-A.

5.2. EXTENT OF MECHANIZATION / COST OF MACHINERY:

The following machineries are utilized on rental basis for the development and production work at this mine.

I. DRILLING MACHINE

Table -12

S.No	Type	Nos	Dia Hole mm	Size /Capacity	Make	Motive power
1	Jack hammer & Accessories	3	35	1.2m to 6m	Atlas Copco	Compressed air
2	Compressor	1	7.5kgs/cm ²	400 psi	ELGI	Diesel Drive
3	Diamond wire saw	1	-	30m ³ /Day	Optima	Diesel Generator
4	Gen set	1	-	Powerica	-	CP 125 D5P (H.P)

II. LOADING EQUIPMENT

Table -13

S.No.	Type	Nos	Size/ Capacity	Make	Motive Power
1	Excavator	1	1.7m ³	Tata Hitachi	Diesel Drive

III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT

a)

Table -14

S.No.	Type	Nos	Size/ Capacity	Make	Motive Power
1	Tippers	2	10 M.T	Tata	Diesel Drive

b) Transport from the quarry head to destination

Transport from quarry head to desired destination is done by trucks or by trailers.

c) Miscellaneous:

Apart from the above the following tools and tackles are required for quarry operation.

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Table-15

GRANITE YEARWISE DEVELOPMENT AND PRODUCTION RESERVES													
Year	Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Side Burden	Topsoil	
05.08.2021 to 04.08.2022	XY-AB	I	36	36	1							1296	
		II	34	33	4				4488				
		III	27	10	5							1350	
		IV	17	5	5							425	
		III	27	15	5	2025	2025	709	1316				
		IV	17	10	5	850	850	298	552				
		I	10	44	1								440
		II	10	42	4						1680		
05.08.2022 to 04.08.2023	XIY1-A1B1	III	10	10	5						500		
		III	10	24	5	1200	1200	420	780				
		TOTAL					4075	4075	1427	2648	6168	2275	1736
		I	36	44	1								1584
05.08.2022 to 04.08.2023	XIY1-A1B1	II	36	42	4					6048			
		III	36	10	5						1800		
		III	36	24	5	4320	4320	1512	2808				
		TOTAL					4320	4320	1512	2808	6048	1800	1584

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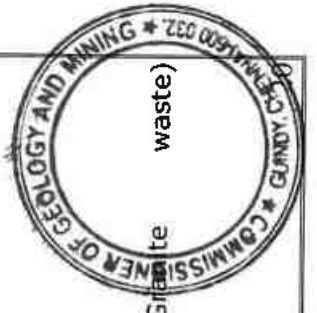


Year	Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Side Burden	Topsoil
05.08.2023 to 04.08.2024	X1Y1-A1B1	I	28	44	1							1232
		II	27	42	4					4536		
		III	35	10	5						1750	
		III	35	24	5	4200	4200	1470	2730			
		TOTAL				4200	4200	1470	2730	4536	1750	1232
05.08.2024 to 04.08.2025	X1Y1-A1B1	IV	36	24	5	4320	4320	1512	2808			
		TOTAL				4320	4320	1512	2808			
05.08.2025 to 04.08.2026	X1Y1-A1B1	IV	39	24	5	4680	4680	1638	3042			
		TOTAL				4680	4680	1638	3042			
GRAND TOTAL							21595	21595	7559	16752	5825	4552

Top Soil = 4552 m³
 Weathered Granite = 16752 m³
 Side burden = 5825 m³
 Total Reserves ROM = 21595 m³
 Total production for the next Five Years (35%) (Multi Colour Granite) = 7559 m³
 Granite waste (65%) = 14036 m³
 Total Waste = 41165 m³
 Granite: Waste ratio is = 1:5.44

(*Total Waste - Top soil + weathered granite + Side burden + Granite waste)

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Estimated Life of the quarry

Mineable ROM = 49220 m³
 Mineable Reserves @ 35% = 17228 m³
 Average production per year @ 35% = 1512 m³
 Estimated Life of the Quarry = 17228/1512= 11 years

Life = 11 years

The average proposed rate of production of **Granite** is about **1512m³** per year.

5.5. Year-wise production for the ensuing Five Years Period:

Table-16

Sl. No	Year	Total Excavation of ROM (in cum)	Percentage of recovery	Production for Granite ROM 35% (In cum)	Granite waste 65% (in cum)
1	05.08.2021-04.08.2022	4075	35%	1427	2648
2	05.08.2022-04.08.2023	4320	35%	1512	2808
3	05.08.2023-04.08.2024	4200	35%	1470	2730
4	05.08.2024-04.08.2025	4320	35%	1512	2808
5	05.08.2025-04.08.2026	4680	35%	1638	3042
	TOTAL	21595		7559	14036

5.6. Year-wise Development for the ensuing Five Years Period:

Table-17

Year	Top Soil (in cum)	Weathered Granite (in cum)	Side burden (in cum)	Granite waste 65% (In cum)	Total Waste (in cum)
05.08.2021-04.08.2022	1736	6168	2275	2648	12827
05.08.2022-04.08.2023	1584	6048	1800	2808	12240
05.08.2023-04.08.2024	1232	4536	1750	2730	10248
05.08.2024-04.08.2025	-	-	-	2808	2808
05.08.2025-04.08.2026	-	-	-	3042	3042
TOTAL	4552	16752	5825	14036	41165

The recovery percentage for the ensuing mining scheme period has been calculated based on the practical experience gained during the mining operation.

Topsoil, Sideburden, Weathered Granite and Granite waste will be dumped in the Northeastern side of the lease area. Please refer plate No.V.

The dumping details are furnished below :

Table No.18

	Top Soil, Side burden, Weathered Granite and Granite Waste Dump
Length (m)	80.0
Width (m)	52.0
Height (m)	9.89
Total Quantity (m ³)	41165

Please refer plate No.V.



6.0 MINE DRAINAGE

The water table in this area is 55m-60m as observed in nearby wells. Now, the present Quarry operation is confined to 25m which is well above the water table and hence, quarrying may not affect the ground water. If water is encountered at depth due to rain water seepage, the same may be drained by suitable pumping & drained water will be utilized for afforestation area.

6.1. Arrangement and Places where the mine water is finally proposed to be discharged:

The ground water may not rise immediately in this type of mining. However, the rain water percolation and collection of water from the seepage shall be less than 300 lpm and it shall be pumped out periodically by a stand by diesel powered Centrifugal pump motivated with 7.5 H.P. Motor. The quality of water is potable and it is not contaminated with any hazardous things.

7.0 STACKING OF MINERAL WASTE AND DISPOSAL OF WASTE:

a) Top Soil:

Top soil of the lease area is about 4552m³.

b) Sideburden:

Sideburden of the lease area is about 5825m³.

c) Weathered Granite:

Weathered Granite of the lease area is about 16752m³.

d) Granite waste:

Multi Colour Granite waste forms nearly 65% of ROM and the quantity of waste in the five years will be around 14036m³. Granite Waste will be dumped in the Northeastern side of the lease area for the next five years. Please refer plate No.V & VI.

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The dumping details is furnished below :

Table No.19

	Top Soil, Side burden, Weathered Granite and Granite Waste Dump
Length (m)	80.0
Width (m)	52.0
Height (m)	9.89
Total Quantity (m ³)	41165

d) Manner of disposal of waste:

As and when there is accumulation of waste, the same is loaded into the tipper by loading machines and dumped in the respective places ear-marked for the purpose.

The waste management plan with reference to the quantum of waste generated is shown in Mine layout and Afforestation plan (Plate No.VI).

8.0 USES OF THE GRANITE STONE

The quarried Multi Colour 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 application.

The export market for granite is china, European Country, North America, Middle East, Far East, Japan, Taiwan & Canada besides catering local markets.

8.1. Products and Application areas of Granites :

Broadly there are six categories of granite products – rough blocks, slabs, panels, tiles, monuments and others.

Granites are most adoptable as interior veneers in sky scrapers. In architecture, granites are mostly used for artistic veneers as they enrich other aspects of buildings.

Slabs, Panels, Tiles and Monuments:

Granite in the form of slabs of various sizes is mainly used in building monumental institutions, commercial and residential buildings.

Slabs :

A semi-finished block of rectangular size with one side polished and the other outside sawn and thickness in the range of 20mm upto 20 cm. are used for interior wall panels in the building.

Panels:

Panels are used for covering the interior surface of the buildings, as tabletops and interior wall paneling. Size of panel range from 50 cms x 100 cms upto 100 cms x 100 cms and thickness correspondingly varying from 20mm to 50mm.

Tiles:

Granite tiles are used as flooring material and also for wall cladding – most preferred size is 30 x 30 sq. cms with 10mm thickness though sizes vary within the range 15 x 10 sq.cms and 60 x 60 sq. cms. Tolerance requirement in the international market on thickness is generally 0.1 cm to 0.2 cm.

Monuments:

Indian Multi Coloured Granite is being exported in finished / semi-finished form for making monuments and tomb-stones for graveyards. Granite with good polish are mostly selected for making memorials ranging from simple markers and head stones to elaborate monuments and mausoleums. Some export of red granite monuments have also begun recently.

Other Uses:

In India granite is used as kitchen platform, kitchen sink, nameplates, foundation / inaugural stones etc., Granites ashtrays; flower vases and other art pieces which have both domestic and export markets.

Other uses for dressed or cuter shaped forms of different sizes are as flagging stones in the form of flat slabs or rectangular or irregular shapes over steps, walk ways, parks and terraces, parking streets and highways or other traffic areas with rectangular blocks.

Less known is the fact, that granites find important applications in the engineering fields as they possess high stability, non-denting and wear resistance qualities. These engineering grade granites are used in the construction of bridges, piers, sea and river walls, dams and related structures, bridges, super structures, grade separations and retaining walls.

Granites are often used for the manufacture of inspection equipment, like surface plates, parallels, cubes, squares, straight edges, measuring prisms, guide ways of precision instruments and other metrological aids such as in weight measurements.

8.2. Changes proposed in the use of mineral, if any, with reasons

No change is proposed in the use of minerals as the mineral is being sold out in raw form as per the buyer's requirement.

8.3. Changes in the specification, if any, imposed by the user industries and / or specifications required in the case of new user industries, if any, to be given.

As mentioned above there is no specification imposed by the user industries. Because the buyers prefer the bigger size blocks called as Gang saw.



8.4. Efforts made for utilization of the sub-grade mineral including fines.

As such there is no sub-grade mineral, there is no separate stacking of such wastes.

9.0 QUALITY CONTROL

The Multi Colour Granite deposit occurring in this quarry shows uniform quality throughout and hence quarried and marketed as a single variety.

The excavated blocks are carefully inspected for any natural defects such as joints, cracks, xenoliths growth etc and such defects is removed manually using feather and wedges and the blocks are then shaped into perfect rectangular dimensional stone blocks by chiselling. Different price for each quality material have been fixed and the entire production quantity is marketed accordingly.

10. SURFACE TRANSPORT

The mode of transport of the granite blocks produced and marketed is by road to various customer destinations and granite processing units located at different parts of the country. The Multi Colour Granite blocks approved for export market are shipped from Chennai Harbour to various countries and if required the blocks may be shifted to Tuticorin Harbour which depend upon the exporters' destination.

11.0. MINERAL BENEFICIATION

11.1. Results of any beneficiation investigations conducted and changes made in existing mineral beneficiation plant and tailing disposals, if any, with benefits expected (necessary) flow sheet and tailing dam designs etc. to be submitted as applicable).

Not Applicable.

11.2. Beneficiation test done, if any, on sub-grade mineral including fines and proposals for installation of new or additional beneficiation facility, if any (furnish process details in brief along with expected tailings loss).

The production of granite dimensional stones involving splitting of rock mass of considerable volume from the parent sheet rock carefully avoiding any kind of damage in the form of cracks, followed by "Secondary Splitting" into required size involves long hole drilling upto the bottom of the separated block and mild blasting along the required plans.

The blocks splitter as above are toppled and removed from the pit, removing the defective portions and dressing into the dimensional blocks are done manually using feather and wedges and chiseling respectively the laborers who are skilled in this work, which is constantly supervised by experienced mining geologists. Nowadays modern techniques of wire- saw machines have been deployed for liberation of the rock from the parental rock, sometimes to the required sizes also.

T. A. S.



12. SITE SERVICES

The simple methods adopted and the limited scale of activities involved in granite dimensional stone quarrying does not require high-tension electric power supply or large workshop facilities. The quarry operation is restricted to one general shift during day time only. Machinery repair works are attended at Karur (14.0 kms) town. Minor repairs carried out by Lessee staff at the quarry site itself.

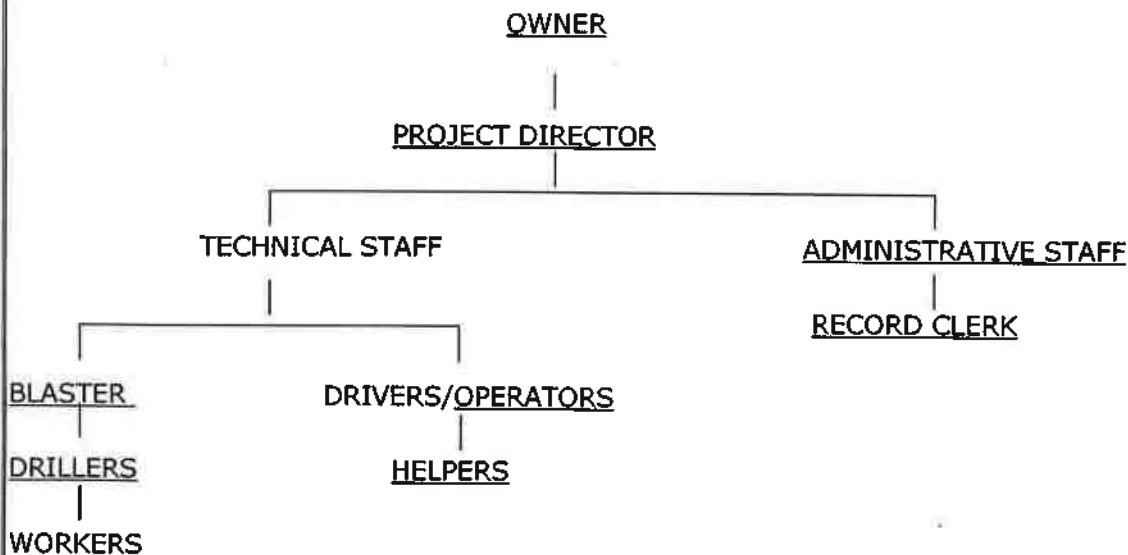
Potable drinking water is supplied from the nearby community wells and approved water vender can be transported to the work site through tanker placed on tippers. Quarry office, first-aid room, store room, rest shed, toilet etc, will be provided on semi - permanent structures within the quarry lease area (Plate No - V - IX).

13. EMPLOYMENT POTENTIAL

Except some established varieties of granites like K.Pitchampatti Multi, Paithur black, Kashmir white or Melur white, Paradiso of Karur , Sivanmalai green, Colombo Zubrana, English teak, Tiger skin Lady dream, Midnight blue etc., market for other varieties are seasonal one. With a result, the quarry work becomes seasonal and the employment also becomes seasonal.

The man power is proposed for the Multi Colour Granite Quarry to look after and carryout the day-to-day quarrying activities, and achieves targeted production duly comply with the statutory provisions of the Quarry is as summarized below:

ORGANISATION CHART



The strength of man power requirement is proportionate to the proposed production for the Multi Colour Granite Quarry in the referred area as detailed below:

1.	Project Manager	:	1
2.	Record Clerk	:	1
	Total	:	2 Nos.

Highly skilled, Skilled, Semi-skilled and Unskilled:

Supervisor Cum Blaster	:	1 No.
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Skilled:

Compressor and Wagon Drill operators	:	1
Drillers / Workers	:	4
Excavator / Rock Breaker Operators	:	3
Vehicle Drivers	:	2
Total	:	11 Nos

**Semi-skilled:**

Watchman	:	1
Total	:	1

Unskilled:

Dresser/cutter	:	6
Total	:	7 Nos

Grand Total : 20 Nos

The man power strength is subject to the extent of mechanizations. The above mentioned technical staff and administrative staff are to be considered to meet out the production schedule and to comply with the statutory provisions of the Mines Safety Regulations.

14. ENVIRONMENT MANAGEMENT PLAN:**14.1 Environment Base line information: Attach a note on the status of baseline Information with regard to the following:**

The quarry lease is an plain terrain, gently sloping ground due Eastern. The existing Multi Colour Granite in a field S.F. Nos.407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4(P) in K.Pitchampatti Village, Karur Taluk, Karur District, and Tamil Nadu state is discordant intrusion of Paradiso with a strike direction of the granite body is almost NE-SW and dip SE80°. The area comprises soil with boulders of Granite.

Table-20

Description	Present Area (Ha.)	Area to be required at the present scheme period (Ha)	End of life of Quarrying Period (Ha.)
Area under Quarry	0.18.0	0.40.0	0.85.0
Dumps	0.20.0	0.41.0	0.61.5
Stockyard	Nil	Nil	Nil
Infrastructure	Nil	0.02.0	0.02.0
Roads	0.03.0	0.04.0	0.07.0
Green Belt	Nil	0.27.0	0.32.0
Unutilized Area	2.43.5	1.70.5	0.97.0
Grand Total	2.84.5	2.84.5	2.84.5

Water Regime

Ground water is touched at a depth of 60m in summer and at 55m in NE monsoon season. The average rainfall is around 600-1000 mm. There is no lake, reservoir or river near the area.

B. →



Villagers use open well water for drinking and other domestic purposes for ages without any adverse health effects. However, drinking water will be supplied from the public water supply system from nearby hamlets.

Flora and Fauna

The main crops are Casuarina, Pungan, Neem, Tamarind, etc. In some places lift irrigation is carried out. Since the sub-seed area is a stony waste, it does not contain much vegetation and villages.

In order to conserve the flora & fauna mitigation measures were mentioned as conditions in the no objection certificate issued by the Principal Chief Conservator of Forests. Particularly to conserve the elephant population by providing elephant proof trenches, solar fencing, engaging elephant trackers, etc & any other measures proposed by the DFO, Chief Conservator of Forests.

Climate Conditions

The area receives rain during NE monsoon. The temperature in summer goes above 39°C in the months of April, May and June and it drops down to 17°C in December, January and February. The wind direction is from NE-SW and vice-versa.

Human Settlement

There are few villages located within the radius of 5km from the quarry lease area. It is rural area with small hamlets scattered all around the area. The approximate distance and population are given below:

Table-21

S.No	Direction	Name of the Village	Approximate Distance	Approximate population
1	North	Balappur	1.0km	130
2	West	K.Pitchampatti	3.0km	450
3	East	Karandapalli	1.2km	320
4	South	Malligarjunadurgam	4.5km	250

Basic human welfare amenities such as health center, schools, communication facilities, commercial centers etc are available in Karur town which is at a distance of about 14.0kms towards North Eastern side of the quarry lease area.

Public building, Places of worship and Monuments

There are no Public buildings, Archaeological or National Monuments or places of worship situated within 500m of the quarry site.



14.2 Impact Assessment: Attach an Environmental Impact Assessment Statement Describing the impact of mining and beneficiation on environment on the following:

Environmental Impact Assessment Statement:

The factors that should be covered in this para are: -

01. Land
02. Air Quality
03. Water Quality
04. Noise Levels
05. Vibration Levels
06. Water Regime
07. Socio-Economics
08. Historical Monuments etc.

Land:

It is a working mine. There is no proposal for back filling and reclamation in this plan period.

Before closure of the mine, a parapet wall will be constructed to prevent inadvertent entry of cattle and human beings. The dumps will be vegetated to prevent sliding.

After closure of the mine, the pit will be allowed to collect seepage and rain water. This will help to charge the nearby agricultural wells. Fish forming will also be attempted.

The total area under mining lease is about 2.84.5Ha.

Conceptual position of the mining details:

The area covered by pits	:	0.85.0 Ha.
The area covered by waste dumps	:	0.61.5Ha.
The area covered by afforestation	:	0.32.0 Ha.
The area covered by mine roads and Infrastructure	:	0.09.0 Ha.
Unutilized area	:	0.97.0 Ha.

Afforestation will be attempted in the boundary barrier.

Air-Quality:

There will be generation of dust during drilling and blasting. Since this is an open area, the impact on air quality will be to the minimum. The air is fresh and unpolluted. Even when the quarry is in operation, because of its small size, the air will not get polluted. The mine roads will be sprinkled with water before starting the transportation of mineral and wastes to minimize air pollution.

Water Quality:

Mining operation will not produce any toxic effluent in the form of solid, liquid or gas.

The existing water quality will not be affected by mining operation. The Surface rainwater flow through the seasonal water course as usual.

2.8.4



Noise Level:

Drilling, loading, hauling and lifting equipment blasting, etc., are bound to produce certain level of noise which will be bring down to acceptable norms.

Table-22

Duration per day (Hrs)	Sound level (dBa)
16	80
8	85
4	90
2	95
1	100
1/2	105
1/4	110
1/8	115

Vibration levels:

The ground vibration will be caused due to movement of earth moving equipment and blasting. But the impact on the environment will be negligible, since the quantity of explosives used will be very small and the movement of earth moving equipment will be intermittent.

Water Regime:

Mining operation will not produce any toxic effluent in the form of solid, liquid or gas and will not be any impact on quality of water and on ground water.

Socio-Economics:

The local population is mostly agriculture based. Agricultural is done only on seasonal basis. Mining in this area is an avenue for employment. It has created awareness on the value and applications of granite in building and in industries. Mining certainly has created an impact in the Socio-economic standards of the local people. It has improved the life style of the local people and has improved the standard of living.

Historical Monuments:

There is no historical or Archaeological monument near the area. There is no scope for mining operation to have any impact on these aspects.

14.3 Proposal For Reclamation Of Land Affected By Mining Activities During & At The End Of Quarrying

Due to nature of occurrence of massive granite formation, the depth persistence of the granite body in this quarry is beyond the workable limits. In the proposed Scheme of mining only 25.0m(1.0m Top Soil + 4.0m Weathered Granite + 20.0m Multi Colour Granite) has been envisaged as workable depth for safe, systematic & economic mining. Hence after quarry reaches ultimate pit limit pit will be used for Pisciculture. Safety bunds and barbed wire fencing will be construct and maintaining around the quarried out pits.



14.4 PHASED PROGRAMME OF PLANTING TREES :

It is an existing mine. The only proposal now is to plant 70 Casuarina & Pungan trees every year in the boundary barrier. A retaining wall will be constructed around the dumping yard. Please refer Plate No.VI. The afforestation programme for the Next Five years are as follows:

Table-23

Year	Name of the species	No. Of species	Interval	Area in Ha.	Survival rate
05.08.2021-04.08.2022	Casuarina & Pungan	70	5m	0.06.0	80%
05.08.2022-04.08.2023	Casuarina & Pungan	70	5m	0.06.0	80%
05.08.2023-04.08.2024	Casuarina & Pungan	70	5m	0.05.0	80%
05.08.2024-04.08.2025	Casuarina & Pungan	70	5m	0.05.0	80%
05.08.2025-04.08.2026	Casuarina & Pungan	70	5m	0.05.0	80%
TOTAL		350		0.27.0	

After complete extraction of mineral, the pit will be allowed to collect rain and seepage water to serve as a reservoir to charge the nearby wells. Fish culture will also be attempted. A bund will be constructed around the pits.

14.5. GRANITE CUTTING AND POLISHING :

The Lessee does not have the facilities to cut and polish the granite blocks. He proposes to export the Granite blocks directly to the potential buyers of the Domestic and World Market.

PROPOSED ENVIRONMENT MANAGEMENT(EMP) FOR FIXED ASSET COST AND OPERATIONAL COST:

Table-24

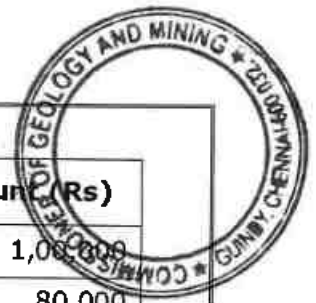
A.FIXED ASSET COST:

SL.No	Description	Amount (Rs)
1	Land cost	30,00,000
2	Labour shed	1,20,000
3	Sanitary facility	70,000
4	Fencing cost	1,60,000
Total		33,50,000

B.OPERATIONAL COST:

SL.No	Description	Approximate Amount (Rs)
1	Excavator	55,00,000
2	Tippers 2 Nos	20,00,000
3	Wire saw	10,00,000
4	Compressor with loose tools	10,00,000
Total		95,00,000

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C. EMP COST:

SL.No	Description	Approximate Amount (Rs)
1	Drinking water facility	1,00,000
2	Safety kits	80,000
3	Water sprinkling	50,000
4	Afforestation	30,000
5	Water quality test	40,000
6	Air quality test	40,000
7	Noise / Vibration test	40,000
Total		3,80,000

Total Project Cost (A+B+C) =Rs. 1,32,30,000/-

15.0 PROGRESSIVE MINE CLOSURE PLAN

In the Multi Colour Granite quarry operations the maximum depth proposed is **25.0m (1.0m Top Soil + 4.0m Weathered Rock + 20.0m Grey Granite) for the entire life of quarrying operations**, this is based on the market potential at present scenario and **15.0m depth (1.0m Top Soil + 4.0m Weathered Rock + 10.0m Grey Granite) during this 1st scheme five year plan period.**

The proposal to safety barrier in the quarried out pits after the end of the life of the quarry period. After completion of quarry operation the quarried out land will be fenced and maintained with barbed wire to prevent inherent entry of the public and cattle's. Garland drains will be constructed around the quarry to prevent the surface run off the rain water.

Afforestation and Green belt development will be maintained in all the boundaries, till the trees attain the stabilize level.

Land use pattern

Table-25

Description	Present Area (Ha.)	Area to be required at the present scheme period (Ha)	End of life of Quarrying Period (Ha.)
Area under Quarry	0.18.0	0.40.0	0.85.0
Dumps	0.20.0	0.41.0	0.61.5
Stockyard	Nil	Nil	Nil
Infrastructure	Nil	0.02.0	0.02.0
Roads	0.03.0	0.04.0	0.07.0
Green Belt	Nil	0.27.0	0.32.0
Unutilized Area	2.43.5	1.70.5	0.97.0
Grand Total	2.84.5	2.84.5	2.84.5



16.0 MINERAL CONSERVATION AND DEVELOPMENT

The Scheme of mining proposed has fully covered the aspects of Granite Conservation and development with a future plan to extend the proposed working of the quarry to the maximum possible workable depth of the deposit. Extreme care is taken to ensure proper supervision and quality control of the granite dimensional stone aimed at the recovery of the maximum saleable quality and quantity of Multi Colour Granite dimensional stones suitable for full utilization of the consumers.

Care is been taken for each process just to safeguard the material quarried in an economical and efficient manner by adopting systematic and scientific quarrying with consultation and supervision of well experienced quarry masters.

17.0 STATUTORY PROVISIONS

The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied with, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety, Chennai. Any violation pointed out by the inspecting authorities shall be rectified as per the guidelines of the department.

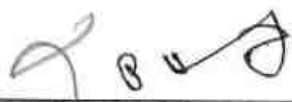
Certified that this Mining Plan has been Prepared in Accordance with the Mines Act, Rules and Regulations and orders made there under and also in Conformity with the Under Rule 18(2) of Granite Conservation and Development Rules, 1999.


S. DHANASEKAR, M.Sc., (Geo)
Qualified Person


COMMISSIONER
GEOLOGY AND MINING,
GUINDY, CHENNAI-600 032.


11/10/22

This Scheme of Mining Plan is approved
Subject in the Conditions / Stipulation Indicated
in the Scheme of Mining Plan Approval
Letter No. / 4631 / MM 2 / 2022 Dated 11.10.2022





ANNEXURE-I.

GEOLOGICAL RESERVE
(Please Refer Plate No. IV & IV-A)

THIRU. P. RAMACHANDRAN,
KARUR.

GRANITE GEOLOGICAL RESERVES										
Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Topsoil
XY-AB	I	63	148	1						9324
	II	63	148	4					37296	
	III	63	24	5	7560	7560	2646	4914		
	IV	63	24	5	7560	7560	2646	4914		
	V	63	24	5	7560	7560	2646	4914		
	VI	63	24	5	7560	7560	2646	4914		
	TOTAL				30240	30240	10584	19656	37296	9324
X1Y1-A1B1	I	83	141	1						11703
	II	83	141	4					46812	
	III	83	24	5	9960	9960	3486	6474		
	IV	83	24	5	9960	9960	3486	6474		
	V	83	24	5	9960	9960	3486	6474		
	VI	83	24	5	9960	9960	3486	6474		
	TOTAL				39840	39840	13944	25896	46812	11703
X1Y1-A2B2	I	15	42	1						630
	II	15	42	4					2520	
	III	26	4	5	520	520	182	338		
	IV	78	24	5	9360	9360	3276	6084		
	V	78	24	5	9360	9360	3276	6084		
	VI	78	24	5	9360	9360	3276	6084		
	TOTAL				28600	28600	10010	18590	2520	630
GRAND TOTAL					98680	98680	34538	64142	86628	21657



T. P. Ramachandran

Top Soil	=	21657 m ³
Weathered Granite	=	86628 m ³
Total Geological Reserves in ROM	=	98680 m ³
Reserves @ 35% (Multi Colour Granite)	=	34538 m ³
Granite Waste @ 65%	=	64142 m ³
Total Waste	=	172427 m ³
Granite waste ratio:	=	1:4.99
(* Total Waste- Top soil + weathered granite + Granite waste)		


S. DHANASEKAR, M.Sc., (Geo)
 Qualified Person





ANNEXURE-II

MINEABLE RESERVE
(Please Refer Plate No.VIII & VIII-A)

THIRU. P. RAMACHANDRAN,
KARUR.

GRANITE MINEABLE RESERVES												
Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Side Burden	Topsoil	
XY-AB	I	36	36	1							1296	
	II	34	33	4				4488				
	III	27	10	5						1350		
	IV	17	5	5						425		
	III	27	15	5	2025	2025	709	1316				
	IV	17	10	5	850	850	298	552				
	TOTAL					2875	2875	1007	1868	4488	1775	1296
	X1Y1-A1B1	I	73	73	1							5329
II		72	71	4					20448			
III		68	39	5						13260		
IV		63	29	5						9135		
V		58	19	5						5510		
VI		53	9	5						2385		
III		68	24	5	8160	8160	2856	5304				
IV		63	24	5	7560	7560	2646	4914				
V	58	24	5	6960	6960	2436	4524					
VI	53	24	5	6360	6360	2226	4134					
TOTAL					29040	29040	10164	18876	20448	30289	5329	



T.P.R.

GRANITE MINEABLE RESERVES

Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Side Burden	Topsoil	
X1Y1-A2B2	I	1	16	1							16	
	II	1	15	4					60			
	III	12	22	5						1320		
	IV	64	17	5						5440		
	V	59	12	5						3540		
	VI	54	7	5						1890		
	III	12	4	5	240	240	84	156				
	IV	64	24	5	7680	7680	2688	4992				
	V	59	19	5	5605	5605	1962	3643				
	VI	54	14	5	3780	3780	1323	2457				
	TOTAL					17305	17305	6057	11248	60	12190	16
	GRAND TOTAL					49220	49220	17228	31992	24996	44255	6641

Top Soil = 6641 m³
 Weathered Granite = 24996 m³
 Sideburden = 44255 m³
 Total Mineable Reserves ROM = 49220 m³
 Recoverable Reserves @ 35% (Multi Colour Granite) = 17228 m³
 Granite Waste @ 65% = 31992 m³
 Total Waste = 107884 m³
 Granite Waste ratio: = 1:6.26

(* Total Waste- Top soil + weathered granite + Sideburden + Granite waste)




S. DHANASEKAR, M.Sc., (G.M.)
 Qualified Person

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ANNEXURE-III

YEARWISE DEVELOPMENT & PRODUCTION SCHEDULE

(Please Refer Plate No. V & V-A)

**THIRU. P. RAMACHANDRAN,
KARUR.**

GRANITE YEARWISE DEVELOPMENT AND PRODUCTION RESERVES												
Year	Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Side Burden	Topsoil
	XY-AB	I	36	36	1							1296
		II	34	33	4				4488			
		III	27	10	5						1350	
		IV	17	5	5						425	
05.08.2021 to 04.08.2022		III	27	15	5	2025	2025	709	1316			
		IV	17	10	5	850	850	298	552			
		I	10	44	1							440
		II	10	42	4						1680	
	X1Y1- A1B1	III	10	10	5						500	
		III	10	24	5	1200	1200	420	780			
		TOTAL				4075	4075	1427	2648	6168	2275	1736
		I	36	44	1							1584
05.08.2022 to 04.08.2023	X1Y1- A1B1	II	36	42	4					6048		
		III	36	10	5						1800	
		III	36	24	5	4320	4320	1512	2808			
		TOTAL				4320	4320	1512	2808	6048	1800	1584



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GRANITE YEARWISE DEVELOPMENT AND PRODUCTION RESERVES

Year	Section	Bench	L (m)	W (m)	D (m)	Volume in M3	Total Reserve in M3	Colour Granite Recoverable Reserve @ 35%	Granite Waste @ 65%	Weathered Granite	Side Burden	Topsoil
05.08.2023 to 04.08.2024	X1Y1-A1B1	I	28	44	1							1232
		II	27	42	4				4536			
		III	35	10	5						1750	
		III	35	24	5	4200	4200	1470	2730			
		TOTAL				4200	4200	1470	2730	4536	1750	1232
05.08.2024 to 04.08.2025	X1Y1-A1B1	IV	36	24	5	4320	4320	1512	2808			
		TOTAL				4320	4320	1512	2808			
05.08.2025 to 04.08.2026	X1Y1-A1B1	IV	39	24	5	4680	4680	1638	3042			
		TOTAL				4680	4680	1638	3042			
GRAND TOTAL						21595	21595	7559	14036	16752	5825	4552

Top Soil

= 4552 m³

Weathered Granite

= 16752 m³

Sideburden

= 5825 m³

Total Reserves ROM

= 21595 m³

Total production for the next Five Years (35%) (Multi Colour Granite)

= 7559 m³

Granite waste (65%)

= 14036 m³

Total Waste

= 41165 m³

Granite: Waste ratio is

= 1:5.44

(* Total Waste- Top soil + weathered granite + Side burden + Granite waste)



S.DHANASEKAR,
Qualified Person


[Handwritten Signature]

ANNEXURE-VII
VAO CERTIFICATE

THIRU. P. Ramachandran, Multi-colour Granite quarry in the S.F.Nos. 407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4(P) over an extent of 2.84.5ha. in K.Pitchampatti Village, Karur Taluk, Karur District.

GENERAL VIEW OF THE LEASE AREA




(P. Ramachandran)
(Deponent)

தி. சீனி 20/10/2022
சீனி நிர்வாக அலுவலர்
18-கா. பச்சம்பட்டி சீனிமம்,
கரூர் வட்டம், கரூர் மாவட்டம்.

சான்றி

கோடு மாவட்டம், கோடு தாலுகா,

கா. பிச்சம்பட்டி கிராமம், டி.என்.என்: 407/1(0.09.0),
407/2 (0.45.5), 407/3 part (0.32.5),
407/4 (0.05.5), 408/3(0.44.0), 408/4 (part.)
(0.48.0) ஆக உள்ள மொத்த பரப்பு 2.84.5 ஏக்கர்
மட்டி எண்: 1453, 2887, 2926 -ல் கட்டுப்பாட்டின்
மீது சீர்திருத்தம் மற்றும் 2917, 2918 -ல்
சீர்திருத்தம் மீது சீர்திருத்தம் தயாரிப்பில் உள்ளது.
அவ்வாறு மீது எண்: 1335/2016, நாள்: 05.08.2016-ல்
பரப்பு மற்றும் மீது ராமச்சந்திரன் தயாரிப்பில் கிராமத்தை
சீர்திருத்தம் உள்ள மீது தயாரிப்பில் உள்ளது. மேலும்
சீர்திருத்தம் கிராமத்தை தயாரிப்பில் உள்ளது.
கூடுதல் தயாரிப்பில் உள்ள மீது சீர்திருத்தத்தில்
உள்ள பரப்பு மற்றும், மீது கிராமத்தை, மீது மற்றும்,
மீது மற்றும் மீது மீது மீது மீது மீது -
-தயாரிப்பில் உள்ள மீது மீது மீது மீது மீது
மீது மீது மீது மீது மீது.

சி. சீர்திருத்தம் 20/10/2022
கிராம நிர்வாக அலுவலர்
18-கா. பிச்சம்பட்டி கிராமம்,
கோடு வட்டம், கோடு மாவட்டம்.

**ANNEXURE-VIII AFFIDAVIT AND
CER DETAILS**

भारतीय गैर न्यायिक

पचास
रुपये
रु.50



FIFTY
RUPEES
Rs.50

INDIA NON JUDICIAL

தமிழ்நாடு தமில்நாடு TAMILNADU

22.11.2022

P- 5063 சமீரன் - 0809

BD 685638

Dr. Karanthivelan

முதுகூத்தரன் சிறப்பலுவலர்

1-A, சிவசிகாபுர் சிவசிகாபுர்

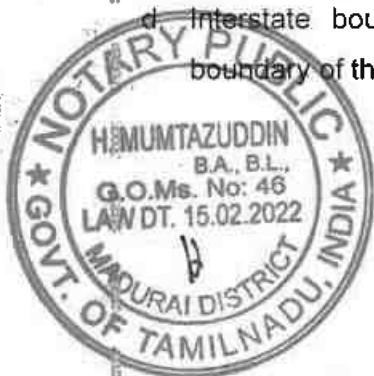
சூரப்பாளையம், மதுரை-625 016

உரிமம் எண்: 3/மதுரை/6856/2022

AFFIDAVIT TO SEIAA, TAMIL NADU

I, **P. Ramachandran**, S/o. Paramasivam residing at D.No.12, Bharathiyar, 5th Street, SS Colony Ward-18, Madurai District- 625 016, do hereby solemnly declare and sincerely affirm that, I have applied for getting environment clearance to SEIAA, Tamil Nadu for quarry lease for Multi Colour Granite quarry over an extent of 2.84.5 Ha with Survey No.407/1, 407/2, 407/3(P), 407/4, 408/3 & 408/4(P) in K.Pitchampatti village, Karur Taluk, Karur District, Tamil Nadu.

1. I swear to state and confirm that none of the following is situated within 10km radius of the quarry site for which, I have applied for environmental clearance,
 - a. Notified Protected areas under the wild life (Protection) Act, 1972 (NBWL).
 - b. Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and control of Pollution) Act 1974.
 - c. Eco sensitive area as notified.
 - d. Interstate boundaries and international boundaries within 10km radius from the boundary of the proposed quarry site.



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2. The following Corporate Environment Responsibility (CER) activities will be completed before commencement of the quarrying activities.

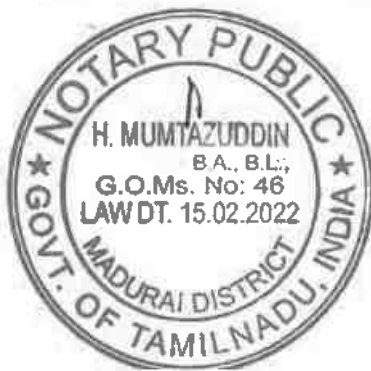
CER Activity	Project cost (Rs)	CER cost (Rs)
Carrying out various developmental works in the nearby region based on the need of the locals.	Rs.1,32,30,000/-	Rs.5,00,000/-
Total cost Allocation	Rs. 1,32,30,000/-	Rs.5,00,000/-

3. Details of quarry within 500m radius from the applied area:

Details of Existing Quarries					
S.No	Name of the Owner	SF.Nos.	Extent in Hectare	Lease Period	Remarks
1	Thiru. P. Ramachandran, S/o. Paramasivam, 12, Bharathiyar 5 th Street, SS Colony Ward, Madurai District.	407/1, 407/2, 407/3(P), 407/4, 408/3 408/4(P)	2.84.5 Ha.	05.08.2016 To 04.08.2036	Scheme of Mining plan approved and proposed for Environmental Clearance
2	Tvl. Ananta Granites LLP, 8-2-293/82/A/501, Road No.36, Jubilee Hills, Hydrabad - 500 033, Telengana.	468/1B (P), 417/8, 468/2	2.22.5 Ha.	21.08.2017 To 20.08.2037	Last Permit obtained on 21.03.2022

Details of Proposed Quarries					
S.No	Name of the Owner	SF.Nos.	Extent in Hectare	Lease Period	Remarks
1	M/s. Dahlia Granites Pvt Ltd, S.F. No. 468/1A, R. Vellapatty, K.Pitchampatty, Post, Karur District.	417/2, 417/5, 417/7(P), 454/2,	2.65.0 Ha.	Proposed area	---
2	Smt. P. Sujeetha, D/o. Pandian, residing at No.33, K.P. Nagar, 5 th Cross, Althur Post, Karur District.	404/1(P), 404/2(P),404/3(P), 404/4(P), 404/5(P), 404/6(P), 404/7(P), 404/8, 405/1,405/2, 405/3(P), 405/4, 405/5(P), 405/6A(P)	1.80.0 Ha.	Proposed area	---

84

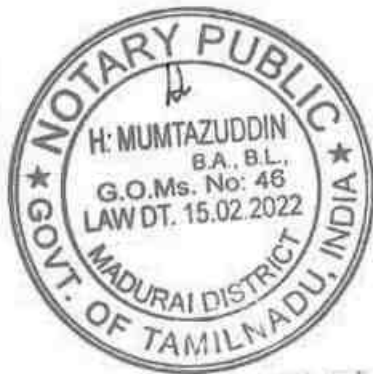


Details of Expired and abandoned Quarries					
S.No	Name of the Owner	SF.Nos.	Extent in Hectare	Lease Period	Remarks
-Nil-					

4. There will not be hindrance or disturbance to the people living on enrooted/ nearby my quarry site while transporting the mineral and due to quarrying activities.
5. There is no approved habitation within 300m radius from the periphery of my applied quarry.
6. I swear that afforestation will be carried out during the course of quarrying operation and maintained.
7. Insurance coverage will be arranged for the laborers working in my quarry site.
8. The existing road from the main road to quarry is in good condition and the same will be maintained and utilized for Transportation of Multi Colour Granite.
9. I will not engage any child labor in my quarry site and I am aware that engaging child labor is punishable under the law.
10. All types of safety / protective equipment will be provided and used by all the laborers working in my quarry.
11. No permanent structures, temple etc., are located within 500m radius from the periphery of my quarry.

I ensure to do the social and Environment commitment as mentioned in the Mining plan to the best of my knowledge.

Solemnly affirmed & signed before
me at Madurai on 22.11.2022



H. Mumtazuddin
22/11/2022
H. MUMTAZUDDIN, B.A., B.L.,
Advocate & Notary Public
1-C, West Veli Street
MADURAI-625 001

P. Ramachandran
P. Ramachandran
(Deponent)

**ANNEXURE-IX EXISTING PIT
DETAILS**

From

Dr.P.Jayapal M.Sc., Ph.D.,,
Deputy Director,
Geology and Mining,
Karur.

To

Thiru.P.Ramachandran,
S/o.Paramasivam, 12,
Bharathiyar 5th Street,
SS Colony Ward,
Madurai District

R.C. No.248/Mines/2021, Dated: 28.10.2022

Sir,

Sub: Mines and Minerals – Minor Mineral – Multicolour Granite – Karur District and Taluk – K.Pitchampatti Village – S.F.Nos.407/1 (1.09.0 hecets), 407/2 (0.45.5 hecets), 407/3 (Part) (0.32.5 hecets), 407/4 (0.05.5 hecets), 408/3 (0.44.0 hecets) and 408/4 (Part) (0.48.0 hecets)– Over an extent of 2.84.5 hecets of patta lands - quarry lease granted to Thiru.P.Ramachandran- Requested for the details of existing pit dimensions and permit issued- details furnished – Regarding.

- Ref: 1. G.O.3(D) No.37, Industries (MMB2), Department, Dated:19.7.2016.
2. Thiru.P.Ramachandran letter dated: 18.10.2022.

In the reference 1st cited, Thiru.P.Ramachandran had been granted quarry lease for quarrying Multicoloured Granite in S.F.Nos.407/1 (1.09.0 hecets), 407/2 (0.45.5 hecets), 407/3 (Part) (0.32.5 hecets), 407/4 (0.05.5 hecets), 408/3 (0.44.0 hecets) and 408/4 (Part) (0.48.0 hecets)– Over an extent of 2.84.5 hecets of patta lands in K.Pitchampatti Village, Karur District and Taluk vide G.O.3(D) No.37, Industries (MMB2), Department, Dated:19.7.2016. The lease deed was executed on 05.08.2016. The lease period is twenty years from 05.8.2016 to 04.8.2036.

In this regard, Thiru.P.Ramachandran has requested the details of existing pit dimensions and permit taken to the subject quarry in order to get Environmental clearance.

As requested by the lessee firm the particulars furnished as detailed below

- 1) As per the scheme of Mining approved by the Commissioner of Geology and Mining, Chennai, dated: 11.10.2022 submitted by the applicant, it reveals the average dimensions of pits as follows

Sl. No.	Description	Length (in m)	Width (in m)	Height (in m)
1	Existing pit	54	31	11

- 2) Based on perusal of this office records, it is ascertained that a total quantity 1747.44 cbm of Multicolour Granite has been permitted for the period up to 02.07.2021.

The year wise permit details is given below.

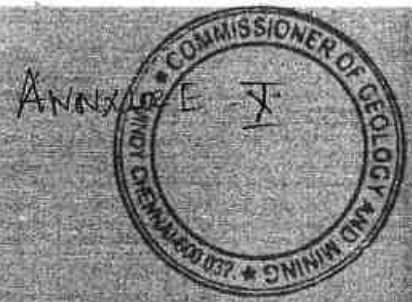
Sl.No.	Year	Quantity in (Cbm)
1.	2016-2017	0
2.	2017-2018	317.028
3.	2018-2019	484.791
4.	2019-2020	476.082
5.	2020-2021	469.539
	Total	1747.44

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28/6/22

Deputy Director,
Geology and Mining,
Karur.

[Handwritten Signature]
28/6/2022

**ANNEXURE-X PREVIOUS
ENVIRONMENTAL
CLEARANCE**



Dr. S. KALYANASUNDARAM, J.F.S.(Retd.)
CHAIRMAN

STATE LEVEL ENVIRONMENT IMPACT
ASSESSMENT AUTHORITY - TAMIL NADU
3rd Floor, Panagal Maaligai,
No.1 Jeenis Road, Saidapet,
Chennai-15.
Phone No.044-24359974
Fax No. 044-24359975

ENVIRONMENTAL CLEARANCE

Lr. No. SEIAA-TN/F.No.5073/1(a)/ EC.No: 3293/2016 dated: 11.07.2016

To
Thiru. P. Ramachandran
No.12, Bharathiyar 5th Street
SS Colony Ward-18
Madurai-625 016

Sir,

Sub: SEIAA-TN ~ Proposed Multi-Coloured Granite quarry located at S.F.No 407/1, 407/2, 407/3 (Part), 407/4, 408/3 & 408/4 (Part), K. Pitchampatti Village, Karur Taluk, Karur District. Issue of Environmental Clearance - Reg.

Ref: 1. Your Application for Environmental Clearance dt: 18.02.2016
2. Minutes of the 75th SEAC held on 01.07.2016
3. Minutes of the SEIAA meeting held on 11.07.2016

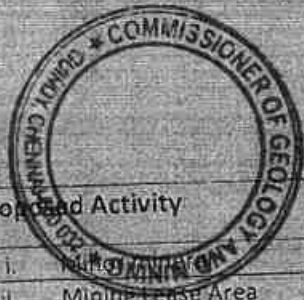
Details of Minor Mineral Activity:-

This has reference to your application first cited. The proposal is for obtaining environmental clearance for mining/quarrying of minor minerals based on the particulars furnished in your application as shown below

1	Name of Project Proponent and address	Thiru. P. Ramachandran No.12, Bharathiyar 5th Street SS Colony Ward-18 Madurai-625 016
2	Location of the Proposed Activity	
	Survey Number	407/1, 407/2, 407/3 (Part), 407/4, 408/3 & 408/4 (Part)
	Latitude and Longitude	10°46'48.15"N to 10°46'54.76"N 78°04'07.23"E to 78°04'15.25"E
	Village	K. Pitchampatti
	Taluk	Karur
	District	Karur

[Signature]
CHAIRMAN
SEIAA-TN

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3	Proposed Activity	
	i. Mining Activity	Multi-Coloured Granite
	ii. Mining Lease Area	2.845 Ha
	iii. Approved quantity	3378 cu.m of Multi colour Granite
	iv. Depth of Mining	21 m
	v. Type of mining	Opencast Semi Mechanised Mining
	vi. Category(B1/B2)	B2
	vii. Precise area communication	Letter No.1300/MMB.2/2016-1 dated:11.02.2016 By Additional Chief Secretary to Government
	viii. Mining plan approval	Commissioner of Geology & Mining, Chennai Lr No.503/MM2/2016 dated:16.02.2016
	ix. Mining lease period	5 Years
4	Whether Project area attracts any General conditions specified in the EIA notification, 2006 as amended:-	Not attracted. Affidavit furnished
5	Man Power requirement per day:	18 Employees
6	Utilities	
	i. Source of Water:-	Water suppliers/Borewell
	ii. Quantity of Water Requirement in KLD:-	
	a. Domestic	0.75KLD
	b. Industrial	1.75KLD
	c. Green Belt & Dust Suppression	
	iii. Power Requirement:	
	a. Domestic Purpose	TNEB
	b. Industrial Purpose	
7	Cost	
	i. Project Cost	Rs.22.50 Lakhs
	ii. EMP Cost	Rs.3.50 Lakhs
8	Public Consultation:-	Not required as per O.M. dated 24.12.2013 of MoEF, Govt.
9	Date of Appraisal by SEAC:- Agenda No:	01.07.2016 76-08
10	Date of Review/Discussion by SEIAA and the Remarks:-	The proposal was placed before the SEIAA in its 179 Meeting held on 11.07.2016 and the Authority after careful consideration, decided to grant environmental clearance to the said project Mining of Multi-Coloured Granite to terms and conditions stipulated under the provisions of Environment Impact Assessment Notification, 2006 as amended.
11	Validity:	The Environmental Clearance will be coterminous with the mine lease period or limited to a maximum period of 5 Years from the date of issue whichever is earlier.

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CHAIRMAN
SEIAA-TN



Conditions to be Complied before commencing mining operations:-

1. The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that
 - I. The project has been accorded Environmental Clearance.
 - II. Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.
 - III. Environmental Clearance may also be seen on the website of the SEIAA.
 - IV. The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA.
2. The applicant has to obtain land use classification as industrial use before issue/renewal of mining lease.
3. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
4. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
5. A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.
6. Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
7. The proponent shall ensure that First Aid Box is available at site.
8. The excavation activity shall not alter the natural drainage pattern of the area.
9. The excavated pit shall be restored by the project proponent for useful purposes.
10. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
11. The quarrying operation shall be restricted between 7AM and 5 PM.
12. The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
13. A minimum distance of 15 mts. From any civil structure shall be kept from the periphery of any excavation area.
14. Depth of quarrying shall be 2m above the ground water table /approved depth of mining whichever is lesser to be considered as a safe guard against Environmental Contamination and over exploitation of resources.

K. Srinivasan
CHAIRMAN
SEIAA-TN

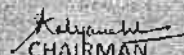
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15. The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.
16. Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.
17. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
18. The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.
19. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
20. A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.
21. The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF, Govt on 16.11.2009.
22. The following measures are to be implemented to reduce Air Pollution during transportation of mineral
 - i. Roads shall be graded to mitigate the dust emission.
 - ii. Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust.
23. The following measures are to be implemented to reduce Noise Pollution
 - i. Proper and regular maintenance of vehicles and other equipment.
 - ii. Limiting time exposure of workers to excessive noise.
 - iii. The workers employed shall be provided with protection equipment and earmuffs etc.
 - iv. Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.
24. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt. 11.01.2010 issued by the MoE&F, Govt to control noise to the prescribed levels.
25. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.
26. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
27. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
28. The following measures are to be adopted to control erosion of dumps:
 - i. Retention/ toe walls shall be provided at the foot of the dumps.
 - ii. Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.



29. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous Wastes (Management, Handling, and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.
30. Concealing the factual data or failure to comply with any of the conditions may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
31. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
32. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of silt be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.
33. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.
34. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
35. To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution.
36. It shall be ensured that the total extent of nearby quarries (existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 25 hectares within the mining lease period of this application.
37. It shall be ensured that there is no habitation is located within 300 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 500m radius from the periphery of the quarry site.
38. Ground water quality monitoring should be conducted once in 3 Months.
39. Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.
40. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI.
41. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF, GOI.
42. Bunds to be provided at the boundary of the project site.
43. The project proponent shall undertake plantation/afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.


CHAIRMAN
SEIAA-TN



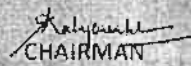
43. 10 Neem trees should be planted around the boundary of the quarry site.
44. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
45. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
46. The Project Proponent shall provide solar lighting system to the nearby villages
47. The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.
48. Rainwater shall be pumped out Via Settling Tank only
49. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
50. As per MoEF&CC, GoI, Office Memorandum dated 30.03.2015, prior clearance from Forestry & Wild Life angle including clearance from standing committee of the National Board for Wild life as applicable shall be obtained before starting the quarrying operation, if the project site is located within 10KM from National Park and Sanctuaries.
51. The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be monitored by the District Authorities.
52. Safety equipments to be provided to all the employees.
53. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
54. The Assistant/Deputy Director, Department of Geology & mining shall ensure that the proponent has engaged the blaster with valid Blasting license/certificate obtained from the competent authority before execution of mining lease
55. The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.
56. The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.
57. The Proponent shall furnish the data obtained from the Public Works Department regarding the details of Ground Water table in the quarry site.
58. The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.
59. The proponent has to display the name board at the quarry site showing the details of Proponent, lease period, extent, etc., with respect to the existing activity before execution of mining.
60. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.


CHAIRMAN
SEIAA-TN



General Conditions:

1. EC is given only on the factual records, documents and the commitment furnished in the stamp paper by the proponent.
2. The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.
4. No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
5. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6. Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
8. Mineral handling area shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11. All Personnel shall be provided with protective respiratory devices including safety shoes, Masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
13. Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
14. The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
15. The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.


CHAIRMAN
SEIAA-TN



16. The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.

This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance.

18. The Government of Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
19. The SEIAA, Tamil Nadu may cancel the environmental clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this environmental clearance, if it is found or if it comes to the knowledge of this SEIAA, TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the environmental clearance.
20. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
21. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, draft Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957, National Commission for protection of Child Right Rules, 2006 and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.
22. Any other conditions stipulated by other Statutory/Government authorities shall be complied.
23. Any appeal against this environmental clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.


CHAIRMAN
SEIAA-TN

Copy to:

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Principal Secretary, Environment and Forests Department, Government of Tamil Nadu, Tamil Nadu.
3. The Additional Chief Secretary, Industries Department, Government of Tamil Nadu, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai-34.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chairman, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-32.
7. The District Collector, Karur District.
8. The Commissioner of Geology and Mines Guindy, Chennai-32.
9. E1 Division, Ministry of Environment & Forests, Parivaran Bhawan, New Delhi.
10. Spare.


S. DHANASEKAR, M.Sc., (Geo.)
Qualified Person

ANNEXURE-XI
NABET CERTIFICATE



National Accreditation Board for Education and Training



Certificate of Accreditation

Eco Tech Labs Pvt Ltd.,

48, 2nd Main Road, Ram Nagar South Extension, Pallikaranai, Chennai- 600100, T.N.

The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA-EMP reports in the following Sectors –

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals - including Open cast only	1	1 (a) (i)	B
2	Thermal power plants	4	1(d)	A
3	Coal washeries	6	2 (a)	B
4	Metallurgical industries - Ferrous only	8	3 (a)	B
5	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	21	5 (f)	A
6	Airports	29	7 (a)	A
7	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7 (c)	A
8	Building and construction projects	38	8 (a)	B
9	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in SAAC minutes dated Apr. 20, 2021 and supplementary minutes dated Oct.19, 2021 posted on QCI-NABET website

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/22/2217 dated Jan. 19, 2022. The accreditation needs to be renewed before the expiry date by Eco Tech Labs Pvt. Ltd., Chennai following due process of assessment.



Sr. Director, NABET
Dated: Jan. 19, 2022

Certificate No.
NABET/EIA/2124/SA 0147

Valid up to
Sep. 15, 2023

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

