

DRAFT EIA / EMP REPORT

FOR

ROUGH STONE AND GRAVEL QUARRY

Extent	1.41.0 Ha
SF.Nos.	144/2A2(P) and 144/3A(P)
Location	Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu
Land Type	Patta Land
Production	Roughstone – 51831m³, Gravel – 11992m³ for 5 years upto a depth of 34m.
Annual Peak Production	Roughstone – 11875m³, Gravel – 11316m³

- Terms Identification No – TO25B0108TN5553727N dated 15.07.2025
- Baseline Monitoring– Summer Season (March – May 2025)

PROJECT PROPONENT

THIRU C.SHANMUGAM

Merku Theru, Karachery, Periyakuyilai (PO), Kinathukadavu Taluk,
Coimbatore District, Tamil Nadu- 641201

CONSULTANT

CREATIVE ENGINEERS & CONSULTANTS

NABET ACCREDITED CONSULTANCY, NABL ACCREDITED TESTING LAB

9B/4, Bharathwajar Street, East Tambaram, Chennai-600059.

Mobile: 09444133619 Email : cecgiri@yahoo.com,



S.No	1(a)	Project Code	CEC/EMP/MI-253
Category	B1	Month of Submission	October.2025

Date:

From,
Thiru C. SHANMUGAM
S/o Chinna Rangasamy Gounder,
Merku Theru, Karachery,
Periyakuyilai (PO), Kinathukadavu Taluk,
Coimbatore District, -641 201,.

To
District Environmental Engineer (Coimbatore District- South)
TamilNadu Pollution Control Board,
No. E-55A, Sidco Industrial Estate,
Kurichi, Coimbatore - 641 021.

Sub: Submission of Draft EIA/EMP report and Summary Roughstone & Gravel Quarry of Thiru C. Shanmugam in S.F.Nos. 144/2A2(P) & 144/3A(P) over an area of 1.41.00 Ha in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu – Public Hearing_Reg

Ref: ToR granted by SEIAA, Tamil Nadu vide letter No - TO25B0108TN5553727N dated 15.07.2025

Sir,

With reference to the above mentioned subject, I am herewith submitting the Draft EIA/EMP report and Summary of EIA/EMP report in English and Tamil for Roughstone & Gravel Quarry of Thiru C. Shanmugam in S.F.Nos. 144/2A2(P) & 144/3A(P) over an area of 1.41.00 Ha in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu. As per the terms of reference issued by SEIAA, Tamil Nadu referred to as (1) above, point no. 39 stipulates conduction of public hearing. Hence, I request you to consider conducting a public hearing for my project at the earliest.

Here with enclosed D.D No – dated for public hearing.

Thank you.

Yours Faithfully,



Thiru. C. SHANMUGAM

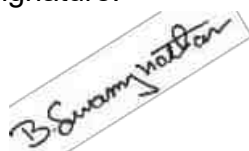
Encl: as above

REVISIONS OF EIA/EMP REPORT

Revision number	Report Status	Date of submission
00/OCT/25	Draft EIA /EMP Report	29.10.2025

Environmental Impact Assessment & Environmental Management Plan Report for Roughstone & Gravel Quarry of Thiru C. Shanmugam in S.F.Nos. 144/2A2(P) & 144/3A(P) over an area of 1.41.00 Ha in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu was prepared by Creative Engineers & Consultants and authorized for submission by Mr.B.Swamynathan, EIA-Coordinator, of Creative Engineers & Consultants on 29.10.2025 after due review by the personnel and consultation with Thiru C. Shanmugam. Current Revision number of the EIA/EMP report is 00/OCT/25, signifying as per the revision mentioned in the above table that this is a draft EIA/EMP report.

Signature:



Date: 29.10.2025

PROJECT PROPONENT DECLARATION

I, Thiru C.Shanmugam received Terms of Reference under EIA Notification 2006 from SEIAA, Tamil Nadu vide their letter No - TO25B0108TN5553727N dated 15.07.2025 for a Roughstone and Gravel Quarry over an area of 1.41Ha in Survey No.144/2A2(P) and 144/3A(P) in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu.

We have entrusted the EIA study to M/s. Creative Engineers & Consultants (CEC), Chennai who have been accredited by the National Accreditation Board for Education & Training (NABET), Quality Council of India with their accreditation valid upto 23.12.2026

The Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) have been prepared as per the generic structure proposed in the EIA notification 2006, ToR issued by SEIAA, Tamil Nadu. The prescribed ToR along with compliance is also incorporated in the EIA/EMP Report.

This report is prepared based on the information and data obtained from the Mining Plan and other records and the field study carried out by various consultant that have been engaged. The data given in the EIA/EMP report are factually correct to the best of my knowledge.

Signature:

For C.Shanmugam



Date: 29.10.2025



CREATIVE ENGINEERS & CONSULTANTS

(NABET ACCREDITED, NABL ACCREDITED TESTING LABORATORY,
DEPARTMENT OF INDUSTRIES AND COMMERCE REGISTERED COMPANY)

EIA Consultant Undertaking

[In compliance with MoEF Office Memorandum No. J-11013/41/2006-IA.II (I) dated 04.08.2009]

Creative Engineers & Consultants (CEC) is an NABL accredited testing Laboratory, and also NABET accredited Category-A environment consultancy organization for preparing EIA/EMP reports for the sectors Mining of minerals, Thermal power plants, Mineral Beneficiation & Cement plants.

CEC has been accredited by the National Accreditation Board for Education & Training (NABET), Quality Council of India for empanelment of EIA Consultants with accreditation valid upto 23.12.2026.

Thiru C.Shanmugam received Terms of Reference under EIA Notification 2006 from SEIAA, Tamil Nadu vide their letter No - TO25B0108TN5553727N dated 15.07.2025 for a Roughstone and Gravel Quarry over an area of 1.41Ha in Survey No.144/2A2(P) and 144/3A(P) in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu.

The prescribed TOR is complied with and incorporated in the EIA Report and submitted. This report is based on the information and data obtained from Approved Mining Plan, other records and data from the field study by CEC. The data generated and given in the EIA/EMP Report are factually correct. The sample analyses are carried out through by Enviro Solutions & Labs, Coimbatore.

(P. Giri)

Chief Executive & EIA Coordinator

Creative Engineers & Consultants

Date: **29.10.2025**

Annexure – VII

Declaration by Experts contributing to the EIA Report for

Roughstone & Gravel Quarry of Thiru C.Shanmugam over an area of 1.41Ha in Survey No.144/2A2(P) and 144/3A(P) in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu.

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

EIA coordinator:

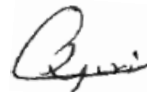
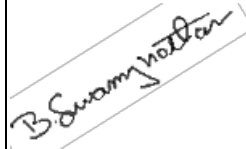
Name: **B.Swamynathan**

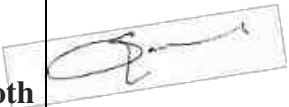



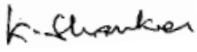
Signature and Date:



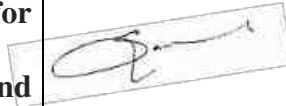

Period of involvement: **Febraury 2025 onwards**


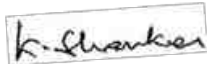
Contact information: **09444133619**

Functional area experts:

S. No.	Function al areas	Name of the expert/s	Involvement (period and task**)	Signature and date
1	AP*	P.Giri	<ul style="list-style-type: none"> • Identification of baseline monitoring stations and study of the monitored data with respect to the applicable standards. • Identification of sources of air pollution comprising dust, gaseous emission due to mining & other activities • Identification of Impacts & suggestion of mitigation measures Period: March 2025 onwards	
		B.Swamynathan	<ul style="list-style-type: none"> • Data interpretation of Micro meteorological data for wind rose. • Identification of polluting source and suggestion of suitable mitigation measures. Period: Febraury 2025 onwards	

2	WP*	G.Sandhya	<ul style="list-style-type: none"> • Study of the monitored data with respect to the applicable standards. • Identification of Water requirement & Source • Preparation of water balance diagram • Identification of Water polluting sources • Impact of the project on the water quality, both surface and groundwater • Suggestion of Mitigation measures to control water pollution <p>Period: March 2025 onwards</p>	
3	SHW*	P.Giri	<ul style="list-style-type: none"> • Quantification of mineral & waste from mining operation • Waste disposal method evaluation • Providing dump management plan • Providing Surface Runoff Management Structure Requirements. • Identification of Hazardous waste and its details of disposal <p>Period: March 2025 onwards</p>	
4	SE*	R.Baburaj	<ul style="list-style-type: none"> • Identification of villages in the study area and finalization of demographic profile of the villages within the study area. • Preparation of sections relevant to SE functional area in the EIA/EMP report <p>Period: March 2025 onwards</p>	
5	EB*	B.Swamynathan	<ul style="list-style-type: none"> • Perusal of existing data relevant to this project. • Studying the details of flora and fauna, separately for core, buffer zone and forest area based on primary field survey. • Identification of species, Indicating the Schedule of the fauna present in the study area • Assessment of impact on Biological environment and suggestion of mitigative measures • Collecting & providing details of existing and proposed Green belt development /plantation in the core zone <p>Period: Febraury 2025 onwards</p>	
6	HG*	K.Shankar	<ul style="list-style-type: none"> • 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 	

			<ul style="list-style-type: none"> • Perusal of site specific ground water table details for the core zone and the study area. • Studied the hydrological aspects of surface and groundwater in study area • Study about impact on the hydrology due to mining operation • Suggesting mitigative measures like RWH for enhancement of ground water level <p>Period: March 2025 onwards</p>	
7	GEO*	K.Shankar	<ul style="list-style-type: none"> • Study of geology of the ML area and the surrounding areas. • Provide details about Mineral composition <p>Period: March 2025 onwards</p>	
8	SC*	B.Swamynathan	<ul style="list-style-type: none"> • Study of soil profile • Assessment of Impact on soil and suggesting plantation scheme. <p>Period: Febraury 2025 onwards</p>	
9	AQ*	G.Sandhya	<ul style="list-style-type: none"> • Quantification of emission particulars • Air quality modelling for post project impact on the air quality prediction of the study area. <p>Analysis of the Isopleth generated</p> <ul style="list-style-type: none"> • Arriving at the post project concentration at the AAQ monitoring locations • Preparation of meteorological data in suitable form for input into the model • Simulation of model for generation of Isopleth and data interpretation. • Studying the impact on AAQ monitoring locations due to the generated emissions. • Preparation of sections relevant to AQ functional area in the EIA/EMP report. <p>Period: March 2025 onwards</p>	
10	NV*	P.Giri	<ul style="list-style-type: none"> • Identification of baseline monitoring stations and study of the monitored data with respect to the applicable standards. • Predict the noise level and vibration level due to proposed mining operation based on scientific evaluation. • Suggesting the Mitigation measures to control noise pollution, Suggesting the Mitigation measures to 	

			control ground vibration Period: March 2025 onwards	
11	LU	B.Swamynathan	<ul style="list-style-type: none"> • Collection of Remote sensing satellite data to study the land use pattern. • Primary field survey and limited field verification • Preparation of Land use map using Satellite data of the project area separately for the core zone and the buffer zone and providing the land use pattern. Period: Febraury 2025 onwards	
12	RH*	K.Shankar	<ul style="list-style-type: none"> • Identified Major risks involved in the project Mitigation measures suggested to avoid risk. • Preparation of onsite and offsite emergency management plan Period: March 2025 onwards	

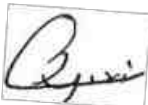
*One TM against each FAE may be shown

**Please attach additional sheet if required

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

I, **P.Giri** hereby,confirm that the above mentioned experts prepared the EIA report for **Roughstone & Gravel Quarry of Thiru C.Shanmugam over an area of 1.41Ha in Survey No.144/2A2(P) and 144/3A(P) in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu.**

I also confirm that EIA Coordinator (EC) has gone through the report, and the consultant organization shall be fully accountable for any misleading information. It is certified that no unethical practices, plagiarism involved in carrying out the work and external data / text has not been used without proper acknowledgement while preparing this EIA report.

Signature: 

Name: **P.Giri**

Designation: **Chief Executive**

Name of the EIA consultant organization: **Creative Engineers & Consultants, Chennai – 59**

NABET Certificate No. & Issue Date: **No- NABET/EIA/23-26/RA 0331 & date 23.12.2026**

National Accreditation Board for Education and Training

Certificate of Accreditation

Creative Engineers and Consultants, Chennai

9B/4, Bharathwajar street, East Tambaram, Chennai, Tamil Nadu

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- opencast mining only	1	1 (a) (i)	A
2.	Thermal power plants	4	1 (d)	A
3.	Mineral beneficiation	7	2 (b)	A
4.	Cement plants	9	3 (b)	A

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in RAAC minutes dated May 03, 2024, 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/24/3250 dated May 24, 2024. The accreditation needs to be renewed before the expiry date by Creative Engineers and Consultants, Chennai following due process of assessment.

Issue Date
May 24, 2024

Valid up to
December 23, 2026



Mr. Ajay Kumar Jha
(Sr. Director, NABET)

Certificate No.
NABET/EIA/23-26/RA 0331

Prof (Dr) Varinder S Kanwar
(CEO-NABET)

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.

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**DRAFT EIA/EMP REPORT FOR ROUGHSTONE & GRAVEL QUARRY OF THIRU C.SHANMUGAM
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VILLAGE, KINATHUKADAVU TALUK, COIMBATORE DISTRICT, TAMIL NADU.**

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PRO CODE: CEC-EMP-MI-253

REV NO : 00/OCT/25

C-9

TERMS OF REFERENCE & ITS COMPLIANCE



File No: 12120
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA),
TAMIL NADU)



Dated 15/07/2025



To,

Thiru C. Shanmugam,
S/o Chinna Rangasamy Gounder, Merku Theru, Karachery, Periyakuyilai (PO), Kinathukadavu Taluk,
Coimbatore District, TAMIL NADU- 641201
shanmugam4896@gmail.com

Subject: Grant of Terms of Reference along with Public Hearing under the provision of the EIA Notification 2006,as amended -regarding.

Sir/Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference along with Public Hearing (ToR) for the Proposed Rough Stone and Gravel Quarry lease over an extent 1.41.0 Ha at S.F. Nos. 144/2A2(P) & 144/3A(P), Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu by Thiru. C. Shanmugam – “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/534952/2025, Dated: 02/05/2025.

2. Your application submitted for Terms of Reference dated: 02.05.2025.

3. Minutes of the 578th Meeting of SEAC held on 13.06.2025.

4. Minutes of the 849th Meeting of Authority held on 10.07.2025.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO25B0108TN5553727N
(ii) File No.	12120
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Roughstone & Gravel Quarry of Thiru C. Shanmugam
(viii) Name of Company/Organization	SHANMUGAM R
(ix) Location of Project (District, State)	COIMBATORE, TAMIL NADU
(x) Issuing Authority	SEIAA

(xi) Applicability of General Conditions	no
(xiii) Applicability of Specific Conditions	no

1. In view of the particulars given in the Para 1 above, the project proposal interalia including Form-1 (Part A and B) were submitted to the SEIAA for an appraisal by the SEAC under the provision of EIA notification 2006 and its subsequent amendments.

2. The above-mentioned proposal has been considered by SEIAA in the meeting held on 10.07.2025. The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B,)] are available on PARIVESH portal which can be accessed by scanning the QR Code above.

3. The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations on all technical aspects recommended the proposal for grant of Terms of Reference with public hearing under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).

4. The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal of **Thiru C. Shanmugam** under the provisions of EIA Notification, 2006 and as amended thereof.

5. The Ministry/SEIAA-TN reserves the right to stipulate additional conditions, if found necessary.

6. The Terms of Reference with public hearing to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/Regulations or Statutes, as applicable, to the project.

7. This issues with the approval of the Competent Authority.

8. 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 OM No. J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Copy To

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Additional Chief Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Natural Resources Department, 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 Chair Person, TNPC Board, 76, Mount Salai, Guindy, Chennai-32
7. The District Collector, Coimbatore District,
8. The Commissioner of Geology and Mines, Guindy, Chennai-32
9. Assistant Director, Department of Geology & Mining, Coimbatore District,
10. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
11. File Copy.

Annexure 1

Specific Terms of Reference for (Mining Of Minerals)

1. Seac Conditions - Site Specific

S. No	Terms of Reference
1.1	1. A Cluster Management Committee (CMC) shall be constituted including all the mines in

S. No	Terms of Reference
	<p>the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal:</p> <p>(i) Copy of the agreement forming CMC.</p> <p>(ii) The Organisation chart of the Committee with defining the role of the members</p> <p>(iii) The 'Standard Operating Procedures' (SoP) executing the planned activities.</p> <p>2. The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report.</p> <p>3. The project proponent shall submit a Certified Compliance Report (CCR) obtained from the RO, MoEF&CC, Chennai for the previous EC dated 26.09.2016 and appropriate mitigating measures for the non-compliance items, if any.</p> <p>4. The PP shall obtain Modified Mining plan for the proposed changes (restricting the mining depth and the extent of area) during the EIA appraisal.</p> <p>5. The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.</p> <p>6. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km 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. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations.</p> <p>7. The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.</p> <p>8. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.</p> <p>9. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.</p> <p>10. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.</p> <p>11. For the safety of the persons employed in the quarry, the PP shall carry out the scientific studies to assess the slope stability of the existing quarry wall (exists without benches) for spelling out the slope stability action plan with mitigation measures and working methodology, by involving any one of the reputed Research and Academic Institutions such as CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Dept of Mining Engg., Anna University Chennai, etc. A copy of such scientific study report shall be submitted with an action plan accommodating the inclusion of haul road accessibility with maintaining the proper gradient by ensuring the slope stability of the working benches to be constructed and existing quarry wall.</p> <p>12. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.</p>

2. Seac Standard Conditions

S. No	Terms of Reference
2.1	1. In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following:

S. No	Terms of Reference
	<p>(i) Original pit dimension</p> <p>(ii) Quantity achieved Vs EC Approved Quantity</p> <p>(iii) Balance Quantity as per Mineable Reserve calculated.</p> <p>(iv) Mined out Depth as on date Vs EC Permitted depth</p> <p>(v) Details of illegal/illicit mining</p> <p>(vi) Violation in the quarry during the past working.</p> <p>(vii) Quantity of material mined out outside the mine lease area</p> <p>(viii) Condition of Safety zone/benches</p> <p>(ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.</p> <p>2. Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.</p> <p>3. The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m 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 with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.</p> <p>4. 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.</p> <p>5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.</p> <p>6. The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.</p> <p>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 the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.</p> <p>8. However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.</p> <p>9. 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>10. 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>11. 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>12. 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> <p>13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?</p> <p>14. Quantity of minerals mined out.</p> <ul style="list-style-type: none"> · Highest production achieved in any one year · Detail of approved depth of mining.

S. No	Terms of Reference
	<ul style="list-style-type: none"> · Actual depth of the mining achieved earlier. · Name of the person already mined in that leases area. · If EC and CTO already obtained, the copy of the same shall be submitted. · Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches. <p>15. 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).</p> <p>16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,</p> <p>17. 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.</p> <p>18. The Project Proponent shall provide the details of mineral reserves and mineable reserves, 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.</p> <p>19. 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 the 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>20. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of groundwater 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.</p> <p>21. 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>22. 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.</p> <p>23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.</p> <p>24. 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>25. Details of the land for storage of Overburden/Waste Dumps (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>26. 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.</p> <p>27. Description of water conservation measures proposed to be adopted in the Project should be</p>

S. No	Terms of Reference
	<p>given. Details of rainwater harvesting proposed in the Project, if any, should be provided.</p> <p>28. Impact on local transport infrastructure due to the Project should be indicated.</p> <p>29. 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.</p> <p>30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.</p> <p>31. 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.</p> <p>32. 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. 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.</p> <p>33. Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly 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</p> <p>34. 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.</p> <p>35. 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.</p> <p>36. 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.</p> <p>37. 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>38. 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.</p> <p>39. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.</p> <p>40. 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.</p> <p>41. 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.</p> <p>42. The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.</p> <p>43. 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.</p>

3. Seiaa Specific Conditions:

S. No	Terms of Reference
3.1	The authority noted that the subject was placed in the 578th SEAC-II meeting held on 13.06.2025. After detailed discussions, the Authority accepts the recommendation of SEAC-II and decided to grant Terms of Reference (ToR) along with Public Hearing for the quantity of 51,831m³ of Rough Stone and 11,992m³ of Gravel up to the depth of 34m BGL. The annual peak production is 11,875m³ of Rough Stone and 11,316m³ of gravel as per the approved mining plan , 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-II & normal conditions & the conditions mentioned below.

4. Seiaa Standard Conditions:

S. No	Terms of Reference
4.1	<p><u>Cluster Management Committee</u></p> <ol style="list-style-type: none"> 1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry. 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 & emergency management plan, fire safety & evacuation plan and sustainable development goals 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 in the 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. 8. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity. <p><u>Agriculture & Agro-Biodiversity</u></p> <ol style="list-style-type: none"> 9. Impact on surrounding agricultural fields around the proposed mining Area. 10. Impact on soil flora & vegetation around the project site. 11. Details of type of vegetation including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetation all along the boundary of the proposed mining area shall committed mentioned in EMP. 12. The Environmental Impact Assessment should study the agro-biodiversity, agro- forestry, horticultural plantations, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem. 13. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services. 14. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock. <p><u>Forests</u></p> <ol style="list-style-type: none"> 15. The project proponent shall detailed study on impact of mining on Reserve forests and free

S. No	Terms of Reference
	<p>ranging wildlife.</p> <p>16. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.</p> <p>17. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.</p> <p>18. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.</p> <p><u>Water Environment</u></p> <p>19. 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, 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.</p> <p>20. Erosion Control measures.</p> <p>21. 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.</p> <p>22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.</p> <p>23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities.</p> <p>24. 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.</p> <p>25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.</p> <p>26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.</p> <p>27. The EIA shall include the impact of mining activity on the following:</p> <ol style="list-style-type: none"> Hydrothermal/Geothermal effect due to destruction in the Environment. Bio-geochemical processes and its foot prints including Environmental stress. Sediment geochemistry in the surface streams. <p><u>Energy</u></p> <p>28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.</p> <p><u>Climate Change</u></p> <p>29. 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.</p> <p>30. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features.</p> <p>31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.</p> <p><u>Mine Closure Plan</u></p> <p>32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.</p> <p><u>EMP</u></p> <p>33. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs.</p> <p>34. The Environmental Impact Assessment should hold detailed study on EMP with budget for</p>

S. No	Terms of Reference
	<p>Green belt development and mine closure plan including disaster management plan.</p> <p><u>Risk Assessment</u></p> <p>35. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.</p> <p><u>Disaster Management Plan</u></p> <p>36. 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.</p> <p><u>Others</u></p> <p>37. 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.</p> <p>38. 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.</p> <p>39. 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.</p>

Standard Terms of Reference for (Mining of minerals)

1.

S. No	Terms of Reference
1.1	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
1.2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given
1.3	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
1.4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/toposheet, topographic sheet, geomorphology and geology of the areashould 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)
1.5	Information should be provided in Survey of India Toposheet 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
1.6	Details about the land proposed for mining activities should be givenwith information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval

S. No	Terms of Reference
	from State land use board or the concerned authority
1.7	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
1.8	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
1.9	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
1.10	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
1.11	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
1.12	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. In the event of any 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
1.13	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
1.14	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
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	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
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/

S. No	Terms of Reference
	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
1.18	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 alongwith 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
1.19	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
1.20	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 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)
1.21	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
1.22	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
1.23	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 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

S. No	Terms of Reference
1.24	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
1.25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided
1.26	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
1.27	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
1.28	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 State Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished
1.29	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
1.30	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
1.31	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 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
1.32	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
1.33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report
1.34	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
1.35	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

S. No	Terms of Reference
	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
1.36	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
1.37	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
1.38	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
1.39	Public Hearing points raised and commitment 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
1.40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report
1.43	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
1.44	Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) 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. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) 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 be followed. g) 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. h) 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. i) The EIA report should also include (i) surface plan of the area indicating

S. No	Terms of Reference
	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



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).
- 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 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 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 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 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 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: -
 - a) Executive Summary of the EIA/EMP Report
 - b) All documents to be properly referenced with index 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) 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.
 - e) Where the documents provided are in a language other than English, an English translation should be provided.
 - f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
 - g) 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.
 - 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&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.

- 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.
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 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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TOR COMPLIANCE

S.No	ToR Points	Reply	Pg.No
A. SEAC CONDITIONS - SITE SPECIFIC			
1	A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: a) Copy of the agreement forming CMC. b) The Organisation chart of the Committee with defining the role of the members c) The 'Standard Operating Procedures' (SoP) executing the planned activities.	<ul style="list-style-type: none"> • Environmental Management Cell of projects in the cluster will act as a Cluster Management Committee. The various activities to be undertaken by this committee are detailed in para 10.2.2, Chapter – X. • Affidavit in this regard will be submitted during EIA appraisal. 	10.3
2	The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report.	<ul style="list-style-type: none"> • Agreed 	--
3	The project proponent shall submit a Certified Compliance Report (CCR) obtained from the RO, MoEF&CC, Chennai for the previous EC dated 26.09.2016 and appropriate mitigating measures for the non-compliance items, if any.	CCR Report obtained from the RO, MoEF&CC, Chennai, Enclosed as Annexure - 8	A-32
4	The PP shall obtain Modified Mining plan for the proposed changes (restricting the mining depth and the extent of area) during the EIA appraisal.	Modified Mining plan preparation Under Progress	-
5	The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.	Details of the features produced within 500m radius are provided in Figure 2.6, Chapter-II	2-9
6	The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & upto 1km 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. and spell out the mitigation	Details of the features produced within 500m radius are provided in Figure 2.6, Chapter-II	2-9



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	measures to be proposed for the protection of the above structures, if any during the quarrying operations.		
7	The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Site photographs have been provided in Chapter-II. Fencing and plantation are already carried out.	2-7
8	The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.	A detailed study of flora and fauna composition in the core and buffer zone of the project has been made through primary field surveys. The details are furnished in para 3.5, Chapter III.	3-37
9	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	EMP is prepared for the entire life of the mine. Affidavit will be provided along with the final EIA/ EMP report.	-
10	2. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.	The details of the quarries located within the 500m radius of the project is given vide Annexure-3. A cumulative impact study has been carried out and furnished in Para 7.6, Chapter-VII. Environmental Management Plan is provided under Chapter-X.	A- 7-5 10-2
11	For the safety of the persons employed in the quarry, the PP shall carry out the scientific studies to assess the slope stability of the existing quarry wall (exists without benches) for spelling out the slope stability action plan with mitigation measures and working methodology, by involving any one of the reputed Research and Academic Institutions such as CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Dept of Mining Engg., Anna University Chennai, etc. A copy of such scientific study report shall be submitted with an action plan accommodating the inclusion of haul road accessibility with maintaining the proper gradient by ensuring the slope stability of the working benches to be constructed and existing	Pit slope stability plan has been provided under Section 7.7, Chapter-VII	7-9



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	quarry wall.														
12	The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.	Agreed	-												
B. SEAC STANDARD CONDITIONS															
1	<p>In the case of existing/operating mines, a letter obtained from the concerned AD (Mines) shall be submitted and it shall include the following:</p> <ul style="list-style-type: none"> a) Original pit dimension b) Quantity achieved Vs EC Approved Quantity c) Balance Quantity as per Mineable Reserve calculated. d) Mined out Depth as on date Vs EC Permitted depth e) Details of illegal/illicit mining f) Violation in the quarry during the past working. g) Quantity of material mined out outside the mine lease area h) Condition of Safety zone/benches i) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m. 	<p>C. Shanmugam carried out mining in this area in 3 spells from 1.04.2006 to 31.03.2011, 04.05.2011 to 03.05.2016 & 09.12.2016 to 08.12.2021. Existing pit dimension is as follows:</p> <table border="1"> <thead> <tr> <th colspan="4">EXISTING DIMENSION</th></tr> <tr> <th>Pit No</th><th>Length (m) (max)</th><th>width (m) (max)</th><th>Depth (m)</th></tr> </thead> <tbody> <tr> <td>1</td><td>97</td><td>65</td><td>27</td></tr> </tbody> </table> <p>Pit letter from AD mines stating these details are given as Annexure -5.</p> <p>Modified Mining plan preparation Under Progress</p>	EXISTING DIMENSION				Pit No	Length (m) (max)	width (m) (max)	Depth (m)	1	97	65	27	<p>2-2</p> <p>A-4</p>
EXISTING DIMENSION															
Pit No	Length (m) (max)	width (m) (max)	Depth (m)												
1	97	65	27												
2	Details of habitations around the proposed mining area and latest VAO certificate regarding the location of habitations within 300m radius from the periphery of the site.	Letter from VAO is obtained and given as Annexure -4 .	A-7												
3	The proponent is requested to carry out a survey and enumerate on the structures located within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m (v) 500m 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 with indicating the owner of the building, nature of construction, age of the building, number of residents, their profession and income, etc.	Details of the features within 500m radius are provided in Figure 2.6, Chapter-II.	2.9												
4	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.	•Hydrogeological Study is detailed under Section 3.6, Chapter-III.	3-42												
5	The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	•A detailed study of flora and fauna composition in the core and buffer zone of the project has been made through primary field surveys. The	3-35												



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		details are furnished in para 3.5, Chapter III.	
6	The DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Sanctuaries, Tiger reserve etc., up to a radius of 25 km from the proposed site.	• There area no Protected Areas, Sanctuaries, Tiger reserve etc., within 10km Radius. The details are furnished in Table no 3.2, Chapter III.	3.3
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 the PP shall carry out the scientific studies to assess the slope stability of the working benches to be constructed and existing quarry wall, by involving any one of the reputed Research and Academic Institutions - CSIR-Central Institute of Mining & Fuel Research / Dhanbad, NIRM/Bangalore, Division of Geotechnical Engineering-IIT-Madras, NIT-Dept of Mining Engg, Surathkal, and Anna University Chennai-CEG Campus. The PP shall submit a copy of the aforesaid report indicating the stability status of the quarry wall and possible mitigation measures during the time of appraisal for obtaining the EC.	• The lease applied area is mostly minedout area and the remaining is plain barren area covered by Gravel formation.	2-15
8	However, in case of the fresh/virgin quarries, the Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30 m below ground level.	• Pit slope stability plan has been provided under Section 7.7, Chapter-VII	7-9
9	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.	• Will be submitted along with the final report	--
10	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.	• Controlled blasting will be adopted in this project and details of the same has been provided in Section 4.4.2, Chapter-IV	4-14
11	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.	• Agreed	--
12	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,	• C. Shanmugam carried out mining in this area in 3 spells from 1.04.2006 to 31.03.2011, 04.05.2011 to 03.05.2016 & 09.12.2016 to 08.12.2021, Pit letter from AD mines stating these details are given as Annexure -5.	A-8



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13	What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	• Replied above in point no.12	--
14	Quantity of minerals mined out. <ul style="list-style-type: none"> • Highest production achieved in any one year • Detail of approved depth of mining. • Actual depth of the mining achieved earlier. • Name of the person already mined in that leases area. • If EC and CTO already obtained, the copy of the same shall be submitted. • Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches. 	• Replied above in point no.12	--
15	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).	<ul style="list-style-type: none"> • Project coordinates superimposed in satellite imagery and given as Figure No - 2.4 in Chapter – II. • The 10km Radius Index plan showing buffer zone is given in Figure No.3.1 in Chapter – III. • Geology Map, Geomorphology, Lithology map are enclosed as Figure No.3.16, 3.17 and 3.18, Chapter-III. 	2-6 3-1 3-43 & 3-45
16	The PP shall carry out Drone video survey covering the cluster, Green belt, fencing etc.,	• Agreed	--
17	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.	• Site photographs have been provided in Chapter-II.	2-7
18	The Project Proponent shall provide the details of geological reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment and the proposed mitigation measures for the same.	<ul style="list-style-type: none"> • The details of geological and mineable reserves are provided in Table 2.4, Chapter-II. • The production schedule is provided in Table 2.7, Chapter-II. • The working methodology is detailed under Section 2.8, Chapter-II. • Anticipated impacts of mining operations on surrounding environment is provided under Chapter-IV. 	2-15 2-17 4-1
19	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.	• The organization chart has been provided in Figure No.10.1, Chapter-X.	10-3
20	The Project Proponent shall conduct the hydro-	• Details of hydrogeological scenario of this	3-39



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	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.	project is provided under section 3.6, Chapter-III.	
21	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.	<ul style="list-style-type: none"> The baseline data on micro- meteorology, ambient air quality, Water quality, noise level, soil and flora & fauna are collected during Summer Season (March 2025 to may 2025) and detailed in Section 3.3 to 3.5 of Chapter-III. The details of Traffic Study is provided under Section 4.9, Chapter-IV. 	3-13 & 3-33 4-23
22	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.	<ul style="list-style-type: none"> The details of the quarries located within the 500m radius of the project is given vide Annexure-3. A cumulative impact study has been carried out and furnished in Para 7.6, Chapter-VII. Environmental Management Plan is provided under Chapter-X. 	A-5 7-5 10-1
23	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	<ul style="list-style-type: none"> The rain water falling in the quarries will be harvested in the sump at the lowest level of the respective quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet. etc. Towards surface runoff management, garland drain will be constructed which will be connected to settling ponds with silt traps. Water requirement for this project is 9 KLD. The required water will be procured initially from outside agencies. Later Rain water harvested in the mine sump can also be used. Details of rainwater harvesting are provided under Section 4.3.4.2, Chapter-IV. 	4-11
24	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.	<ul style="list-style-type: none"> The land use of the study area was studied to demarcate various LULC categories and its details are provided under section 3.4, Chapter-III. The land use pattern at present and at the end of the quarrying period has been provided under section 4.5.1, Chapter-IV. The post mining land use has been provided in Table No. 4.12. . 	3-27 4-17



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		<ul style="list-style-type: none"> The post mining land use plan showing afforestation and water body is shown in Figure No- 2.12. 	2.20
25	Details of the land for storage of Overburden/Waste Dumps (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.	<ul style="list-style-type: none"> There is no waste generation anticipated in this quarry. As such there are no OB dumps involved. 	--
26	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.	<ul style="list-style-type: none"> Not Applicable 	--
27	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.	<ul style="list-style-type: none"> The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet. etc. Towards surface runoff management, garland drain will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users. The surface runoff management structures diagram is given in Figure No 4.4, Chapter-IV. The methods for reducing water consumption and rainwater harvesting is provided in section 4.3.4, Chapter-IV. 	4-11 4-10
28	Impact on local transport infrastructure due to the Project should be indicated.	<ul style="list-style-type: none"> From this proposed quarry the entire output will be transported to the crusher units and other buyers etc. Since the production from this lease is very less, there will be just 1 trip per hour of additional truck traffic. The existing road can absorb this traffic due to this project Details are provided under section 4.9, Chapter-IV. 	4.23
29	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.	<ul style="list-style-type: none"> An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under section 3.5.1, Chapter-III. 	3-33
30	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	<ul style="list-style-type: none"> Details of Mine Closure Plan is provided under section 7.5, Chapter-VII. 	7-4
31	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA	<ul style="list-style-type: none"> An ecological survey of the study area was conducted with reference to listing of species 	3-33



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	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.	and assessment of the existing baseline ecological conditions. Details are provided under section 3.5.1, Chapter-III.	
32	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. 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.	• Agreed	--
33	Taller/one year old Saplings raised in appropriate size of bags, preferably ecofriendly 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.	• Agreed	--
34	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.	• The disaster management plan has been provided under section 7.3.1, Chapter-VII.	7-3
35	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.	• Various risks likely to arise due to mining activities are detailed under section 7.3, Chapter-VII.	7-1
36	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.	• Details of occupational health and safety aspects are given under the subsections of Para 4.8, Chapter-IV.	4-21
37	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.	<ul style="list-style-type: none"> • Details of the socio-economic survey conducted in the buffer zone has been provided in Para 3.2.4, Chapter-III. • Public health facilities will be further aimed to be developed through CER activities wherein periodic health checkups, medical camps for the locals will be conducted. 	3-8



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38	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.	<ul style="list-style-type: none"> Nearby villages were visited for conducting study to know about socio-economic conditions, including aspirations and requirements of the people for a better living and collected relevant data. The details are provided under section 3.2.4, Chapter-III. 	3-8
39	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	<ul style="list-style-type: none"> PP informed that there is no litigation pending against the project. 	--
40	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.	<ul style="list-style-type: none"> The Roughstone and Gravel Quarry will benefit this region in the fields of employment opportunities, improved per capita income for local people, improved social welfare facilities in respect of education, health, infrastructural etc. Direct employment to about 20 people and indirect employment to scores of people. By means of carrying out the socio-economic development activities, local community development is expected. Towards the same, the proponent has planned to allocate Rs2.5 Lakhs for various activities under CER for all the three projects together. From the CER activities allocated for various social welfare activities, the villages near the lease area will be benefited. 	8-1
41	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/TNPCCB.	CCR Report obtained from the RO, MoEF&CC, Chennai, Enclosed as Annexure - 8	A-32
42	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	<ul style="list-style-type: none"> EMP is prepared for the entire life of the mine. Affidavit will be provided along with the final EIA/ EMP report. 	--
43	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.	<ul style="list-style-type: none"> Agreed 	--

C. Additional ToR

Cluster Management Committee

1	Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	<ul style="list-style-type: none"> Details of the cluster management committee is provided under Section 10.2.2, Chapter-X. 	10-2
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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.,	• Agreed	-
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	-
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	-
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.	• Agreed	-
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	-
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	-
8	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity.	• Agreed	-
Agriculture & Agro-Biodiversity			
9	Impact on surrounding agricultural fields around the proposed mining Area.	• Since the lease and its nearby area is of rocky type , it remain uncultivated and only in patches of land away from the lease area, agricultural activities are carried during monsoon rainfall. Due to poor quality of the soil, inconsistent rainfall, high agricultural labor cost, manpower shortage and less yield are reason for very little agricultural activity in this region. By adoption of systematic mining	4-17



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		adhering to all the environmental mitigation measures as explained earlier, no adverse impact on the far away agricultural or surrounding environs envisaged.	
10	Impact on soil flora & vegetation around the project site.	• The impact of mining on biological environment is provided under Table 4.14, Chapter-IV.	4-18
11	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.	• The details of flora in the core zone is provided in Table 3.24, Chapter-III. There is no major clearance of vegetation or transplantation involved.	3-38
12	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.	• An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under Section 3.5.1, Chapter-III.	3-33
13	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	• The post mining land use has been provided in Table No. 4.12. • The post mining land use plan showing afforestation and water body is shown in Figure No- 2.12.	4-17 2-20
14	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	• Replied in sl no 13 above.	4-18
Forests			
15	The project proponent shall detailed study on impact of mining on Reserve forests free ranging wild life.	• There are no reserve forest within 10km radius and as such no impact on this front envisaged.	--
16	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	• An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under Section 3.5.1, Chapter-III.	3-34
17	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	• Replied in point 20. Above	--
18	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	• There are no national parks or corridors in the 10k radius. There are no reserve forest in the proximity of the lease area	3-2
Water Environment			
19	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.	• The details of hydrogeological study is provided under Section 3.6, Chapter-III.	3-39



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	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.		
20	Erosion Control measures.	<ul style="list-style-type: none"> • Since the entire material from the quarry face will be directly dispatched to the consumers, there will not be any stockpiles. There are no waste dumps in this quarry. As such there will not be any wash out due to stock pile or waste dumps. • Towards surface runoff management, a garland drain will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users 	4-10
21	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.	<ul style="list-style-type: none"> • There is no proposal to discharge any effluent into this waterbody. No major impact is envisaged on the nearby water bodies due to project operations 	11-12
22	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	<ul style="list-style-type: none"> • There is no major perennial waterbody in close proximity of the lease area. 	7-3
23	The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.	<ul style="list-style-type: none"> • The post mining land use has been provided in Table No. 4.13. The post mining land use plan showing afforestation and water body is shown in Figure No- 4.5. 	4-16 & 4-20
24	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.	<ul style="list-style-type: none"> • An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. Details are provided under section 3.5.1, Chapter-III. 	3-33
25	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	<ul style="list-style-type: none"> • Soil samples were collected in 5 locations in the core and buffer zone to analyse the physiochemical characteristics of the soil in the area. The soil quality data is provided in Table No.3.18, Chapter-III. 	3-28
26	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	<ul style="list-style-type: none"> • The nearest major water bodies is provided in Table No.3.1, Chapter-III. • There are no perineal water courses in lease areas. <p>The mining area consists of hard compact rock, hence no major water seepage within the mine is expected from the periphery. The ground water table in this area is below the ultimate pit level. Hence, ground water intersection in not envisaged and ground water will not be affected</p>	3-1



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		appreciably due to the quarrying operation.	
27	<p>The EIA shall include the impact of mining activity on the following:</p> <ol style="list-style-type: none"> Hydrothermal/Geothermal effect due to destruction in the Environment. Bio-geochemical processes and its foot prints including environmental stress. Sediment geochemistry in the surface streams. 	<p>d) As such the production from this lease is very low to cause any appreciable impact.</p> <p>e) No adverse impact on the surrounding environment is envisaged since the number of equipments to be used to achieve this small production is very less and the magnitude of operation is of very small level.</p> <p>f) Besides, as is it a mining project, no adverse generation of heat is envisaged.</p> <p>g) Certified vehicles with low carbon emissions will only be used. These equipments will be properly and regularly maintained. Besides, regular vehicular emission tests will be done for the transport vehicles to ensure minimal impact due to carbon emissions. To further mediate the carbon emissions, a good greenbelt and plantation plan has been planned.</p> <p>h) Geologically the area in and around the lease area contains charnokite type rock formation containing mostly fallow land. As such there no major vegetation or agricultural activities are observed.</p> <p>i) There are no Protected or Eco-Sensitive Zone or forest land nearby wherein it can have an impact.</p> <p>j) It will be ensured that mining will be carried out adhering to all the statutory rules and regulations and maintaining the environmental quality within the prescribed standards by effective implementation of various mitigative measures.</p> <p>k) These mitigative measures will be continued for the entire lease period ensuring no impact on the environment.</p> <p>As such release of Greenhouse gases (GHG), rise in temperature, affecting livelihood of the local people, loss of Agriculture, Forestry and Traditional Practices is not envisaged. Such a limited scope will not induce any climatic change leading to droughts, floods etc.</p>	4-18
Energy			
28	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	<ul style="list-style-type: none"> The dust control measures are listed under Table 4.1, Water pollution control measures under Section 4.3.2, and noise pollution control measures under Section 4.4.1.2, Chapter-IV. Besides, energy consumption in this project will be optimum and as per requirement. 	4-2
Climate Change			
29	The Environmental Impact Assessment shall study	• Certified vehicles with low carbon emissions	7-16



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	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.	will only be used. These equipments will be properly and regularly maintained. Besides, regular vehicular emission tests will be done for the transport vehicles to ensure minimal impact due to carbon emissions. To further mediate the carbon emissions, a good greenbelt and plantation plan has been planned wherein 750 number of plants will be planted in and around the lease area.	
30	The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock, soil health and physical, chemical & biological soil features.	• Replied in point no.29 above	--
31	Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.	• Replied in point no.29 above	
Mine Closure Plan			
32	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.	• Details of Mine Closure Plan is provided under section 7.5, Chapter-VII.	7-4
EMP			
33	Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs	• Detailed environmental management plan is provided under Chapter-X.	10-1
34	The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	• Detailed environmental management plan is provided under Chapter-X.	10-1
Risk Assessment			
35	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	• Various risks likely to arise due to mining activities are detailed under section 7.3, Chapter-VII.	7-1
Disaster Management Plan			
36	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.	• The disaster management plan has been provided under section 7.3.1, Chapter-VII.	7-3
Others			
37	The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved	• Given in Vide Annexure No -4 of EIA EMP report	A-7



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	habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.		
38	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.	Will be provided in the Final EIA/EMP Report after completion of public hearing.	--
39	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.	• Single use plastics/ use and throwaway plastics will be banned in the site as directed by the Tamil Nadu Government vide GO(Ms)No.84 regarding ban on use of plastic products. The employees will be encouraged to use compostable material or reusable material.	11-16

D. Standard ToR

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.	• The lease applied area is mostly mined out area and the remaining is plain barren area covered by Gravel formation.	2-11
2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given	Precise Area Communication letter received from the Assistant Director, Dep. of Geology & Mining, Coimbatore vide Rc.No.690/Kanimam/2023 dated 18.02.2025 (Annexure-1)	A-1
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.	• The production capacity, quantity of waste, its management and mining technology in mine plan and EIA, etc., are compatible with one another.	--
4	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, 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).	<ul style="list-style-type: none"> • Project coordinates superimposed in satellite imagery and given as Figure No - 2.4 in Chapter – II. • The geology and geomorphology map is provided in Figure No.3.16, 3.17, Chapter-III. The Lithology map and Soil map are provided under Figure No. 3.18, 3.19, Chapter-III. • The 10km Radius Index plan showing buffer zone is given in Figure No.3.1 in Chapter – III. 	2-6 3-43 3-2



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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.	•Replied in Standard ToR point no.4	--
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.	•Not Applicable	--
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.	<ul style="list-style-type: none"> •The proponent will frame a well-planned environmental policy. Its details are provided under Section 10.2.1, Chapter-X. •The Mines Manager will undertake effective monitoring and implementation of various environmental control measures promptly and effectively and to oversee various environmental management schemes for air quality control, water quality status, noise level control, plantation programme, social development schemes, etc in the mine. The organizational chart for the same has been provided in Figure No.10.1, Chapter-X. 	10-1 10-3
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.	•Various risks likely to arise due to mining activities are detailed under section 7.4, Chapter-VII. This being an opencast mine, subsidence is not applicable. The impact due to ground vibrations due to blasting is given in para 4.3.2, Chapter-IV.	7-4 4-9
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.	•The study area chosen for collecting existing environmental status covers 10 km radial distance from the project periphery (Figure No - 3.1). Data given in the report is for the life of the mine.	3-2
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.	<ul style="list-style-type: none"> •The land use of the study area was studied to demarcate various LULC categories and its details are provided under section 3.4, Chapter-III. •The land use pattern at present and at the end of the quarrying period has been provided under section 4.5, Chapter-IV. •In the post mining stage, the mine pit area of 0.98.26 Ha will be left as a water body. Plantation will be carried out over 0.40.64 Ha 	3-27 4-18



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		and 0.021Ha will be left as road and infrastructure.	
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.	• There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized. Hence, there is no external overburden dump involved. Besides, there is no proposal for overburden dump outside the lease area.	2-15
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 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.	• There is no forest land in the lease area.	--
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.	• There is no forest land in the lease area.	--
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.	• Not Applicable	--
15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	• There is no forest land in the lease area.	--
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.	• The mining lease area and the 10 km buffer zone from the periphery of the core zone is devoid of declared ecologically sensitive features like national parks, biospheres, sanctuaries, etc.	4-19
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.	• Replied in Standard ToR point No.16	--
18	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)]	• A detailed study of flora and fauna	3-36



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	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.	composition in the core and buffer zone of the project has been made through primary field surveys. The details are furnished in para 3.5, Chapter III.	
19	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 Department should be secured and furnished to the effect that the proposed mining activities could be considered.	• Not Applicable	--
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 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).	• Not Applicable	--
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.	• The mining activities will be carried out within the mine lease area only. The entire mine lease area is a patta land in proponent's possession. There is no population within the ML area. Hence, the question of R& R does not arise.	7-4
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	<ul style="list-style-type: none"> • The baseline data on micro- meteorology, ambient air quality, Water quality, noise level, soil and flora & fauna are collected during Summer Season (March 2025 to May 2025) and detailed in para 3.3 to 3.5 of Chapter-III. • Monitoring stations were selected taking into account, wind direction and location of 	3-1 & 3-16



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		<p>discharge, before outlet. etc.</p> <ul style="list-style-type: none"> • Towards surface runoff management, a garland drain of length 500m will be constructed around the quarry and will be connected to a settling pond with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users. The surface runoff management structures diagram is given in Figure No 4.4, Chapter-IV. • The methods for reducing water consumption and rainwater harvesting is provided in section 4.3.4, Chapter-IV. 	<p>4-10</p> <p>4-11</p>
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.	<ul style="list-style-type: none"> • There will be no generation of effluent or its discharge from the mining operation in this lease area and as such no impact on surface or ground water is expected. • The ultimate pit depth of mining is 34m. The ground water table in this area is below this level. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation. 	<p>4-10</p> <p>2-18</p>
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.	<ul style="list-style-type: none"> • The occurrence of groundwater mainly in the porous soil are weathered layers, very negligible amount of groundwater percolated through the poorly fractured layer, after that there is no existence of groundwater. Since the mining area consists of hard compact rock, no major water seepage within the mine is expected from the periphery. • The ultimate pit depth of mining is 34m. The ground water table in this area is below this level. Hence, ground water intersection in not envisaged and ground water will not be affected appreciably due to the quarrying operation. • Details of hydro geological study are given in Para 3.6.2 Chapter – III. 	<p>2-12</p> <p>3-46</p>
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.	<ul style="list-style-type: none"> • There are no streams passing in and around the lease area. 	--
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.	<ul style="list-style-type: none"> • The lease applied area is mostly minedout area and the remaining is plain barren area covered by Gravel formation.. • The ultimate pit depth of mining is 34 m. The 	2-2



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		ground water table in this area is below this level.	
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. Phasc-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 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.	<ul style="list-style-type: none"> • Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area. About 750 trees will be planted in and around the lease area. Details of the same is provided under TableNo.4.16, Chapter-IV. 	4-23
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.	<ul style="list-style-type: none"> • From this proposed quarry the entire output will be transported to the crusher units and other buyers etc. Details of the traffic study is provided under section 4.9, Chapter-IV. 	4-23
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	<ul style="list-style-type: none"> • This is a proposed project. Site services like mine office, first aid room, rest shelters, toilets etc. will be provided as semi-permanent structures. 	2-17
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.	<ul style="list-style-type: none"> • In the post mining stage, the mine pit area of 0.98.26 Ha will be left as a water body. Plantation will be carried out over 0.40.64 Ha and 0.021Ha will be left as road and infrastructure. Entire mined out area will be properly fenced to prevent inadvertent entry of men and animals. In the post mining stage the rainwater harvested in the mined out void shall be utilized in the area. 	4-19
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	<ul style="list-style-type: none"> • Details of occupational health and safety aspects are given under the subsections of Para 4.8, Chapter-IV. 	4-22



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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	<ul style="list-style-type: none"> • Details of the socio economic survey conducted in the buffer zone has been provided in Para 3.2.4, Chapter-III. • Public health facilities will be further aimed to be developed through CER activities wherein periodic health checkups, medical camps for the locals will be conducted. 	3-9
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.	<ul style="list-style-type: none"> • Towards the socio economic development of the surrounding area, the proponent has earmarked an amount of Rs 2.5 Lakhs under Corporate Environmental Responsibility. The activities identified under CER will be implemented in a phased manner in the nearby Government schools. In consultation with the locals based on the need & priority it will be implemented. Its details are provided in Para 4.7, Chapter-IV 	4-21
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.	<ul style="list-style-type: none"> • Detailed Environmental Management plan and its implementation, etc., are furnished in Chapter X. 	10-1
39	Public Hearing points raised and commitment 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.	<ul style="list-style-type: none"> • This draft EIA/EMP report will be exposed to public consultation as per mandatory procedures through the District Collector and State Pollution Control Board officials after giving 30 days advance notice in two local newspapers about the scheduled date and time for conduct of the public hearing procedures. • The opinions, concerns and objections of stakeholders will be recorded during the public hearing. All the public queries and the replies to the query by the project proponent and officials concerned will be recorded and incorporated in the EIA/EMP report for approval by SEIAA, Tamil Nadu. 	7-1
40	Details of litigation pending against the project, if any, with direction /order paced by any Court of Law against the Project should be given.	<ul style="list-style-type: none"> • PP informed that there is no litigation pending against the project. 	--
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.	<ul style="list-style-type: none"> • The cost of the project is Rs. 76,50,000 (Excluding operational cost).Towards EMP measures, Rs. Rs.19.01 Lakhs is allocated under capital cost. Besides, Rs.12.63 lakhs per annum will be spent under recurring cost. All the recurring cost of maintenance of pollution control measures, environmental monitoring etc., will be met 	4-21 10-12



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		from revenue.	
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	<ul style="list-style-type: none"> • The disaster management plan has been provided under section 7.3.1, Chapter-VII. 	7-3
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.	<ul style="list-style-type: none"> • The proposed Rough Stone Quarry will benefit this region in the fields of employment opportunities, improved per capita income for local people, improved social welfare facilities in respect of education, health, infrastructural etc. • Direct employment to 20 people and indirect employment to scores of people. • By means of carrying out the socio economic development activities, local community development is expected. Towards the same, the proponent has planned to allocate Rs. 2.5 Lakhs for various activities under CER. From the CER activities allocated for various social welfare activities, the villages near the lease area will be benefited. 	8-1



CHAPTER - I

INTRODUCTION

CHAPTER 1

INTRODUCTION

1.1 PURPOSE OF THE REPORT:

Thiru C.Shanmugam proposed to operate a Roughstone and Gravel Quarry over an area of 1.41Ha in Survey No.144/2A2(P) and 144/3A(P) for 5 years in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu and has initiated action towards obtaining environmental clearance.

Although the individual lease area of this project is less than 5 Ha, the proposal falls under Category B1 forming a cluster situation as per the EIA Notification 2006, its subsequent amendments and MoEF& CC Notification S.O. 2269(E) Dated 01.07.2016 (With total cluster area of 14.3622Ha). This necessitates preparation of EIA/EMP report for appraisal to SEAC.

This EIA/EMP report is prepared based on standard Terms of Reference issued by SEIAA, Tamil Nadu vide ToR Identification No. TO25B0108TN5553727N dated 15.07.2025 and is in conformance of the generic structure prescribed by MoEFCC in their notification of September 2006 and the approved mining plan.

1.2 IDENTIFICATION OF PROJECT &PROJECT PROPONENT:

Table 1.1 Identification of project

1	Project Name	Rough Stone and Gravel Quarry of Thiru C.Shanmugam
2	Extent	1.41 Ha
3	Production for 5 years	Gravel – 11992m ³ , Rough stone – 51831m ³ , for 5 years with the peak production capacity of 11,316 (Year 1) of Gravel & 11875m ³ of Rough stone (Year 4)
4	Ultimate Depth	34m
5	Land Classification	Patta Land in proponent's possession
6	Location	Survey No.144/2A2(P) and 144/3A(P) in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu



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VILLAGE, KINATHUKADAVU TALUK, COIMBATORE DISTRICT, TAMIL NADU.**

Table 1.2: Identification of Project Proponent

1	Proponent Name	Thiru C.Shanmugam
2	Address	Merku Theru, Karachery, Periyakuyilai (PO), Kinathukadavu Taluk, Coimbatore District, Tamil Nadu- 641201
3	Contact Number	9788557779
4	Email-ID	shanmugam4896@gmail.com

The Proponent can meet the financial requirement of this project and will ensure that the mining activities are carried out as per statutory requirements.

Table 1.3: Statutory Approvals

Name	Issuing Authority	Status	Letter number	Date	Reference
Precise Area Communication	Assistant Director, Department of Geology & Mining	Received	Rc.No.690/ Kanimam/2023	18.02.2025	Annexure-1
Mining Plan Approval	Assistant Director, Department of Geology & Mining	Approved	Rc.No.690/ Kanimam/2023	25.02.2025	Annexure-2
Details of other quarries within 500m radius	Assistant Director, Department of Geology & Mining	Obtained	Rc.No.690/ Kanimam/2023	25.02.2025	Annexure-3
District survey report	Collector, Assistant director, Geology & Mining	Authenticated	As per S.O. 3611(E) dated 25.07.2018	--	--
VAO Letter	VAO	Obtained	--	28.03.2025	Annexure-4
Existing Pit Letter	Assistant Director, Department of Geology & Mining	Obtained	Rc.No.690/ Kanimam/2023	25.02.2025	Annexure-5
Consent Register documents	-	Obtained	-	02.04.2025	Annexure-6
Previous Environmental Clearance	SEIAA Tamilnadu	Obtained	SEIAA-TN/F.No.5654/1 (a)/ EC.No-3756/2016	26.09.2016	Annexure-7
Certified EC Compliance Report	Ministry of Environment, Forest & Climate change, Nungambakkam, Chennai-06	Obtained	EP/12.1/2025-26/SEIAA/77/TN/1300	22.08.2025	Annexure-8

The following conditions have been stated in the Precise Area Letter:

A safety distance of 7.5m for patta land, Safety distance of 50 m should be provided for high tension tower line passing on the north and eastern side of the applied area.

The above conditions have been adhered to.



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INTRODUCTION

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1.3 BRIEF DESCRIPTION OF NATURE, SIZE, LOCATION & PROJECT IMPORTANCE

Table 1.4: Brief Description of Nature of project

1.	Sector	1(a), Non-Coal Mining
2.	Type	Brownfield Project
3.	Category	B1
4.	Mineral Mined	Roughstone & Gravel Quarry
5.	Major/Minor Mineral	Minor
6.	Mining method	Opencast Semi Mechanized Mining
7.	End use	Top gravel shall be excavated and transported by tippers for supply to prospective customers. The underlying rough stone shall be systematically quarried and dispatched in tippers to authorized buyers for use in the production of crusher aggregates and manufactured sand (M-Sand).

Table 1.5: Location of the project

S.No	Particulars	Details
1.	Location	Survey No.144/2A2(P) and 144/3A(P) in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu
2.	Corner Coordinates	Latitude : 10°52'12.74" N to 10°52'18.41" N Longitude : 77°02'33.30" E to 77°02'37.28" E
3.	Toposheet Number	58 F/1 & 58 E/3

Location details are elaborated in Para 2.3, Chapter-II.

1.3.1 IMPORTANCE TO THE COUNTRY AND REGION:

Rough stone from this quarry will meet the domestic demand. The production and method of mining is planned considering the geological factors, availability of proven technology, demand for the material etc. Safety barriers as per State Government order is left in the planning stage itself. Systematic and scientific mining will be carried out. This project will provide employment opportunities to many people. The proponent will carry out CER activities which will help the surrounding villages to derive socio economic benefits. The activities will be customized based on local needs and prioritized. Hence, livelihood development and employment will arise due to this project.



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1.4 SCOPE OF THE STUDY:

Particulars	Details
Proposal no	SIA/TN/MIN/534952/2025 dated 02.05.2025
File no	12120
SEAC meeting Reference	578th Meeting of SEAC held on 13.06.2025
SEIAA meeting Reference	849th Meeting of Authority held on 10.07.2025
Terms of Reference	TO25B0108TN5553727N dated 15.07.2025
Baseline Data Collection	Summer Season (March – May 2025)

Based on the terms of reference, data collection, the Environmental Impact Assessment was carried out for the project area (core zone and the buffer zone (10km radius from the core zone) and the following studies were covered:

- Collection of primary and secondary data relevant to the project.
- One-Season baseline monitoring for environmental parameters such as air, water, noise, soil, flora & fauna, etc. Analysis of parameters in in-house laboratory.
- Documentation of EIA/EMP report with inclusion of relevant studies conducted by other bodies into the EIA/EMP report.
- Identification of significant environmental parameters that are prone to get affected due to pollution. Namely, Air, Water, Noise, Soil, Biological and Land Environment.
- Evaluation and determination of suitable mitigation measures to reduce and control the said pollution.
- Prediction of post project concentration (baseline + incremental) with respect to air environment for core zone and buffer zone. (on Individual as well as cumulative basis)
- Formulation of an Environmental Management plan including administrative aspects for proposed implementation of mitigative measures in time.



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This draft EIA/EMP report will be submitted for public consultation, as per rules and procedures in this respect, as per the EIA notification 2006. The opinions, concerns and objections, if any, of the surrounding public and other stake holders connected, will be taken into consideration and compliance report thereon will be submitted to SEIAA, Tamil Nadu in the final EIA/EMP report.

* * * * *



CHAPTER - II

PROJECT DESCRIPTION

CHAPTER 2

PROJECT DESCRIPTION

2.1 TYPE OF PROJECT:

This proposal is a Roughstone and Gravel Quarry over an area of 1.41Ha in Survey No.144/2A2(P) and 144/3A(P) in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu. The method of mining is proposed to be opencast mechanized mining upto a depth of 34m (BGL) for the TOR issued production capacity of 11992m³ of Gravel & 51,831m³ of rough stone with the peak production capacity of 11,316 (Year 1) of Gravel & 11875m³ of Rough stone (Year 4) for five years lease period.

2.2 NEED & JUSTIFICATION FOR THE PROJECT:

There is a huge demand for construction material and the entire material produced from this quarry will be used in the local construction/ infrastructure sector. Considering the following favorable factors it is practically possible to achieve the proposal within the planned period and this proposal is fully justified.

- Availability of good quality proved reserves
- Techno economic viability of the scheme
- Better approachability to the project, availability of logistic facility in proximity to the site
- Economic and Socio Economic Benefits to the region

2.3 LOCATION:

A brief description of the mining area, along with the location, coordinates, accessibility, etc. has been details below in Table No.2.1.

Table 2.1: Mine site description

Location	Arasampalayam Village, Kinathukadavu Taluk, Coimbatore,Tamil Nadu
Survey No.	144/2A2(P) and 144/3A(P)
Coordinates	Latitude : 10°52'12.74" N to 10°52'18.41" N Longitude : 77°02'33.30" E to 77°02'37.28" E
Nearest Village	Karachery -1.8km - SE

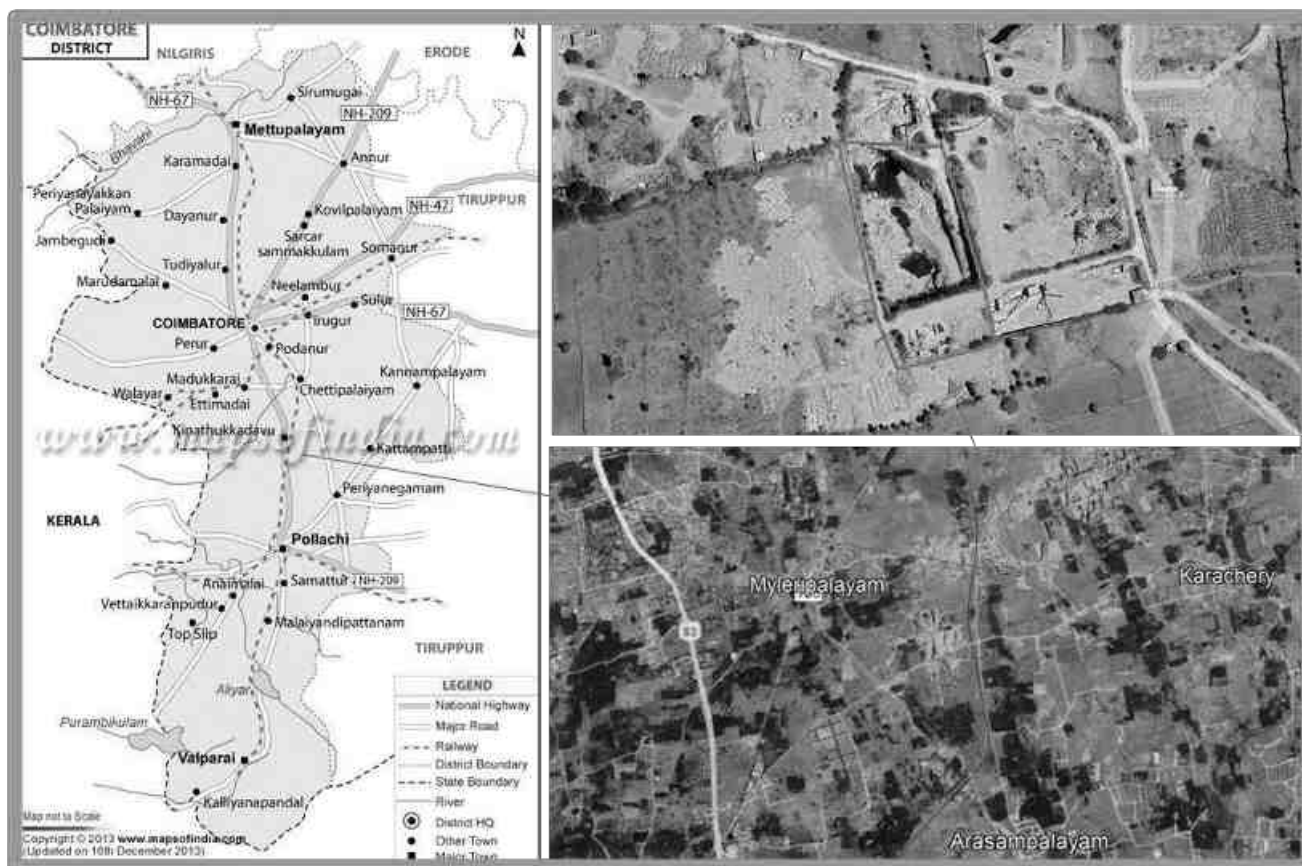


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Nearest Town	Chettipalayam - 4.0km (W)
Nearest Highway	NH-83 (Ottakkalmandapam – Kinathukadavu)– 3.5Km – W,
Nearest Railway Station	Kinathukadavu - 5.0km, SW
Nearest Airport	Coimbatore - 16km (NE)
Accessibility	The lease area can be approached through Pollachi road on the Western side at a distance of 3.5Km which joins NH-83 at a distance of 3.5 Km.
Topography	The lease applied area is mostly minedout area and the remaining is plain barren area covered by Gravel formation.

Location map is provided in **Figure No.2.1**. The approachability map is provided in **Figure No.2.2**. Corner co-ordinates of the lease area and satellite imagery are shown in **Figure No. 2.3 & 2.4** respectively. Village map for 500m radius from the lease is shown in **Figure No. 2.5**.

Figure 2.1: Location Map



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Source: Maps of India, Google Earth

Figure 2.2: Approachability Map



Source: Google Earth



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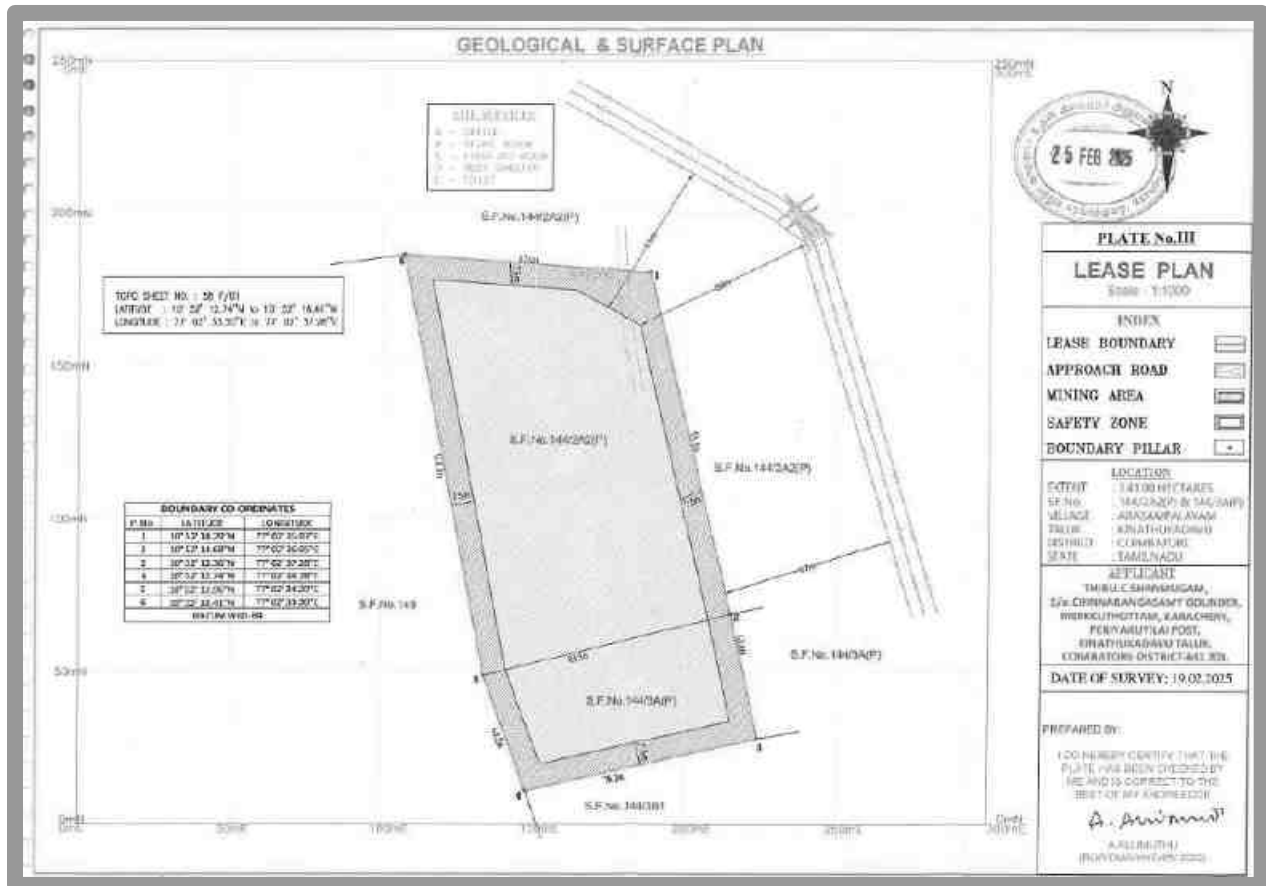
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Figure 2.3: Lease Plan



Source: Approved Mining Plan



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Figure 2.4: Satellite Imagery Showing Corner Co-ordinates of the Project Area



Source: Google Earth



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SITE PHOTOGRAPHS



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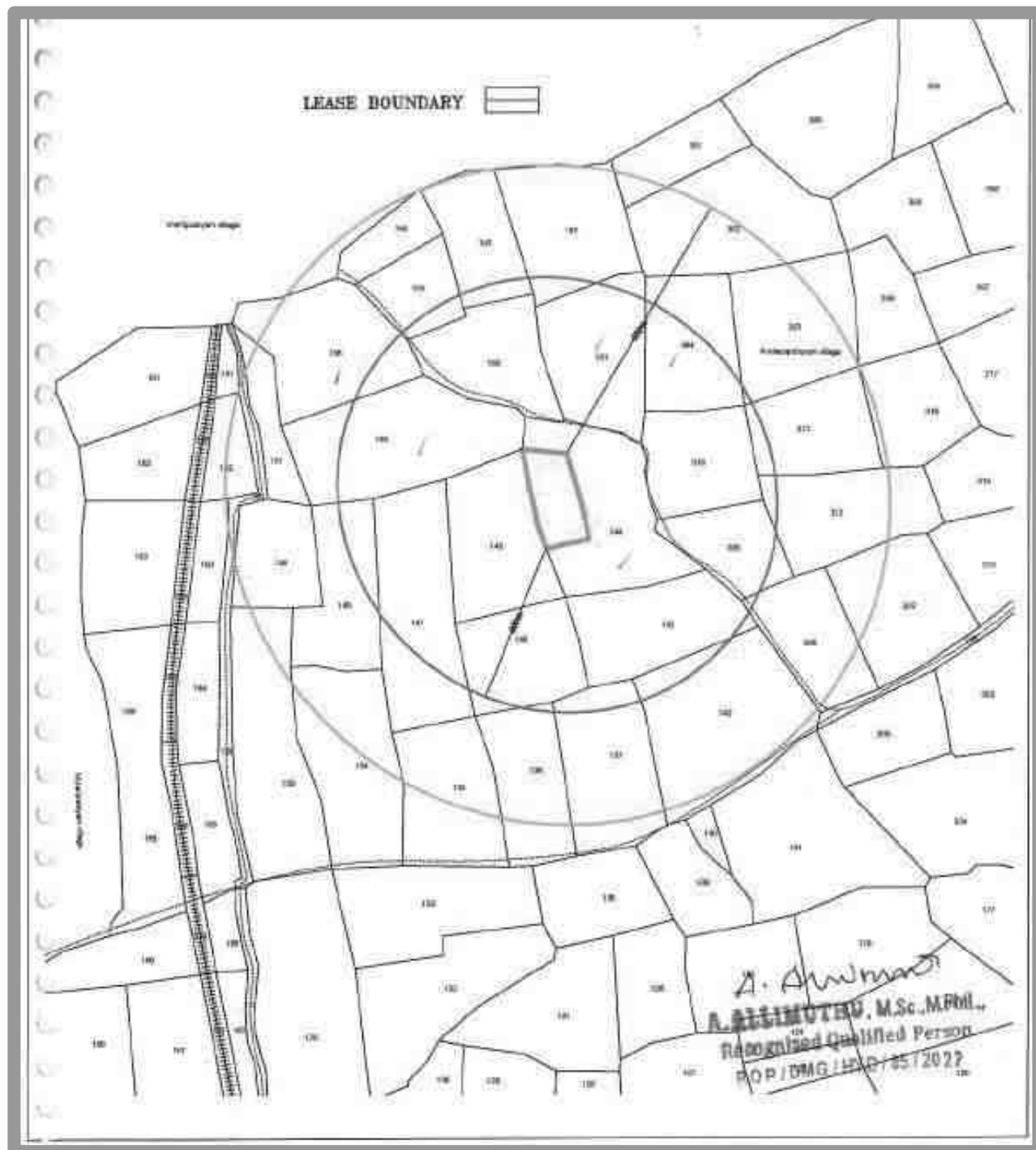
PRO CODE: CEC-EMP-MI-253

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Figure 2.5: Village Map



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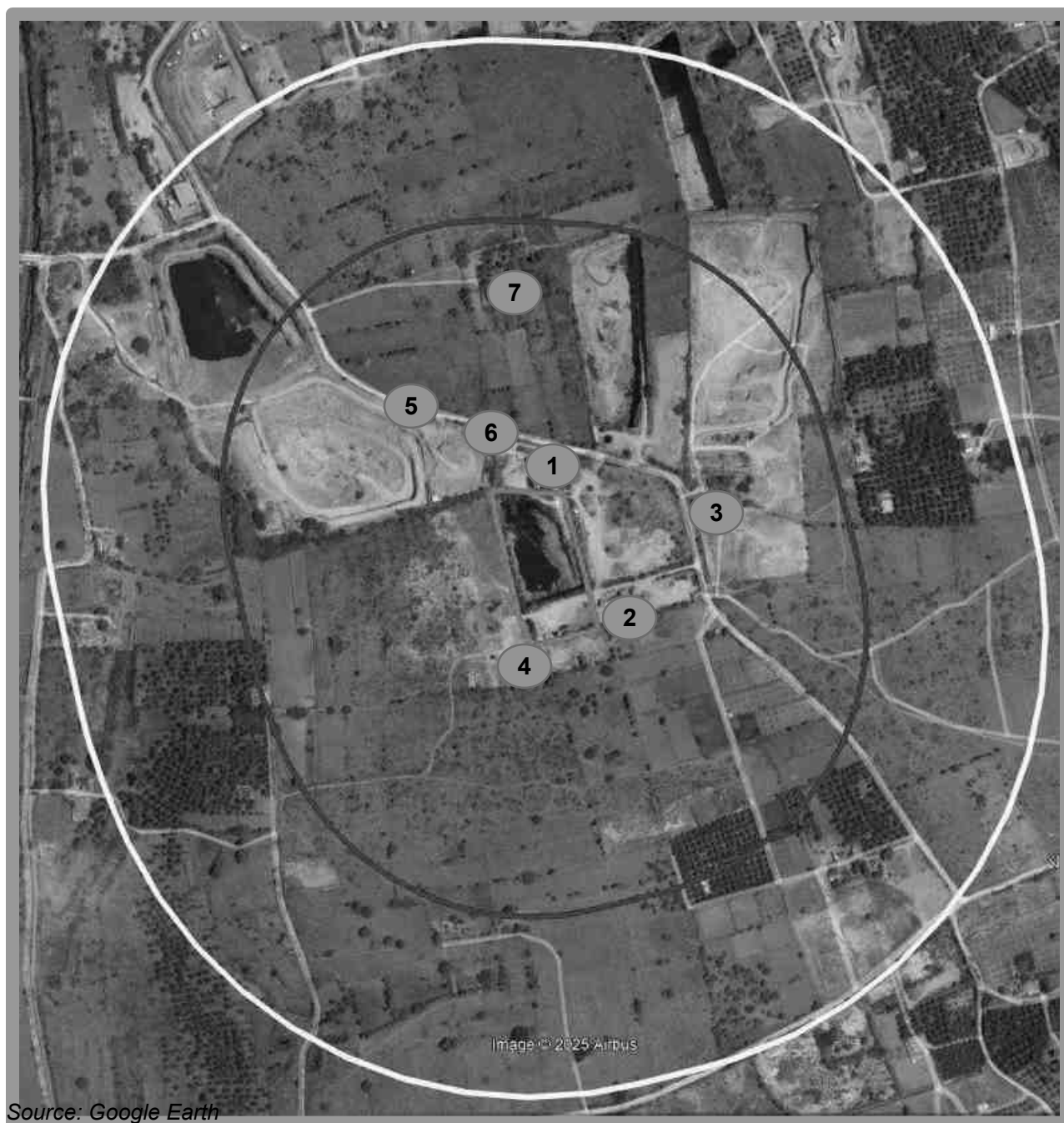
PROJECT DESCRIPTION

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Figure 2.6: Details of features within 300m radius






Source: Google Earth

As per the conditions of the Terms of Reference, the details of structures located within the 100m, 200m, 300m, radius are provided below.

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Table 2.2: Features within 300m radius

S.No	Structure	Distance	Photograph
1	Own Crusher	Adjacent, N	
2	Own Crusher	Adjacent, SE	
3	Labor Shed	145m, E	



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4	Labour Shed	Within Lease Area	
5	Cart Track	60m, N	
6	Labour Shed	85m, N	
7	Farm House		

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2.4 LAND CLASSIFICATION:

The lease area of 1.41Ha in S.F.Nos.144/2A2(P) and 144/3A(P) is a patta land, partly owned by the applicant and for the remaining, applicant got consent from the other pattadhar. The survey no. wise area breakup has been provided below:

Table 2.3: Survey Number wise Area Breakup

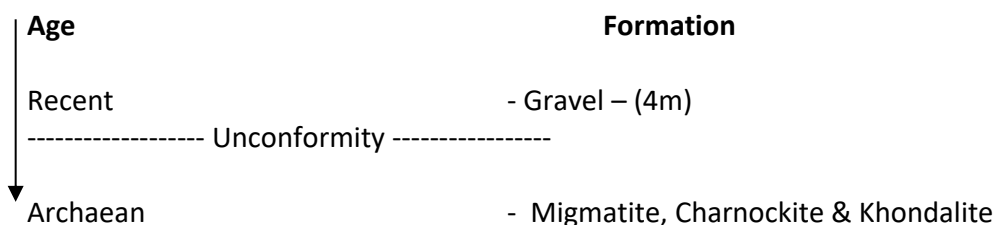
District	Taluk	Village	Survey Nos	Area in Ha	Ownership
Coimbatore	Kinathukadavu	Arasampalayam village	144/2A2(P)	1.08.0	It is a Patta Land. S.F.No - 144/2A2(P) is in the name of Thiru. Shanmugam & 144/3A(P) is in the name of Mrs.Rathinam patta no.796 & 1121. Consent from other Pattadhar obtained and got it registered.
			144/3A(P)	0.33.0	
Total Area in (Hectares)				1.41.0	

2.5 GEOLOGY:

The area is mainly composed of crystalline metamorphic complex. The rock type majorly noticed in the area for lease is Biotite Gneiss. Which is mainly composed Hornblende, biotite mica, Quartz, and Feldspar with some ferromagnesian minerals. The grain size is medium to course. The strike of the Charnockite formation is N35°E-S35°W with dipping towards 60°S.

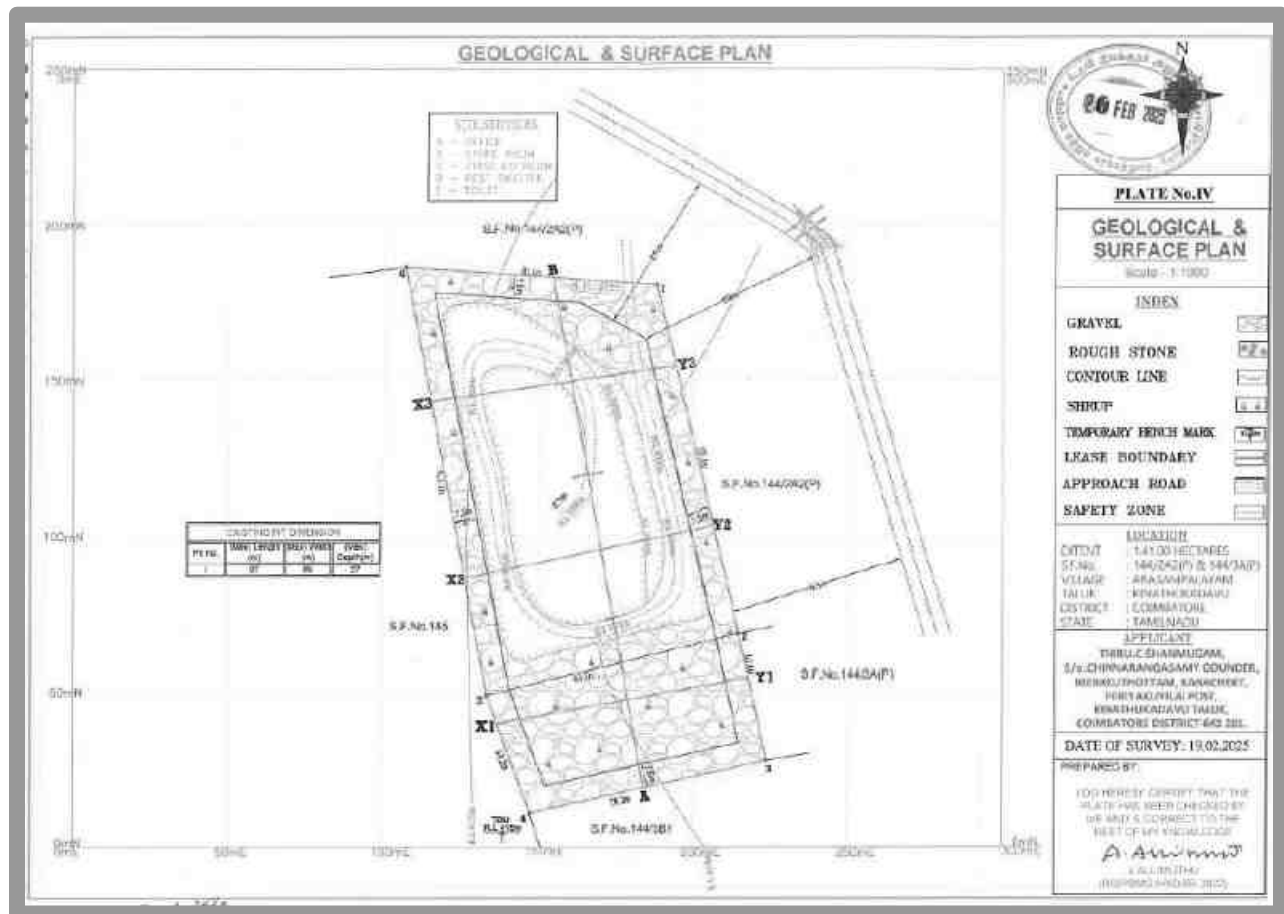
The biotite gneiss is part of peninsular gneisses, a high grade metamorphic rock. It is typically brown to black color and the grain size is course grained. It is suitable for construction purposes because of its high strength, color, high density and low porosity.

The geological sequence:



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VILLAGE, KINATHUKADAVU TALUK, COIMBATORE DISTRICT, TAMIL NADU.**

Figure 2.7: Surface & Geological Plan



Source: Approved Mining Plan



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PROJECT DESCRIPTION

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2.6.1 RESERVES:

Table 2.4: Details of reserves

S. No	Type of reserves	Roughstone (m3)	Gravel (m3)
1	Geological Resources	254558	21712
2	Mineable Reserves	58821	11992

The mineable reserves is arrived after considering the safety distance of 7.5m for adjacent patta lands, 10m for Government lands from the lease boundary as indicated in the precise area communication letter.

2.6.2 MINING METHOD:

Open cast semi mechanized mining using shot hole drilling with the help of compressor and jack hammer for smooth blasting. The raw materials are removed using Hydraulic Excavator and loaded directly into the tippers. The mineral is transported to the nearby crushing plants where it is crushed to the required sizes. The height and width of the benches is 5m.

Table 2.5: Details of Equipments

NAME OF THE EQUIPMENT	CAPACITY	REQUIREMENT
Jack Hammer	33mm dia	2
Compressor	400psi	1
Excavator	1.2m3	1
Hydraulic Rock breaker	-	1
Tippers	10/20T	4
Water Tanker	10 KL	1

2.7 PROPOSED SCHEDULE FOR APPROVAL AND IMPLEMENTATION:

The proponent propose to implement the production immediately after obtaining all the statutory approvals such as CTE, CTO, etc. The proponent will comply with the environmental clearance conditions during mining operations. The schedule of project implementation envisaged for this project is provided below. This is a tentative schedule subject to various factor, hence unforeseen variations may occur.

Table 2.6: Proposed Schedule of Implementation

Activities	Months					
	Zero Date	1	2	3	4	5
Obtaining Environmental Clearance						
Obtaining Consent from State Pollution Control Board						
Lease Execution						
Equipment mobilization and Commencement of Mining activity after following all the Statutory Requirements						



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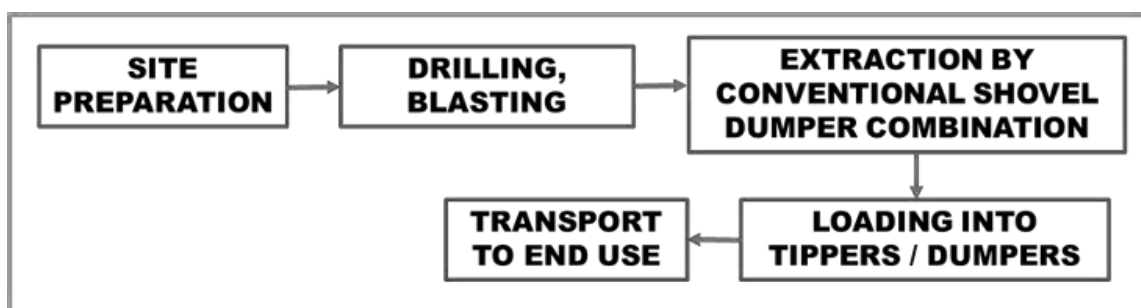
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2.8 TECHNOLOGY AND PROCESS DESCRIPTION:

The quarry operations involve drilling, blasting, excavation, loading and transportation of Rough stone to buyers. The production of Rough stone in this quarry involves jackhammer drilling and blasting. The primary boulders are removed from the pits by excavators and further made to smaller sizes by rock breakers attached in excavators. It is a conventional opencast mechanized method of mining. The process flow diagram of this project is provided below.

Figure 2.9: Process Flow Diagram



2.9 PROJECT DESCRIPTION:

2.9.1 PAST PRODUCTION:

Thiru C. Shanmugam, the proponent has carried out mining in this area for 3 spells during the following lease periods:

Table 2.7: Previous lease details

S.No	S.F.No	Extent (Ha)	District Collectors Proceedings	Lease Period
1	144/2A	1.38.0 Ha	Rc.No.1067/2005/MM1 dated 15.03.2006	01.04.2006 – 31.03.2011
2	144/2A2(P)	0.85.5 Ha	Rc.No.189/2011/MM2 dated 04.05.2011	04.05.2011 – 03.05.2016
3	144/2A2(P)	0.85.5 Ha	Rc.No.335/Mines/2016 dated 09.12.2016	09.12.2016 – 08.12.2021

Environmental Clearance was obtained from SEIAA, Tamil Nadu by the proponent for Survey No.144/2A2(P) over an area of 0.85.5Ha vide Lr.No.SEIAA-TN/F.No.5654/1(a)/EC.No.3756/2016 dated 26.09.2016 (**Annexure-7**).

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A letter is obtained from the Assistant Director, Geology & Mining vide Rc.No.690/2023 dated 25.02.2025 wherein the existing pit dimensions and the production quantities mined out has been furnished. **(Annexure-5)** The details of the same are provided below:

Table 2.8: Existing Pit Dimensions

Length (m)	Width (m)	Depth (m)
97	65	27

Table 2.9: Production during earlier lease period (09.12.2016 – 08.12.2021)

Details	Roughstone(m3)	Gravel(m3)	Total (m3)	Depth (m)
As per approved EC	45845	4738	50583	27
Achieved Quantity	44985	4685	49670	27

From the above table it is evident that the achieved quantity during the lease period was adhering to the production approved in the Environmental Clearance.

2.9.2 PRODUCTION & WASTE DISPOSAL:

Based on the approved Terms of Reference, the production has been restricted to 51,831m3 of Roughstone and 11992m3 of Gravel upto a total depth of 34m. The top gravel of 4m depth will be mined out in the first two years itself. The year wise production as per the approved mining plan is as follows:

Table 2.10: Production Schedule During Plan Period

Year	Roughstone (m3)	Gravel (m3)
1	11285	11316
2	11745	676
3	11846	-
4	11875	-
5	5080	-
Total	51831	11992

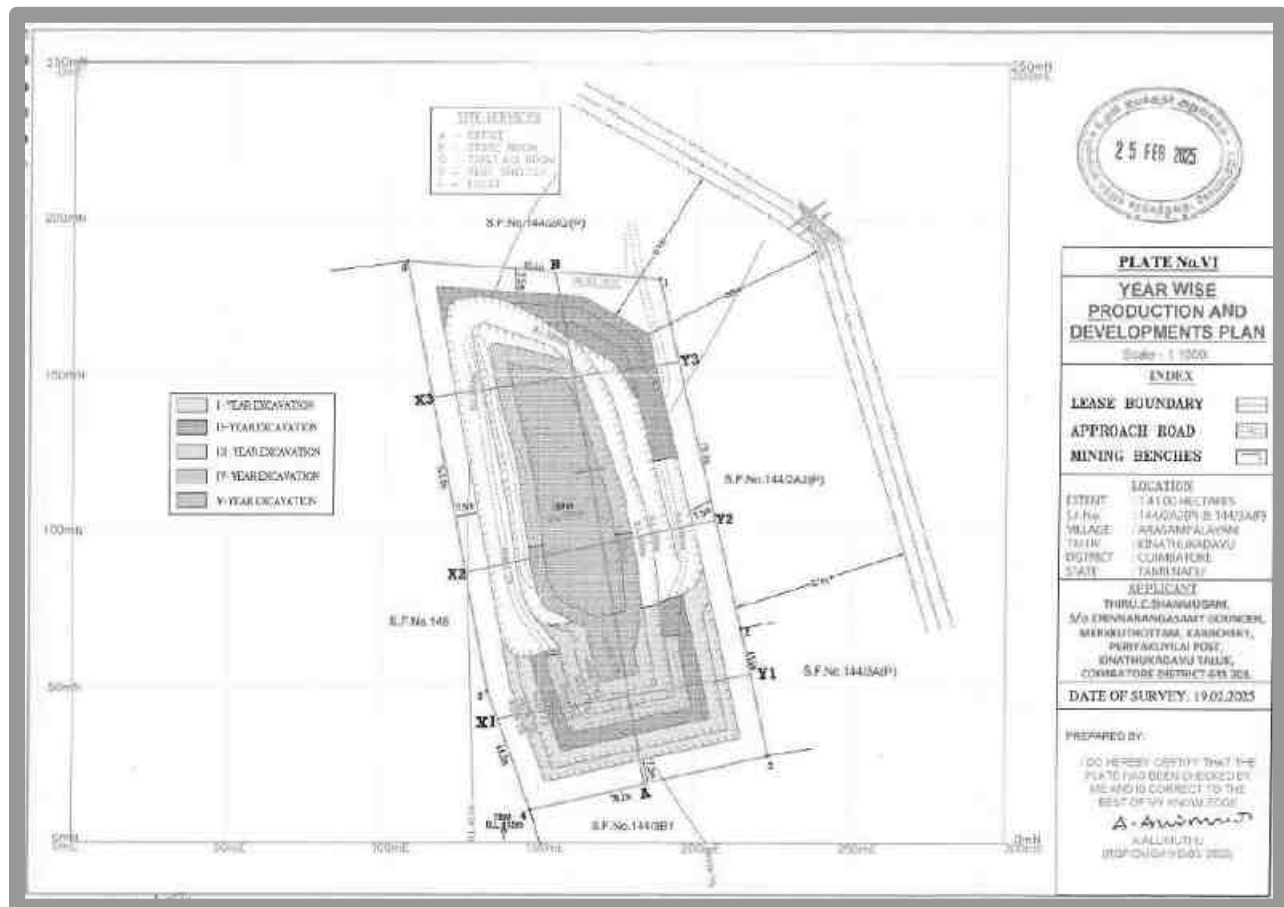


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Waste Disposal during Plan Period:

No waste generation is anticipated from this quarry operation, as the entire excavated material will be fully utilized. The overburden in the form of gravel will be loaded into tippers and supplied to customers upon payment of the prescribed fees to the Government. The rough stone will be excavated and transported to buyers for use in the production of crusher aggregates and M-sand.

Figure 2.10: Year wise Plan



Source: Approved Mining Plan



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PROJECT DESCRIPTION

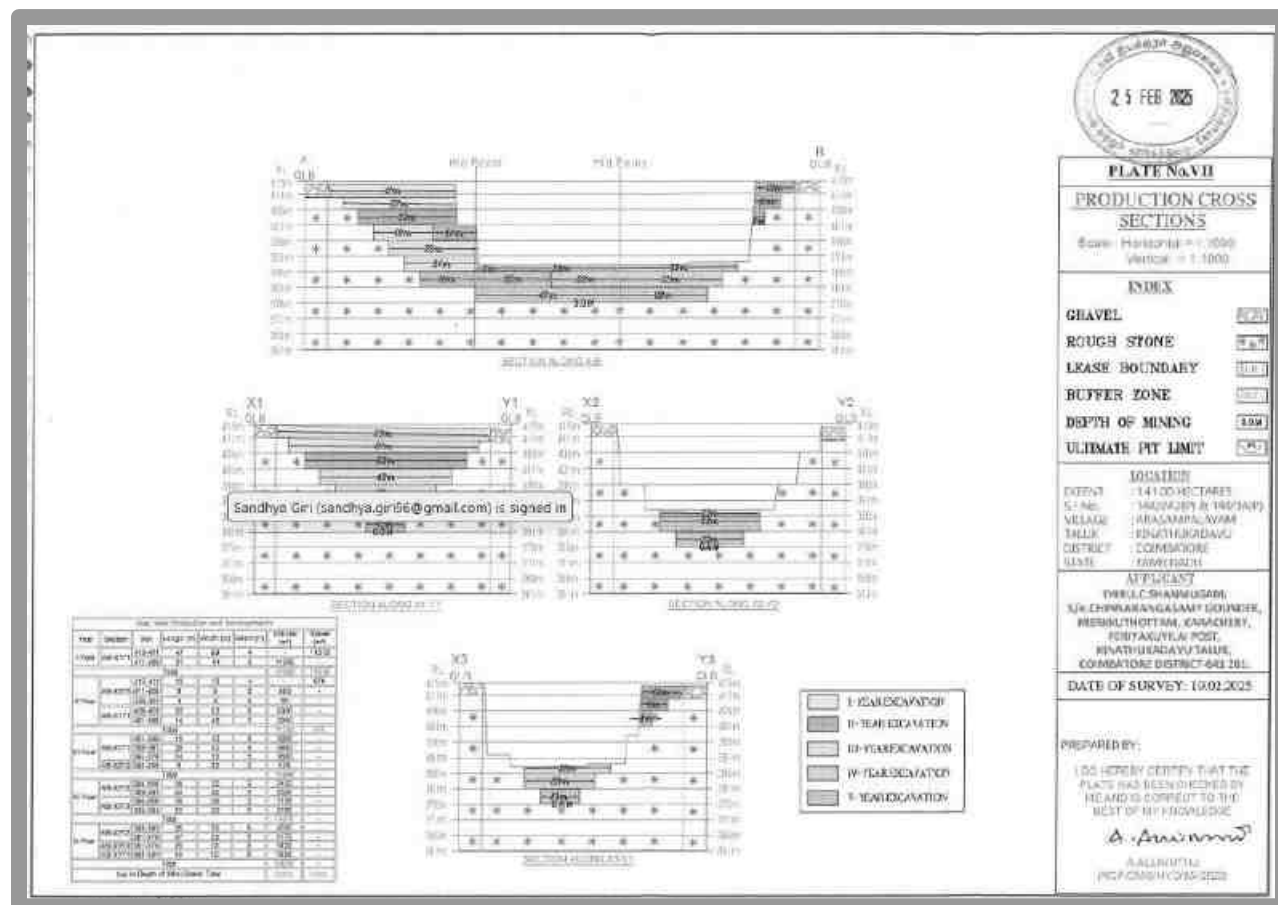
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Figure 2.11: Year wise Cross Section



Source: Approved Mining Plan

The production will be carried out over the period of 5 years. During the conceptual stage, the pit dimensions will be as follows:

Table 2.11: Ultimate Pit Dimensions

Length in m	Width in m	Depth in (m)
151	69	34

The ground water table on the surface in this area is ranging below 50 – 55 mBGL Hence, ground water intersection in not envisaged. The Conceptual Plan & Cross section are shown in **Figure No. 2.11 & 2.12.**



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PROJECT DESCRIPTION

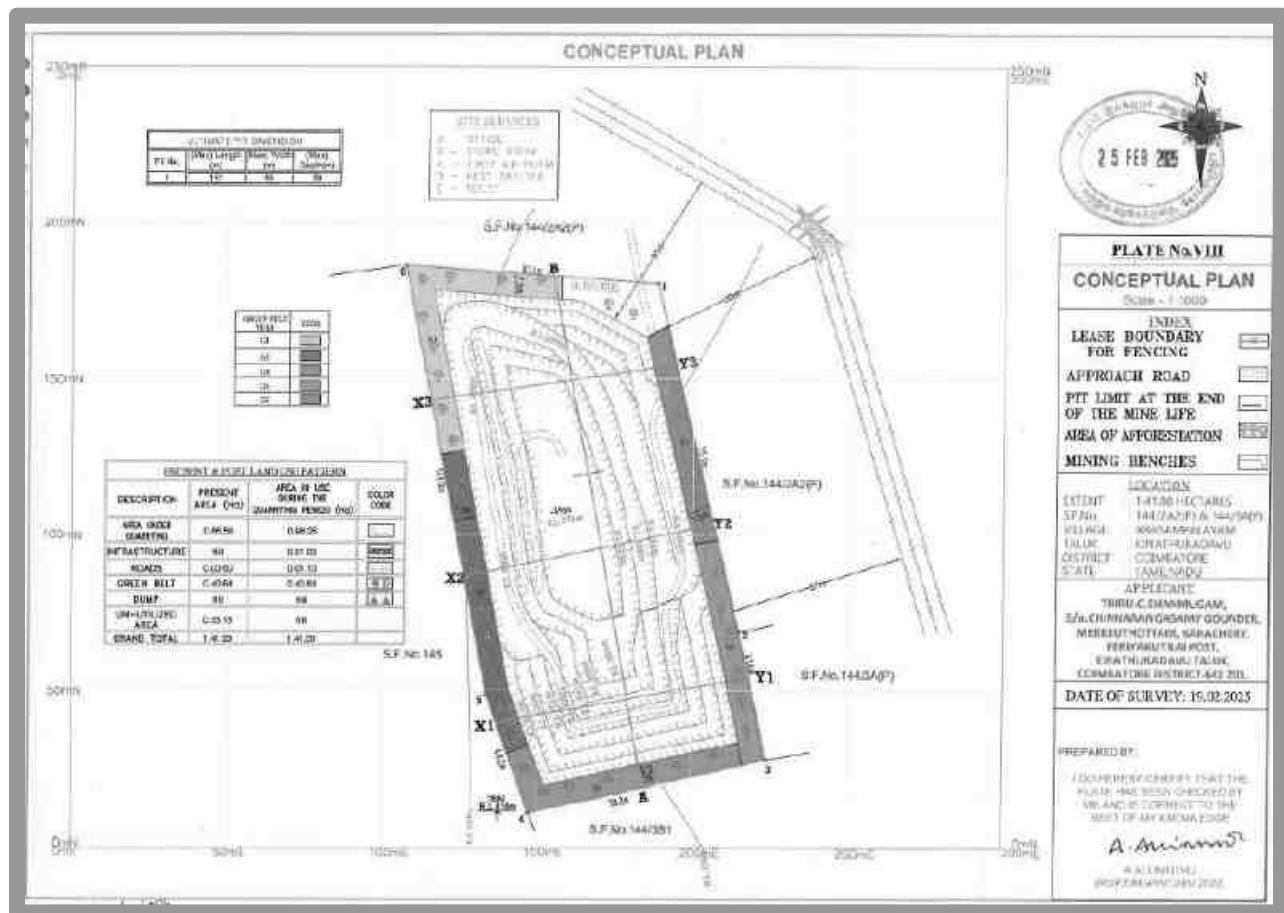
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Figure 2.12: Conceptual Plan



Source: Approved Mining Plan



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PROJECT DESCRIPTION

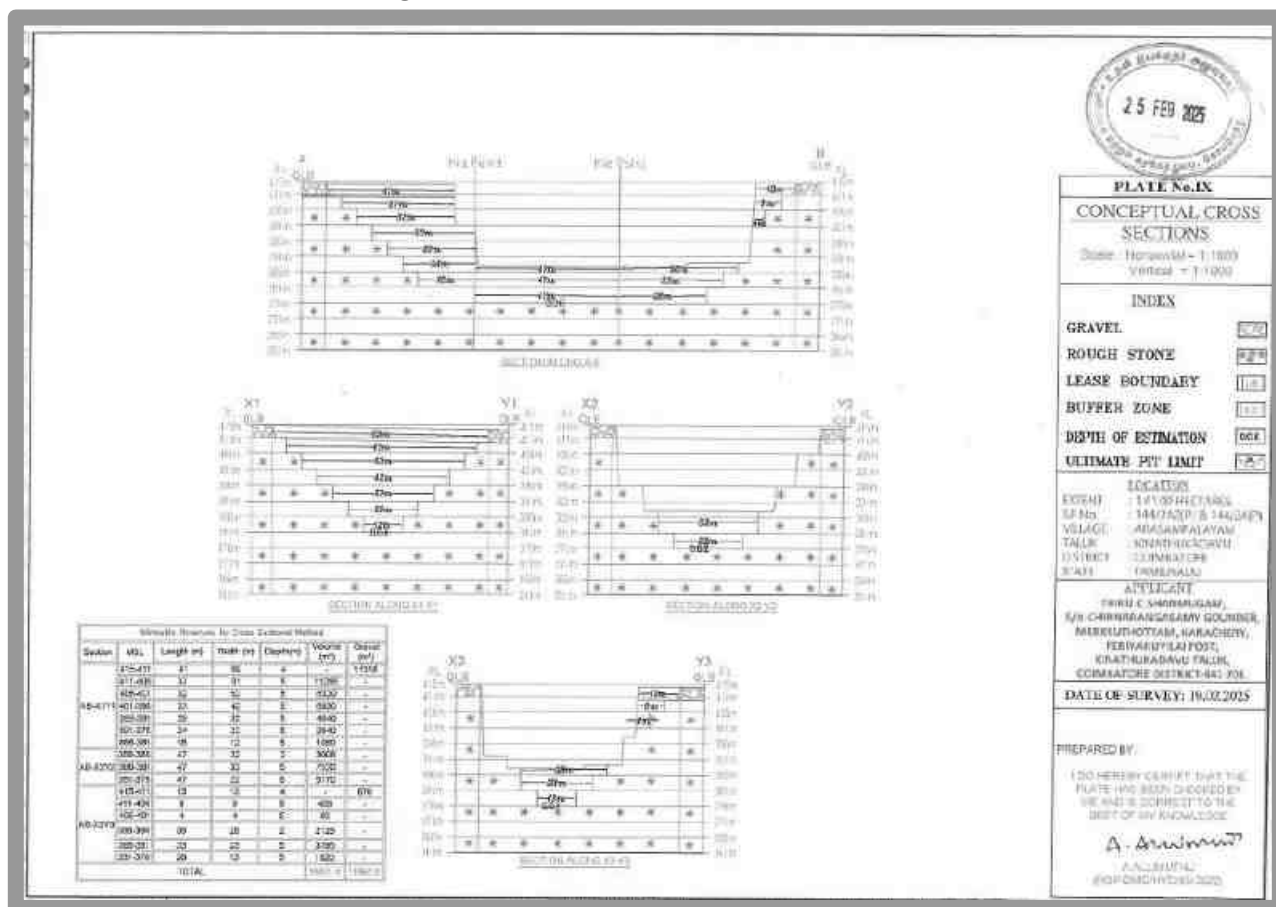
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REV NO : 00/OCT/25

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DRAFT EIA/EMP REPORT FOR ROUGHSTONE & GRAVEL QUARRY OF THIRU C.SHANMUGAM OVER AN AREA OF 1.41 Ha IN SURVEY NO. 144/2A2(P) and 144/3A(P) IN ARASAMPALAYAM VILLAGE, KINATHUKADAVU TALUK, COIMBATORE DISTRICT, TAMIL NADU.

Figure 2.13: Conceptual Cross Section



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In the post mining stage, the mine pit area of 0.98.26 Ha will be left as a water body. Plantation will be carried out over 0.40.64 Ha and 0.021Ha will be left as road and infrastructure. Overall about 750 trees will be planted in and around the lease area during the plan period.

2.9.3 PROJECT REQUIREMENTS:

Table 2.13: Project Requirements

Manpower	The project will provide employment opportunities totally to 20 people. Priority of employment will be provided to the locals based on skill.	
Water Requirement and Source	Water Requirement:9 KLD	
	Details	Quantity (KLD)
	Drinking water and Domestic Use	1.0
	Dust Suppression	6.0
	Green belt	2.0
	Total	9.0
	Source: The required water will be sourced from outside agencies.	
Power Requirement	All the equipment will be diesel operated. No electricity is needed for mining operation. The minimum power requirement for office, etc are and will be met from state grid.	
Site Services	Site services like mine office, first aid room, rest shelters, toilets etc. are provided as semi-permanent structures.	
Project Cost	Rs. 76,50,000 (Excluding operational cost).	
Funds allocated for socio-economic development	Rs.2.5 Lakhs is allocated under CER budget.	

2.10 DESCRIPTION OF MITIGATION MEASURES:

Scientific and systematic development of mines will be carried out by the project authorities for preserving as well as improving the environmental conditions in and around the mining lease area. Elaborate analysis on impacts and mitigation measures to be adopted on implementation of this project and the same has been dealt in Chapter- IV.



2.11 ASSESSMENT OF NEW & UNTESTED TECHNOLOGY:

There is no new technology that is being implemented. Opencast method of mining which is the proposed method of mining is a proven technology which is technologically and economically viable. No major technological failures are anticipated. A disaster management plan shall be put into place to take care of any unforeseen situation.

As good environmental preservation is one of the prime motive of the project proponent. It is expected that the project activity will not have any major impact on environmental equilibrium in the study area.

* * * * *



CHAPTER - III

DESCRIPTION OF ENVIRONMENT

CHAPTER 3

DESCRIPTION OF ENVIRONMENT

3.1 GENERAL:

The existing environmental baseline data for the various environmental components were collected in the study area for the purpose of assessing the impact on present environment due to the project activities.

Monitoring was carried out systematically and meticulously as per relevant IS codes, CPCB, MoEF&CC guidelines during Summer Season (March 2025 to May 2025) by Enviro Solutions & Labs, Coimbatore. The details of the study are given in this chapter.

For the purposes of this study, the area has been divided into two zones, namely, core and buffer zones. The entire lease area is considered to be the core zone while the buffer zone encompasses a 10 km radius from the periphery of the core zone. The details of villages falling in the study area and other features are given in Index Plan in Figure No - 3.1

The primary data collection was done by means of field monitoring and the secondary data collection was obtained from published sources and government documents. The details of the baseline data collection which has been elaborated through the course of this chapter has been concised below:

Table 3.1: Type of Baseline Data

S.No	Studies	Parameters / Study	Location
1	Socio Economy	Demographic Data from Census 2011	Core and Buffer Zone
		Sample Survey	Buffer Zone
2	Micro Meteorology	Rainfall Data from IMD, Coimbatore	Coimbatore
		Temperature, Humidity, Wind Speed, Wind Direction	1 Representative Location
3	Ambient Air Quality	PM10, PM2.5, SO2, NOx, CO	1 Core Zone, 5 Buffer Zone
4	Water Quality	Physical and Chemical Parameters	1 Core Zone, 5 Buffer Zone
5	Noise Levels	Ambient Noise	1 Core Zone, 5 Buffer Zone
6	Soil Quality	Physical and Chemical Parameters	1 Core Zone, 5 Buffer Zone
7	Land Use and Land Cover	Land use pattern within 10km study area using RS Satellite	Buffer Zone
		Land use based on Census 2011	Core and Buffer Zone
8	Biological Environment	Flora and Fauna	Core Zone and Buffer Zone
9	Hydrology & Hydro Geology	Hydrogeological profile of the area	Core Zone and Buffer Zone

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Figure 3.1: Study Area Map



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Table 3.2: Environmental Setting of the Study Area

S.No	PARTICULARS	Details
1	Nearest Highway	NH-83 - 3.5km - (W)
2	Nearest Railway station	Kinathukadavu RS – 5.0km – (SW)
3	Nearest Airport	Coimbatore Airport - 16km – (NE)
4	Nearest major water bodies	Kodavadi River – 7.5km – (S) Varattar River – 8.9km – (W)
5	Nearest villages	Myleripalayam – 2.0km- (W) Kumaarapalayam – 2.6km – (SW) Tegani -2.2km – (NE) Karachery -1.8km – (E)
6	Hills / valleys	Nil within 10m radius
7	Notified Archaeologically important places, Monuments	Nil within 10m radius
8	Local Places of Historical and Tourism Interest	Nil within 10m radius
9	Environmental sensitive areas, Protected areas as per Wildlife Protection Act, 1972 (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	Nil within 10Km radius
10	Reserved / Protected Forests	Nil within 10 km radius
11	Defence Installations	Nil within 10 km radius
12	Seismic Zone	Zone – II (Least Active)
13	Other Industries in the study area	Other than rough stone quarry & crushers there are numerous ware houses, other industries like glass, textile mills, foundries, engineering units, Upcoming CODISSIA Industrial Park B (Kallapalayam), etc in the area.

3.2 SOCIO-ECONOMIC CONFIGURATIONS OF THE AREA:

3.2.1 GENERAL:

The Socio-Economic details of the study area are collected through:

- Identification of villages falling from the study area map with combined Taluk map.
- Collection of primary data through sample survey, village people meetings and discussion.
- Collection of the demographic pattern of villages falling in the area through NIC 2011 census data.
- Occupational structure of villages falling in the study area through NIC 2011 census data.
- Details of the amenities available in villages falling in the study area through NIC 2011 census data. The findings of the study are illustrated below:

3.2.2 SECONDARY DATA DESCRIPTION:

The proposed Rough stone and gravel quarry is located in in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District. Based on 2011 census data, in the 10km radius there are 36 Rural Villages 7 Urban Areas from Three Taluks namely Coimbatore South, Sulur, Pollachi. of Coimbatore District. The demographic profile of the study area is given below:

Table 3.3: Social, Economic and Demographic Profile of the Study Area

Details	Population	Percentage
A. Gender-wise distribution		
Male Population	174613	50.09
Female Population	173985	49.91
Total	348598	100
B. Caste-wise population distribution		
Scheduled Caste	56402	16.18
Scheduled Tribes	1942	0.56
Other	290254	83.26
Total	348598	100
C. Literate and Illiterate population		
Literate Males	139164	39.92
Literate Females	121238	34.78

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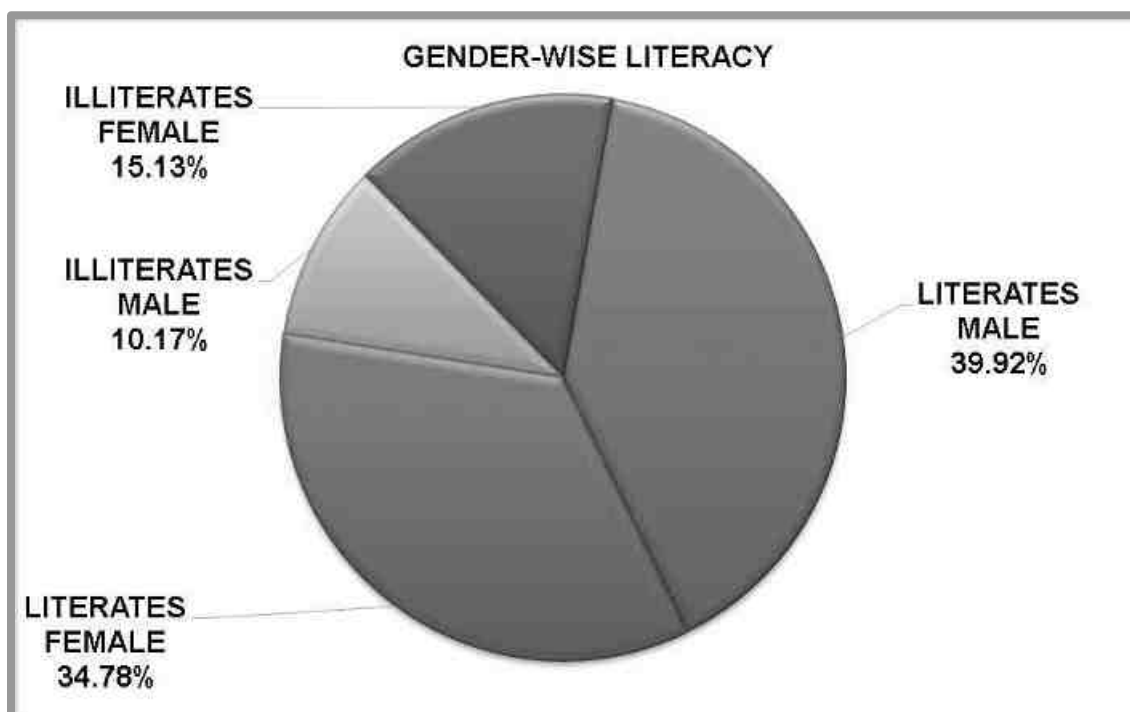
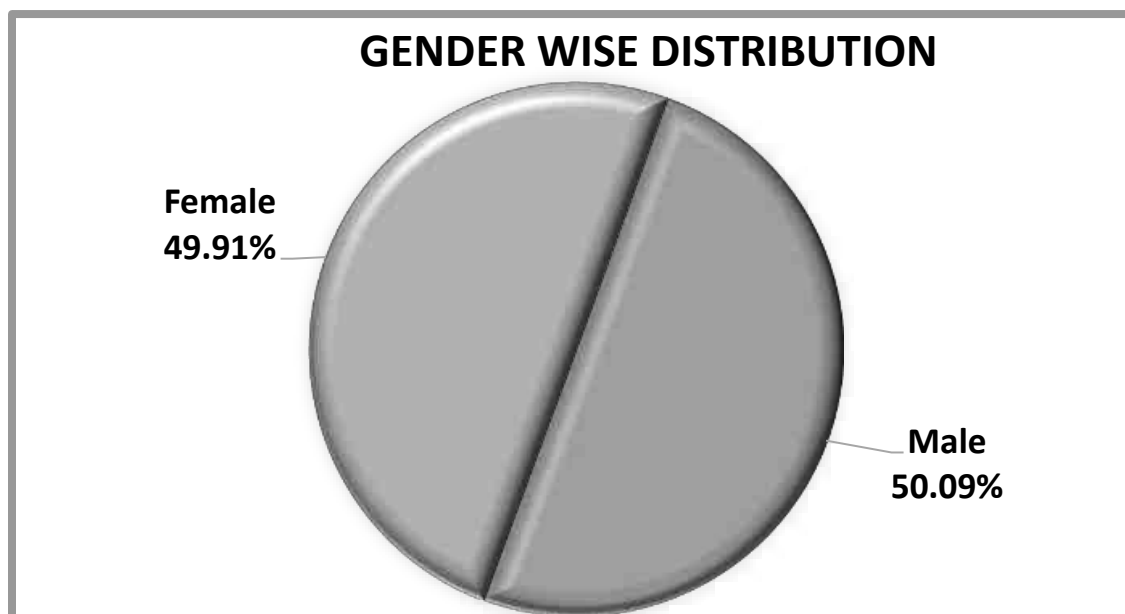
Details	Population	Percentage
Total Literate Population	260402	74.70
Others Males	35449	10.17
Others Females	52747	15.13
Others Population	88196	25.30
Total	348598	100
D. Occupational structure		
Main workers	142221	40.80
Marginal workers	16772	4.80
Total Workers	158993	45.60
Total Non-workers	189605	54.40
Total	348598	100

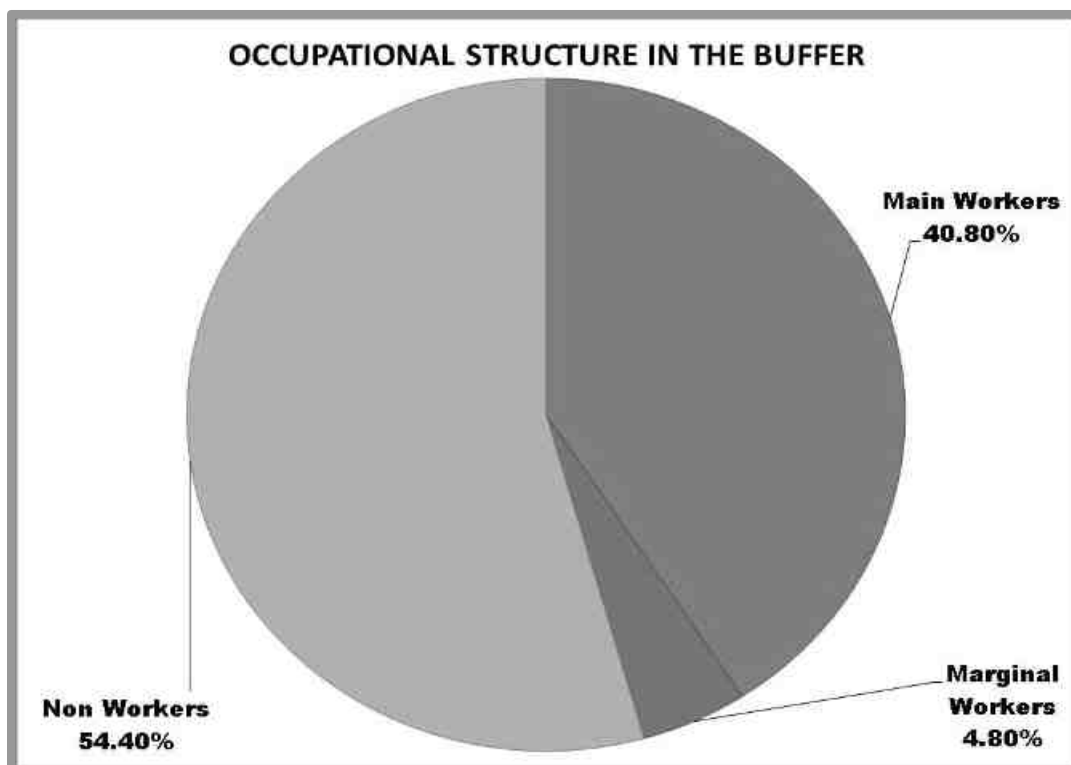
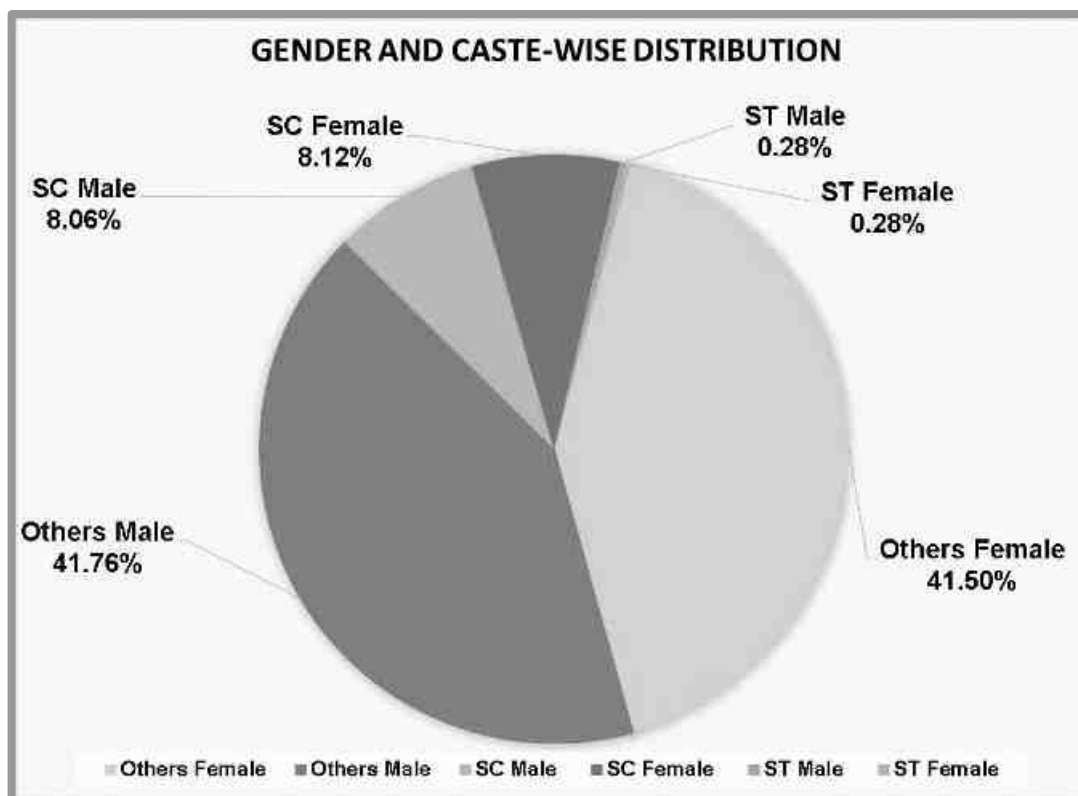
The total population of these 36 rural villages 348598 in which the male population is 174613 (50.09%) and the female population is 173985 (49.91%). This shows that the male and female population ratio is almost equal. Among the total population 0.56% belong to Scheduled Tribes, 16.18% are Scheduled Caste and the balance 83.26% people belong to other castes. Among the total population, 74.70% of the people are literate.

Among the total population, 39.92% are literate males and 34.78% are literate females. This shows that the male literates are slightly more than the female literates. Totally, the illiterate constitute 25.30% of which the female cover 15.13% and the male 10.17%. Illiteracy in women is more than in the male population.

The village wise population, literacy levels and occupational structure details area given in **Annexures 9 and 10**. The demographic structure within the buffer zone is shown diagrammatically in **Figure No – 3.2**.

Figure 3.2: Demographic Structure in Buffer Zone





3.2.3 DETAILS OF AMENITIES:

Based on 2011 census data, regarding the educational facilities, 36 rural villages out of 36 rural villages have educational facilities. There are totally 71 Primary Schools functioning in these 36 rural villages. Among them 14 villages have one primary school, 9 villages have 2 primary schools, 9 villages have 3 primary schools, 3 villages have 4 primary schools. With regards to educational facilities, from Primary School level to Senior Secondary School level, there is availability of some schools in the area. However, beyond this, college level education is not available in the buffer zone. Out of 36 villages, 23 villages have primary health sub centers. Better medical facilities are available in the nearby larger towns.

Table 3.4: Primary Schools in the Buffer Zone Rural Villages

S.No	No of Rural Villages	Number of primary schools	Totals
1	1	0	0
2	14	1	14
3	9	2	18
4	9	3	27
5	3	4	12
Total	36		71

Table 3.5: Education Facility Availability

PARTICULARS	Available in village
Govt Primary School	35
Govt Middle School	24
Govt Secondary School	13
Govt Senior Secondary School	5
Govt Arts and Science Degree College	0
Govt Engineering College	0
Govt Medicine College	0
Govt Management Institute	0
Govt Polytechnic	0
Govt Vocational Training School/ITI	0

Table 3.6: Healthcare Amenities Availability

PARTICULARS	Available in village
Community Health Centre	1
Primary Health Centre	4
Primary Health Sub Centre	23
Maternity And Child Welfare Centre	6
TB Clinic	4
Hospital Allopathic	0
Hospital Alternative Medicine	0
Dispensary	4
Veterinary Hospital	6
Mobile Health Clinic	0
Family Welfare Centre	4

Table 3.7: Infrastructure Facilities

Particulars	Available in village
Tap Water-Treated	36
Covered Well	32
Hand Pump	23
Tube Wells/Borehole	33
Post office	0
Bus services	34
Railway station	1
Commercial Bank	5
Cooperative bank	9

The details of the educational, medical and infrastructural facilities available in the buffer zone is provided in **Annexures- 11-13**. The above figures are based on 2011 census data, however drastic improvements in the above said amenities are observed in the area.

3.2.4 SOCIO ECONOMIC SURVEY:

Study of the area to know about socio-economic conditions, including aspirations and requirements of the people show the following:

- Lease and its surrounding environment is dominated with quarry and its related activities.
- Due to rocky land formation, undependable rainfall, poor soil condition, absence of irrigational source or water bodies, deep ground water occurrence, little seasonal agricultural activities are carried out in the area. Only patches of coconut cultivation is observed.

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- Numerous ware houses, other industries like glass, textile mills, foundaries, engineering units, Upcoming CODISSIA Industrial Park B (Kallapalayam), etc serve as the main occupation for the young workforce.
- Industrialisation & harmony with locals are observed.
- Other allied activities like livestock rearing and poultry farming are also found.
- Reasonably better amenities like approach road bus facility, electricity, mobile phone connectivity, Public Distribution System, Co operative bank. Scheduled banks etc are available.

Bore well is the main source for drinking water. There are OHT's, Ground level tanks, public taps are available



Tekani Village –Ration Shop



Kumarapalayam Village – Primary School



Arasampalayam Village –Water tank



Tekani Village – Primary School



Myleripalayam Village – Primary Health Centre



Myleripalayam Village – Primary School



3.3 EXISTING ENVIRONMENTAL QUALITY

3.3.1 MICRO-METEOROLOGY

3.3.1.1 General:

The meteorological conditions in an area regulate the dispersion of air pollutants being released into the atmosphere. The principal variables are horizontal convective transport i.e. wind speed and direction and vertical convective transport, i.e. mixing height, stability class and topography of the area.

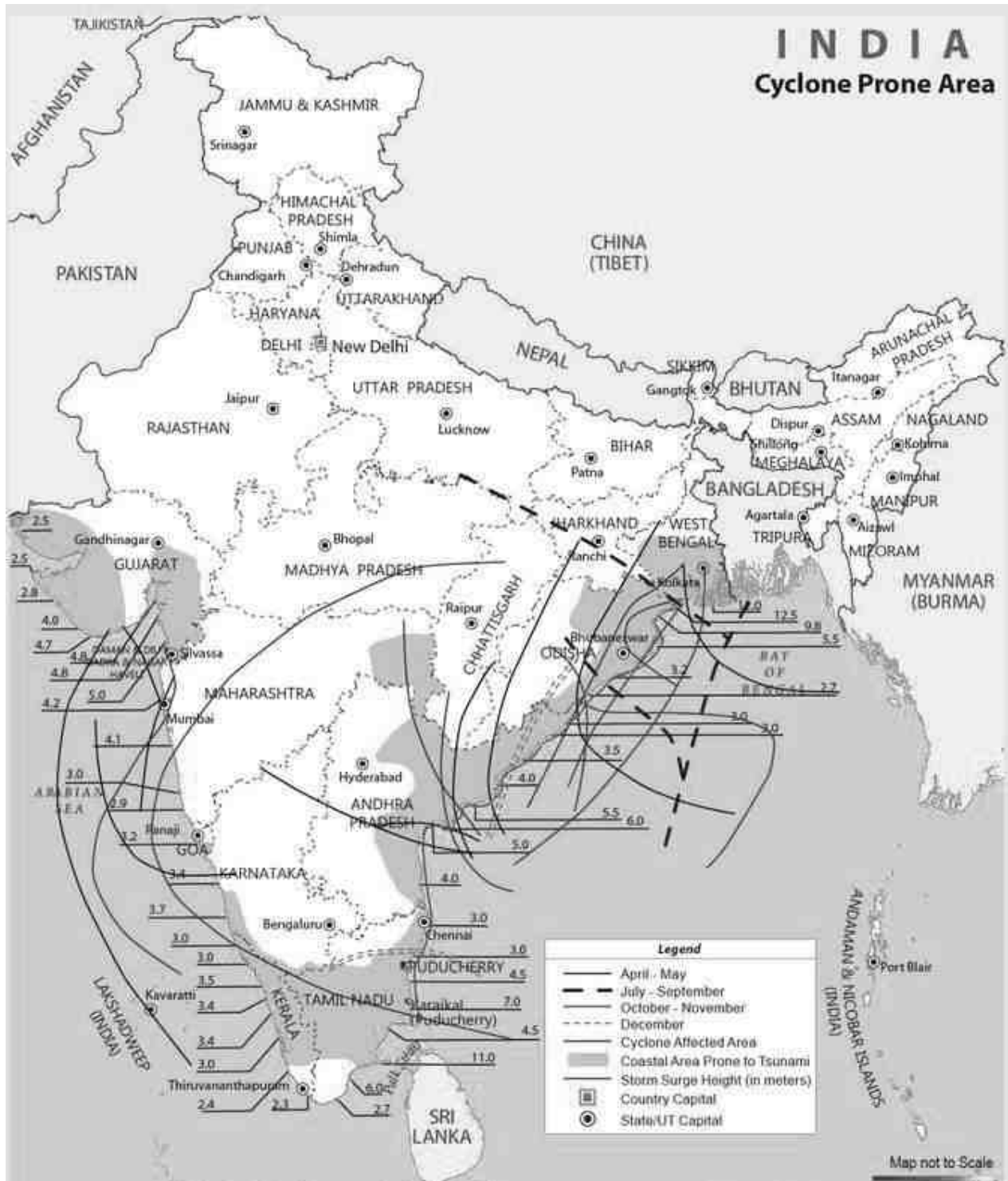
3.3.1.2 Historical Meteorological Data:

A. Cyclones And Depressions

Cyclonic storms and depressions in Bay of Bengal affect the East Coast of India. Isolated ones, forming in January to March in the South Bay of Bengal move West-North-westwards and hit Tamil Nadu coast. In April and May, cyclonic storms and depressions form in the South and adjoining Central Bay and move initially to the Northwest, then North and then recurve to the Northeast striking the Arakan coasts in April and Andhra Pradesh (AP)-Orissa-West Bengal (WB) – Bangladesh coasts in May. Most of the monsoon (June – September) storms develop in the central and in the north bay and move west – north - westwards affecting AP – Orissa – WB coasts. Post monsoon (October – December) storms form mostly in the south and central Bay, recurve between 150 and 180 N affecting Tamil Nadu – AP – Orissa – WB – Bangladesh coasts. **Figure No - 3.3** depicts the history of cyclonic storms, which have struck the Indian coast during the months of October, November and December during the last 75 years. (**Source: Vulnerability Atlas of India series, above figure accessed from www.maps of india.com**). East coast is prone to cyclonic storms round the year but mostly these occur prior to SW i.e., in May and after SW monsoon i.e., in October and November.

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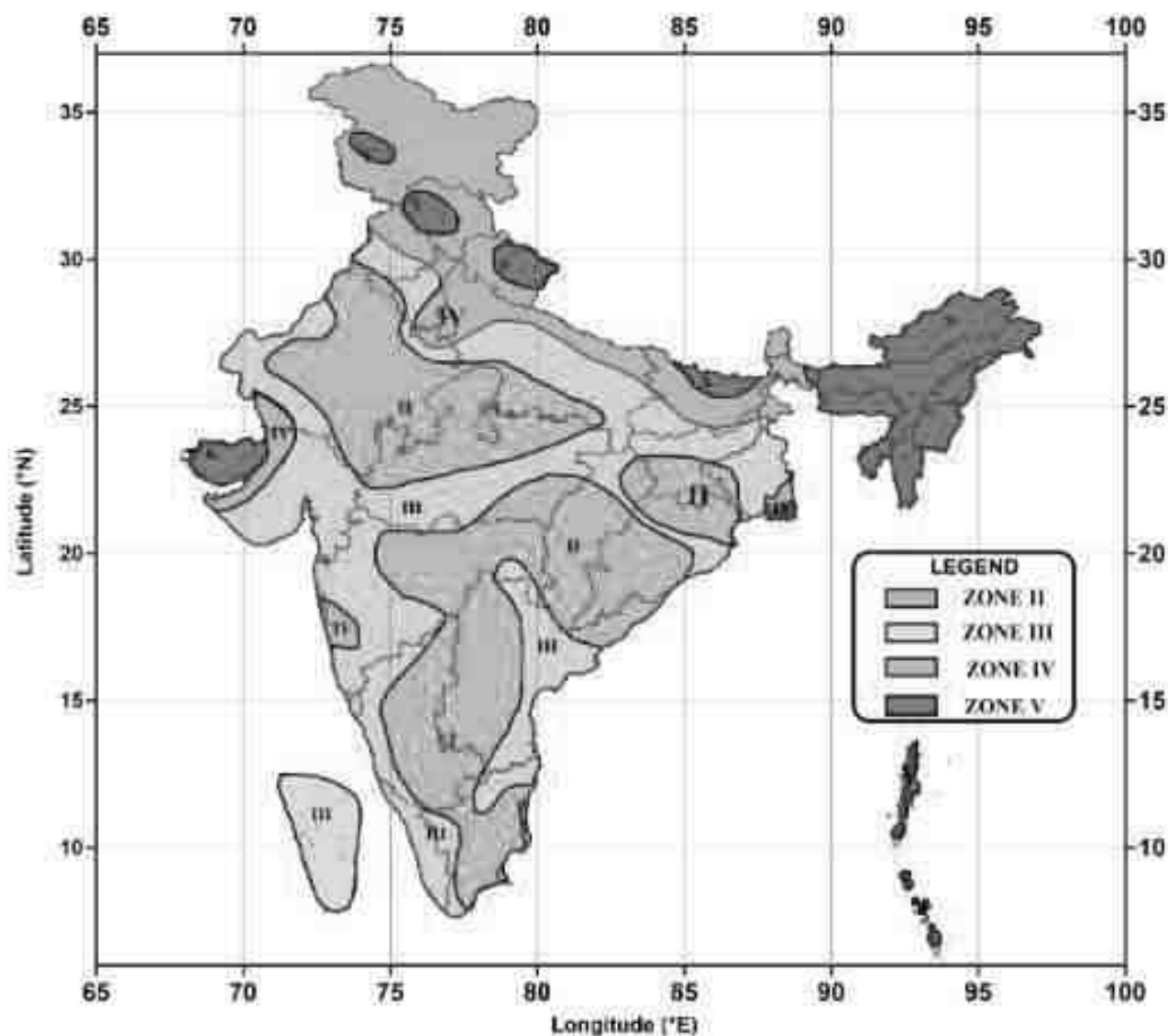
Figure 3.3: Cyclone Prone Areas



B. SEISMIC DATA

From the seismic zone map of India as depicted in the **Figure No - 3.4**, it can be seen that the project site and study area falls in the Zone – II and is described as least active zone.

Figure 3.4: Seismic Zone Map of India



C. Climate and Rainfall Data:

Coimbatore has a tropical wet and dry climate. It experiences hot and humid summers from March to June with temperatures ranging from 25 °C to 38 °C. The monsoon season starts from July and lasts till October. The city receives moderate rainfall from the south-west monsoon and occasional heavy rainfall from the north-east monsoon. The winter season starts from November and ends in February.

Due to the south-west monsoon winds passing through the Palghat gap, elevated regions of the city receive rainfall in the months from June to August. After a warm and foggy September, the north-east monsoon starts from October, lasting until early November. The average annual rainfall is around 600 mm (23.6 in) with the northeast and the southwest monsoons contributing to 47% and 28% respectively to the total rainfall.[36] This periodic rainfall does not satisfy the city's water requirements throughout the year and water supply schemes drawn from Siruvani and Pilloor help supplant the requirements during low rainfall months

Table 3.8: Average Annual Rainfall Data

The average annual rainfall and the 5 years rainfall collected from twadboard, Coimbatore as follows:

Actual Rainfall In mm						Normal Rainfall In Mm
2019	2020	2021	2022	2023	2024(as on 30.09.24)	
272.4	1572.3	2119.1	2151.7	1480.9	1287.7	1205.8

Source – <https://www.twadboard.tn.gov.in/content/coimbatore>

3.3.1.3 SITE SPECIFIC METEOROLOGICAL DATA:

Micrometeorology and microclimatic parameters like wind velocity, wind direction, ambient temperature, relative humidity, were collected throughout the monitoring period.

DATA ANALYSIS:

The temperature in the area during the study period ranged from 21.0°C to 38.1°C while the relative humidity varied between 18 – 98.0%. The wind speed during the study period ranged from <1.8 to 38.9 Km/hr. The predominant wind direction is from SW. The meteorological data are presented in **Table no – 3.9**. The average wind rose is depicted in **Figure No - 3.5**.

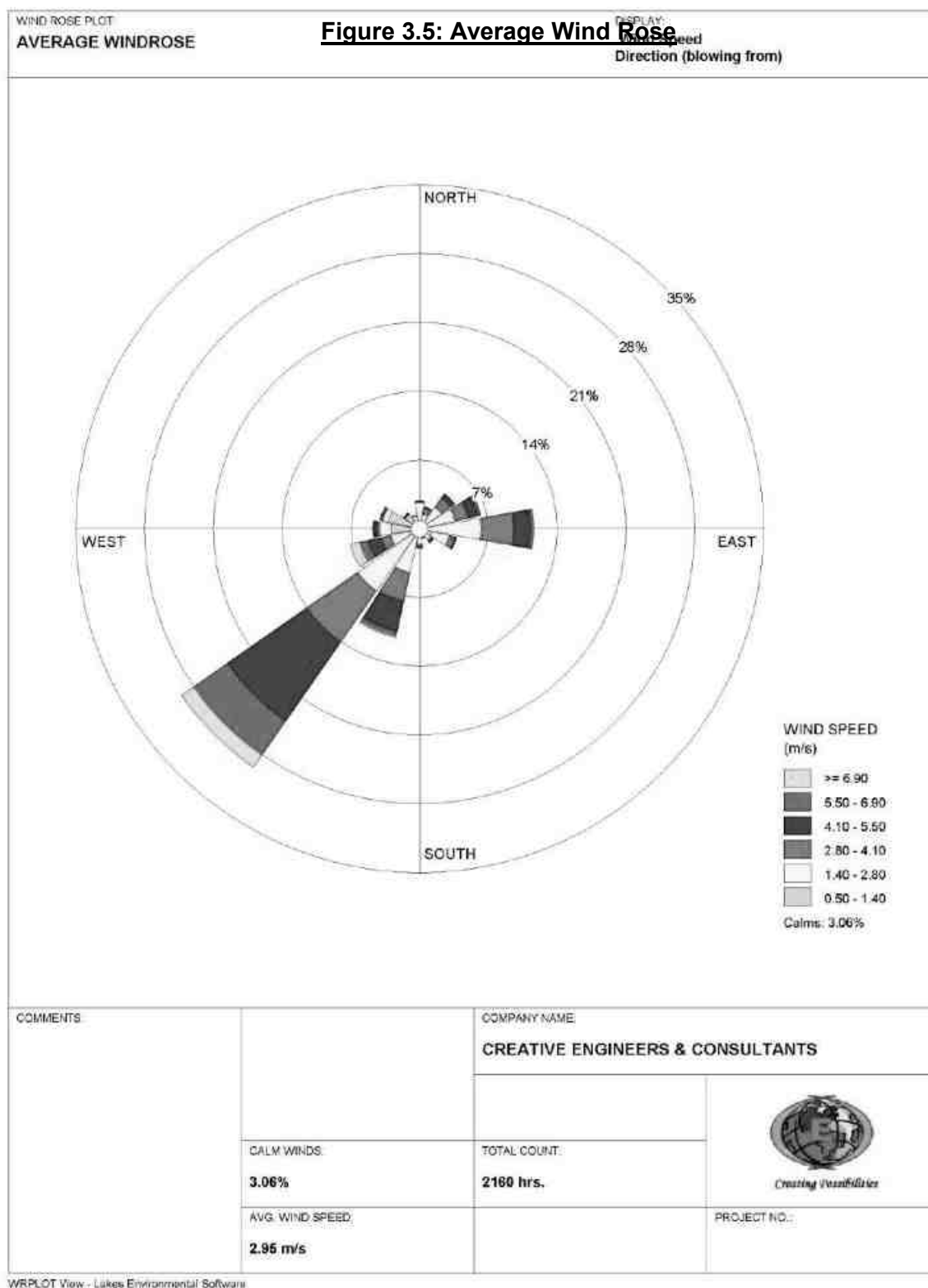
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Table 3.9: Meteorological Data

Season: Summer Season (March 2025 – May 2025)			
S.NO	PARAMETERS	MIN	MAX
1	Temperature In °c	21.0	38.0
2	Humidity in %	18.0	98.0
3	Wind speed in km/hr	<1.8	38.9
4	Predominant wind direction from	SW	



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3.3.2 AMBIENT AIR QUALITY (AAQ):

Ambient Air quality has been assessed through a network of 6 ambient air quality stations. The following methodology has been considered for design of ambient air quality monitoring network in the area. Based on these criteria, 6 numbers of air sampling stations were selected in the area as shown below in Table No.3.10.

- ❖ Topography / terrain of study area.
- ❖ Populated areas within study area.
- ❖ Residential /sensitive areas within study area.
- ❖ Magnitude of surrounding industries.0.9
- ❖ Representation of regional background levels.
- ❖ Representation of cross sectional distribution in down wind direction.
- ❖ Predominant wind direction and wind pattern.

Table 3.10: Air Quality Monitoring

1.	Monitoring Period	Summer Season (March 2025 – May 2025)
2.	Monitoring Location	The location map showing Ambient Air Quality study stations are shown in Figure No- 3.6.
3.	Methodology	
	Parameter	Protocol
	a. Particulate Matter (PM10)	Gravimetric (IS 5182: Part 23:2017)
	b. Particulate Matter PM2.5	Gravimetric (IS 5182: Part 24:2019)
	c. Sulphur Dioxide	Colorimetric (West & Gaeke Method) (IS 5182: Part 02: 2017)
	d. Nitrogen Dioxide	Colorimetric(Modified Jacob & Hocheiser Method) (IS 5182: Part 06:2017)
	e. Carbon Monoxide	CO Monitor
	f. Silica	Colorimetric (Molybdate Method) NIOSH 7601 -2003
4.	Monitoring Frequency	2 days in a week, 4 weeks in a month for 3 months in a season.

Table 3.11: Air Quality Monitoring Locations

S.NO	LOCATION CODE	LOCATION	DISTANCE FROM CORE ZONE (KM)	DIRECTION
1	A1	Project Site	-	-
2	A2	Myleripalayam Village	2.0km	W
3	A3	Kumaarapalayam Village	2.6km	SW
4	A4	Tegani Village	2.2km	NE
5	A5	Karachery Village	1.8km	E
6	A6	Near Ramraj Quarry	980m	SW

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Figure 3.6: Ambient Air Quality Study Stations



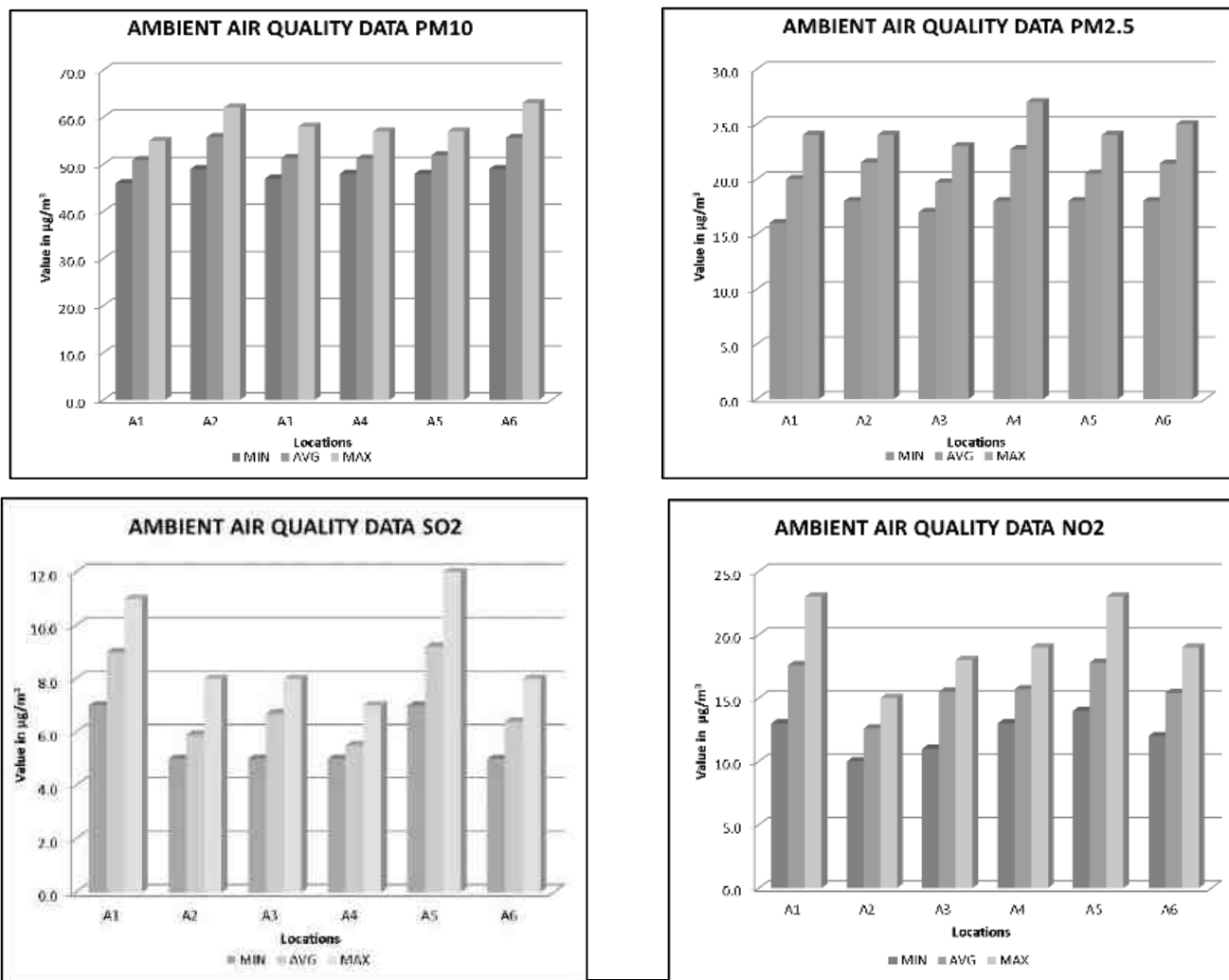
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Table 3.12: Ambient Air Quality Data

PARAMETERS	Cat.*	All Value in $\mu\text{g}/\text{m}^3$											
		PM ₁₀			PM _{2.5}			SO ₂			NO ₂		
LOCATIONS		MIN	AVG	MAX	MIN	AVG	MAX	MIN	AVG	MAX	MIN	AVG	MAX
A1-Project Site	I	46.0	50.9	55.0	16.0	20.0	24.0	7.0	9.0	11.0	13.0	17.6	23.0
A2- Myleripalayam Village	R	49.0	55.8	62.0	18.0	21.5	24.0	5.0	5.9	8.0	10.0	12.6	15.0
A3-Kumaarapalayam Village	R	47.0	51.4	58.0	17.0	19.7	23.0	5.0	6.7	8.0	11.0	15.5	18.0
A4-Tegani Village	R	48.0	51.2	57.0	18.0	22.7	27.0	5.0	5.5	7.0	13.0	15.7	19.0
A5-Karachery Village	R	48.0	51.9	57.0	18.0	20.5	24.0	7.0	9.2	12.0	14.0	17.8	23.0
A6-Near Ramraj Quarry	R	49.0	55.6	63.0	18.0	21.4	25.0	5.0	6.4	8.0	12.0	15.4	19.0
NAAQ Limits		PM ₁₀			PM _{2.5}			SO ₂			NO ₂		
	*	100			60			80			80		
	**	100			60			80			80		

***Note:** Category: * - Industrial, Residential, Rural and other area, ** – Ecologically Sensitive Area (notified by Central Government)

Figure 3.7: Ambient Air Quality Data



3.3.2.1 Results and Discussion:

The AAQ monitored data for all locations for above parameters are shown in **Table No - 3.12** and in **Figure No - 3.7**. Ambient Air Quality data during the study period is given in **Annexure-14**. From the table it is seen that, in the ambient air, the PM₁₀ values were in the range of 46.0-63.0 µg/m³. PM_{2.5} values were in the range of 16.0-27.0 µg/m³. SO₂ levels were ranging from 5.0–12.0 µg/m³. NO₂ levels were ranging from 10.0-23.0 µg/m³.

The existing Ambient Air Quality levels for PM₁₀, PM_{2.5}, SO₂ and NO₂, are within the NAAQ standards prescribed CPCB limits of 100 µg/m³, 60 µg/m³, 80 µg/m³ & 80 µg/m³. The CO values in all the locations were found to be below detectable limit. Silica values in the study area are found to be below detectable limit. (Detection limit – 0.05 mg/m³)

3.3.3 WATER ENVIRONMENT:

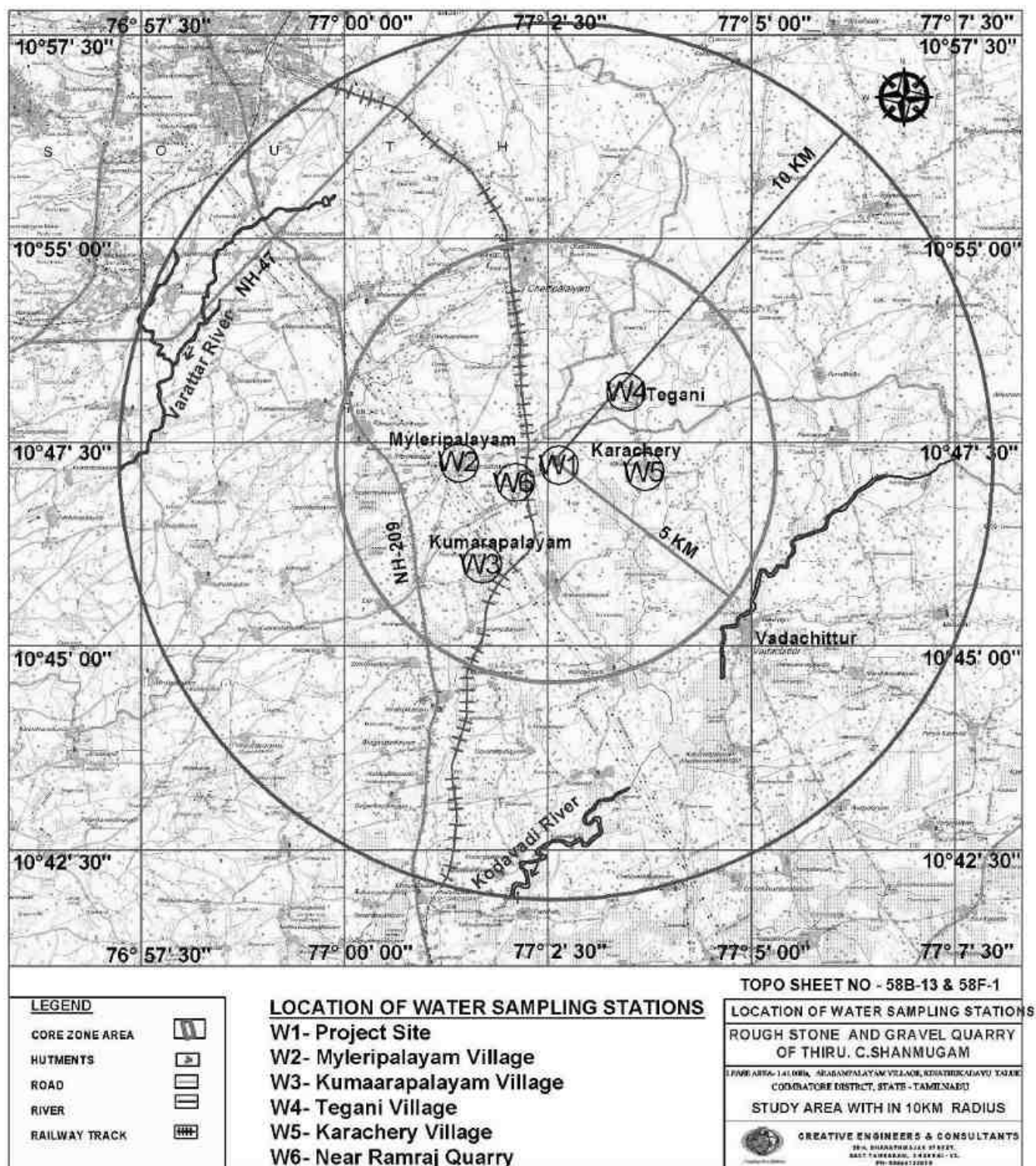
Assessment of baseline data on water environment includes Identification of water resources, Collection of water samples and Analyzing water samples collected for physico-chemical parameters as per standards. The water sampling was carried out for 6 locations. Details of the same has been provided below:

Table 3.13: Water Quality Monitoring

1.	Monitoring Period		Summer Season (March 2025 – May 2025)		
2.	Monitoring Location		The location map showing water sampling locations are given in Figure No.3.8 .		
	Code	Location	Sample Type	Distance	Direction
	W1	Near Project Site	Bore well	-	-
	W2	Myleripalayam Village	Bore well	2.0km	W
	W3	Kumaarapalayam Village	Bore well	2.6km	SW
	W4	Tegani Village	Bore well	2.2km	NE
	W5	Karachery Village	Bore well	1.8km	E
	W6	Near Ramraj Quarry	Bore well	980m	SW
3.	Methodology		Sampling - IS 3025 Part - I		
			Analysis – IS 3025 relevant parts / APHA 23rd Edition		

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Figure 3.8: Location of Water Sampling Stations



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REV NO : 00/OCT/25
3-21

Table 3.14: Summary of Water Quality Data

Season	Summer Season (March 2025 – May 2025)	
Monitoring Locations	6 locations	
Parameters	Range of values	Limits*
pH at 25 °C	7.33 – 8.02	6.5-8.5
Total Dissolved Solids, mg/L	415 – 789	2000
Chloride as Cl-, mg/L	38.7 – 168	1000
Total Hardness (as CaCO ₃), mg/L	128 – 269	600
Total Alkalinity (as CaCO ₃), mg/L	212– 265	600
Sulphates as SO ₄ ²⁻ , mg/L	12.8 – 55.3	400
Iron as Fe, mg/L	BDL	0.3
Nitrate as NO ₃ , mg/L	4.1 – 6.63	45
Fluoride as F, mg/L	BDL – 0.2	1.5

3.3.3.1 Results and Discussion:

The results of the water sample analysis are shown in **Table No - 3.14**. The pH values of bore well water were ranging in between 7.33 – 8.02, TDS values were in the range of 415 – 789mg/L. Chloride values were ranging from 38.7 – 168mg/L. Iron content was found to be in the range BDLmg/L. The water quality of ground water is found to be within the prescribed Permissible limits of IS: 10500 Norms in the absence of an alternative source as per Drinking Water Specifications. The water quality data is provided in **Annexure-15**.

3.3.4 NOISE ENVIRONMENT:

Operational phase of this project may lead to increase noise levels from the existing levels at least in and around the project area. As noise level beyond permissible limits will cause adverse impacts on the environment, it has become imperative to assess the noise levels in and around the mine area. Noise level measurements were taken at the 6 locations during the monitoring period. Details of the same are provided below:

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Table 3.15: Noise Level Monitoring

1.	Monitoring Period	Summer Season (March 2025 – May 2025)		
2.	Monitoring Location	The location map showing noise monitoring locations are given in Figure No.3.9.		
	Code	Location	Distance	Direction
	N1	Project Site	-	-
	N2	Myleripalayam Village	2.0km	W
	N3	Kumaarapalayam Village	2.6km	SW
	N4	Tegani Village	2.2km	NE
	N5	Karachery Village	1.8km	E
	N6	Near Ramraj Quarry	980m	SW
3.	Methodology	Noise levels were measured using sound level meter manufactured by (Model No - SL- 4001, Make - Lutron). Sound Pressure Level (SPL) measurements were measured at all locations where ambient air quality monitored; one reading for every hour was taken for 24 hours.		
4.	Monitoring Frequency	Once during monitoring period		

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Figure 3.9: Location of Noise Sampling Stations

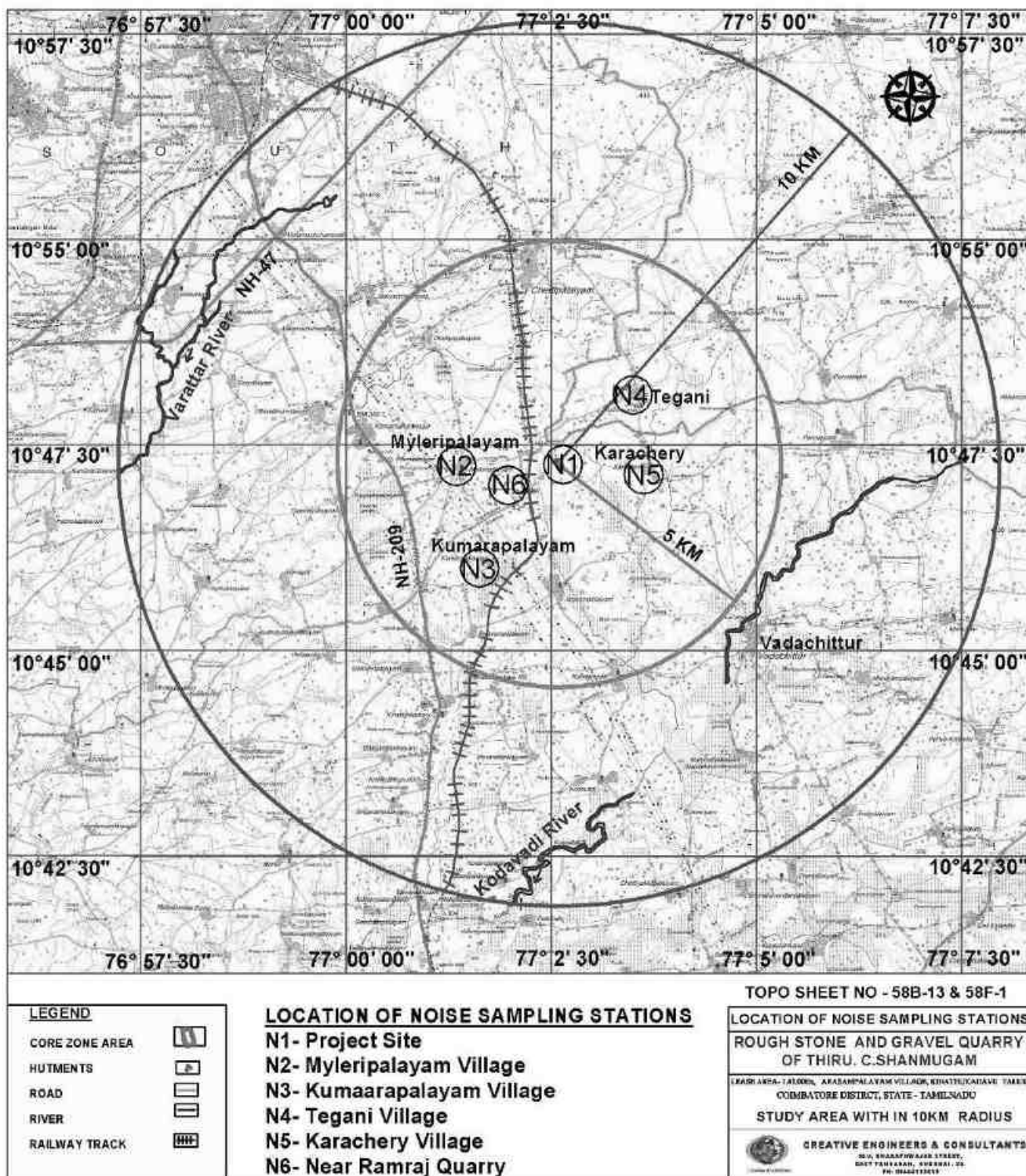
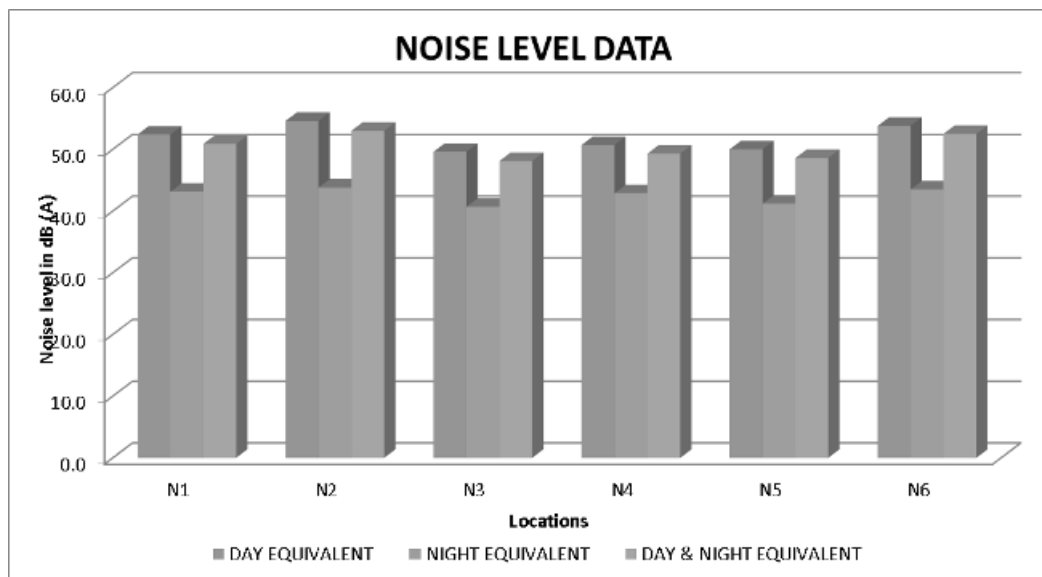


Table 3.16: Ambient Noise Level in dB (A)

Date and time of monitoring	N1	N2	N3	N4	N5	N6
Day Equivalent	52.4	54.6	49.6	50.7	50	53.8
Night Equivalent	43.2	43.8	40.7	42.9	41.2	43.5
Day & Night Equivalent	50.9	53.0	48.1	49.3	48.6	52.5
Limits: As per CPCB: Work zone Exposure in 8 hr - 90 dB(A)						
As per MoEF&CC: Residential: Day equivalent - 55 dB(A); Night equivalent - 45 dB(A)						

Figure 3.10: Noise Level Data



3.3.4.1 Results and Discussion:

The results of noise levels for all locations are given in **Table No-3.16**. The noise values for all above locations are shown in a comparative chart given in **Figure No - 3.10**. Day Equivalent Noise (Leq-d levels were ranging from 49.6 dB(A) to 54.6 dB(A) and night Equivalent Noise (Leq-d) levels ranged between 40.7 dB(A) to 43.8 dB(A). While comparing with the MOEF&CC Norm of 55 dB(A) for day time and 45 dB(A) for night time, the monitored ambient noise levels were within the limit values for Residential areas.

3.3.5 SOIL CHARACTERISTICS:

Soil samples were collected in 6 locations in the core and buffer zone to analyse the physiochemical characteristics of the soil in the area. Elaborate details of the same has been provided below.

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Table 3.17: Soil Quality Monitoring

1.	Monitoring Period	Summer Season (March 2025 – May 2025)		
2.	Monitoring Location	The location map showing soil sampling locations are given in Figure No.3.11.		
	Code	Location	Distance	Direction
	S1	Project Site	-	-
	S2	Myleripalayam Village	2.0km	W
	S3	Kumaarapalayam Village	2.6km	SW
	S4	Tegani Village	2.2km	NE
	S5	Karachery Village	1.8km	E
	S6	Near Ramraj Quarry	980m	SW
3.	Methodology	Composite soil samples using sampling augers and field capacity apparatus.		
4.	Monitoring Frequency	Once during monitoring period		

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Figure 3.11: Location of Soil Sampling Stations



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Table 3.18: Soil Quality Data

S.No	Parameters	Unit	S1	S2	S3	S4	S5	S6
1	pH at 25°C	-	6.75	6.54	6.75	6.86	6.85	6.72
2	Electrical Conductivity	(µmhos/cm)	0.096	0.089	0.106	0.073	0.102	0.102
3	Organic Matter	%	1.21	0.87	1.49	0.59	1.25	1.42
4	Soil texture	-	SANDY	SANDY	SANDY	SANDY	SANDY	SANDY
5	Grain Size Distribution i. Sand	%	87.9	86.9	87.8	87.4	86.1	85.8
6	ii. Silt	%	3.4	2.6	3.3	4.5	4.7	5
7	iii. Clay	%	8.7	10.5	8.9	8.1	9.2	9.2
8	Phosphorous	µg/g	33.5	28.2	38.9	50.2	34.6	21.9
9	Sodium	mg/kg	1.91	1.58	2.67	1.26	1.96	2.37
10	Potassium	mg/kg	331	235	367	403	338	275
11	Total Nitrogen	mg/kg	202	136	238	278	207	169

3.3.5.1 Results and Discussion:

Results of the soil samples show that the pH values were ranging between 6.54 to 6.86 and Electrical Conductivity values were ranging between 0.073 – 0.106 µmhos/cm. Soils are generally Sandy type. Organic matter values were ranging between 0.59 – 1.49%. Total Nitrogen values were ranging between 136 - 278 mg/kg. Phosphorus values were ranging between 21.9 – 50.2 µg/g. Potassium values were ranging between 235 - 403 mg/kg. Sodium values were ranging between 1.26- 2.67 mg/kg. Total Sulphur values were observed to be BDL. The soil quality data for the 3 samples collected and analyzed are provided in **Table No – 3.18.**



3.4 LAND ENVIRONMENT - LANDUSE & LAND COVER

For preparing an impact statement, aspects of the land conditions are covered under land use. An industrial project / mine can cause changes in land use, soil process in different intensities depending upon the size of the project and distance involved between the industries and the area. Here, land use status for a radius of 10 km has been studied.

3.4.1 DATA USED AND METHODOLOGY

For the present study on land use pattern of buffer area around the proposed stone and gravel quarry, an archived historical data of Landsat 8 data shas been used as base data (Figure No.3.12) has been used to generate the require landuse map showing their spatial pattern within the buffer area. The table showing data used for generation of information on landuse and subsequent GIS analysis is given below

Table 3.19: RS satellite image used for the present study

S.No	Type of Data	Date	Generated Map
1.	Landsat 8	April 2025	Landuse (LU) Map showing 10 Km buffer zone

Interpretation of satellite image requires understanding of relationship between image elements and their respective terrain elements. Since, in the present study, the landuse information is obtained using visual interpretation, an interpretation key is generated. The image elements such as color, tone, texture, size, shape and associated elements have been used to delineate various landuse categories. The landuse categorization and nomenclature used in the present study is based on the national level landuse classification system, which is adopted for the entire country as recommended by National Remote Sensing Centre (NRSC), Department of Space, Government of India.

Figure 3.12 : Landsat 8 Satellite Data of the Study Area

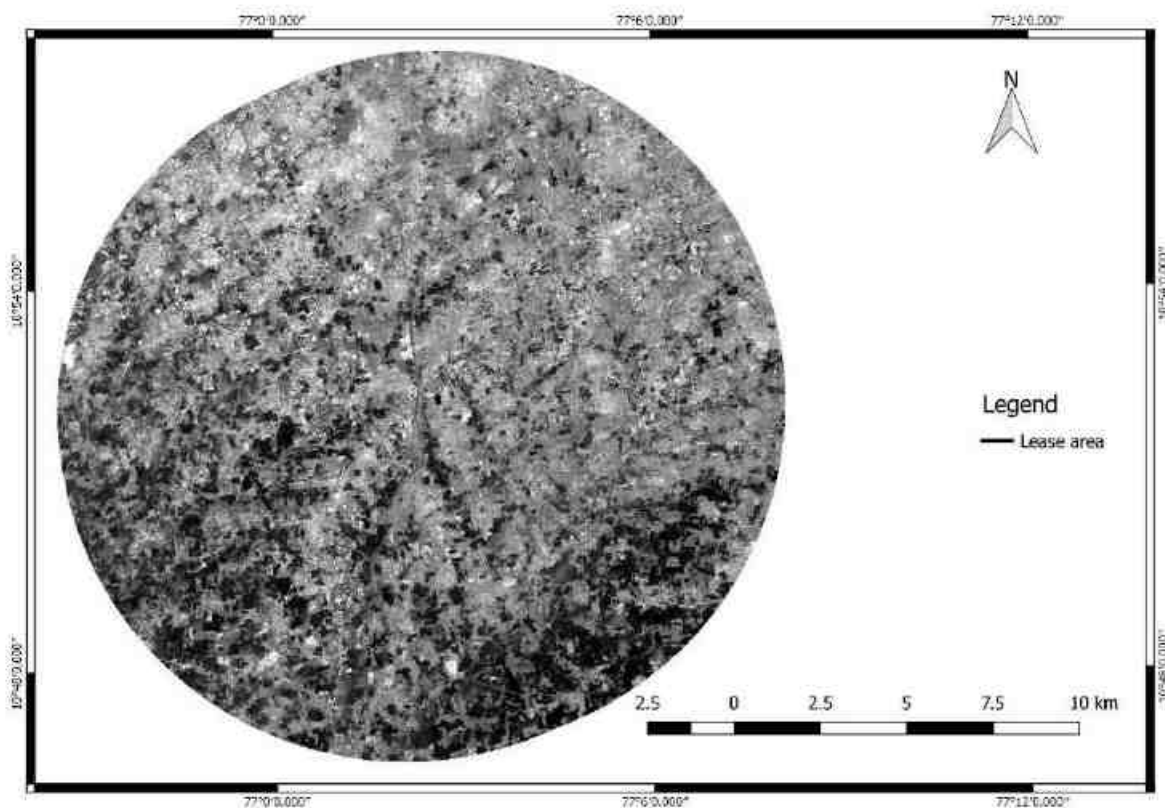


Table 3.20: Major Landuse Units of the Study Area

S.No	Major Category	Landuse unit
1	Built-Up Land	Village, Town, Industrial / Vacant Area
2	Agricultural Land	Crop Land Fallow Land Plantation Farm Land
3	Forest Land	Open Scrub Forest
4	Waste Land Mining Area	Land With Scrub/ Land Without Scrub Barren Rocky/ Stony Waste Quarries / Abandoned Quarries
5	Waterbodies	Tanks/ Rivers / Streams

Such LandUse and Land cover (LULC) categories have been verified using field check and identified sample sites within the buffer area, verified on field and transferred into gis geo-coordinates using observation coordinates received from hand held GPS (global positioning system) instrument. Thus, an interpreted final landuse map has been generated (Figure No. 3.13)

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using above such elaborate procedure and transformed into GIS environment for its spatial distribution and area estimation. Spatial nature and extent of various landuse categories within the buffer area is discussed is given below:

Figure 3.13: Map Showing Land Use Categories around 10km Buffer

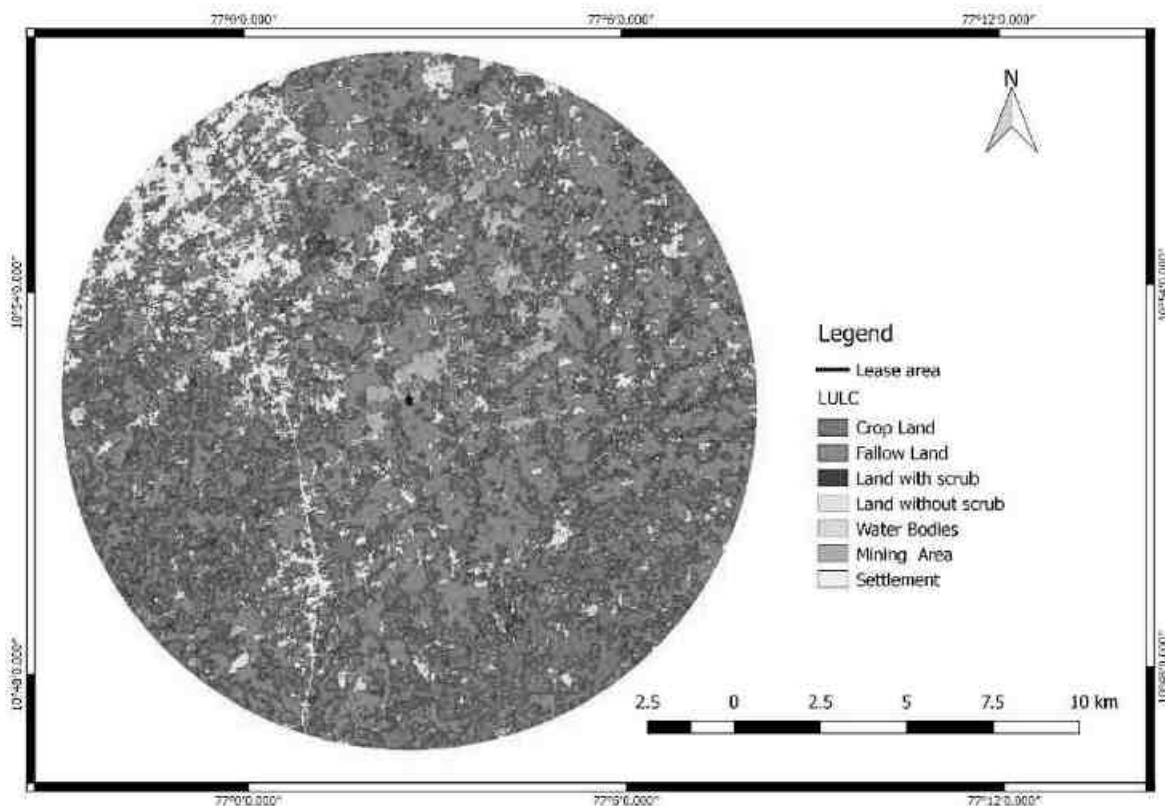


Table 3.21: Area Estimation of Landuse Categories in Buffer Zone

S.No	Landuse Feature	Area (Sq.Km)	Percentage
1	Agriculture/ Plantation	104.39	32.69
2	Fallow Land	157.72	49.40
3	Land With Scrub	6.99	2.19
4	Land Without Scrub	10.61	3.32
5	Water bodies	0.83	0.26
6	Mining	7.79	2.44
7	Settlement	30.96	9.70
	Total	319.28	100

From the above table it is seen that 49.40% of the buffer area is classified under fallow land, 32.69 % of Agriculture/ Plantation land, 2.19 % constitutes land with scrub, 3.32 % constitutes land without scrub and the balance falls under other land use categories.

.LAND USED BASED ON REVENUE RECORDS:

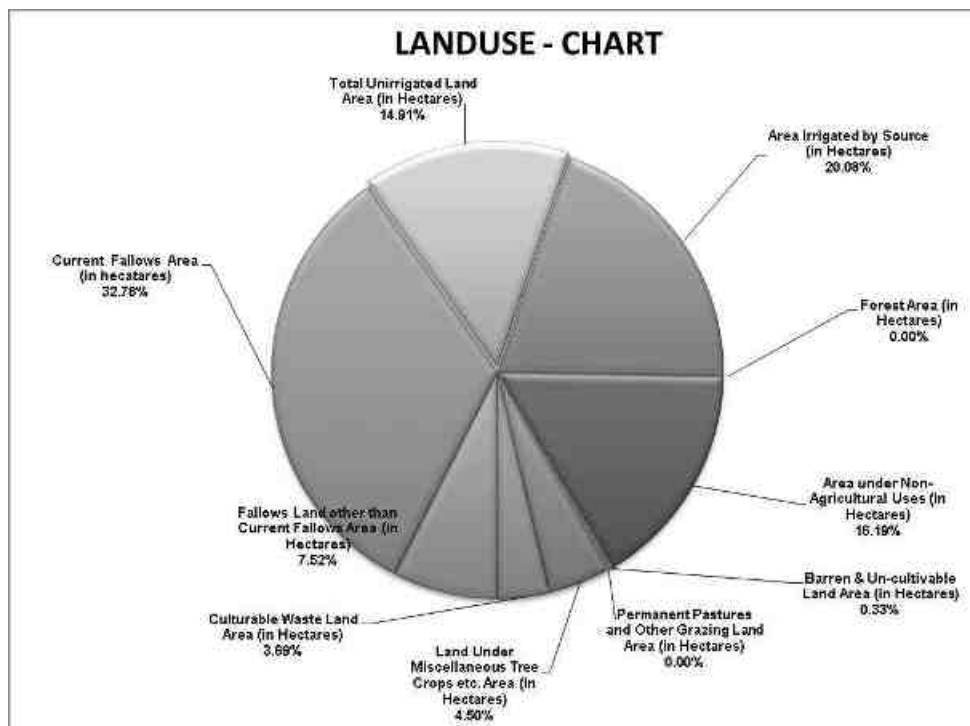
The lease area falls in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District,, Tamil Nadu state and the study area for the land use pattern (10 km radius) has been divided into four zones viz. Zone-I (0-2 km), Zone-II (2-5 km), Zone-III (5-10 km) and Zone-IV (0-10 km) respectively. The land use pattern of the study area falling within 10 km radius around the proposed project area is presented in Table no - 3.22. Village wise land use pattern is provided in **Annexure-16**.

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Table 3.22: Land Use Pattern of the Study Area Falling Within 10 Km Area in (Ha)

VILLAGE NAME	Total Geographic al Area	Forest Area	Area under Non-Agricultural Uses	Barren & Un-cultivable Land Area	Permanent Pastures and Other Grazing Land Area	Land Under Miscellaneous Tree Crops etc. Area	Culturable Waste Land Area	Fallows Land other than Current Fallows Area	Current Fallows Area	Total Un irrigated Land Area	Area Irrigated by Source
2 - 5 KM	16533.73	0	3004.06	49.27	0	1.81	549.09	955.96	5953.32	2508.35	3511.87
5-10 KM	21168.66	0	3427.34	68.85	0	952.24	780.57	1591.92	6939.45	3156.88	4251.41
0-10 KM	100.00	0.00	16.19	0.33	0.00	4.50	3.69	7.52	32.78	14.91	20.08
2 - 5 KM	16533.73	0	3004.06	49.27	0	1.81	549.09	955.96	5953.32	2508.35	3511.87

Figure 3.14: Landuse within the Buffer Zone Area



3.5 BIOLOGICAL ENVIRONMENT:

Study of the biological environment of any area comprises of well-planned ecological survey for the floristic and faunal composition of the areas through various scientifically planned techniques.

3.5.1 FLORA:

An ecological survey of the study area was conducted with reference to listing of species and assessment of the existing baseline ecological conditions. The objective of the survey is as follows:

- ❖ Generate existing data from field observations of various terrestrial floristic occurrences.
- ❖ Collect secondary data from Government records as well as through discussion with Forest officials, knowledgeable public etc.,
- ❖ Compare the data with authentic past records to identify changes, if any.
- ❖ Identify the impact of project operations on the biological aspects.

To accomplish the above objectives, a general ecological survey covering an area of 10 km radius was conducted. The locations were identified for phyto-sociological aspects to assess the current status.

3.5.1.1 Sampling Methodology:

In order to provide representative ecological status for the study area, the 10-km radius buffer area has been divided into four quartiles for biodiversity sampling, i.e., NE (Q-1), NW (Q-2) SW (Q-3) and SE (Q-4). Each of the quartiles have been examined for representative flora on randomly sampled quadrats for trees (10x10 m), shrubs (5x5 m) and herbs (1x1 m) depending upon prevailing geographical conditions and bio-diversity aspects of study area.

Phyto-sociological Survey: Phyto-sociological parameters, viz., Abundance (i.e., density), average and minimum stems were measured to determine the distribution and ecological aspects of the species. Abundance is a measure of the density of distribution of an individual species within a given area. It is calculated by summed individuals of a species. Average species number is calculated for all quadrates; similarly, minimum number of individuals represented is recorded

at quadrats level. A total of 5 quadrats were laid down in core area and a total of 20 quadrats were laid out in four quartiles (5 each) of buffer area.

Quadrats method for flora : A total of 100 x 100 m Grid was laid for buffer zone of 300m from Core Zone. In that grid 10 × 10m sub-quadrat were laid down randomly within core, PIZ and 10kms buffer area; each quadrat was laid to assess the trees (>5 cm GBH) and 5 × 5 m sub-quadrat nested within the quadrat for shrubs and two plot 1 × 1 m for herbs. The quadrats were laid apart to maximize the sampling efforts and minimize the species homogeneity, such as small stream area, Mining area, Working pit, Old quarries, agricultural areas, tank bunds, farm forestry plantations, natural forest area, avenue plantations, house backyards, etc. In each sample quadrat, individuals belonging to tree, shrub and herb species were recorded separately, and have been identified on the field. The prevailing land use and habitat quality has been noted down for each location on the field.

Vegetation Analysis using index: Species diversity will be calculated by using Shannon and Wiener (1963) formula as follows:

$$H' = - \sum_{i=1}^R p_i \ln p_i$$

Whereas,

H' is Shannon index of general diversity,

p_i is often the proportion of individuals belonging to the i th species in the dataset of interest.

Evenness index was calculated as: $E = H'/H_{max}$,

Whereas $H_{max} = \log_2$ (number of species in the plot)

A.CORE ZONE:

The proposed lease area is a non forest, private land. Major part of the lease area is already mined and exposed with rock. The remaining area contains plantation carried out in the lease periphery and barren patch on the south side. The detailed list of plants found in the core zone are given in Table no – 3.23.

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Table 3.23: List of Floristic Species in the Core Zone

Sl.No	Species Name	Family	Common Name
Trees			
1	Azadirachta indica	Meliaceae	Neem
2	Tectona grandis	Verbenaceae	Thekku
3	Borassus flabellifer	Arecaceae	Panai
4	Morinda tinctoria	Rubiaceae	Nuna
5	Leucaena leucocephala	Fabaceae	Soundal
6	Vachellia nilotica	Fabaceae	Karuvelam
Shrubs			
1	Calotropis gigantea	Apocynaceae	Erukku
2	Jatropha curcas	Euphorbiaceae	Kattamanakku
3	Abutilon indicum	Meliaceae	Thuthi
4	Senna auriculata	Fabaceae	Avarai
Herbs			
1	Tridax procumbens	Asteraceae	Veetukaayapoondur
2	Phyllanthus niruri	Phyllanthaceae	Keelaneeli
3	Leucas aspera	Lamiaceae	Thumbai
4	Acalypha indica	Euphorbiaceae	Kuppamani
5	Parthenium hysterophorus	Asteraceae	Parttiniyam
6	Celome viscosa	Capparidaceae	Nai kadugu
7	Achyranthes aspera	Amaranthaceae	Nayuruvi
8	Ocimum tenuiflorum	Lamiaceae	Thulasi

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PHOTOS OF CORE ZONE



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B.BUFFER ZONE:

The Dominated species are Acacia auriculiformis, Azadirachta indica, , Borassus flabellifer, Acacia nilotica, Leucaena leucocephala, Prosopis juliflora, Acacia leucophloea, Cocus nucifera, Albizia lebbeck, etc. The detailed list of plants found in the Buffer zone is given in Table no – 3.24.

Table 3.24: List of Floristic Species in the Buffer Zone

Sl.No	Scientific Name	Family Name	Common Name
Trees			
1	Casuarina equisetifolia	Casuarinaceae	Savukku
2	Citrus lemon	Rutaceae	Ezhumuchaipalam
3	Morinda tinctoria	Rubiaceae	Nuna
4	Lawsonia inermis	Lythraceae	Marudaani
5	Moringa oleifera	Moringaceae	Murunga
6	Pithecellobium dulce	Fabaceae	Kudukapuli
7	Ficus religiosa	legume	Asoka
8	Mangifera indica	Anacardiaceae	Mango
9	Phoenix sylvestris	Arecaceae	Icham
10	Cocos nucifera	Arecaceae	Thennai
11	Thespesia Populnea	Malvaceae	Poovarasam
12	Annona reticulata	Annonaceae	Seethapazham
13	Bambusoideae	Poaceae	Moongil
14	Syzygium cumini	Myrtaceae	Naval maram
15	Ficus benghalensis	Moraceae	Alamaram
16	Muntingia calabura	Muntingiaceae	Ten Pazham
17	Ceiba pentandra	Malvaceae	Ilavam Panju
18	Tamarindus indica	Legumes	Puliyamaram
19	Peltophorum pterocarpum	Fabaceae	Perunkondrai
20	Millettia pinnata	Fabaceae	Pongai
21	Borassus flabellifer	Arecaceae	Panai
22	Musa acuminata	Musaceae	Vazhaimaram
23	Carica papaya L	Caricaceae	Pappali
24	Azadirachta indica	Meliaceae	Vembu
25	Eucalyptus tereticornis	Myrtaceae	Thailam
26	Murraya koenigii	Rutaceae	Karuveppilai
27	Artocarpus heterophyllus	Moraceae	Palamaram
28	Artocarpusintegrifolia	Moraceae	Pala maram
29	Samanea saman	Fabaceae	Thungumoonchi

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Sl.No	Scientific Name	Family Name	Common Name
30	Terminalia catappa	Combretaceae	Inguti
31	Prosopis juliflora	Fabaceae	karuvalam
32	Vachellia nilotica	Fabaceae	Karuvelam
33	Leucaena leucocephala	Fabaceae	Soundal
34	Tectona grandis	Verbenaceae	Thekku
Shrubs			
1	Nerium indicum	Apocynaceae	Arali
2	Lantana camara	Verbenaceae	Unni chedi
3	Ixora coccinea	Rubiaceae	Idly Poo
4	Calotropis gigantea	Apocynaceae	Erukku
5	Datura metel	Solanaceae	Umathai
6	Hibiscus rosa-sinensis	Malvaceae	Chemparuthi
7	Senna auriculata	Fabaceae	Avarai
8	Phoenix sp	Arecaceae	Icham
9	Ricinus communis	Euphorbiaceae	Amanakku
10	Mimosa pudica	Mimosaceae	Thottalchinungi
11	Jatropha curcas	Euphorbiaceae	Kattamanakku
12	Anisomeles malabarica	Lamiaceae	Pei veratti
13	Abrus precatorius	Fabaceae	Kundumani
14	Euphorbia antiquorum	Euphorbiaceae	Chaturakalli
15	Catharanthus roseus	Apocynaceae	Nithyakalyani
16	Abutilon indicum	Meliaceae	Thuthi
17	Opuntia	Cactaceae	Nagathali
Herbs			
1	Parthenium hysterophorus	Asteraceae	Parttiniyam
2	Ocimum tenuiflorum	Lamiaceae	Thulasi
3	Tridax procumbens	Asteraceae	Veetukaayapoondur
4	Argemone mexicana	Papaveraceae	Eli-yotti
5	Aloe vera	Asphodelaceae	Katrashai
6	Phyllanthus niruri	Phyllanthaceae	Keelaneeli
7	Boerhavia diffusa	Nyctaginaceae	Mukurattai
8	Solanum nigrum	Solanaceae	Manathakkali
9	Amaranthus spinosus	Amaranthaceae	Mullukkeerai
10	Achyranthes aspera	Amaranthaceae	Nayuruvi
11	Acalypha indica	Euphorbiaceae	Kuppamani
12	Leucas aspera	Lamiaceae	Thumbai
13	Celome viscosa	Capparidaceae	Nai kadugu
14	Solanum melongena	Solanaceae	kathirikai

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Sl.No	Scientific Name	Family Name	Common Name
15	Amaranthus polygonoides	Amaranthaceae	Sirukeerai
16	Euphorbia hirta	Euphorbiaceae	Amman pacharisi
Climber			
1	Abrus precatorius L	Fabaceae	Kuntumani
2	Cissus quadrangularis	Vitaceae	Perandai
3	Momordica charantia	Cucurbitaceae	Pavakkai
4	Coccinia grandis	Cucurbitaceae	Kovai
5	Jasminum augustifolium	Oleaceae	Malli
Grasses			
1	Chloris barbata	Amaranthaceae	Chevvarakupul
2	Chloris dolichostachya	Poaceae	Kuruthupillu
3	Dichanthium annulatum	Poaceae	Marvel grass
4	Cyperus rotandus	Poaceae	Korai

3.3.1 FAUNA:

Methodology: Both direct and indirect observation methods were used to survey the fauna. Point Survey Method was used to study the Bird diversity. Besides, discussion with local villagers Collection secondary data from Government records, published reports as well as through discussion with Forest officials, knowledgeable public were used for the study.

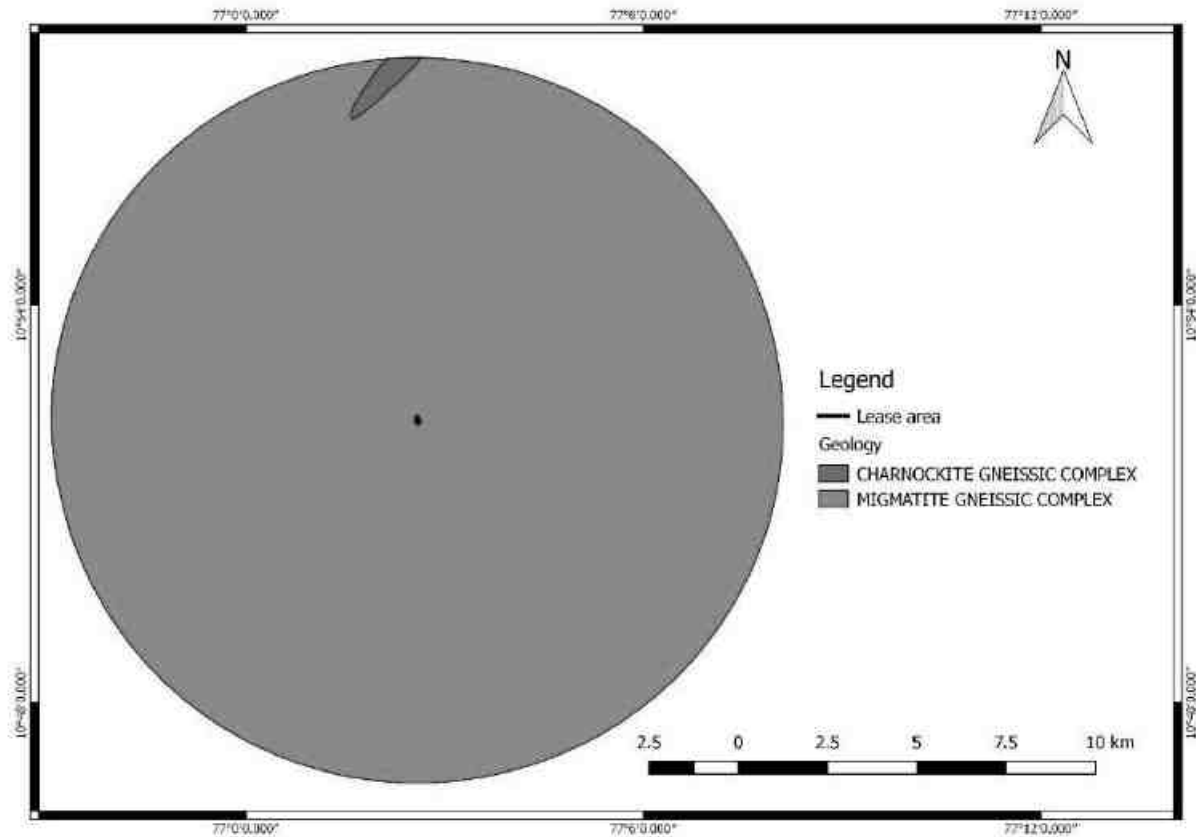
Observation: There is no Wild Life Sanctuary or National Park within the study area of 10 km. Domesticated animals are commonly found. No wild mammalian species was directly sighted during the field survey. The list of fauna within the study area is given in Table No – 3.25.

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Table 3.25: List of Fauna in the Buffer Zone

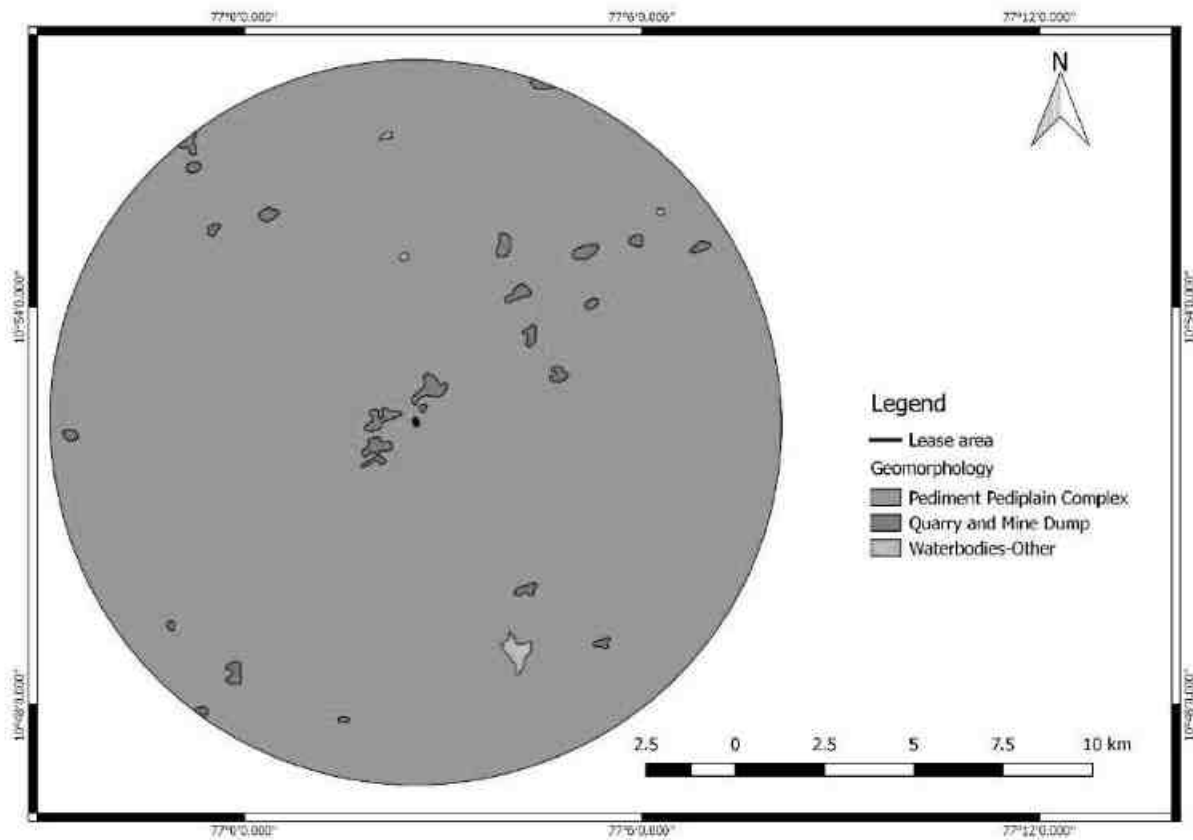
Sl. No	Common Name	Family Name	Scientific Name	Schedule list WPA 1972
Mammals				
1.	Indian palm squirrel	Sciuridae	<i>Funambulus palmarum</i>	Schedule IV
2.	Indian Field Mouse	Muridae	<i>Mus booduga</i>	Schedule IV
3.	Asian Small Mongoose	Herpestidae	<i>Herpestes javanicus</i>	Schedule (Part II)
4.	Indian hare	Leporidae	<i>Lepus nigricollis</i>	Schedule (Part II)
5.	Brown rat	Muridae	<i>Rattus norvegicus</i>	Schedule IV
Birds				
1.	Asian Koel	Cuculidae	<i>Eudynamys</i>	Schedule IV
2.	Cattle egret	Ardeidae	<i>Bubulcus ibis</i>	Schedule IV
3.	Rock pigeon	Columba livi	<i>Columbidae</i>	Schedule IV
4.	Common myna	Sturnidae	<i>Acridotheres tristis</i>	Schedule IV
5.	House crow	Corvidae	<i>Corvus splendens</i>	Schedule V
6.	Sunbird	Nectariniidae	<i>Nectariniidae</i>	Schedule IV
7.	Red Vented Bulbul	Pycnonotidae	<i>Pycnonotus cafer</i>	Schedule IV
8.	Small Bee Eater	Meropidae	<i>Merops orientalis</i>	Schedule IV
9.	Small blue Kingfisher	Alcedinidae	<i>Alcedo atthis</i>	Schedule IV
10.	Rose-ringed parakeet	Psittaculidae	<i>Psittacula krameri</i>	Schedule IV
11.	Asian Palm Swift	Apodidae	<i>Cypsiurus balasiensis</i>	Schedule IV
12.	Common quail	Phasianidae	<i>Coturnix coturnix</i>	Schedule IV
13.	Black drongo	Dicruridae	<i>Dicrurus macrocercus</i>	Schedule IV
14.	Woodpecker bird	Picidae	<i>Picidae</i>	Schedule IV
15.	Two-tailed Sparrow	Dicruridae	<i>Dicrurus macrocercus</i>	Schedule IV
16.	Grey Francolin	Phasianidae	<i>Francolinus pondicerianus</i>	Schedule IV
17.	Wood Sandpiper	Scolopacidae	<i>Tringa glareola</i>	Schedule IV
18.	Blue-Tailed Bee Eater	Meropidae	<i>Merops philippinus</i>	Schedule IV
19.	Indian Roller	Coraciidae	<i>Coracias benghalensis</i>	Schedule IV
20.	Common Swallow	Hirundinidae	<i>Hirundo rustica</i>	Schedule IV
21.	Purple Rumped Sunbird	Nectariniidae	<i>Leptocoma zeylonica</i>	Schedule IV
22.	Common Tailor Bird	Cisticolidae	<i>Orthotomus sutorius</i>	Schedule IV
23.	Purple Sunbird	Chordata	<i>Cinnyris asiaticus</i>	Schedule IV
24.	Lesser Golden Backed Woodpecker	Picidae	<i>Dinopium benghalense</i>	Schedule IV
REPTILES				
1.	Oriental garden lizard	Agamidae	<i>Calotes versicolor</i>	NL
2.	House lizards	Gekkonidae	<i>Hemidactylus flaviviridis</i>	Schedule IV
3.	Indian cobra	Elapid snakes	<i>Naja naja</i>	Sch II (Part II)
4.	Green vine snake	Colubridae	<i>Ahaetulla nasuta</i>	Schedule IV
5.	Rat snake	Colubridae	<i>Ptyas mucosa</i>	Sch IV (Part II)
6.	Common krait	Elapid snakes	<i>Bungarus caeruleus</i>	Schedule IV
7.	Common skink	Scincidae	<i>Mabuya carinatus</i>	NL

Figure 3.16: Geology Map



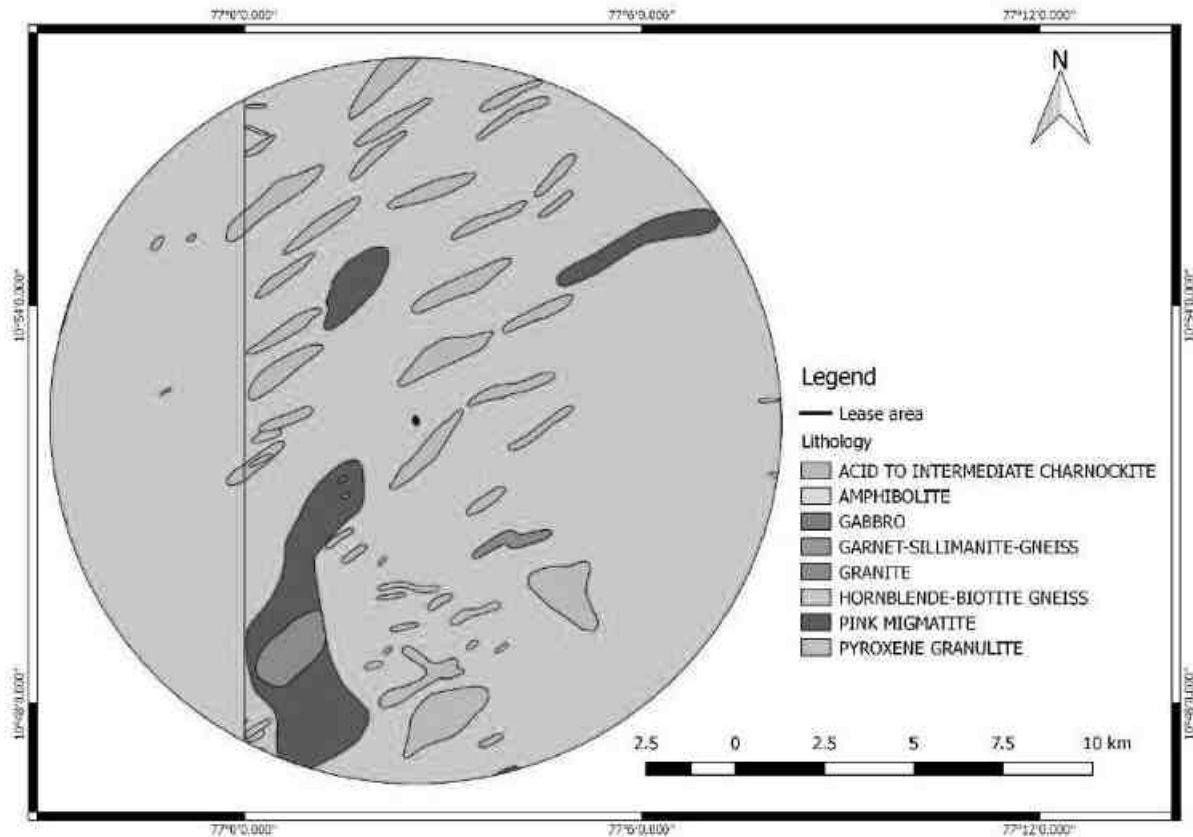
Geomorphology: The geomorphology map of the study derived from the satellite imagery using remote sensing and GIS technique. Predominantly the buffer zone is dominated by Pediment Plain complex, and it is the same category that the lease area also falls under.

Figure 3.17: Geomorphology Map



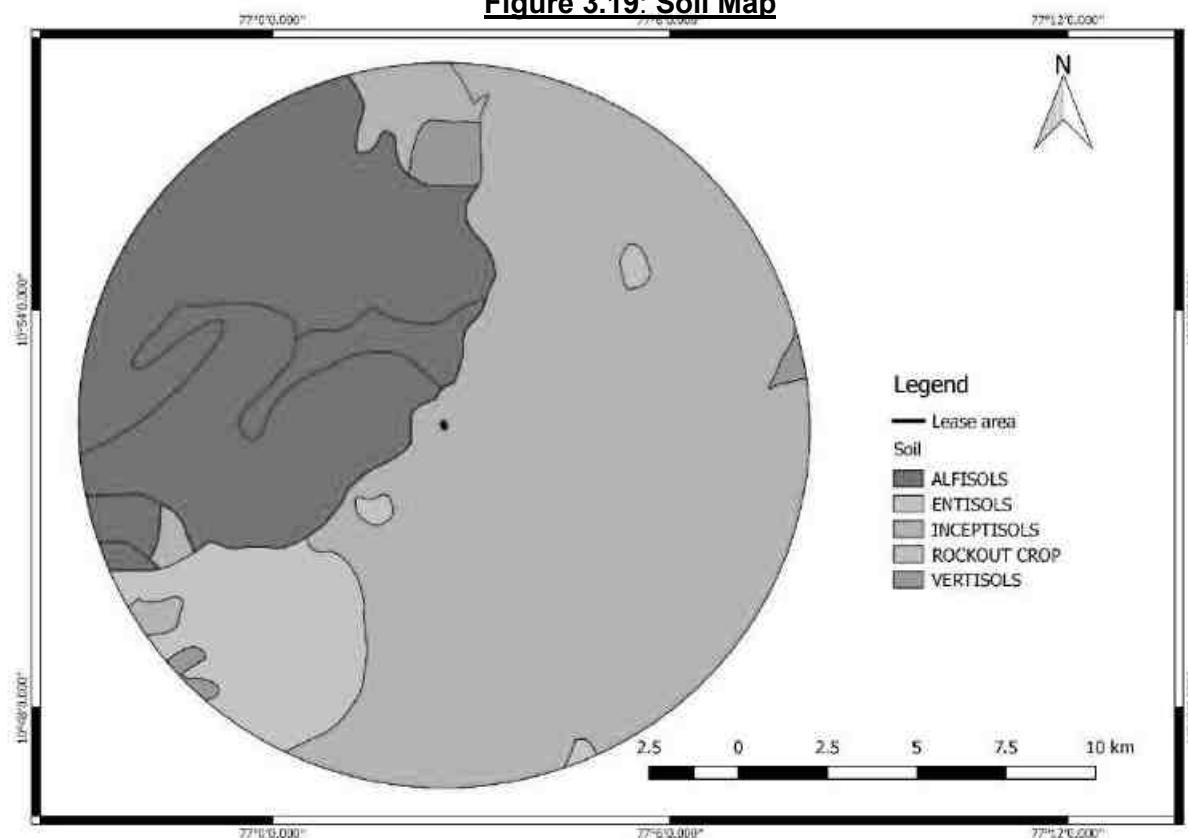
Lithology: The lithological map of the buffer zone has been provided in Figure No.3.18. From this, it is seen that the study area is mainly dominated by Hornblende Biotite Gneiss. The lease area falls under by Hornblende Biotite Gneiss with regards to lithology.

Figure 3.18: Lithology Map



Soil: The study area is characterized by Inceptisol followed by Alfisols, Entisols and Vertisols,.The lease are falls under the category of Inceptisol. The soil map is provided in Figure No.3.19.

Figure 3.19: Soil Map



Field investigation:

The district is underlain by hard rock formation fissured and fractured crystalline rocks constitute the important aquifer systems in the district. Study area is dominated with hard Charnockite rock formation.

There are no streams, canals or water bodies within the lease area. The drainage pattern of the area is dendritic – sub dendritic. Drainage pattern is the pattern formed by the streams, rivers, and lakes in a particular drainage basin.

In the study area, the shallow aquifer is developed through dug wells and deeper aquifer through tube wells. Based on the well inventory of the nearby wells & borewells, it is observed that the average water level in the open well is varies from 12m to 15 m BGL whereas the water level in the bore well varies generally from 50m to 55m BGL.

Study of the area shows that the sub-surface formations reveal low to medium recharge potentials. Subsequently hard and massive formations of rock are found. Based on the available information and the geophysical investigations it is observed that the study area is

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of poor to moderate groundwater potential up to 50m to 55m. Besides, the mining area consists of hard compact rock, no major water seepage within the mine is expected. There is no water seepage noticed in to the already quarried deeper pits situated nearby the proposed quarry area. Hence, the quarrying rough stone up to the proposed depth may not have any adverse impact in the area over ground water conditions.

Direct rainfall falling into the mine pit during monsoon season and intermittent seepage from phreatic top layer if any will be collected in the bottom of the mine pit and gainfully used for Greenbelt development, Dust suppression etc.

* * * * *



CHAPTER - IV

ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

CHAPTER 4

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.1 GENERAL

In this project, mechanized open cast mining will be undertaken for the extraction of Rough Stone and Gravel. The potential impacts arising from mining and its associated activities have been assessed with respect to various environmental components such as air, water, noise, vibration, land, and transportation. The detailed findings are presented in this chapter.

4.2 AIR ENVIRONMENT:

4.2.1 IMPACTS DUE TO PROJECT OPERATION:

The existing ambient air quality in the area has been described in Chapter-III. The proposed mining and allied operations may cause deterioration of air quality due to pollution arising from the project operation if prompt care is not taken. The principal sources of air pollution in general due to mining and allied activities will be:

- ❖ Excavation of material.
- ❖ Movement of HEMM such as Excavators, tippers etc.
- ❖ Loading and unloading operation
- ❖ Transportation

Besides, Gas emission will occur as a result of operation of diesel driven mining equipment, compressors, transporting vehicles, etc.

Particulate matter smaller than 10 microns, referred to as PM₁₀, can settle in the bronchi and lungs and cause health problems like Bronchitis, Emphysema, Bronchial Asthma, Irritation of mucus membranes of eyes, etc. Particles smaller than 2.5 micrometers (PM_{2.5}), tend to penetrate into the lungs and very small particles (<100 nanometers) may pass through the lungs to affect other organs.

Besides the above mentioned fugitive dust emissions, atmospheric pollution can occur as a result of emission of SO₂, NO_x, CO etc., from diesel driven mining equipment, generator sets, etc. Larger suspended particles are generally filtered in the nose and throat and do not cause problems.



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Higher concentration of SO₂, NO_x, CO may cause some health effect on the human beings exposed to it.

In case of this mine, since the production from this lease is less, the number of equipment to be used, magnitude of operation & consequent impact on the environment will be less. Besides, the following measures will be adopted to control impact on the air quality due to mining operations in the lease area:

Table 4.1: Impact and Mitigation Measures – Air Environment

S.No	Activity	Consequence	Mitigation Measures
1	Drilling	Dust Emanation	Usage of Drill bits in good condition
			Covering of drill holes with wet cloth
			Usage of sharp drill bits for drilling of holes.
			Provision of dust filters / mask to workers working at highly dust prone and affected areas.
2	Blasting	Instantaneous dust emanation	Well-designed blasting parameter, effective stemming to achieve optimum breakage occurs without generating fines.
			Use of appropriate explosives for blasting and avoiding overcharging of blast holes.
			Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality.
			Use of controlled blasting techniques with Nonel to keep the dust generation, noise as well as vibration level within the prescribed limits.
3	Excavation and Loading	Dust emanation, Gaseous Emission	HEMM will be operated as per the manufacturer's guidelines
			Enclosures for operator cabin.
			Imparting sufficient training to operators on safety and environmental parameters.
			Proper maintenance of hauling equipments.
4	Transportation	Dust emanation, Gaseous Emission	Avoiding overloading of dumpers.
			Regular wetting of transport road using mobile water tanker.
			Proper maintenance of haul road and other roads
			Setting up of tyre wash facility in the transport road.
			Avoiding overloading of tippers
			Covering of loaded tippers with tarpaulins during transportation



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			Vehicular emissions will be controlled through regular and proper preventive maintenance schedules and emissions tests are done with diesel smoke meter equipment to ensure emission values.
5	Others	Dust emanation, Gaseous Emission	Development of greenbelt / barriers around mine in the safety zone and carrying out plantation within the lease area.

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

Considering that the quantum of production is less, only 1 excavator, 4 tippers will be engaged. These equipment's will be properly and regularly maintained. Besides, as mentioned earlier, regular vehicular emission tests will be done for the transport vehicles to ensure minimal impact due to carbon emissions. To further mediate the carbon emissions, a good greenbelt and plantation plan has been planned wherein 750 number of plants will be planted in and around the lease area.

The impact on air quality due to the proposed project is estimated using AERMOD View Gaussian Plume Air Dispersion Model developed by Lakes Environmental Software which is based on steady state Gaussian plume dispersion. Details of the modeling study / estimation including the modeling technique and post project air quality values are elaborated in the following paras.

4.2.2 AIR QUALITY IMPACT PREDICTION:

The model simulations are done for the air pollutant arising from the mining operations, namely, PM₁₀, PM_{2.5}. **Ground Level Concentration (GLC)** have been computed using hourly meteorological data.

Table 4.2: Emission Sources

ACTIVITY	SOURCE TYPE
A. Mining operations	Open pit
B. Transportation	Line

4.2.2.1 Emission Factors

Quantification of particulate emissions has been carried out by the emission factor technique. Emission factor is a statistical average of the rate at which a pollutant is released during an activity. This factor when multiplied by the level of that activity in a given situation will give the



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overall effect. Fugitive emissions have been predicted by using standard equations given and suggested by AP-42, USEPA(1998), Coal S&T Project and for mining & allied activities and other factors. The modeling is done for the peak production to know the worst case scenario. The details of the emission factors used for the same is provided below:

Table 4.3: Emission Factors

S.No	Activity	PM10	PM2.5	Unit
1	Ore Loading	1.5×10^{-3}	2.1×10^{-4}	Kg/T
2	OB Loading	1.4×10^{-4}	1.5×10^{-5}	Kg/T
3	Hauling inside lease area	0.19	0.019	g/VKT
4	Drilling	0.1	0.04	Kg/hole

4.2.2.2 Emission Rates:

Based on the emission factors, after adopting necessary control measures like dust suppression, Proper maintenance of HEMM, using better quality diesel, using latest equipment, proper maintenance of roads, etc. the expected emission rate due to various operations in this project is calculated and is given below:

Table 4.4: Emission Rate

ACTIVITIES/POLLUTANTS	PM ₁₀ (g/sec)	PM _{2.5} (g/sec)
Ore Loading	0.01	0.00
Drilling	0.04	0.02
Hauling inside lease area	0.04	0.01
Total	0.09	0.02

- A. Emission Source Coordinates:** The center of mine was assumed (0, 0) in the mathematical modeling.
- B. Meteorological Conditions Used In Predictions:** The hourly meteorological data has been generated for the monitoring period and the same has been used in the predictions.

4.2.2.3 Results and Discussions

Table 4.5: Peak Incremental Concentration

S.No	Parameters	Peak incremental concentration $\mu\text{g}/\text{m}^3$
1	PM ₁₀	0.53
2	PM _{2.5}	0.22



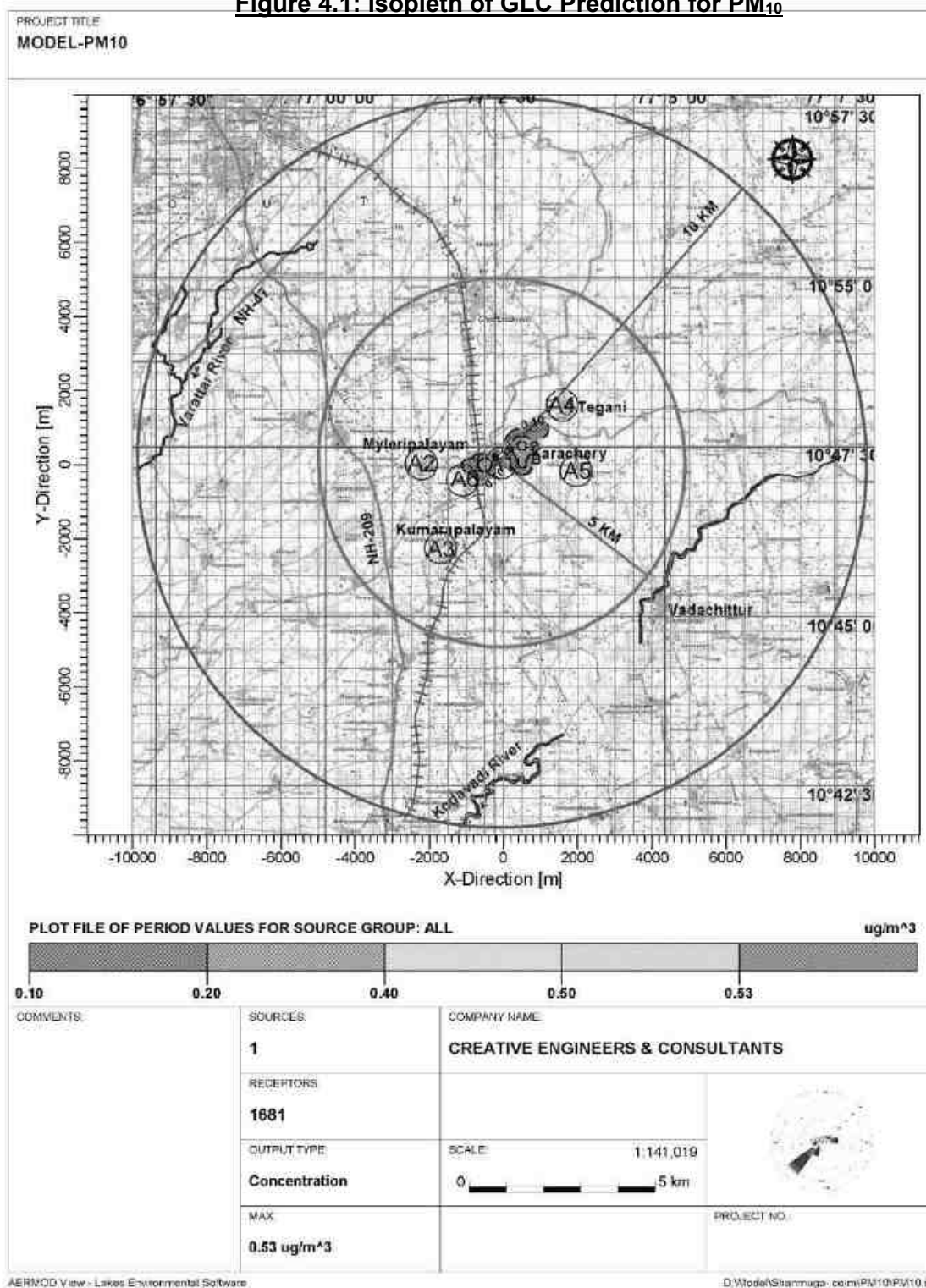
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It is observed that the peak incremental concentration for PM_{10} , $PM_{2.5}$ occurring very near the source. At away from the source the values are getting reduced due to dispersion effects. The Isopleths of PM_{10} , $PM_{2.5}$ concentrations with control measures scenario have also been drawn and these are given in **Figure No.4.1 and 4.2**. The incremental and predicted concentrations at the locations of ambient air quality have been discussed in the following section.



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Figure 4.1: Isopleth of GLC Prediction for PM₁₀



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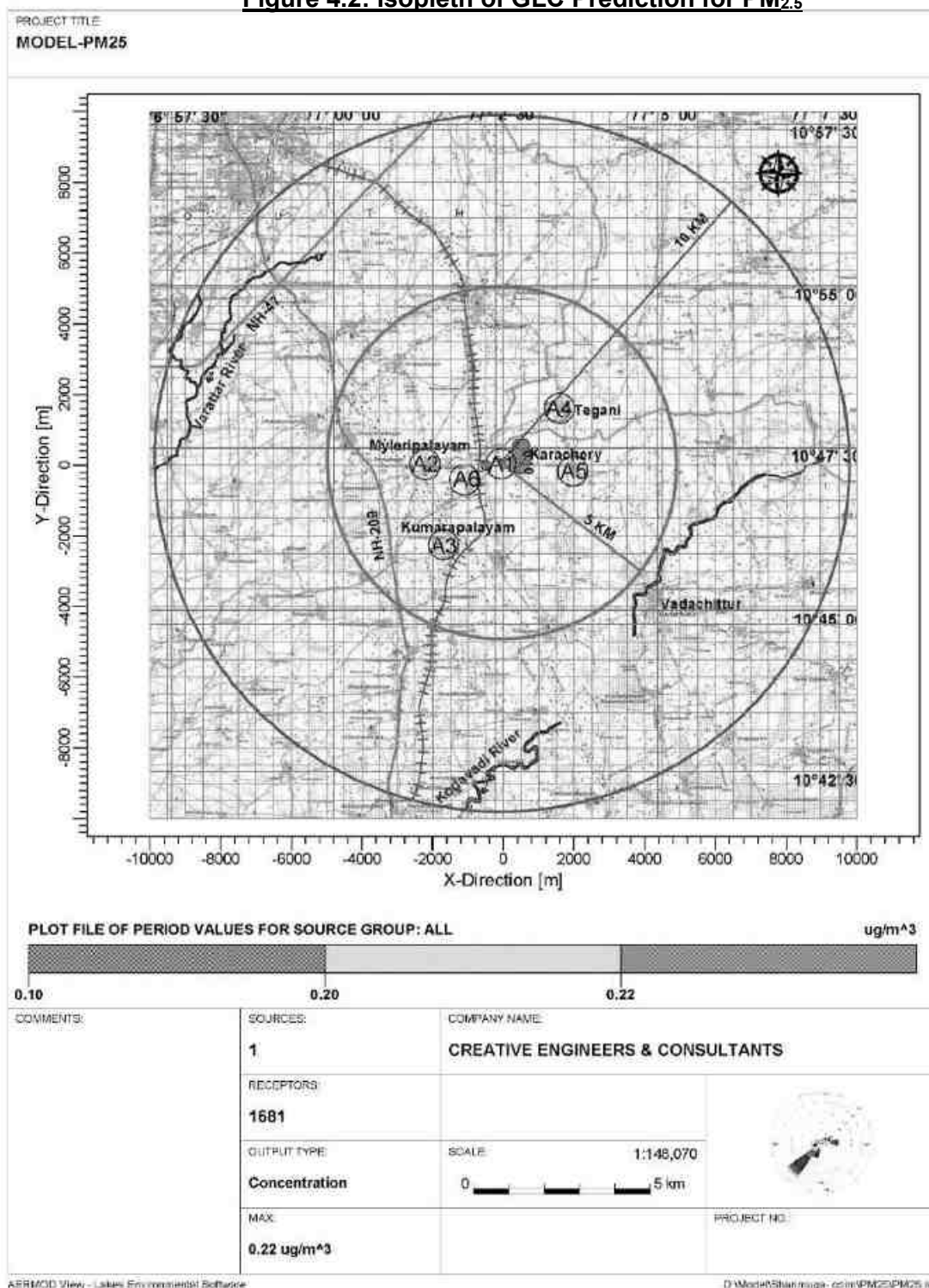
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Figure 4.2: Isopleth of GLC Prediction for PM_{2.5}



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Predicted Ambient Air Quality:

The post project Concentrations of PM₁₀, PM_{2.5}, (GLC) (base line + incremental) after adopting necessary control measures is given in Table No - 4.6 to 4.7.

Table 4.6: Concentrations Of PM₁₀ after Project Implementation

Values in $\mu\text{g}/\text{m}^3$

S. No	Location	Background Concentration	Predicted Incremental Concentration	Post Project Concentration	Statutory Limits
1	A1-Project Site	55.0	<1.0	56.0	-
2	A2- Myleripalayam Village	62.0	<1.0	63.0	100
3	A3-Kumaarapalayam Village	58.0	<1.0	59.0	
4	A4-Tegani Village	57.0	<1.0	58.0	
5	A5-Karachery Village	57.0	<1.0	58.0	
	A6-Near Ramraj Quarry	63.0	<1.0	64.0	

Table 4.7: Concentrations Of PM_{2.5} after Project Implementation

Values in $\mu\text{g}/\text{m}^3$

S. No	Location	Background Concentration	Predicted Incremental Concentration	Post Project Concentration	Statutory Limits
1	A1-Project Site	24.0	<1.0	25.0	-
2	A2- Myleripalayam Village	24.0	<1.0	25.0	60
3	A3-Kumaarapalayam Village	23.0	<1.0	24.0	
4	A4-Tegani Village	27.0	<1.0	28.0	
5	A5-Karachery Village	24.0	<1.0	25.0	
6	A6-Near Ramraj Quarry	25.0	<1.0	26.0	

The ambient air quality assessment carried out for PM₁₀ and PM_{2.5} indicates that the background concentrations in the study area are within the prescribed National Ambient Air Quality Standards (NAAQS). The predicted incremental concentrations due to the proposed mining operations are negligible. Consequently, the post-project concentrations are estimated to remain in the range of 58.0–64.0 $\mu\text{g}/\text{m}^3$ for PM₁₀ and 24.0–28.0 $\mu\text{g}/\text{m}^3$ for PM_{2.5}, which are well below the statutory limits of 100 $\mu\text{g}/\text{m}^3$ and 60 $\mu\text{g}/\text{m}^3$ respectively. This clearly demonstrates that the proposed mechanized quarrying activities will not cause any significant deterioration in the ambient air quality of the surrounding villages and the impact on the environment is expected to be minimal provided the suggested mitigative measures are followed.

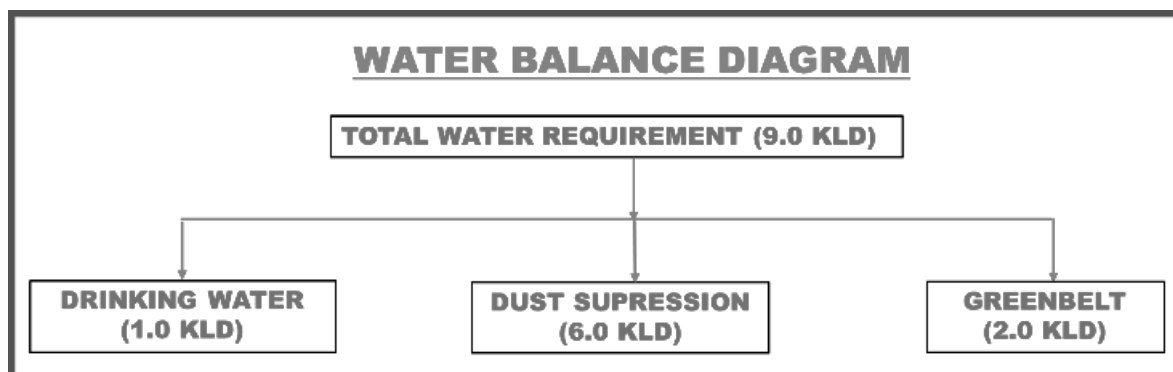


4.3 WATER ENVIRONMENT:

4.3.1 WATER REQUIREMENT:

The total water requirement for this project will be 9.0 KLD comprising 1.0 KLD for drinking water and domestic use, 6.0 KLD for dust suppression and 2.0 KLD for greenbelt. The water will be sourced initially from outside agencies. Later the rainwater collected in the mine pit sump will be used for this purpose. The water balance diagram for the same is shown in **Figure No 4.3**.

Figure 4.3: Water Balance Diagram



4.3.2 SOURCES OF WATER POLLUTION:

The existing water environment showing water quality at different sampling stations in the area has been described in Chapter-III.

Direct impact on human beings due to poor water quality consequent to mining operation can lead to various water borne diseases like diarrhea, jaundice, dysentery, typhoid, etc. Besides, the polluted water may not be useful for animal or human consumption, vegetation and may affect aquatic life, if effluents are not properly treated to remove the harmful pollutants.

The major sources of water pollution normally associated due to mining and allied operations are:

- a. Domestic effluent.
- b. Washouts from stockpile if any.
- c. Disturbance to drainage course in the project area
- d. Generation of mine pit water pumped out from deeper workings if any.

4.3.3 TREATMENT SCHEME:

A. Generation of domestic effluent:

The domestic sewage to be generated from the project will be collected in septic tank with soak pits.

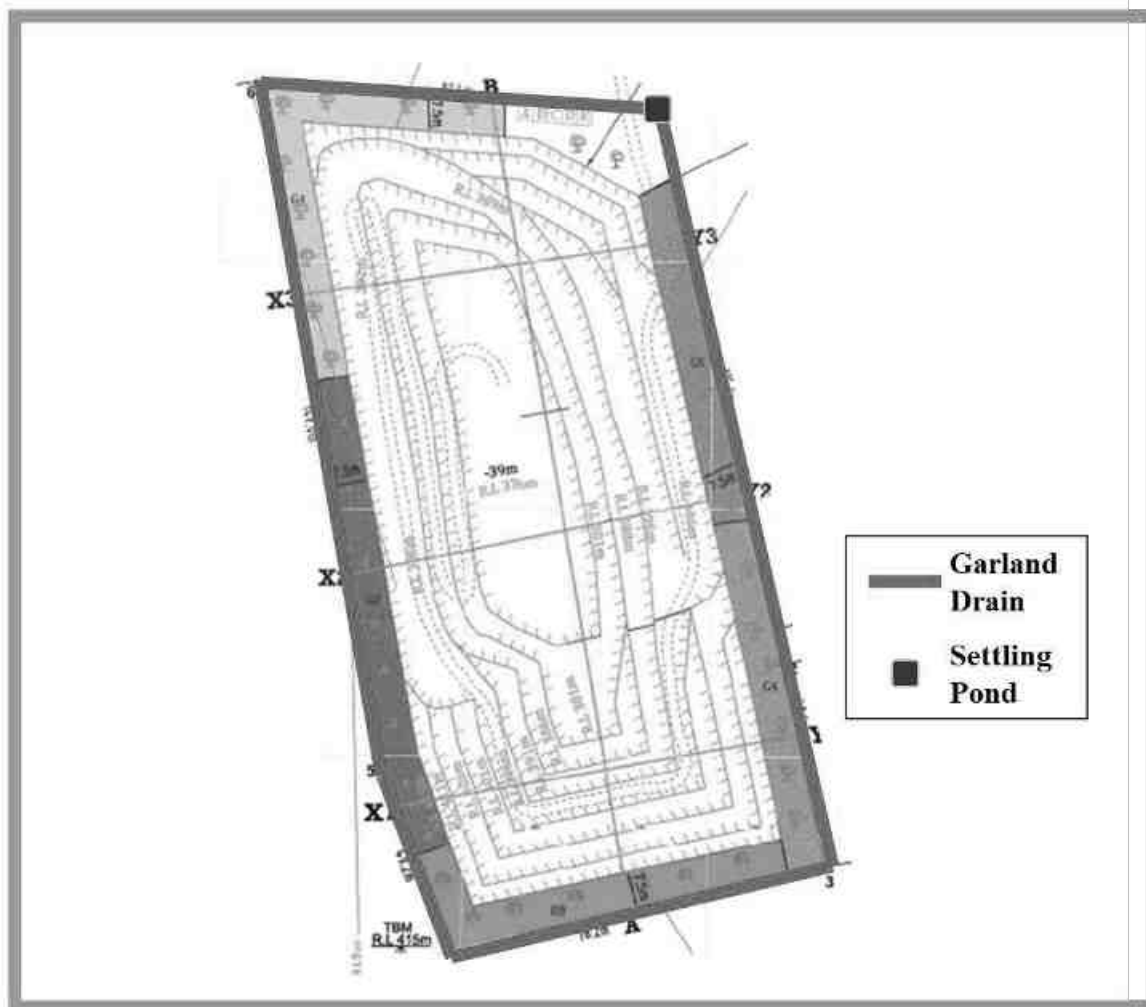
B. Washouts from overburden, ore stockpile, etc.

Since the entire material from the quarry face will be directly dispatched to the consumers, there will not be any stockpiles. There are no waste dumps in this quarry. As such there will not be any wash out due to stock pile or waste dumps.

The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet. etc. "To manage surface runoff, a garland drain of approximately 500 m length will be constructed encircling the quarry and directed towards a settling pond proposed at the north east corner, provided with silt traps to arrest suspended solids. The clarified supernatant from the settling pond will be systematically discharged for utilization by downstream users, thereby ensuring effective stormwater management and prevention of siltation in the surrounding areas. This design approach is in line with statutory guidelines and best environmental management practices, as it facilitates controlled drainage, minimizes soil erosion, prevents contamination of nearby water bodies, and promotes safe reuse of stormwater. The surface runoff management structures diagram is given in **Figure No 4.4.**



Figure 4.4: Surface Runoff Management Structures



C. Disturbance to drainage courses

There are no streams, canals or water bodies in and around the lease area.. There is no proposal to discharge any effluent into these water bodies. No major impact is envisaged on the nearby water bodies due to project operations.

D. Generation of mine pit water pumped out from deeper workings if any.

The occurrence and movement of groundwater in hard rock formations are restricted to the porous zones of weathered formations and the open systems of fractures, fissures and joints. Generally, in hard rock regions, occurrence of weathered thickness is discontinuous both in space and depth.

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Hence recharge of groundwater in hard rock formations is influenced by the intensity and depth of weathering.

Study of the area shows that the sub-surface formations are compact with less intergranular porosity and fractures leading to less permeability and transmissivity values and as such the ground water level in this area is deep from surface. Subsequently hard and massive formations of rock are found. Based on the available information and the geophysical investigations it is observed that the study area is of poor to moderate groundwater potential up to 60m to 65m. Besides, the mining area consists of hard compact rock, no major water seepage within the mine is expected. The ultimate pit depth of mining is 34m. The ground water table in this area is below this level. Hence, ground water intersection is not envisaged and ground water will not be affected appreciably due to the quarrying operation. There is no water seepage noticed in the already quarried deeper pits situated nearby the proposed quarry area. Hence, the quarrying rough stone up to the proposed depth may not have any adverse impact in the area over ground water conditions.

As mentioned earlier, the rainfall will be collected in the mine floor sump and advantageously used. Excess water if any in the sump will be pumped to settling pond for downstream users.

4.3.4 REDUCING WATER CONSUMPTION OVER THE YEARS:

4.3.4.1 GENERAL METHODS:

Use of water will be monitored and used to the minimum required. Awareness will be spread to the employees about the importance of water conservation. Tap and showers will be turned off immediately after use and any leaks will be monitored and immediately controlled. Water requirement for greenbelt and dust suppression can be reduced by choosing the native plants/trees species with low water requirement and which can sustain in such conditions for greenbelt/ plantation and also optimum usage to the required minimum. While the dust suppression itself is an important method of pollution control for air pollution due to dust, the water consumption will be monitored strictly. The water tanker will be examined for any sources of leaks and if found will be immediately sealed so that water can be utilized for dust suppression effectively without loss.



4.3.4.2 RAINWATER HARVESTING PLAN

Since the lease proximate areas are with less water potential and the rainwater is the major source for replenishment of ground water, effective rainwater harvesting and other water augmentation measures are proposed in this project.

- a) Development of garland drain around the quarry connected to settling tank.
- b) Cleaning of drain periodically to prevent siltation
- c) The supernatant clear water from the settling pond will drain into the nearby drainage.
- d) Utilizing the rainwater harvested in the mine pit to meet the water requirement of the project.
- e) Excess water, if any in consultation with local villagers and in line with government practices shall be provided to the downstream users.

4.4 NOISE AND VIBRATION:

4.4.1 NOISE ENVIRONMENT:

The ambient noise levels in the study area have been discussed in Chapter - III. The data shows that the existing noise levels are within statutory tolerable limits. The impact prediction and control measure for noise environment due to mining and allied activities is described below:

4.4.1.1 IMPACT PREDICTION DUE TO NOISE:

Noise is one of the inevitable causes of pollution in mining operations, largely due to the extensive mechanization adopted. Besides, other operations such as drilling, blasting, movement of vehicles, etc., also produce noise of considerable magnitude in mining operations. The main sources of noise and expected levels are given below in **Table no – 4.8.**

Table 4.8: Main Sources of Noise

Sl. No.	Source	Inside Cabin	Noise level at dB(A) 10 m. from source
1	Shovel	84-91	59-68
2.	Dumpers/Tippers	87-96	75-85
3.	Drill	88- 95	75-83

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Prolonged exposure to a high noise level is harmful to the human auditory system and can create mental fatigue, rebellious attitude, annoyance and carelessness, which may lead to neglect of work and also result in accidents. The impact of noise level as per World Health Organization's 1986 notification is given below in **Table No - 4.9**.

Table 4.9: Impact of Noise Levels

NOISE LEVELS	ADVERSE EFFECTS
90-115 dB	Partial deafness and nervous irritability
> 115 dB	Permanent deafness
Impulsive noise (>90dB)	Frightens livestock grazing in the nearby areas

OSHA (Occupational Safety and Health Administration), USA and other similar organisations stipulate that noise level up to 90 dB(A) is acceptable for eight hours exposure Leq (Equivalent sound level) (8hrs) per day. The Directorate General of Mines Safety, in circular No. DG (Tech)/18 of 1975, has prescribed the noise level in mining occupations (TLV) for workers, in an 8 hour shift period with unprotected ear as 90 dB(A) or less.

The noise will be felt only near the active sources. There will be considerable reduction in the noise level due to the absorption factor, environmental surroundings and other attenuation factors. As far as absorption factor is concerned, If the ground cover is vegetated or has a soft texture, sound will decrease at the rate of 4.5 dB(A) every time the distance between the source and the observer is doubled. Besides, there will be shielding factor, which takes into account the environmental surroundings. With every 30m of dense land scape vegetation, 5 dB(A) of additional attenuation can be obtained up to a maximum of 10 dB(A). As such at away places the effect of noise will not be felt.

Anticipated noise levels resulting from operation of the various machineries like excavator, tippers, drill have been computed using point source model. Computation of cumulative noise levels at the nearby villages is made based on the assumption that there are no attenuation paths between the source and the boundary.

Noise modeling is carried out using the following formula:



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$Lp2 = Lp1 - 20 \log R2/R1$, Where, $Lp1$ and $Lp2$ are sound pressure levels at points located at distances $R1$ and $R2$ respectively from the source. The study results are as follows:

Table 4.10: Post Project Noise Levels

Sl.No	Location	Baseline Day Eq.in dB(A)	Post project noise Eq in dB(A)	Limit dB(A) as per MoEF&CC
1.	A1-Project Site	52.4	52.8	90
2.	A2- Myleripalayam Village	54.6	54.7	55
3	A3-Kumaarapalayam Village	49.6	49.8	55
4	A4-Tegani Village	50.7	50.9	55
5	A5-Karachery Village	50.0	50.2	55
6	A6-Near Ramraj Quarry	53.8	54.0	90

From the studies, it is found that the predicted Noise Levels due to mining operations at the periphery of the mine lease itself will be less even without considering any attenuation factor. However, practically there will be attenuation due to vegetation etc., and as such there will not be any adverse noise propagation outside the lease boundary. Since the habitations are also away the effect of noise due to mining operations will not be felt at all in the surrounding villages.

4.4.1.2 CONTROL MEASURES FOR NOISE ENVIRONMENT:

Hence, by following mitigative measures for noise control, the impact on noise levels will be insignificant:

- Planting rows of native trees along roads, around mine area and other noise generating centers to act as acoustic barriers.
- Sound proof operator's cabin for equipments like shovel, tippers, etc.
- Proper and regular maintenance of equipments may lead to less noise generation.
- Providing in-built mechanism for reducing sound emissions.
- Providing earplugs to workers exposed to higher noise level.
- Conducting regular health check-up of workers including Audiometry test for the workers engaged in noise prone area.



- Displaying the noise level status of operational machinery on the machines to know the extent of noise level and to control the time to which the worker is exposed to higher noise levels.
- Provision of tin net on the southern side and green net along the lease periphery on the other sides.

Further green belt and afforestation will be planned and executed to abate noise and dust propagation in the area.

4.4.2 GROUND VIBRATIONAL DUE TO BLASTING EFFECTS:

Vibrations due to blasting may cause damage to nearby structures, if appropriate control measures are not adopted. Flyrock is another possible damage causing outcome of blasting. There are many factors, which influence these, like long explosive column with little stemming column, improper burden, loose material or pebbles near holes and long water columns in the holes.

Since the production from this lease is very low, the no of holes and the quantum of explosives to be used for blasting will be negligible .

The following control measures will be planned to reduce ground vibratory conditions to sustainable statutory limits:

- 1) Carrying out controlled blasting using Nonel delay detonator.
- 2) Optimum design for burden and spacing.
- 3) Reducing explosive charge per delay to minimum.
- 4) The peak particle velocity (PPV) of ground vibration will be kept very low through optimally controlled blasting techniques, after necessary field trials.
- 5) To contain fly rocks, stemming column to be less than burden of the hole. Blasting area will also be muffled, if necessary, to stop fly rocks propagation.
- 6) Blasting will not be carried out when strong winds are. Blasting will be done during midday time.



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- 7) Controlled blasting to avoid tension cracks which may endanger the stability of bench slopes in the mine.
- 8) Proper care and supervision during blasting by a competent and experienced person to be carried out.
- 9) Having different blasting time for the leases in the cluster.

By adoption of above measures, it will be ensured that the ground level vibration due to blasting are maintained within the limits prescribed by DGMS, Dhanbad at the mining areas vide Circular No. 7 dated 29 -08-1997 as given below

Table 4.11: Permissible Peak Particle Velocity (PPV) In Mining Areas

In mm/sec

Type of structure	Dominant excitation frequency Hz		
	<8 Hz	8-25 Hz	>25 Hz
A. Buildings/structures not belonging to owner			
Domestic houses /structures (Kuchha brick and cement)	5	10	15
Industrial buildings (RCC and framed structures)	10	20	25
Objects of historical importance and sensitive structures.	2	5	10
B. Building belonging to owner with limited span of life			
Domestic houses/structures (Kuchha brick and cement)	10	15	25
Industrial buildings (RCC and framed structures)	15	25	50

Besides, different blasting time for the projects in the vicinity is suggested and the timing is to be mentioned in the display board in the respective mines entrance.

4.5 LAND ENVIRONMENT:

The lease area of 1.41Ha in S.F.Nos.144/2A2(P) and 144/3A(P) is a patta land, partly owned by the applicant and for the remaining, applicant got consent from the other pattadhar. The proponent has operated this lease in the previous lease periods also. As such major part of the lease area is already mined and exposed with rock. The present land use pattern, and the post mining land use pattern is shown below:



Table 4.12: Land Use Table

S.No	Land Use	Present Land Use (Ha)	At the end of lease period(Ha)
1	Quarrying Pit	0.66.58	0.98.26
2	Infrastructure	--	0.01.00
3	Roads	0.00.60	0.01.10
4	Green Belt	0.40.64	0.40.64
5	Unutilized	0.3318	--
	Total	1.41.00	1.41.00

4.5.1 LAND RECLAMATION:

There is no waste generation anticipated in this quarry operation since the entire excavated material will be utilized. Hence, there is no external overburden dump involved. At the end of the period, In the post mining stage, the mine pit area of 0.98.26 Ha will be left as a water body. Plantation will be carried out over 0.40.64 Ha and 0.021Ha will be left as road and infrastructure. Overall about 750 trees will be planted in and around the lease area during the plan period.

Table 4.13: Land Use During Post Operational Period

S.No	Description	Land use (Ha.)			
		Plantation	Water body	Others	Total
1	Quarrying Pit	-	0.98.26	-	0.98.26
2	Infrastructure	0.01.00	-	-	0.01.00
3	Road		-	0.01.10	0.01.10
4	Green Belt	0.40.64	-	-	0.40.64
	TOTAL	0.41.64	0.98.26	0.01.10	1.41.00

Entire mined out area will be properly fenced to prevent inadvertent entry of men and animals. In the post mining stage the entire mined out area shall be used as a rainwater harvesting pond.

4.6 BIOLOGICAL ENVIRONMENT:

4.6.1 EXISTING FLORA AND FAUNA:

Major part of the lease area is already mined and exposed with rock. The remaining area is also free from vegetation other than plantation carried out by the lessee. Details of flora/fauna pattern in core and buffer zones have been described in chapter - III.

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4.6.2 IMPACT OF MINING ON BIOLOGICAL ENVIRONMENT:

The significance of impact on biological environment due to mining and allied activities on various fronts is described below:

Table 4.14: Impact on Biological Environment

S. No	IMPACTS	OBSERVATIONS
1	Clearance of vegetation due to mining and allied activities	Part of the lease area is already mined out during the previous lease periods and plantation carried out by the lessee is only present. However, in the present lease, PP has added a barren virgin additional land on the southern side which has resulted in the presence of few of matured neem tree within the present lease planted in the southern boundary of the earlier lease period. These trees will be transplanted outside the present workings safety. Financial provision of Rs 1.0 lakh for this transplantation is provided in the EMP budget.
2	Retardation of tree growth, tip burning, etc, due to deposition of dust and the Particulate matter generated from the mining operation.	Necessary mitigative measures like dust suppression, proper maintenance of equipment's, roads will be carried out to prevent dust generation.
3	Proximity to national park/ wildlife sanctuary/reserve forest/ mangroves/ Coastline /estuary/sea	The mining lease area and the 10 km buffer zone from the periphery of the core zone is devoid of declared ecologically sensitive features like national parks, biospheres, sanctuaries, etc.
4	Release of effluents into water body that also supplies water to wildlife	There is no proposal to discharge any effluent into nearby water bodies.
5	Proposed project could increase siltation that would affect nearby biodiversity area	Surface runoff management structures like garland drain, settling pond etc. as explained above will be constructed and as such there will not be any appreciable impact on surface



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		water quality which in turn can affect the bio diversity of the area.
6	Activities of the project affects the breeding/nesting sites of birds and animals	In the present ML area, there is no wetland. A migratory bird needs sufficient wetlands with sufficient food, shelter, roosting places and nesting places which is not possible here.
7	Located near an area populated by rare or endangered species	There are no rare or endangered species in the nearby area
8	Risk of fall/slip or cause death to wild animals due to project activities	In the post mining stage, barbed wire fencing is proposed all around the mined-out void to prevent falling of animals in the mine pits.
9	Project affects the forest-based livelihood/any specific forest product on which local livelihood depends	Not applicable
10	Project likely to affect migration routes	No migration routes are in the area.
11	Project likely to affect flora of an area, which have medicinal value	No such significantly important medicinal value species within the ML area and its nearby region.
12	The project likely to affect wetlands, fish breeding grounds, marine ecology	There are no any wetlands, fish breeding grounds, marine ecology nearby the ML area which will be affected due to this project.
13	Project affects the Agriculture, Forestry and Traditional Practices	Due to rocky land formation, undependable rainfall, poor soil condition, absence of irrigational source or water bodies, deep ground water occurrence, little seasonal agricultural activities are carried out in the area. Only patches of coconut cultivation is observed
14	Impact on soil health and biodiversity	The lease area is Plain topography land only (Photograph of the site attached in Chapter-II). Besides, there is no waste generation, disposal or stacking involved in this project. As such no loss of soil health and Bio-diversity is expected.
15	Climate change leading to droughts, floods, etc.	



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16	<p>Pollution leading to release of greenhouse gases (GHG) rise in temperature (Hydrothermal/ Geothermal effect due to destruction in environment, Bio-geochemical processes and its foot prints including environmental stress) and livelihood of local people.</p>	<ul style="list-style-type: none"> •As such the production from this lease is very low to cause any appreciable impact. •No adverse impact on the surrounding environment is envisaged since the number of equipment's to be used to achieve this small production is very less and the magnitude of operation is of very small level. •Besides, as is it a mining project, no adverse generation of heat is envisaged. •Certified vehicles with low carbon emissions will only be used. These equipment's will be properly and regularly maintained. Besides, regular vehicular emission tests will be done for the transport vehicles to ensure minimal impact due to carbon emissions. To further mediate the carbon emissions, a good greenbelt and plantation plan has been in and around the lease area. •Geologically the area in and around the lease area contains charnokite type rock formation containing mostly fallow land. As such there no major vegetation or agricultural activities are observed. •There are no Protected or Eco-Sensitive Zone or forest land nearby wherein it can have an impact. •It will be ensured that mining will be carried out adhering to all the statutory rules and regulations and maintaining the environmental quality within the prescribed standards by effective implementation of varioius mitigative measures. •These mitigative measures will be continued for the entire lease period ensuring no impact on the environment. •As such release of Greenhouse gases (GHG), rise in temperature, affecting livelihood of the local people ,loss of Agriculture, Forestry and Traditional Practices is not
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		envisaged. Such a limited scope will not induce any climatic change leading to droughts, floods etc.
17	Possibilities of water contamination and impact on aquatic ecosystem health and impact on Sediment geochemistry in the surface streams	<ul style="list-style-type: none"> • This being a mining project no process effluent will be generated. • Water generation is expected to be due to <ul style="list-style-type: none"> ✓ Direct rainfall falling within the pit ✓ Rain water draining near the lease area. • Direct rain fall will be collected in the mine floor sump. Water from sump will be pumped to settling pond for downstream users. • Rainwater from the mine periphery will be collected through peripheral garland drain. Garland drain will be connected to a settling pond. Supernatant clear water from settling pond confirming to applicable limits will be let out to downstream users for agricultural or other purposes. • Due to above mentioned reasons and absence of perennial water bodies nearby where in any marine ecosystem is observed, no effect on this front is expected.

There are no migratory corridors, migratory avian-fauna, rare endemic and endangered species. Therefore there shall be no impacts due to mining activity on them. Even though there are no adverse impact on bio diversity and flora/fauna status due to project operations, positive impacts will arise due to well-planned reclamation measures for restoration of land status in the area ultimately to productive land category with elaborately planned green belt development activities.

4.6.3 CONTROL MEASURES FOR BIOLOGICAL ASPECTS:

To reduce the adverse effects on flora/fauna status of the area due to deposition of dust generated from mining operations, mobile water tanker systems will be ensured in all dust prone areas to arrest dust generation. Methodical and well-planned plantation scheme will be carried out depending upon the immediate need, priority and availability of land. The plantation will be done along the lease boundary in a phased manner.



4.6.4 GREEN BELT & PLANTATION:

In the safety zone within the lease area and in the nearby areas including mineral transport road plantation of local tree species like Pungai, Vagai, Vembu etc. will be carried out about 750 trees will be planted in and around the lease area.

Table 4.15: Proposed Plantation

Year	No of Trees
1	150
2	150
3	150
4	150
5	150
Total	750

In the post mining stage, the mine pit area of 0.98.26 Ha will be left as a water body. Plantation will be carried out over 0.40.64 Ha and 0.021Ha will be left as road and infrastructure.

4.7 SOCIO ECONOMIC ENVIRONMENT:

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

The mining operations in the proposed mine will employ about 20 persons directly and about 50 persons on indirect basis through allied opportunities in logistics, trading, repairing works etc. good employment potential will arise in this area, which will provide raising income levels and standards of living in the area through various service related activities connected with the project operations as shown under.

- Project related logistical operations for transport of Rough Stone, etc,
- Various trading services for consumer goods, spare parts, sundry items, etc.
- Contractual services connected with the project.
- Green belt and horticultural works in the project.
- Casual labor needs for various activities.

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Besides, there will be improvement in the following aspects due to project operation:

- ❖ Improvement in infrastructural facilities, providing education aids etc. in nearby schools
- ❖ Betterment of drinking water facilities.
- ❖ Benefit to the State and the Central governments through financial revenues by way of royalty, tax, duties, etc from this project directly and also indirectly.

From above details, it is clear that the project operations will have highly beneficial positive impact in the area.

Table 4.16: CER Cost

Project Cost (Rs.)	Rs. 76,50,000 (Excluding operational cost).
2% of the Project Cost	Rs. 1,53,000/-
Cost allocated for Socio Economic Development (Rs.)	Rs. 2,50,000/-

However, towards the socio-economic development of the surrounding area, the proponent has earmarked an amount of Rs.2.5 Lakhs under Corporate Environmental Responsibility. The activities identified under CER will be implemented in a phased manner in provision of facilities in nearby Government School.

4.8 OCCUPATIONAL HEALTH AND SAFETY:

4.8.1 BASELINE STATUS:

Primary data collection through field survey conducted in the study area reveals that there is no reported incident of any occupational diseases in the area. Hazardous jobs like blasting, loading, etc. are planned to be executed safely and with all precautionary measures as prescribed in Metalliferous Mines Regulations of 1961, so as to minimize hazards and incidences of health problems.

4.8.2 IMPACTS ON OCCUPATIONAL HEALTH DUE TO PROJECT OPERATIONS:

Anticipated occupational illness sequel to mining activities can be as follows:

- Dust related pneumonia



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- Tuberculosis
- Rheumatic arthritis
- Segmental vibration
- Miner's Nystagamus

4.8.3 MITIGATIVE MEASURES FOR OCCUPATIONAL HEALTH:

To reduce pollution emanation from the project, following measures are being and will be taken:

- Water sprinkling on haul roads etc.
- Green belt creation to arrest dust and reduce noise propagation.
- Acceptance of good control measures for reducing air pollution, as mentioned earlier in the chapter.
- Control of noise levels through good preventive maintenance of machineries, green belt creation, provision of ear plug to workers, etc.
- In addition to above measures, the following remedial steps are being and will be enforced to ensure minimization of occupational health and safety problems.
- Medical examination of workers by qualified doctors, as per DGMS circulars.
- Regular awareness campaigns amongst staff and workers
- Staff will be provided with PPE to guard against excess noise levels, Dust generation and inhalation, etc., as per standards prescribed by DGMS.

4.8.4 MITIGATIVE MEASURES FOR SAFETY ASPECTS:

The following safety gadgets will be provided to the staff and workers based on their area of operation and work & requirement:

SI No	Safety Equipments
1.	Helmets
2.	Shoes
3.	Goggles
4.	Dust Mask
5.	Hand Gloves



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SI No	Safety Equipments
6.	Reflective Jackets
7.	Ear Muffs
8.	Signal Lights/Flags

4.9 LOGISTICAL SYSTEM:

From this proposed quarry the entire output will be transported to the crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc. The expected peak transport will be as follows:

Table 4.17: Details of Transportation

Sl.no	Particulars of activity	Quantity
A	Maximum Rough stone Transported (m3/year)	11875
B	No of days in a year	300
C	Transport hours per day	8
D	Truck capacity in m3	8
	Trips per hour	<1 Trip/hr

From the above table it is seen that there will be less than 1 trip per hour additional truck traffic. The existing road can absorb this traffic due to this project. However, the following mitigative measures are suggested:

- ❖ Water sprinkling on material in the transport vehicles before transporting, so that no dust nuisance during transport will arise.
- ❖ Plantation on either side of the transport road in consultation with the concerned department.
- ❖ Proper maintenance of transport roads
- ❖ Proper maintenance of transport vehicles.
- ❖ Avoiding overloading of material
- ❖ Covering of loaded vehicles with tarpaulins sheet.
- ❖ Limiting of speed
- ❖ Provision of tyre washing facility at the mine outlet



4.10 WASTE MANAGEMENT:

Solid Waste: Since the entire mined out material will be used there will not be any solid waste generation from this project.

Liquid waste: There is no process effluent generation from this mine. Hence no liquid waste is generated.

Hazardous waste management: In this project the following management practices will be followed:

- Ensuring availability of different colour bins for collection of different types of waste.
- Storing of Hazardous waste material in a separate storage area with impervious containers for waste oil, oil contaminated clothes, used lead acid batteries, scraps, tyre storage etc.
- Ensure that there are no leakages/spillages of hazardous wastes.
- Ensuring that the fire extinguisher system is available at hazardous material storage area.

The hazardous waste if any will be disposed through authorized recyclers or re-processors periodically. The hazardous wastes will be transported in accordance with the provisions of rules. By effective implementation of above said mitigation measures no major impact due to Hazardous waste is expected.

Plastic waste: Single use plastics/ use and throwaway plastics will be banned in the site as directed by the Tamil Nadu Government vide GO(Ms)No.84 regarding ban on use of plastic products. The employees will be encouraged to use compostable material or reusable material.

* * * * *



CHAPTER - V

ANALYSIS OF ALTERNATIVES (TECHNOLOGY & SITE)

CHAPTER 5

ANALYSIS OF ALTERNATIVES

5.1 ALTERNATE TECHNOLOGY:

The proposed project involves the development of a Rough Stone and Gravel Quarry through mechanized open cast mining. The mining operations will comprise jackhammer drilling, controlled blasting, excavation, loading, and transportation of the quarried material to crushing units. This method is well-established, technically feasible, and economically viable; hence, consideration of alternative technologies is not warranted.

5.2 ALTERNATE SITE:

The mineral deposits are inherently site-specific, making the consideration of an alternative location unnecessary.

* * * * *



CHAPTER - VI

ENVIRONMENTAL MONITORING PROGRAMME

CHAPTER 6

ENVIRONMENTAL MONITORING PROGRAMME

6.1 GENERAL

In this project, appropriate environmental monitoring programme are framed. Regular, systematic and sustained programme schedules for implementation and monitoring of various control measures are devised with clear cut guidelines of various concerned plans for keeping a continuous surveillance on the various environmental quality parameters in the area.

The monitoring schedules are planned to aim at regular and systematic study of various pollution levels with respect to air and water quality, noise levels etc., to ensure that they conform to the standards laid down by the Environment Protection Act, 1986 and various Central and State Pollution Control Board Limits.

The various methodologies and frequency of studies of all environmental quality parameters will be as per prescribed norms laid down by MOEF&CC and State Pollution Control Board. This being a small quarry operation, the Mines in-charge will take care of all the environmental related works also.

Environmental control measures include components like air, water and soil quality, noise levels, afforestation measures, etc. For monitoring of environment over the life of the mine, a set of stations for study of quality parameters are fixed as per the actual requirements and prevailing conditions of environmental factors, as dictated from time to time, depending on the prevailing pollution levels.

6.2 MONITORING SCHEDULES FOR VARIOUS PARAMETERS

The monitoring schedules are planned for systematic study of various pollution levels with respect to air and water qualities, noise levels, etc. to ensure that they conform to the standards laid down by Environmental Protection Act and various statutory Limits. However, based on the need and priority it may be suitably modified / improved in consultation with local authorities. The monitoring schedules to be adopted in this quarry are given below.



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Table 6.1: Environmental Monitoring Schedule

S.No	Environmental Parameters	Parameters to be monitored	Monitoring area coverage /locations	Frequency of monitoring
1	Air Quality	Sulphur dioxide (SO ₂), Oxides of Nitrogen (NO ₂), Respirable Particulate Matter (PM _{2.5} and PM ₁₀).	2 locations in the buffer zone and 1 work zone locations.	As per SPCB requirement
2	Water Quality	General, Physical, and chemical parameters	Ground Water samples (around the project area) and Mine Pit water samples	As per SPCB requirement
3	Water Table Fluctuations	Water Levels	Nearby wells and Borewells	On seasonal basis pre and post monsoon level
4	Noise	Leq. Lmax Lmin, Leq Day & Leq Night dB(A)	Work zone locations and buffer zone villages	As per SPCB requirement
5	Vibration	Peak Particle Velocity	Mine periphery	Once to arrive at optimum blasting parameters
6	Socio Economic Environment	Socio Economic Survey, Review of implementation of CER activities proposed	Buffer Zone	2 years once
7	Occupational Health	Occupational health survey to detect early incidence of diseases, Audiometry Test for workers in noise prone area and review of safety matters.	Staff and Workers involved in the project	2 years once
8	Greenbelt	Maintenance	Within the lease area	Regularly

6.3 LEGISLATIVE AND REGULATORY FRAME WORK:

The project will have environmental policy declaring its responsibility and commitment to protect the environment and to ensure public safety. The existing policy will be available with all concerned officials of the plant. The following environmental standards as per methodologies prescribed, by MOEF/CPCB/TNPCB will be enforced in this project:



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Table 6.2: Environmental Standards

Standards	Issued By	Reference
National Ambient Air Quality Standards	Central Pollution Control Board	Table No. 6.3
Water quality standards per IS 10500:2012	Bureau of Indian Standards	Table No.6.4
Noise Standards	CPCB / MoEF&CC	Table No.6.5
Permissible Peak Particle Velocity	DGMS, Dhanbad	Table No.6.6

Table 6.3: National Ambient Air Quality Standards

[NEPI III - 000004]

मानक वायु गुणवत्ता : अंतराष्ट्रीय

3

NATIONAL AMBIENT AIR QUALITY STANDARDS
CENTRAL POLLUTION CONTROL BOARD
NOTIFICATION
New Delhi, the 18th November, 2009

No. B-29616/2009/PC-I.-In exercise of the powers conferred by Sub-section (2) (b) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No.14 of 1981), and in supersession of the Notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-

NATIONAL AMBIENT AIR QUALITY STANDARDS

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO ₂), µg/m ³	Annual* 24 hours**	50 80	20 80	- Improved West and Gaeke - Ultraviolet fluorescence
2	Nitrogen Dioxide (NO ₂), µg/m ³	Annual* 24 hours**	40 80	30 80	- Modified Jacob & Hochheiser (Na-Arsenite) - Chemiluminescence
3	Particulate Matter (size less than 10µm) or PM ₁₀ , µg/m ³	Annual* 24 hours**	60 100	60 100	- Gravimetric - TOEM - Beta attenuation
4	Particulate Matter (size less than 2.5µm) or PM _{2.5} , µg/m ³	Annual* 24 hours**	40 60	40 60	- Gravimetric - TOEM - Beta attenuation
5	Ozone (O ₃), µg/m ³	8 hours** 1 hour**	100 180	100 180	- UV photometric - Chemiluminescence - Chemical Method
6	Lead (Pb), µg/m ³	Annual* 24 hours**	0.50 1.0	0.50 1.0	- AAS/ICP method after sampling on EPM 2000 or equivalent filter paper - ED-XRF using Teflon filter
7	Carbon Monoxide (CO), mg/m ³	8 hours** 1 hour**	02 04	02 04	- Non Dispersive Infra Red (NDIR) spectroscopy
8	Ammonia (NH ₃), µg/m ³	Annual* 24 hours**	100 400	100 400	- Chemiluminescence - Indophenol blue method



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THE GAZETTE OF INDIA : EXTRAORDINARY

[PART III—SEC. 4]

(1)	(2)	(3)	(4)	(5)	(6)
9	Benzene (C ₆ H ₆) µg/m ³	Annual*	05	05	- Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10	Benzo(a)Pyrene (BaP) - particulate phase only, ng/m ³	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m ³	Annual*	06	06	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m ³	Annual*	20	20	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note. — Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

SANT PRASAD GAUTAM, Chairman
[ADVT-III/4/184/09/Exty.]

Note: The notifications on National Ambient Air Quality Standards were published by the Central Pollution Control Board in the Gazette of India, Extraordinary vide notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998.



Creative Engineers & Consultants
ENVIRONMENTAL
MONITORING PROGRAM

PRO CODE: CEC-EMP-MI-253
REV NO : 00/OCT/25
6-4

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Table 6.4: IS – 10500 :2012 Standards

Table 1 Organoleptic and Physical Parameters
(Foreword and Clause 4)

Sl No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to Part of IS 3025	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
i)	Colour, Hazen units, <i>Max</i>	5	15	Part 4	Extended to 15 only, if toxic substances are not suspected in absence of alternate sources
ii)	Odour	Agreeable	Agreeable	Part 5	a) Test cold and when heated b) Test at several dilutions
iii)	pH value	6.5-8.5	No relaxation	Part 11	—
iv)	Taste	Agreeable	Agreeable	Parts 7 and 8	Test to be conducted only after safety has been established
v)	Turbidity, NTU, <i>Max</i>	1	5	Part 10	—
vi)	Total dissolved solids, mg/l, <i>Max</i>	500	2 000	Part 16	—

NOTE — It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under 'acceptable' render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limits indicated under 'permissible limit in the absence of alternate source' in col 4, above which the sources will have to be rejected.



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Table 2 General Parameters Concerning Substances Undesirable in Excessive Amounts
(Foreword and Clause 4)

Sl No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
i)	Aluminium (as Al), mg/l, Max	0.03	0.2	IS 3025 (Part 55)	—
ii)	Ammonia (as total ammonia-N), mg/l, Max	0.5	No relaxation	IS 3025 (Part 34)	—
iii)	Anionic detergents (as MBAS) mg/l, Max	0.2	1.0	Annex K of IS 13428	—
iv)	Barium (as Ba), mg/l, Max	0.7	No relaxation	Annex F of IS 13428* or IS 15302	—
v)	Boron (as B), mg/l, Max	0.5	1.0	IS 3025 (Part 57)	—
vi)	Calcium (as Ca), mg/l, Max	75	200	IS 3025 (Part 40)	—
vii)	Chloramines (as Cl ₂), mg/l, Max	4.0	No relaxation	IS 3025 (Part 26)* or APHA 4500-Cl G	—
viii)	Chloride (as Cl), mg/l, Max	250	1 000	IS 3025 (Part 32)	—
ix)	Copper (as Cu), mg/l, Max	0.05	1.5	IS 3025 (Part 42)	—
x)	Fluoride (as F) mg/l, Max	1.0	1.5	IS 3025 (Part 60)	—
xi)	Free residual chlorine, mg/l, Min	0.2	1	IS 3025 (Part 26)	To be applicable only when water is chlorinated. Tested at consumer end. When pro- tection against viral infec- tion is required, it should be minimum 0.5 mg/l
xii)	Iron (as Fe), mg/l, Max	0.3	No relaxation	IS 3025 (Part 53)	Total concentration of man- ganese (as Mn) and iron (as Fe) shall not exceed 0.3 mg/l
xiii)	Magnesium (as Mg), mg/l, Max	30	100	IS 3025 (Part 46)	—
xiv)	Manganese (as Mn), mg/l, Max	0.1	0.3	IS 3025 (Part 59)	Total concentration of man- ganese (as Mn) and iron (as Fe) shall not exceed 0.3 mg/l
xv)	Mineral oil, mg/l, Max	0.5	No relaxation	Clause 6 of IS 3025 (Part 39) Infrared partition method	—
xvi)	Nitrate (as NO ₃), mg/l, Max	45	No relaxation	IS 3025 (Part 34)	—
xvii)	Phenolic compounds (as C ₆ H ₅ OH), mg/l, Max	0.001	0.002	IS 3025 (Part 43)	—
xviii)	Selenium (as Se), mg/l, Max	0.01	No relaxation	IS 3025 (Part 56) or IS 15303*	—
xix)	Silver (as Ag), mg/l, Max	0.1	No relaxation	Annex J of IS 13428	—
xx)	Sulphate (as SO ₄) mg/l, Max	200	400	IS 3025 (Part 24)	May be extended to 400 pro- vided that Magnesium does not exceed 30
xxi)	Sulphide (as H ₂ S), mg/l, Max	0.05	No relaxation	IS 3025 (Part 29)	—
xxii)	Total alkalinity as calcium carbonate, mg/l, Max	200	600	IS 3025 (Part 23)	—
xxiii)	Total hardness (as CaCO ₃), mg/l, Max	200	600	IS 3025 (Part 21)	—
xxiv)	Zinc (as Zn), mg/l, Max	5	15	IS 3025 (Part 49)	—

NOTES

1 In case of dispute, the method indicated by '*' shall be the referee method.

2 It is recommended that the acceptable limit is to be implemented. Values in excess of those mentioned under 'acceptable' render the water not suitable, but still may be tolerated in the absence of an alternative source but up to the limits indicated under 'permissible limit in the absence of alternate source' in col 4, above which the sources will have to be rejected.



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Table 6.5: Noise Level Standards

Area Code	Category of Area	Limits in dB(A) Leq	
		Day Time	Night Time
(A)	Industrial area	75	70
(B)	Commercial area	65	55
(C)	Residential area	55	45
(D)	Silence Zone	50	40

Note :

1. Day time shall mean from 6 a.m. and 10.0 p.m.
2. Night time shall mean from 10.0 p.m. and 6 a.m.
3. Silence zone is an area comprising not less than 100 meters around hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority.
4. Mixed categories of areas may be average as one of the four above mentioned categories by the competent authority.

* dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A “decibel” is a unit in which noise is measured.

“A”, in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq: It is energy mean of the noise level over a specified period.

Table 6.6: Permissible Noise For Industrial Workers As Laid Down By CPCB

Exposure time (in hr. per day)	Limit in dB(A)
8	90
4	93
2	96
1	99
1/2	102
1/4	105
1/8	108
1/16	111
1/32	114



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Table 6.7: Permissible Peak Particle Velocity (PPV) In Mining Areas

In mm/sec.

Type of structure	Dominant excitation frequency Hz		
	<8 Hz	I 8-25 Hz	I >25 Hz
A. Buildings/structures not belonging to owner			
Domestic houses /structures (Kuchha brick and cement)	5	10	15
Industrial buildings (RCC and framed structures)	10	20	25
Objects of historical importance and sensitive structures.	2	5	10
B. Building belonging to owner with limited span of life			
Domestic houses/structures (Kuchha brick and cement)	10	15	25
Industrial buildings (RCC and framed structures)	15	25	50

The above said monitoring location and the frequency of monitoring shall be suitably modified in consultation with the nodal agency as per the actual requirements and prevailing conditions of the mine and environmental factors, as dictated from time to time, depending on the prevailing pollution levels, if required.

6.4 ENVIRONMENTAL MONITORING COST:

Towards environmental monitoring it is proposed to allocate a budget of Rs. 50,000 per annum for this project. Further details of the capital and recurring cost of environmental management has been provided in in Table No. 10.2, Chapter-X.

* * * * *



CHAPTER - VII

ADDITIONAL STUDIES

CHAPTER 7

ADDITIONAL STUDIES

7.1 GENERAL:

The additional studies covered for this EIA / EMP report are:

1. Public consultation of the project as per MoEF&CC mandates.
2. Risk Assessment
3. Cumulative Impact Study
4. R&R Plan
5. Mine closure planning

7.2 PUBLIC CONSULTATION:

This draft EIA/EMP report will be made available for public consultation in accordance with the prescribed procedures. A 30-day advance notice regarding the date and time of the public hearing will be published in two local newspapers. The hearing will be conducted under the supervision of the District Collector and officials from the State Pollution Control Board. During the public consultation, the opinions, concerns, and objections of stakeholders will be documented. All queries raised by the public, along with responses provided by the project proponent and relevant authorities, will be duly recorded and incorporated into the final EIA/EMP report submitted for approval to the SEIAA, Tamil Nadu.

7.3 RISK ASSESSMENT:

For the various risks, likely to arise, detailed analysis of causes and control measures is given in below:

S.No	Factors	Causes of risks	Control measures
1.	Removal of material	a) Bench may slide due to its unconsolidated nature. b) Vibration due to movement of vehicles in the benches.	Overall bench slope angle will be maintained optimally as per DGMS requirement. Working bench width will be more than bench height.
2.	Drilling	a)Due to high pressure of compressed air hoses may	• Periodical preventative maintenance and



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S.No	Factors	Causes of risks	Control measures
		burst. b) Down the hole drill rod may break due to improper maintenance of rod.	replacement of worn out accessories in the compressor and drill equipment. • As per manufacturers recommendation rod to be replaced and bits will be changed.
3.	Blasting	a)Fly rock, ground vibration, noise etc. b) Improper charging of explosives	• Burden and spacing will be kept optimum on trial basis. • Explosive charge per delay will be minimized. • Controlled blasting with Nonel will be used.
4.	Excavation	a)Hauling and loading equipment are in such proximity while excavation b)Swinging of bucket over the body of tipper c) Driving of unauthorized person	• Operator shall not operate the machine when person & vehicles are in such proximity. • Shall not swing the bucket over the cab and operator leaves the machine after ensuring the bucket is on ground. • Shall not allow any unauthorized person to operate the machine by effective supervision.
5.	Transportation	a)Operating the vehicle "nose to tail" b) Overloading of material c) While reversal & overtaking of vehicle d) Operator of truck leaving his cabin when it is loaded	• It will be ensured that all these causes will be nullified by giving training to the operators. • No over loading will be done. • Audio visual reverse horn will be provided. • Proper training will be given.
6.	Fire due to electricity and Oil	a)Due to the short circuit of cables & other electrical parts b) Due to the leakage of inflammable liquid like diesel, oil etc.	• Electrical parts shall be cleaned frequently with the help of dry air blower • All fastening parts and places will be tightening. Suitable fire suppression equipment shall be provided.
7.	Natural calamities	Unexpected happenings	The mine management is capable to deal with the situation.

This being a small rough stone project that too working in a safe area, no major disaster is expected.



7.3.1. DISASTER MANAGEMENT PLAN:

In General, following natural/industrial hazards may occur during normal operation.

- Inundation of mine pit due to flood/excessive rains :
- Slope failure of the pit and waste dumps
- Accident due to heavy mining equipment and
- Blasting and use of Explosives

Mining operation in this lease will be carried out under the management control and direction of a qualified mine manager. The DGMS have been issuing a number of standing orders, model standing orders and circulars to be followed by the mine management in case of disaster. All these orders statutory rules and regulations will be followed. Seismically project site and study area falls in the Zone – II and is described as least active zone. There are no perennial water body near the lease area to cause any flooding. As such no disaster due to this project is envisaged.

In order to take care of above hazard / disasters the following control measures have been adopted.

- Checking and regular maintenance of garland drains and earthen bunds to avoid any inflow of surface water in the mine pit.
- Avoiding mining during heavy monsoon period and marching of all the HEMM to the top benches during rainy period.
- Provision of high capacity standby pumps with generator sets with sufficient quantity of diesel for emergency pumping especially during monsoon.
- All safety precautions and provisions of regulations will be strictly followed during all mining operations
- Prohibiting entry of unauthorized persons.
- Provision of Fire fighting and first-aid provisions in the mines.
- Provisions of all the safety appliances such as safety boot, helmets, goggles, dust masks, ear plugs and ear muffs etc. are made available to the employees for their use.

- Training and refresher courses for all the employees working in hazardous premises
- Observance of all safety precautions for blasting and storage of explosives as per MMR 1961.
- Working of mine, as per approved plans and regularly updating the mine plans
- Cleaning of mine faces regularly
- Proper storage, usage of explosives through competent persons.
- Regular maintenance and testing of all mining equipment as per manufacturers guidelines
- Suppression of dust on the haulage roads with frequent water sprinkling, etc.
- Increasing the awareness of safety and disaster through competitions, posters and annual safety weeks and environmental weeks, encouraged through suitable rewards and other similar drives.

The management and the EMC will be able to deal with the situations efficiently keeping in view of the likely sources of dangers in the mine.

7.4 REHABILITATION AND RESETTLEMENT (R & R) PLAN:

The mining activities will be carried out within the mine lease area only. The entire mine lease area is a Patta land. There is no population within the ML area. Hence, the question of R&R does not arise.

7.5 MINE CLOSURE PLAN:

In the mine closure stage all necessary measures will be taken as per Act & Rules, There is no proposal for back filling, reclamation and rehabilitation. The quarried pits after the end of life of mine will be properly fenced all around to prevent inherent entry of public and cattle and all the statutory requirements will be fulfilled. As already explained, in the post mining stage the rainwater harvested in the mined out void shall be utilized for irrigation and domestic needs locally. The mine closure plan is provided in Figure 4.5 in chapter – IV of the EIA/EMP Report.

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7.6 CUMULATIVE IMPACT STUDY:

The lease area is located in Arasampalayam village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu. The details of the other quarries located within the 500m radius of the project considered for cumulative impact study now (**Annexure-3**) has been provided below:

Table 7.1: Details of quarries within 500m radius

S.No	Name of the Quarry Owner	Survey No.	Extent (Ha)	Lease Period
a. Existing Quarries				
1	C.Ganesh	151/1E(P)	1.58.0	03.11.2023 – 02.11.2028
2	S.Abdul Jabbar	364	3.85.5	28.11.2023 – 27.11.2028
3	M. Rasamani	361/1A, 362/1	0.99	07.11.2023 to 06.11.2028
4	M/s. Sree Mahalakshmi Blue Metals	149/2B, 149/3A, 149/3B, 149/3C, 149/4A, 149/4B, 149/4C	4.26.72	15.03.2024 to 14.03.2029
b. Expired Quarries				
	R. Palanimuthu		0.72	25.01.2019 to 24.01.2024
c. Present Proposed Quarries				
1	C. Shanmugam	144/2A2(P) & 144/3A(P)	1.41	Applied area (Rough Stone and gravel)
2	V. Senthilkumar	135/3F, 136/3 & 137/3	2.26	Under progress

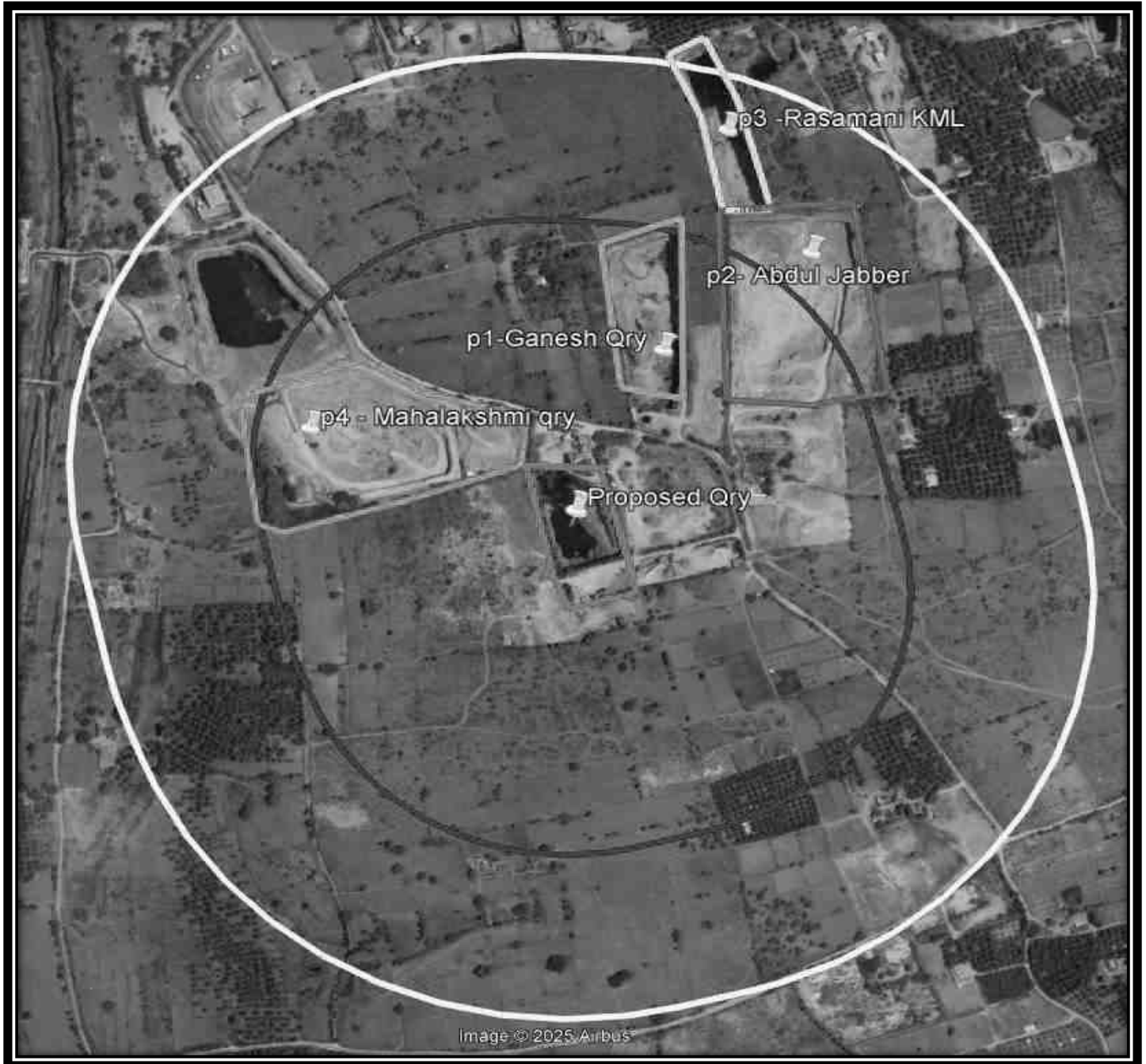
From the above table, it is seen that there are 4 existing quarries in the lease area with lease periods upto 2028 and 2 proposed quarries of which 1 is the subject project. The individual lease area of this project is less than 5Ha, however the cumulative area of the existing and proposed projects add up to greater than 5Ha. The present baseline monitoring carried out for this project during the Summer Season (March – May 2025) reflects the pollution contribution of the existing leases also. The predictive modelling carried out in Chapter-IV shows that despite the present environmental status being within statutory norms, there is no adverse impact



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envisaged from the proposed mining operations with the implementation of the suggested mitigative measures.

Figure 7.1: Vicinity Map



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Table 7.2: Salient details of the Existing Quarries

S. No	Project Name	Shanmugam	P1 Ganesh	P2 – Abdul Jabbar	P3- Rasamani	P4- Sree Mahalakshmi Blue metals
1	Survey No.	151	151/1E(P)	364	361/1A, 362/1	149/2B, 149/3A, 149/3B, 149/3C, 149/4A, 149/4B & 4C,
2	Village	Arasampalayam	Arasampalayam	Arasampalayam	Arasampalayam	Arasampalayam
3	Taluk	Kinathukadavu	Kinathukadavu	Kinathukadavu	Kinathukadavu	Kinathukadavu
4	District	Coimbatore	Coimbatore	Coimbatore	Coimbatore	Coimbatore
5	State	Tamilnadu	Tamilnadu	Tamilnadu	Tamilnadu	Tamilnadu
6	Lease Area in Ha	1.41	1.58	3.85.5	0.99	4.2672
7	Mineable reserves	58821	1,03,186	5,99,537	68,150	8,10,600
8	Peak Production	11,875	22,716	36,850	12,000	1,64,125
9	Method of mining	Opencast mechanized mining	Opencast mechanized mining	Opencast mechanized mining	Opencast mechanized mining	Opencast mechanized mining
10	Lease Period	5 years	5 years	5 years	5 years	10 years
11	Ultimate Depth	34m	47m	47m	41.5m	37m
12	Project cost	Rs.1,16,50,000/-	Rs. 34,09,000/-	Rs. 72,22,000 /-	Rs.32,20,000 /-	Rs. 1,70,86,000/-

7.6.2 WATER ENVIRONMENT:

Water requirement for all the projects is mainly for dust suppression and green belt development. Only negligible quantity of water is required for this purpose. Initially it will be procured from outside agencies for these projects and later rainwater collected in the mine pit will be used. Groundwater intersection is not envisaged due to the quarrying operations in these mines . These being mining project there will not be any effluent discharge outside. There are no streams passing through the lease areas. Hence, no major impact is expected on groundwater and surface water regime due to the cumulative project operations.

7.6.3 NOISE ENVIRONMENT:

Normally noise is felt only near the active source and at away places it get dissipates rapidly. Besides, due to attenuation at mine benches, elevation difference in pits, green belt and dissipation effect , noise levels due to mining operations at its periphery itself becomes insignificant.



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Post project noise in the core zone has already been provided under para 4.4, Chapter-IV where it is seen that the predicted Noise Levels due to mining operations at the periphery of the mine lease itself will be less even without considering any attenuation factor. However, practically there will be attenuation due to vegetation etc., and as such there will not be any adverse noise propagation outside the lease boundary. Hence, the cumulative post project noise levels is also expected to be insignificant.

7.6.4 VIBRATION:

By Carrying out controlled blasting using Nonel milli second delay detonators, Optimum design for burden and spacing, reducing the explosive charge per delay to minimum in all the projects no adverse impact due to blasting vibration is expected.

7.6.5 TRAFFIC:

The mined out minerals will be transported by means of trucks to the consumers like crusher units for producing stone aggregates of different sizes or construction of roads, bridges, buildings and other buyers etc. The cumulative impact on traffic due to transportation of minerals are provided below:

Table 7.3: Cumulative number of trips

Details	Shanmugam	P1 Ganesh	P2 – Abdul Jabbar	P3- Rasamani	P4- Sree Mahalakshmi Blue metals
Maximum Roughstone Transported (m3/year)	11,875	22,716	36,850	12,000	1,64,125
No of days in a year	300	300	300	300	300
Transport hours per day	8	8	8	8	8
Truck capacity in m3	8	12.5	12.5	12.5	12.5
Trips per hour	1 Trip/hr	1 Trip/hr	2 Trips/hr	1 Trips/hr	6 Trips/hr

Totally there will be about 11 trips per hour. The existing road can absorb this traffic due to this project. Various measures like proper maintenance of road, covering of the loaded truck with tarpaulin, water sprinkling will be carried out to ensure no adverse impact on the logistical front.

7.6.6 LAND ENVIRONMENT:

In the post mining stage, entire mined out area of all the leases will be left as water body. Safety zone will be developed with plantation. It will be ensured that the entire mined out area will be



properly fenced to prevent inadvertent entry of men and animals. The rainwater harvested in the mined-out void shall be utilized to meet the water requirement.

7.7 ACTION PLAN FOR CARRYING OUT THE REALIGNMENT OF THE BENCHES & SLOPE STABILITY PLAN FOR THE QUARRY

Factors affecting mine slope stability include the geological structure (such as dip, shear zones, clay intrusions, joints, and faults), the lithology of the rock formations, the geometry of the slopes, and groundwater conditions, which can increase lateral pressure on the slope faces.

Mining activity in part of the lease area was already carried out in the earlier different stages of mining lease periods. However, more virgin area is available nearby the existing pit on the southern side. As such there is sufficient scope for realignment of the benches in the proposed quarry lease, & according slope stability plan is prepared and given below:

- Lease area is a massive hard rocky terrain of homogeneous rock formation and hence the probability of slope failure is low and can be avoided if proper measures are adopted.
- There is an existing pit. Mining operation only in the northern part of the lease area is carried out and as such there is further scope of proper development of benches in the future course of mining.
- Future mining operation is planned advancing from the existing 27m in the northern part of the lease area to ultimate overall 34m in the lease area.
- In year 1 of the proposed mining operation, before commencement of mine production, pruning of top mine benches in the existing mine pit on the northern, eastern and western side will be carried out.
- No further production mining is planned in the top most existing bench and only the existing haul road will be used.

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- This area will be declared as no mining zone, it will be properly barricaded and no movement of men or machineries or further mine progress other than pruning of top benches will be carried. Active mining is proposed only on the virgin southern side of the lease area.
- Progressive systematic and scientific mining will be made subsequently and the benches of 5m ultimate height and 5m wide will be developed. Working bench width will be at least 2.5 times the bench height. Ultimate pit slope is kept at 45° to ensure slope stability.
- Haul road formation will be formed at 1 in 16 slope with adequate road width.
- There will be no ground water table intersection since the mining is above the GL. There is no danger due to flooding or inundation as the working is above the GL.
- No seepage is expected due to formation. Adequate drainage management system comprising peripheral garland drain, settling pond to regulate monsoon water will be created to prevent saturation of compact layers, apparent drainage over the bench slope to avert damages to quarry face and manage the water flow.
- Following Run off management is suggested:
 - 1) Direct rainfall falling within the pit
 - 2) Rain water draining near the lease area.

Direct rain fall will be collected in the mine floor sump. Water from sump will be pumped to settling pond for down stream users. Rainwater from the mine periphery will be collected through peripheral garland drain. Garland drain will be connected to a settling pond. Supernatant clear water from settling pond will be let out to downstream users



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- No top soil or loose top earth or boulders cover is observed on the top of the mine pit. Besides, the safety zone which will form a ridge which can also take care of the section and as such no risk is envisaged on this front.
- Regular inspection of the mine faces to be carried out by mines manager for ensuring absence of any structural features like faults, joints, dyke, intrusive material in the rock strata which may affect the slope stability and cleared.
- No loose material or boulders is to be stacked on the mine top or pit benches.
- Lease periphery on all sides will be properly fence and erected with green netting.

Implementation of the above measures and consideration of these factors will help to ensure that the mining operations are conducted in a safe and controlled manner, maintaining the stability of the mine slopes and minimizing the risk of accidents or structural failures.

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CHAPTER - VIII

PROJECT BENEFITS

CHAPTER 8

PROJECT BENEFITS

The proposed Rough stone and Gravel Quarry of Thiru.C.Shanmugam will improve physical and social infrastructures in the area like:

- Direct employment to 20 people.
- Indirect employment to scores of people.
- Financial gains for the governments, through collection of various taxes like royalty, GST, etc.,
- Increase in General Awareness of the People.
- Continual improvements of the local amenities for the local society
- Improvement of the General Living Standard of the People in the Vicinity
- Overall Improvement in HDI (Human Development Index)
- Growth of Allied Industries in the Area.
- Improvement in Per Capita Income.
- Providing certain facilities for the local schools and panchyats

In short, the proposed Rough Stone & Gravel Quarry will benefit this region in the fields of employment opportunities, improved per capita income for local people, and improved social welfare facilities in respect of education, medical systems, infrastructural build-up, etc in its own way.

By means of carrying out the socio-economic development activities, local community development is expected. Towards the same, the proponent has planned to allocate Rs.2.5 Lakhs for various activities under CER. From the CER activities allocated for various social welfare activities, the villages near the lease area will be benefited.

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CHAPTER - IX

ENVIRONMENTAL COST BENEFIT ANALYSIS

CHAPTER 9

ENVIRONMENTAL COST BENEFIT ANALYSIS

Appendix-III of the MoEF notification S.O. 1533 dated 14.09.2006, which describes the generic structure of Environmental Impact Assessment document, states that the chapter 'Environmental cost benefit analysis' is applicable if it is recommended during scoping stage.

ToR for this project has been received from SEIAA, Tamil Nadu vide their letter No. TO25B0108TN5553727N dated 15.07.2025. Environmental cost benefit analysis is not prescribed in the terms of reference. Hence, it is not applicable for this project.

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CHAPTER - X

ENVIRONMENTAL MANAGEMENT PLAN

CHAPTER 10

ENVIRONMENTAL MANAGEMENT PLAN

10.1 INTRODUCTION:

This chapter describes the implementation strategies of the environmental management measures described through the course of this EIA/EMP report for the purpose of mitigating significant impacts due to the proposed mining operations.

10.2 COMPONENTS OF THE ENVIRONMENTAL MANAGEMENT PLAN:

The environmental management plan comprises identification of the major impacts due to project operations and their suitable mitigative measures. (Provided in an elaborate manner in Chapter-IV) Based on the environmental policy of the company, the environmental management cell will oversee the implementation of these mitigative measures. The details of the proponent's environmental policy, environmental management cell and also the budgetary allocation towards various environmental management measures has been elaborated in this chapter.

10.2.1 ENVIRONMENTAL POLICY:

The proponent will frame a well-planned environmental policy. The salient features of this policy will be.

- ❖ Ensuring risk-free and safe mining operations by following all rules and conditions prescribed in the Indian mines Act, metalliferous mining regulation, mineral conservation and development rules, etc,
- ❖ Ensuring environmental preservation by adoption of remedial measures for control of air, water quality, noise status, biological improvements, green belt creation, etc.,
- ❖ Extending CER activities to cater to the needs of local community for various benefits like improvement of physical and social infrastructures for the welfare of local community.



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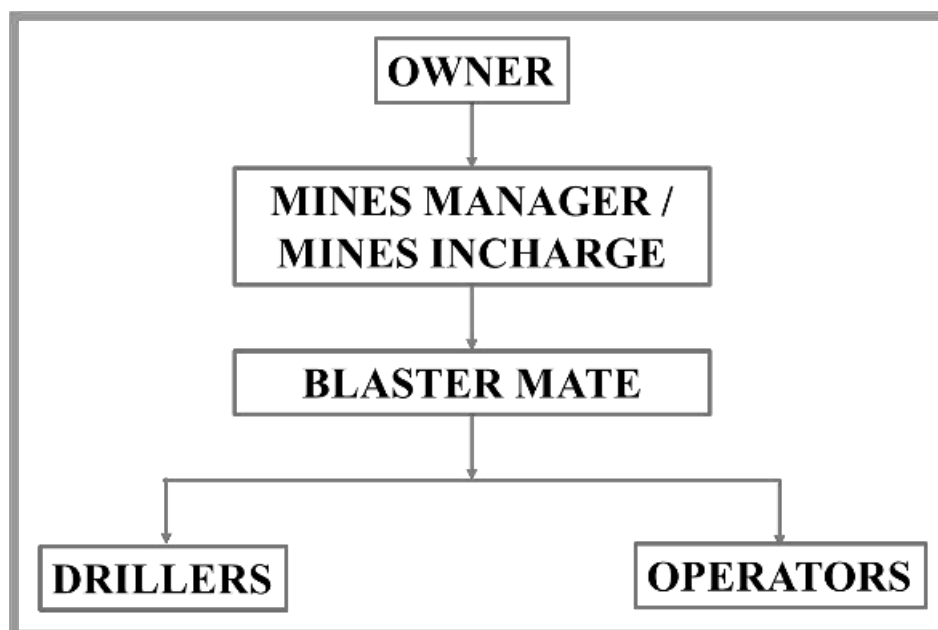
- ❖ Ensuring that all mining operations such as deployment of HEMM, conduct of drilling and blasting operations, etc are strictly conducted keeping with regulatory standards & maintaining safe working environment in the area.
- ❖ Providing periodical training on safety, Health, & Environment to all employers.
- ❖ Any infringement / violation of any rule or unsafe mining operations should be reported mines manager, should be reported by the foremen/ blaster mate etc, who will take immediate corrective measures for avoiding major disasters. The report will ultimately reach the owner through upwardly hierarchical communicative channels from the lowest level to superior levels in a quick time bound duration.
- ❖ The mines manager will exercise overall control over entire mining and connected operations and all infringements / violations on any count pertaining to unsafe operations, environmental degradation, etc, should be brought to the notice of the owner of the quarry. Remedial measures for such violations and deviations should be taken care by the mines manager to avoid any hazards or disasters in the mine and nearby areas. The persons responsible for such violations will be punished through appropriate disciplinarily penal actions.
- ❖ The EC conditions and stipulations will be strictly observed by Mines manager of the mine in various issues like prescribed environmental monitoring schedules conducting of vibratory studies due to blasting, creation of green belt, management of mined area, occupational health review, etc.
- ❖ Penalty actions will be taken by the proponent in cases of continuous negligence resulting in violations deviations in this respect.
- ❖ A time schedule of once in 90 days for review of all operational factors as mentioned above is to be enforced, for proper and quick corrective actions needed in the matter.



10.2.2 ENVIRONMENTAL MANAGEMENT CELL:

The Mines Manager/Mine Incharge will undertake effective monitoring and implementation of various environmental control measures promptly and effectively and to oversee various environmental management schemes for air quality control, water quality status, noise level control, plantation programme, social development schemes, etc in the mine. The organizational chart for the same has been provided below:

Figure 10.1: Organization Chart



The Mines Manager/Mines In charge in the mine project site will be directly responsible for various environmental activities in the mine. The owner will correlate and oversee the environmental activities and their effective implementation in consonance with the guidelines in the EMP. The Mines Manager/Mines In charge will oversee the environmental administration at the mine and he will directly supervise all activities of environmental administration on environmental issues. Necessary assistance from sub ordinates, external consultants and laboratories shall be taken.

Environmental control measures will span various factors like land degradation, air, water and soil quality, noise levels, effective land reclamation for excavated areas, afforestation measures, etc. The administrative functions are given below.



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- ❖ To observe the implementation of environmental control measures.
- ❖ To study the effects of project activities on the environment.
- ❖ To ensure implementation of Plantation Programme. Regular monitoring of survival rate of plants is carried out to achieve the desired result.
- ❖ To keep records of monitoring etc., in a systematic way, so as to facilitate easy access, when needed by statutory agencies, etc. Also send prescribed returns to statutory authorities.
- ❖ To ensure that adequate fencing and plantation is carried out in the safety zones.
- ❖ Conducting environmental studies and reporting to SPCB.
- ❖ To interact and liaise with Government Departments.
- ❖ To evaluate the performance of existing pollution control equipment and systems periodically and take timely action to keep the equipment at its optimum performance condition.
- ❖ To take immediate preventive action in case of some unforeseen environmental pollution attributable to the project.
- ❖ Conducting safety audits and programmes to create safety awareness in workers/ staff.
- ❖ Conducting annual health audits to detect any health problems promptly in the workers/staff. This will reduce occupational health problems.
- ❖ Imparting training on safety and conduct safety drills to educate employees. Firefighting equipment and system has to be kept in 'ready-to-fight' condition.
- ❖ Carrying out socio economic study in the surrounding areas to find out the benefits derived by the society due to the project and also to fulfill the deficiency, if any, immediately.
- ❖ Ensuring proper mine closure arrangements



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Considering the other mines in the cluster, the Environmental Management Cell of this project will also act as a Cluster Management Committee. The various activities undertaken to be undertaken by this committee are detailed below:

- Effective implementation of the environmental management measures in a holistic manner
- Devising an operation plan for mining and transportation activities.
- Various natural calamities like rain, flooding, evacuation plans etc. will also be deliberated by this committee to form risk management and emergency management plan pertaining to the cluster.
- The environmental policy of the company will be implemented and proper sustainable mining in accordance with statutory regulations will be enforced for the quarries in the cluster.
- Furnishing action plan regarding restoration strategy
- Deliberate on the health of the workers involved in the mining and also the health of the public
- Carrying out detailed study on the impact of mining on:
 - Soil health & biodiversity
 - Climate change leading to droughts, floods, etc.
 - Pollution leading to release of greenhouse gases (GHG) rise in temperature and livelihood of local people
 - Possibilities of water contamination and impact on aquatic ecosystem health.
 - Agriculture, Forestry & Traditional practices.
 - Hydro geothermal /Geothermal effect due to destruction in the Environment.
 - Bio-geochemical process and its footprints including environmental stress.
 - Sediment geochemistry



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- Furnishing action plan to achieve sustainable development goals with regards to water, sanitation and safety.
- Furnishing fire safety and evacuation plans in case of fire accidents.
- Implementation of steps to effectively utilize energy.

10.2.3 ENVIRONMENTAL MANAGEMENT PLAN:

10.2.3.1 General:

Systematic monitoring systems and well-conceived and efficient Environment Management Plan will ensure that during the project operations, the various environmental parameters, are well within the statutorily sustainable limits. The environmental control measures proposed to keep various environmental parameters of the project in terms of air, water, noise, land, biological environment, etc. has been described below.

10.2.3.2 Air Quality:

With regards to air quality, to mitigate the fugitive and gaseous emission resulting from mining and allied activities, the following control measures are proposed to be undertaken:

- Regular water sprinkling in the transport roads using mobile tankers for dust suppression.
- Controlled blasting techniques with NONEL.
- Provision of dust filters / mask to workers working at highly dust prone and affected areas.
- Covering of drill holes with wet cloth, using sharp drill bits
- Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality.
- Proper maintenance of haul roads, HEMM and dumpers.
- Covering of loaded tippers with tarpaulins during transportation



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- Vehicular emissions will be controlled through regular and proper preventive maintenance schedules and emissions tests are done with diesel smoke meter equipment to ensure emission values.
- Besides, there will be good green belt cover will be developed around mine periphery and in safety zone.

10.2.3.3 Water Environment:

There will be no process effluent generated from this project. The domestic sewage to be generated will be collected in septic tank with soak pit arrangements. Besides, there will be no waste dumps or stockpiles within the lease area as the entire material will be directly dispatched to the consumers.

Surface runoff management structures such as garland drain connected to a settling pond will be constructed around the quarry to collect the rain water. The supernatant clear water from the settling pond will be provided to nearby downstream users. Towards rainwater harvesting, the rainwater harvested in the mine will be used to meet the water requirements during mining and excess water in consultation with villagers and in line with government practices will be out in to the nearby stream or shall be distributed to the nearby villages as per their need

10.2.3.4 Noise Environment:

During the project operations, various control measures as listed below will be carried out to mitigate adverse impact due to the noise generated due to mining and allied activities:

- Good plantation will be carried out in the safety zone areas
- Noise protectors, insulation of operator cabins, installation of silencers in machineries, etc.
- Proper and regular maintenance of equipment's
- Providing earplugs to workers exposed to higher noise level.
- Providing in-built mechanism for reducing sound emissions.
- Conducting regular health check-up of workers including Audiometry test for the workers engaged in noise prone area.



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- Displaying the noise level status of operational machinery on the machines to know the extent of noise level and to control the time to which the worker is exposed to higher noise levels.

10.2.3.5 Ground Vibration

Since the production from this lease is less, the no of holes and the quantum of explosives to be used will also be negligible. During the project operations, various control measures as listed below will be carried out to mitigate adverse impact due to the ground vibration caused due to blasting activities:

- ❖ Controlled blasting techniques to maintain the peak particle velocity (PPV) below DGMS prescribed levels.
- ❖ Ideally formulating drilling and charging pattern and ensuring using less charge per delay.
- ❖ To contain fly rocks, stemming column will not be less than burden of the hole. Blasting area will also be muffled, if necessary, to stop fly rocks propagation.
- ❖ Blasting will not be carried out when strong winds are blowing towards the inhabited areas. Blasting will be done during midday time and never at night.
- ❖ Safety tools and implements near blasting site at the time of charging.
- ❖ Proper warning system before blasting and clearance of the area before blasting will be ensured.
- ❖ Proper care and supervision during blasting by a competent and experienced person.
- ❖ Besides, different blasting time for the projects in the vicinity is suggested and the timing is to be mentioned in the display board in the respective mines entrance.

Further details regarding the same has been provided under section 4.4.2, Chapter-IV.

10.2.2.6 Biological Environment:

The mining lease area and 10km buffer zone are devoid of declared ecologically sensitive features such as national parks, sanctuaries etc. Besides, endangered or endemic species are observed in the core and buffer zone. There will be no major clearance of vegetation involved in



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this project. However, good greenbelt and plantation programmes are planned in and around the lease area.. Greenbelt / Plantation will be carried out to enhance the vegetative growth and aesthetic in the safety zone area. This will boost the biological, visual and aesthetic outlook of the area. Elaborate details regarding the same is provided under section 4.6.4, Chapter-IV..

10.2.2.7 Socio-Economic Environment:

The proposed project operation will provide positive impacts in the region on the employment area as well as on physical and social infrastructural status. Many other tangible benefits will be gained by the local people in the surrounding areas due to ancillary units, trading operations, contractual needs, casual labor, green belt development, etc. Towards the socio economic development of the surrounding area, the proponent has earmarked an amount of Rs.3.0 Lakhs under Corporate Environmental Responsibility. The activities identified under CER will be implemented in a phased manner.

10.3 ENVIRONMENTAL POLLUTION CONTROL COST:

In this proposed quarry Implementation of environmental control measures as stated above involves capital as well as recurring expenses. The probable capital and recurring environmental control cost are calculated and given below **Table No – 10.1**

Table 10.1: Environmental Control Cost

		Rs. In lakhs	
S.No	Particulars	Capital Cost (Rs.in Lakhs)	Recurring Cost (Rs.in Lakhs)
A. Air Environment			
1	Compaction, gradation and drainage on both sides for Haulage Road	0.14	0.14
2	Water Sprinkling Arrangements	8.00	0.50
3	Muffled blasting	0.00	0.01
4	Wet drilling procedure / Latest eco-friendly drill machine with separate dust extractor unit	0.50	0.02
5	Manual Monitoring of trucks/tippers/tractors to ensure no overloading	0.00	0.00
6	Tarpaulin Sheets	0.00	0.10
7	Speed Governors	0.10	0.02
8	Regular monitoring of exhaust fumes as per RTO norms	0.00	0.05
9	Regular sweeping and maintenance of approach roads	-	0.28
10	Installing wheel wash system near gate of quarry	0.50	0.20
Sub-Total (A)		9.24	1.32



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S.No	Particulars	Capital Cost (Rs.in Lakhs)	Recurring Cost (Rs.in Lakhs)
B.Noise Environment			
11	HEMM Maintenance	In-built in OPEX	In-built in OPEX
12	Oiling & greasing of Transport vehicles and HEMM at regular interval	In-built in OPEX	In-built in OPEX
13	Adequate silencers in all the diesel engines of vehicles.	In-built in OPEX	In-built in OPEX
14	Fitness certificate for transport vehicles	In-built in OPEX	In-built in OPEX
15	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	In-built in OPEX	In-built in OPEX
16	Portable blaster shed	0.50	0.02
17	NONEL Blasting to control Ground vibration and fly rocks	-	1.54
Sub-Total (B)		0.5	1.74
C.Waste Management			
18	Provision for domestic waste collection and disposal through authorized agency	0.25	0.2
19	Installation of dust bins	0.05	0.02
20	Bio toilets	In-built in OPEX	In-built in OPEX
Sub-Total (C)		0.30	0.22
D. Mine Closure			
21	Construction and Maintenance of Garland Drains	0.14	0.07
22	Barbed Wire Fencing	2.82	0.14
23	Green belt development - 750 Trees (200 Inside Lease Area & 550 Outside Lease Area)	0.25	0.08
24	Implementation of Final Mine Closure Actity as per Approved Mining Plan on Last Year	0.75	0.15
25	Contribution towards Green Fund. As per TNMMCR 1959, Rule 35 (The Contribution towards Green Funds @ 10% of peak production Seigniorage fee are indicated as part of EMP Budge and not necessarily implemented in the Project Site)	1.66*	-
Sub-Total (D)		3.96	0.44
E. Implementation of EC, Mining Plan & DGMS Condition			
26	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	0.10	0.01
27	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0.0	0.50
28	Provision of PPE to workers	0.80	0.20
29	IME & PME Health check up	0.00	0.20
30	First aid facility	0.00	0.03
31	Slope stability action plan	2.00	0.00
32	Safety precaution signages boards.	0.10	0.02
33	Parking area with shelter and flags	0.71	0.10



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S.No	Particulars	Capital Cost (Rs.in Lakhs)	Recurring Cost (Rs.in Lakhs)
34	Installation of CCTV cameras in the mines and mine entrance	0.30	0.05
35	Mines Manager (1st Class / 2nd Class / Mine Foreman) and Mining Mate for Implementation as per Mining Plan and ensure safe quarry working	0.0	7.8
36	Cost provision for transplantation for trees within the southern side of the lease area	1.00	0.00
Sub-Total (E)		5.01	8.91
Grand Total (A+B+C+D+E)		19.01	12.63

For implementation of Environmental Management Plan (EMP) measures, a capital cost of Rs.19.01 lakhs has been earmarked. In addition, an annual recurring expenditure of Rs.12.63lakhs will be incurred. The recurring costs, which include maintenance of pollution control systems, environmental monitoring, and other related activities, will be met from the project revenue and sustained throughout the entire lease period.

10.4 CONCLUSION:

As the production from this lease is relatively low, the requirement for equipment and the scale of mining operations will be minimal, and consequently, the anticipated environmental impacts are expected to be negligible. As such no adverse impact on environment is expected. Systematic mining and ensuring adoption of various mitigative measures given in the report will ensure that the future environmental quality in the area will be maintained within statutory limits. The environmental management strategy as explained above will prove that industrial growth, if properly planned with all environmental concerns and appropriate remedial measures can go a long way to improve life pattern and living conditions of the local community around the project.

* * * * *



CHAPTER-XI

SUMMARY AND CONCLUSION

CHAPTER 11

SUMMARY & CONCLUSION

11.1 INTRODUCTION:

Thiru C.Shanmugam proposes to operate a Roughstone and Gravel Quarry over an area of 1.41Ha in Survey No.144/2A2(P) and 144/3A(P) for 5 years in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu and has initiated action towards obtaining environmental clearance.

Although the individual lease area of this project is less than 5 Ha, the proposal falls under Category B1 forming a cluster situation as per the EIA Notification 2006, its subsequent amendments and MoEF& CC Notification S.O. 2269(E) Dated 01.07.2016. This EIA/EMP report is prepared based on standard Terms of Reference issued by SEIAA, Tamil Nadu vide ToR Identification No. TO25B0108TN5553727N dated 15.07.2025 and is in conformance of the generic structure prescribed by MoEFCC in their notification of September 2006 and the approved mining plan.

It is proposed to quarry out TOR issued production capacity of 51,831m³ of Roughstone and 11992m³ of Gravel for a period of 5 years upto a depth of 34m with the peak production capacity of 11,316 (Year 1) of Gravel & 11875m³ of Rough stone (Year 4) for five years lease period. The entire lease area is a patta land which is in applicants possession.

11.1.1 STATUTORY APPROVALS:

Name	Issuing Authority	Status	Letter number	Date	Reference
Precise Area Communication	Assistant Director, Department of Geology & Mining	Received	Rc.No.690/ Kanimam/2023	18.02.2025	Annexure-1
Mining Plan Approval	Assistant Director, Department of Geology & Mining	Approved	Rc.No.690/ Kanimam/2023	25.02.2025	Annexure-2
Details of other quarries within 500m radius	Assistant Director, Department of Geology & Mining	Obtained	Rc.No.690/ Kanimam/2023	25.02.2025	Annexure-3
District survey report	Collector, Assistant director, Geology & Mining	Authenticated	As per S.O. 3611(E) dated 25.07.2018	--	--



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VAO Letter	VAO	Obtained	--	28.03.2025	Annexure-4
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The project proponent has previously undertaken mining operations within this lease area during earlier lease periods and had obtained Environmental Clearance from SEIAA, Tamil Nadu for the same. The relevant statutory documents supporting this are furnished below:

Name	Issuing Authority	Status	Letter number	Date	Reference
Previous pit dimensions and production	Assistant Director, Geology & Mining	Received	Rc.No.690/2023	25.02.2025	Annexure-5
Consent Register documents	-	Obtained	-	02.04.2025	Annexure-6
Previous Environmental Clearance	SEIAA, Tamil Nadu	Granted	SEIAA-TN/F.No.5654/1(a)/EC. No.3756/2016	26.09.2016	Annexure-7
Certified EC Compliance Report	Ministry of Environment, Forest & Climate change, Nungambakkam, Chennai-06	Obtained	EP/12.1/2025-26/SEIAA/77/TN/1300	22.08.2025	Annexure-8

The following conditions have been stated in the Precise Area Letter:

A safety distance of 7.5m for patta land, Safety distance of 50 m should be provided for high tension tower line passing on the north and eastern side of the applied area.

The above conditions have been adhered to.

11.1.2 ENVIRONMENTAL CLEARANCE APPLICATION:

Particulars	Details
Terms of Reference	Received from SEIAA, Tamil Nadu vide TO25B0108TN5553727N dated 15.07.2025
Baseline Data Collection	Carried out by Enviro Solutions & Labs, Coimbatore, Summer Season (March – May 2025)

11.2 SALIENT FEATURES OF THE PROJECT:

Table 11.1: Site Details

Location	Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu
Survey No.	144/2A2(P) and 144/3A(P)
Coordinates	Latitude : 10°52'12.74" N to 10°52'18.41" N Longitude : 77°02'33.30" E to 77°02'37.28" E



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Nearest Village	Karachery -1.8km - SE
Nearest Town	Chettipalayam - 4.0km (W)
Nearest Highway	NH-83 (Ottakkalmandapam – Kinathukadavu)– 3.5Km – W,
Nearest Railway Station	Kinathukadavu - 5.0km, SW
Nearest Airport	Coimbatore - 16km (NE)
Accessibility	The lease area can be approached through Pollachi road on the Western side at a distance of 3.5Km which joins NH-83 at a distance of 3.5 Km.
Topography	The lease applied area is mostly minedout area and the remaining is plain barren area covered by Gravel formation.

Table 11.2: Environment Setting of The Study Area

S.No	PARTICULARS	DETAILS
1	Nearest highway	NH-83 (Ottakkalmandapam – Kinathukadavu)– 3.5Km – W,
2	Nearest Railway station	Kinathukadavu - 5.0km, SW
3	Nearest Airport	Coimbatore - 16km (NE)
4	Nearest major water bodies	Kodavadi River – 7.5km (S) Varattar River – 8.9km – (W)
5	Nearest town/City	Chettipalayam - 4.0km (W)
6	Nearest villages	Karachery -1.8km - SE
7	Notified Archaeologically important places, Monuments	Nil within 10km radius
8	Environmental sensitive areas, Protected areas as per Wildlife Protection Act, 1972 (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	Nil within 10km radius
9	Reserved / Protected Forests	Nil within 10km radius
10	Defence Installations	Nil within 10m radius
11	Seismic Zone	Zone – II (Least Active)
12	Other Industries in the study area	Other than rough stone quarry & crushers, there are numerous ware houses, other industries like glass, textile mills, foundries, engineering units, Upcoming CODISSIA Industrial Park B (Kallapalayam), etc in the area.



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Table 11.3: Technical Description

PARTICULARS	DETAILS																								
Geological reserve	254558 Cu.m. Roughstone & 21712 cu.m Gravel																								
Mineable reserve	58821 Cu.m. Roughstone & 11992 cu.m Gravel																								
Method of Mining	Open cast mechanized mining method with drilling, blasting, excavation, loading and transportation of Rough stone to needy buyers.																								
Previous Mining	<ul style="list-style-type: none">• The proponent carried out mining operations during previous lease periods also.• During this period, Environmental Clearance was obtained from SEIAA, Tamil Nadu by the proponent for only Survey No.144/2A2(P) over an area of 0.85.5Ha vide Lr.No.SEIAA-TN/F.No.5654/1(a)/ EC.No.3756/2016 dated 26.09.2016 (Annexure-7)• This EC was issued for the production quantity of 45845m3 of Roughstone and 4738m3 of Gravel upto a depth of 27m for a period of 5 years.• A letter is obtained from the Assistant Director, Geology & Mining vide Rc.No.690/2023 dated 25.02.2025 wherein the existing pit dimensions and the production quantities mined out has been furnished. (Annexure-5) The achieved quantity during the lease period was adhering to the production approved in the Environmental Clearance.																								
Production		<table><tr><th>Year</th><th>ROUGHSTONE (m3)</th><th>GRAVEL(m3)</th></tr><tr><td>I</td><td>11285</td><td>11316</td></tr><tr><td>II</td><td>11745</td><td>676</td></tr><tr><td>III</td><td>11846</td><td>-</td></tr><tr><td>IV</td><td>11875</td><td>-</td></tr><tr><td>V</td><td>5080</td><td>-</td></tr><tr><td>Total</td><td>51831</td><td>11992</td></tr></table>	Year	ROUGHSTONE (m3)	GRAVEL(m3)	I	11285	11316	II	11745	676	III	11846	-	IV	11875	-	V	5080	-	Total	51831	11992		
Year	ROUGHSTONE (m3)	GRAVEL(m3)																							
I	11285	11316																							
II	11745	676																							
III	11846	-																							
IV	11875	-																							
V	5080	-																							
Total	51831	11992																							
Waste Generation and Management	No waste generation is anticipated from this quarry operation, as the entire excavated material will be fully utilized. The overburden in the form of gravel will be loaded into tippers and supplied to customers upon payment of the prescribed fees to the Government. The rough stone will be excavated and transported to buyers for use in the production of crusher aggregates and M-sand.																								
Ultimate Depth	34 m																								
Man power	20 People directly and more than 50 people indirectly																								
Mode of transport	By Road																								



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PARTICULARS	DETAILS
Water requirement	9 KLD
Source of water	The required water will be procured from outside agencies initially. Later, water collected in the mine pit will be used to meet the needs.
Power requirement	All the equipment will be diesel operated. No electricity is needed for mining operation. The minimum power requirement for office, etc will be met from state grid.
Life of the mine	5 Years
Project cost	Rs. 76,50,000 (Excluding operational cost).

11.3 EXISTING ENVIRONMENTAL SCENARIO:

11.3.1 GENERAL:

The studies and data collection have been carried out systematically and meticulously as per relevant IS codes, CPCB and MoEF&CC guidelines and as per approved ToR during **Summer Season (march 2025 – May 2025)** by **Enviro Solutions & Labs, Coimbatore**. For the purpose of this study, the area has been divided into two zones, namely, core and buffer zones. Core zone is considered as the total lease area, while buffer zone encompasses an area of 10 km radius distance from the periphery of core zone.

11.3.2 SOCIO-ECONOMIC STATUS:

The proposed Roughstone and gravel quarry is located in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, and Tamil Nadu. The details of the 10Km radius study area has been provided below:

Table 11.4: Social, Economic and Demographic Profile of the Study Area

Details	Population	Percentage
A. Gender-wise distribution		
Male Population	174613	50.09
Female Population	173985	49.91
Total	348598	100
B. Caste-wise population distribution		
Scheduled Caste	56402	16.18
Scheduled Tribes	1942	0.56
Other	290254	83.26
Total	348598	100



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Details	Population	Percentage
C. Literate and Illiterate population		
Literate Males	139164	39.92
Literate Females	121238	34.78
Total Literate Population	260402	74.70
Others Males	35449	10.17
Others Females	52747	15.13
Others Population	88196	25.30
Total	348598	100
D. Occupational structure		
Main workers	142221	40.80
Marginal workers	16772	4.80
Total Workers	158993	45.60
Total Non-workers	189605	54.40
Total	348598	100

Further developments in this area with respect to these various facilities has occurred over the years. Numerous ware houses, other industries like glass, textile mills, foundries, engineering units, Industrial Park B (Kallapalayam), etc serve as the main occupation for the young workforce. Industrialisation in harmony with locals are observed.

11.3.2.1 SAMPLE SURVEY:

Nearby villages were visited for conducting sample Village survey on all socio-economic aspects and requirements of the people. The existing socio-economic scenario is studied and CER activities are also suggested to the proponent. The study details are given in **Para 3.2.4, Chapter – III.**

11.3.3 EXISTING ENVIRONMENTAL QUALITY:

Table 11.5: Baseline Data

A) METEOROLOGICAL DATA		
Season: Winter Season (March 2025 to May 2025)		
PARAMETERS	MINIMUM	MAXIMUM
Temperature in °C	21.0	38.0
Humidity in %	18.0	98.0
Wind speed Km/Hr	<1.8	38.9
Predominant wind direction (From)	SW	



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B) AMBIENT AIR QUALITY		Monitoring Location – 6 locations	
PARAMETER	RESULT (µg/m3)		*LIMIT (µg/m3)
Location	Core Zone	Buffer Zone	
Particulate Matter (Size <10 µm)	46.0 - 55.0	47.0 - 63.0	100
Particulate Matter (Size <2.5 µm)	16.0 - 24.0	17.0– 27.0	60
Sulphur Dioxide (as SO ₂)	7.0 - 11.0	5.0– 12.0	80
Nitrogen Dioxide (as NO ₂)	13.0 -23.0	10.0 – 23.0	80
Conclusion: The existing Ambient Air Quality levels for PM10, PM2.5, SO2 and NO2, are within the NAAQ standards prescribed CPCB limits of 100 µg/m3, 60 µg/m3, 80 µg/m3 & 80 µg/m3. The CO values in all the locations were found to be below detectable limit. Silica values in the study area are found to be below detectable limit. (Detection limit – 0.05 mg/m3)			
C) WATER QUALITY		Monitoring Location – 6 locations	
PARAMETER	Result	*LIMIT (µg/m3)	
pH at 25 °C	7.33 – 8.02	6.5-8.5	
Total Dissolved Solids, mg/L	415 – 789	2000	
Chloride as Cl-, mg/L	38.7 – 168	1000	
Total Hardness (as CaCO3), mg/L	128 – 269	600	
Total Alkalinity (as CaCO3), mg/L	212– 265	600	
Sulphates as SO42-, mg/L	12.8 – 55.3	400	
Iron as Fe, mg/L	BDL	0.3	
Nitrate as NO3, mg/L	4.1 – 6.63	45	
Fluoride as F, mg/L	BDL – 0.2	1.5	
Conclusion: The water quality of ground water is found to be within the prescribed Permissible limits of IS: 10500 Norms in the absence of an alternative source as per Drinking Water Specifications.			
D) NOISE LEVELS		Monitoring Location – 6 locations	
PARAMETER	RESULT dB(A)		*LIMIT (µg/m3)
	Day Equivalent	Night Equivalent	
Core Zone	52.4	43.2	90
Buffer Zone	49.6-54.6	40.7-43.8	Day Equivalent - 55dB(A), Night Equivalent - 45dB(A)
*Permissible noise for industrial workers as laid down by CPCB (at 8 hrs Exposure Time). While comparing with the MoEF&CC Norms, the monitored ambient noise levels are generally within the limit values.			
E) SOIL QUALITY		Monitoring Location – 6 locations	
PARAMETER	Range of values		
pH	6.54 to 6.86		
Electrical Conductivity (µmho/cm)	0.073 – 0.106		
Organic matter (%)	0.59 – 1.49%.		
Total Nitrogen (kg/Ha)	136 - 278		
Phosphorus (kg/Ha)	21.9 – 50.2		
Sodium (m.eq/100g)	1.26- 2.67		
Potassium ((kg/Ha))	235 - 403		
Soil is of Sandy type.			



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F) LAND ENVIRONMENT:

For the present study on land use pattern in the study area, remote sensing satellite data have been used. The area estimated of land use categories around the 10km buffer zone is provided below:

Table 11.6: Land Use in 10Km Buffer Zone

S.No	Landuse Feature	Area (Sq.Km)	Percentage
1	Agriculture/ Plantation	104.39	32.69
2	Fallow Land	157.72	49.40
3	Land With Scrub	6.99	02.19
4	Land Without Scrub	10.61	03.32
5	Water bodies	0.83	00.26
6	Mining	7.79	02.44
7	Settlement	30.96	09.70
	Total	319.28	100.00

From the above table it is seen that 49.40% of the buffer area is classified under fallow land, 32.69 % of Agriculture/ Plantation land, 2.19 % constitutes land with scrub, 3.32 % constitutes land without scrub and the balance falls under other land use categories.

G) BIOLOGICAL ENVIRONMENT:

Flora: The proposed lease area is a non forest, private land. Major part of the lease area is already mined and exposed with rock. The remaining area contains plantation carried out in the lease periphery and barren patch in the south side.

Dominated species in the buffer zone are *Acacia auriculiformis*, *Azadirachta indica*, , *Borassus flabellifer*, *Acacia nilotica*, *Leucaena leucocephala*, *Prosopis juliflora*, *Acacia leucophloea*, *Cocus nucifera*, *Albizia lebbeck*, etc. The detailed list of plants found in the Buffer zone is given in Table no – 3.26.

Fauna: There is no Wild Life Sanctuary or National Park within the study area of 10 km. Domesticated animals are commonly found. No wild mammalian species was directly sighted during the field survey. The list of fauna within the study area is given in Table No – 3.27.



H) HYDROLOGICAL STUDY:

The district is underlain by hard rock formation. Fissured and fractured crystalline rocks constitute the important aquifer systems in the district. Study area is dominated with hard Charnockite rock formation.

There are no streams, canals or water bodies within the lease area. The drainage pattern of the area is dendritic – sub dendritic. Drainage pattern is the pattern formed by the streams, rivers, and lakes in a particular drainage basin.

In the study area, the shallow aquifer is developed through dug wells and deeper aquifer through tube wells. Based on the well inventory of the nearby wells & borewells, it is observed that the average water level in the open well is varies from 12m to 15 m BGL whereas the water level in the bore well varies generally from 50m to 55m BGL.

Study of the area shows that the sub-surface formations reveal low to medium recharge potentials. Subsequently hard and massive formations of rock are found. Based on the available information and the geophysical investigations it is observed that the study area is of poor to moderate groundwater potential up to 50m to 55m. Besides, the mining area consists of hard compact rock, no major water seepage within the mine is expected. There is no water seepage noticed in to the already quarried deeper pits situated nearby the proposed quarry area. Hence, the quarrying rough stone up to the proposed depth may not have any adverse impact in the area over ground water conditions.

Direct rainfall falling into the mine pit during monsoon season and intermittent seepage from phreatic top layer if any will be collected in the bottom of the mine pit and gainfully used for Greenbelt development, Dust suppression etc..

11.4 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES:

11.4.1 GENERAL:

In this project, mechanized open cast mining will be undertaken for the extraction of Rough Stone and Gravel. The potential impacts arising from mining and its associated activities have been assessed with respect to various environmental components such as air, water, noise, vibration, land, and transportation.



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11.4.2 AIR ENVIRONMENT:

The principal sources of air pollution in the area due to mining and allied activities are dust generation in the mine due to various activities such as excavation of material, movement of HEMM, loading, unloading and transportation operations.. Besides, Gas emission also occur as a result of emission of SO₂, NO_x, CO etc., from diesel driven mining equipment, compressors, generator sets, etc. In case of this mine, since the production from this lease is less, the number of equipment to be used, magnitude of operation & consequent impact on the environment will be less. Besides, the following measures will be adopted to control impact on the air quality due to mining operations in the lease area:

Table 11.7: Mitigation Measures – Air Environment

S.No	Activity	Mitigation Measures
1	Drilling	Usage of Drill bits in good condition
		Covering of drill holes with wet cloth
		Usage of sharp drill bits for drilling of holes.
		Provision of dust filters / mask to workers working at highly dust prone and affected areas.
2	Blasting	Well-designed blasting parameter, effective stemming to achieve optimum breakage occurs without generating fines.
		Use of appropriate explosives for blasting and avoiding overcharging of blast holes.
		Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality.
		Use of controlled blasting techniques with Nonel to keep the dust generation, noise as well as vibration level within the prescribed limits.
3	Excavation and Loading	Proper maintenance of HEMM
		Enclosures for operator cabin.
		Imparting sufficient training to operators on safety and environmental parameters.
		Proper maintenance of hauling equipments.
4	Transportation	Avoiding overloading of dumpers.
		Regular wetting of transport road using mobile water tanker.
		Proper maintenance of haul road and other roads
		Setting up of tyre wash facility in the transport road.
		Avoiding overloading of tippers
		Covering of loaded tippers with tarpaulins during transportation
		Vehicular emissions will be controlled through regular and proper preventive maintenance schedules and emissions tests are done with



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		diesel smoke meter equipment to ensure emission values.
5	Others	Development of greenbelt / barriers around mine in the safety zone and carrying out plantation within the lease area.

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

The impact on air quality due to the proposed project is estimated using AERMOD View Gaussian Plume Air Dispersion Model developed by Lakes Environmental Software which is based on steady state Gaussian plume dispersion. Ground Level Concentration (GLC) have been computed using hourly meteorological data for particulate matter PM10 and PM2.5.

The resultant added concentrations with baseline figures even at worst scenario, show that the values of ambient air quality with respect to PM10 are in the range of 58.0 µg/m³ to 64.0 µg/m³ and with respect to PM2.5 are in the range of 24.0 µg/m³ to 28.0 µg/m³ which are within the statutory limits in each case.

For preservation of environment in this mine strict enforcement of management schemes will be undertaken for taking corrective actions, as needed. By adopting the effective implementation of all the mitigative measures, no adverse impact on Air quality due to the mining operation in this lease area is expected.

11.4.3 WATER ENVIRONMENT:

Water Requirement: The total water requirement for this project will be 9.0 KLD comprising 1.0 KLD for drinking water and domestic use, 6.0 KLD for dust suppression and 2.0 KLD for greenbelt. The water will be sourced initially from outside agencies. Later the rainwater collected in the mine pit sump will be used for this purpose.

The activity / source of pollution, its impact / consequence, proposed control measures are explained below:

Table 11.8: Mitigation Measures – Water Pollution

S.No	Source	Consequence	Mitigation Measures
A	Domestic use	Generation of waste water	The domestic sewage to be generated from the project will be collected in septic tank with soak pits.
B	Rainfall	Runoff from waste dump and	Towards surface runoff management, a garland drain of length 750m will be constructed around the quarry and will be connected



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		stack	to settling ponds with silt traps. The supernatant clear water from the settling pond will be flow to the downstream users.
		Rainwater Harvesting	The rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet. etc.
C	Drainage Course	Disturbance to drainage course	There are no streams or water bodies in and around the lease area. There is no proposal to discharge any effluent into this waterbody. No major impact is envisaged on the nearby water bodies due to project operations

Generation of mine pit water: Study of the area shows that the sub-surface formations are compact with less intergranular porosity and fractures leading to less permeability and transmissivity values and as such the ground water level in this area is deep from surface. Subsequently hard and massive formations of rock are found. Based on the available information and the geophysical investigations it is observed that the study area is of poor to moderate groundwater potential up to 50m to 55m. Besides, the mining area consists of hard compact rock, no major water seepage within the mine is expected. The ultimate pit depth of mining is 34m. The ground water table in this area is below this level. Hence, ground water intersection is not envisaged and ground water will not be affected appreciably due to the quarrying operation. There is no water seepage noticed in to the already quarried deeper pits situated nearby the proposed quarry area. Hence, the quarrying rough stone up to the proposed depth may not have any adverse impact in the area over ground water conditions.

As mentioned earlier, the rainfall will be collected in the mine floor sump and advantageously used. Excess water if any in the sump will be pumped to settling pond for downstream users.

11.4.4 NOISE ENVIRONMENT:

Anticipated noise levels resulting from operation of the various machineries like excavator, tippers, drill have been computed using point source model. Computation of cumulative noise levels at the nearby villages is made based on the assumption that there are no attenuation paths between the source and the boundary. From the studies, it is found that the predicted Noise Levels due to mining operations at the periphery of the mine lease itself will be less even without considering any attenuation factor. However, practically there will be attenuation due to vegetation etc., and as such there will not be any adverse noise propagation outside the lease boundary. Since the habitations are also away the effect of noise due to mining operations will



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not be felt at all in the surrounding village. Hence, by implementing the following mitigative measures for noise control, the impact on noise levels will continue to be insignificant:

- Planting rows of native trees along roads, around mine area and other noise generating centres to act as acoustic barriers.
- Sound proof operator's cabin for equipments like shovel, tippers, etc.
- Proper and regular maintenance of equipments may lead to less noise generation.
- Providing in-built mechanism for reducing sound emissions.
- Providing earplugs to workers exposed to higher noise level.
- Conducting regular health check-up of workers including Audiometry test for the workers engaged in noise prone area.
- Displaying the noise level status of operational machinery on the machines to know the extent of noise level and to control the time to which the worker is exposed to higher noise levels.
- Provision of green net in lease periphery

Further green belt and afforestation will be planned and executed to abate noise and dust propagation in the area.

11.4.5. VIBRATION:

Vibrations due to blasting may cause damage to nearby structures, if appropriate control measures are not adopted. Since the production from this lease is very low, the no. of holes and the quantum of explosives to be used for blasting will be negligible.

The following control measures will be planned to reduce ground vibratory conditions to sustainable statutory limits:

- 1) Carrying out controlled blasting using Nonel.
- 2) Optimum design for burden and spacing.
- 3) Reducing explosive charge per delay to minimum.



- 4) The peak particle velocity (PPV) of ground vibration will be kept very low through optimally controlled blasting techniques, after necessary field trials.
- 5) To contain fly rocks, stemming column to be less than burden of the hole. Blasting area will also be muffled, if necessary, to stop fly rocks propagation.
- 6) Blasting will not be carried out when strong winds are. Blasting will be done during midday time.
- 7) Controlled blasting to avoid tension cracks which may endanger the stability of bench slopes in the mine.
- 8) Proper care and supervision during blasting by a competent and experienced person to be carried out.
- 9) Having different blasting time for the leases in the cluster.

By adoption of above measures, it will be ensured that the ground level vibration due to blasting are maintained within the limits prescribed by DGMS, Dhanbad . Elaborate details regarding the same are provided under section 4.4.2, Chapter-IV.

11.4.6 IMPACT ON LAND ENVIRONMENT:

The lease area of 1.41Ha in S.F.Nos.144/2A2(P) and 144/3A(P) is a patta land, partly owned by the applicant and for the remaining, applicant got consent from the other pattadhar. The proponent has operated this lease in the previous lease periods also. Presently, 0.6658Ha of the lease area is quarried out. At the end of the period, In the post mining stage, the mine pit area of 0.98.26 Ha will be left as a water body. Plantation will be carried out over 0.40.64 Ha and 0.021Ha will be left as road and infrastructure. Overall about 750 trees will be planted in and around the lease area during the plan period. Entire mined out area will be properly fenced to prevent inadvertent entry of men and animals. In the post mining stage the rainwater harvested in the mined-out void shall be utilized.

11.4.7 BIOLOGICAL ENVIRONMENT:

Part of the lease area is already mined out during the previous lease periods and plantation carried out by the lessee is only present. Since the mining operation in this lease will be of small scale the impact on surrounding environ is expected to be insignificant. Additionally, necessary



mitigative measures like dust suppression, proper maintenance of equipment's, greenbelt and plantation etc., will be carried out to prevent dust generation & any further impact on the vegetation. In the safety zone within the lease area and in the nearby areas including mineral transport road plantation of local trees will be carried out about 750 trees will be planted in and around the lease area.

.11.4.8 SOCIO ECONOMIC ENVIRONMENT:

The entire lease area is a private patta land. There are no habitations or hutments in the core zone area and as such no rehabilitation or resettlement is involved. The mining operations in the proposed quarry will employ about 20 people. Besides through allied opportunities in logistics, trading, repairing works etc. good employment potential will arise in this area, which will provide raising income levels and standards of living in the area through various service related activities connected with the project operations.

Towards the socio-economic development of the surrounding area, the proponent has earmarked an amount of Rs.2.5 Lakhs under Corporate Environmental Responsibility. The activities identified under CER will be implemented in the nearby Government school. In consultation with the locals based on the need & priority it will be implemented.

11.4.9 OCCUPATIONAL HEALTH AND SAFETY ASPECTS:

In order to ensure minimisation of occupational health and safety problems in the project operation, the following preventive remedial measures will be effectively exercised in the project operations, so as to comply with applicable standards.

- Medical examination of workers at pre-entry level stage of workers, etc., by qualified doctors, with periodical examination of all workers/staff at least once a year, as per DGMS circulars.
- Regular awareness campaigns amongst staff and workers
- Staff will be provided with PPE to guard against excess noise levels, Dust generation and inhalation, etc., as per standards prescribed by DGMS.

11.4.10 IMPACT ON LOCAL LOGISTICAL SYSTEM DUE TO PROJECT:

From this proposed quarry the entire output will be transported to the consumers . There will be less than 1 trip per hour additional truck traffic. The transport route can easily absorb this



negligible traffic due to this project. The following mitigative measures are suggested for mitigation of adverse impacts on the logistical aspect of the project:

- ❖ Water sprinkling on Rough stone in the transport vehicles before transporting, so that no dust nuisance during transport will arise.
- ❖ Proper maintenance of transport roads
- ❖ Proper maintenance of transport vehicles.
- ❖ Avoiding overloading of material
- ❖ Covering of loaded vehicles with tarpaulins sheet if warranted.

11.4.11 WASTE MANAGEMENT:

Since the entire mined out material will be used there will not be any solid waste generation from this project. There is no process effluent generation from this mine. Hence no liquid waste is generated.

The hazardous waste generated in this mine will be stored in a separate storage area with impervious containers for waste oil, oil contaminated clothes, used lead acid batteries, scraps, tyre storage etc. It will be disposed through authorized recyclers or re-processors periodically. The hazardous wastes will be transported in accordance with the provisions of rules. By effective implementation of above said mitigation measures no major impact due to Hazardous waste is expected.

Single use plastics/ use and throwaway plastics will be banned in the site as directed by the Tamil Nadu Government vide GO(Ms)No.84 regarding ban on use of plastic products. The employees will be encouraged to use compostable material or reusable material.

11.5 ENVIRONMENTAL MONITORING PROGRAMME:

The monitoring schedules are planned for systematic study of various pollution levels with respect to air and water qualities, noise levels, etc. to ensure that they conform to the standards laid down by Environmental Protection Act and various statutory Limits.

Monitoring location and the frequency of monitoring shall be suitably modified in consultation with the nodal agency as per the actual requirements and prevailing conditions of the mine and



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environmental factors, as dictated from time to time, depending on the prevailing pollution levels, if required.

Towards EMP measures, Rs. 19.01 Lakhs is allocated under capital cost. Besides, Rs. 12.63 Lakhs per annum will be spent under recurring cost. All the recurring cost of maintenance of pollution control measures, environmental monitoring etc., will be met from revenue. Further details of the capital and recurring cost of environmental management has been provided in in Table No. 10.2, Chapter-X.

11.6 ADDITIONAL STUDIES:

The additional studies covered for this EIA / EMP report are:

1. Public consultation of the project as per MoEF&CC mandates.
2. Risk Assessment
3. R&R Plan
4. Mine closure plan

This draft EIA/EMP report will be made available for public consultation in accordance with the prescribed procedures. A 30-day advance notice regarding the date and time of the public hearing will be published in two local newspapers. The hearing will be conducted under the supervision of the District Collector and officials from the State Pollution Control Board. During the public consultation, the opinions, concerns, and objections of stakeholders will be documented. All queries raised by the public, along with responses provided by the project proponent and relevant authorities, will be duly recorded and incorporated into the final EIA/EMP report submitted for approval to the SEIAA, Tamil Nadu.

Elaborate description in respect of Risk Assessment and Mine closure plan are given in **Chapter - VII.**

Although the individual lease area of this project is less than 5 Ha, the other existing and proposed quarries within the 500m radius along with this subject project works out to >5 Ha. As such cluster situation applicable and this EMP is prepared. The baseline monitoring carried out for this project reflects the cumulative impact of the existing quarries.



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From the study it is observed that due to adoption of various mitigative measures there will not be adverse impact on cumulative basis also.

11.7 CONCLUSION:

Mining and allied activities are already being carried out in the hard rock formations in and around the area.

Certified vehicles with low carbon emissions will only be used. These equipment's will be properly and regularly maintained. Besides, regular vehicular emission tests will be done for the transport vehicles to ensure minimal impact due to carbon emissions. To further mediate the carbon emissions, a good greenbelt and plantation plan has been planned

Geologically the area in and around the lease area contains charnokite type rock formation containing mostly fallow land. As such there no major vegetation or agricultural activities are observed. There are no Protected or Eco-Sensitive Zone or forest land nearby wherein it can have an impact.

It will be ensured that mining will be carried out adhering to all the statutory rules and regulations, appointing statutory personnel's like qualified mines manager, blaster, informing DGMS before commencement of mining operations and maintaining the environmental quality within the prescribed standards by effective implementation of various mitigative measures.

As such release of Greenhouse gases (GHG), rise in temperature, affecting livelihood of the local people, loss of Agriculture, Forestry and Traditional Practices is not envisaged. Such a limited scope will not induce any climatic change leading to droughts, floods etc.

Mine closure plan is prepared for the lease period and already included in the approved mine plan.

Due to absence of perennial water bodies nearby where in any marine ecosystem is observed, no effect on this front is also expected. Hydrological investigation carried out and as given in Para 3.6 of Chapter III & para 4.3 Chapter – IV shows that the all-time ground water table in this area is much below the mining level. Hence, ground water intersection in not envisaged for the entire life of the mine and ground water will not be affected due to the quarrying operation. As such there will not be any adverse impact on the ground water regime. Besides, this being a mining project, there will be not be any process effluent. As mentioned earlier, the rainfall will be



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collected in the mine floor sump and gainfully used as per CGWA requirement. Excess water if any in the sump will be pumped to settling pond and supernatant clear water let out for downstream users.

It will be ensured that mining will be carried out adhering to all the statutory rules and regulations, appointing statutory personnel's like qualified mines manager, blaster, informing DGMS before commencement of mining operations and maintaining the environmental quality within the prescribed standards by effective implementation of various mitigative measures for the entire lease period.

As the production from this lease is relatively low, the requirement for equipment and the scale of mining operations will be minimal and consequently, the anticipated environmental impacts are expected to be negligible. As such no adverse impact on environment is expected. Systematic mining and ensuring adoption of various mitigative measures given in the report will ensure that the future environmental quality in the area will be maintained within statutory limits. The environmental management strategy as explained above will prove that industrial growth, if properly planned with all environmental concerns and appropriate remedial measures can benefit this region in the fields of potential employment opportunities, improved per capita income for local people, improved social welfare facilities etc. in its own way and also revenue to Government through royalty, taxes etc. Besides, it will meet the raw material requirement of the construction industry also.

* * * * *



CHAPTER - XII

DISCLOSURE OF CONSULTANTS ENGAGED

CHAPTER 12

DISCLOSURE OF CONSULTANTS ENGAGED

Creative Engineers & Consultants, Chennai is an **NABL** accredited testing laboratory and **NABET** accredited EIA consultancy. Established over 25 years ago, this company has steadily made good strides in the environmental impact assessment fields, and is also one of the first companies to get accredited by NABET as an Accredited Consultant Organization as early as 2011. Creative Engineers & Consultants has to its credit, successful completion of numerous EIA/EMP reports, grant of environmental clearances and periodic environmental monitoring works. Presently, the company has been accredited by NABET as a 'Category-A' organization for the sectors of Mining of Minerals (opencast only), Thermal Power Plants, Mineral Beneficiation and Cement Plants with the accreditation valid upto 23.12.2026. The team of experienced professionals that are a part of this organization has been detailed below.

Figure 12.1: Disclosure of consultants engaged

EXPERT NAME	QUALIFICATION	POSITION	EXPERIENCE
Mr. P. Giri	AMIE (Mining)	EIA Coordinator & Functional area Expert (AP,NV,HW),	Over 35 years of experience in EIA/EMP report, mine plan preparation, including modeling
Mr. K. Shankar	M.Sc (Geology). PGMEMG	Functional area Expert (GEO, HG, SHW, RH) & IBM approved RQP.	Over 30 years of experience in EIA/EMP report, Mine plan, hydrological report preparation
Mr.S.S.Rajendran	M.Sc. (Pharmaceutical Chemistry)	Lab head	More than 15 years of experience in Environmental laboratory.
Mr. R. Babu raj	M.A (Sociology), B.Com(Y.L&Cost), ITI, Advance Diploma in Computer application	Functional Area Expert (Socio Economy)	Over 15 years of experience in dispersion modeling, computer applications. Specialized in CAD and computer software, applications. 5 years experience in the field of socio economy and its allied report preparation.



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EXPERT NAME	QUALIFICATION	POSITION	EXPERIENCE
Mr. B. Govindaraman	B.Sc.	Field technician	Over 20 years of field monitoring & data collection experience
Dr.B.Swamynathan	M.Sc (Ecology & Environmental Sciences), M.Phill (Botany), Ph.D (Ecology & Environmental Sciences)	EIA Coordinator & Functional Area Expert (EB,SC,LU&AP)	More than 12 years of experience in Environment and allied fields.
Ms. G. Sandhya	B. Tech Chemical Engineering M.Tech Environmental Engineering	EIA Coordinator & Functional Area Expert (AQ&WP)	Over 8 years experience in preparation of EIA/EMP reports

* * * * *



Creative Engineers & Consultants
DISCLOSURE OF CONSULTANT
ENGAGED

PRO CODE: CEC-EMP-MI-253
REV NO : 00/OCT/25
12-2

ANNEXURES

உதவி இயக்குநர் அலுவலகம்,
புவியியல் மற்றும் சுரங்கத்துறை,
மாவட்ட ஆட்சியர் அலுவலக வளாகம்
கோயம்புத்தூர் - 18.

ந.க.எண்.690/கனிமம்/2023

குறிப்பாணை

நாள்:

02.02.2025

12.5 FEB 2025

பொருள்: கனிமங்களும் குவாரிகளும் - கோயம்புத்தூர் மாவட்டம் - கிணத்துக்கடவு வட்டம் - அரசம்பாளையம் கிராமம், புல எண்.144/2A2 (பகுதி)-ல் 1.08.0 ஹெக்டேர் மற்றும் புல எண்.144/3A (பகுதி)-ல் 0.33.0 ஹெக்டேர் ஆக மொத்தம் 1.41.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் - சாதாரணக்கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க திரு.சு.சண்முகம் என்பவர் விண்ணப்பம் செய்தது - வரைவு சுரங்கத்திட்டம் சமர்ப்பிக்க அறிவுறுத்துதல் - தொடர்பாக.

- பார்வை: 1. திரு.சு.சண்முகம், த/பெ.சின்னரங்கசாமி கவுண்டர், மேற்கு தோட்டம், காரச்சேரி, கோயம்புத்தூர் என்பவரின் விண்ணப்பம் நாள்: 28.06.2023 மற்றும் 18.10.2024
2. இவ்வலுவலக கடிதம் இதே எண். நாள்: 06.07.2023 மற்றும் 22.10.2024
3. வட்டாட்சியர், கிணத்துக்கடவு கடிதம் எண். 2317/2023/ஆ1 நாள்: 18.10.2023 மற்றும் கடிதம் எண். 2371/2023/ஆ1 நாள்: 10.12.2024
4. வருவாய் கோட்டாட்சியர், பொள்ளாச்சி அவர்களின் கடிதம் ப.மு.எண்.3418/2023/அ2 நாள்: 07.11.2023.
5. வட்டார வளர்ச்சி அலுவலர், கிணத்துக்கடவு கடிதம் ந.க.எண்.277/2022/ஆ1 நாள்: 29.12.2023.
6. சார் ஆட்சியர், பொள்ளாச்சி கடிதம் எண்.4639/2024/அ2 நாள்.24.01.2025.
7. கோயம்புத்தூர் மாவட்ட புவியியல் மற்றும் சுரங்கத்துறை உதவி புவியியலாளரின் புலதணிக்கை குறிப்பு நாள்.04.02.2025.

பார்வை 1-ல் கண்ட கடிதங்களில் கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், பெரியகுயிலை அஞ்சல், மேற்கு தோட்டம், காரச்சேரி என்ற முகவரியில் வசிக்கும் திரு.சு.சண்முகம், த/பெ. திரு.சின்னரங்கசாமி கவுண்டர் என்பவர் கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், அரசம்பாளையம் கிராமம், புல எண்.144/2A2 (பகுதி)-ல் 1.08.0 ஹெக்டேர் மற்றும் புல எண்.144/3A (பகுதி)-ல் 0.33.0 ஹெக்டேர் ஆக மொத்தம் 1.41.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் கோரி உரிய ஆவணங்களுடன் விண்ணப்பித்துள்ளார்.

பார்வை 3,4, 5, 6 மற்றும் 7-ல் கண்ட கடிதங்களில் கிணத்துக்கடவு வட்டாட்சியர், வருவாய் கோட்டாட்சியர், பொள்ளாச்சி, கிணத்துக்கடவு வட்டார வளர்ச்சி அலுவலர்,

சார் ஆட்சியர், கொள்ளாச்சி மற்றும் புவியியல் மற்றும் சுரங்கத்துறை உதவி புவியியலாளர் ஆகியோர் புலத்தணிக்கை மேற்கொண்டு கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், அரசம்பாளையம் கிராமம், புல எண்.144/2A2 (பகுதி)-ல் 1.08.0 ஹெக்டேர் மற்றும் புல எண்.144/3A (பகுதி)-ல் 0.33.0 ஹெக்டேர் ஆக மொத்தம் 1.41.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் திரு.சுசண்முகம், த/பெ. திரு.சின்னரங்கசாமி கவுண்டர் என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வழங்கலாம் என பரிந்துரை செய்துள்ளனர்.

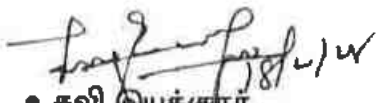
எனவே, கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், அரசம்பாளையம் கிராமம், புல எண்.144/2A2 (பகுதி)-ல் 1.08.0 ஹெக்டேர் மற்றும் புல எண்.144/3A (பகுதி)-ல் 0.33.0 ஹெக்டேர் ஆக மொத்தம் 1.41.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், விதி எண்.19-ன் கீழ் 5 வருட காலங்களுக்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி குத்தகை உரிம அனுமதி வழங்க உகந்த புலமாக கருதி அறிவிப்பு செய்யப்படுகிறது.

மேலும், திரு.சுசண்முகம் என்பவர் மூன்று மாத காலத்திற்குள் வரைவு சுரங்கத்திட்ட அறிக்கை (Draft Mining Plan) கீழ்கண்ட நிபந்தனைகளுக்குட்பட்டு தயார் செய்து கோயம்புத்தூர் மாவட்ட புவியியல் மற்றும் சுரங்கத்துறை உதவி இயக்குநரிடம் ஒப்புதல் பெற்றும், தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 41 & 42-ன் படி ஏற்பளிக்கப்பட்ட சுரங்கத்திட்ட அறிக்கை மற்றும் மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய இசைவாணைச் சான்று பெற்று சமர்ப்பிக்குமாறும் அறிவுறுத்தப்படுகிறது.

நிபந்தனைகள்

1. அருகிலுள்ள பட்டா நிலங்கள் மற்றும் பொது மக்களுக்கும் எவ்வித இடையூறும் இன்றி குவாரி பணி மேற்கொள்ள வேண்டும்.
2. அருகில் உள்ள பட்டா நிலத்திற்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.
3. அனுமதி கோரும் புலங்களின் வடக்கு மற்றும் கிழக்கு பகுதிகளில் செல்லும் உயர் மின்கம்பி டவர்லைனுக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி புரிய வேண்டும்.
4. அனுமதி கோரும் புலத்தினை அரசு அங்கீகாரம் பெற்ற நிறுவனத்தினரால் DGPS (Differential Global Positioning System)-ன் படி ஆய்வு செய்யப்பட்டு ஒவ்வொரு எல்லைத் தூண்களும் நடப்படவேண்டும்.

பெறுநர்:
திரு.சுசண்முகம்,
த/பெ.திரு.சின்னரங்கசாமி கவுண்டர்,
மேற்கு தோட்டம்,
காரச்சேரி,
கோயம்புத்தூர் மாவட்டம்.


உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை
கோயம்புத்தூர்.

From

Thiru.K.Vijayaragavan, M.Sc.,
Assistant Director,
Geology and Mining,
Coimbatore

To

Thiru.C.Shanmugam,
S/o.Chinnarangasamy Gounder,
Merku Thottam, Karachery,
Periyakuyilai (po),
Kinathukadavu,
Coimbatore

Rc.No.690/Mines/2023 Dated: 25.02.2025.

Sir,

Sub: Mines and Quarries – Minor Minerals – Coimbatore District - Kinathukadavu Taluk – Arasampalayam Village - Survey Nos.144/2A2 (part) (1.08.0 Hec) and 144/3A (part) (0.33.0 Hec) - over an extent of 1.41.0 hectares of patta land - Rough stone & Gravel quarry lease – Precise area communicated – Draft mining plan submitted by Thiru.C.Shanmugam - Approval of mining plan - Regarding.

Ref: 1. Application of Thiru.C.Shanmugam dated: 28.06.2023 & 18.10.2024.
2. Precise area communication in Rc.No.690/Mines/ 2023 dated: 18.02.2025.
3. Thiru.C.Shanmugam letter dt. .02.2025.


In the reference 1st cited, Thiru.C.Shanmugam has applied for the grant of rough stone & Gravel quarry lease over an extent of 1.41.0 hectares of patta land in Survey Nos.144/2A2 (part) (1.08.0 Hec) and 144/3A (part) (0.33.0 Hec) of Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District under Rule 19(1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

2) Based on the recommendations of the Tahsildar, Kinathukadavu, Sub Collector, Pollachi, Block Development Officer, Kinathukadavu and the Assistant Geologist of Geology and Mining, Coimbatore, the precise area has been communicated to the applicant vide reference 2nd cited.

3) In exercise of powers delegated under Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959, I hereby approve the mining plan submitted by Thiru.C.Shanmugam for grant of rough stone & gravel quarry lease over an extent of 1.41.0 hectares of patta land in Survey Nos.144/2A2 (part) (1.08.0 Hec) and 144/3A (part) (0.33.0 Hec) of

Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District for a period of Five years and the proposed mineable reserves after leaving safety distance is arrived as **58,821 cbm** of rough stone and **11,992 cbm** of gravel upto a depth of **39 m**. This approval is subject to the following conditions:-

- (i). 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.
- (ii). This approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (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 the Tamil Nadu Minor Mineral Concession Rules, 1959.
- (iii). That the mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.
- (iv). No hindrance should be caused to the Public and nearby patta lands.
- (v). A safety distance of 7.5 meters should be provided for adjacent patta land from the lease applied area.
- (vi). A safety distance of 50 meters should be provided for high tension tower line passing on the north and eastern side of the applied area.
- (vii). DGPS survey should be done by the Government recognized agency and boundary stones should be erected along the entire boundary of the leased out area.


Assistant Director,
Geology and Mining,
Coimbatore

Encl: 2 copies of Approved Mining Plan.

Copy submitted to :

1. The Chairman, State Level Environment Impact Assessment Authority, Chennai
2. The Commissioner of Geology and Mining, Industrial Estate, Guindy, Chennai- 32.

Annexure- 3

From

Thiru.K.Vijayaragavan, M.Sc.,
Assistant Director,
Geology and Mining,
Coimbatore

To

Thiru.C.Shanmugam,
S/o.Chinnarangasamy Gounder,
Merku Thottam, Karachery,
Periyakuyilai (po),
Kinathukadavu,
Coimbatore.

Rc.No.690/Mines/2023 Dated: 25.02.2025.

Sir,

Sub: Mines and Quarries – Minor Minerals – Coimbatore District - Kinathukadavu Taluk – Arasampalayam Village - Survey Nos.144/2A2 (part) (1.08.0 Hec) and 144/3A (part) (0.33.0 Hec) - over an extent of 1.41.0 hectares of patta land - Rough stone & Gravel quarry lease – Precise area communicated to Thiru.C.Shanmugam – 500 mts Radius letter requested- regarding.

Ref: 1. Application of Thiru.C.Shanmugam dated: 28.06.2023 & 18.10.2024.
2. Precise area communication in Rc.No.690/Mines/2023 dated: 18.02.2025.
3. Thiru.C.Shanmugam letter dt. .02.2025

With reference to your letter in the reference 3rd cited, the details of existing and lease expired quarries located within 500 mts radius from the proposed Rough stone & gravel quarry over an extent of 1.41.0 hectares of patta land in Survey Nos.144/2A2 (part) (1.08.0 Hec) and 144/3A (part) (0.33.0 Hec) of Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District are as follows:

Sl. No	Name of the quarry Owner	Name of the Village & Survey Number	Extent (in Hects)	Remarks
a. Existing Quarries				
1.	C.Ganesh	Arasampalayam 151/1E (P)	1.58.0	03.11.2023 to 02.11.2028
2.	S.Abdul Jabbar	Arasampalayam 364	3.85.5	28.11.2023 to 27.11.2028

3.	M.Rasamani	Arasampalayam 361/1A, 362/1	0.99.0	07.11.2023 to 06.11.2028
4.	M/s.Sree Mahalakshmi Blue Metals	Arasampalayam 149/2B, 149/3A, 149/3B, 149/3C, 149/4A, 149/4B & 149/4C	4.26.72	15.03.2024 to 14.03.2029

b. Expired Quarries


1.	R.Palanimuthu	Arasampalayam	0.72.0	25.01.2019 to 24.01.2024
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c. Abandoned Quarries

-NIL-

d. Present proposed Quarries

1.	C.Shanmugam	Arasampalayam 144/2A2 (P) & 144/3A (P)	1.41.0	applied area (Rough Stone and gravel)
2.	V.Senthilkumar	Arasampalayam 135/3F, 136/3 & 137/3	2.26.0	The land availability report from the Sub Collector, Pollachi, is still awaited.


Assistant Director,
Geology and Mining,
Coimbatore

25/2/25

சான்றி

கிராமப்புத்தூர் மாவட்டம், கிணத்துக்கடவு
வட்டம். அரசம்பாளையம் கிராமம், பட்டா: 796ல்
கீழ்வ எண் : 144 / 2A2ல் 1.38.0 ஏக்கர். ஏரில்
புண்ணெய் பூமியும் இதில் 2ம் கிராமம் யுனிடமும்
(சீவசீவா புறமெட்டல்ஸ்) சிபிளாவுக்களிக்கமுன்
மகன் 100. சண்டுகம் சம்பலுக்கு மாத்தியப்பபு
என சான்றிடுகப்படுகிறது.


28.03.2025

கிராம நிர்வாக அலுவலர்
06, அரசம்பாளையம் கிராமம்
கிணத்துக்கடவு வட்டம்

From

Thiru.K.Vijayaragavan, M.Sc.,
Assistant Director,
Geology and Mining,
Coimbatore

To

Thiru.C.Shanmugam,
S/o.Chinnarangasamy Gounder,
Merku Thottam, Karachery,
Periyakuyilai (po),
Kinathukadavu,
Coimbatore

Rc.No. 690/Mines/2023 dated: 25.02.2025

Sir,

Sub: Mines and Quarries – Minor Minerals – Coimbatore District - Kinathukadavu Taluk – Arasampalayam Village - Survey Nos.144/2A2 (part) (1.08.0 Hec) and 144/3A (part) (0.33.0 Hec) - over an extent of 1.41.0 hectares of patta land - Rough stone and gravel quarry lease – Precise area communicated – Mining Plan approved – further particulars called for – furnished – regarding - Regarding.

Ref: 1. Precise area communication in Rc.No.690/Mines/2023 dated: 18.02.2025.
2. Thiru.C.Shanmugam letter dt. .02.2025

In the reference 2nd cited, Thiru.C.Shanmugam has requested to furnish certain particulars regarding the precise area granted over an extent of 1.41.0 hectares of patta land in Survey Nos.144/2A2 (part) (1.08.0 Hec) and 144/3A (part) (0.33.0 Hec) of Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District. In this connection the following details are furnished.

The area was previously held under quarry lease and the details are as follows


Sl. No.	Name of the Exlessee	SF.No/ Extent	District Collector's proceedings No. & Date	Lease Period
1	C.Shanmugam	144/2A 1.38.0 Hec	Rc.No.1067/2005/M M1 dated: 15.03.2006	01.04.2006 to 31.03.2011 -5 years
2	C.Shanmugam	144/2A2 (P) 0.85.5	Rc.No.189/2011/M M2 dt: 04.05.2011	04.05.2011 to 03.05.2016 - 5 years

3.	C.Shanmugam	144/2A2 (P) 0.85.5 Hec	Rc.No. 335/Mines/2016 Dt: 09.12.2016	09.12.2016 to 08.12.2021 - 5 Years
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As per modified mining plan submitted by the RQP concerned the dimension of existing pit as follows:

Pit No.	Length in max(m)	Width in max(m)	Depth in max(m)
I	97m	65m	27m
Total Depth			27m

Excavated Quantity Details								
Year	As Per Approved For Ec Quantity (2016 To 2021) - Ec No: 3756/2016-Dated 26.09.2016			Depth (m)	Achieved Quantity (2016 To 2021)			Depth (m)
09.12.2016 to 08.12.2021	Rough Stone (m ³)	Gravel (m ³)	Total Rough Stone & Gravel Quantity (m ³)	27m	Rough Stone (m ³) (Transported)	Gravel (m ³) (Transported)	Total Rough Stone & Gravel Quantity (m ³)	27m
Total	45,845	4,738	50583	27m	44,985	4,685	49,670	27m


Assistant Director,
Geology and Mining,
Coimbatore

24/2/25



தமிழ்நாடு தமிழ்நாடு TAMILNADU Rs 500/-

AS 179915

2102
D. தண்டபாணி
"முத்திரைநாள் விற்பனையாளர்"
உரிமம் எண் : 928/B1/2021-75/CBE
பிரிமியர் நகர், ஒத்தக்கால் மண்டபம்
கிணத்துக்கடவு, தமிழ்நாடு
DT: 02.04.2025

சண்முகம்
கருச்சேரி

உ

ஓம்

குத்தகை பத்திரம்

வருடக்குத்தகை தொகை ரூ. 5,000/- குத்தகைகாலக்கெடு 5 வருடம்

(முன்பணம் கில்லை)

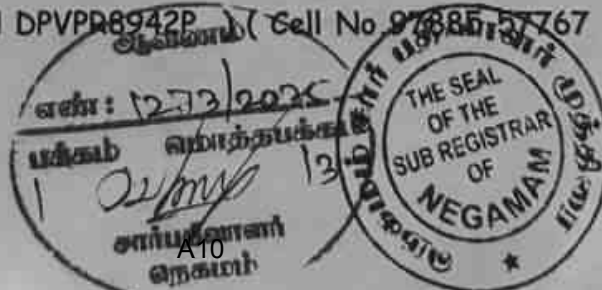
2025 ஆம் வருடம் ஏப்ரல் மாதம் 2 ந் தேதிக்குச் சரியான தமிழ் ஸ்ரீகுரோதி
வருடம் பங்குனி மாதம் 19 ஆம் நாள்

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு தாலுக்கா, அரசம்பாளையம்
கிராமம் மஜரா காரச்சேரி, கதவு நெ.5/69 இலக்கமிட்ட விலாசத்தில் வசிக்கும்
மேற்படி 1 லக்கமிட்ட திரு. வேலுச்சாமிக்கவுண்டர் அவர்கள் மகனும் திரு.
சண்முகம் அவர்கள் மனைவியுமான திருமதி. ரத்தினம் (Aadhaar

No. 2596 0202 3226) (PAN DPVPR8942P) (Cell No 97885 57767) (1),

1. சரத்தினம்

2. R சண்முகம்



கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு தாலூக்கா -641 201, காரச்சேரி, பெரியகுயிலை, கதவு நெ.5/69 இலக்கமிட்ட விலாசத்தில் வசிக்கும் திரு. சின்னரங்கசாமி அவர்கள் குமாரர் திரு.R. சண்முகம் (Aadhaar No.5177 7543 2558) (PAN BVSPS1352P) (Cell No.98656 50656) (2), ஆகிய நாங்கள் இருவரும் சேர்ந்து எழுதிக்கொண்ட குத்தகை பத்திரம் என்னவென்றால் :-

நம்மில் 1 இலக்கமிட்டவருக்கு 30.05.2019 ந் தேதியில் நெகமம் சார்பதிவாளர் அலுவலகத்தில் 1 புத்தகம் 1394/2019 ஆம் நெம்பராகப்பதிவு செய்யப்பட்ட பாகப்பத்திரப்படி "B" ஷெட்யூலாகப்பிரிந்ததும், பிதூரார்ஜிதவகையில் பாத்தியப்பட்டதுமான மொத்தச்சொத்துக்களில் இதனடியிற்கண்ட பூமியை மட்டும் நம்மில் 2லக்கமிட்டவருக்கு, 1 இலக்கமிட்டவர் வகுடம் 1 க்கு ரூ.5,000/- வீதம் (ரூபாய் ஐந்தாயிரம்) குத்தகைக்கு கொடுத்து குத்தகை முன்பணம் எதுவும் இல்லாமல் 5 (ஐந்து) வகுடத்திற்கு இதனடியிற்கண்ட பூமியை மட்டும் நம்மில் 1 இலக்கமிட்டவர் 2 இலக்கமிட்டவருக்கு கல்குவாரி சம்பந்தமாக தொழில் செய்வதற்காக மட்டும் குத்தகைக்கு கொடுத்துள்ளார்.

நம்மில் 2 இலக்கமிட்டவர் இதனடியிற்கண்ட குத்தகை பூமியை மட்டும் மாவட்ட ஆட்சியர் அவர்களின் அனுமதி பெற்று கீழ்க்காணும் பூமியில் கல்குவாரி சம்பந்தமான வேலைகளை குத்தகை ஒப்பந்தம் செய்து கொண்ட பிறகு மேற்படி 5 (ஐந்து) வகுட காலத்திற்கு கல்குவாரி சம்பந்தமான வேலைகளை நம்மில் 2 இலக்கமிட்டவர் செய்துவரவேண்டியது.

மேற்படி குத்தகை காலம் முடிந்தவுடன் கீழ்க்காணும் பூமியை 1 இலக்கமிட்டவரிடம் 2 லக்கமிட்டவர் ஒப்படைத்துவிடவேண்டியது. இதனடியிற்கண்ட குத்தகை பூமியை 2 லக்கமிட்டவர் மேற்படி குத்தகை கெடுக் காலம் வரையிலும் எந்தவிதமான வில்லங்கத்திற்கு உட்படுத்தவதில்லை என இதன் மூலம் ஒப்புக்கொண்டுள்ளார்.

1. ச. ரத்தினம்

2. R சண்முகம்



...3...

இந்த குத்தகை ஒப்பந்தத்தின் அசல் 2 லக்கமிட்டவரும் அதன் ஜெராக்ஸ்காப்பி 1 லக்கமிட்டவரும் வைத்துக்கொள்ளவேண்டியது.

குத்தகை ஒப்பந்தப் பத்திரத்தின் பிற நிபந்தனைகளுக்கும், நாம் இருவரும் கட்டுப்பட்டவர்கள் எனவும் நாம் இருவரும் சேர்ந்து சம்மதித்து எழுதிக்கொண்ட குத்தகை ஒப்பந்தப்பத்திரம்.

சொத்து விபரம்

முன்பு திருப்பூர் பதிவு மாவட்டம், தற்போது கோயம்புத்தூர் தெற்கு பதிவு மாவட்டம், முன்பு கிணத்துக்கடவு துணைப்பதிவு மாவட்டம், தற்போது நெகமம் துணைப்பதிவு மாவட்டம், முன்பு பொள்ளாச்சித் தாலுக்கா, தற்போது கிணத்துக்கடவு தாலுக்கா, அரசம்பாளையம் கிராமம் தனிப்பட்டா எண். பழையது 364 புதிய பட்டா எண். 1121 இதில்

க.ச.144/3Aநெ.பு.ஹெக்.0.82.0 க்குச்சரியான பு.ஏ.2.02 ½ க்கு தீ.ரு.1.12 இதில் மேல்புறம் கிழமேலாக 0.33.0 க்குச் சரியான பு.ஏ.0.81 ½ விஸ்தீரணமுள்ள பூமி மட்டும் இந்த குத்தகை பத்திரத்திற்கு கட்டுப்படும்.

1. 5.7 ஏக்கர்

2. 1/2 ஸ்டான்ட்



..4..

மேற்படி குத்தகை பூமிக்கு 1 லக்கமிட்டவர் திதுவரை மாறலாக போக வர உபயோகித்து வந்தபடி தினிமேல் 2 லக்கமிட்டவரும் மாறல்படி போக வர உண்டான வழிநடை தடபாத்தியம் வழியாக மாறல்படி போக வர உபயோகித்துக்கொள்ளவேண்டியது. மேற்படி திர்தச்சொத்துக்கள் சகிதம்.

1. S. ரத்தினம்

2. R. ஜெனா

சாட்சிகள்-----

1. R. ஜெனா

(சதீஷ்மார்), த/பெ. சண்முகம்
3/298 -1/16 ஹோம் பார்க், கார்ச்சேரி (போஸ்ட்)
பெரியகுயிலை, கிணத்துக்கடவு தாலுக்கா
கோவை - 641 201
(Aadhaar No. 8001 9172 2351) (Age 33)

2. S. ஜெனா

(தர்மலிங்கம்), த/பெ. சுப்பையாமி
கதவு நெ.5/70 முஸ்லீம்கோவில்பாளையம்
நெகமம் ரோடு, கோவில்பாளையம்,
கிணத்துக்கடவு தாலுக்கா கோவை 642 109
(Aadhaar No. 8994 0433 7468) (Age 56)



பத்திரம் தயாரித்தவர்



லதா.S

பத்திர எழுத்தர்

மாநில உரிமம் எண் -L.No. A728/TRP/99

சார் பதிவாளர் அலுவலகம் இதரில்,

கோவை - பொன்னாச்சி மெயின் ரோடு,

கிணத்துக்கடவு - 642 109

98422 72793 | 98422 36793

A13

Email : lathaadw1999@gmail.com



நாடுநாடு அரசு
வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை
நில உரிமை விபரங்கள்: இ. எண் 10(1) பிரிவு
வட்டம்: கிணத்தூக்கடவு
பட்டா எண்: 1121

மாவட்டம்: கோயம்புத்தூர்
வருவாய் கிராமம்: அரண்மனையம்

சுண்ணாம்பு		உரிமையாளர்கள் பெயர்				மணலாதி		ரத்தினம்		குறிப்புக்கள்
புல எண்	உட்கிரிவு	புலசெய்		நட்புசெய்		மற்றவை		குறிப்புக்கள்		
		பரப்பு	நீர்வை	பரப்பு	நீர்வை	பரப்பு	நீர்வை			
		தெரு - ஏர	கு - கை	தெரு - ஏர	கு - கை	தெரு - ஏர	கு - கை			
144	3A	0 - 82.00	1.12	-	-	-	-	2019/0103/12/179957- Digitally signed: Jothibasu R Zonal Deputy Tahsildar 06/07/2019 02:09:07 PM		
		0 - 82.00	1.12							

குறிப்பு :

குறிப்பு:

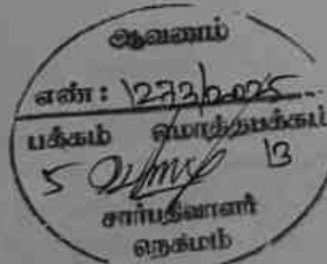


- மேற்கண்ட தகவல் / ஊர்நிதித் தகவல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 12/12/001/01121/10135 என்ற குறியீடு எண்ணை உள்நுழைத்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 02-04-2025 அன்று 11:06:50 AM நேரத்தில் அச்சிடப்பட்டது.
- ஸ்கான்பேசி செய்வதற்கான 2D barcode படிப்பான் மூலம் படித்து 30/6PR5 வுறி இணையதளத்தில் சரிபார்க்கவும்.

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1. S. ரஞ்சிதன்
2. R. சண்முகம்



District : Coimbatore

Taluk : Klnathukkdavu

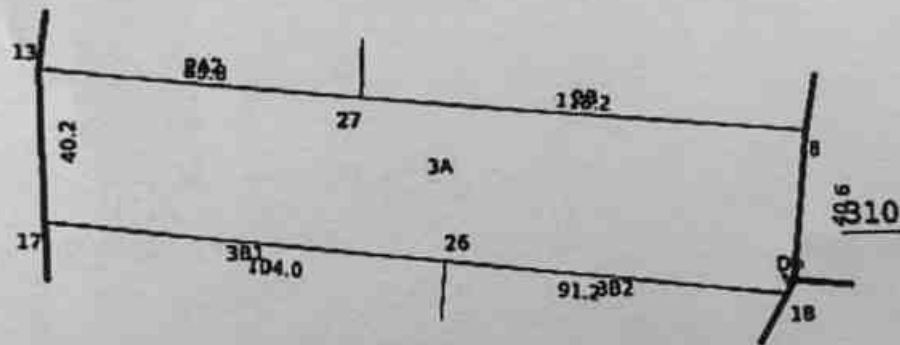
Village : Arasampalayam. [1]



Survey No : 144/3A

Area : Hect 00 Ares 82.00

Scale : 1 : 1447



Data Digitally Signed By
ALDRIN PRASATH J

Date of Issue: 02-04-2025 11:16:23

Survey and Settlement Department, Government of TamilNadu

280 IV.2



1. S. ரஞ்சிதன்
2. R. சந்திரன்



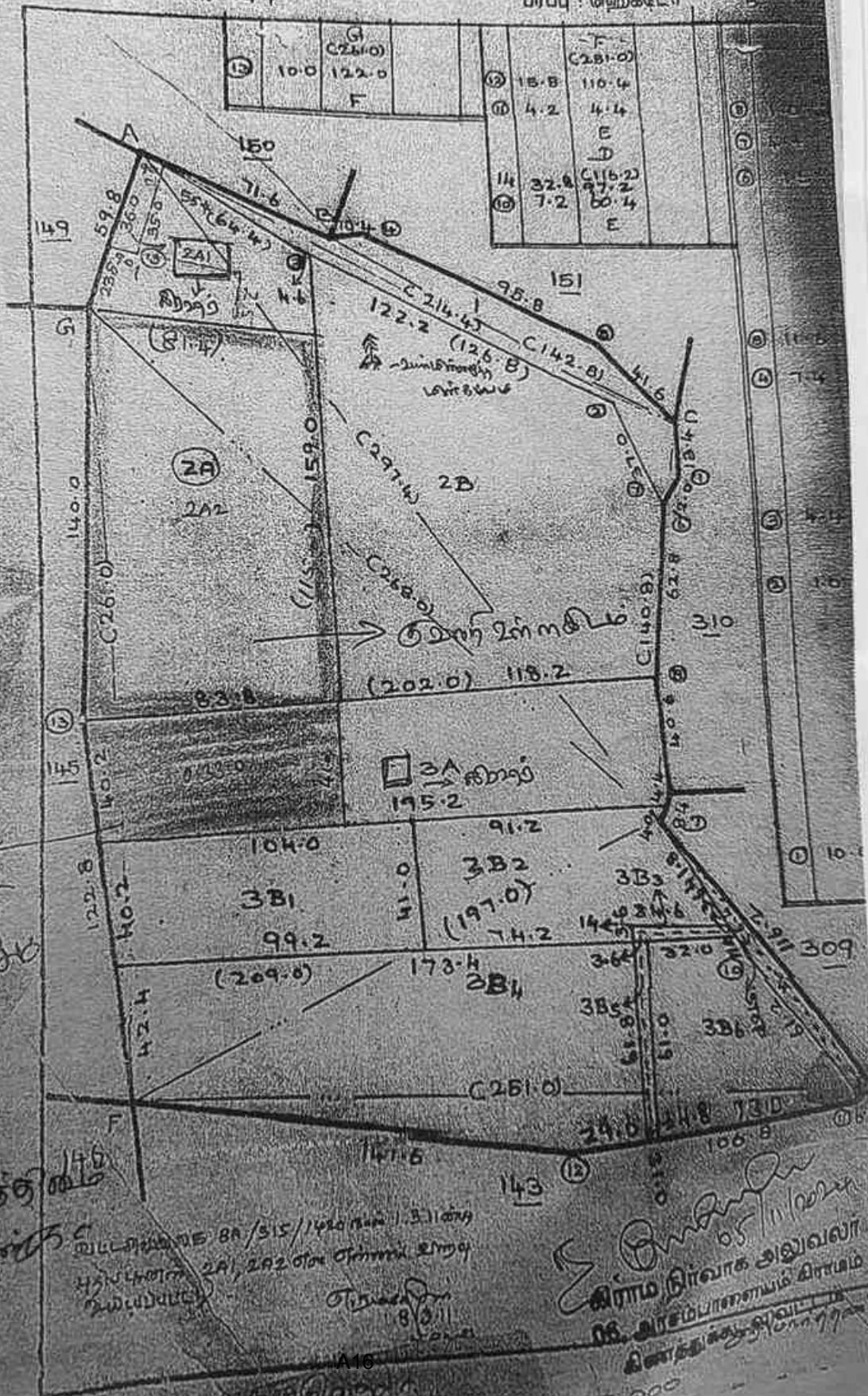
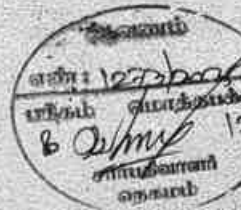
A15

மாவட்டம். கோயம்புத்தூர்

வட்டம். ரிபான்சாகதி.

புல எண். 144

பரப்பு : ஹெக்டேர் 6



கோயம்புத்தூர்
புல எண் 144

ச. ரமணி
R. Ramani

சு. ரமணி
S. Ramani

அ-பதிவேடு விவரங்கள் - கணக்கம்

மாவட்டம் : கோயம்புத்தூர்
வட்டம் : கிளைத்துங்குடவு
கிராமம் : அரண்மனைபாளையம்

1. புல எண்	144	9. மண் வயலுக்கும் ஏரிலும்	3 - 4
2. உட்பிரிவு எண்	3A	10. மண் தரம்	6
3. பரப்பளவு புல உட்பிரிவு எண்	3a	11. நீர்மை (ரு - நெல்)	1.38
4. பருதி	-	12. பாப்பு (நெல்சேடி - ஏர்)	6 - 82.00
5. அரண் / ஏயத்துவாரி	ஏயத்துவாரி	13. மொத்த நீர்மை (ரு - ண)	1.12
6. நிலத்தின் வகை	புஞ்சை	14. பட்டா எண்	1121
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகலா	-	16. பெயர்	1. ஏத்தினம்

குறிப்பு:



1. விவரங்கள் தகவல் / எண்ணிதல் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டன. இவற்றை தங்கள் <https://eservices.in.gov.in> என்ற இணைய தளத்தில் 12/12/2011/144/3A/10135 என்ற குறிப்பு எண்ணை உள்ளிடு செய்த உறுதி செய்துகொள்ளவும்.

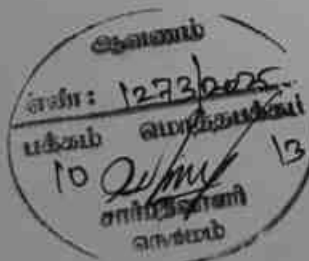
1. S. ரத்தினம்

2. R. ரத்தினம்





1. S. R. சந்திரன்
2. R. சந்திரன்





1. ச. ரத்தினம்
2. R சந்திரன்



 <p>1947 1950-2002</p>	<p>भारतीय विशिष्ट पहचान प्राधिकरण UNIQUE IDENTIFICATION AUTHORITY OF INDIA</p>
<p>குமுகாரி: க. எஸ். 5/70 முஸ்லிம் கோவில் அரண்மனை, நெ-எம் கோடு, கோவில் அரண்மனை, கோவில் அரண்மனை, கிஷ்கிணு, கி, கோவில் நெடு, தமிழ் நாடு, 642110</p>	<p>Address: D NO5/70 MUSLIM KOILPALAYAM, NEEGAM/AM ROAD, KOILPALAYAM, Kothpalayam, KOVILPALAYAM, Kuthalikadu, Coimbatore, Tamil Nadu, 642110</p>

J. D. Baker.

 <p>Unique Identification Authority of India</p>	<p>8001 9172 2351 VID : 9197 3543 8167 1587</p>	 <p>AADHAAR</p>
<p>Address: S/O SHANMUGAM, 3/298-1/16, HOME SPARK, KINATHUKADAVU, Karachai, PO, Periyakudayil, DIST: Coimbatore, Tamil Nadu - 641201</p>		

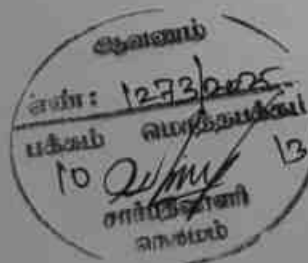
1. சரத்தினாட்

2/2 Jootho





1. S. R. சந்திரன்
2. R. சந்திரன்

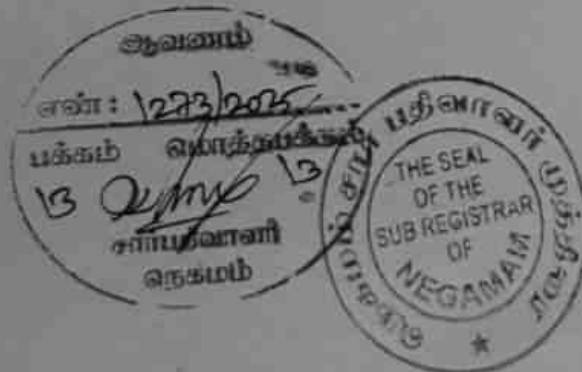


R/நெகமம்/புத்தகம்-1/1273/2025 எண்ணாகப் பதிவு செய்யப்பட்டது.

நாள்: 02/04/2025

நெகமம்

Q2/my
கலாவதி வெ
சார்பதிவாளர்



2025 ஆம் ஆண்டு ஏப்ரல் மாதம் 02ம் தேதி பி.ப. 03-01 மணியளவில் நெகமம் சார்பதிவாளர் அலுவலகத்தில் தாக்கல் செய்து கட்டணம் ரூ. 910/- செலுத்தியவர்.

இடது பெருவிரல்



R சண்முகம்

கூடுதல் விவரங்கள் ஆவண வாசகத்தில் உள்ளபடி

எழுதிக் கொடுத்ததாக ஒப்புக் கொண்டவர்
இடது பெருவிரல்



S.ரத்தினம்

"சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்" என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது. ஒப்பீட்டு எண் :
UKC:3840544fc04d438e1c24812bd8ea0698d0eba84
(Details from UIDAI : Rathinam W/O: Shanmugam, 03-06-1978, xxxxxxxx3226)



எழுதி வாங்கியதாக ஒப்புக் கொண்டவர்
இடது பெருவிரல்



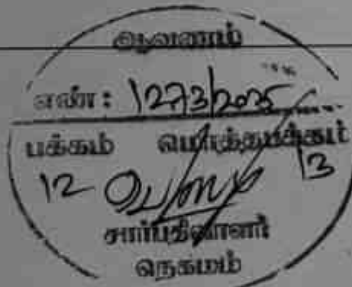
R சண்முகம்

"சம்மதத்துடன் கூடிய ஆதார் அங்கீகாரம்" என்ற வழி இந்த நபரின் அடையாளம் விரல் ரேகை மூலம் ஆதார் ஆணையத்துடன் சரிபார்க்கப்பட்டது. ஒப்பீட்டு எண் :
UKC:68182941fb2c58ca51a48c7bd4de1f7e9a4581a
(Details from UIDAI : SHANMUGAM R S/O: Chinnarangasamy, 11-02-1971, xxxxxxxx2558)



2025 ஆம் ஆண்டு ஏப்ரல் மாதம் 2ம் நாள்

(Signature)
கலாவதி வெ
சார்பதிவாளர்
நெகமம்





Dr. S. KALYANASUNDARAM ,I.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.5654/1(a)/ EC.No: 3756/2016 dated: 26.09.2016

To

Thiru. C. Shanmugam
Merku Thottam, Karacheri
Periyakuyilai (Post)
Chettipalayam(Via)
Kinathukadavu Taluk
Coimbatore District



Sir,

Sub: SEIAA-TN – Proposed **Rough Stone & Gravel** quarry located at S.F.No 144/2A2 (Part),
Arasampalayam Village,Kinathukadavu Taluk, Coimbatore District- issue of
Environmental Clearance – Reg.

Ref: 1. Your Application for Environmental Clearance dt: 19.08.2016
2. Minutes of the 81th SEAC held on 23.09.2016
3. Minutes of the SEIAA meeting held on 26.09.2016

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. C. Shanmugam Merku Thottam, Karacheri Periyakuyilai (Post) Chettipalayam(Via) Kinathukadavu Taluk Coimbatore District
2	Location of the Proposed Activity	
	Survey Number	144/2A2 (Part)
	Latitude and Longitude	10°52'14"N to 10°52'18"N 77°02'33"E to 77°02'37"E
	Village	Arasampalayam

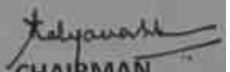
Kalyanasundaram
CHAIRMAN
SEIAA-TN

	Taluk	Kinathukadavu
	District	Coimbatore
3	Proposed Activity	
	i. Minor mineral	Rough Stone & Gravel
	ii. Mining Lease Area	0.85.5 Ha
	iii. Approved quantity	45845 cu.m of Rough stone & 4738 cu.m of Gravel
	iv. Depth of Mining	27 m
	v. Type of mining	Opencast Semi Mechanized Mining Method
	vi. Category(B1/B2)	B2
	vii. Precise area communication	R.C. 335/Mines/2016, dated: 04.08.2016
	viii. Mining plan approval	Assistant Director R.C.No.335/Mines/2016, dated: 17.08.2016
	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:	12 Employees
6	Utilities	
	i. Source of Water :	Water vendors/Existing bore hole
	ii. Quantity of Water Requirement in KLD:	
	a. Domestic	0.3KLD
	b. Industrial	} 0.7KLD
	c. Green Belt & Dust Suppression	
	iii. Power Requirement:	
	a. Domestic Purpose	TNEB
	b. Industrial Purpose	23710 Liters of HSD
7	Cost	
	i. Project Cost	Rs.23.42 Lakhs
	ii. EMP Cost	Rs.4.25 Lakhs
8	Public Consultation:-	Not required as per O.M. dated 24.12.2013 of MoEF, Gol.
9	Date of Appraisal by SEAC:-	23.09.2016
	Agenda No:	81-11
10	Date of Review/Discussion by SEIAA and the Remarks:-	
	The proposal was placed before the SEIAA in its 193 rd Meeting held on 26.09.2016 and the Authority after careful consideration, decided to grant environmental clearance to the said project Mining of Rough Stone & Gravel subject 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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SEIAA-TN

Conditions to be Complied before commencing mining operations:-

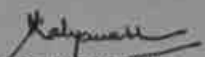
1. The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that
 - I. The project has been accorded Environmental Clearance.
 - II. Copies of clearance letters are available with the 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.


CHAIRMAN
SEIAA-TN

29. Wast
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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, GoI 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, GoI 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.


CHAIRMAN
SEIAA-TN

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 mentioned above 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 soil 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, if 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.

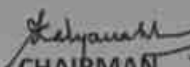

CHAIRMAN
SEIAA-TN

44. At least 10 Neem trees should be planted around the boundary of the quarry site.
45. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
46. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
47. The Project Proponent shall provide solar lighting system to the nearby villages
48. The Project Proponent shall comply with the mining and other relevant rules and regulations where ever applicable.
49. Rainwater shall be pumped out Via Settling Tank only
50. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
51. 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.
52. 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.
53. Safety equipments to be provided to all the employees.
54. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
55. 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.
56. 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.
57. 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.
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.

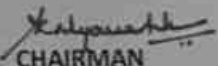

CHAIRMAN
SEIAA-TN

General Conditions:

1. EC is given only on the factual records, documents and the commitment furnished in non judicial 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.
17. 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 SEIAA, 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, Coimbatore District
8. The Commissioner of Geology and Mines, Guindy, Chennai-32
9. El Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. Spare.



भारतसरकार
GOVERNMENT OF INDIA

पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE

Regional Office/ क्षेत्रीय कार्यालय,

1st Floor, Additional Office Block for GPOA, Shastri Bhawan,
Haddows Road, Nungambakkam, Chennai – 600006



EP/12.1/2025-26/SEIAA/77/TN / 1300

22.08.2025

To

The Member Secretary,

State Level Environment Impact Assessment Authority (SEIAA),
3rd Floor, Panagal Maaligai, No.1, Jeeris Road,
Saidapet, Chennai – 600 015.
Email- cmantoseiaa@yahoo.com

Subject: SEIAA-TN - Proposed Rough Stone & Gravel Quarry located at S.F. No. 144/2A2 (Part), Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District – Thiru. C. Shanmugam – issue of Environmental Clearance - reg.

EC Ref. No: Lr. No. SEIAA-TN/F.No.5654/1(a) / EC.No.3756/2016 dated 26.09.2016.
(ii) CCR request letter dated: 21.07.2025
(iii) ATR seeking letter dated: 14.08.2025
(iv) ATR reply E-mail dated: 20.08.2025

Sir,

With reference to the subject cited above, please find enclosed herewith a Certified Compliance Report along with action taken report submitted by Thiru. C. Shanmugam on non-compliances observed in the Report issued by Regional Office, MoEF&CC, Chennai vide ref. no. 3 above.

This issues with the approval of the Competent Authority.

Encl: As above.

Yours faithfully,

(Signature)
22/8/2025

(Dr. C. Palpandi)

Scientist 'D'

Dr.C.Palpandi

Government of India

Min. of Environment Forest and Climate Change,

Regional Office

1st Floor, Addl. Office Block for GPOA,

Shastri Bhawan, Haddows Road,

Nungambakkam, Chennai - 600 006.

Copy to:

1. **Dr. Shruti Rai Bhardwaj, Scientist 'F'** Monitoring Cell, IA Division, Indira Paryavaran Bhawan, MoEF&CC, Jorbagh Road, Aliganj, New Delhi – 110 003. Email- shruti.rai@nic.in
2. **The Member Secretary,** Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai - 600 032. Email - memsec@tnpcb.gov.in
3. **Thiru. C. Shanmugam,** Merku Thottam, Karacheri, Periyakuyilai (Post), Chettipalayam (Via), Kinathukadavu Taluk, Coimbatore District.
4. **The District Collector,** Collectorate Building, Coimbatore – 641018. Email: collicbe@nic.in

C. Palpandi 22/8/2015
(Dr. C. Palpandi)
Scientist 'D'

Dr. C. Palpandi
Scientist 'D'
Ministry of Environment, Forest and Climate Change
Regional Office
1st Floor, 8B, Anna Salai, Chennai - 600 002

Inspection Report

Subject: SEIAA-TN - Proposed Rough Stone & Gravel Quarry located at S.F. No. 144/2A2 (Part), Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District – Thiru. C. Shanmugam – issue of Environmental Clearance - reg.

EC Ref. No: Lr. No. SEIAA-TN/F.No.5654/1(a) / EC.No.3756/2016 dated 26.09.2016.

Project Proponent: Thiru. C. Shanmugam,
Merku Thottam,
Karacheri, Periyakuyilai (Post),
Chettipalayam (Via),
Kinathukadavu Taluk,
Coimbatore District

Present Status of the Project:



The State Level Environment Impact Assessment Authority, Tamil Nadu (SEIAA - TN), granted Environmental Clearance (EC) vide letter dated 26.09.2016 to the Rough Stone & Gravel Quarry of Thiru. C. Shanmugam in Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu. It is an Open-Cast, Semi Mechanized mining operation with an approved mining depth of 27 meters below ground level. The total Mine Lease (ML) area is 0.85.5 hectares, out of total Mine Lease area, broken-up area is 0.66.58 Hectare. The quantity of Rough Stone sanctioned for five years is 45,845 m³ and of 4,738 m³ of Gravel and the quantity taken so far is 44,985 m³ of Rough Stone and 4,685 m³ of Gravel. The project cost is Rs. 23.42 Lakhs, with an Environmental Management Plan (EMP) cost is Rs.4.25 Lakhs.

C. Shanmugam

During the site visit, it was observed that the quarry is not in operation. The Project Proponent (PP) has obtained Consent to Operate (CTO) from the Tamil Nadu Pollution Control Board (TNPCB), Coimbatore and valid up to 08.12.2021.

The Nearest Railway Station is Kinathukadavu, located at a distance of 5 km on South-West side of the quarry. The Nearest National Highway (NH-83) Coimbatore – Nagapattinam Road, located at a distance of 4 km on the West side of the quarry. State Highway (SH-163) Palladam – Cochin Frontier Road, located at a distance of 4 km on the North-West side of the quarry. There is no Reserve Forest, Social Forest, or wildlife sanctuary exists within 1 km of the quarry.

During the site inspection, the quarry pit was found to be filled with water, thereby preventing direct measurement of its depth. Consequently, as per the letter issued by the Assistant Director, Geology & Mining, Coimbatore, vide Rc. No. 690/Mines/2023 dated 25.02.2025, the existing quarry pit has reached a depth of 27 meters below ground level (BGL).

The Environmental Clearance (EC) was issued by DEIAA – Coimbatore District, Tamil Nadu, vide Lr. No. SEIAA-TN/F.No.5654/1(a) / EC.No.3756/2016 dated 26.09.2016, and was valid up to 25.09.2021, under Schedule 1(a) – Mining of Minerals, Category 'B2'. As the EC has since expired, the Project Proponent (PP) has applied for renewal of Environmental Clearance to SEIAA – Tamil Nadu.

During the 578th meeting of the State Expert Appraisal Committee (SEAC) held on 13.06.2025, the Authority directed the Project Proponent to submit a Certified Compliance Report (CCR) based on the existing Environmental Clearance.

In compliance with this direction, the Project Proponent submitted a request to the Regional Office of the Ministry of Environment, Forest & Climate Change (MoEF&CC), Chennai on 21.07.2025, seeking issuance of the Certified Compliance Report for EC renewal.

Accordingly, the site was inspected on 07.08.2025 in the presence of the Project Proponent. The status of compliance with the stipulated conditions of the aforementioned Environmental Clearance is detailed below in **Part – II**.

Date of Monitoring: **07.08.2025.**

C. Rajan

PART - II

Environment Clearance Conditions:

Conditions to be Complied Before Commencing Mining Operations: -

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
1.	<p>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</p> <p>i. The project has been accorded Environmental Clearance.</p> <p>ii. Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.</p> <p>iii. Environmental Clearance may also be seen on the website of the District Level Environmental Impact Assessment Authority.</p> <p>iv. The advertisement should be made within 7</p>	<p>Advertisement has been given in two local newspapers regarding grant of Environmental Clearance. We also agree to place it on our website.</p>	<p>Complied.</p> <p>The Advertisement were given in two local newspapers namely "Trinity Mirror" and "Makkal Kural" dated 11.11.2016 regarding Environmental clearance was obtained.</p> <p>Newspaper copy is enclosed in Annexure - I.</p>

C. Parameswari

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the DEIAA.		
2.	The applicant has to obtain land use classification as industrial use before issue/renewal of mining lease.	We acknowledge the requirement and will initiate the process to obtain land use classification as industrial use before the issuance/renewal of the mining lease.	<p>Not complied.</p> <p>The PP has not provided documents confirming the land use classification as industrial use. The project proponent is required to obtain the necessary land use classification before the issuance or renewal of the mining lease.</p> <p>Justification given in the ATR is not satisfied/acceptable.</p> <p>Hence, the compliance status of this condition is "Not complied".</p>
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.	There are no protected areas within 10 km radius of the project area. Hence NBWL clearance is not applicable for this project.	<p>Complied.</p> <p>During the visit, it was observed that there is no Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries,</p>

C. Palanisamy

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
			community reserves and conservation reserves are available within 10 Km radius of the project site. Hence NBWL Clearance is not required.
4.	The project proponent shall comply the conditions laid down in the section V, Rules 36 of Tamil Nadu Minor Minerals Concession Rules 1959.	We comply with the conditions mentioned in Section V, Rule 36 of the Tamil Nadu Minor Mineral Concession Rules, 1959.	Refer below. During the site visit, no mining operations were observed. Hence, compliance with the stipulated conditions under Section V, Rule 36 of the Tamil Nadu Minor Mineral Concession Rules, 1959, including blasting, could not be verified specifically.
5.	A copy of the Environmental 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	EC letter was submitted to local Village Panchayat. EC copy is displayed at the project site for the general public to see. The Environmental Clearance letter will be placed on our website.	Not complied. Copies of the Environmental Clearance has not submitted to the Village Panchayat. The Environmental Clearance letter is available at the quarry site for public viewing. As this PP does not have a website, the letter has not yet been uploaded to their website.

O. Prasad

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	website of the proponent and also kept at the site, for the general public to see.		Justification given in the ATR is not satisfied/acceptable. Hence, the compliance status of this condition is "Not complied".
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.	A wire fence has been erected around the quarry lease area, with red flags on each pillar to mark the boundary of the lease area.	Complied. During the visit, it was observed that the quarry lease area was demarcated with boundary pillars on all sides, and wire fencing was erected on all sides of the lease boundary. Photographs of the boundary pillars and wire fencing are provided in Annexure - II.
7.	The proponent shall ensure that First Aid Box is available at site.	A first aid box is available in the quarry office.	Complied. First Aid Box is available at the quarry office.
8.	The excavation activity shall not alter the natural drainage pattern of the area.	The excavation activity will not alter the natural drainage pattern of the area.	Complied. During the site visit, it was observed that no streams in the mining lease are noticed and the same has been confirmed by the PP. Therefore, the excavation activity has

C. Narasimha

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
			not altered the natural drainage system of the area.
9.	The excavated pit shall be restored by the project proponent for useful purposes.	We assure that once the mining operation is completed, the excavated pit will be restored for useful purposes.	Refer below. Not applicable at this stage.
10.	The proponent shall quarry and remove only in the permitted areas as per the approved mining plan details.	Excavation of Rough Stone material is only where permitted area as per the approved Mining Plan.	Complied. As per the EC, the lease area is 0.85.5 Ha. Out of which the PP has mined out the area is 0.66.58 Hectare as per the approved Mining Plan. In view of this, the PP has removed Rough Stone & Gravel only in the permitted and approved areas.
11.	The quarrying operation shall be restricted between 7 AM and 5 PM.	The quarry is operated between 7 AM to 5 PM.	Refer below. During the site visit, no mining activity was carried out. Hence, this EC compliance could not be verified specifically.
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	Water is sprayed to control dust, materials are transported in covered lorry and environment is monitored every six months to avoid any adverse impact on nearby human habitats	Refer below. During the site visit, no mining activity was carried out. Hence, this EC compliance could not be verified specifically.

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S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	pollution to the environment.	due to quarry operations.	The PP has submitted only one monitoring report for the environmental measures such as air, water, noise to prevent & control the pollution to the environment. As the results of the report show that there is no impact on the environment, it can be observed that there is no impact on the nearby habitats.
13.	A minimum distance of 15mts. from any civil structure shall be kept from the periphery of any excavation area.	There are no civil structures within 15 meters of the perimeter of the excavation area.	Complied. During the site visit, it was observed that no civil structures are located within 15 meters of the periphery of the quarry 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.	Agreed. The depth of quarrying will be maintained at least 2m above the groundwater table or the approved depth of mining, whichever is lesser, as a safeguard against environmental contamination and resource overexploitation.	Complied. The approved depth of quarry is 27 meters below ground level, and excavation has been carried out up to a depth of 27 meters below ground level. As the groundwater level is at 50 - 55m BGL. Refer Pit letter in Annexure – III.

C. Narasimha

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
			Therefore, the quarrying activity maintains a safe vertical buffer above the groundwater table, adhering to the condition of staying at least 2 meters above the water table.
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.	Agreed to carryout landscaping and tree plantation after completion of the mining operation.	Refer below. Not applicable at this stage.
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.	Wet drilling method is adopted to control dust emission. Delay detonators and shock tube initiation system are used for blasting operation, so the vibration and dust level is controlled.	Refer below. During the site visit, no mining activity was observed. Therefore, the implementation of the wet drilling method and delay detonator systems could not be verified.
17.	Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required	We are engaged authorized explosive agency to carry out the blasting. The explosives agencies have the valid blaster certificate after completion of blasting	Refer below. During the site visit, no mining activity was carried out. Because of this, drilling and

O. prasad

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	approvals from Competent Authorities	the explosives agencies will take it out back the remaining quantity of Explosives	blasting activities were not observed. However, the PP informed that the Drilling and Blasting were done by engaging licensed explosive agent. They carry out Drilling and Blasting in a safe and scientific manner as per DGMS guidelines.
18.	The explosives shall be stored at site as per the conditions stipulated in the permits issued by the licensing Authority.	Explosives are not stored at the site; they are procured from the authorized explosive agent as required and unused quantity is returned as per regulations.	Refer below. The explosive material was not stored at the site and it was taken from licensed agent as and when it is required and used immediately.
19.	Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.	The Blasting is carried out after announcing the public through posting red flags to avoid any accident.	Refer below. During the site visit, no mining activity was carried out. Because of this, drilling and blasting activities were not observed.
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	The blasting pattern and safety measures has been studied in the Mining Plan. The quarry is situated more than 300 meters from the nearby villages, controlled blasting measures is being adopt for minimizing	Not complied. The PP has not conducted a study to assess the optimum blast parameters and blast design to ensure vibration levels are kept within the prescribed limits.

C. Nairamala.

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	blasting is done Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.	ground vibration and fly rock.	Justification given in the ATR is not satisfied/acceptable. Hence, the compliance status of this condition is "Not complied".
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.	Ambient Air Quality was monitored through the third-party laboratory and the report shows that the values are within the revised NAAQ Norms. (See AAQ report at Annexure - 1).	Refer below. The Ground Level Concentration (GLC) has been controlled through regular water sprinkling to meet NAAQ norms. Monitoring of ambient air quality has been carried out only once by a NABL-accredited third-party laboratory. AAQ Monitoring reports is attached in Annexure - IV
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	i. Roads were graded to reduce the dust emissions. ii. Water is sprinkled on the main road and other service roads at regular intervals to suppress dust.	Refer below. During the site visit, no mining activity was carried out. Hence, this EC compliance could not be verified specifically.

O. N. Nandya

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	regular interval on the main road and other service roads to suppress dust.		
23.	<p>The following measures are to be implemented to reduce Noise Pollution.</p> <p>i. Proper and regular maintenance of vehicles and other equipment.</p> <p>ii. Limiting time exposure of workers to excessive noise.</p> <p>iii. The workers employed shall be provided with protection equipment and earmuffs etc.</p> <p>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.</p>	<p>i. Vehicles and other equipment are properly maintained.</p> <p>ii. Proper and regular maintenance of vehicles and other equipment's are carried out.</p> <p>iii. Workers' exposure to excessive noise is reduced by providing protective equipment and earmuffs.</p> <p>iv. The speed of trucks entering or exiting the mine is controlled by speed breakers to prevent unnecessary noise from empty trucks.</p>	<p>Refer below.</p> <p>During the site visit, no mining activity was carried out. Hence, this EC compliance could not be verified specifically.</p>
24.	Measures should be taken to comply with the provisions laid under Noise Pollution	Noise generating machines are incorporated into the	<p>Refer below.</p> <p>During the site visit, no mining activity was</p>

C. Narayana

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	(Regulation and Control) (Amendment) Rules, 2010, dt. 11.01.2010 issued by the MoE&F, GoI to control noise to the prescribed levels.	acoustics to reduce noise in the work area. The noise levels are monitored by a third-party laboratory and the values are within the range recommended by the MoEF. (See Noise monitoring report at Annexure – 2).	carried out. Hence, this EC compliance could not be verified specifically. Monitoring of Ambient noise levels in and around the quarry area was carried out only once through third-party laboratory, and the results indicate that the noise levels are within the prescribed limits. Noise level monitoring report is enclosed in Annexure – V .
25.	Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWP suitable measures should be taken for rainwater harvesting.	Complied.	Not complied. The PP has not consulted with Regional Director, CGWP for the groundwater augmentation measures. Justification given in the ATR is not satisfied/acceptable. Hence, the compliance status of this condition is "Not complied".
26.	Permission from the competent authority	There was no bore well at the quarry site.	Complied.

O. Ramreddy

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	should be obtained for drawl of ground water, if any, required for this project.	Water is obtained from Water Supply vendors. So no permission from the competent authority is required for this project.	There is no ground water required for this project. Hence, permission from the Competent Authority was not obtained for ground water withdrawal.
27.	Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.	Whatever topsoil removed is stacked and used for plantation purpose & bund formation in the quarry area.	Complied. The project proponent has stacked the topsoil within the lease area, which has been used for plantation purposes and bund formation in the quarry area.
28.	The following measures are to be adopted to control erosion of dumps:- a) Retention / toe walls shall be provided at the foot of the dumps. b) Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.	Toe wall is provide at the foot of the dumps. The plantation work is carried out at the worked out slopes.	Complied. There is no dump at the quarry site. Since 100% mineral is transported out.
29.	Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as	There is no waste oil is generated in the mining operations. We will follow hazardous waste rules, if any.	Refer below. During the site visit, no mining activity was carried out. Hence, this

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S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	per the Hazardous Wastes (Management, Handling, and trans boundary movement) Rules, 2008 and its amendments thereof to the recyclers authorized by TNPCB.		EC compliance could not be verified specifically.
30.	Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.	Agreed.	<p>Refer below.</p> <p>Informed to PP as stipulated and list of non-compliances are indicated.</p>
31.	Rain water harvesting to collect and utilize the entire water falling in land area should be provided.	Rainwater is collected in the quarry pit during rainy season and stored in a settling tank to be used for green belt development and wet drilling method, dust suppression.	<p>Refer below.</p> <p>During monsoon season, the rain water was collected at the bottom of quarry pit. The part of water was allowed for percolation and rest of the water was utilized for greenbelt development and dust suppression.</p> <p>The PP has provided Rainwater harvesting system in the quarry offices.</p>

C. Prasad

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
			Refer rainwater harvesting photos in Annexure – VI.
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 soil 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.	Rainwater is collected in the quarry pit during rainy season and stored in a settling tank. The water is not discharged directly to the nearby water body.	Refer below. No rain water is discharged directly to nearby stream or water body.
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	The groundwater quality was monitored at a nearby borewell and the report shows that the groundwater quality was not contaminated. (See water report at Annexure – 3).	Refer below. The Assistant Director, Ground Water division, PWD, Coimbatore had not monitored the groundwater table in the lease area.

C. JAIN

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	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, if it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out. The Assistant Director Ground water Division, PWD Coimbatore shall monitor, the ground water related issues.	Agreed to monitor the groundwater level around the mine lease area.	Ground water quality at the buffer zone of the quarry was monitored through third party laboratory and as per the report there is no adverse impact was noticed. Water report is enclosed in Annexure - VII.
34.	No tree-felling shall be done in the leased area, except only with the permission from competent Authority.	No trees have been felled on the leased land. In case of any such cutting, the permission of the Competent Authority will be obtained.	Refer below. The lease area was opened in 2016. Hence, this condition could not be verified specifically during the site visit.
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	Environmental monitoring is carried out before, during the mining activities through a third-party laboratory. The monitored data shows that the values are within the permissible limits.	Not complied. The PP has not carried out environmental monitoring of proposed quarry site before and after the mining activities including vibration study data, water, air,

O. Narasimhan

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	water generated/disposed and method of disposal, involving a reputed academic Institution.		flora / fauna by involving a reputed academic institution. Justification given in the ATR is not satisfied/acceptable. Hence, the compliance status of this condition is "Not complied".
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.	Agreed	Complied. As per Extent Certificate issued by Assistant Director, there are few quarries are located within 500 m radius from the periphery of this quarry and the total extent of the quarries is not exceeding 25 hectares. Refer Extent certificate issued by Assistant Director, Dept. of Geology and Mining, Coimbatore in Annexure – VIII.
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	Complied. There is no habitation within 300-meter radius from the periphery of the quarry site.	Refer below. During the site visit, it was observed that there is no habitation is located within the 500m radius from the periphery of the quarry area.

C. Narayana

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	habitation located within 500 m radius from the periphery of the quarry site.		The PP has provided a letter from VAO stating that there are no dwellings within 300 meters of the quarry. Refer VAO letter in Annexure – IX.
38.	Ground water quality monitoring should be conducted once in 3 Months.	Complied. Groundwater quality monitoring has been conducted through a third-party laboratory as per the stipulated requirements.	Not complied. Monitoring of groundwater quality was not carried out once in three months. Justification given in the ATR is not satisfied/acceptable. Hence, the compliance status of this condition is "Not complied".
39.	Transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village road.	Complied. Transportation of the quarried materials is carried out without causing any hindrance to the village residents or the existing village road.	Refer below. During the site visit, the quarry was not operational. Therefore, the transportation of quarried materials and its impact on the village roads could not be verified at that time.
40.	Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining	Free Silica test will be conducted to the quarry workers.	Not complied. Monitoring of Free Silica test was not conducted.

C. Jain

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	and Regional Director, MoEF, GOL		Justification given in the ATR is not satisfied/acceptable. Hence, the compliance status of this condition is "Not complied".
41.	Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF&CC, GOL	Air sampling was carried out in the intersection point through the third party laboratory and the report indicates that the Air quality concentration are within the permissible limits.	Not complied. Air sampling at intersection point was not monitored. Justification given in the ATR is not satisfied/acceptable. Hence, the compliance status of this condition is "Not complied".
42.	Bunds to be provided at the boundary of the project site.	Provided bunds at the boundary of the project site.	Complied. The PP has been provided bunds around 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 samplings should be planted on the bunds	We agreed to carry out the afforestation and plantation work as per the stipulated requirements.	Complied. The PP has undertaken Plantation work by planting the native species on all side of the lease area.

C. Narasimha.

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	and other suitable areas in and around the work place.		Plantation photos are provided in Annexure - X .
44.	At least 10 Neem trees should be planted around the boundary of the quarry site.	Complied. More than 10 Neem trees have been planted around the boundary of the quarry site.	Complied. The PP has planted more than 10 Neem trees around the boundary of the quarry area.
45.	Floor of excavated pit to be leveled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.	Agreed.	Refer below. Not applicable at this stage.
46.	The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity.	Complied. 2.5% of annual revenue is being spent on CSR activities.	Complied. The Project Proponent has constructed one classroom and a compound wall at Arasampalayam Government Higher Secondary School as part of the CSR activity. Refer CSR activity in Annexure - XI .
47.	The Project Proponent shall provide solar lighting system to the nearby villages.	Provided solar lighting system to the nearby villages.	Complied. The PP has provided solar lighting system to the nearby villages.
48.	The Project Proponent shall comply with the mining and other relevant rules and	Agreed.	Agreed to comply. Refer Annexure - XII for undertaking by the PP.

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S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	regulations where ever applicable.		
49.	Rainwater shall be pumped out Via Settling Tank only.	Complied. Rainwater is pumped out via a settling tank only.	<p>Not complied.</p> <p>There is no settling tank was provided.</p> <p>The PA mentioned in the ATR that they have constructed a settling tank at quarry site. The photographs of the settling tank are enclosed below for reference.</p> <p>Hence, the compliance status of this condition is "Complied".</p>
50.	Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.	Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary were developed and maintained.	<p>Complied.</p> <p>Earthen bunds and barbed wire fencing have been erected on all sides of the pits.</p> <p>Green belt has been developed and is maintained along the boundary.</p>
51.	As per MoEF & CC, Govt. Office Memorandum dated 30.03.2015, prior clearance from Forestry & Wild Life angle including clearance from standing committee of the	Agreed.	<p>Complied.</p> <p>Clearance from forestry and wild life angle is not applicable to them due to following:</p>

C. Narasimha

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	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.		<ul style="list-style-type: none"> No forest land is involved in their lease area. No wildlife sanctuary / critically polluted area / ecologically sensitive zone within 10km from the boundary of the ML area.
52.	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.	Agreed. Quarrying activities will be stopped once the entire quantity indicated in the Mining Plan is extracted, even if it occurs before the expiry of the quarry lease period.	<p>Refer below.</p> <p>As per the approved mining plan as well as in EC, the approved quantity is 45,845 m³ of Rough stone & 4,738 m³ of Gravel up to a depth of 27 meters below ground level.</p> <p>As per the Pit letter issued by Geology & Mining, PP has excavated only 44,985 m³ of Rough stone & 4,685 m³ of Gravel during the lease period.</p>
53.	Safety equipment's to be provided to all the employees.	All the employees were provided with safety equipment's such as Safety Helmet, Masks; and Safety Shoes as per mines act and rules.	<p>Refer below.</p> <p>During the site visit, no mining activity was carried out. Hence, this EC compliance could not be verified specifically.</p>

C. NAINIA

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
54.	Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai.	There is no railway, reservoir or stream within 50 m of the mining lease area.	Complied. During the visit, it was observed that there is no railway line, reservoir, canal/odai within 50 m distance from the boundary of the lease area.
55.	The Assistant / Deputy Director, Department of Geology and 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.	Complied.	Agreed to comply. Refer Annexure – XII for undertaking by the PP.
56.	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.	Complied. Baseline data covering air, water, noise and land environmental quality were monitored before starting quarry operation.	Not complied. The PP has not done a baseline study covering air, water, noise and land environment before starting the mining operation. In this regard, the PA has submitted ATR (Refer Annexure-B).
57.	The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary	Boundary pillar with GPS coordinates were erected at the boundary of the quarry lease area.	Complied. During the visit, it was observed that pillars were erected according to the rules for

C. Prasad

S. No.	EC CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	Observations of ROs/SROs
	of the quarry site to monitor electronically before execution of quarrying lease.		depicting GPS details within the allotted boundary of 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.	Complied. Insurance coverage was provided to the quarry workers.	<p>Complied.</p> <p>The PP has provided insurance protection to the workers engaged in the mining activity.</p> <p>Refer insurance copy in Annexure – XIII.</p>
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.	The name board is displayed at the quarry site showing the details like lease period, extent, lease address, etc.	<p>Complied.</p> <p>The Name board showing the details of the project was displayed on the front of the quarry site.</p> <p>Refer name board photos in Annexure – XIV.</p>
60.	Heavy earth machinery equipment's if utilized, after getting approval from the competent authority.	Agreed to comply.	<p>Not complied.</p> <p>The PP has not obtained approval from the competent authority for utilization of heavy earth machinery and equipment.</p> <p>In this regard, the PA has submitted ATR (Refer Annexure-B).</p>

O. Nandani

B. GENERAL CONDITIONS

S. No.	CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	COMPLIANCE STATUS
1.	EC is given only on the factual records, documents and the commitment furnished in non-judicial stamp paper by the proponent.	Agreed.	Agreed to comply. It was submitted that this condition is noted and assured to abide by this condition.
2.	The Proponent shall obtain the Consent for Establishment from the TNPC Board before commencing the activity.	Consent to Establishment (CTE) has not obtained from Tamil Nadu Pollution Control Board (TNPCB). However, Consent To Operate (CTO) has been obtained directly from TNPCB, Coimbatore. (See CTO copy at Annexure – 4).	Not complied. The PP has not obtained the Consent for Establishment. However, the PP has obtained Consent to Operate (CTO) for Air vide proceedings NO.F.1284CBS/RS /DEE /TNPCB /CBS /A /2021 dated 17.07.2021 and Water vide proceeding NO.F.1284CBS/RS /DEE /TNPCB /CBS /W /2021 dated 17.07.2021 from the Tamil Nadu Pollution Control Board, Coimbatore. Refer CTO copy in Annexure – XV . Justification given in the ATR is not satisfied/acceptable.

C. parameswar

S. No.	CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	COMPLIANCE STATUS
			Hence, the compliance status of this condition is "Not complied".
3.	No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.	So far there has been no change in mining technology and scope of work.	Complied. There is no change in mining technology and scope of working.
4.	No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.	No change has been made in the calendar plan including excavation, mineral quantity (minor mineral).	Complied. There is no change in the calendar plan including excavation, quantum of mineral (minor mineral) 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	Regular water sprinkling was carried out at the loading and unloading areas of the mine lease and at all transfer points. The ambient air quality in the quarry area was monitored and the parameters complied with the norms prescribed by the Central Pollution Control Board.	Complied. Water sprinkling on haul roads at regular intervals by water sprinklers & tanker lorry to control dust generation. Refer water sprinkling photos in Annexure - XVI . Ambient Air Quality (AAQ) was monitored on loading point, unloading point, and all transfer points by a third-party laboratory. Monitoring Reports indicates that AAQ levels are within the permissible limits.

O. Narasimhan

S. No.	CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	COMPLIANCE STATUS
	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.	Agreed.	Complied. During the site visit, it was observed that no water is stagnant inside the mine pit. The traces of discharge and percolation pond observed. So, no water borne disease possible.
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.	A berm has also been left along the haul roads, bordering the adjoining field.	Complied. A berm has left from the boundary of the adjoining field.
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.	Water is sprayed to control dust at transfer points including loading and unloading by tanker lorry.	Complied. No dust extraction system is provided in the mineral handling area. However, the PP is carrying out water sprinkling activities to control the dust levels in the project area.
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	Vehicle emissions are monitored at regular intervals by an authorized service center. Transport of material is carried out in covered	Refer below. During the site visit, no mining activity was being carried out. Hence, this specific EC condition could not be verified.

C. Paramide

S. No.	CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	COMPLIANCE STATUS
	the vehicles carrying the mineral shall not be overloaded,	trucks and is not overloaded.	However, the PP has been regularly monitoring vehicular emissions. Refer the PUC certificates in Annexure – XVII.
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.	Agreed to comply.	Refer below. Access and haul roads to the quarry area will be restored in a mutually compatible manner after the extraction is 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.	Safety shoes, masks and helmets are provided to all workers in the quarry.	Refer below. During the site visit, no mining activity was carried out. Hence, this EC compliance could not be verified specifically.

C. Prasad

S. No.	CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	COMPLIANCE STATUS
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.	Periodical medical examination is conducted and records are maintained for quarry workers.	Complied. Medical examinations of all workers have been conducted as per regulatory requirements. Records of these examinations have been maintained. Refer medical examination report in Annexure – XVIII.
13.	Workers / labourer shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.	Drinking water and sanitary facilities are provided to the workers separately for men and women.	Refer below. During the site visit, it was observed that Drinking water and sanitary facilities are provided to the workers separately for men and women. Refer workers facilities photos in Annexure – XIX.
14.	The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.	We ensure that no child labor is employed at this project site.	Refer below. During the site visit, it was noted that there was no child labor was employed at the project site.
15.	The funds earmarked for environmental	A separate account has been opened to	Complied.

C. DAVINIA

S. No.	CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	COMPLIANCE STATUS
	protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to ministry of Environment and Forest and its Regional Office located at Chennai.	maintain the EMP expenditure. Year-wise expenditure is reported to the Ministry of Environment and Forests and its Regional Office located in Chennai.	As per EC, an amount of Rs.4.25 Lakhs has been earmarked for environmental management purposes, which has been utilized for monitoring environmental pollution, maintaining greenery around the quarry, and controlling pollution. A separate account has been opened to maintain the EMP amount. Refer Account details in Annexure – XX .
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.	Agreed.	Agreed to comply. Refer Annexure – XII for undertaking by the PP.
17.	This Environmental Clearance does not imply that the other statutory / administrative clearances shall be	Agreed.	Agreed to comply. Refer Annexure – XII for undertaking by the PP.

C. Narayana

S. No.	CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	COMPLIANCE STATUS
	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 SEIAA, Tamil Nadu may alter / modify the above conditions or stipulate any further conditions in the interest of environment protection.	Agreed.	Agreed to comply. Refer Annexure – XII for undertaking by the PP.
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	Agreed.	Agreed to comply. Refer Annexure – XII for undertaking by the PP.

C. Murthy.

S. No.	CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	COMPLIANCE STATUS
	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.	Agreed.	Agreed to comply. Refer Annexure – XII for undertaking by the PP.
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	Agreed.	Agreed to comply. Refer Annexure – XII for undertaking by the PP.

C. Rajmohan

S. No.	CONDITIONS	STATUS AS PER SIX MONTHLY COMPLIANCE REPORT SUBMITTED BY THE PP	COMPLIANCE STATUS
	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.	Agreed.	Agreed to comply. Refer Annexure – XII for undertaking by the PP.
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.	There is no appeal lying with Hon'ble National Green Tribunal (NGT) against this Environmental Clearance.	Agreed to comply. Refer Annexure – XII for undertaking by the PP.

Summary note:

(i) Implementation of Conditions

The PA has not complied following EC conditions:

1. Land use classification was not obtained **(Specific condition No. 2).**
2. Copies of the Environmental Clearance has not submitted to the Village Panchayat **(Specific condition No. 5).**
3. No such study has been conducted to assess the optimum blast parameters and blast design **(Specific condition No. 20)**
4. Consultation for Groundwater conservation measures were not done with the Regional Director, CGWP for the groundwater augmentation measures. **(Specific condition No. 25).**
5. Environmental monitoring of the proposed quarry site before and after the mining activities including vibration study data, water, air, flora/fauna by involving a reputed academic Institution **(Specific condition No. 35).**

C. Narayana

6. Monitoring of ground water quality was not conducted once in 3 months (**Specific condition No. 38**).
7. Monitoring of Free Silica test was not conducted (**Specific condition No. 40**).
8. Air sampling at intersection point was not conducted (**Specific condition No. 41**).
9. No Settling Tank in the quarry area (**Specific condition No. 49**).
10. Baseline study covering air, water, noise and land environment before starting the mining operation (**Specific condition No. 56**).
11. Approval from the Competent Authority for utilization of heavy earth equipment's has not obtained (**Specific condition No. 60**).
12. Consent to Establishment was not obtained (**General condition No. 2**).

- (ii) **Show cause Notice:** As submitted by the PP, there is no Show Cause Notice issued or pending against the project.
- (iii) **Court cases:** As informed, there is no court cases / closure notices issued by the Competent Authority.
- (iv) **Accidents:** As submitted by the PP, there is no major accidents or reportable incident happened at the plant.

Site Photographs: -



C. Painsworth



C. Palpandi 22/8/2025
Signature of the inspecting officer,
डॉ. पालपंडी
शास्त्री 'डी'
Dr.C.Palpandi
Scientist 'D'
 Government of India
 Min. of Environment Forest and Climate Change,
 Regional Office,
 1st Floor, Addl. Office Block for GPOA,
 Shastri Bhawan, Haridwars Road,
 Nungambakkam, Chennai - 600 006.

Photograph of Wire Fencing & Boundary Pillars



From

Thiru.K.Vijayaragavan, M.Sc.,
Assistant Director,
Geology and Mining,
Coimbatore

To

Thiru.C.Shanmugam,
S/o.Chinnaragasamy Gounder,
Merku Thottam, Karachery,
Periyakuyilai (po),
Kinathukadavu,
Coimbatore

Rc.No. 690/Mines/2023 dated: 25.02.2025

Sir,

Sub: Mines and Quarries – Minor Minerals – Coimbatore District - Kinathukadavu Taluk – Arasampalayam Village - Survey Nos.144/2A2 (part) (1.08.0 Hec) and 144/3A (part) (0.33.0 Hec) - over an extent of 1.41.0 hectares of patta land - Rough stone and gravel quarry lease – Precise area communicated – Mining Plan approved – further particulars called for – furnished – regarding - Regarding.

Ref: 1. Precise area communication in Rc.No.690/Mines/2023 dated: 18.02.2025.
2. Thiru.C.Shanmugam letter dt. .02.2025

In the reference 2nd cited, Thiru.C.Shanmugam has requested to furnish certain particulars regarding the precise area granted over an extent of 1.41.0 hectares of patta land in Survey Nos.144/2A2 (part) (1.08.0 Hec) and 144/3A (part) (0.33.0 Hec) of Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District. In this connection the following details are furnished.

The area was previously held under quarry lease and the details are as follows


Sl. No.	Name of the Exlessee	SF.No/ Extent	District Collector's proceedings No. & Date	Lease Period
1	C.Shanmugam	144/2A 1.38.0 Hec	Rc.No.1067/2005/M M1 dated: 15.03.2006	01.04.2006 to 31.03.2011 -5 years
2	C.Shanmugam	144/2A2 (P) 0.85.5	Rc.No.189/2011/M M2 dt: 04.05.2011	04.05.2011 to 03.05.2016 - 5 years

3.	C. Shanmugam	144/2A2 (P) 0.85.5 Hec	Re.No. 335/Mines/2016 Dt: 09.12.2016	09.12.2016 to 08.12.2021 - 5 Years
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As per modified mining plan submitted by the RQP concerned the dimension of existing pit as follows:

Pit No.	Length in max(m)	Width in max(m)	Depth in max(m)
I	97m	65m	27m
Total Depth			27m

Excavated Quantity Details								
Year	As Per Approved For Ec Quantity (2018 To 2023) - Ec No: 3756/2016-Dated 26.09.2016			Depth (m)	Achieved Quantity (2016 To 2021)			Depth (m)
09.12.2016 to 08.12.2021	Rough Stone (m ³)	Gravel (m ³)	Total Rough Stone & Gravel Quantity (m ³)	27m	Rough Stone (m ³) (Transported)	Gravel (m ³) (Transported)	Total Rough Stone & Gravel Quantity (m ³)	27m
Total	45,845	4,738	50583	27m	44,985	4,685	49,670	27m


Assistant Director,
Geology and Mining,
Coimbatore

24/2/25

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 + 91 9652855456 + 91 9330035470
 E-Mail: envirofarmerslabs@gmail.com
 Website: www.efflts.com



TEST REPORT FOR AMBIENT AIR QUALITY MONITORING				
Report Code	EFLT/TRF/2021/0591	Report Date	19.08.2021	
CUSTOMER DETAILS				
Name & Address of the Customer/Company		Thiru. C. Shanmugam Rough Stone & Gravel Quarry, (Mine Lease Area - 0.855 Hectare), S.F. No. 144/2A2 (P), Arasampalayam Village, Kinnathukadavu Taluk, Coimbatore District.		
DETAILS OF SAMPLE				
Customer Code	-	Laboratory Code	EFLT/FA/2021/0591	
Sample Collected On	10.08.2021	Sample Collected By	Laboratory	
Sample Received On	11.08.2021	Analysis Started Date	11.08.2021	
Received Condition	Good	Analysis Completed Date	19.08.2021	
Sample Description	Ambient Air Quality - North-East side of the quarry			
TEST REPORT PARTICULARS				
S. No.	Parameters	Test Method	Result	Standards
1.	Particulate matter (Size less than 10 µm/PM ₁₀)	IS 5182 Part 23	54.9 µg/m ³	100
2.	Particulate matter (Size less than 2.5 µm/PM _{2.5})	IS 5182 Part 24	25.7 µg/m ³	60
3.	Sulphur dioxide (SO ₂)	IS 5182 Part 2	8.6 µg/m ³	80
4.	Nitrogen dioxide (NO ₂)	IS 5182 Part 6	21.3 µg/m ³	80
5.	Ozone (O ₃)	CPCB Manual for Ambient Air Pollutants	BDL (DL:5.0) µg/m ³	180
6.	Ammonia (NH ₃)	CPCB Manual for Ambient Air Pollutants	5.9 µg/m ³	400
7.	Carbon Monoxide (CO)	IS 5182 Part 10	BDL (DL:1.0) mg/m ³	4.0
8.	Lead (Pb)	IS 5182 Part 22	BDL (DL:0.01) µg/m ³	1.0
9.	Benzene (C ₆ H ₆)	IS 5182 Part 11	BDL (DL:1.0) µg/m ³	5.0
10.	Benzo(a)Pyrene (BaP)	IS 5182 Part 12	BDL (DL:0.5) ng/m ³	1.0
11.	Arsenic (As)	CPCB Manual for Ambient Air Pollutants	BDL (DL:1.0) ng/m ³	6.0
12.	Nickel (Ni)	IS 5182 Part 26	BDL (DL:1.0) ng/m ³	20

*****End of Report*****



Authorized Signatory
 Dr. Balakrishnan Marudugan

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E-Mail: envirofarmerslabs@gmail.com
Website: www.efltdn.com

ACCREDITATIONS:



TEST REPORT FOR AMBIENT AIR QUALITY MONITORING				
Report Code	EFLT/TRF/2021/0591	Report Date	19.08.2021	
CUSTOMER DETAILS				
Name & Address of the Customer/Company		Thiru. C. Shanmugam Rough Stone & Gravel Quarry, (Mine Lease Area - 0.85.5 Hectare), S.F.No. 144/2A2 (P), Anusampalayam Village, Kinathukadavu Taluk, Coimbatore District.		
DETAILS OF SAMPLE				
Customer Code	-	Laboratory Code	EFLT/FA/2021/0591	
Sample Collected On	10.08.2021	Sample Collected By	Laboratory	
Sample Received On	11.08.2021	Analysis Started Date	11.08.2021	
Received Condition	Good	Analysis Completed Date	19.08.2021	
Sample Description	Ambient Air Quality - South-West side of the quarry			
TEST REPORT PARTICULARS				
S. No.	Parameters	Test Method	Result	Standards
1.	Particulate matter (Size less than 10 µm/PM ₁₀)	IS 5182 Part 23	56.8 µg/m ³	100
2.	Particulate matter (Size less than 2.5 µm/PM _{2.5})	IS 5182 Part 24	24.2 µg/m ³	60
3.	Sulphur dioxide (SO ₂)	IS 5182 Part 2	11.5 µg/m ³	80
4.	Nitrogen dioxide (NO ₂)	IS 5182 Part 6	24.9 µg/m ³	80
5.	Ozone (O ₃)	CPCB Manual for Ambient Air Pollutants	BDL(DL:5.0) µg/m ³	180
6.	Ammonia (NH ₃)	CPCB Manual for Ambient Air Pollutants	6.5 µg/m ³	400
7.	Carbon Monoxide (CO)	IS 5182 Part 10	BDL(DL:1.0) mg/m ³	4.0
8.	Lead (Pb)	IS 5182 Part 22	BDL(DL:0.01) µg/m ³	1.0
9.	Benzene (C ₆ H ₆)	IS 5182 Part 11	BDL(DL:1.0) µg/m ³	5.0
10.	Benzene (Pyrene) (BaP)	IS 5182 Part 12	BDL(DL:0.5) ng/m ³	1.0
11.	Arsenic (As)	CPCB Manual for Ambient Air Pollutants	BDL(DL:1.0) ng/m ³	6.0
12.	Nickel (Ni)	IS 5182 Part 26	BDL(DL:1.0) µg/m ³	20

*****End of Report*****



Authorized Signatory
Dr. Balakrishnan Marudodan

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 +91 9942855454 / +91 9530231470
 E-Mail: envirofarmerslabs@gmail.com
 Website: www.efflts.com



TEST REPORT FOR AMBIENT AIR QUALITY MONITORING

Report Code	EFLT/TRF/2021/0591	Report Date	19.08.2021
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CUSTOMER DETAILS

Name & Address of the Customer/Company	Thiru. C. Shanmugam Rough Stone & Gravel Quarry, (Mine Lease Area - 0.85.5 Hectare), S.F.No. 144/2A2 (P), Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District.
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DETAILS OF SAMPLE

Customer Code	-	Laboratory Code	EFLT/PA/2021/0591
Sample Collected On	18.08.2021	Sample Collected By	Laboratory
Sample Received On	11.08.2021	Analysis Started Date	11.08.2021
Received Condition	Good	Analysis Completed Date	19.08.2021
Sample Description	Ambient Air Quality - Arasampalayam Village		

TEST REPORT PARTICULARS

S. No.	Parameters	Test Method	Result	Standards
1.	Particulate matter (Size less than 10 µm/PM ₁₀)	IS 5182 Part 23	53.8 µg/m ³	100
2.	Particulate matter (Size less than 2.5 µm/PM _{2.5})	IS 5182 Part 24	25.5 µg/m ³	60
3.	Sulphur dioxide (SO ₂)	IS 5182 Part 2	6.8 µg/m ³	80
4.	Nitrogen dioxide (NO ₂)	IS 5182 Part 6	21.5 µg/m ³	80
5.	Ozone (O ₃)	CPCB Manual for Ambient Air Pollutants	BDL(DL:5.0) µg/m ³	180
6.	Ammonia (NH ₃)	CPCB Manual for Ambient Air Pollutants	6.9 µg/m ³	400
7.	Carbon Monoxide (CO)	IS 5182 Part 10	BDL(DL:1.0) mg/m ³	4.0
8.	Lead (Pb)	IS 5182 Part 22	BDL(DL:0.01) µg/m ³	1.0
9.	Benzene (C ₆ H ₆)	IS 5182 Part 11	BDL(DL:1.0) µg/m ³	5.0
10.	Benzo(a)Pyrene (BaP)	IS 5182 Part 12	BDL(DL:0.5) ng/m ³	1.0
11.	Arsenic (As)	CPCB Manual for Ambient Air Pollutants	BDL(DL:1.0) ng/m ³	6.0
12.	Nickel (Ni)	IS 5182 Part 26	BDL(DL:1.0) ng/m ³	20

*****End of Report*****



Authorized Signatory
 Dr. Balakrishnan Murugesan

Annexure - V

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 + 91 9042855436 + 91 7330035470
 E-Mail: envirofarmerslabs@gmail.com
 Website: www.eftl.co.in



TEST REPORT FOR NOISE LEVEL MONITORING			
Report Code	EFL/T/TRF/2021/0591	Report Date	19.08.2021
CUSTOMER DETAILS			
Name & Address of the Customer/Company		Thiru. C. Shanmugam Rough Stone & Gravel Quarry, (Mine Lease Area - 0.85.5 Hectare), S.F.No. 144/2A2 (P), Arisampalayam Village, Kinathukadavu Taluk, Coimbatore District.	
DETAILS OF SAMPLE			
Customer Code	-	Laboratory Code	EFL/T/FA/2021/0591
Sample Collected On	10.08.2021	Sample Collected By	Laboratory
Sample Received On	11.08.2021	Analysis Started Date	11.08.2021
Received Condition	Good	Analysis Completed Date	19.08.2021
Sample Description	Ambient Noise Level Monitoring		
TEST REPORT PARTICULARS			
S. No.	Location	Result	Standard
1.	North side of the quarry	52.3	75 dB (A) (Industrial)
2.	East side of the quarry	54.9	75 dB (A) (Industrial)
3.	South side of the quarry	57.3	75 dB (A) (Industrial)
4.	West side of the quarry	55.1	75 dB (A) (Industrial)
5.	Workers Shed	50.8	75 dB (A) (Industrial)
6.	Arisampalayam Village	50.4	55 dB (A) (Residential)

*****End of Report*****



Authorized Signatory
 Dr. Balakrishnan Marudeshan

Photograph of Rainwater Harvesting



ENVIRO FARMERS LABS & TECHNOLOGIES



SERVICES :

- Water and Waste Water Testing
- Environmental Monitoring & Testing
- Testing of Food and Food Products
- Soil, Compost & Solid Waste Testing
- Microbial Testing Services
- Other Testing Services

CONTACT US :

Address : No-283, Arunthi Road, Main Road,
Chinnampalayam P.O., Salem Taluk,
Coimbatore - 641062, Tamil Nadu, India
Phone : + 91 9842055456 + 91 9536035458
+ 91 9842055456 + 91 9536035458
E-Mail : envirofarmerslabs@gmail.com
Website : www.eFLT.in

ACCREDITATIONS :



TEST REPORT FOR WATER ANALYSIS				
Report Code	EFLT/TRF/2021/0591	Report Date	19.08.2021	
CUSTOMER DETAILS				
Name & Address of the Customer/Company		Thiru. C. Shanmugam Rough Stone & Gravel Quarry, (Mine Lease Area - 0.85.5 Hectare), S.F.No. 144/2A2 (P), Arasampalayam Village, Kinnathukudavu Taluk, Coimbatore District.		
DETAILS OF SAMPLE				
Customer Code	-	Laboratory Code	EFLT/FA/2021/0591	
Sample Collected On	10.08.2021	Sample Collected By	Laboratory	
Sample Received On	11.08.2021	Analysis Started Date	11.08.2021	
Received Condition	Packed in a Plastic Container	Analysis Completed Date	19.08.2021	
Sample Description	Borewell Water			
TEST REPORT PARTICULARS				
S. No.	Parameters	Test Method	RESULTS	Standard (As per IS 10500:2012)
1.	pH	IS 3025 Part 11	7.15	6.5 - 8.5
2.	Color	IS 3025 Part 4	<5 Hazen	15
3.	Odor	IS 3025 Part 5	Agreeable	Agreeable
4.	Turbidity	IS 3025 Part 10	<1 NTU	5
5.	Electrical Conductivity	IS 3025 Part 14	324 µS/cm	-
6.	Total Dissolved Solids	IS 3025 Part 16	191	2000
7.	Total Solids	IS 3025 Part 15	192	-
8.	Total Suspended Solids	IS 3025 Part 17	<2	-
9.	Total Alkalinity	IS 3025 Part 23	157	600
10.	Total Hardness	IS 3025 Part 21	151	600
11.	Calcium	IS 3025 Part 40	26.7	200
12.	Magnesium	IS 3025 Part 46	20.5	100
13.	Chloride	IS 3025 Part 32	45.2	1000
14.	Iron	IS 3025 Part 53	BDL(DL:0.1)	No Relaxation
15.	Acidity	IS 3025 Part 22	NIL	-
16.	Sulphate	IS 3025 Part 24	20.2	400
17.	Potassium	IS 3025 Part 45	17.5	-
18.	Sodium	IS 3025 Part 43	25	-
19.	Nitrate	IS 3025 Part 34	BDL(DL:0.2)	No Relaxation
20.	Silica	IS 3025 Part 35	17.2	-
21.	Boron	IS 3025 Part 57	BDL(DL:0.1)	1
22.	Manganese	IS 3025 Part 59	BDL(DL:0.1)	0.3

*****End of Report*****



Authorized Signatory
Dr. Rajakrishnan Murugesan

From:

Thiru.K.Vijayaragavan, M.Sc.,
Assistant Director,
Geology and Mining,
Coimbatore

To:

Thiru.C.Shanmugam,
S/o,Chinnaragasamy Gounder,
Merku Thottam, Karachery,
Periyakuyilai (po),
Kinathukadavu,
Coimbatore.

Rc.No.690/Mines/2023 Dated: 25.02.2025.

Sir,

Sub: Mines and Quarries - Minor Minerals - Coimbatore District - Kinathukadavu Taluk - Arasampalayam Village - Survey Nos.144/2A2 (part) (1.08.0 Hec) and 144/3A (part) (0.33.0 Hec) - over an extent of 1.41.0 hectares of patta land - Rough stone & Gravel quarry lease - Precise area communicated to Thiru.C.Shanmugam - 500 mts Radius letter requested- regarding


Ref: 1. Application of Thiru.C.Shanmugam dated: 28.06.2023 & 18.10.2024.
2. Precise area communication in Rc.No.690/Mines/2023 dated: 18.02.2025.
3. Thiru.C.Shanmugam letter dt. .02.2025

With reference to your letter in the reference 3rd cited, the details of existing and lease expired quarries located within 500 mts radius from the proposed Rough stone & gravel quarry over an extent of 1.41.0 hectares of patta land in Survey Nos.144/2A2 (part) (1.08.0 Hec) and 144/3A (part) (0.33.0 Hec) of Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District are as follows:

Sl. No	Name of the quarry Owner	Name of the Village & Survey Number	Extent (in Hects)	Remarks
a. Existing Quarries				
1.	C.Ganesh	Arasampalayam 151/1E (P)	1.58.0	03.11.2023 to 02.11.2028
2.	S.Abdul Jabbar	Arasampalayam 364	3.85.5	28.11.2023 to 27.11.2028

3.	M.Rasamani	Arasampalayam 361/1A, 362/1	0.99.0	07.11.2023 to 06.11.2028
4.	M/s.Sree Mahalakshmi Blue Metals	Arasampalayam 149/2B, 149/3A, 149/3B, 149/3C, 149/4A, 149/4B & 149/4C	4.26.72	15.03.2024 to 14.03.2029

b. Expired Quarries				
1.	R.Palanimuthu	Arasampalayam	0.72.0	25.01.2019 to 24.01.2024
c. Abandoned Quarries				
-NIL-				
d. Present proposed Quarries				
1.	C.Shanmugam	Arasampalayam 144/2A2 (P) & 144/3A (P)	1.41.0	applied area (Rough Stone and gravel)
2.	V.Senthilkumar	Arasampalayam 135/3F, 136/3 & 137/3	2.26.0	The land availability report from the Sub Collector, Pollachi, is still awaited.


 Assistant Director,
 Geology and Mining,
 Coimbatore
 25/2/24

சீரணி Annexure-8

கிராமப்புத்தூர் ஸ்வபம், கிணத்துக்கடவு
 வட்டம். அரண்மாளையம் கிராமம், பட்டா: 796வ
 கிரேவ் எண்: 144 / 2A2வ 1.38-0 ஏக்கர். இரம்
 புன்கைய நாயும் இதில் 2ம் கிராமம் யுனிடம்
 (சிலகிலா புருமடலம்) சிணரவுக்காங்குமன்
 மகன் திரு. சண்முகம் என்பவருக்கு மாத்தியப்பட்டது
 ரன் சான்றிடுக்கப்பட்டிருந்தது.


 28.03.2025

கிராம நிர்வாக அலுவலர்
 06, அரண்மாளையம் கிராமம்
 கிணத்துக்கடவு வட்டம்

Photograph of Plantation



Corporate Social Responsibility (CSR) Activity

கிணத்துக்கடவு வட்டம் கோயம்புத்தூர் மாவட்டம்-642109

அனுப்புகிற:

03/04/2025

து விதியா, M.Sc., M.A., B.Ed

தலைமை ஆசிரியர்

பெறுகிற:

மாநில சற்றுத்தழல் தாக்க மதிப்பீட்டு ஆணையர்

சென்னை

இயல்:

திரு. சென்முகம் த.பு. சின்னரங்காணி கவுண்டர்
மெற்றத்தோட்டம் களச்சேரி, பெரியநாட்டிலை அஞ்சல் கிணத்துக்கடவு
தாழாக்கா, கோயம்புத்தூர்-642109 அரசம்பாளையம் குறிமையாள் Roughstone
and Gravel Quarry-யுடன் 144/2a2(p) and 144/3AP மொத்தப் பரப்பளவு 1.41.00
ஹெக்டேர் அரசம்பாளையம் அவர்கள் அரசம்பாளையம் அரசு
உயர்நிலைப்பள்ளிக்கு ஒரு வகுப்பறை மற்றும் சற்றுச்சுவர் அமைத்துத்தர
பிசைத்துள்ளார் என்பதைத் தெரிவித்துக் கொள்கிறேன்

இப்படிக்கு

தங்கள் உண்மையுள்ள

தி. 20/3/25
03/04/25



13.08.2025

From

C. Shanmugam,
 Merku Thottam,
 Karacheri,
 Periyakuyilai (Post),
 Chettipalayam (Via),
 Kinathukadavu Taluk,
 Coimbatore District.

To

Deputy Director General,
Regional Office (South Eastern Zone),
Ministry of Environment, Forest and Climate Change (MoEF & CC)
 1st Floor, Additional Office Block – GPOA,
 Shastri Bhavan,
 Chennai – 600 006.

Sir,

Sub: Submission of Undertaking – C. Shanmugam – Rough Stone & Gravel Quarry over an extent of 0.85.5 Hectare in S.F. No. 144/2A2 (Part), Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu – Certified Compliance Report Requested – reg.

Ref:

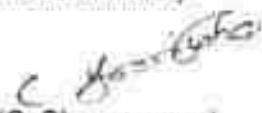
1. SEIAA-TN, Environmental Clearance - Lr. No. SEIAA-TN/F.No.5654/1(a) / EC.No.3756/2016 dated 26.09.2016.
2. CCR Request Letter submitted to RO, MoEF&CC on 21.07.2025.
3. Site inspection by Dr.C. Palpandi, Scientist 'D', RO-SEZ, MoEF&CC on 07.08.2025.

We hereby submit this undertaking to comply with the Condition Nos. **48, & 55** in the Specific Conditions and Condition Nos. **16, 17, 18, 19, 20, 21, 22, & 23** in the General Conditions of the Environmental Clearance as per reference 1.

Additionally, we assure that all Non-Compliance conditions identified in the Certified Compliance Report (as per ref. 1) will be Complied in the future.

Thanking You for your attention,

Yours Sincerely


(C. Shanmugam)

Project Proponent



POLICY SCHEDULE FOR RAASTA AAPATTI KAVACH POLICY (Group (Named))

UIN NUMBER - IRDA/NL-HLT-NIA/P-H/V.1/355/13-14

Insured Name	SIVASIVAA BLUE METALS		
Insured's Details		Issuing Office Details	
Customer ID	PO58993883	Office Code	POLLACHI (722200)
Address	NO. 144/2A2 MERKU THOTTAM ARASAMPALAYAM COIMBATORE, TAMIL NADU, 642202	Address	13/1 KAMARAJ ROAD MAHALINGAPURAM POLLACHI 642002
Phone No	XXXXXX7778	Phone No	04268226701 / 04269221301
E-mail/Fax	sivasivasblumetals@gmail.com /	E-mail/Fax	nla.722200@newindia.co.in /
PAN No		S. Tax Regn. No	AAACN4165CST178
GSTIN/UIN	33BVSPS1352P1ZU / NA	GSTIN	33AAACN4165C42V
		SAC	991135 (Other non-life insurance services excl. RI)

Policy Details

Policy Number	72220040246800000108	Business Source Code	
Period of Insurance	From: 23/12/2024 03:47:35 PM To: 23/12/2026 11:59:59 PM	Dev. Off level/Broker/Corp. Agent/CPSC User	DIRECT BUSINESS - 60 - (104316932)
Date of Proposal	23-Dec-24	Agent/Bancassurance	Mrs. GEETHA P. (NIAAG00141673) GEETHA P. (SI00233624)
Prev. Policy no.		Phone No	9842212612 / NA
Client Type	Corporate	E-mail/Fax	gureshba79@gmail.com /

Premium	GST	Total (₹)	Stamp Duty	Rupees (In words)	Receipt No. & Date
₹ 3,600	₹ 648	₹ 4,248	₹ 1	RUPEES FOUR THOUSAND TWO HUNDRED FORTY EIGHT ONLY	7222008124050000 7351 - 23/12/24

Members covered under the Policy: Group (Named)

Sl. No	EMP ID	Name of the Member	Age	Nominee	Sum Insured			
					Personal Accident	Hospitalization expenses		
						Road Accident	Employment extension	Any other accident
1	1	RAJAMANI	34	PECHIMUT HU	200000	200000	200000	200000
2	2	GANESAN	28	PAVITHRA	200000	200000	200000	200000
3	3	LOGANATHAN	30	NATARAJ	200000	200000	200000	200000
4	4	MANITHKU MAR	28	SAVITHRI	200000	200000	200000	200000
5	5	UMESH RAM	24	RANI DEVI	200000	200000	200000	200000

Special Conditions

Limit of Hospitalisation expenses shown above is the combined limit for all the hospitalisation extensions put together.

The Policy shall be subject to RAASTA AAPATTI KAVACH POLICY (Group (Named)) policy clauses attached herewith.

Premium and GST Details

Signature Not
Required
Digitally signed by
SIVASIVAA BLUE
METALS
Date: 2024.12.23

Policy No: 72220040246800000108 Document generated by 32318 at 23/12/2024 15:57:18 Hours.

Regd. & Head Office: New India Assurance Bldg., 87 M.G. Road, Fort, Mumbai - 400 001. TOLL FREE No: 1-800-209-1476

For redressal of your grievance, if any, you may approach any one of the following offices: 1. Policy issuing office 2. Regional office 3. Head office. In case, you are not satisfied with our own grievance redressal mechanism, you may also approach Insurance Ombudsman. For details of our office addresses and addresses of office of Insurance Ombudsman, please visit our website <http://newindia.co.in>



	Rate of Tax	Amount in INR
Premium		₹25000
SGST	9%	324
CGST	9%	324
IGST	0%	0

IN WITNESS WHEREOF, the undersigned (We) authorized beneficiary set his hand

Place:-
Date:-

For and on behalf of
The New India Assurance Company Limited

Date of Issue: 23/12/2024

Duly Constituted Attorney(s)

We hereby declare that though our aggregate turnover in any preceding financial year from 2017-18 onwards is more than the aggregate turnover notified under sub-rule (4) of rule 48, we are not required to prepare an invoice in terms of the provisions of the said sub-rule.

Tax Invoice No: 72250024P0011359

IRDA Registration Number: 190
NIA PAN NUMBER: AAACN4165C



POLICY SCHEDULE FOR RAASTA AAPATTI KAVACH POLICY (Group (Named))

UIN NUMBER - IRDA/NL-HLT-NIA/P-H/V.1/355/13-14

Insured Name	SHRADEVA BLUE METALS		
Insured's Details		Issuing Office Details	
Customer ID	PG8888063	Office Code	POLLACHI (722200)
Address	NO.144/1A ARADMPALAYAM VILLAGE KINATHUKADAVU COIMBATORE, TAMIL NADU, 642201	Address	13/1 KAMARAJ ROAD MAHALINGAPURAM POLLACHI 642002
Phone No	XXXXXX7778	Phone No	04259225701 / 04259221381
E-mail/Fax	shradevafuemetals@gmail.com /	E-mail/Fax	nia.722200@newindia.co.in /
PAN No		S.Tax Regn. No	AAACN4165CST178
GSTIN/UIN	33DPVPR8642P1ZK / NA	GSTIN	33AAACN4165C42V /
		SAC	897138 (Other non-life insurance services excl RI)

Policy Details

Policy Number	722200482488000000105	Business Source Code	
Period of Insurance	From:23/12/2024 03:32:43 PM To 22/12/2025 11:59:59 PM	Dev.Off level /Broker/Corp. Agent/CPSC User	DIRECT BUSINESS - 00 - (104316932)
Date of Proposal	23-Dec-24	Agent/Bancassurance	Mrs. GEETHA P (NIAAG00141673) GEETHA P (S100233624)
Prev. Policy no.		Phone No	9842212812 / NA
Client Type	Corporate	E-mail/Fax	surenba73@gmail.com / /

Premium	GST	Total (₹)	Stamp Duty	Rupees (in words)	Receipt No. & Date
₹ 3,600	₹ 648	₹ 4,248	₹1	RUPEES FOUR THOUSAND TWO HUNDRED FORTY- EIGHT ONLY	7222008124000000 7351 - 23/12/24

Members covered under the Policy: Group (Named)

Sl. No	EMP ID	Name of the Member	Age	Nominee	Sum Insured			
					Personal Accident	Hospitalization expenses		
						Road Accident	Employment extension	Any other accident
1	1	VIJAYALAKS HMI	29	SAKTHIVEL	200000	200000	200000	200000
2	2	KRISHNA KUMAR	27	KALAISELVI	200000	200000	200000	200000
3	3	ANBUSELV AN	20	SELVI	200000	200000	200000	200000
4	4	SARAVANA M	29	GOKILA	200000	200000	200000	200000
5	5	RAKESH KUMAR	25	NEHA KUMARI	200000	200000	200000	200000

Special Conditions	Limit of Hospitalisation expenses shown above is the combined limit for all the hospitalisation extensions put together.
---------------------------	--

The Policy Shall be subject to RAASTA AAPATTI KAVACH POLICY (Group (Named)) policy clauses attached herewith

Premium and GST Details



Policy No. : 722200482488000000105 Document generated by 32319 at 23/12/2024 15:58:08 Hours
Head. & Head Office: New India Assurance (Bldg. 87 M.G. Road, Fort, Mumbai - 400 001, TOLL FREE No. 1 800 208 1419)
For details of your grievances, if any you may approach any one of the following offices: 1. Policy issuing office 2. Regional office 3. Head office in case you are not satisfied with our own grievance redressal mechanism; you may also approach Insurance Ombudsman. For details of our office addresses and addresses of office of Insurance Ombudsman, please visit our website: <http://newindia.co.in>



	Rate of Tax	Amount in INR
Premium:		₹1000
SGST	9	324
CGST	9	324
IGST	0	0

WITNESS WHEREOF, the undersigned duly authorized hereunto set his hand:

Place:-

Date:-

For and on behalf of
The New India Assurance Company Limited

Date of issue: 23/12/2024

Duly Constituted Attorney(s)

We hereby declare that though our aggregate turnover in any preceding financial year from 2017-18 onwards is more than the aggregate turnover notified under sub-rule (4) of rule 48, we are not required to prepare an invoice in terms of the provisions of the said sub-rule.

Tax Invoice No: 72220024P0011360

IRDA Registration Number: 190
NIA PAN NUMBER: AAACN4165C

Photograph of Name Board



RENEWAL OF CONSENT ORDER NO:2109239841522

DATE:17/07/2021

PROCEEDINGS NO.F.1284CBS/RS/DEE/TNPCB/CBS/A/2021 DATED: 17/07/2021

Sub :	Tamil Nadu Pollution Control Board – AUTO RENEWAL OF CONSENT –M/s. C.SHANMUGAM QUARRY, S.F. No. 144/2A2 Part, ARASAMPALAYAM village, Kinathukadavu Taluk and Coimbatore District- Renewal of Consent for operation of the plant and discharge of emissions under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) – Issued – Reg.
Ref :	1. CTO Proc. No. F.1284CBS/RS/DEE/TNPCB/CBS/A/2016 dated 31.10.2016 2. Unit application id 39841522 for CTO-autoRenew dated 06.07.2021 3. Minutes of the 225th DLCCC meeting dated 16.07.2021 held at the O/o, DEE, Coimbatore South.

Renewal of Consent is hereby granted under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Proprietor,
M/s. C.SHANMUGAM QUARRY
S.F No. 144/2A2 Part,
ARASAMPALAYAM Village,
Kinathukadavu Taluk,
Coimbatore District.

Authorizing the occupier to operate the industrial plant in the Air Pollution Control Area as notified by the Government and to make discharge of emission from the stacks/chimneys.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This RENEWAL OF CONSENT is valid for the period ending - December 08, 2021

**PERIYASAMY
MANIMARAN**

**District Environmental Engineer,
Tamil Nadu Pollution Control Board,
COIMBATORE SOUTH**

For the Tamil Nadu Pollution Control Board,
Coimbatore South
Signature of District Environmental Engineer
Date: 17/07/2021

SPECIAL CONDITIONS

1. This renewal of consent is valid for operating the facility for the manufacture of products (Col. 2) at the rate (Col. 3) mentioned below. Any change in the products and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl.No.	Description	Quantity	Unit
Product Details :-			
1.	Rough Stone and Gravel Quarrying Area in SF No. 144/2A2 Part, Arasanpalayam Village, Kinathudavu Taluk, Coimbatore District (Latitude 10°52'14" N to 10°52'18" N, and Longitude 77°02'33"E to 77°02'37" E).	0.85.5	Hectares
2.	Rough Stone	45845	Cu.m/Five Years
3.	Gravel	4738	Cu.m/Five Years
By-Product Details :-			
Intermediate Product Details :-			

2. This renewal of consent is valid for operating the facility with the below mentioned emission/noise sources along with the control measures and/or stack. Any change in the emission source/control measures/change in stack height has to be brought to the notice of the Board and fresh consent/Amendment has to be obtained.

I Point source emission with stack :				
Stack No	Point Emission sources	Air pollution Control measures provided	Stack height from Ground Level in m	Gaseous Discharge in Nm ³ /hr
01	Quarrying Process	Water Sprinkler arrangements	0	--
II Fugitive/Noise emission :				
Sl.No.	Fugitive or Noise Emission sources	Type of Emission	Control measures provided	Quantity

Special Additional Conditions-

The unit shall install the approved retrofit emission control device/equipment with at least 70% Particulate matter reduction efficiency on all DG sets with capacity of 125 KVA and above or otherwise the unit shall be shift to gas based generators within the time frame prescribed in the notification No.

TNPCR/Lab/DIX/1,02151-2019 dated 10.06.2020 issued by TNPCR.

Additional Conditions-

- The unit shall comply with all the conditions stipulated in the CTO and subsequent renewal consent order.
- The renewal of consent is issued based on the following information,
 - There is no increase in production over the consented quantity.
 - There is no increase in GFA of the unit from the previous information submitted by the unit.
 - There is no increase in quantity of sewage and trade effluent over the consented quantity.
 - There is no increase in the numbers of stacks and in emission over the consented quantity.
 - There is no change in the management or ownership of the company.
 - No court case is pending in respect of the unit against the Board in High court/Supreme court/NGT/Appellate Authority or any other cases.
- In case of any deviation from the particulars mentioned in Sl.No.2, the unit has to inform the details to the O/o DEE, TNPCR, Coimbatore (South). In such a case, the unit shall comply with appropriate directions to be issued by the Board.
- In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification. Failing to remit the consent fee, this consent order will be withdrawn without any notice and further action will be initiated against the unit as per law.
- The unit shall not use "use and throwaway plastics" such as plastic sheets used for food wrapping, spreading on dining table etc., plastic plates, plastic coated tea cups, plastic tumbler, water pouches and packets, plastic straw, plastic carry bags and plastic flags irrespective of thickness, within the industry premises. Instead unit shall encourage use of eco friendly alternative such as banana leaf, arecanut palm plate, stainless steel, glass,

Photograph of Water Sprinkling



Form 59

[See rules 115 (2)]

Pollution Under Control Certificate

Authorised By :
State Transport Department

Date : 23/07/2025
Time : 09:35:16 AM
Validity upto : 22/07/2026



Certificate SL No. : TN04100070052669
Registration No. : TN41BB0588
Date of Registration : 15/Dec/2022
Month & Year of Manufacturing : September 2022
Valid Mobile Number : *****7775
Emission Norms : BHARAT STAGE VI
Fuel : DIESEL
PUC Code : TN0410007
GSTIN :
Fees : Rs.150.0
MIL observation : No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
	CO	percentage (%)		
High idling emissions	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	0.7	0.29

This PUC certificate is system generated through the national register of Motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://vahan.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator
60mm x 20 mm

Form 59

(See rules 115 (2))

Pollution Under Control Certificate

Authorised By :
State Transport Department

Date : 30/05/2025
Time : 10:22:04 AM
Validity upto : 29/11/2025



Certificate SL No. : TN04100070051182
Registration No. : TN41AH4896
Date of Registration : 17/Apr/2013
Month & Year of Manufacturing : February 2013
Vehic Mobile Number : *****7779
Emission Norms : BHARAT STAGE III
Fuel : DIESEL
PUC Code : TN0410007
GSTIN :
Taxes : Rs.150.0
MIL observation : No

Vehicle Photo with Registration plate
60 mm x 30 mm



Sr. No.	Pollutant (as applicable)	Units (as applicable)	Emission limits	Measured Value (upto 2 decimal places)
1	2	3	4	5
Idling Emissions	Carbon Monoxide (CO)	percentage (%)		
	Hydrocarbon, (THC/HC)	ppm		
High idling emissions	CO	percentage (%)		
	RPM	RPM	2500 ± 200	
	Lambda	-	1 ± 0.03	
Smoke Density	Light absorption coefficient	1/metre	2.45	1.43

This PUC certificate is system generated through the national register of Motor vehicles and does not require any signature.

Note : 1. Vehicle owners to link their mobile numbers to registered vehicle by logging to <https://vahan.parivahan.gov.in>

Authorised Signature with stamp of PUC Operator
50mm x 20 mm

Medical Examination Format

(FORM - C)

(See rule 29(2) and 29(3))

Report of medical examination under rule 29B in accordance with Form P1 of the Mines Rules 1955

Certificate No. _____

Certified that Shri/Shrimati E. Shammugam to be employed as trade apprentice
E. Shammugam trade in mines of SECL, Form B No/ Apprenticeship registration
 number _____ has been examined for an initial medical examination in accordance with
 Form P1 of the Mines Rules 1955. He/She* appears to be 57 years of age. The findings of the
 examining authority are given in the attached sheet. It is considered that Shri/Shrimati*
 (a)* is medically fit for Any employment/ graduate/technician apprentice training in mines.

(b)* is suffering from _____ and is medically unfit for

(1) any employment in mine; or

(2) any employment below ground; or

(3) any employment or work _____

©* is suffering from _____ He should get this disability* cured/controlled and
 should be again examined within a period of _____ months. He/She will appear for re-examination
 with the medical test of _____ and the opinion of _____ Specialist from _____ He/She may
 be permitted to carry on his duties during this period.

Passport

the Candidate.



Dr. N. CHITRA, M.B.B.S.
 Chief Civil Surgeon

Examining authority (not below the rank of assistant civil surgeon) with seal
 Upgraded Primary Health Centre
 V. Chandrapuram.

Place: Kinathukadavu

Date: 12/08/2005

Name and designation in block letters

Dr. N. CHITRA, M.B.B.S.
 Chief Civil Surgeon
 Reg. No. 46514
 Upgraded Primary Health Centre
 V. Chandrapuram.

* Delete whatever is not applicable.

** One copy of the certificate shall be handed over to the person concerned for SECL and another copy shall be retained by the examining authority.

Report of the examining authority

(to be filled in for every medical examination whether initial or after cure/control of disability)

Annexure to Certificate No. _____ as result of medical examination on 12/08/2025

Identification Mark

B. Scam - cat log
B. Scam - cat hand

Left thumb impression of the candidate

1. General development _____ Good / Fair / Poor
2. Height 164 cms
3. Weight 57 kg

4 Eyes

(Visual acuity Distant vision (with or without glasses))

Right eye Power

Left eye Power

- (i) Any organic disease of eyes _____
(ii) Night blindness _____
(iv) Color blindness _____
(v) Squint _____

(* to be tested in special cases)

(5) Ears

- (i) Hearing: right ear N Left ear N
(ii) Any organic diseases _____

6 Respiratory system

Chest measurement:

- (i) After full inspiration 98 cms
(ii) After full expiration 92 cms

7 Circulatory system:

Blood Pressure 130/80 mmHg
Pulse 72

8 Abdomen

Tenderness N

Liver N

Spleen N

Tumor N

9. Nervous system:

History of fits or epilepsy -

Paralysis -

Mental health -

10. Locomotory system (S)

11. Skin (S)

12. Hydrocele -

13. Hernia -

14. Any other abnormality -

15. Urine:

Reaction N

Albumin N

Sugar N

16. Ski gram of chest.

17. Any other test considered necessary by the examining authority.

18. Any opinion of specialist considered necessary.

Signature and seal of the examining authority.

(Not below the rank of Assistant Surgeon)

Dr. N. CHITRA, M.B.B.S.,

Chief Civil Surgeon

Reg. No. 46514

Upgraded Primary Health Centre

V. Chandrapuram,

Place:

Name Dr. N. CHITRA, M.B.B.S.

Designation CHIEF CIVIL SURGEON

Place of posting V. Chandrapuram

City/Town V. Chandrapuram PO. -

District Calicut State Kerala

Phone / Mobile No. 9788347366

Email Address -

(FORM - F-1)

(See rule 28F(1) and 28L)

Medical standard of fitness for persons to be employed in mines.

1. The person should be in good mental and bodily health and free from any physical defect likely to interfere with his efficient employment in a mine. Due allowance in the standard should be made for the age of a candidate.

2. Locomotor system - The limbs should be well formed and developed and the function of all the limbs should be within normal limits. Any deformity should be recorded. There should be no deformity or paralysis which may interfere with his efficient employment in a mine. Any deformity noted should be recorded.

3. Skin - There should be no evidence of extensive and chronic skin disease or ulceration.

4. (a) Distant vision eye with or without glasses should be not less than the following standard.

For workers employed on
Surface and in opencast
Workings

For workers employed
below ground

1. Better eye	5/12	6/6
2. Worse eye	6/18	6/9

(b) Night blindness should be tested in special cases only in underground workers where the examining authority considers it necessary.

(c) A person having only one eye which functions normally should not be employed belowground. For employment on surface the vision of such a person in the other eye should be 5/12 with or without glasses. A person will be considered uniocular when there is physical loss of one eye or when there is functional loss of vision of one eye.

(d) Colour blindness will be tested only in special cases where the job requires good colour discrimination. Only low grade colour perceptions will be tested with Eridge Green's lantern.

(e) There should not be squint where binocular vision is essential.

(f) There should not be any organic disease of the eye which is likely to affect the distant vision within a period of five years.

5. Hearing should be good. Any progressive disease affecting hearing should be recorded. The candidate should be able to hear conversational voice from a distance of 3 metres.

6. Speech must be without serious impediments.

7. (a) Respiratory system should be sound and free from any chronic laryngeal bronchial pulmonary disease. Tuberculosis of lungs if not active should not be a disqualification.

(b) ²[A full sized postero-anterior chest radiograph (large) enough to include thoracic inlet and both costophrenic angles obtained by an X-ray machine of atleast 300 mA Milli-Ampere strength shall be evaluated in the manner specified by the Chief Inspector and Lung function tests (spirometry) to record forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) shall be made. There should not be any evidence of active pulmonary disease if there are evidences of active pulmonary tuberculosis, he may be permitted to work if his sputum is negative on repeated examination and on

8. Circulatory system - There should be no evidence of cardiac or vascular disease which may interfere with his efficient employment in a mine.

9. There should not be any evidence of disease of abdominal organs which is likely to affect his efficient discharge of duty in a mine.

10. In case the candidate has hernia, he may be declared fit after he has been successfully operated for the same.

11. Hydrocele if present should not be large enough to impede the normal activities of the person. If it is large enough he may be declared fit after being successfully operated.

12. The nervous system should be sound. Persons with history of epilepsy or any other type of organic or hysterical fits should not be declared fit for employment in a mine.

13. The medical examination should include examination of urine. Mere presence of albumen and sugar in the urine without any gross organic disease producing signs and symptoms should not be a disability.

14. Skiagram of the chest should also be obtained. If it is necessary the medical officer may direct the candidate to obtain the result of special tests and the opinion of a specialist from recognised institution/hospital.

Photograph of Workers Facility

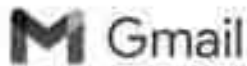




SOUTH INDIAN Bank
EXPERIENCE NEXT-GEN BANKING

TO WHOMSOEVER IT MAY CONCERN



ATR

Annexure - B

Regional Office Chennai <roefccc1@gmail.com>

Submission of Action Taken Report - C.Shanmugam, Rough Stone & Gravel Quarry, Coimbatore

1 message

Brown Green Solution <browngreensolution@gmail.com>

Wed, Aug 20, 2025 at 3:41 PM

To: roefccc1@gmail.com

Cc: Palpandi Chendurpandi <c.palpandi1981@gmail.com>

Respected Sir/Madam,

With reference to your letter No. EP/12.1/2023-26/SE/AA/77/TN/1264 dated 14.08.2025, I am herewith submitting the **Action Taken Report (ATR)** with Annexures for C.Shanmugam - Rough Stone & Gravel Quarry over an extent of 0.85.5 Hectare located at S.F.No. 144/2A2 (Part), Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District.

We kindly request your good office to consider the submission and issue the **Certified Compliance Report (CCR)** at the earliest.

Thanking you,

Yours faithfully,

C. Shanmugam

(Project Proponent)

 C. Shanmugam_ATR_Des 1264.pdf
300K

20.08.2025

From

C. Shanmugam
Merku Thottam,
Karacheri, Periyakuyilai (Post),
Chettipalayam (Via),
Kinathukadavu Taluk,
Coimbatore District.

To

Deputy Director General,
Regional Office (South Eastern Zone),
Ministry of Environment, Forest and Climate Change (MoEF & CC)
1st Floor, Additional Office Block for GPOA,
Shastri Bhawan, Haddows Road, Nungambakkam,
Chennai – 600 006.

Sir,

Sub: Submission of **Action Taken Report** – C. Shanmugam – Rough Stone & Gravel Quarry over an extent of 0.85.5 Hectare located at S.F.No. 144/2A2 (Part), Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District – Certified Compliance Report requested – reg.

Ref:


1. Environmental Clearance - Lr. No. SEIAA-TN/F.No.5654/1(a) / EC.No.3756 / 2016 dated 26.09.2016
2. CCR Request Letter submitted to RO, MoEF&CC, Chennai on 21.07.2025
3. Site inspection by Dr.C.Palpandi, Scientist 'D', RO-SEZ, MoEF&CC on 07.08.2025
4. Query Letter No. EP/12.1/2025-26/SEIAA/77/TN/1264 dated 14.08.2025

We acknowledge receipt of your letter dated 14.08.2025 regarding the observed non-compliance issues.

We are fully committed to addressing each point and ensuring full compliance with the stipulated conditions.

Below is the summary of corrective actions taken in response to the queries raised vide Ref.4, based on the Environmental Clearance conditions (Ref. 1):

S. No.	Query	Reply
1.	Land use classification was not obtained (<i>Specific conditions No. 2</i>)	Not complied in last EC. We will be duly obtained and submitted before commencing operations.
2.	Copies of the Environmental Clearance has not submitted to the Village Panchayat (<i>Specific condition No. 5</i>)	We assure that once the Environmental Clearance is granted, a copy will be submitted immediately to the concerned Village Panchayat.
3.	No such study has been conducted to assess the optimum blast parameters and blast design (<i>Specific condition No. 20</i>)	We will carry out the required studies and implement the recommended blast design parameters. Periodic vibration monitoring will be conducted at designated locations, and the results will be included in the upcoming half-yearly compliance report.
4.	Consultation for Groundwater conservation measures were not done with the "Regional Director, CGWB for the groundwater augmentation measures. (<i>Specific condition No. 25</i>)	We will initiate the necessary consultation with the Regional Director, CGWB to ensure that all required groundwater augmentation measures are implemented. An action plan will be developed based on their recommendations, and the details will be shared in the subsequent compliance submission.
5.	Environmental monitoring of the proposed quarry site before and after the mining activities including vibration study data, water, air, flora/fauna by involving a reputed academic institution (<i>Specific condition No. 35</i>)	<p>We ensure that environmental monitoring - including vibration study data, water quality, air quality, and flora/fauna assessments, will be conducted at the quarry site during and after mining operations through a reputed academic institution.</p> <p>The results will be documented and submitted in the upcoming half-yearly compliance report.</p>

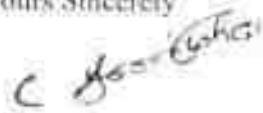
S. No.	Query	Reply
6.	Monitoring of ground water quality was not conducted once in 3 months (<i>Specific condition No. 38</i>).	<p>We ensure that quarterly groundwater quality monitoring will be carried out henceforth to comply with the stipulated condition without fail.</p> <p>The monitoring results will be documented and included in future half-yearly compliance reports.</p>
7.	Monitoring of Free Silica test was not conducted (<i>Specific condition No. 40</i>).	<p>We ensure that free silica testing will be conducted in the coming days through a NABL-accredited laboratory.</p> <p>The test results will be included in our upcoming half-yearly compliance report and submitted to the Regional Office, MoEF&CC, Chennai.</p>
8.	Air sampling at intersection point was not conducted (<i>Specific condition No.41</i>).	<p>We ensure that air sampling at the intersection point of the quarry site will be done through accredited laboratory in future.</p>
9.	No Settling Tank in the quarry area (<i>Specific condition No. 49</i>).	<p>We have constructed a settling tank at the quarry site. The photographs of the settling tank are enclosed below for reference.</p> <div>  </div>
10.	Baseline study covering air, water, noise and land environment before starting the mining operation (<i>Specific condition No. 56</i>).	<p>We commit to promptly conducting the baseline study covering air, water, noise, and ground conditions before commencing mining activities.</p>
11.	Approval from the Competent Authority for utilization of heavy earth	<p>We ensure that all necessary permissions for operating heavy earth-</p>

S. No.	Query	Reply
	equipment's has not obtained (<i>Specific condition No. 60</i>).	moving equipment will be obtained from the concerned authorities in a timely manner.
12.	Consent to Establishment was not obtained (<i>General condition No. 2</i>).	We assure that Consent to Establish (CTE) will be obtained from the Tamil Nadu Pollution Control Board (TNPCB) before commencement of quarrying operations.

We also assure that all conditions of the Environmental Clearance (EC) issued by SEIAA-TN will be complied in the future.

Thanking You,

Yours Sincerely


(C. Shanmugam)
 Project Proponent

POPULATION BREAKUP & LITERACY LEVEL IN THE BUFFER ZONE

Sl.No	No. of Villages	Name of village	Rural / urban	HOUSE HOLDS	POPULATION			POPULATION BELOW 6 AGE GROUP			SCHEDULE CASTE			SCHEDULE TRIBE			LITRERATES			ILLITRERATES		
					TOTAL	MALE	F.MALE	TOTAL	MALE	F.MALE	TOTAL	MALE	F.MALE	TOTAL	MALE	F. MALE	TOTAL	MALE	F.MALE	TOTAL	MALE	F.MALE
0-2 km,Coimbatore South Sub-District, Coimbatore District																						
1	1	Myleripalayam	Rural	1393	4990	2451	2539	447	227	220	1381	679	702	0	0	0	3169	1746	1423	1821	705	1116
Pollachi Sub-District, Coimbatore District																						
2	1	Arasampalayam	Rural	1090	3818	1894	1924	298	160	138	947	471	476	0	0	0	2473	1384	1089	1345	510	835
		total (A)		2483	8808	4345	4463	745	387	358	2328	1150	1178	0	0	0	5642	3130	2512	3166	1215	1951
2-5 km,Pollachi Sub-District, Coimbatore District																						
3	1	Panappatti	Rural	763	2635	1383	1252	199	113	86	450	219	231	0	0	0	1740	1026	714	895	357	538
4	2	Vadasithur	Rural	1532	5080	2483	2597	342	173	169	940	459	481	2	1	1	3452	1878	1574	1628	605	1023
5	3	Kondampatty	Rural	738	2467	1218	1249	165	77	88	455	221	234	2	1	1	1625	889	736	842	329	513
6	4	Solavampalayam	Rural	1837	6387	3195	3192	619	316	303	1364	691	673	3	2	1	4074	2234	1840	2313	961	1352
Sulur Sub-District, Coimbatore District																						
7	1	Peedampalli	Rural	1134	3896	1955	1941	339	185	154	683	356	327	24	13	11	2982	1601	1381	914	354	560
Coimbatore South Sub-District, Coimbatore District																						
8	1	Othakalmandapam (TP)	Urban	3394	12207	6028	6179	1087	551	536	1479	707	772	69	40	29	9133	4831	4302	3074	1197	1877
		total (B)		9398	32672	16262	16410	2751	1415	1336	5371	2653	2718	100	57	43	23006	12459	10547	9666	3803	5863
5-10 km,Coimbatore South Sub-District, Coimbatore District																						
9	1	Narasipuram	Rural	831	3078	1574	1504	245	125	120	466	234	232	145	70	75	2034	1145	889	1044	429	615
10	2	Madavarayapuram	Rural	1797	6365	3226	3139	619	342	277	510	274	236	53	32	21	4587	2468	2119	1778	758	1020
11	3	Ikkaraibooluvampatti	Rural	1834	6361	3183	3178	536	270	266	1367	679	688	495	240	255	4043	2273	1770	2318	910	1408
12	4	Madampatti	Rural	1999	6771	3359	3412	595	312	283	1384	700	684	9	4	5	4748	2584	2164	2023	775	1248
13	5	Theethipalayam	Rural	2386	8629	4296	4333	847	425	422	1395	686	709	25	16	9	6329	3424	2905	2300	872	1428
14	6	Palathurai	Rural	767	2727	1346	1381	213	103	110	1214	602	612	0	0	0	1906	1033	873	821	313	508
15	7	Thambagoundenpalayam	Rural	133	482	234	248	30	17	13	87	42	45	0	0	0	374	193	181	108	41	67
16	8	Karunchamigoundenpalayam	Rural	95	343	171	172	33	17	16	0	0	0	0	0	0	213	111	102	130	60	70
17	9	Seerappalayam	Rural	1646	5881	3053	2828	505	282	223	1041	513	528	0	0	0	4457	2470	1987	1424	583	841
18	10	Nachippalayam	Rural	878	3008	1517	1491	228	120	108	1033	509	524	0	0	0	2019	1105	914	989	412	577
19	11	Arisippalayam	Rural	700	2400	1212	1188	225	127	98	823	414	409	0	0	0	1670	883	787	730	329	401
20	12	Valukkupparai	Rural	1412	4891	2376	2515	383	182	201	1368	667	701	55	33	22	3043	1670	1373	1848	706	1142
Pollachi Sub-District, Coimbatore District																						
21	1	Mettubavi	Rural	719	2485	1281	1204	173	93	80	301	153	148	8	3	5	1671	971	700	814	310	504
22	2	Vadaputhur	Rural	1467	5176	2561	2615	503	259	244	706	348	358	15	5	10	3663	1985	1678	1513	576	937
23	3	Kuthiraiampalayam	Rural	444	1448	685	763	107	52	55	442	216	226	9	5	4	887	483	404	561	202	359
24	4	Pottaiyandiporambu	Rural	445	1530	764	766	127	59	68	357	180	177	71	30	41	901	502	399	629	262	367
25	5	Sangarayapuram	Rural	255	816	416	400	58	27	31	147	67	80	55	27	28	604	338	266	212	78	134
26	6	Kodangipalayam	Rural	463	1481	730	751	91	52	39	331	165	166	0	0	0	887	479	408	594	251	343
27	7	Kothavadi	Rural	500	1565	767	798	84	43	41	662	317	345	0	0	0	1005	556	449	560	211	349
28	8	Kurunallipalayam	Rural	528	1753	887	866	110	60	50	457	236	221	0	0	0	1014	599	415	739	288	451

Sl.No	No. of Villages	Name of village	Rural / urban	HOUSE HOLDS	POPULATION			POPULATION BELOW 6 AGE GROUP			SCHEDULE CASTE			SCHEDULE TRIBE			LITRERATES			ILLITRERATES		
					TOTAL	MALE	F.MALE	TOTAL	MALE	F.MALE	TOTAL	MALE	F.MALE	TOTAL	MALE	F. MALE	TOTAL	MALE	F.MALE	TOTAL	MALE	F.MALE
29	9	Periakalandai	Rural	571	1915	951	964	162	86	76	588	284	304	0	0	0	1224	687	537	691	264	427
30	10	Andipalayam	Rural	1006	3315	1624	1691	205	101	104	654	327	327	8	4	4	2278	1245	1033	1037	379	658
31	11	Chettiakkapalayam	Rural	984	3370	1710	1660	204	102	102	719	335	384	0	0	0	2219	1291	928	1151	419	732
32	12	Nallattipalayam	Rural	1550	5431	2699	2732	536	272	264	969	495	474	521	250	271	3541	1911	1630	1890	788	1102
Sulur Sub-District, Coimbatore District																						
33	1	Kallapalayam	Rural	860	3066	1581	1485	253	130	123	686	346	340	4	3	1	2350	1293	1057	716	288	428
34	2	Pappampatti	Rural	1172	4143	2052	2091	415	196	219	961	455	506	0	0	0	2865	1524	1341	1278	528	750
35	3	Edayapalayam	Rural	667	2251	1130	1121	193	98	95	269	128	141	4	3	1	1659	930	729	592	200	392
36	4	Vadavalli	Rural	955	3171	1567	1604	244	128	116	822	413	409	0	0	0	2010	1093	917	1161	474	687
37	5	Bogampatti	Rural	686	2415	1254	1161	155	85	70	170	87	83	0	0	0	1515	905	610	900	349	551
Coimbatore South Sub-District, Coimbatore District																						
38	1	Vellalur (TP)	Urban	6837	24872	12794	12078	2232	1129	1103	4389	2206	2183	16	8	8	19571	10684	8887	5301	2110	3191
39	2	Kurichi (M)	Urban	32830	123667	61815	61852	12987	6596	6391	13001	6502	6499	312	153	159	99529	51805	47724	24138	10010	14128
40	3	Chettipalayam (TP)	Urban	2841	10366	5268	5098	880	480	400	2920	1460	1460	0	0	0	7304	3991	3313	3062	1277	1785
41	4	Madukkarai (TP)	Urban	8153	30357	15084	15273	3049	1544	1505	4640	2325	2315	29	12	17	23046	12155	10891	7311	2929	4382
42	5	Malumichampatti (CT)	Urban	3594	12936	6568	6368	1294	687	607	2561	1294	1267	4	2	2	10023	5315	4708	2913	1253	1660
Pollachi Sub-District, Coimbatore District																						
43	1	Kinathukadavu (TP)	Urban	2469	8653	4271	4382	737	381	356	1263	620	643	4	2	2	6565	3474	3091	2088	797	1291
		total (C)		84474	307118	154006	153112	29258	14982	14276	48703	24279	24424	1842	902	940	231754	123575	108179	75364	30431	44933
		Grand Total (A+B+C)		96355	348598	174613	173985	32754	16784	15970	56402	28082	28320	1942	959	983	260402	139164	121238	88196	35449	52747

**Source: District Primary Census Abstract, Coimbatore District of Tamilnadu State-2011*

OCCUPATIONAL STRUCTURE IN THE BUFFER ZONE

Sl.No	No. of Villages	Name of village	Rural / urban	MAIN WORKERS		CULTIVATORS		AGRI LABOURS		HOUSE HOLD		OTHERS		MARGINAL WORKERS		NON WORKERS	
				MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE
0-2 km,Coimbatore South Sub-District, Coimbatore District																	
1	1	Myleripalayam	Rural	1539	1042	303	265	264	320	36	50	936	407	127	204	785	1293
Pollachi Sub-District, Coimbatore District																	
2	1	Arasampalayam	Rural	1166	697	241	119	345	401	12	11	568	166	103	75	625	1152
		total (A)		2705	1739	544	384	609	721	48	61	1504	573	230	279	1410	2445
2-5 km,Pollachi Sub-District, Coimbatore District																	
3	1	Panappatti	Rural	969	597	391	240	300	304	5	6	273	47	5	8	409	647
4	2	Vadasithur	Rural	1631	788	354	194	377	340	19	9	881	245	40	53	812	1756
5	3	Kondampatty	Rural	635	351	86	54	219	195	8	1	322	101	183	141	400	757
6	4	Solavampalayam	Rural	2014	1023	145	95	432	494	15	29	1422	405	120	210	1061	1959
Sulur Sub-District, Coimbatore District																	
7	1	Peedampalli	Rural	1023	442	139	39	83	100	86	44	715	259	218	186	714	1313
Coimbatore South Sub-District, Coimbatore District																	
8	1	Othakalmandapam (TP)	Urban	3274	1297	76	29	80	85	50	28	3068	1155	510	318	2244	4564
		total (B)		9546	4498	1191	651	1491	1518	183	117	6681	2212	1076	916	5640	10996
5-10 km,Coimbatore South Sub-District, Coimbatore District																	
9	1	Narasipuram	Rural	912	475	76	27	215	132	13	9	608	307	205	282	457	747
10	2	Madavarayapuram	Rural	1452	740	213	113	422	302	32	22	785	303	551	354	1223	2045
11	3	Ikkaraibooluvampatti	Rural	1773	991	162	107	747	649	42	26	822	209	308	313	1102	1874
12	4	Madampatti	Rural	2041	1228	297	140	720	751	26	30	998	307	118	207	1200	1977
13	5	Theethipalayam	Rural	2362	922	222	31	362	410	34	23	1744	458	328	289	1606	3122
14	6	Palathurai	Rural	557	211	67	26	37	48	6	5	447	132	337	298	452	872
15	7	Thambagoundenpalayam	Rural	134	59	24	13	10	10	1	0	99	36	8	23	92	166
16	8	Karunchamigoundenpalayam	Rural	109	43	28	29	1	1	0	0	80	13	4	26	58	103
17	9	Seerappalayam	Rural	1760	691	112	37	247	203	35	31	1366	420	85	87	1208	2050
18	10	Nachippalayam	Rural	934	664	257	201	248	231	8	11	421	221	113	92	470	735
19	11	Arisippalayam	Rural	702	272	103	14	149	132	11	4	439	122	69	83	441	833
20	12	Valukkupparai	Rural	1429	1211	466	432	509	626	19	18	435	135	216	199	731	1105
Pollachi Sub-District, Coimbatore District																	
21	1	Mettubavi	Rural	879	446	335	142	252	205	3	5	289	94	12	35	390	723
22	2	Vadaputhur	Rural	1623	856	273	218	205	261	21	14	1124	363	54	137	884	1622
23	3	Kuthiraialampalayam	Rural	441	365	86	86	201	236	6	6	148	37	32	58	212	340
24	4	Pottaiyandiporambu	Rural	321	177	96	54	60	46	1	0	164	77	197	194	246	395
25	5	Sangarayapuram	Rural	274	172	97	81	69	51	3	1	105	39	27	45	115	183
26	6	Kodangipalayam	Rural	471	178	174	43	135	91	9	8	153	36	56	273	203	300
27	7	Kothavadi	Rural	549	380	153	94	211	209	9	12	176	65	1	5	217	413
28	8	Kurunallipalayam	Rural	612	449	169	166	205	222	0	0	238	61	2	7	273	410

Sl.No	No. of Villages	Name of village	Rural / urban	MAIN WORKERS		CULTIVATORS		AGRI LABOURS		HOUSE HOLD		OTHERS		MARGINAL WORKERS		NON WORKERS	
				MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE	MALE	F.MALE
29	9	Periakalandai	Rural	657	425	147	74	275	276	8	4	227	71	2	3	292	536
30	10	Andipalayam	Rural	1087	662	156	47	458	441	30	12	443	162	39	52	498	977
31	11	Chettiakkapalayam	Rural	1222	677	307	146	389	385	51	42	475	104	10	20	478	963
32	12	Nallattipalayam	Rural	1553	1016	113	73	308	343	89	59	1043	541	211	171	935	1545
Sulur Sub-District, Coimbatore District																	
33	1	Kallapalayam	Rural	961	561	214	148	227	227	31	13	489	173	18	7	602	917
34	2	Pappampatti	Rural	1262	499	95	48	225	158	48	27	894	266	79	137	711	1455
35	3	Edayapalayam	Rural	676	301	153	47	54	124	28	15	441	115	72	101	382	719
36	4	Vadavalli	Rural	1095	763	180	109	634	479	75	80	206	95	16	20	456	821
37	5	Bogampatti	Rural	731	254	352	118	174	104	11	3	194	29	82	98	441	809
Coimbatore South Sub-District, Coimbatore District																	
38	1	Vellalur (TP)	Urban	7404	2647	230	64	274	265	208	244	6692	2074	767	539	4623	8892
39	2	Kurichi (M)	Urban	34683	10136	211	53	158	105	614	446	33700	9532	2222	1999	24910	49717
40	3	Chettipalayam (TP)	Urban	3078	1000	393	46	157	109	49	35	2479	810	221	151	1969	3947
41	4	Madukkarai (TP)	Urban	8642	2757	105	30	162	142	79	77	8296	2508	532	543	5910	11973
42	5	Malumichampatti (CT)	Urban	3922	1300	123	65	57	47	61	40	3681	1148	133	162	2513	4906
Pollachi Sub-District, Coimbatore District																	
43	1	Kinathukadavu (TP)	Urban	2686	1211	89	35	314	248	78	79	2205	849	52	82	1533	3089
		total (C)		88994	34739	6278	3157	8871	8269	1739	1401	72106	21912	7179	7092	57833	111281
		Grand Total (A+B+C)		101245	40976	8013	4192	10971	10508	1970	1579	80291	24697	8485	8287	64883	124722

**Source: District Primary Census Abstract, Coimbatore District of Tamilnadu State-2011*

Annexure- 11

EDUCATIONAL FACILITIES IN THE STUDY AREA

Sl.No	No. of Villages	Name of village	Educational Facilities (A(1)/ NA(2))	Govt Pre - Primary School (Nursery/LKG/UKG) (Numbers)	Govt Primary School (Numbers)	Govt Middle School (Numbers)	Govt Secondary School (Numbers)	Govt Senior Secondary School (Numbers)	Govt Arts and Science Degree College (Numbers)	Govt Engineering College (Numbers)	Govt Medicine College (Numbers)	Govt Management Institute (Numbers)	Govt Polytechnic (Numbers)	Govt Vocational Training School/ITI (Numbers)	Government Non Formal Training Centre (Numbers)	Government School For Disabled (Numbers)
0-2 km,Coimbatore South Sub-District, Coimbatore District																
1	1	Myleripalayam	1	3	3	1	0	0	0	0	0	0	0	0	0	0
Pollachi Sub-District, Coimbatore District																
2	1	Arasampalayam	1	3	2	1	1	0	0	0	0	0	0	0	0	0
		total (A)		6	5	2	1	0	0	0	0	0	0	0	0	0
2-5 km,Pollachi Sub-District, Coimbatore District																
3	1	Panappatti	1	2	1	1	1	0	0	0	0	0	0	0	0	0
4	2	Vadasithur	1	4	3	1	1	1	0	0	0	0	0	0	0	0
5	3	Kondampatty	1	2	1	1	0	0	0	0	0	0	0	0	0	0
6	4	Solavampalayam	1	4	3	1	0	0	0	0	0	0	0	0	0	0
Sulur Sub-District, Coimbatore District																
7	1	Peedampalli	1	2	2	1	1	1	0	0	0	0	0	0	0	0
		total (B)		14	10	5	3	2	0	0	0	0	0	0	0	0
5-10 km,Coimbatore South Sub-District, Coimbatore District																
8	1	Narasipuram	1	1	1	1	1	0	0	0	0	0	0	0	0	0
9	2	Madavarayapuram	1	4	1	0	0	0	0	0	0	0	0	0	0	0
10	3	Ikkaraibooluvampatti	1	1	4	2	1	0	0	0	0	0	0	0	0	0
11	4	Madampatti	1	4	3	5	0	0	0	0	0	0	0	0	0	0
12	5	Theethipalayam	1	2	4	2	1	0	0	0	0	0	0	0	0	0
13	6	Palathurai	1	1	1	1	0	0	0	0	0	0	0	0	0	0
14	7	Thambagoundenpalayam	1	1	1	0	0	0	0	0	0	0	0	0	0	0
15	8	Karunchamigoundenpalayam	1	1	0	0	0	0	0	0	0	0	0	0	0	0
16	9	Seerappalayam	1	3	3	1	0	0	0	0	0	0	0	0	0	0
17	10	Nachippalayam	1	3	4	0	0	0	0	0	0	0	0	0	0	0
18	11	Arisippalayam	1	3	2	1	1	1	0	0	0	0	0	0	0	0
19	12	Valukkupparai	1	3	3	1	1	0	0	0	0	0	0	0	0	0
Pollachi Sub-District, Coimbatore District																
20	1	Mettubavi	1	1	3	1	0	0	0	0	0	0	0	0	0	0
21	2	Vadaputhur	1	2	2	0	0	0	0	0	0	0	0	0	0	0
22	3	Kuthiraiampalayam	1	1	1	0	0	0	0	0	0	0	0	0	0	0
23	4	Pottaiyandiporambu	1	1	1	0	0	0	0	0	0	0	0	0	0	0
24	5	Sangarayapuram	1	1	1	0	0	0	0	0	0	0	0	0	0	0
25	6	Kodangipalayam	1	1	2	0	0	0	0	0	0	0	0	0	0	0
26	7	Kothavadi	1	1	2	1	0	0	0	0	0	0	0	0	0	0
27	8	Kurunallipalayam	1	1	1	0	0	0	0	0	0	0	0	0	0	0
28	9	Periakalandai	1	2	2	0	0	0	0	0	0	0	0	0	0	0
29	10	Andipalayam	1	3	3	2	1	1	0	0	0	0	0	0	0	0
30	11	Chettiakkapalayam	1	2	1	0	0	0	0	0	0	0	0	0	0	0
31	12	Nallattipalayam	1	4	3	1	0	0	0	0	0	0	0	0	0	0
Sulur Sub-District, Coimbatore District																
32	1	Kallapalayam	1	2	1	1	1	0	0	0	0	0	0	0	0	0
33	2	Pappampatti	1	2	1	1	0	0	0	0	0	0	0	0	0	0
34	3	Edayapalayam	1	1	1	1	1	1	0	0	0	0	0	0	0	0

Sl.No	No. of Villages	Name of village	Educational Facilities (A(1)/ NA(2))	Govt Pre - Primary School (Nursery/LKG/UKG) (Numbers)	Govt Primary School (Numbers)	Govt Middle School (Numbers)	Govt Secondary School (Numbers)	Govt Senior Secondary School (Numbers)	Govt Arts and Science Degree College (Numbers)	Govt Engineering College (Numbers)	Govt Medicine College (Numbers)	Govt Management Institute (Numbers)	Govt Polytechnic (Numbers)	Govt Vocational Training School/ITI (Numbers)	Government Non Formal Training Centre (Numbers)	Government School For Disabled (Numbers)
35	4	Vadavalli	1	2	2	1	1	0	0	0	0	0	0	0	0	0
36	5	Bogampatti	1	1	2	2	0	0	0	0	0	0	0	0	0	0
		total (C)		55	56	25	9	3	0	0	0	0	0	0	0	0
		Grand Total (A+B+C)		75	71	32	13	5	0	0	0	0	0	0	0	0

*Source: District Primary Census Abstract, Coimbatore District of Tamilnadu State-2011

MEDICAL FACILITIES WITHIN THE STUDY AREA

Sl.No	No. of Villages	Name of village	Medical Facilities (A(1)/NA(2))	Community Health Centre (Numbers)	Primary Health Centre (Numbers)	Primary Health Sub Centre (Numbers)	Maternity And Child Welfare Centre (Numbers)	TB Clinic (Numbers)	Hospital Allopathic (Numbers)	Hospital Alternative Medicine (Numbers)	Dispensary (Numbers)	Veterinary Hospital (Numbers)	Mobile Health Clinic (Numbers)	Family Welfare Centre (Numbers)
0-2 km,Coimbatore South Sub-District, Coimbatore District														
1	1	Myleripalayam	1	0	1	1	1	1	0	0	1	0	0	1
Pollachi Sub-District, Coimbatore District														
2	1	Arasampalayam	1	0	0	1	0	0	0	0	0	0	0	0
		total (A)		0	1	2	1	1	0	0	1	0	0	1
2-5 km,Pollachi Sub-District, Coimbatore District														
3	1	Panappatti	1	0	0	1	0	0	0	0	0	1	0	0
4	2	Vadasithur	1	0	0	1	0	0	0	0	0	1	0	0
5	3	Kondampatty	1	0	0	1	0	0	0	0	0	0	0	0
6	4	Solavampalayam	1	0	0	3	0	0	0	0	0	0	0	0
Sulur Sub-District, Coimbatore District														
7	1	Peedampalli	1	0	0	1	0	0	0	0	0	0	0	0
		total (B)		0	0	7	0	0	0	0	0	2	0	0
5-10 km,Coimbatore South Sub-District, Coimbatore District														
8	1	Narasipuram	1	0	1	1	1	1	0	0	1	1	0	1
9	2	Madavarayapuram	1	0	0	1	0	0	0	0	0	0	0	0
10	3	Ikkaraibooluvampatti	1	0	0	1	0	0	0	0	0	0	0	0
11	4	Madampatti	1	0	0	1	0	0	0	0	0	1	0	0
12	5	Theethipalayam	1	0	0	1	1	0	0	0	0	0	0	0
13	6	Palathurai	1	0	0	1	0	0	0	0	0	0	0	0
14	7	Thambagoundenpalayam	2	0	0	0	0	0	0	0	0	0	0	0
15	8	Karunchamigoundenpalayam	2	0	0	0	0	0	0	0	0	0	0	0
16	9	Seerappalayam	1	0	0	3	0	0	0	0	0	0	0	0
17	10	Nachippalayam	1	0	0	1	0	0	0	0	0	0	0	0
18	11	Arisippalayam	1	0	1	1	1	1	0	0	1	0	0	1
19	12	Valukkupparai	1	0	0	1	0	0	0	0	0	1	0	0
Pollachi Sub-District, Coimbatore District														
20	1	Mettubavi	2	0	0	0	0	0	0	0	0	0	0	0
21	2	Vadaputhur	1	0	0	1	0	0	0	0	0	0	0	0
22	3	Kuthiraiampalayam	2	0	0	0	0	0	0	0	0	0	0	0
23	4	Pottaiyandiporambu	1	0	0	1	0	0	0	0	0	0	0	0
24	5	Sangarayapuram	2	0	0	0	0	0	0	0	0	0	0	0
25	6	Kodangipalayam	2	0	0	0	0	0	0	0	0	0	0	0
26	7	Kothavadi	2	0	0	0	0	0	0	0	0	0	0	0
27	8	Kurunallipalayam	2	0	0	0	0	0	0	0	0	0	0	0
28	9	Periakalandai	2	0	0	0	0	0	0	0	0	0	0	0
29	10	Andipalayam	1	0	0	1	1	0	0	0	0	0	0	0

Sl.No	No. of Villages	Name of village	Medical Facilities (A(1)/NA(2))	Community Health Centre (Numbers)	Primary Health Centre (Numbers)	Primary Health Sub Centre (Numbers)	Maternity And Child Welfare Centre (Numbers)	TB Clinic (Numbers)	Hospital Allopathic (Numbers)	Hospital Alternative Medicine (Numbers)	Dispensary (Numbers)	Veterinary Hospital (Numbers)	Mobile Health Clinic (Numbers)	Family Welfare Centre (Numbers)
30	11	Chettiakkapalayam	1	0	0	1	0	0	0	0	0	0	0	0
31	12	Nallattipalayam	1	1	1	1	1	1	0	0	1	0	0	1
Sulur Sub-District, Coimbatore District														
32	1	Kallapalayam	1	0	0	1	0	0	0	0	0	0	0	0
33	2	Pappampatti	1	0	0	1	0	0	0	0	0	1	0	0
34	3	Edayapalayam	2	0	0	0	0	0	0	0	0	0	0	0
35	4	Vadavalli	1	0	0	1	0	0	0	0	0	0	0	0
36	5	Bogampatti	2	0	0	0	0	0	0	0	0	0	0	0
		total (C)		1	3	20	5	3	0	0	3	4	0	3
		Grand Total (A+B+C)		1	4	29	6	4	0	0	4	6	0	4

**Source: District Primary Census Abstract, Coimbatore District of Tamilnadu State-2011*

Note : A: Available, NA- Not Available

INFRASTRUCTURAL FACILITIES IN THE STUDY AREA

Sl.No	No. of Villages	Name of village	Tap Water-Treated (Status A(1)/NA(2))	Covered Well (Status A(1)/NA(2))	Hand Pump (Status A(1)/NA(2))	Tube Wells/Borehole (Status A(1)/NA(2))	Spring (Status A(1)/NA(2))	River/Canal (Status A(1)/NA(2))	Tank/Pond/Lake (Status A(1)/NA(2))	Post Office (Status A(1)/NA(2))	Sub Post Office (Status A(1)/NA(2))	Post And Telegraph Office (Status A(1)/NA(2))	Telephone (landlines) (Status A(1)/NA(2))	Mobile Phone Coverage (Status A(1)/NA(2))	Public Bus Service (Status A(1)/NA(2))	Railway Station (Status A(1)/NA(2))
0-2 km,Coimbatore South Sub-District, Coimbatore District																
1	1	Myleripalayam	1	1	1	1	2	2	2	2	1	2	1	1	1	2
Pollachi Sub-District, Coimbatore District																
2	1	Arasampalayam	1	1	1	1	2	2	2	2	1	2	1	1	1	2
2-5 km,Pollachi Sub-District, Coimbatore District																
3	1	Panappatti	1	1	1	1	1	2	2	2	2	2	1	1	1	2
4	2	Vadasithur	1	1	1	1	2	2	2	2	1	2	1	1	1	2
5	3	Kondampatty	1	1	2	1	2	1	2	2	1	2	1	1	1	2
6	4	Solavampalayam	1	1	1	1	2	2	2	2	1	2	1	1	1	1
Sulur Sub-District, Coimbatore District																
7	1	Peedampalli	1	1	2	2	2	2	2	2	1	2	1	1	1	2
5-10 km,Coimbatore South Sub-District, Coimbatore District																
8	1	Narasipuram	1	1	2	2	2	1	2	2	1	2	1	1	1	2
9	2	Madavarayapuram	1	1	1	1	2	1	1	2	1	2	1	1	1	2
10	3	Ikaraibooluvampatti	1	1	1	1	2	1	1	2	1	2	1	1	1	2
11	4	Madampatti	1	1	1	1	2	2	1	2	1	2	1	1	1	2
12	5	Theethipalayam	1	1	2	1	2	2	2	2	1	2	1	1	1	2
13	6	Palathurai	1	1	1	1	2	2	2	2	1	2	1	1	1	2
14	7	Thambagoundenpalayam	1	2	2	2	2	2	2	2	2	2	1	1	1	2
15	8	Karunchamigoundenpalayam	1	2	1	1	2	2	2	2	2	2	1	1	1	2
16	9	Seerappalayam	1	1	1	1	1	1	2	2	1	2	1	1	1	2
17	10	Nachippalayam	1	1	1	1	2	2	2	2	2	2	1	1	1	2
18	11	Arisippalayam	1	2	2	1	2	1	2	2	1	2	1	1	1	2
19	12	Valukkupparai	1	1	1	1	1	2	1	2	1	2	1	1	1	2

Sl.No	No. of Villages	Name of village	Tap Water-Treated (Status A(1)/NA(2))	Covered Well (Status A(1)/NA(2))	Hand Pump (Status A(1)/NA(2))	Tube Wells/Borehole (Status A(1)/NA(2))	Spring (Status A(1)/NA(2))	River/Canal (Status A(1)/NA(2))	Tank/Pond/Lake (Status A(1)/NA(2))	Post Office (Status A(1)/NA(2))	Sub Post Office (Status A(1)/NA(2))	Post And Telegraph Office (Status A(1)/NA(2))	Telephone (landlines) (Status A(1)/NA(2))	Mobile Phone Coverage (Status A(1)/NA(2))	Public Bus Service (Status A(1)/NA(2))	Railway Station (Status A(1)/NA(2))
Pollachi Sub-District, Coimbatore District																
20	1	Mettubavi	1	1	2	1	1	2	2	2	2	2	1	1	1	2
21	2	Vadaputhur	1	1	1	1	2	2	2	2	2	2	1	1	1	2
22	3	Kuthiraiampalayam	1	1	1	1	2	2	2	2	2	2	1	1	1	2
23	4	Pottaiyandiporambu	1	1	2	1	2	2	2	2	2	2	1	1	1	2
24	5	Sangarayapuram	1	1	1	1	2	2	2	2	2	2	1	1	2	2
25	6	Kodangipalayam	1	1	1	1	2	2	2	2	2	2	1	1	1	2
26	7	Kothavadi	1	1	2	1	2	1	2	2	1	2	1	1	1	2
27	8	Kurunallipalayam	1	1	2	1	2	2	1	2	1	2	1	1	1	2
28	9	Periakalandai	1	1	2	1	2	2	2	2	2	2	1	1	1	2
29	10	Andipalayam	1	1	1	1	2	2	2	2	1	2	1	1	1	2
30	11	Chettiakkapalayam	1	1	1	1	2	2	2	2	1	2	1	1	1	2
31	12	Nallattipalayam	1	1	1	1	1	2	2	2	1	2	1	1	1	2
Sulur Sub-District, Coimbatore District																
32	1	Kallapalayam	1	1	1	1	2	2	1	2	1	2	1	1	1	2
33	2	Pappampatti	1	2	2	1	1	2	2	2	1	2	1	1	1	2
34	3	Edayapalayam	1	1	1	1	2	2	2	2	2	2	1	1	1	2
35	4	Vadavalli	1	1	2	1	1	2	2	2	1	2	1	1	1	2
36	5	Bogampatti	1	1	1	1	2	2	2	2	1	2	1	1	2	2

**Source: District Primary Census Abstract, Coimbatore District of Tamilnadu State-2011*

Note : A: Available, NA- Not Available

Status: A(1)/NA(2)



Enviro Solutions & Labs

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TEST REPORT

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Issued To

Mr. C. Shanmugam (Rough Stone Quarry)
S/O Chinna Rangasamy Gounder, Merku Theru,
Periyakuyilai (PO), Kinathukadvu Taluk,
Coimbatore - 641 201.

Report No
Report Date
Sample Code

: **ESL/2506/AAQ/2994**
: **05.06.2025**
: **ESL250614**

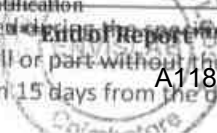
SAMPLE DETAILS

Nature of Sample	Air Quality	Sample Description	Ambient Air
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Date	ESL/QSP/07	Sample Location	Project Site
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) &144/3A(P), Arsampalayam Village, Kinathukadvu Taluk, Coimbatore.		

Monitoring Date	Particulate Matter size less than 10- µm (PM ₁₀)	Particulate Matter size less than 2.5- µm (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Dioxide (NO ₂)	Carbon Monoxide (CO)
	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³
03.03.2025	53	21	9	15	0.21
07.03.2025	49	19	9	13	0.19
10.03.2025	55	23	7	16	0.26
14.03.2025	51	19	10	15	0.25
17.03.2025	53	21	8	17	0.24
21.03.2025	54	23	10	20	0.23
25.03.2025	49	18	8	16	0.18
30.03.2025	53	22	10	18	0.25
02.04.2025	51	21	8	15	0.25
07.04.2025	53	21	10	18	0.24
11.04.2025	52	19	11	19	0.22
16.04.2025	47	16	8	15	0.17
21.04.2025	51	19	8	18	0.24
23.04.2025	49	18	7	14	0.18
28.04.2025	52	19	11	20	0.24
30.04.2025	50	20	9	17	0.21
02.05.2025	52	18	11	23	0.23
07.05.2025	51	19	7	21	0.24
12.05.2025	47	18	8	15	0.19
16.05.2025	51	21	10	19	0.25
19.05.2025	46	17	7	16	0.23
21.05.2025	49	19	8	18	0.17
23.05.2025	51	21	10	19	0.19
26.05.2025	54	24	11	20	0.26
28.05.2025	51	21	10	19	0.21
30.05.2025	50	22	9	22	0.22
Min	46	16	7	13	0.17
Max	55	24	11	23	0.26
Mean	51	20	9	18	0.22
98%ile	55	24	11	23	0.26
CPCB Limits	100	60	80	80	2

Note: BQL - Below Quantification Limit, LOQ - Limit of Quantification

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Authorised Signatory

[Signature]
I. Ram Ganesan
Technical Manager



Enviro Solutions & Labs

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Mr. C. Shanmugam (Rough Stone Quarry)
S/O Chinna Rangasamy Gounder, Merku Theru,
Periyakuyilai (PO), Kinathukadvu Taluk,
Coimbatore - 641 201.

Report No
Report Date
Sample Code

: ESL/2506/AAQ/2995
: 05.06.2025
: ESL250615

SAMPLE DETAILS

Nature of Sample	Air Quality	Sample Description	Ambient Air
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Date	ESL/QSP/07	Sample Location	Myleripalayam Village
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) &144/3A(P), Arsampalayam Village, Kinathukadvu Taluk, Coimbatore.		

Monitoring Date	Particulate Matter size less than 10- µm (PM ₁₀)	Particulate Matter size less than 2.5- µm (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Dioxide (NO ₂)	Carbon Monoxide (CO)
	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³
03.03.2025	55	22	6	12	0.16
07.03.2025	53	19	5	10	0.21
10.03.2025	60	24	7	13	0.18
14.03.2025	54	18	8	11	0.18
17.03.2025	57	22	6	12	0.23
21.03.2025	61	23	7	11	0.18
25.03.2025	58	23	5	14	0.18
30.03.2025	55	21	7	15	0.22
02.04.2025	49	20	6	14	0.17
07.04.2025	59	21	5	13	0.16
11.04.2025	62	23	6	11	0.22
16.04.2025	60	22	5	14	0.15
21.04.2025	57	23	6	13	0.21
23.04.2025	59	22	7	15	0.17
28.04.2025	56	21	5	13	0.22
30.04.2025	55	23	6	12	0.21
02.05.2025	50	22	5	12	0.22
07.05.2025	49	18	6	13	0.18
12.05.2025	51	20	6	11	0.16
16.05.2025	53	19	6	13	0.17
19.05.2025	56	20	5	13	0.21
21.05.2025	55	23	5	14	0.18
23.05.2025	59	23	5	12	0.22
26.05.2025	57	24	6	12	0.17
28.05.2025	58	22	6	11	0.18
30.05.2025	54	20	6	13	0.21
Min	49	18	5	10	0.15
Max	62	24	8	15	0.23
Mean	56	21	6	13	0.19
98%ile	62	24	8	15	0.23
CPCB Limits	100	60	80	80	

Note: BQL - Below Quantification Limit, LOQ - Limit of Quantification

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End of Report

Authorised Signatory

T. Ram Ganesan
5/6/25



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Mr. C. Shanmugam (Rough Stone Quarry)
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Periyakuyilai (PO), Kinathukadavu Taluk,
Coimbatore - 641 201.

Report No : ESL/2506/AAQ/2996
Report Date : 05.06.2025
Sample Code : ESL250616

SAMPLE DETAILS

Nature of Sample	Air Quality	Sample Description	Ambient Air
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Date	ESL/QSP/07	Sample Location	Kumaarapalayam Village
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) &144/3A(P), Arsampalayam Village, Kinathukadavu Taluk, Coimbatore.		

Monitoring Date	Particulate Matter size less than 10- µm (PM ₁₀)	Particulate Matter size less than 2.5- µm (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Dioxide (NO ₂)	Carbon Monoxide (CO)
	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³
03.03.2025	57	20	7	17	0.22
07.03.2025	50	19	6	14	0.21
10.03.2025	51	18	6	15	0.18
14.03.2025	57	20	7	11	0.15
17.03.2025	51	19	7	13	0.22
21.03.2025	50	21	8	18	0.15
25.03.2025	49	19	6	15	0.14
30.03.2025	58	22	7	17	0.19
02.04.2025	55	18	6	15	0.17
07.04.2025	49	19	6	16	0.22
11.04.2025	51	17	7	17	0.18
16.04.2025	47	19	8	16	0.18
21.04.2025	49	21	7	18	0.23
23.04.2025	52	18	6	15	0.17
28.04.2025	50	19	7	14	0.23
30.04.2025	49	22	8	15	0.24
02.05.2025	48	19	7	16	0.23
07.05.2025	55	23	6	14	0.21
12.05.2025	52	20	7	17	0.16
16.05.2025	48	18	8	15	0.17
19.05.2025	49	19	6	16	0.22
21.05.2025	52	21	6	17	0.18
23.05.2025	49	19	7	15	0.17
26.05.2025	51	22	6	16	0.22
28.05.2025	53	19	5	14	0.15
30.05.2025	55	20	6	17	0.18
Min	47	17	5	11	0.14
Max	58	23	8	18	0.24
Mean	51	20	7	16	0.18
98%ile	58	23	8	18	0.22
CPCB Limits	100	60	80	80	2

Note: BQL - Below Quantification Limit, LOQ - Limit of Quantification

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Authorized Signatory
I. Ram Ganesan
Manager



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TEST REPORT

Report No
Report Date
Sample Code

: **ESL/2506/AAQ/2997**
: **05.06.2025**
: **ESL250617**

Page 01 of 01

SAMPLE DETAILS

Nature of Sample	Air Quality	Sample Description	Ambient Air
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Date	ESL/QSP/07	Sample Location	Tegani Village
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) &144/3A(P), Arsampalayam Village, Kinathukadvu Taluk, Coimbatore.		

Monitoring Date	Particulate Matter size less than 10- µm (PM ₁₀)	Particulate Matter size less than 2.5- µm (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Dioxide (NO ₂)	Carbon Monoxide (CO)
	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³
03.03.2025	55	21	5	15	0.14
07.03.2025	51	18	6	18	0.19
10.03.2025	50	21	5	16	0.12
14.03.2025	54	24	5	13	0.15
17.03.2025	51	25	5	15	0.13
21.03.2025	53	26	5	13	0.14
25.03.2025	50	25	7	19	0.21
30.03.2025	52	22	5	14	0.12
02.04.2025	49	18	5	14	0.16
07.04.2025	51	25	6	19	0.12
11.04.2025	48	23	5	19	0.16
16.04.2025	50	19	6	14	0.21
21.04.2025	52	25	5	13	0.12
23.04.2025	48	19	6	16	0.13
28.04.2025	52	25	5	18	0.18
30.04.2025	53	22	6	19	0.12
02.05.2025	55	20	5	16	0.23
07.05.2025	57	27	5	15	0.25
12.05.2025	50	22	7	15	0.12
16.05.2025	49	26	5	13	0.14
19.05.2025	51	24	6	16	0.18
21.05.2025	53	25	5	18	0.21
23.05.2025	49	19	6	14	0.14
26.05.2025	50	26	5	17	0.15
28.05.2025	48	22	6	16	0.12
30.05.2025	49	20	6	13	0.21
Min	48	18	5	13	0.12
Max	57	27	7	19	0.25
Mean	51	23	6	16	0.16
98%ile	56	27	7	19	0.24
CPCB Limits	100	60	80	80	

Note: BQL - Below Quantification Limit, LOQ - Limit of Quantification

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Authorised Signatory

J. Ram Ganesan
8/6/25

J. Ram Ganesan

Technical Manager

A121



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Coimbatore - 641 201.

TEST REPORT

Report No

Report Date

Sample Code

: ESL/2506/AAQ/2998

: 05.06.2025

: ESL250618

Page 01 of 01

SAMPLE DETAILS

Nature of Sample	Air Quality	Sample Description	Ambient Air
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Date	ESL/QSP/07	Sample Location	Karachery Village
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) &144/3A(P), Arsampalayam Village, Kinathukadvu Taluk, Coimbatore.		

Monitoring Date	Particulate Matter size less than 10- µm (PM ₁₀)	Particulate Matter size less than 2.5- µm (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Dioxide (NO ₂)	Carbon Monoxide (CO)
	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³
03.03.2025	51	22	10	17	0.24
07.03.2025	48	19	9	18	0.24
10.03.2025	56	21	8	16	0.26
14.03.2025	53	19	10	15	0.25
17.03.2025	51	21	9	17	0.24
21.03.2025	55	23	11	20	0.23
25.03.2025	50	20	8	19	0.23
30.03.2025	55	22	10	18	0.25
02.04.2025	53	21	8	15	0.25
07.04.2025	51	21	10	16	0.24
11.04.2025	52	19	11	19	0.22
16.04.2025	49	18	12	17	0.24
21.04.2025	50	19	8	18	0.24
23.04.2025	52	20	9	14	0.25
28.04.2025	54	19	11	18	0.24
30.04.2025	51	22	9	17	0.21
02.05.2025	52	18	8	23	0.23
07.05.2025	53	19	7	18	0.24
12.05.2025	48	18	11	18	0.22
16.05.2025	51	21	8	19	0.25
19.05.2025	48	19	9	20	0.23
21.05.2025	50	22	9	18	0.24
23.05.2025	54	21	10	19	0.21
26.05.2025	57	24	8	20	0.26
28.05.2025	51	21	8	17	0.21
30.05.2025	54	24	9	18	0.19
Min	48	18	7	14	0.19
Max	57	24	12	23	0.26
Mean	52	21	9	18	0.24
98%ile	57	24	12	21	0.26
CPCB Limits	100	60	80	80	

Note: BQL - Below Quantification Limit, LOQ - Limit of Quantification

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Authorized Signatory
I. Ram Ganesan
5/6/25

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Coimbatore - 641 201.

TEST REPORT

Report No
Report Date
Sample Code

: **ESL/2506/AAQ/2999**
: **05.06.2025**
: **ESL250619**

Page 01 of 01

SAMPLE DETAILS

Nature of Sample	Air Quality	Sample Description	Ambient Air
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Date	ESL/QSP/07	Sample Location	Near Ramraj Quarry
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) &144/3A(P), Arsampalayam Village, Kinathukadavu Taluk, Coimbatore.		

Monitoring Date	Particulate Matter size less than 10- µm (PM ₁₀)	Particulate Matter size less than 2.5- µm (PM _{2.5})	Sulphur Dioxide (SO ₂)	Nitrogen Dioxide (NO ₂)	Carbon Monoxide (CO)
	µg/m ³	µg/m ³	µg/m ³	µg/m ³	mg/m ³
03.03.2025	52	25	7	16	0.21
07.03.2025	56	23	5	12	0.24
10.03.2025	55	21	8	14	0.19
14.03.2025	51	23	7	19	0.21
17.03.2025	56	24	6	15	0.23
21.03.2025	54	23	7	18	0.21
25.03.2025	57	21	8	16	0.20
30.03.2025	49	23	6	17	0.19
02.04.2025	57	21	5	18	0.22
07.04.2025	61	25	7	16	0.21
11.04.2025	55	23	6	17	0.22
16.04.2025	57	24	7	16	0.22
21.04.2025	58	21	6	16	0.21
23.04.2025	63	22	8	15	0.23
28.04.2025	57	18	7	13	0.21
30.04.2025	55	21	8	14	0.24
02.05.2025	56	19	6	12	0.22
07.05.2025	55	21	7	13	0.23
12.05.2025	57	18	6	19	0.21
16.05.2025	56	20	6	15	0.22
19.05.2025	58	20	5	16	0.22
21.05.2025	52	19	5	14	0.18
23.05.2025	55	21	5	15	0.19
26.05.2025	58	20	6	16	0.22
28.05.2025	52	22	7	14	0.23
30.05.2025	53	19	6	15	0.21
Min	49	18	5	12	0.18
Max	63	25	8	19	0.24
Mean	56	21	6	15	0.21
98%ile	62	25	8	19	0.24
CPCB Limits	100	60	80	80	

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Authorized Signatory
I. Ram Ganesan
5/6/25



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S/O Chinna Rangasamy Gounder, Merku Theru,
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Coimbatore - 641 201.

TEST REPORT

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Report No

: ESL/2506/N/3000

Report Date

: 05.06.2025

Sample Code

: ESL250620

SAMPLE DETAILS

Nature of Sample	Air Quality	Sample Description	Ambient Noise
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Date	ESL/QSP/07	Sample Location	As Mentioned Below
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) &144/3A(P), Arsampalayam Village, Kinathukadvu Taluk, Coimbatore.		

TIME	PROJECT SITE	Myleripalayam	Kumaarapalayam	Tegani	Karachery	Core Zone
06:00 AM	47.2	40.5	45.6	48.7	46.5	48.9
07:00 AM	52.7	42.8	44.7	46.3	51.6	49.7
08:00 AM	53.4	53.6	47.6	49.5	49.7	55.3
09:00 AM	50.3	56.1	51.4	51.2	53.4	57.1
10:00 AM	52.1	60.4	52.8	52.6	53.6	56.4
11:00 AM	54.6	59.7	53.5	52.4	51.5	58.3
12:00 PM	52.5	55.2	53.4	49.3	53.8	52.6
01:00 PM	55.1	56.5	50.8	50.7	50.6	55.9
02:00 PM	52.6	54.8	50.3	53.6	49.5	52.7
03:00 PM	50.3	53.4	52.4	51.4	47.3	54.6
04:00 PM	53.4	55.7	48.2	53.7	46.5	50.8
05:00 PM	54.6	49.6	42.3	52.4	48.7	50.4
06:00 PM	52.3	47.5	41.5	48.7	45.6	49.2
07:00 PM	48.6	43.3	42.7	45.9	43.4	49.8
08:00 PM	48.3	43.6	40.6	48.6	46.3	49.5
09:00 PM	51.7	45.1	44.7	46.2	44.7	50.7
10:00 PM	45.9	48.2	45.3	48.5	42.4	46.5
11:00 PM	43.6	46.3	41.7	43.9	40.1	44.7
12:00 AM	46.5	43.8	40.4	41.7	43.2	40.5
01:00 AM	43.7	45.7	38.6	39.5	45.7	43.6
02:00 AM	41.3	39.9	41.5	43.4	40.3	40.7
03:00 AM	40.5	36.8	39.6	39.5	37.2	44.3
04:00 AM	38.6	35.6	33.5	37.4	35.4	43.7
05:00 AM	35.4	34.8	31.7	32.6	30.7	40.2
Leq - day	52.4	54.6	49.6	50.7	50.0	53.8
Leq - night	43.2	43.8	40.7	42.9	41.2	43.5
Leq - dn	50.9	53.0	48.1	49.3	48.6	52.5

AMBIENT NOISE STANDARDS	Lday dB(A)	Lnight dB(A)
Industrial Area	75	70
Commercial Area	65	55
Residential Area	55	45
Silence Zone	50	40

End of Report

Authorised Signatory

[Signature]

I. Ravi Ganesan

Technical Manager

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Mr. C. Shanmugam (Rough Stone Quarry)
S/O Chinna Rangasamy Gounder, Merku Theru,
Periyakuyilai (PO), Kinathukadavu Taluk,
Coimbatore - 641 201.

Report No : ESL/2506/W/3001
Report Date : 05.06.2025
Sample Code : ESL250621

SAMPLE DETAILS

Nature of Sample	Water	Sample Description	Ground Water - Well
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Procedure	ESL/QSP/07	Sample Location	Near Project Site
Sample Collected On	28.05.2025	Sample Received On	28.05.2025
Analysis Started On	28.05.2025	Analysis Completed On	05.06.2025
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) &144/3A(P), Arsampalayam Village, Kinathukadavu Taluk, Coimbatore.		

S.No.	PARAMETER	UNIT	TEST PROCEDURE	RESULTS	*Limits
1	Odour	-	IS 3025 Part 5-2018	Agreeable	Agreeable
2	Turbidity	NTU	IS 3025 Part 10-2023	BQL (LOQ:0.1)	1
3	pH at 25 °C	-	IS 3025 Part 11-2022	7.85	6.5-8.5
4	Electrical Conductivity @25°C	µS/cm	IS :3025 Part 14- 1984(RA: 2019)	830	Not Specified
5	Total dissolved solids	mg/l	IS 3025 Part 16-2023	415	2000
6	Total Suspended solids	mg/l	IS : 3025 Part 17-2022	BQL (LOQ:2.0)	Not Specified
7	Total Alkalinity as CaCO ₃	mg/l	IS 3025 Part 23- 2023	212	600
8	Total Hardness as CaCO ₃	mg/l	IS 3025 Part 21-2009(RA:2019)	128	600
9	Calcium as Ca	mg/l	IS 3025 Part 40-1991 (RA:2019)	86.4	200
10	Magnesium as Mg	mg/l	IS 3025 Part 46-2023	19.7	100
11	Magnesium as CaCO ₃	mg/l	IS 3025 Part 46-2023	80.0	Not Specified
12	Free Residual Chlorine	mg/l	IS 3025 Part 26-2021	BQL (LOQ:0.2)	1.0
13	Chloride as Cl ⁻	mg/l	IS 3025 Part 32-1988 (RA: 2019)	81.5	1000
14	Sulphate as SO ₄	mg/l	IS 3025 Part 24/Sec 1: 2022	27.3	400
15	Nitrate as NO ₃	mg/l	IS 3025 Part 34-2023	4.10	45
16	Iron as Fe	mg/l	IS 3025 Part 53-2024	BQL(LOQ:0.05)	1.0
17	Manganese as Mn	mg/l	IS 3025 Part 59-2023	BQL(LOQ:0.02)	0.3
18	Fluoride as F	mg/l	IS 3025 Part 60-2008(RA:2017)	BQL(LOQ:0.1)	1.5
19	Ammonia as N	mg/l	IS 3025 Part 34-2023	BQL(LOQ:0.05)	0.5
20	Calcium as CaCO ₃	mg/l	IS 3025 Part 40-1991 (RA:2019)	232	-

*Limits-PERMISSIBLE LIMIT AS PER IS 10500: 2012

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification.

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T. Ram Ganesan
T. Ram Ganesan
Technical Manager

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Coimbatore - 641 201.

Report No : ESL/2506/W/3002
Report Date : 05.06.2025
Sample Code : ESL250622

SAMPLE DETAILS

Nature of Sample	Water	Sample Description	Ground Water - Borewell
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Procedure	ESL/QSP/07	Sample Location	Myleripalayam Village
Sample Collected On	28.05.2025	Sample Received On	28.05.2025
Analysis Started On	28.05.2025	Analysis Completed On	05.06.2025
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) &144/3A(P), Arsampalayam Village, Kinathukadavu Taluk, Coimbatore.		

S.No.	PARAMETER	UNIT	TEST PROCEDURE	RESULTS	*Limits
1	Odour	-	IS 3025 Part 5-2018	Agreeable	Agreeable
2	Turbidity	NTU	IS 3025 Part 10-2023	BQL (LOQ:0.1)	1
3	pH at 25 °C	-	IS 3025 Part 11-2022	7.33	6.5-8.5
4	Electrical Conductivity @25°C	µS/cm	IS :3025 Part 14- 1984(RA: 2019)	1082	Not Specified
5	Total dissolved solids	mg/l	IS 3025 Part 16-2023	541	2000
6	Total Suspended solids	mg/l	IS : 3025 Part 17-2022	BQL (LOQ:2.0)	Not Specified
7	Total Alkalinity as CaCO ₃	mg/l	IS 3025 Part 23- 2023	245	600
8	Total Hardness as CaCO ₃	mg/l	IS 3025 Part 21-2009(RA:2019)	212	600
9	Calcium as Ca	mg/l	IS 3025 Part 40-1991 (RA:2019)	81.8	200
10	Magnesium as Mg	mg/l	IS 3025 Part 46-2023	43.2	100
11	Magnesium as CaCO ₃	mg/l	IS 3025 Part 46-2023	180	Not Specified
12	Free Residual Chlorine	mg/l	IS 3025 Part 26-2021	BQL (LOQ:0.2)	1.0
13	Chloride as Cl ⁻	mg/l	IS 3025 Part 32-1988 (RA: 2019)	98.6	1000
14	Sulphate as SO ₄	mg/l	IS 3025 Part 24/Sec 1: 2022	32.9	400
15	Nitrate as NO ₃	mg/l	IS 3025 Part 34-2023	5.12	45
16	Iron as Fe	mg/l	IS 3025 Part 53-2024	BQL(LOQ:0.05)	1.0
17	Manganese as Mn	mg/l	IS 3025 Part 59-2023	BQL(LOQ:0.02)	0.3
18	Fluoride as F	mg/l	IS 3025 Part 60-2008(RA:2017)	BQL(LOQ:0.1)	1.5
19	Ammonia as N	mg/l	IS 3025 Part 34-2023	BQL(LOQ:0.05)	0.5
20	Calcium as CaCO ₃	mg/l	IS 3025 Part 40-1991 (RA:2019)	204	-

*Limits-PERMISSIBLE LIMIT AS PER IS 10500: 2012

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification.

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I. Ram Ganesan
Technical Manager

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Coimbatore - 641 201.

Report No

: ESL/2506/W/3003

Report Date

: 05.06.2025

Sample Code

: ESL250623

SAMPLE DETAILS

Nature of Sample	Water	Sample Description	Ground Water - Borewell
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Procedure	ESL/QSP/07	Sample Location	Kumaarapalayam Village
Sample Collected On	28.05.2025	Sample Received On	28.05.2025
Analysis Started On	28.05.2025	Analysis Completed On	05.06.2025
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) &144/3A(P), Arsampalayam Village, Kinathukadavu Taluk, Coimbatore.		

S.No.	PARAMETER	UNIT	TEST PROCEDURE	RESULTS	*Limits
1	Odour	-	IS 3025 Part 5-2018	Agreeable	Agreeable
2	Turbidity	NTU	IS 3025 Part 10-2023	0.47	1
3	pH at 25 °C	-	IS 3025 Part 11-2022	7.41	6.5-8.5
4	Electrical Conductivity @25°C	µS/cm	IS :3025 Part 14- 1984(RA: 2019)	1580	Not Specified
5	Total dissolved solids	mg/l	IS 3025 Part 16-2023	789	2000
6	Total Suspended solids	mg/l	IS : 3025 Part 17-2022	BQL (LOQ:2.0)	Not Specified
7	Total Alkalinity as CaCO ₃	mg/l	IS 3025 Part 23- 2023	251	600
8	Total Hardness as CaCO ₃	mg/l	IS 3025 Part 21-2009(RA:2019)	269	600
9	Calcium as Ca	mg/l	IS 3025 Part 40-1991 (RA:2019)	150	200
10	Magnesium as Mg	mg/l	IS 3025 Part 46-2023	38.6	100
11	Magnesium as CaCO ₃	mg/l	IS 3025 Part 46-2023	160	Not Specified
12	Free Residual Chlorine	mg/l	IS 3025 Part 26-2021	BQL (LOQ:0.2)	1.0
13	Chloride as Cl ⁻	mg/l	IS 3025 Part 32-1988 (RA: 2019)	168	1000
14	Sulphate as SO ₄	mg/l	IS 3025 Part 24/Sec 1: 2022	55.3	400
15	Nitrate as NO ₃	mg/l	IS 3025 Part 34-2023	6.63	45
16	Iron as Fe	mg/l	IS 3025 Part 53-2024	BQL(LOQ:0.05)	1.0
17	Manganese as Mn	mg/l	IS 3025 Part 59-2023	BQL(LOQ:0.02)	0.3
18	Fluoride as F	mg/l	IS 3025 Part 60-2008(RA:2017)	BQL(LOQ:0.1)	1.5
19	Ammonia as N	mg/l	IS 3025 Part 34-2023	BQL(LOQ:0.05)	0.5
20	Calcium as CaCO ₃	mg/l	IS 3025 Part 40-1991 (RA:2019)	372	-

*Limits-PERMISSIBLE LIMIT AS PER IS 10500: 2012

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification.

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L. Ram Ganesan
L. Ram Ganesan
Technical Manager

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Coimbatore - 641 201.

Report No : ESL/2506/W/3004
Report Date : 05.06.2025
Sample Code : ESL250624

SAMPLE DETAILS

Nature of Sample	Water	Sample Description	Ground Water - Borewell
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Procedure	ESL/QSP/07	Sample Location	Tegani Village
Sample Collected On	28.05.2025	Sample Received On	28.05.2025
Analysis Started On	28.05.2025	Analysis Completed On	05.06.2025
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) &144/3A(P), Arsampalayam Village, Kinathukadavu Taluk, Coimbatore.		

S.No.	PARAMETER	UNIT	TEST PROCEDURE	RESULTS	*Limits
1	Odour	-	IS 3025 Part 5-2018	Agreeable	Agreeable
2	Turbidity	NTU	IS 3025 Part 10-2023	BQL (LOQ:0.1)	1
3	pH at 25 °C	-	IS 3025 Part 11-2022	8.02	6.5-8.5
4	Electrical Conductivity @25°C	µS/cm	IS :3025 Part 14- 1984(RA: 2019)	912	Not Specified
5	Total dissolved solids	mg/l	IS 3025 Part 16-2023	456	2000
6	Total Suspended solids	mg/l	IS : 3025 Part 17-2022	BQL (LOQ:2.0)	Not Specified
7	Total Alkalinity as CaCO ₃	mg/l	IS 3025 Part 23- 2023	265	600
8	Total Hardness as CaCO ₃	mg/l	IS 3025 Part 21-2009(RA:2019)	162	600
9	Calcium as Ca	mg/l	IS 3025 Part 40-1991 (RA:2019)	60.0	200
10	Magnesium as Mg	mg/l	IS 3025 Part 46-2023	16.7	100
11	Magnesium as CaCO ₃	mg/l	IS 3025 Part 46-2023	70.0	Not Specified
12	Free Residual Chlorine	mg/l	IS 3025 Part 26-2021	BQL (LOQ:0.2)	1.0
13	Chloride as Cl ⁻	mg/l	IS 3025 Part 32-1988 (RA: 2019)	38.7	1000
14	Sulphate as SO ₄	mg/l	IS 3025 Part 24/Sec 1: 2022	12.8	400
15	Nitrate as NO ₃	mg/l	IS 3025 Part 34-2023	4.12	45
16	Iron as Fe	mg/l	IS 3025 Part 53-2024	BQL(LOQ:0.05)	1.0
17	Manganese as Mn	mg/l	IS 3025 Part 59-2023	BQL(LOQ:0.02)	0.3
18	Fluoride as F	mg/l	IS 3025 Part 60-2008(RA:2017)	0.2	1.5
19	Ammonia as N	mg/l	IS 3025 Part 34-2023	BQL(LOQ:0.05)	0.5
20	Calcium as CaCO ₃	mg/l	IS 3025 Part 40-1991 (RA:2019)	151	-

*Limits-PERMISSIBLE LIMIT AS PER IS 10500: 2012

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification.

****End of Report******



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I. Ram Ganesan
I. Ram Ganesan
Technical Manager

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Coimbatore - 641 201.

Report No : ESL/2506/W/3005
Report Date : 05.06.2025
Sample Code : ESL250625

SAMPLE DETAILS

Nature of Sample	Water	Sample Description	Ground Water - Borewell
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Procedure	ESL/QSP/07	Sample Location	Karachery Village
Sample Collected On	28.05.2025	Sample Received On	28.05.2025
Analysis Started On	28.05.2025	Analysis Completed On	05.06.2025
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) &144/3A(P), Arsampalayam Village, Kinathukadavu Taluk, Coimbatore.		

S.No.	PARAMETER	UNIT	TEST PROCEDURE	RESULTS	*Limits
1	Odour	-	IS 3025 Part 5-2018	Agreeable	Agreeable
2	Turbidity	NTU	IS 3025 Part 10-2023	BQL (LOQ:0.1)	1
3	pH at 25 °C	-	IS 3025 Part 11-2022	7.91	6.5-8.5
4	Electrical Conductivity @25°C	µS/cm	IS :3025 Part 14- 1984(RA: 2019)	974	Not Specified
5	Total dissolved solids	mg/l	IS 3025 Part 16-2023	487	2000
6	Total Suspended solids	mg/l	IS : 3025 Part 17-2022	BQL (LOQ:2.0)	Not Specified
7	Total Alkalinity as CaCO ₃	mg/l	IS 3025 Part 23- 2023	218	600
8	Total Hardness as CaCO ₃	mg/l	IS 3025 Part 21-2009(RA:2019)	175	600
9	Calcium as Ca	mg/l	IS 3025 Part 40-1991 (RA:2019)	101	200
10	Magnesium as Mg	mg/l	IS 3025 Part 46-2023	21.5	100
11	Magnesium as CaCO ₃	mg/l	IS 3025 Part 46-2023	90.0	Not Specified
12	Free Residual Chlorine	mg/l	IS 3025 Part 26-2021	BQL (LOQ:0.2)	1.0
13	Chloride as Cl ⁻	mg/l	IS 3025 Part 32-1988 (RA: 2019)	96.4	1000
14	Sulphate as SO ₄	mg/l	IS 3025 Part 24/Sec 1: 2022	32.3	400
15	Nitrate as NO ₃	mg/l	IS 3025 Part 34-2023	4.58	45
16	Iron as Fe	mg/l	IS 3025 Part 53-2024	BQL(LOQ:0.05)	1.0
17	Manganese as Mn	mg/l	IS 3025 Part 59-2023	BQL(LOQ:0.02)	0.3
18	Fluoride as F	mg/l	IS 3025 Part 60-2008(RA:2017)	BQL(LOQ:0.1)	1.5
19	Ammonia as N	mg/l	IS 3025 Part 34-2023	BQL(LOQ:0.05)	0.5
20	Calcium as CaCO ₃	mg/l	IS 3025 Part 40-1991 (RA:2019)	251	-

*Limits-PERMISSIBLE LIMIT AS PER IS 10500: 2012

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification.

End of Report**



Authorised Signatory

I. Ram Ganesan

I. Ram Ganesan
Technical Manager

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S/O Chinna Rangasamy Gounder, Merku Theru,
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Coimbatore - 641 201.

Report No : ESL/2506/W/3006
Report Date : 05.06.2025
Sample Code : ESL250626

SAMPLE DETAILS

Nature of Sample	Water	Sample Description	Ground Water - Borewell
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Procedure	ESL/QSP/07	Sample Location	Near Ramaraj Quarry
Sample Collected On	28.05.2025	Sample Received On	28.05.2025
Analysis Started On	28.05.2025	Analysis Completed On	05.06.2025
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) &144/3A(P), Arsampalayam Village, Kinathukadavu Taluk, Coimbatore.		

S.No.	PARAMETER	UNIT	TEST PROCEDURE	RESULTS	*Limits
1	Odour	-	IS 3025 Part 5-2018	Agreeable	Agreeable
2	Turbidity	NTU	IS 3025 Part 10-2023	BQL (LOQ:0.1)	1
3	pH at 25 °C	-	IS 3025 Part 11-2022	7.96	6.5-8.5
4	Electrical Conductivity @25°C	µS/cm	IS :3025 Part 14- 1984(RA: 2019)	1092	Not Specified
5	Total dissolved solids	mg/l	IS 3025 Part 16-2023	589	2000
6	Total Suspended solids	mg/l	IS : 3025 Part 17-2022	BQL (LOQ:2.0)	Not Specified
7	Total Alkalinity as CaCO ₃	mg/l	IS 3025 Part 23- 2023	218	600
8	Total Hardness as CaCO ₃	mg/l	IS 3025 Part 21-2009(RA:2019)	260	600
9	Calcium as Ca	mg/l	IS 3025 Part 40-1991 (RA:2019)	114	200
10	Magnesium as Mg	mg/l	IS 3025 Part 46-2023	38.9	100
11	Magnesium as CaCO ₃	mg/l	IS 3025 Part 46-2023	160	Not Specified
12	Free Residual Chlorine	mg/l	IS 3025 Part 26-2021	BQL (LOQ:0.2)	1.0
13	Chloride as Cl ⁻	mg/l	IS 3025 Part 32-1988 (RA: 2019)	138	1000
14	Sulphate as SO ₄	mg/l	IS 3025 Part 24/Sec 1: 2022	45.2	400
15	Nitrate as NO ₃	mg/l	IS 3025 Part 34-2023	5.49	45
16	Iron as Fe	mg/l	IS 3025 Part 53-2024	BQL(LOQ:0.05)	1.0
17	Manganese as Mn	mg/l	IS 3025 Part 59-2023	BQL(LOQ:0.02)	0.3
18	Fluoride as F	mg/l	IS 3025 Part 60-2008(RA:2017)	0.2	1.5
19	Ammonia as N	mg/l	IS 3025 Part 34-2023	BQL(LOQ:0.05)	0.5
20	Calcium as CaCO ₃	mg/l	IS 3025 Part 40-1991 (RA:2019)	268	-

*Limits-PERMISSIBLE LIMIT AS PER IS 10500: 2012

Note: BQL-Below Quantification Limit, LOQ - Limit of Quantification.

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TEST REPORT

Report No. : ESL/2506/S/3007
Report Date : 05.06.2025
Sample Code : ESL250627

Page 1 of 1

SAMPLE DETAILS

Nature of Sample	Soil Analysis	Sample Description	Soil
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Procedure	ESL/QSP/07	Sample Location	Project Site
Sample Collected On	28.05.2025	Sample Received On	28.05.2025
Analysis Started On	28.05.2025	Analysis Completed On	05.06.2025
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) & 144/3A(P), Arsampalayam Village, Kinathukadvu Taluk, Coimbatore.		

S.NO	PARAMETER	UNIT	TEST METHOD	RESULTS
1	pH (1:5 Suspension)	%	IS 2720 Part-26 : 1987 (RA- 2021)	6.75
2	Bulk Density	%	FAO Chapter 3, ESL/SOP/18:2023	1.19
3	Electrical conductivity, (1:5 Suspension)	mS/cm	IS -14767:2000 (RA 2021)	0.096
4	Total Nitrogen as N	Kg/ha	IS -14684:1999, RA:2019	202
5	Available Phosphorous,	Kg/ha	FAO Chapter 3, ESL/SOP/14:2023	33.5
6	Available Potassium	Kg/ha	FAO Chapter 3, ESL/SOP/17:2023	331
7	Exchangeable Calcium as Ca,	m.eq/100g	FAO Chapter 3, ESL/SOP/15:2023	13.1
8	Exchangeable Magnesium as Mg,	m.eq/100g	FAO Chapter 3, ESL/SOP/16:2023	4.14
9	Exchangeable Sodium as Na,	m.eq/100g	FAO Chapter 3, ESL/SOP/17:2023	1.91
10	Organic matter	%	IS 2720 Part- 22 : 1972 (RA- 2020)	1.21
11	Texture Classification		Bouyoucos G.J. Hydrometer method improved for making particle size analysis of soil. Argon, J. 54-464-465: 1962: 1962	Sandy
a)	Sand	%		87.9
b)	Clay	%		8.7
c)	Silt	%		3.4
12	Porosity	%	ICARDA page 53: 2013	0.66
13	Water Holding Capacity	Inches/foot	ICARDA page 28: 2013	5.2
14	Sodium Absorption Ratio (SAR)	meq/Kg	ESL/SOP/54:2024	1.12

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I. Ram Ganesan
Technical Manager

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TEST REPORT

Page 1 of 1

Report No. : ESL/2506/S/3008
Report Date : 05.06.2025
Sample Code : ESL250628

SAMPLE DETAILS

Nature of Sample	Soil Analysis	Sample Description	Soil
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Procedure	ESL/QSP/07	Sample Location	Myleripalayam Village
Sample Collected On	28.05.2025	Sample Received On	28.05.2025
Analysis Started On	28.05.2025	Analysis Completed On	05.06.2025
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) & 144/3A(P), Arsampalayam Village, Kinathukadvu Taluk, Coimbatore.		

S.NO	PARAMETER	UNIT	TEST METHOD	RESULTS
1	pH (1:5 Suspension)	%	IS 2720 Part-26 : 1987 (RA- 2021)	6.54
2	Bulk Density	%	FAO Chapter 3, ESL/SOP/18:2023	1.13
3	Electrical conductivity, (1:5 Suspension)	mS/cm	IS -14767:2000 (RA 2021)	0.089
4	Total Nitrogen as N	Kg/ha	IS -14684:1999, RA:2019	136
5	Available Phosphorous,	Kg/ha	FAO Chapter 3, ESL/SOP/14:2023	28.2
6	Available Potassium	Kg/ha	FAO Chapter 3, ESL/SOP/17:2023	235
7	Exchangeable Calcium as Ca,	m.eq/100g	FAO Chapter 3, ESL/SOP/15:2023	10.4
8	Exchangeable Magnesium as Mg,	m.eq/100g	FAO Chapter 3, ESL/SOP/16:2023	3.02
9	Exchangeable Sodium as Na,	m.eq/100g	FAO Chapter 3, ESL/SOP/17:2023	1.58
10	Organic matter	%	IS 2720 Part- 22 : 1972 (RA- 2020)	0.87
11	Texture Classification		Bouyoucos G.J. Hydrometer method improved for making particle size analysis of soil. Argon. J. 54-464-465: 1962: 1962	Sandy
a)	Sand	%		86.9
b)	Clay	%		10.5
c)	Silt	%		2.6
12	Porosity	%	ICARDA page 53: 2013	0.61
13	Water Holding Capacity	Inches/foot	ICARDA page 28: 2013	5.9
14	Sodium Absorption Ratio (SAR)	meq/Kg	ESL/SOP/54:2024	1.11

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Technical Manager

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TEST REPORT

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Report No. : ESL/2506/S/3009
Report Date : 05.06.2025
Sample Code : ESL250629

SAMPLE DETAILS

Nature of Sample	Soil Analysis	Sample Description	Soil
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Procedure	ESL/QSP/07	Sample Location	Kumaarapalayam Village
Sample Collected On	28.05.2025	Sample Received On	28.05.2025
Analysis Started On	28.05.2025	Analysis Completed On	05.06.2025
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) & 144/3A(P), Arsampalayam Village, Kinathukadvu Taluk, Coimbatore.		

S.NO	PARAMETER	UNIT	TEST METHOD	RESULTS
1	pH (1:5 Suspension)	%	IS 2720 Part-26 : 1987 (RA- 2021)	6.75
2	Bulk Density	%	FAO Chapter 3, ESL/SOP/18:2023	1.24
3	Electrical conductivity, (1:5 Suspension)	mS/cm	IS -14767:2000 (RA 2021)	0.106
4	Total Nitrogen as N	Kg/ha	IS -14684:1999, RA:2019	238
5	Available Phosphorous,	Kg/ha	FAO Chapter 3, ESL/SOP/14:2023	38.9
6	Available Potassium	Kg/ha	FAO Chapter 3, ESL/SOP/17:2023	367
7	Exchangeable Calcium as Ca,	m.eq/100g	FAO Chapter 3, ESL/SOP/15:2023	19.8
8	Exchangeable Magnesium as Mg,	m.eq/100g	FAO Chapter 3, ESL/SOP/16:2023	5.84
9	Exchangeable Sodium as Na,	m.eq/100g	FAO Chapter 3, ESL/SOP/17:2023	2.67
10	Organic matter	%	IS 2720 Part- 22 : 1972 (RA- 2020)	1.49
11	Texture Classification		Bouyoucos G.J. Hydrometer method improved for making particle size analysis of soil. Argon.J.54-464-465: 1962: 1962	Sandy
a)	Sand	%		87.8
b)	Clay	%		8.9
c)	Silt	%		3.3
12	Porosity	%	ICARDA page 53: 2013	0.65
13	Water Holding Capacity	Inches/foot	ICARDA page 28: 2013	5.9
14	Sodium Absorption Ratio (SAR)	meq/Kg	ESL/SOP/54:2024	1.13

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TEST REPORT

Page 1 of 1

Report No. : ESL/2506/S/3010
Report Date : 05.06.2025
Sample Code : ESL250630

SAMPLE DETAILS

Nature of Sample	Soil Analysis	Sample Description	Soil
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Procedure	ESL/QSP/07	Sample Location	Tegani Village
Sample Collected On	28.05.2025	Sample Received On	28.05.2025
Analysis Started On	28.05.2025	Analysis Completed On	05.06.2025
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) & 144/3A(P), Arsampalayam Village, Kinathukadvu Taluk, Coimbatore.		

S.NO	PARAMETER	UNIT	TEST METHOD	RESULTS
1	pH (1:5 Suspension)	%	IS 2720 Part-26 : 1987 (RA- 2021)	6.86
2	Bulk Density	%	FAO Chapter 3, ESL/SOP/18:2023	1.19
3	Electrical conductivity, (1:5 Suspension)	mS/cm	IS -14767:2000 (RA 2021)	0.073
4	Total Nitrogen as N	Kg/ha	IS -14684:1999, RA:2019	278
5	Available Phosphorous,	Kg/ha	FAO Chapter 3, ESL/SOP/14:2023	50.2
6	Available Potassium	Kg/ha	FAO Chapter 3, ESL/SOP/17:2023	403
7	Exchangeable Calcium as Ca,	m.eq/100g	FAO Chapter 3, ESL/SOP/15:2023	5.9
8	Exchangeable Magnesium as Mg,	m.eq/100g	FAO Chapter 3, ESL/SOP/16:2023	2.35
9	Exchangeable Sodium as Na,	m.eq/100g	FAO Chapter 3, ESL/SOP/17:2023	1.26
10	Organic matter	%	IS 2720 Part- 22 : 1972 (RA- 2020)	0.59
11	Texture Classification		Bouyoucos G.J. Hydrometer method improved for making particle size analysis of soil. Argon. J. 54-464-465: 1962: 1962	Sandy
a)	Sand	%		87.4
b)	Clay	%		8.1
c)	Silt	%		4.5
12	Porosity	%	ICARDA page 53: 2013	0.68
13	Water Holding Capacity	Inches/foot	ICARDA page 28: 2013	5.6
14	Sodium Absorption Ratio (SAR)	meq/Kg	ESL/SOP/54:2024	1.08

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Technical Manager

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TEST REPORT

Page 1 of 1

Report No. : ESL/2506/S/3011
Report Date : 05.06.2025
Sample Code : ESL250631

SAMPLE DETAILS

Nature of Sample	Soil Analysis	Sample Description	Soil
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Procedure	ESL/QSP/07	Sample Location	Karachery Village
Sample Collected On	28.05.2025	Sample Received On	28.05.2025
Analysis Started On	28.05.2025	Analysis Completed On	05.06.2025
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) & 144/3A(P), Arsampalayam Village, Kinathukadvu Taluk, Coimbatore.		

S.NO	PARAMETER	UNIT	TEST METHOD	RESULTS
1	pH (1:5 Suspension)	%	IS 2720 Part-26 : 1987 (RA- 2021)	6.85
2	Bulk Density	%	FAO Chapter 3, ESL/SOP/18:2023	1.21
3	Electrical conductivity, (1:5 Suspension)	mS/cm	IS -14767:2000 (RA 2021)	0.102
4	Total Nitrogen as N	Kg/ha	IS -14684:1999, RA:2019	207
5	Available Phosphorous,	Kg/ha	FAO Chapter 3, ESL/SOP/14:2023	34.6
6	Available Potassium	Kg/ha	FAO Chapter 3, ESL/SOP/17:2023	338
7	Exchangeable Calcium as Ca,	m.eq/100g	FAO Chapter 3, ESL/SOP/15:2023	13.2
8	Exchangeable Magnesium as Mg,	m.eq/100g	FAO Chapter 3, ESL/SOP/16:2023	4.16
9	Exchangeable Sodium as Na,	m.eq/100g	FAO Chapter 3, ESL/SOP/17:2023	1.96
10	Organic matter	%	IS 2720 Part- 22 : 1972 (RA- 2020)	1.25
11	Texture Classification		Bouyoucos G.J. Hydrometer method improved for making particle size analysis of soil. Argon. J. 54-464-465: 1962: 1962	Sandy
a)	Sand	%		86.1
b)	Clay	%		9.2
c)	Silt	%		4.7
12	Porosity	%	ICARDA page 53: 2013	0.67
13	Water Holding Capacity	Inches/foot	ICARDA page 28: 2013	5.3
14	Sodium Absorption Ratio (SAR)	meq/Kg	ESL/SOP/54:2024	1.12

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TEST REPORT

Report No. : ESL/2506/S/3012
Report Date : 05.06.2025
Sample Code : ESL250632

Page 1 of 1

SAMPLE DETAILS

Nature of Sample	Soil Analysis	Sample Description	Soil
Sample Collected By	Enviro Solutions & Labs	Sample Condition	Good
Sampling Procedure	ESL/QSP/07	Sample Location	Near Ramaraj Quarry
Sample Collected On	28.05.2025	Sample Received On	28.05.2025
Analysis Started On	28.05.2025	Analysis Completed On	05.06.2025
Sample Collected At	C. Shanmugam (Rough Stone Quarry), S.F.Nos.144/A2A(P) &144/3A(P), Arsampalayam Village, Kinathukadvu Taluk, Coimbatore.		

S.NO	PARAMETER	UNIT	TEST METHOD	RESULTS
1	pH (1:5 Suspension)	%	IS 2720 Part-26 : 1987 (RA- 2021)	6.72
2	Bulk Density	%	FAO Chapter 3, ESL/SOP/18:2023	1.10
3	Electrical conductivity, (1:5 Suspension)	mS/cm	IS -14767:2000 (RA 2021)	0.102
4	Total Nitrogen as N	Kg/ha	IS -14684:1999, RA:2019	169
5	Available Phosphorous,	Kg/ha	FAO Chapter 3, ESL/SOP/14:2023	21.9
6	Available Potassium	Kg/ha	FAO Chapter 3, ESL/SOP/17:2023	275
7	Exchangeable Calcium as Ca,	m.eq/100g	FAO Chapter 3, ESL/SOP/15:2023	18.9
8	Exchangeable Magnesium as Mg,	m.eq/100g	FAO Chapter 3, ESL/SOP/16:2023	4.96
9	Exchangeable Sodium as Na,	m.eq/100g	FAO Chapter 3, ESL/SOP/17:2023	2.37
10	Organic matter	%	IS 2720 Part- 22 : 1972 (RA- 2020)	1.42
11	Texture Classification		Bouyoucos G.J. Hydrometer method improved for making particle size analysis of soil. Argon J. 54-464-465: 1962: 1962	Sandy
a)	Sand	%		85.8
b)	Clay	%		9.2
c)	Silt	%		5.0
12	Porosity	%	ICARDA page 53: 2013	0.62
13	Water Holding Capacity	Inches/foot	ICARDA page 28: 2013	5.6
14	Sodium Absorption Ratio (SAR)	meq/Kg	ESL/SOP/54:2024	1.10

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I. Ram Sanesan
Technical Manager

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LAND USE PATTERN OF THE STUDY AREA WITHIN 10 KM RADIUS AROUND THE PROPOSED PROJECT AREA

Sl.No	No. of Villages	Name of village	Total Geographical Area (in Hectares)	Forest Area (in Hectares)	Area under Non-Agricultural Uses (in Hectares)	Barren & Un-cultivable Land Area (in Hectares)	Permanent Pastures and Other Grazing Land Area (in Hectares)	Land Under Miscellaneous Tree Crops etc. Area (in Hectares)	Culturable Waste Land Area (in Hectares)	Fallows Land other than Current Fallows Area (in Hectares)	Current Fallows Area (in Hectares)	Total Unirrigated Land Area (in Hectares)	Area Irrigated by Source (in Hectares)
0-2 km,Coimbatore South Sub-District, Coimbatore District													
1	1	Myleripalayam	1112.88	0	318.06	0	0	0	0	0	344.87	194.75	255.2
Pollachi Sub-District, Coimbatore District													
2	1	Arasampalayam	1270.73	0	95.83	9.24	0	0	44.93	0	586.75	267.37	266.61
		total (A)	2383.61	0	413.89	9.24	0	0	44.93	0	931.62	462.12	521.81
2-5 km,Pollachi Sub-District, Coimbatore District													
3	1	Panappatti	1616.95	0	112.91	15.74	0	950.43	0	0	0	293.33	244.54
4	2	Vadasithur	1748.48	0	142.86	3.25	0	0	0	0	818.23	167.74	616.4
5	3	Kondampatty	1205.85	0	69.57	7.54	0	0	58.39	0	647	125.08	298.27
6	4	Solavampalayam	869.81	0	92.17	0	0	0.85	0	0	423.68	124.39	228.72
Sulur Sub-District, Coimbatore District													
7	1	Peedampalli	1359.65	0	425.06	0	0	0.74	41.9	343.91	292.54	110.26	145.24
		total (B)	6800.74	0	842.57	26.53	0	952.02	100.29	343.91	2181.45	820.8	1533.17
5-10 km,Coimbatore South Sub-District, Coimbatore District													
8	1	Narasipuram	1332.73	0	22.63	0	0	0	394.25	208.26	0	0.7	706.89
9	2	Madavarayapuram	1308.36	0.92	116.1	0	0	0	0	0	693.43	0	497.91
10	3	Ikkaraibooluvampatti	1915.78	0	298.53	0	0	15.16	12.32	218.45	264.6	8.8	1097.92
11	4	Madampatti	1554.34	0	262.08	0	0	8.8	71.27	250.6	218.38	203.64	539.57
12	5	Theethipalayam	1338.96	0	256.04	0	0	3.34	3.28	593.88	129.03	23.81	329.58
13	6	Palathurai	344.34	0	90.32	0	0	0	0	29.39	61.56	39.85	123.22
14	7	Thambagoundenpalayam	261.1	0	46.11	0	0	0	0	20.63	45.34	56.17	92.85
15	8	Karunchamigoundenpalayam	413.3	0	91.74	0	0	0	0	32.23	68.72	0	220.61
16	9	Seerappalayam	1187.56	0	172.66	0	0	0	0	163.29	568.17	69.02	214.42
17	10	Nachippalayam	516.52	0	63.63	0	0	0	0	40.53	83.86	0	328.5
18	11	Arisippalayam	1085.6	0	79.09	20.68	0	0	188.48	0	393.9	388.95	14.5
19	12	Valukkupparai	1698.3	0	200.36	4.34	0	0	0	0	61.31	697.67	734.62
Pollachi Sub-District, Coimbatore District													
20	1	Mettubavi	2120.03	0	149.58	0	0	0.05	0	0	858.36	671.56	440.48
21	2	Vadaputhur	1059.16	0	253.53	12.4	0	0.22	4.94	0	325.56	196.01	266.5
22	3	Kuthiraiampalayam	263.74	0	41.98	0	0	0	0	0	68.78	55.88	97.1
23	4	Pottaiyandiporambu	502.99	0	33.32	1.99	0	0	0	0	198.32	99.34	170.02
24	5	Sangarayapuram	692.04	0	63.08	7.46	0	0	0	0	224.37	197.37	199.76
25	6	Kodangipalayam	753.51	0	65.13	6.57	0	0	0	0	368.79	130.79	182.23
26	7	Kothavadi	291.55	0	32.63	1.32	0	0	0	0	112.81	34.32	110.47
27	8	Kurunallipalayam	827.67	0	149.4	0.84	0	0.53	0	0	193.38	115.41	368.11
28	9	Periakalandai	1153.92	0	86.4	14.34	0	0.39	1.19	0	412.48	168.29	470.83
29	10	Andipalayam	1329.9	0	133.35	0	0	0	16.82	0	345.81	88.24	745.68

30	11	Chettiakkapalayam	976.68	0	133.65	3.15	0	0	0	0	112.75	149.89	577.24
31	12	Nallattipalayam	978.92	0	248.21	3.69	0.67	1.36	2.42	0	206.73	128.61	387.23
Sulur Sub-District, Coimbatore District													
32	1	Kallapalayam	1141.05	0	48.67	0	0	0	0	74.47	716.44	0	301.47
33	2	Pappampatti	1024.82	0	162.72	0	0	0	0	8.19	660.33	0	193.58
34	3	Edayapalayam	1191.04	0	188.02	28.43	0	0	111.17	171.5	11.02	487.51	193.39
35	4	Vadavalli	1745.38	0	195.98	0	0	0.17	193.19	432.36	345.9	337.24	240.54
36	5	Bogampatti	1876.93	0	261.7	3.84	0	0	231.48	561.49	269.69	355.2	193.53
		total (C)	30886.22	0.92	3946.64	109.05	0.67	30.02	1230.81	2805.27	8019.82	4704.27	10038.75
		Grand Total (A+B+C)	40070.57	0.92	5203.1	144.82	0.67	982.04	1376.03	3149.18	11132.89	5987.19	12093.73

**Source: District Primary Census Abstract, Coimbatore District of Tamilnadu State-2011*

MINE PLAN

MINING PLAN

FOR GRANT OF ROUGH STONE & GRAVEL QUARRYING LEASE
[PREPARED UNDER RULE 19 (1), 20, 41 & 42 OF TAMILNADU MINOR MINERAL
CONCESSION RULES, 1959 AND AMENDED TAMILNADU MINOR MINERAL
CONSERVATION AND DEVELOPMENT RULES, 2010]

LOCATION

EXTENT : 1.41.00 HECTARES
SURVEY NO. : 144/2A2(P) & 144/3A(P)
VILLAGE : ARASAMPALAYAM
TALUK : KINATHUKADAVU
DISTRICT : COIMBATORE
STATE : TAMIL NADU

APPLICANT ADDRESS

Thiru. C. SHANMUGAM

S/o CHINNARANGASAMY GOUNDER,
MERKU THOTTAM, KARACHERY,
PERIYAKUYILAI(PO), KINATHUKADAVU TALUK,
COIMBATORE DISTRICT, TAMIL NADU- 641 201.

MOBILE – +91 98656 50656

PREPARED BY

A. ALLIMUTHU., (RQP)

REG.NO . RQP/DMG/HYD/85/2022,
D.NO.1/231,PATTAKARNAVALAVU,
CHINNAMUTHIYAMPATTI, PUDUPPALAYAM (PO),
EDAPADDI (TK), SALEM DISTRICT,
TAMIL NADU – 636 306.

MOBILE : +91 97886 36242,

E-mail : allimuthu1973@gmail.com

C. Shanmugam

Thiru. C. SHANMUGAM

S/O Chinnarangasamy Gounder,

Merku Thottam, Karachery,

Periyakuyilai(PO), Kinathukadavu Taluk,

Coimbatore District, Tamil Nadu- 641 201.

Mobile – +91 98656 50656



CONSENT LETTER FROM THE MINE OWNER

The Mining Plan in respect of **Rough Stone & Gravel Quarry** over an extent of **1.41.00** Hectares in S.F.Nos. **144/2A2(P) & 144/3A(P)** at **Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State** has been prepared by

Mr. A. ALLIMUTHU , Recognized Qualified Person,

Reg.No. **RQP / DMG / HYD / 85 / 2022**

I request the Assistant Director, Dept. of Mining and Geology, **Coimbatore District** to make further correspondence regarding modifications of the Mining Plan with the said Recognized Person on this following Address,

A. ALLIMUTHU.,

D.No-1/231, Pattakarnavalavu,

Chinnamuthiyampatti, Pudupalayam (PO),

Edapaddi Taluk, Salem District,

Tamil Nadu – 636 306.

Mobile: +91 97886 36242

E-mail: allimuthu1973@gmail.com

I hereby under take that all modifications so made in the Mining Plan by the Recognized Qualified Person may be deemed to have been made with my knowledge and consent and shall be acceptable to me and binding on me in all respects.

Place :

Date :

C Shanmugam

C. SHANMUGAM,

C Shanmugam

Thiru. C. SHANMUGAM

S/O Chinnarangasamy Gounder,

Merku Thottam, Karachery,

Periyakuyilai(PO), Kinathukadavu Taluk,

Coimbatore District, Tamil Nadu- 641 201.

Mobile – +91 98656 50656



DECLARATION OF MINE OWNER

The Mining Plan in respect of **Rough Stone & Gravel** quarry over an extent of **1.41.00 Hectares** in S.F.Nos. **144/2A2(P) & 144/3A(P)** at **Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State** has been prepared with my consultation and I have understood the contents and agree to implement the same in accordance with the Mining Laws.

Place :

Date :

C Shanmugam

C. SHANMUGAM,

C Shanmugam

A. ALLIMUTHU.,

D.No-1/231, Pattakarnavalavu,
Chinnamuthiyampatti, Pudupalayam (PO),
Edapaddi Taluk, Salem District,
Tamil Nadu – 636 306.

Mobile: +91 97886 36242

E-mail: allimuthu1973@gmail.com



CERTIFICATE

This is to certify that the provisions of Minor Minerals Conservation & Development Rules, 2010 (MMCDR, 2010) have been observed in the Mining Plan for grant of **Rough Stone & Gravel** quarrying lease over an extent of **1.41.00 Hectares** in S.F.Nos. **144/2A2(P) & 144/3A(P)** at **Arasampalayam Village, Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State** for quarry lease.

Wherever specific permissions/exemptions/relaxations or approvals are required, the applicant will approach the concerned authorities of State and Central Governments for granting such permissions etc.

Certified

Place :

Date :

A. Allimuthu
Recognized Qualified Person

A. ALLIMUTHU

A. ALLIMUTHU, M.Sc., M.Phil.,
Recognized Qualified Person
RQP / DMG / HYD / 85 / 2027

A. ALLIMUTHU.,

D.No-1/231, Pattakarnavalavu,
Chinnamuthiyampatti, Pudupalayam (PO),
Edapaddi Taluk, Salem District,
Tamil Nadu – 636 306.

Mobile: +91 97886 36242

E-mail: allimuthu1973@gmail.com



CERTIFICATE

Certified that in preparation of Mining Plan for **Rough Stone & Gravel** quarry over an extent of **1.41.00 Hectares** in in S.F.Nos. **144/2A2(P) & 144/3A(P)** at **Arasampalayam Village**, **Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State** prepared for **Thiru. C. Shanmugam, Merku Thottam, Karachery, Periyakuyilai (PO), Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State**, covers all the provisions of Mines Act, Rules and Regulations, etc. made there under and whenever specific permissions are required the applicant will approach the Director General of Mines Safety, Chennai. The standards prescribed by DGMS in respect of Miners Health will be strictly implemented.

Certified

Place :

Date :

A. Allimuthu
Recognized Qualified Person

A. ALLIMUTHU
A.ALLIMUTHU, M.Sc.,M.Phil.,
Recognized Qualified Person
RQP/DMG/HYD/85/2022



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LIST OF ANNEXURE

S.No	Description	Annexure No
1	Precise Area Communication Letter issued from the Assistant Director, Department of Geology & Mining, Coimbatore District.	I
2	FMB Sketch along with Measurements	II
3	Land Documents (Patta, A.Register, Adangal, etc.,)	III
4	Copy of Identity Proof	IV
5	Copy of RQP Certificate	V

MINING PLAN

FOR ROUGH STONE & GRAVEL QUARRYING LEASE

25 FEB 2025

(PREPARED UNDER RULE 19(1), 20, 41 & 42 OF TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959 AND AMENDED TAMIL NADU MINOR MINERAL CONSERVATION AND DEVELOPMENT RULES, 2010)

1.0 INTRODUCTION:

The Applicant, **Thiru. C. SHANMUGAM**, residing at Merku Thottam, Karachery, Periyakuyilai (PO), Kinathukadavu Taluk, Coimbatore District has applied for grant of permission for quarrying Rough Stone & Gravel over an extent of 1.41.00 Hectares, located in Survey.Nos - 144/2A2(P) & 144/3A(P) at Arasampalayam Village of Kinathukadavu Taluk, Coimbatore District, Tamil Nadu State. The excavated Rough Stone is used for building and road construction and also used for crushing units and Gravel is used for filling and leveling of low lying areas of road projects and other infrastructure development work in and around the district.

1. The application was meritoriously processed and precise area communication letter issued by the Assistant Director, Department of Geology & Mining, Coimbatore District has passed an order vide R.C.No.690/ Kanimam / 2023. dated 18.02.2025.
2. The applicant has to submit Mining Plan and to get approval from the Assistant Director, Department of Geology & Mining, Coimbatore District and to obtain Environmental Clearance from the State Level Environment Impact Assessment Authority SEIAA, Tamil Nadu State, notified by MoEF and Climate Change and the procedure prescribed under the EIA Notification, 2006 and by incorporating all the details proposed in the letter No. SEIAA-TN/Minor Minerals/2012 dated 17.04.2013 of State Level Environmental Impact Assessment Authority.
3. Geological Resources are estimated to contain **21,712m³** of Gravel up to a depth of **4m** & **2,54,558m³** of Rough Stone up to a depth of **35m**. The Mineable Reserves is estimated at **11,992m³** of Gravel up to a depth of **4m** and **58,821m³** of Rough Stone up to a depth of **35m** after leaving necessary safety distance from the lease boundary. Total depth of mining area up to **39m** (4m Gravel + 35m Rough stone).



4. Environmental parameters,

i. Forest Conservation Act, 1980: (Reserve Forest)

Walayar R.F – 18km - NW

ii. Interstate Boundary:

Walayar, Kerala – Tamil Nadu Border – 21km - West

iii. Wildlife (Protection) Act, 1972:

The area does not attract the Wild Life Sanctuary around 10km Radius from the boundary of lease applied area.

iv. The Coastal Regulation Zone (CRZ) Notification 1991:

The quarry is located at a distance of 126km from the Arabian Sea in the western side. Hence, the project doesn't attract the C.R.Z. Notification, 1991.

5. Environmental measures to be adopted shall be,

- i) Dust control at source while drilling and blasting,
- ii) Dust suppression at loading point and transport haul roads.
- iii) Noise control in blasting, control of fly rock missiles and vibration by doing peak particle velocity are within standard as prescribed by the DGMS and MoEF.
- iv) Avoid uneven rat hole mining and follow scientific and systematic mining by safe bench system of open cast mining.
- v) Unnecessary Land degradation will be avoided or damaged land should be reclaimed or rehabilitated.
- vi) Mining near major fracture zones if any will be avoided to control ground water fluctuation in the adjacent agricultural lands.
- vii) Emission test of vehicles will be in tack to maintain minimum emission level of flue gases.
- viii) Noise level will not exceed 80dB and the vehicles will use only permitted Air Horn while on road near residential areas.
- ix) Safety Zones as prescribed by the Department of Geology and Mining from adjacent infrastructures will be strictly adhering to.
- x) And any other conditions as stipulated by the concerned authorities will be followed to protect the environment.

C. Jeyaraj



2.0 EXECUTIVE SUMMARY:

a.	Name of the village	ARASAMPALAYAM
b.	Geological Resources of Rough Stone	2,54,558m ³
c.	Geological Resources of Gravel	21,714m ³
d.	Mineable Reserves of Rough Stone	58,821m ³
e.	Mineable Reserves of Gravel	11,992m ³
f.	Extent of the lease area	1.41.00 Ha
g.	Proposed Life of Mine	Five Years
h.	Proposed depth of mining	39m (4m Gravel + 35m Rough Stone)
i.	Method of mining/ level of mechanization	Open cast, semi mechanized mining with a bench height of 5m and bench width of 5m is proposed.
m.	Cost of Project	
	a. Fixed Cost	72,00,000/-
	b. Operational Cost	40,00,000/-
	c. EMP Cost	4,50,000/-

C. J. J. J.



3.0 GENERAL INFORMATION:

3.1	a.	Name of the Applicant	:	C. SHANMUGAM
	b.	Address of the Applicant with phone no and e-mail id if any	:	Merku Theru, Karachery, Periyakuyilai(PO), Kinathukadavu Taluk, Coimbatore District, Tamil Nadu- 641 201 Mobile – +91 98656 50656
	c.	Status of Land	:	Patta Land
3.2	a.	Mineral which the Applicant intends to mine	:	Rough Stone & Gravel
	b.	Precise area communication Letter details	:	R.C.No.690/ Kanimam / 2023. dated 18.02.2025
	c.	Period of permission / lease granted	:	Five Years
	d.	Name and Address of the RQP preparing Mining Plan	:	A. ALLIMUTHU D.No-1/231, Pattakarnavalavu, Chinnamuthiyampatti, Pudupalayam (PO), Edapaddi Taluk, Salem District, Tamil Nadu – 636 306. Mobile: +91 97886 36242 E-mail: allimuthu1973@gmail.com
	e.	RQP Reg no.	:	[RQP/DMG/HYD/85/2022] Valid upto 25-04-2032

4.0 LOCATION:

a) Details of the area:

STATE & DISTRICT	TALUK	VILLAGE	SF.NO.	EXTENT(HA)
Tamil Nadu, Coimbatore	Kinathukadavu	Arasampalayam	144/2A2(P)	1.08.00
			144/3A(P)	0.33.00
Total				1.41.00

Route:

COIMBATORE $\xrightarrow{16\text{km}}$ CHETTIPALAYAM $\xrightarrow{5\text{km}}$ KARACHERY $\xrightarrow{2\text{km}}$ SITE

b) Classification of the Area: **Patta land.** Patta Nos –796 (144/2A2) & 1121 (144/3A) .

c) Ownership occupancy of applied area (Surface rights):

Own property of C. Shanmugam in Survey no. – 144/2A2

Consent property of S. Rathinam in Survey No – 144/3A

d) Existence of Public Road / Railway Line if any nearby and approximate distance:

Nearest Public Road is **Panjayat** road at a distance of **45m**.

Nearest Railway Station is **Kinathukadavu** at a distance of **5km**.

e) Infrastructures nearby are given as under,

Sl. No	Particulars	Location	Approximate distance in km
1	POST OFFICE	PERIYAKUYILAI	3
2	TOWN	KINATHUKADAVU	5
3	POLICE STATION	KINATHUKADAVU	5.5
4	FIRE STATION	KINATHUKADAVU	4
5	GOVT. HOSPITAL/PHC	THEKANI	2
6	GOVT. SCHOOL	MYLERIPALAYAM	2.5
7	DSP OFFICE	PODANUR	12
8	RAILWAY STATION	KINATHUKADAVU	5
9	NEAREST AIRPORT	COIMBATORE	24
10	SEA PORT	COCHIN	190

f) Topo sheet No. with latitude and longitude: Toposheet No: 58F/1 & The 6 Pillars Reading as follows,

BOUNDARY CO-ORDINATES		
P.No.	LATITUDE	LONGITUDE
1	10° 52' 18.29"N	77° 02' 35.97"E
2	10° 52' 14.68"N	77° 02' 36.95"E
3	10° 52' 13.36"N	77° 02' 37.28"E
4	10° 52' 12.74"N	77° 02' 34.78"E
5	10° 52' 13.96"N	77° 02' 34.29"E
6	10° 52' 18.41"N	77° 02' 33.30"E
DATUM WGS-84		

PART - A



5.0 GEOLOGY AND MINERAL RESERVES:

5.1	Topography	<p>1. The lease applied area is exhibits Plain Area covered by Rough stone & Gravel formation. The remaining land in the proposed area is partially covered with shrubs, herbs, grass, climbers, bushes, etc</p> <p>2. Massive rock & gravel is observed in the area. No major river or Pond is found nearby applied area.</p> <p>3. The maximum and minimum temperatures for the District during summer and winter vary between 35 °C to 18 °C</p> <p>4. The average annual rainfall in the plains is around 700 mm with the northeast and the southwest monsoons contributing to 47% and 28% respectively to the total rainfall.</p>														
5.2	Regional Geology	<p>Coimbatore district is covered by rocks belonging to Archean age comprising the Khondalite group, Charnockite Group, migmatite group, Sathayamangalam group, Bhavani Group and Alkali complex of Proterozoic age and Recent to Late Pleistocene rocks of Cainozoic age.</p> <table><tr><th>Lithology</th><th>Age</th></tr><tr><td>Black soil & laterite</td><td>Recent</td></tr><tr><td>Alkali Complex</td><td>Proterozoic</td></tr><tr><td>Bhavani & Satyamangalam Group</td><td>Archaean formation</td></tr><tr><td>Migmatite & Peninsular gneiss</td><td>Archaean formation</td></tr><tr><td>Charnockite</td><td>Archaean formation</td></tr><tr><td>Khondalite</td><td>Archaean formation</td></tr></table>	Lithology	Age	Black soil & laterite	Recent	Alkali Complex	Proterozoic	Bhavani & Satyamangalam Group	Archaean formation	Migmatite & Peninsular gneiss	Archaean formation	Charnockite	Archaean formation	Khondalite	Archaean formation
Lithology	Age															
Black soil & laterite	Recent															
Alkali Complex	Proterozoic															
Bhavani & Satyamangalam Group	Archaean formation															
Migmatite & Peninsular gneiss	Archaean formation															
Charnockite	Archaean formation															
Khondalite	Archaean formation															
5.3	Geology of the Precise Area	<p>The area is mainly composed of crystalline metamorphic complex. The rock type majorly noticed in the area for lease is Biotite Gneiss. Which is mainly composed Hornblende, biotite mica, Quartz, and Feldspar with some ferromagnesian minerals. The grain size is medium to course. The strike of the Charnockite formation is N35°E-S35°W with dipping towards 60°S.</p>														

C. J. Senthil

PHOTOGRAPH SHOWS GENERAL VIEW OF THE LEASE AREA



FIG: 1

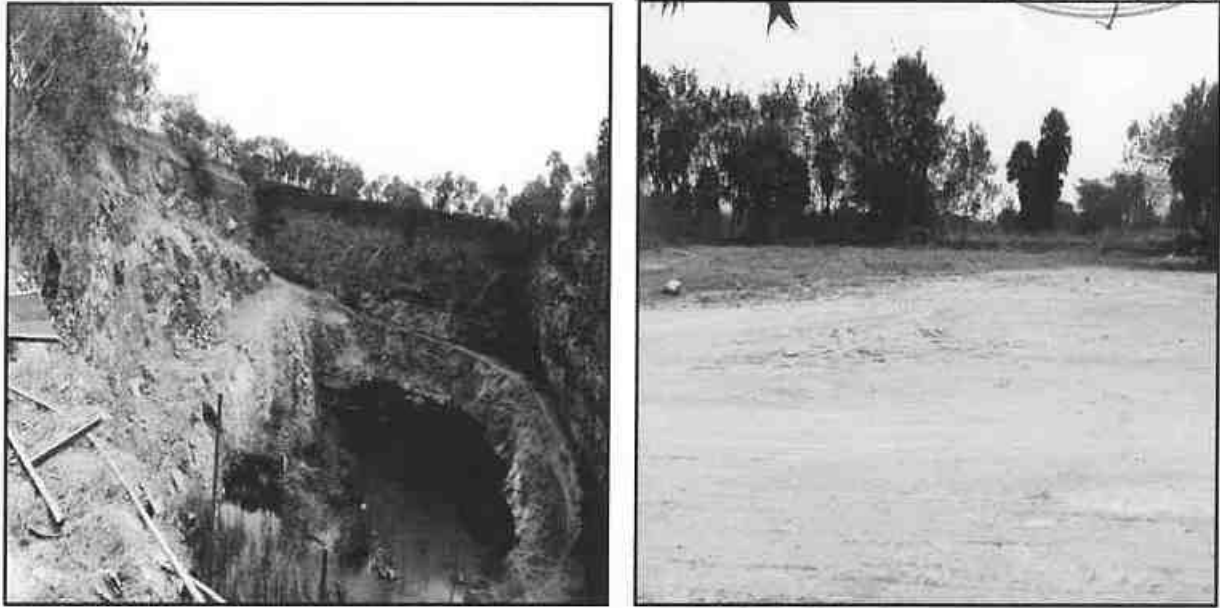
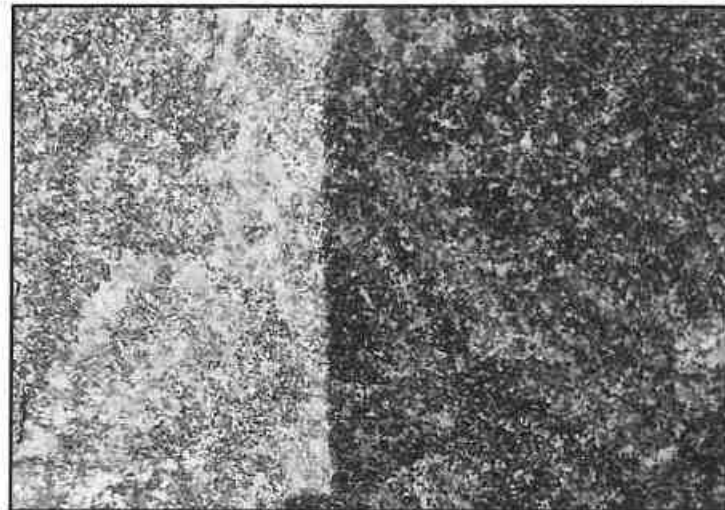
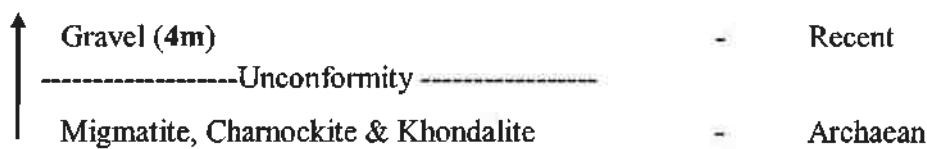


FIG: 2



CLOSE VIEW OF THE ROCK

The Biotite gneiss is part of peninsular gneisses, a high grade metamorphic rock. It is typically brown to black colour and grain size is coarse grained. It is suitable of construction purposes because of its high strength, colour, high density, low porosity etc.





5.4 DETAILS OF EXPLORATION

Already Mined out:

The Proposed lease area was disturbed by earlier quarrying activity. The existing pit dimension as follow,

EXISTING PIT DIMENSION			
Pit No.	Length (m) (Max)	Width (m) (Max)	Depth(m)
I	97	65	27

5.5 METHOD OF ESTIMATION OF RESERVES

- * As far as Rough stone & Gravel is concerned, the only practical method is the systematic geological mapping and delineation of Rough stone & Gravel within the field and careful evaluation of body lustre, physical properties, engineering properties, commercial aspects etc.,
- * Totally four sections have been drawn, one section drawn length wise as (A-B) and another three Section drawn width wise as (X1-Y1) , (X2-Y2) and (X3-Y3) to cover maximum area considered for lease.
- * The Topographical, Geological plan and sections demarcated the commercial, marketable Rough stone & Gravel deposit has been prepared in Scale 1:1000 and Sections have been drawn with a scale of Hor 1:1000 and Ver 1:1000 respectively.
- * Please refer Plate No. VI & VII Rough stone & Gravel are terms of Cubic Meters (Volume) only.



a) GEOLOGICAL RESOURCES

The Geological resources are estimated as **21,714m³** of Gravel up to a depth of **4m** and **2,54,558m³** of Rough stone up to a depth of **35m**. Details of estimation of Geological resources are given below,

Geological Resources by Cross Sectional Method						
Section	MSL	Length (m)	Width (m)	Depth(m)	Volume (m ³)	Gravel (m ³)
AB-X1Y1	415-411	49	83	4	-	16268
	411-401	49	83	10	40670	-
	401-388	55	83	13	59345	-
	388-381	55	83	7	31955	-
AB-X2Y2	415-410	47	16	4	-	3008
	410-406	47	17	5	3995	-
	406-396	47	24	10	11280	-
	396-388	47	40	8	15040	-
	388-376	47	82	12	46248	-
AB-X3Y3	415-411	21	29	4	-	2436
	411-398	21	31	13	8463	-
	398-392	4	35	7	980	-
	392-388	38	43	3	4902	-
	388-376	33	80	12	31680	-
Total (Up to Depth of 39m)					254558	21712

b) MINEABLE RESERVES

The mineable reserves are estimated as **11,992m³** of Gravel up to a depth of **4m** and **58,821m³** of Rough stone up to a depth of **35m** after leaving the safety distance of 7.5m for adjacent Patta lands and 10m for Government lands from the boundary of lease applied area as indicated in precise area communication letter and relevant mining laws in force. Details of estimation of mineable reserves are given below,



Mineable Reserves by Cross Sectional Method						
Section	MSL	Length (m)	Width (m)	Depth(m)	Volume (m³)	Gravel (m³)
AB-X1Y1	415-411	41	69	4	-	11316
	411-406	37	61	5	11285	-
	406-401	32	52	5	8320	-
	401-396	33	42	5	6930	-
	396-391	29	32	5	4640	-
	391-376	24	22	5	2640	-
	886-381	18	12	5	1080	-
AB-X2Y2	388-386	47	32	2	3008	-
	386-381	47	32	5	7520	-
	381-376	47	22	5	5170	-
AB-X3Y3	415-411	13	13	4	-	676
	411-406	9	9	5	405	-
	406-401	4	4	5	80	-
	388-386	38	28	2	2128	-
	386-381	33	23	5	3795	-
	381-376	28	13	5	1820	-
TOTAL (Up to Depth of 39m)					58821	11992

6.0 MINING

6.1 Mining Methods:

Opencast method of semi mechanized mining with 5m vertical bench height and width 5m of the bench is not less than bench height.

However, as far as the quarrying of Rough stone & Gravel is concerned, observance of the provisions of Regulation 106(2)(b) as below 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 below regulation from the Director of mines safety for which necessary provision is available with the regulation 106 (2) (b) of MMR-1961, under Mine Act-1952.



6.2 Mode of working:

Mode of working is semi-mechanized quarrying operation using shot hole drilling with the help of compressor and jack hammer for smooth blasting. The raw materials are removed using Hydraulic excavator and loaded directly to the tippers. The mineral is transported to the crushing plants, where it is crushed to required sizes. The height and width of bench is designed as 5m.

6.3 Details of Overburden / Mineral Production proposed for the five years

The development involves only removal of 4m gravel to be generated out of production. The five years production is 58,821m³. Production plan is shown in plate VI to VII.

Year	Gravel (m ³)	Rough Stone (m ³) (Production/Year)
I	11316	11285
II	676	11745
III	---	11846
IV	---	11875
V	---	12070
Total	11992	58821



YEAR WISE PRODUCTION AND DEVELOPMENT FOR 5 YEARS							
Year	Section	MSL	Length (m)	Width (m)	Depth(m)	Volume (m³)	Gravel (m³)
I	AB-X1Y1	415-411	41	69	4	-	11316
		411-406	37	61	5	11285	-
Total						11285	11316
II	AB-X3Y3	415-411	13	13	4	-	676
		411-406	9	9	5	405	-
		406-401	4	4	5	80	-
	AB-X1Y1	406-401	32	52	5	8320	-
		401-396	14	42	5	2940	-
Total						11745	676
III	AB-X1Y1	401-396	19	42	5	3990	-
		396-391	29	32	5	4640	-
		391-376	24	22	5	2640	-
	AB-X2Y2	388-386	9	32	2	576	-
Total						11846	-
IV	AB-X2Y2	388-386	38	32	2	2432	-
		386-381	22	32	5	3520	-
	AB-X3Y3	388-386	38	28	2	2128	-
		386-381	33	23	5	3795	-
Total						11875	-
V	AB-X2Y2	386-381	25	32	5	4000	-
		381-376	47	22	5	5170	-
	AB-X3Y3	381-376	28	13	5	1820	-
	AB-X1Y1	886-381	18	12	5	1080	-
Total						12070	-
Grand Total (Up to Depth of 39m)						58821	11992

The mineable reserves are estimated as 58,821m³ of Rough Stone up to depth of 35m for period of five years only and 11,992m³ of Gravel up to depth of 4m Above ground level for period of two years only.

Production quantity per day (1Load=6m³approx) (1Year=260 Working days)

Rough stone quantity = 58,821m³ / 6 = 9,804 Loads
= 58,821m³/ 1300 days (5 Years)
= 45m³ or 8 Lorry Loads per day

C. Sankar

Gravel quantity = $11,992\text{m}^3 / 6 = 1999 \text{ Loads}$
 = $11,992\text{m}^3 / 520 \text{ days (2 Years)}$
 = 23m^3 or 4 Lorry Loads per day



The applicant ensures the total approved quantity of proposed reserves in benches will not exceed the quarrying operation. Besides the Rough stone & Gravel locked up in bench loss will be exploited after obtaining necessary permission from Director General of Mines Safety, Chennai region by submit the relevant documents, appropriate safety plans and its necessary mitigation safety measures etc.,

6.4. Details of mining machinery deployed and their specification:

The machineries are proposed to be purchased or hired for use in mines for systematic operation and development.

a) Drilling:

Drilling of shot-holes will be carried out using compressor and Jack Hammer combination. Depth of holes shall be 2-3m and the spacing shall be 0.95m and burden shall be 0.50m. To estimate a correct blasting geometry and to effect a perfect pre-determined fragmentation and fly rock control, certain amount of trial blast is a prerequisite. Details of drilling equipment are tabulated below,

Type	No	Dia of hole	Make	Motive
Jack Hammer	2	33 mm	Atlas copco	Air
Compressor	1	-	Chicago Newmatic	Diesel

b) Loading Equipment:

Loading shall be done by Excavator into tippers from the working place. Gravel and rough stone shall be dumped in the site. The applicant is proposed to engage one Hydraulic excavator and one hydraulic rock breaker with 1.4m^3 capacity and 4 tippers of 10/20 tonnes capacity for transportation of rock and internal transport of rock.

Type	No.	Capacity	Make	Motive
Hydraulic Excavator	1	1.20 M^3	L&T Komatsu	Diesel
Hydraulic Rock breaker	1	-	JCB	Diesel

c) Transportation

Transport of Gravel and Rough stone shall be done by Tippers of 10-20 tonnes capacity. Water tanker will be used for the transportation and supply of water to site as well as sprinkling of water along the haul roads.

Type	No.	Capacity	Make	Motive
Tipper	4	10-20 MT	Tata / Ashok Leyland / Bharath Benz	Diesel
Water Tanker	1	10 KL	Ashok Leyland / TATA	Diesel

6.5 DISPOSAL OF OVERBURDEN/WASTE

The excavated Gravel is 11,992m³ up to a depth of 4m and it is used for filling and leveling of low lying areas of road projects and other infrastructure development work in and around the district. There is no overburden (weathered rock). Here, the recovery is taken as 100% of total production.

6.6 Brief Note on Conceptual Mining Plan:

Conceptual plan is prepared with an objective of long term systematic development of mines. This involves bench layouts, selection of ultimate pit limit and pit slope.

Ultimate Pit Dimension: The ultimate pit size is designed based on certain practical factors such as the economical depth of mining, safety zones, permissible area etc., The Ultimate pit Dimensions of the mine is given as under.

ULTIMATE PIT DIMENSION			
PIT	Avg. L(m)	Avg. W(m)	Depth (m)
I	151	69	39

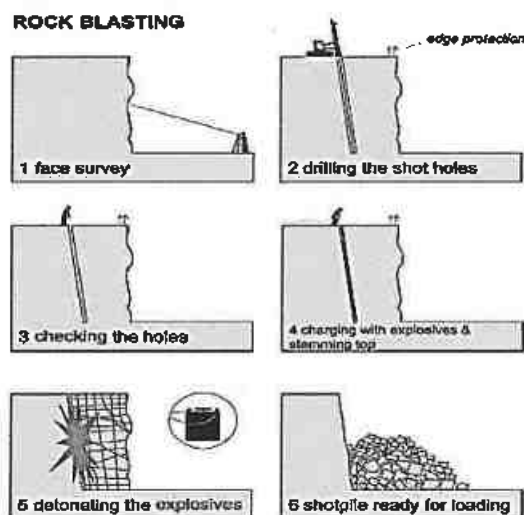
During extraction, each bench will be maintained at 5m height and 5m width. The quantum of excavation is estimated as 58,821m³ to a depth of 35m. The quantity of Gravel is estimated as 11,992m³ to a depth of 4m. Entire quantity of excavated Gravel will be used for filling and leveling of low lying areas of road projects and other infrastructure development work.

7.0 BLASTING:

The massive formation shall be broken into pieces of transportable size by drilling and blasting using jack hammers and shot hole blasting. Since the bench height needs to be maintained at 5.0 m, two sub benches will be created of 2.5 m height each and the benches will be joined / merged together to form 5.00 m height. Blast hole will be, preferably by jack hammer where the diameter is normally 33 mm and the depth of the hole is approximately 2.4 m. Blasting pattern is generally square or rectangle or zig zag with burden of 0.5m and spacing of 0.75 meters. Usually single / double row of holes is blasted along free face to achieve optimum powder factor and best fragmentation. Blasting pattern is generally square or rectangle or staggered, The Burden and Spacing will be decided as per the requirements of the size of the boulders, generally the burden ranging from 2.00 to 2.50 meters and spacing of 2.50 to 3.00 meters.

Diameter of the hole	33 mm
Spacing	0.75m
Burden	0.5m
Depth	2.4m
Charge / Hole	0.125kg/ stick, 3 stick/ Hole = 0.375Kg
Pattern of hole	Zig-Zag
Inclination of hole	70° from the horizontal.
Quantity of rock broken	0.5 x 0.75 x 2.4 x 2.5 = 2.25 MT
Blasting efficiency @ 90%	2.25 x 90% = 2 MT / hole

Subsequent to the drilling and blasting, the material so fragmented / loosened from the rock mass will be crushed or broken with the help of the rock breakers. Then material will be loaded into tippers with the help of the excavator. Thereafter the material is loaded into trucks / tippers of 10-20 tonnes capacity with the help of the excavator. The loaded material is then transported to the site or crusher units.



Types of Explosives

Following explosives are recommended for efficient blasting with safe practices. Nitrate mixture of slurry explosives are used for blasting. Powder factor is approximately 4 tonnes per kg of explosive.

Sl. No.	Description	Class	Division	Type
1	Nitrate Mixture	2	0	Nitrate Mixtures
2	Safety fuse	6	3	Blue sump fuse coils
3	NONEL	6	3	Non-Electric Detonator

MEASURES PROPOSED TO MINIMIZE GROUND VIBRATION DUE TO BLASTING

The following steps shall be adopted to control ground vibration due to blasting.

1. The minimum recommended delay time of 8ms will be maintained to minimize ground vibration to avoid constructive interference of blast vibration waves and hence its impact or amplitude.
2. Maximum numbers of holes blasted at a time is generally limited to 20 to 30 with milli second delay detonators (MSDD) to mitigate adverse impacts like throw, ground vibration etc.
3. Maximum number of holes is generally limited to 30 with non-electric detonators (NONEL) to mitigate adverse impacts such as air blast, fly rock and ground vibration. The Ignition will be the Non-Conventional and Eco- Friendly method by NONEL (Non-Electric Detonators).
4. Charge per hole depends on the powder factor designed for each hole, based on the quantum of blasting, strength of rocks, fracture pattern etc.
5. The hole will be blasted in two phases, each one after the other, by inserting one NONEL at bottom and another one at the middle of the hole. The hole will be blasted one after the other with a delay of 17 ms. The bottom portion will be blasted first and the middle one next with a blast gap of 17 ms. The blast delay will be 44ms from row to row. A schematic diagram of drilling and blasting pattern show here

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620	586	552	518	484	467	433	399	365	42Ms
603	569	535	501	467	450	416	382	348	செருமனி

34	68	102	136	170	204	238	272	306
17	51	85	119	153	187	220	255	289

6. Blast holes will always be initiated by short delay detonators, rather than adopting instantaneous detonation. Short delay in blasting of successive blast holes will effectively reduce the vibration problem.
7. Number of holes per shot and blast will be kept to minimum to guide the throw in the desired direction while keeping vibration and noise to minimum.
8. Mostly, holes will be fired towards the free face.
9. Proper spacing & burden will be maintained.
10. Optimum utilization of the explosives will be ensured.
11. Direction of the hole will be maintained towards free face.

Total non-electric initiation systems were introduced to offer all the advantages of electric initiation but adding safety benefits including insensitivity to electricity, radio frequency energy, and electromagnetic radiation. Non-electric detonators also improved operational flexibility because of their easier to design larger initiation sequences, theoretically with an unlimited number of delays. This initiation system is composed of shock tubes connected to down-the-hole detonators and surface connectors. Though their coating of reactive powders and thanks to a starter, shock tubes transmit shock waves to the non-electric detonators.

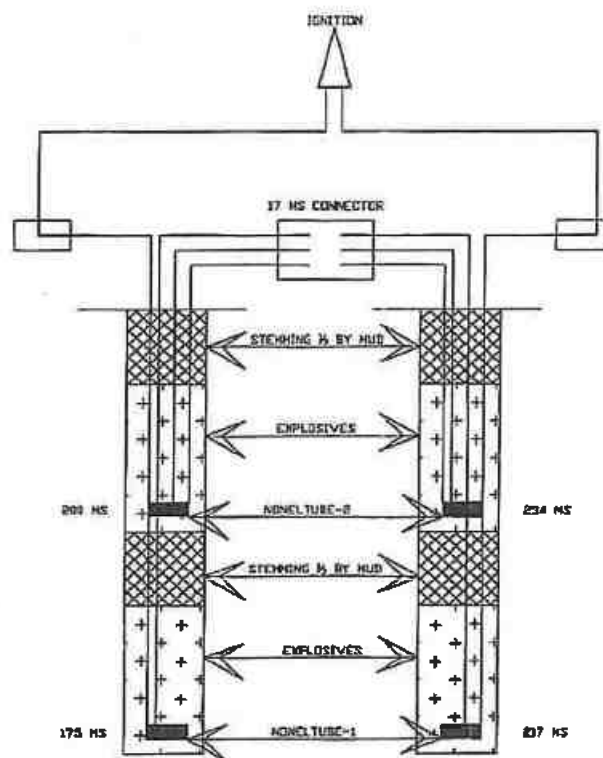


NONEL IS STRUCTURED AS FOLLOWS

- 4mm diameter tube is prepared in different length (4 Mts to 25 Mts)
- The tube filled with PFTN (Penta erythritol tetra nitrate)
- Bottom end of the Tube is crimped with Detonator which is having Delay Element, ASA and PETN at the bottom.
- Top end of the tube is connected with connector having 17 MS (Milli Second).

NONEL LOADING INTO THE BLAST HOLE

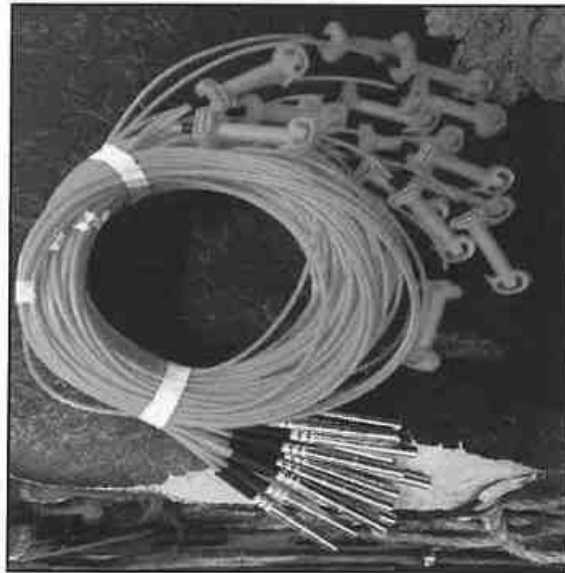
- The Nonel Detonator is pricked into the Nitrate Mixtures and dropped into the Blast Hole.
- Then the Nitrate mixtures are dropped inside the Hole.
- One third of the Hole is filled with stemming material (MUD).
- As like 20 Holes are loaded with Explosives & Nonel.
- The holes are connected through the MS Connector which is crimped at top of the Nonel Tube.
- Only one Detonator is connected with first Nonel Tube.
- Finally the detonator is ignited and the blast is completed.
- Each and every hole is blasted with a 17 Milli Second delay.
- The delays are given for 20 Holes.





ADVANTAGES OF NONEL

1. Eco-Friendly initiation method.
2. Is used mainly during the rainy season because it is Non-Electric Detonator.
3. It is bottom ignition.
4. The Noise is less.
5. Fly Rock & Vibration is less.
6. Fragmentation is good.



NONEL

STORAGE OF EXPLOSIVES AND SAFETY MEASURES TO BE TAKEN WHILE BLASTING

1. The applicant proposes to store the explosives as per the Indian Explosives Act, 1884.
2. The applicant will engage an authorized blaster to carry out blasting.
3. Controlled blasting is proposed by adopting all the safety measures as per "MMR 1961" and with the permission of DGMS. Blasting will be performed as per requirement on the face.
4. First Aid Box is a statutory requirement and will be made available.
5. Necessary precautionary announcement will be carried out and sirens will be blown before the blasting operation. The blasting time is proposed between 12pm to 12.30pm.
6. Instructions in common language will be given to all employees and Regular safety inspection will be done by a competent person and Proper training on safety will be given to all employees. Proper warning signs will be displayed at respective areas.
9. Proper, safe and careful handling and use of explosives by competent Blasters having Blaster's Certificate of Competency issued by DGMS.

10. Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Beedi, etc.



FLY ROCK HAZARD CONTROL & NOISE CONTROL

- Inter row delay will be selected in such a manner, so that each row pushes its burden in a forward direction rather than in an upward direction.
- Stemming length will be kept not less than the burden.
- It will be ensured that the burden will not be excessive.
- Detonating fuse will not be used & Blasts will be planned properly to eliminate noise.

Before beginning of drilling & blasting operations, the applicant will identify the hazards from the knowledgeable person who had worked in masonry stone mining and being trained to recognize the hazards as well as to inform the authority for quickly corrective action to eliminate such hazards. The applicant will use engineering and administrative control measures, personal protective equipment (PPE) including respiratory protection and training to protect workers involved in drilling & blasting activities. Engineering control measures such as substitution, isolation, containment and ventilation which are the primary means of preventing or reducing exposures to airborne hazards during drilling & blasting operations have to be implemented by the applicant.

PERSONAL PROTECTIVE EQUIPMENTS (PPE)

1. Ear Plug
2. Spectacles
3. Nose Mask
4. Helmet
5. Leather gloves
6. Safety shoes or boots
7. Provide training to quarry employees on quarry operation, health, safety hazards, how to use controls, personal hygiene practices, safe work practices and the use of respirators.

PREVENTIVE MEASURES

1. Respirators will not be used as the only means of preventing or minimizing exposures to airborne contaminants. Dust source controls such as containment systems, local exhaust systems, and good work practices will be implemented as the primary means of protecting

workers. When dust source controls cannot keep exposures below the recommended exposure limits, controls should be supplemented with the use of respiratory protection.

2. Environmental monitoring by trained personnel will be conducted in all blasting applications. This is necessary to ensure that workers will not be over exposed than the prescribed exposure limit as fixed by the authorities.
3. Anytime environmental conditions, airborne contaminants and their concentrations will be maintained within the permissible limit.

8.0 MINE DRAINAGE:

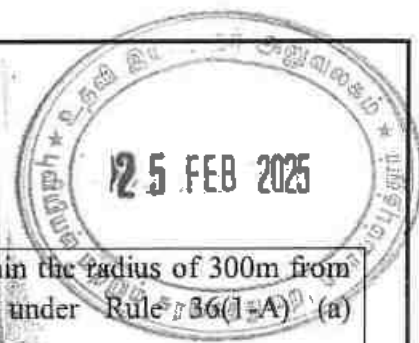
8.1 Depth of water table:

There is no major river, stream or canal flowing within the applied lease area and its surrounding. Bore well exists near to the proposed area. The mining activity will reach only up to a depth of **39m (Max) or 376m** above MSL. The water table is located below 50-55m (326-321m above MSL) from the lowest point of mining and hence it may not touch the Ground water table. In case of necessity, the accumulated rainy water (free from suspended solid material) from pit bottom may be allowed to flow out after settling through a check dam & allowed to spill over adjoining areas, facilitating uptake by native plants. Normally, the mine will be closed during rains. The same will also be used for watering saplings/trees in the plantation site. The excess water will be allowed to be stored in the public tank for irrigation.

8.2 Arrangements and Place 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 100 lpm and it shall be pumped about periodically by a stand by diesel powered Centrifugal pump. The quality of water is potable.

9.0 OTHER PERMANENT STRUCTURES:



9.1	Habitations/ Village (300m)	:	There are no inhabited sites within the radius of 300m from the boundary of lease area under Rule 36(1-A) (a) TNMMCR 1959. The Nearest Village habitation is Karachery are about 2km on East side of the lease applied area.
9.2	Power lines (HT/LT)	:	There is no HT power lines located within the safety distance as prescribed under Tamil Nadu Minor Minerals Concession Rules, 2015.
9.3	Water bodies (River, Pond, Lake, Odai, Canal etc.)	:	Noyyal River is situated at a distance of 12km towards the NW side of the lease area.
9.4	Archeological / Historical Monuments	:	There are no Archeological / Historical Monuments within a radius of 500m.
9.5	Road (NH, SH, Village Road etc)	:	Nearest Public Road is Panchayat road at a distance of 45m from lease boundary. SH-163 Palladam – Cochin Frontier road at distance of 4 km towards NW side of the lease area. NH-83 Coimbatore – Nagapattinam Highway at distance of 4km towards west side of the lease area.
9.6	Places of Worship	:	There is no Places of Worship within a radius of 500m
9.7	Reserved Forest / Forest / Social Forest / Wild Life Sanctuary etc.,	:	Walayar Reserve Forest is located 18km towards the NW side of the quarry lease area.
9.8	Any Interstate Border, Protected areas under the Wild Life (Protection) Act, 1972, Critically Polluted Areas as Identified by Central Pollution Control Board and Notified Eco sensitive areas	:	The inter State border is at a distance of 21km .
9.9	Any Other Structures	:	There are few quarries area adjacent to the lease area. EB Transmission Tower is situated at a distance of 59m towards the NE side of the lease area.

10.0 EMPLOYMENT POTENTIAL & WELFARE MEASURES:



10.1	Employment Potential (Management & Supervisory personal)	<p>As per Mines safety under the provisions of MMR, 1961 under the Mines Act, 1952, whenever the number of workers employed is more than 10, it is preferred to have a qualified Mines Mate to keep all the production workers directly under his control and supervision.</p> <p>A mines clerk shall also be appointed to keep the registers and record of the mine and make necessary entries for the persons employed in the mines.</p> <p>The following man power is proposed for quarrying rough stone & gravel during the five years period to achieve the proposed production and to comply with the provisions of the Government norms.</p> <table><tr><td>1.</td><td colspan="3">Management & supervisory staff</td></tr><tr><td></td><td>Mines Manager</td><td></td><td>1</td></tr><tr><td rowspan="5">2.</td><td rowspan="5">Skilled</td><td>Operator</td><td>4</td></tr><tr><td>Mechanic</td><td>1</td></tr><tr><td>Mate cum Blaster</td><td>1</td></tr><tr><td>Magazine Keeper</td><td>1</td></tr><tr><td>Mines Foreman</td><td>-</td></tr><tr><td>3.</td><td>Semi – skilled</td><td>Driver</td><td>6</td></tr><tr><td rowspan="2">4.</td><td rowspan="2">Unskilled</td><td>Musdoor / Labours</td><td>5</td></tr><tr><td>Office Boy</td><td>1</td></tr><tr><td colspan="3">Total</td><td>20 Nos</td></tr></table> <p>Allowing 10% absenteeism, the no. of employees on roll will be around 18. It will be ensured that child labors will not be engaged for quarrying operation.</p>	1.	Management & supervisory staff				Mines Manager		1	2.	Skilled	Operator	4	Mechanic	1	Mate cum Blaster	1	Magazine Keeper	1	Mines Foreman	-	3.	Semi – skilled	Driver	6	4.	Unskilled	Musdoor / Labours	5	Office Boy	1	Total			20 Nos
1.	Management & supervisory staff																																			
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Total			20 Nos																																	

10. 2	a.	Welfare Measures Drinking Water	Drinking water shall be provided to the nearby public. Quantity for Drinking and utilities is 1 KLD. Dust suppression and Green belt of water is 8 KLD. Minimum quantity of 9 KLD is required. Drinking water will be purchased and water for dust suppression and green belt development will be sourced from open well in site as well as purchased from outside.
	b.	Sanitary facilities	Latrines & urinals shall be maintained at convenient places for use of labours separately for males and females. Washing facilities shall also be arranged.
	c.	First Aid Facility	Being a small mine, First Aid station will be provided. First aid training will be given to selected employees and such Qualified First Aid personnel will be nominated to attend emergency first aid treatment.
	d.	Labour Health	As per Rule 45(A) Mines Rule, 1955, Periodic medical examination has to be arranged for occupational health once in a year in addition to attending medical treatment of occupational injuries.

10.3 Precautionary safety measures to the Laborers

- All the quarry workers will be provided with Safety device include such as safety helmet, mine goggles, ear muffs, ear Plugs, dust mask, sand respirator (avoid silica dusts forms- Silicosis), reflector jackets, safety thick shoes, etc., as Personnel Productive Equipment (PPE) as per the circulars and amendments made for Mine Labours under the guidance of DGMS.



Helmet



Mine
Goggles



Ear Muffs



Ear
Plugs



Dust
Mask



Sand
Respirator



Reflector
Jackets



Shoes

- Periodically medical checkup will be conducted for all workers for any mine health problems.
- Proper training and induction will be given by qualified and experienced safety officer to all employees about the safe and systematic quarrying operation.
- The drillers and workers are sent for vocational training periodically to carry out the quarrying operations scientifically to safeguard the men machinery and mineral and to create awareness of conventional opencast quarrying operation.

PART – B

11.0 ENVIRONMENT MANAGEMENT PLAN

11.1) Existing Land use Pattern:

The applied area is dry barren land and devoid of agriculture and habitations and the area is not used for the specific vegetation. The surrounding area is practiced by the seasonal cultivation.

S. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hectares)
1.	Area under quarrying	0.66.58	0.98.26
2.	Infrastructure	---	0.01.00
3.	Roads	0.00.60	0.01.10
4.	Green Belt	0.40.64	0.40.64
5.	Dump	---	---
6.	Unutilized	0.33.18	---
	Total	1.41.00 Ha	1.41.00 Ha

11.2) Water Regime:

i) Water:

Water drawn from the nearest bore well is potable and is used for a long period. No adverse health hazardous was reported due to quality of water like fluorosis. TDS, COD, BOD, Salinity, hardness, etc. Mineral water shall be supplied in cans for drinking purposes or RO systems shall be provided.

ii) Air quality:

The air quality will be affected by the Suspended Particulate Matter (SPM) generated by the blasting, jack hammer drilling, loading and unloading during the quarrying operation.

The following mitigation measures will be carried out, Mist water spraying will be carried out by means of water sprinklers to suppress dust emission in the Haul roads. The native species of Neem etc., will be planted along the lease boundary and Safety buffer zone.

11.5) ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

Facts to be considered for EIA are,

- i) Dust generation,
- ii) Temporary storage and utilization of gravel
- iii) Land degradation
- iv) Adverse effect on water regime
- v) Socio-economic benefits arising out of Mining



i) Dust:

Dust expected to be generated from drilling, hauling roads, place of excavation etc. will be suppressed by periodical wetting of land by spraying.

ii) Temporary storage and Utilization of Gravel:

Gravel shall be dumped within lease area and will be used for filling and leveling of low lying areas of road projects and other infrastructure development work within the district.

iii) Land degradation:

Land degradation by means of cutting the trees and removal of fertile soil does not arise. Proposed usage of land for five years shall be less than 1.41.00 Ha. Afforestation will be started during the first year of mining operation itself.

iv) Measures to minimizing adverse effect on water regime:

No chemicals or hazardous substances are likely to be quarried during the mining of rough stone and hence, the quality of ground water will not be affected. The water to be pumped will be pure and potable and therefore it will not affect any water regime of the area.

v) Socio-Economic benefits arising out of Mining:

- Employment opportunities of the nearby Villagers.
- Cultural development of the nearby Villagers.

11.6) Proposal for Waste Management:

There is no waste anticipated during in this Rough stone & Gravel quarry operation. The quarried out materials 100% will be utilized.



11.7) Reclamation of Land affected during mining activities and at the end of mining

The present mining is proposed to an average depth of **39m** (376m above MSL). The mined out area will be fenced on top of open cast working with barbed wires. No immediate proposals for closure of pit as the Rough Stone & Gravel persist still at deeper level.

11.8) Programme for Afforestation

Native Trees will be planted along the lease boundary with an interval of 5m. The rate of survival expected to be 80% in this area. Appropriate native species of Neem, Pungan, Teak and Casuarinas Saplings will be planted approach roads, service roads, nearby villages, village roads, government school etc.,

Year	No. of Saplings proposed to be planted	Survival %	No. of Saplings expected to be grown	Name of the species
I	50	80%	40	Teak, Pungai & Neem
II	50	80%	40	
III	50	80%	40	
IV	50	80%	40	
V	50	80%	40	

11.9) Proposed financial estimate / budget for (EMP) Environment Management

S.No	Monitory and Analysis Description	Rate per location	No. of location	Total Charges for monitoring		
				6 months	Per Year	5 Years
1	Ambient Air quality monitoring	5000	4	20000	40000	2,00,000
2	Water sampling and analysis	10000	1	10000	20000	1,00,000
3	Noise level monitoring	500	4	2000	4000	20,000
4	Ground vibration monitoring	2500	2	5000	10000	50,000
Total EMP Cost				37000	74000	3,70,000



a) Fixed Asset Cost

i)	Land Cost	:	Rs 64,00,000
ii)	Refilling / Fencing	:	Rs 3,00,000
iii)	Laborers Shed	:	Rs 2,00,000
iv)	Canteen facility	:	Rs 1,00,000
v)	Other items	:	Rs 2,00,000
	Total	:	Rs 72,00,000/-

b) Operational Cost:

i)	Machinery cost	:	Rs 40,00,000
	Excavator with Breaker, Tipper ,Compressor, Jack Hammer, Pump etc (Owned +Hired)		
	Total	:	Rs. 40,00,000/-

c) EMP Cost:

i)	Drinking water facility for the laborers	:	Rs 1,00,000
ii)	Sanitary arrangement	:	Rs 1,00,000
iii)	Safety kits & protective equipments	:	Rs 1,00,000
iv)	Dust control	:	Rs 50,000
v)	Afforestation etc.	:	Rs 1,00,000
	Total		Rs 4,50,000/-
	Total Project Cost	:	Rs 1,16,50,000/-

11.10. Corporate Environment Responsibility (CER):

The Applicant shall be distributed Note books, Stationary items to nearby Govt Primary School and to conduct the Medical camp, Environment awareness program, etc., to nearby villages after consultation with local panchayat authorities.

The Applicant shall ensure that a minimum of 2.0% from the Total project cost (Rs.2,33,000/-) for the entire lease period will be utilized for the CER Activities.

District Mineral Fund @10% of the Royalty shall be given to the Dept. of Geology and Mining.

C. J. S. S.



12.0 MINE CLOSURE PLAN

12.1. Closure activity:

This mining plan is prepared for 5 years and the quantity of mineral excavated during this period is only $58,821\text{m}^3$. The Closure activity will start during the first year itself. The Afforestation along the Buffer area will be done initially and the mined out area will be afforested once the bench is formed. At the closure of the mining activity the entire area will be restored completely by Tree plantation. The proposed area is a plain surface area. Mining will be done from top by developing benches $5\text{m} \times 5\text{m}$. There will not be any land degradation because the mining activity will be limited depth only. After extraction of the material up to ultimate pit limit of 39m (376m above MSL), the mined out pit will be used for water storage.

12.2. Re-vegetation:

It is proposed to develop green belt in areas covering the proposed land, which includes regions along the mine lease boundary and the reclaimed area. Grass and bushes will be planted in areas prone to erosion. Other areas will be fertilized and planted with local species. The characteristics of this vegetation will resemble that of the natural environment except for the early growth, which may be a protective cover crop. Before re-vegetation, the land will be properly prepared by spreading the soil which is rich in organic contents. Vegetation will be self-sufficient after planting and require no fertilization or maintenance.

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

In case of steep slopes, fencing shall be made to control accident due to inadvertent entry of animals and local persons. Plantation shall be made over small dumps to prevent soil erosion/wash outs and help ecological balance.

12.4. Mitigation measures to be undertaken for safety and restoration / reclamation of the already mined out area

The area applied for quarry lease was disturbed by earlier quarrying. The land ecology shall be preserved during Mine closure by proper terracing and stabilization with plantations.

12.5. Measures to be under taken on mine closure as per Act & Rules

Fencing shall be made around open cast working as per DGMS circulars.



12.6. Safety and Security:

Safety measures will be implemented to the prevent access to surface opening excavations. Working area will be fenced with Barbed wires.

12.7. Disaster Management and Risk Assessment:

In order to handle emergency situations, an organizational chart entrusting responsibility to various project personnel will be prepared with their specific roles during the emergency. Assembly points will be setup farthest from the quarry location where workers would assemble in case of emergency. Fire protection system will be setup at mine site which consist of Portable Handheld appliances suitable for extinguishing small fires. Other emergency services like First Aid center, Vehicle to rush to nearby hospital etc., will be provided.

12.8. Care and Maintenance during temporary discontinuance:

During the temporary discontinuance the working place will be fenced completely & a board of Discontinuance will be hanged on the main entrance of the working place. One watchman will be kept on the leaset area to watch the area and look after the survival of the plants.

12.9. Economic Repercussions of closure of mine & man power retrenchments:

Five years mining will generate employment potential and general financial status and socio economic conditions of approx. 20 laborers will be improved.

12.10. Abandonment Cost:

Abandonment is not proposed during five years of mining. But implementation of waste management, retaining wall and afforestation is proposed as continues process. Cost of these is around Rs. 1,00,000/- per year.

13.0 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT



Overview:

- Care and precautionary measures will be taken for the safety of workers as per Rules and Acts.
- There is no deep hole drilling and heavy blasting of this lease area.
- The Applicant will endeavor every attempt to quarry the Rough stone & Gravel economically without any wastage and to improve the environment and ecology.

Mining Plan with Mine Closure Plan is prepared under the provisions of Tamil Nadu Minor Minerals Concession Rules, 1959 for quarrying Rough Stone & Gravel with due consideration of environmental parameters so as to obtain Environmental Clearance (EC). Systematic mining and blasting techniques will ensure safety and create eco-friendly environment.

C. Shanmugam

C. SHANMUGAM
(Applicant)

A. ALLIMUTHU
(RQP/DMG/HYD/85/ 2022)

A. ALLIMUTHU, M.Sc., M.Phil.,
Recognized Qualified Person
RQP/DMG/HYD/85/2022

This Mining Plan is Approved
subject to the conditions / stipulation
& indicated in the Mining Plan Approval
Letter No: 690/80106/2023
office of the A.D, Geology & Mining Coimbatore

This Mining Plan is Approved based on the
incorporation of the particulars specified
in the letter of the commissioner of Geology
and Mining, Chennai ref No: 3863/LC/2012
Dated 19.11.2012 and subjected to further
fulfillment of the condition laid down under
Tamil Nadu Minor Mineral Concession Rules 19


ASSISTANT DIRECTOR
DEPARTMENT OF GEOLOGY & MINING
COIMBATORE DISTRICT

du
25/2/25

C. Shanmugam

உதவி இயக்குநர் அலுவலகம்,
புவியியல் மற்றும் சுரங்கத்துறை,
மாவட்ட ஆட்சியர் அலுவலக வளாகம்
கோயம்புத்தூர் - 18.

ந.க.எண்.690/கனிமம்/2023

குறிப்பாணை

நாள்:

02.02.2025

12.5 FEB 2025

பொருள்: கனிமங்களும் குவாரிகளும் - கோயம்புத்தூர் மாவட்டம் - கிணத்துக்கடவு வட்டம் - அரசம்பாளையம் கிராமம், புல எண்.144/2A2 (பகுதி)-ல் 1.08.0 ஹெக்டேர் மற்றும் புல எண்.144/3A (பகுதி)-ல் 0.33.0 ஹெக்டேர் ஆக மொத்தம் 1.41.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் - சாதாரணக்கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க திரு.சு.சண்முகம் என்பவர் விண்ணப்பம் செய்தது - வரைவு சுரங்கத்திட்டம் சமர்ப்பிக்க அறிவுறுத்துதல் - தொடர்பாக.

- பார்வை: 1. திரு.சு.சண்முகம், த/பெ.சின்னராங்கசாமி கவுண்டர், மேற்கு தோட்டம், காரச்சேரி, கோயம்புத்தூர் என்பவரின் விண்ணப்பம் நாள்: 28.06.2023 மற்றும் 18.10.2024
2. இவ்வலுவலக கடிதம் இதே எண். நாள்: 06.07.2023 மற்றும் 22.10.2024
3. வட்டாட்சியர், கிணத்துக்கடவு கடிதம் எண். 2317/2023/ஆ1 நாள்: 18.10.2023 மற்றும் கடிதம் எண். 2371/2023/ஆ1 நாள்: 10.12.2024
4. வருவாய் கோட்டாட்சியர், பொள்ளாச்சி அவர்களின் கடிதம் ப.மு.எண்.3418/2023/அ2 நாள்: 07.11.2023.
5. வட்டார வளர்ச்சி அலுவலர், கிணத்துக்கடவு கடிதம் ந.க.எண்.277/2022/ஆ1 நாள்: 29.12.2023.
6. சார் ஆட்சியர், பொள்ளாச்சி கடிதம் எண்.4639/2024/அ2 நாள்.24.01.2025.
7. கோயம்புத்தூர் மாவட்ட புவியியல் மற்றும் சுரங்கத்துறை உதவி புவியியலாளரின் புலதணிக்கை குறிப்பு நாள்.04.02.2025.

பார்வை 1-ல் கண்ட கடிதங்களில் கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், பெரியகுயிலை அஞ்சல், மேற்கு தோட்டம், காரச்சேரி என்ற முகவரியில் வசிக்கும் திரு.சு.சண்முகம், த/பெ. திரு.சின்னராங்கசாமி கவுண்டர் என்பவர் கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், அரசம்பாளையம் கிராமம், புல எண்.144/2A2 (பகுதி)-ல் 1.08.0 ஹெக்டேர் மற்றும் புல எண்.144/3A (பகுதி)-ல் 0.33.0 ஹெக்டேர் ஆக மொத்தம் 1.41.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிமம் கோரி உரிய ஆவணங்களுடன் விண்ணப்பித்துள்ளார்.

பார்வை 3,4, 5, 6 மற்றும் 7-ல் கண்ட கடிதங்களில் கிணத்துக்கடவு வட்டாட்சியர், வருவாய் கோட்டாட்சியர், பொள்ளாச்சி, கிணத்துக்கடவு வட்டார வளர்ச்சி அலுவலர்,

சார் ஆட்சியர், கொள்ளாச்சி மற்றும் புவியியல் மற்றும் சுரங்கத்துறை உதவி புவியியலாளர் ஆகியோர் புலத்தணிக்கை மேற்கொண்டு கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், அரசம்பாளையம் கிராமம், புல எண்.144/2A2 (பகுதி)-ல் 1.08.0 ஹெக்டேர் மற்றும் புல எண்.144/3A (பகுதி)-ல் 0.33.0 ஹெக்டேர் ஆக மொத்தம் 1.41.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் திரு.சண்முகம், த/பெ. திரு.சின்னரங்கசாமி கவுண்டர் என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி குத்தகை உரிமம் வழங்கலாம் என பரிந்துரை செய்துள்ளனர்.

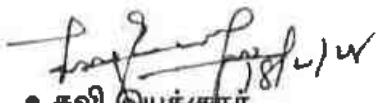
எனவே, கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், அரசம்பாளையம் கிராமம், புல எண்.144/2A2 (பகுதி)-ல் 1.08.0 ஹெக்டேர் மற்றும் புல எண்.144/3A (பகுதி)-ல் 0.33.0 ஹெக்டேர் ஆக மொத்தம் 1.41.0 ஹெக்டேர் பரப்பளவுள்ள பட்டா பூமியில் 1959-ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், விதி எண்.19-ன் கீழ் 5 வருட காலங்களுக்கு சாதாரண கற்கள் மற்றும் கிராவல் குவாரி குத்தகை உரிம அனுமதி வழங்க உகந்த புலமாக கருதி அறிவிப்பு செய்யப்படுகிறது.

மேலும், திரு.சண்முகம் என்பவர் மூன்று மாத காலத்திற்குள் வரைவு சுரங்கத்திட்ட அறிக்கை (Draft Mining Plan) கீழ்கண்ட நிபந்தனைகளுக்குட்பட்டு தயார் செய்து கோயம்புத்தூர் மாவட்ட புவியியல் மற்றும் சுரங்கத்துறை உதவி இயக்குநரிடம் ஒப்புதல் பெற்றும், தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 41 & 42-ன் படி ஏற்பளிக்கப்பட்ட சுரங்கத்திட்ட அறிக்கை மற்றும் மாநில சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய இசைவாணைச் சான்று பெற்று சமர்ப்பிக்குமாறும் அறிவுறுத்தப்படுகிறது.

நிபந்தனைகள்

1. அருகிலுள்ள பட்டா நிலங்கள் மற்றும் பொது மக்களுக்கும் எவ்வித இடையூறும் இன்றி குவாரி பணி மேற்கொள்ள வேண்டும்.
2. அருகில் உள்ள பட்டா நிலத்திற்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி மேற்கொள்ள வேண்டும்.
3. அனுமதி கோரும் புலங்களின் வடக்கு மற்றும் கிழக்கு பகுதிகளில் செல்லும் உயர் மின்கம்பி டவர்லைனுக்கு 50 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி புரிய வேண்டும்.
4. அனுமதி கோரும் புலத்தினை அரசு அங்கீகாரம் பெற்ற நிறுவனத்தினரால் DGPS (Differential Global Positioning System)-ன் படி ஆய்வு செய்யப்பட்டு ஒவ்வொரு எல்லைத் தூண்களும் நடப்படவேண்டும்.

பெறுநர்:
திரு.சண்முகம்,
த/பெ.திரு.சின்னரங்கசாமி கவுண்டர்,
மேற்கு தோட்டம்,
காரச்சேரி,
கோயம்புத்தூர் மாவட்டம்.


உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை
கோயம்புத்தூர்.

District : Coimbatore

Taluk : Kinathukkdavu

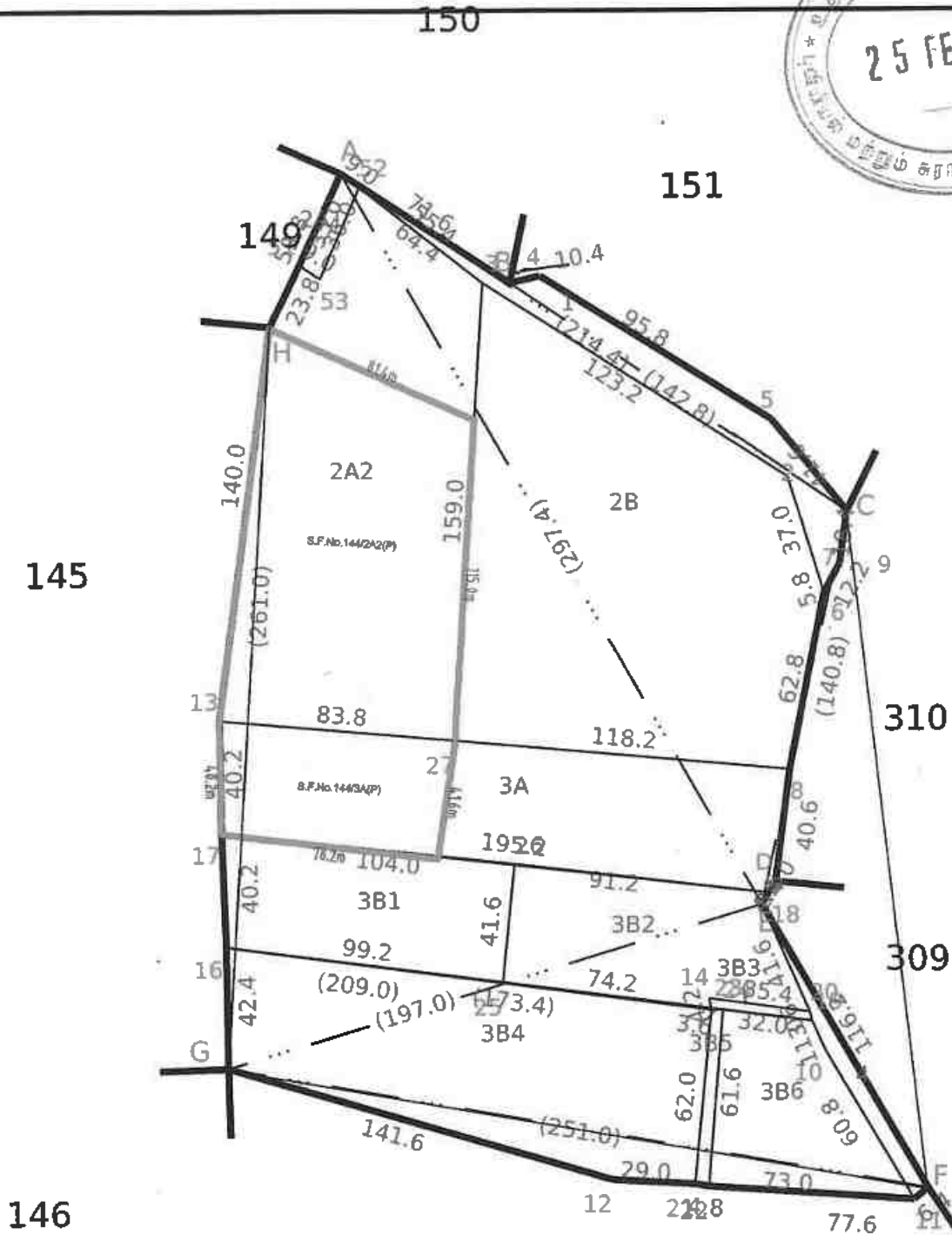
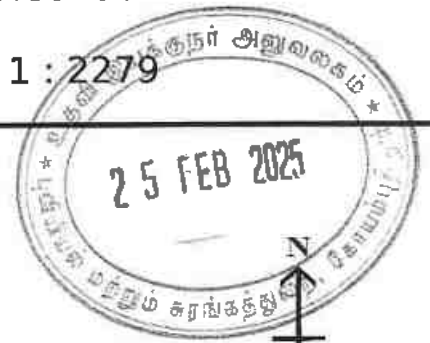
Village : Arasampalayam.



Survey No : 144

Area : Hect 06 Ares 14.50

Scale : 1 : 2279



LEASE BOUNDARY

A. Allimuthu
A. ALLIMUTHU, M.Sc., M.Phil.
Recognized Qualified Person
RQP / DMG / HYD / 85 / 2022

Data Digitally Signed By
ALDRIN PRASATH J

Date of Issue: 03-03-2025 13:22:15

Survey and Settlement Department, Government of Tamil Nadu



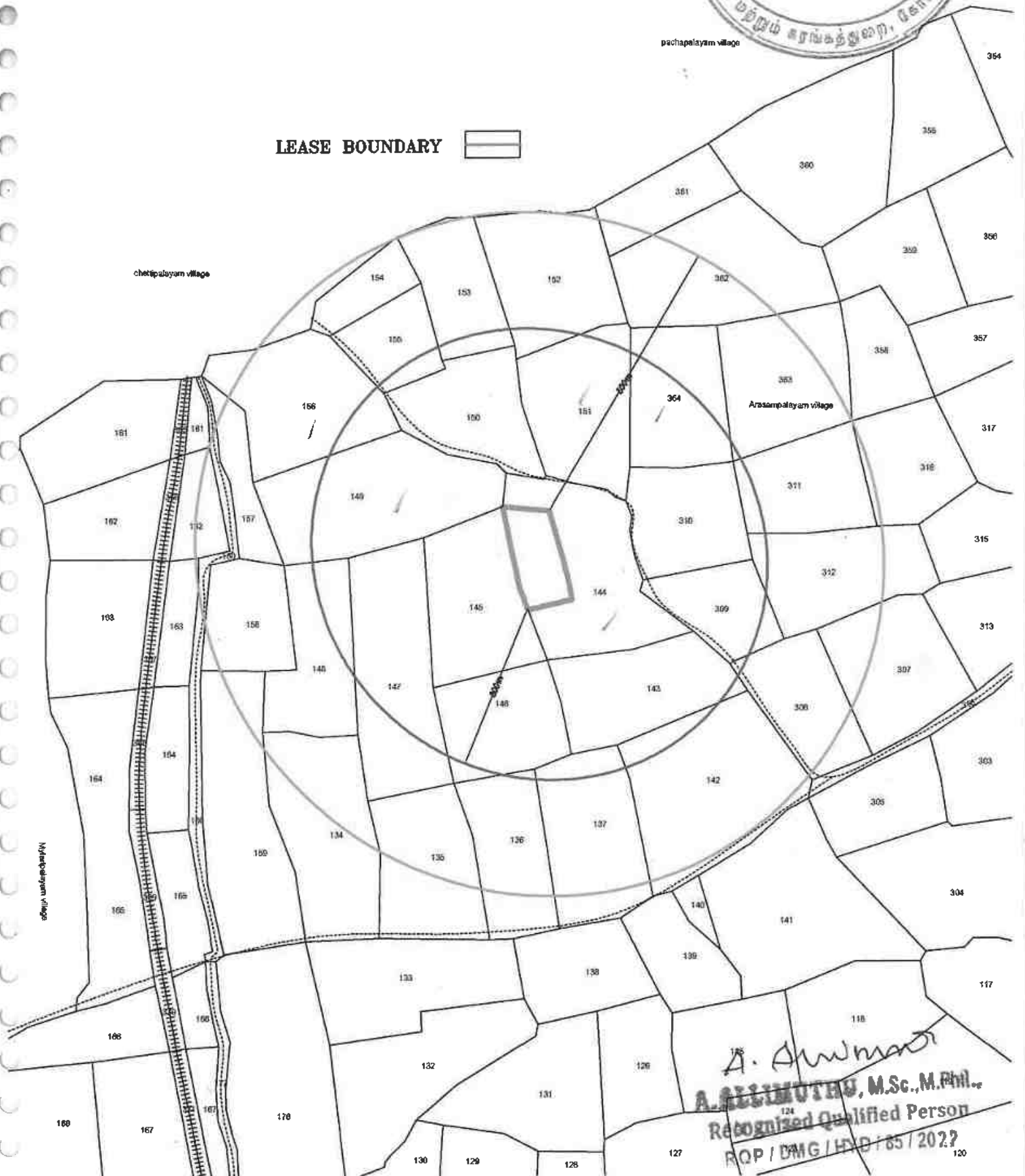
260 fu 2

VILLAGE : ARASAMPALAYAM
 TALUK : KINATHUKADAVU
 DISTRICT : COIMBATORE
 STATE : TAMILNADU

Combined Sketch



LEASE BOUNDARY





தமிழக அரசு

வருவாய்த் துறை

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



மாவட்டம் : கோயம்புத்தூர்

வட்டம் : கிணத்துக்கடவு

வருவாய் கிராமம் : அரசம்பாளையம்

பட்டா எண் : 796

உரிமையாளர்கள் பெயர்

1. சின்ன ரங்கசாமிகவுண்டர்

மகன்

சண்முகம்

புல. எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக்டர் - ஏர்	ரூ - பை	ஹெக்டர் - ஏர்	ரூ - பை	ஹெக்டர் - ஏர்	ரூ - பை	
144	2A2	1 - 38.00	1.90	--	--	--	--	r10/5666-315/1420 -- 04-03-2011
		1 - 38.00	1.90					

குறிப்பு2 :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 12/12/001/00796/70182 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 29-09-2022 அன்று 11:13:03 AM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்



தமிழ்நாடு அரசு

வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை
நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு



மாவட்டம் : கோயம்புத்தூர்

வட்டம் : கிணத்துக்கடவு

வருவாய் கிராமம் : அரசம்பாளையம்

பட்டா எண் : 1121

உரிமையாளர்கள் பெயர்

1. சண்முகம்

மனைவி

ரத்தினம்



புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
144	3A	0 - 82.00	1.12	--	--	--	--	2019/0103/12/179957- Digitally signed:Jothibasu R Zonal Deputy Tahsildar 06/07/2019 02:09:07:PM
		0 - 82.00	1.12					

குறிப்பு :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 12/12/001/01121/10135 என்ற குறிப்பு எண்ணை உள்ளிடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 03-03-2025 அன்று 01:24:26 PM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

சண்முகம்

1	2	3	4	5	6	7	8	9	10	11	12
143	IF	143-1பா	ர	பு	...	8-4	6	1 38	0 36.0	0 61	300 கி. வள்ளியம்மாள்.
	1G	-1பா	ர	பு	...	8-4	6	1 38	0 44.0	0 55	211 அ. பழனிச்சாமிக்கவுண்டர்.
	2	-2	அ	புற	...	...	...	...	0 10.0	..	...
									4 02.5	5 44	
144	I	144-1	அ	புற	...	...	...	...	0 25.0	...	...
	2A	-2பா	ர	பு	...	8-4	6	1 38	1 41.0	1 93	118 மா. சின்னரங்கசாமிக்கவுண்டர்.
	2B	-2பா	ர	பு	...	8-4	6	1 38	1 53.0	2 12	193 சு. நாச்சிமுத்துக்கவுண்டர்.
	3A	-3A	ர	பு	...	8-4	6	1 38	0 82.0	1 12	364 சி. வேலுச்சாமிக்கவுண்டர்.
	3B1	-3Bபா	ர	பு	...	8-4	6	1 38	0 40.0	0 54	340 சு. வள்ளியம்மாள்.
	3B2	-3Bபா	ர	பு	...	8-4	6	1 38	0 38.0	0 51	211 அ. பழனிச்சாமிக்கவுண்டர்.
	3B3	-3Bபா	ர	பு	...	8-4	6	1 38	0 01.0	0 06	556 சி. கருப்பச்சாமிக்கவுண்டர் மற்றும் நான்கு பேர்களும்.
	3B4	-3Bபா	ர	பு	...	8-4	6	1 38	0 92.0	1 26	339 கி. வள்ளியம்மாள்.
	3B5	-3Bபா	ர	பு	...	8-4	6	1 38	0 03.0	0 06	578 சு. நாச்சிமுத்துக்கவுண்டர் மற்றும் ஐந்து பேர்களும்.
	3B6	-3Bபா	ர	பு	...	8-4	6	1 38	0 32.0	0 44	339 வ. வள்ளியம்மாள்.

* விவரப்பட்டியலைப் பார்க்கவும். கிராம நிர்வாக அலுவலர்

உயரகல்பு 80/315/1420 பணம் 1.3.11 மீது 4 மாதம்: 114-2A, 2A1, 2A2 மீது
கொண்டு செல்லுக
சுமந்திரன்
8/3/11
J. S. S.

C. J. Smith



தமிழ்நாடு தமிழ்நாடு TAMILNADU

2024 S. ரத்தினம்
கோவை

DU 710553

M. DORAISWAMY
"STAMP VENDOR"
10-A, STATE BANK ROAD,
COIMBATORE - 641 018.
L.No: 710553/9788-3



சம்மதக் கடிதம்

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், பெரியகுடியிலை அளவை
செட்டிபாளையம் வழி, மேற்குதோட்டம், காரச்சேரி என்ற முகவரியில் வசிக்கும்
திரு. C சண்முகம் அவர்களின் மனைவி S. ரத்தினம் ஆகிய நான் எழுதிக்கொடுக்கும்
சம்மதக் கடிதம் என்னவென்றால்,

கோயம்புத்தூர் மாவட்டம், கிணத்துக்கடவு வட்டம், அரசம்பாளையம் கிராமம்
பட்டா எண் 1121-ன் படி புல எண் 144/3Aல் மொத்தம் 0.82 0 ஹெக்டேர் பரப்பு
பூமியானது எனக்குத் தனியாகப் பாத்தியப்பட்டது. இதில் 0.33 0 ஹெக்டேர்
பரப்பளவில் எனது கணவர் திரு. C சண்முகம் அவர்களுக்கு கல் மற்றும் கிராவல் மண்
குவாரி அனுமதி வழங்கும் நாளிலிருந்து ஐந்து ஆண்டுகளுக்கு கனிமம்
வெட்டியெடுக்க சம்மதம் தெரிவிக்கிறேன் என்பதை உறுதி கூறுகிறேன்.

இப்படிக்கு



P. PRAKASH BBM BL..
Notary Public Advocate
85, Annamalai Hotel Building
Railway Station Road
Gopalapuram 1st Street
Coimbatore - 641 018.
98437 88988.

ரத்தினம்

C சண்முகம்



சனமுகம்
Shanmugam

பிறந்த நாள் / DOB : 11/02/1971

ஆண்பால் / Male

5177 7543 2558

எனது ஆதார். எனது அடையாளம்



ஆதார்

முகவரி

தந்தை : தாய் பெயர்
சின்னரங்கசாமி. 5/69. கரேச்சேரி.
கிணத்துக்கடவு. கரேச்சேரி.
கோயம்புத்தூர். பெரியகூயிலை.
தமிழ் நாடு. 641201

Unique Identification Authority of India

Address.

S/O. Chinnaragasamy, 5/69,
Keracheri, Kintathukadavu.
Karacheri, Coimbatore.
Periyakuyilai, Tamil Nadu, 641201

5177 7543 2558



1947



help@uidai.gov.in



www.uidai.gov.in



C. Shanmugam



**GOVERNMENT OF TELANGANA
DEPARTMENT OF MINES AND GEOLOGY**

**CERTIFICATE OF REGISTRATION
AS RECOGNIZED QUALIFIED PERSON
TO PREPARE MINING PLAN**

[Under Rule 14(2) of Granite Conservation and Development Rules 1999 & Rule 7(B) of Telangana State Minor Mineral Concession Rules, 1966]

* * * * *

Sri A. Allimuthu, S/o Arumugam, D.No.1/231, Pattakarnavalavu, Chinnamuthiyampatti, Puduppalayam Post, Edapaddi Taluk, Salem District, Tamil Nadu-636306 whose photograph and signature is affixed herein above, having given evidence of his qualification and experience is hereby granted recognition under Rule 14(2) of Granite Conservation & Development Rules, 1999 and Rule 7(B) of Telangana State Minor Mineral Concession Rules, 1966 as Recognized Qualified Person (RQP) to prepare Mining Plan.

Registration Number :

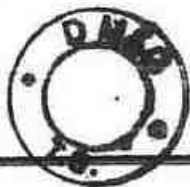
RQP/DMG/HYD/85/2022

This Recognition is valid for period of (10) years with effect from 26.04.2022.

This certificate will liable to be withdrawn/cancelled in the event of furnishing the wrong information/documents in the Mining Plan submitted by the Recognized Qualified Person.

Place: Hyderabad,

Date: 26.04.2022.



DIRECTOR OF MINES AND GEOLOGY

Signed by D Ronald Rose

Date: 26-04-2022 09:41:13

Reason: Approved

A. Allimuthu
A. ALLIMUTHU, M.Sc., M.Phil.,
Recognized Qualified Person
RQP/DMG/HYD/85/2022
C. J. S. S. S.

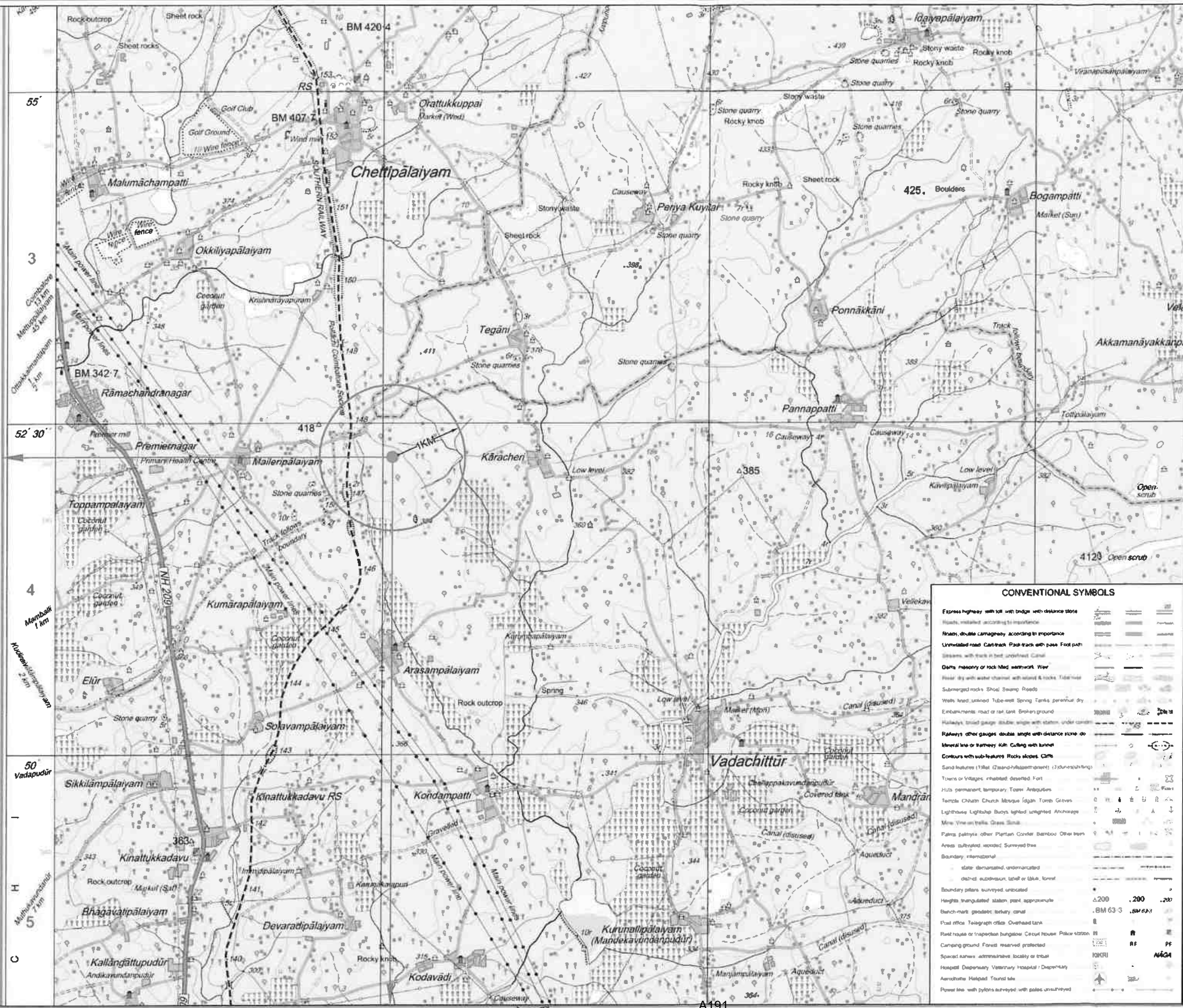


PLATE No.I

LOCATION MAP
Scale - 1:50,000

INDEX
LOCATION OF THE QUARRY ●

LATITUDE : 10° 52' 12.74"N to 10° 52' 18.41"N
LONGITUDE : 77° 02' 33.30"E to 77° 02' 37.28"E

TOPO SHEED No.58F/01

LOCATION
EXTENT : 1.41.00 HECTARES
S.F.No. : 144/2A2(P) & 144/3A(P)
VILLAGE : ARASAMPALAYAM
TALUK : KINATHUKADAVU
DISTRICT : COIMBATORE
STATE : TAMILNADU

APPLICANT
THIRU.C.SHANMUGAM,
S/o.CHINNARANGASAMY GOUNDER,
MERKKUTHOTTAM, KARACHERY,
PERIYAKUYILAI POST,
KINATHUKADAVU TALUK,
COIMBATORE DISTRICT-641 201.

DATE OF SURVEY: 19.02.2025

PREPARED BY:
I DO HEREBY CERTIFY THAT THE
PLATE HAS BEEN CHECKED BY
ME AND IS CORRECT TO THE
BEST OF MY KNOWLEDGE

A. Allimuthu
A.ALLIMUTHU
(RQP/DMG/HYD/85/ 2022)

CONVENTIONAL SYMBOLS	
Express highway with toll with bridge with distance stone	
Roads, metalled according to importance	
Roads, unmetalled according to importance	
Unmetalled road, Cart track, Path-track with pass Foot path	
Streams with track in bed, underfoot, Canal	
Dams, masonry or rock filled, waterwork, View	
Feeder dry with water channel with island & rocks, Tidal weir	
Submerged rocks, Shoal, Swamp, Roads	
Wells lined, unlined, Tube-well, Spring, Tanks, perennial dry	
Embankments, road or rail, bank, Broken ground	
Railways, broad gauge, double single with station, under construction	
Railways, other gauges, double single with distance stone, do	
Mineral line or tramway, kiln, Culling with tunnel	
Contours with sub-features, Rocky slopes, Cliffs	
Sand features (1)Belt (2)Sand-hill (3)Sand-dune (4)Sand-bar	
Towns or Villages, inhabited, deserted, Fort	
Hills, permanent, temporary, Tower, Antiquities	
Temple, Chhatra, Church, Mosque, Idgah, Tomb, Graves	
Lighthouse, Lightship, Buoy, lighted, unlighted, Anchorage	
Mine, Vine, oil, traffic, Grass, Sand	
Palms, peepals, other Plantain, Cane, Bamboo, Other trees	
Areas cultivated, wooded, Surveyed tree	
Boundary international	
State, demarcated, undemarcated	
District, subdivision, taluk or block, forest	
Boundary pillars surveyed, unlocated	
Height, triangulated, station, point, approximate	
Beach, mark, gendace, tertiary, canal	
Post office, Telegraph office, Overhead tank	
Rail house or inspection bungalow, Carpal house, Police station	
Camping ground, Forest, reserved, protected	
Spaced, narrow, administrative, locality or tribal	
Hospital, Dispensary, Veterinary hospital, Dispensary	
Aerodrome, Helipad, Tourist site	
Power line, with pylons surveyed, with poles, unsurveyed	

C 6002930



PLATE No.II

**SATELLITE IMAGE
500m RADIUS**

Scale - 1:5000

INDEX

LEASE BOUNDARY	
500m RADIUS	
300m RADIUS	

LOCATION

EXTENT : 1.41.00 HECTARES
S.F.No. : 144/2A2(P) & 144/3A(P)
VILLAGE : ARASAMPALAYAM
TALUK : KINATHUKADAVU
DISTRICT : COIMBATORE
STATE : TAMILNADU

APPLICANT

THIRU.C.SHANMUGAM,
S/o.CHINNARANGASAMY GOUNDER,
MERKKUTHOTTAM, KARACHERY,
PERIYAKUYILAI POST,
KINATHUKADAVU TALUK,
COIMBATORE DISTRICT-641 201.

DATE OF SURVEY: 19.02.2025

PREPARED BY:

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A. Allimuthu

A.ALLIMUTHU
(RQP/DMG/HYD/85/ 2022)

GEOLOGICAL & SURFACE PLAN

250mN
0mE

250mN
300mE

200mN

150mN

100mN

50mN

0mN
0mE

50mE

100mE

150mE

200mE

250mE

0mN
300mE

SITE SERVICES

- A - OFFICE
- B - STORE ROOM
- C - FIRST AID ROOM
- D - REST SHELTER
- E - TOILET

TOPO SHEET NO. : 58 F/01
LATITUDE : 10° 52' 12.74"N to 10° 52' 18.41"N
LONGITUDE : 77° 02' 33.30"E to 77° 02' 37.28"E

BOUNDARY CO-ORDINATES

P.No.	LATITUDE	LONGITUDE
1	10° 52' 18.29"N	77° 02' 35.97"E
2	10° 52' 14.68"N	77° 02' 36.95"E
3	10° 52' 13.36"N	77° 02' 37.28"E
4	10° 52' 12.74"N	77° 02' 34.78"E
5	10° 52' 13.96"N	77° 02' 34.29"E
6	10° 52' 18.41"N	77° 02' 33.30"E
DATUM WGS-84		

S.F.No.145

S.F.No.144/2A2(P)

S.F.No.144/2A2(P)

S.F.No.144/2A2(P)

S.F.No.144/3A(P)

S.F.No.144/3A(P)

S.F.No.144/3B1



PLATE No.III

LEASE PLAN

Scale - 1:1000

INDEX

LEASE BOUNDARY	
APPROACH ROAD	
MINING AREA	
SAFETY ZONE	
BOUNDARY PILLAR	

LOCATION

EXTENT : 141.00 HECTARES
S.F.No. : 144/2A2(P) & 144/3A(P)
VILLAGE : ARASAMPALAYAM
TALUK : KINATHUKADAVU
DISTRICT : COIMBATORE
STATE : TAMILNADU

APPLICANT

THIRU.C.SHANMUGAM,
S/o.CHINNARANGASAMY GOUNDER,
MERKUTHOTTAM, KARACHERY,
PERIYAKUYILAI POST,
KINATHUKADAVU TALUK,
COIMBATORE DISTRICT-641 201.

DATE OF SURVEY: 19.02.2025

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A. Allimuthu

A.ALLIMUTHU
(RQP/DMG/HYD/85/ 2022)

GEOLOGICAL & SURFACE PLAN

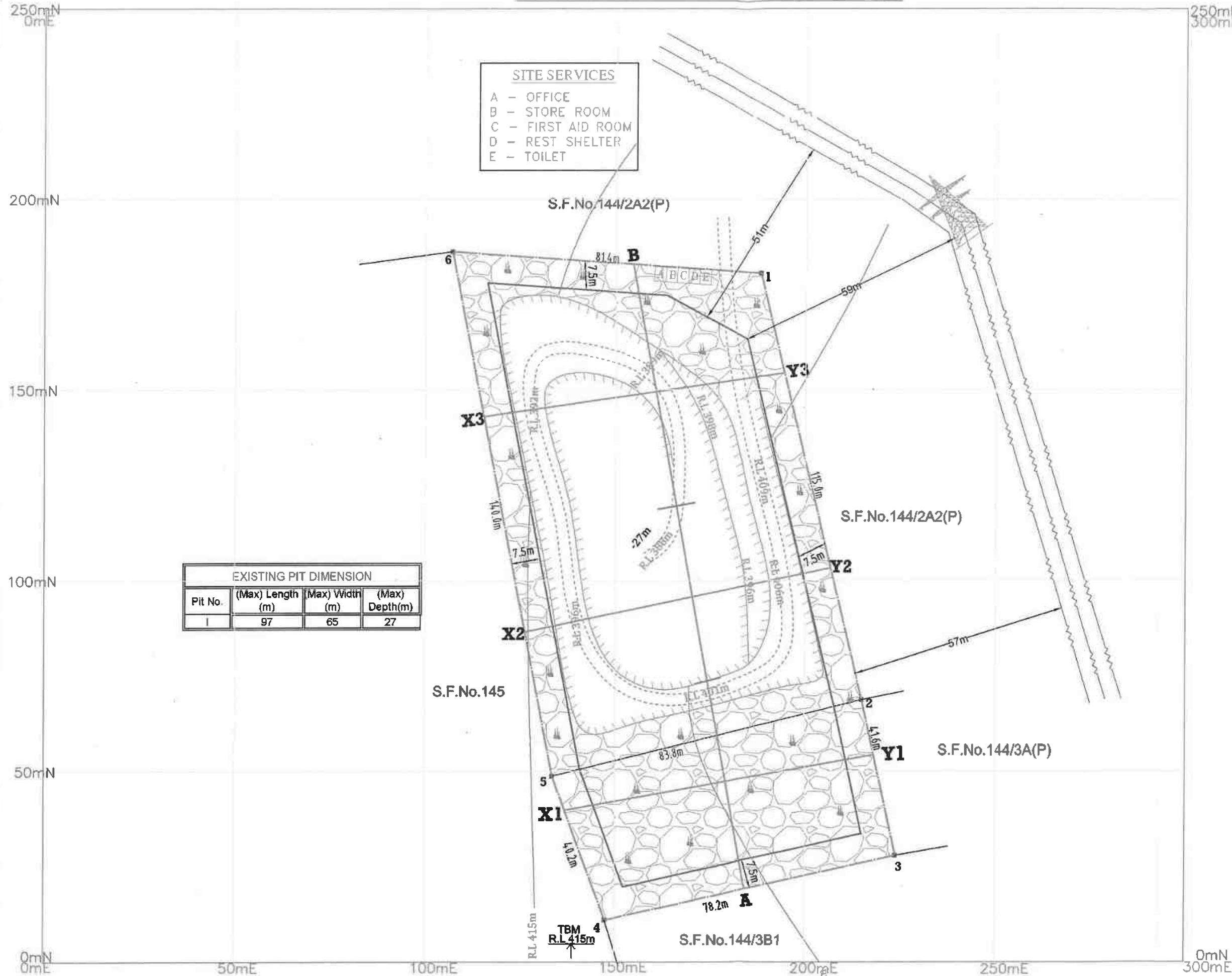


PLATE No.IV

GEOLOGICAL & SURFACE PLAN

Scale - 1:1000

INDEX

GRAVEL	
ROUGH STONE	
CONTOUR LINE	
SHRUP	
TEMPORARY BENCH MARK	
LEASE BOUNDARY	
APPROACH ROAD	
SAFETY ZONE	

LOCATION

EXTENT : 1.41.00 HECTARES
 S.F.No. : 144/2A2(P) & 144/3A(P)
 VILLAGE : ARASAMPALAYAM
 TALUK : KINATHUKADAVU
 DISTRICT : COIMBATORE
 STATE : TAMILNADU

APPLICANT

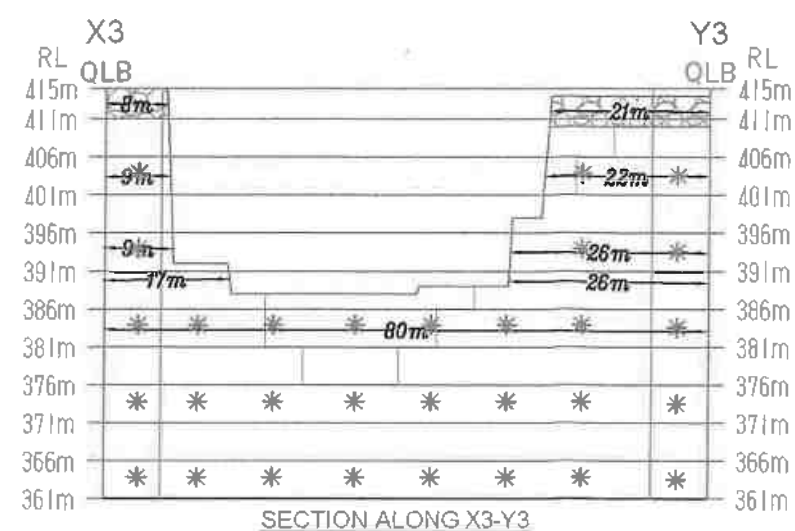
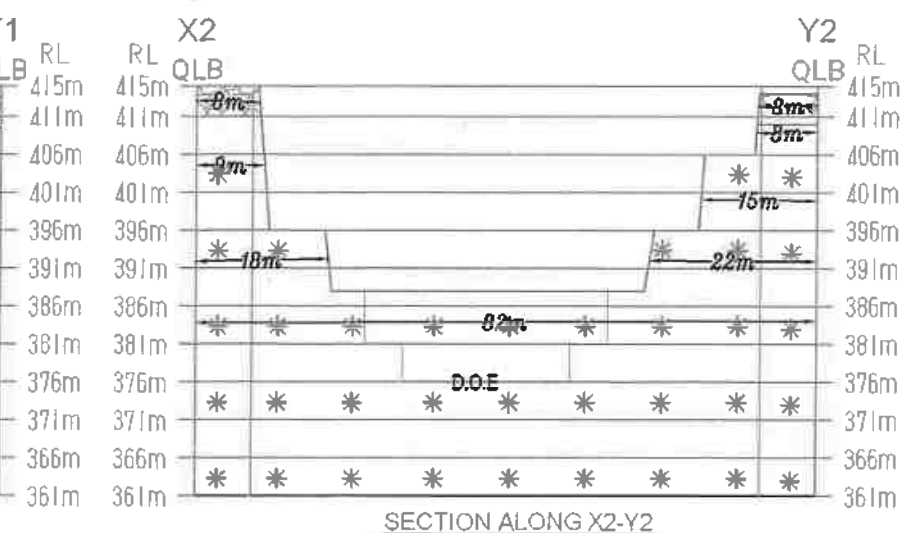
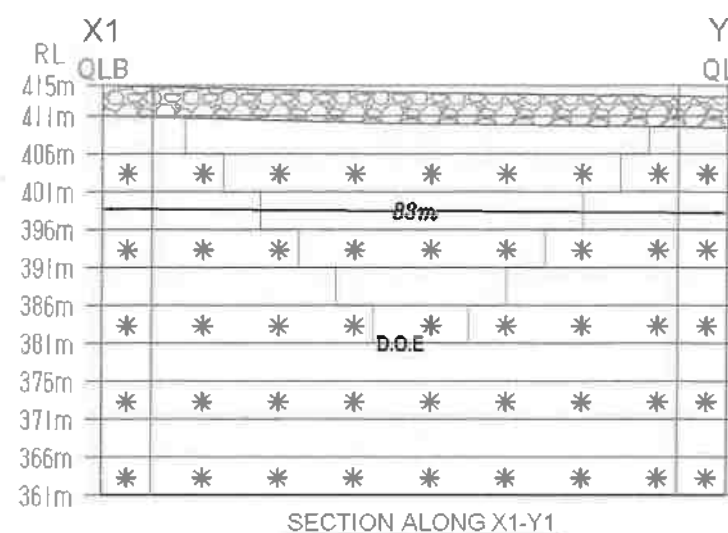
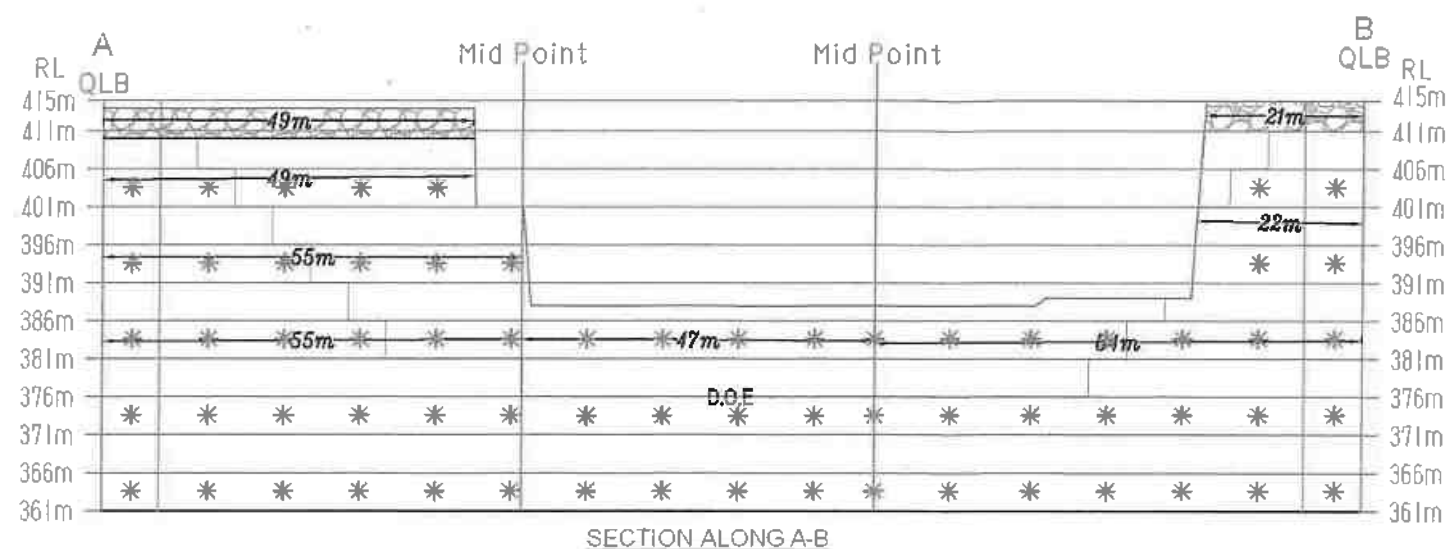
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 S/o.CHINNARANGASAMY GOUNDER,
 MERKKUTHOTTAM, KARACHERY,
 PERIYAKUYILAI POST,
 KINATHUKADAVU TALUK,
 COIMBATORE DISTRICT-641 201.

DATE OF SURVEY: 19.02.2025

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A. Allimuthu
 A.ALLIMUTHU
 (RQP/DMG/HYD/85/ 2022)



Geological Resources by Cross Sectional Method						
Section	MSL	Length (m)	Width (m)	Depth(m)	Volume (m³)	Gravel (m³)
AB-X1Y1	415-411	49	83	4	-	16268
	411-401	49	83	10	40670	-
	401-388	55	83	13	59345	-
	388-381	55	83	7	31955	-
AB-X2Y2	415-410	47	16	4	-	3008
	410-406	47	17	5	3995	-
	406-396	47	24	10	11280	-
	396-388	47	40	8	15040	-
AB-X3Y3	388-376	47	82	12	46248	-
	415-411	21	29	4	-	2436
	411-398	21	31	13	8463	-
	398-392	4	35	7	980	-
	392-388	38	43	3	4902	-
	388-376	33	80	12	31680	-
(Up to Depth of 39m) Total					254558.0	21712.0

PLATE No.V

GEOLOGICAL CROSS SECTIONS

Scale : Horizontal = 1:1000
Vertical = 1:1000

INDEX

GRAVEL	
ROUGH STONE	
LEASE BOUNDARY	
BUFFER ZONE	
DEPTH OF ESTIMATION	
ULTIMATE PIT LIMIT	

LOCATION

EXTENT : 1.08.0 HECTARES
S.F.No. : 144/2A2(P)
VILLAGE : ARASAMPALAYAM
TALUK : KINATHUKADAVU
DISTRICT : COIMBATORE
STATE : TAMILNADU

APPLICANT

THIRU.C.SHANMUGAM,
S/o.CHINNARANGASAMY GOUNDER,
MERKKUTHOTTAM, KARACHERY,
PERIYAKUYILAI POST,
KINATHUKADAVU TALUK,
COIMBATORE DISTRICT-641 201.

DATE OF SURVEY: 19.02.2025

PREPARED BY:

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A. Allimuthu

A.ALLIMUTHU
(RQP/DMG/HYD/85/ 2022)

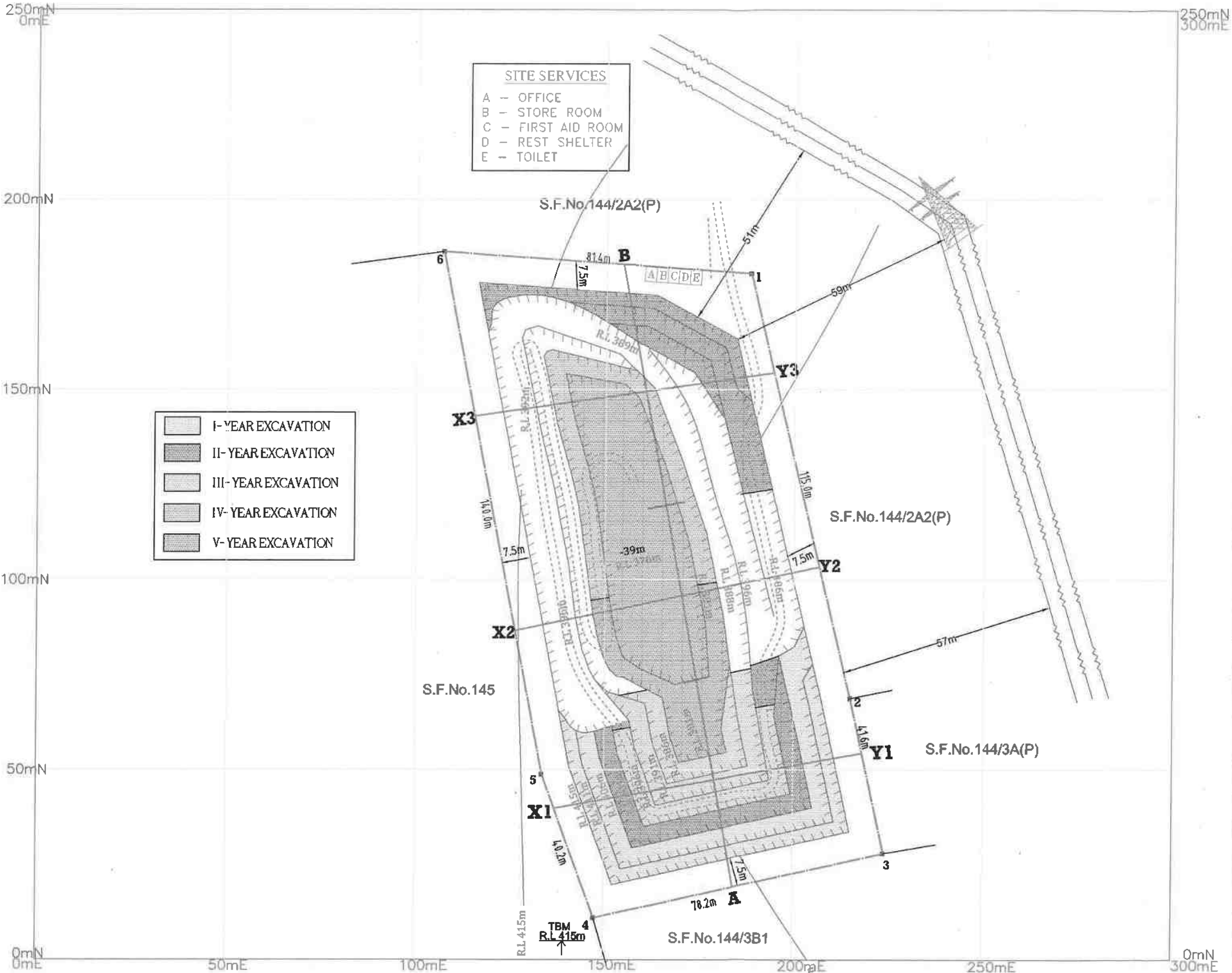


PLATE No.VI
YEAR WISE
PRODUCTION AND
DEVELOPMENTS PLAN

Scale - 1:1000

INDEX

LEASE BOUNDARY	
APPROACH ROAD	
MINING BENCHES	

LOCATION

EXTENT : 1.41.00 HECTARES
S.F.No. : 144/2A2(P) & 144/3A(P)
VILLAGE : ARASAMPALAYAM
TALUK : KINATHUKADAVU
DISTRICT : COIMBATORE
STATE : TAMILNADU

APPLICANT

THIRU.C.SHANMUGAM,
S/o.CHINNARANGASAMY GOUNDER,
MERKUTHOTTAM, KARACHERY,
PERIYAKUYILAI POST,
KINATHUKADAVU TALUK,
COIMBATORE DISTRICT-641 201.

DATE OF SURVEY: 19.02.2025

PREPARED BY:

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A. Allimuthu

A.ALLIMUTHU
(RQP/DMG/HYD/85/ 2022)



25 FEB 2025

PLATE No.VII

PRODUCTION CROSS SECTIONS

Scale : Horizontal = 1:1000
Vertical = 1:1000

INDEX

GRAVEL	
ROUGH STONE	
LEASE BOUNDARY	
BUFFER ZONE	
DEPTH OF MINING	
ULTIMATE PIT LIMIT	

LOCATION

EXTENT : 1.41.00 HECTARES
S.F.No. : 144/2A2(P) & 144/3A(P)
VILLAGE : ARASAMPALAYAM
TALUK : KINATHUKADAVU
DISTRICT : COIMBATORE
STATE : TAMILNADU

APPLICANT

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PERIYAKUYILAI POST,
KINATHUKADAVU TALUK,
COIMBATORE DISTRICT-641 201.

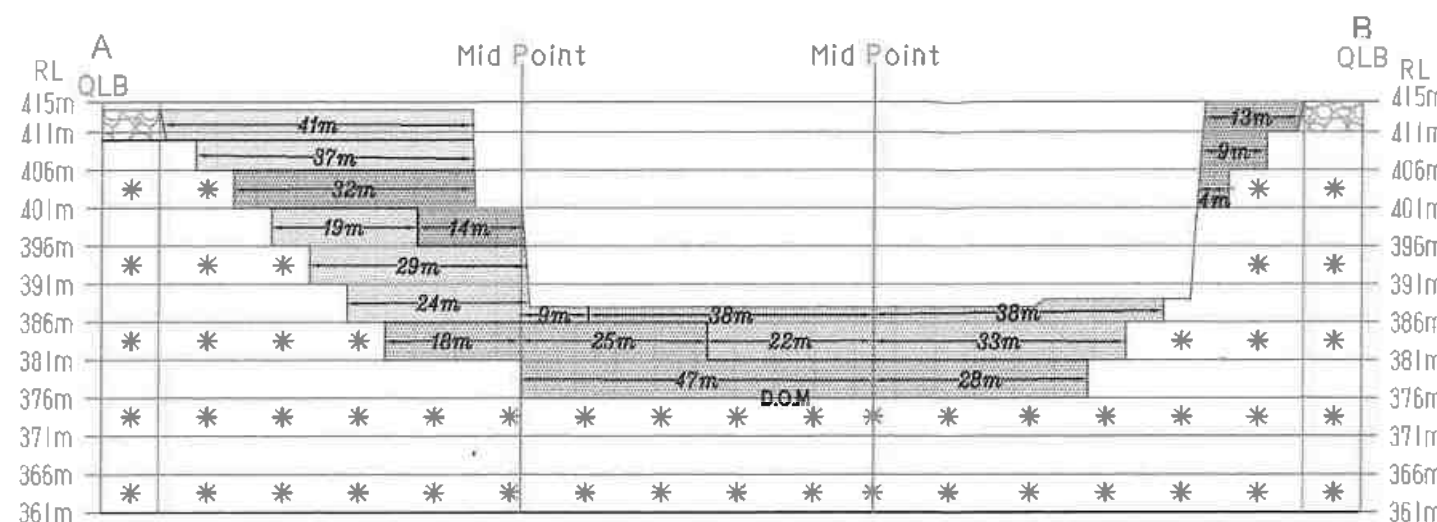
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PREPARED BY:

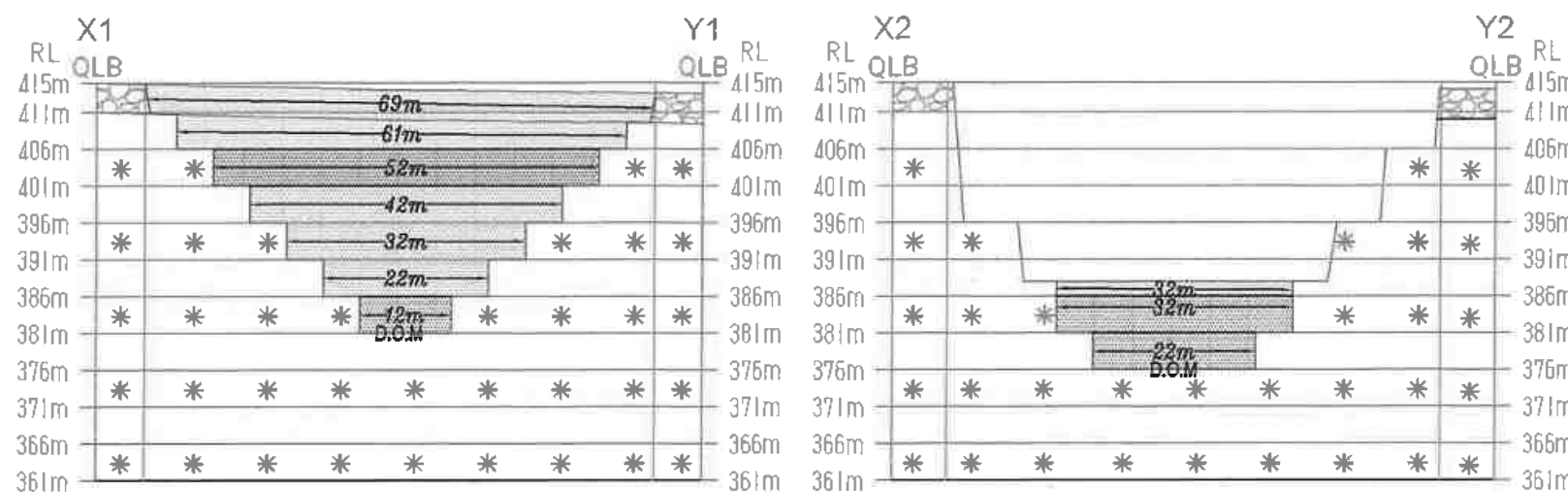
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A. Allimuthu

A.ALLIMUTHU
(RQP/DMG/HYD/85/ 2022)



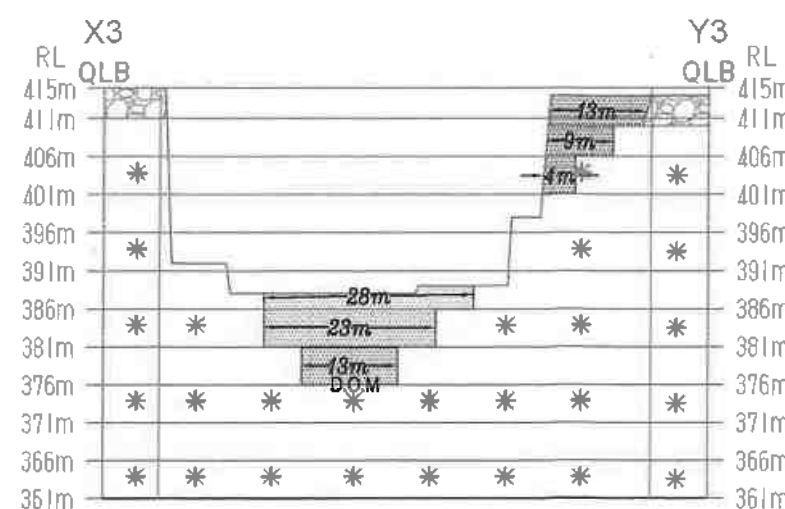
SECTION ALONG A-B



SECTION ALONG X1-Y1

SECTION ALONG X2-Y2

Year wise Production and Developments							
Year	Section	Msl	Length (m)	Width (m)	Depth(m)	Volume (m³)	Gravel (m³)
I-Year	AB-X1Y1	415-411	41	69	4	-	11315
		411-406	37	61	5	11285	-
Total						11265	11316
II-Year	AB-X3Y3	415-411	13	13	4	-	678
		411-408	9	9	5	405	-
		406-401	4	4	5	80	-
	AB-X1Y1	406-401	32	52	5	8320	-
		401-396	14	42	5	2940	-
Total						11745	676
III-Year	AB-X1Y1	401-396	19	42	5	3990	-
		396-391	29	32	5	4640	-
		391-376	24	22	5	2640	-
	AB-X2Y2	388-386	9	32	2	576	-
		Total						11346	-
IV-Year	AB-X2Y2	388-386	38	32	2	2432	-
		386-381	22	32	5	3520	-
		388-386	36	28	2	2128	-
	AB-X3Y3	386-381	33	23	5	3795	-
Total						11875	-
V-Year	AB-X2Y2	386-381	25	32	5	4000	-
		381-376	47	22	5	5170	-
	AB-X3Y3	381-376	28	13	5	1820	-
		AB-X1Y1	886-381	18	12	5	1080
Total						12070	-
(Up to Depth of 39m) Grand Total						58621	11992



SECTION ALONG X3-Y3

	I- YEAR EXCAVATION
	II- YEAR EXCAVATION
	III- YEAR EXCAVATION
	IV- YEAR EXCAVATION
	V- YEAR EXCAVATION

CONCEPTUAL PLAN

ULTIMATE PIT DIMENSION			
Pit No.	(Max) Length (m)	(Max) Width (m)	(Max) Depth(m)
I	151	69	39

SITE SERVICES	
A	OFFICE
B	STORE ROOM
C	FIRST AID ROOM
D	REST SHELTER
E	TOILET

GREEN BELT YEAR	CODE
G1	
G2	
G3	
G4	
G5	

PRESENT & POST LAND USE PATTERN			
DESCRIPTION	PRESENT AREA (Ha)	AREA IN USE DURING THE QUARRYING PERIOD (Ha)	COLOR CODE
AREA UNDER QUARRYING	0.66.58	0.98.26	
INFRASTRUCTURE	Nil	0.01.00	
ROADS	0.00.60	0.01.10	
GREEN BELT	0.40.64	0.40.64	
DUMP	Nil	Nil	
UN-UTILIZED AREA	0.33.18	Nil	
GRAND TOTAL	1.41.00	1.41.00	

S.F.No.145

TBM
R.L.415m

S.F.No.144/3B1

S.F.No.144/2A2(P)

S.F.No.144/3A(P)



PLATE No.VIII

CONCEPTUAL PLAN

Scale - 1:1000

INDEX

LEASE BOUNDARY
FOR FENCING

APPROACH ROAD

PIT LIMIT AT THE END
OF THE MINE LIFE

AREA OF AFFORESTATION

MINING BENCHES

LOCATION

EXTENT : 1.41.00 HECTARES
S.F.No. : 144/2A2(P) & 144/3A(P)
VILLAGE : ARASAMPALAYAM
TALUK : KINATHUKADAVU
DISTRICT : COIMBATORE
STATE : TAMILNADU

APPLICANT

THIRU.C.SHANMUGAM,
S/o.CHINNARANGASAMY GOUNDER,
MERKKUTHOTTAM, KARACHERY,
PERIAKUYILAI POST,
KINATHUKADAVU TALUK,
COIMBATORE DISTRICT-641 201.

DATE OF SURVEY: 19.02.2025

PREPARED BY:

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BEST OF MY KNOWLEDGE

A. Allimuthu

A.ALLIMUTHU
(RQP/DMG/HYD/85/ 2022)



PLATE No.IX

CONCEPTUAL CROSS SECTIONS

Scale : Horizontal = 1:1000
Vertical = 1:1000

INDEX

GRAVEL	
ROUGH STONE	
LEASE BOUNDARY	
BUFFER ZONE	
DEPTH OF ESTIMATION	
ULTIMATE PIT LIMIT	

LOCATION

EXTENT : 1.41.00 HECTARES
S.F.No. : 144/2A2(P) & 144/3A(P)
VILLAGE : ARASAMPALAYAM
TALUK : KINATHUKADAVU
DISTRICT : COIMBATORE
STATE : TAMILNADU

APPLICANT

THIRU.C.SHANMUGAM,
S/o.CHINNARANGASAMY GOUNDER,
MERKKUTHOTTAM, KARACHERY,
PERIYAKUYILAI POST,
KINATHUKADAVU TALUK,
COIMBATORE DISTRICT-641 201.

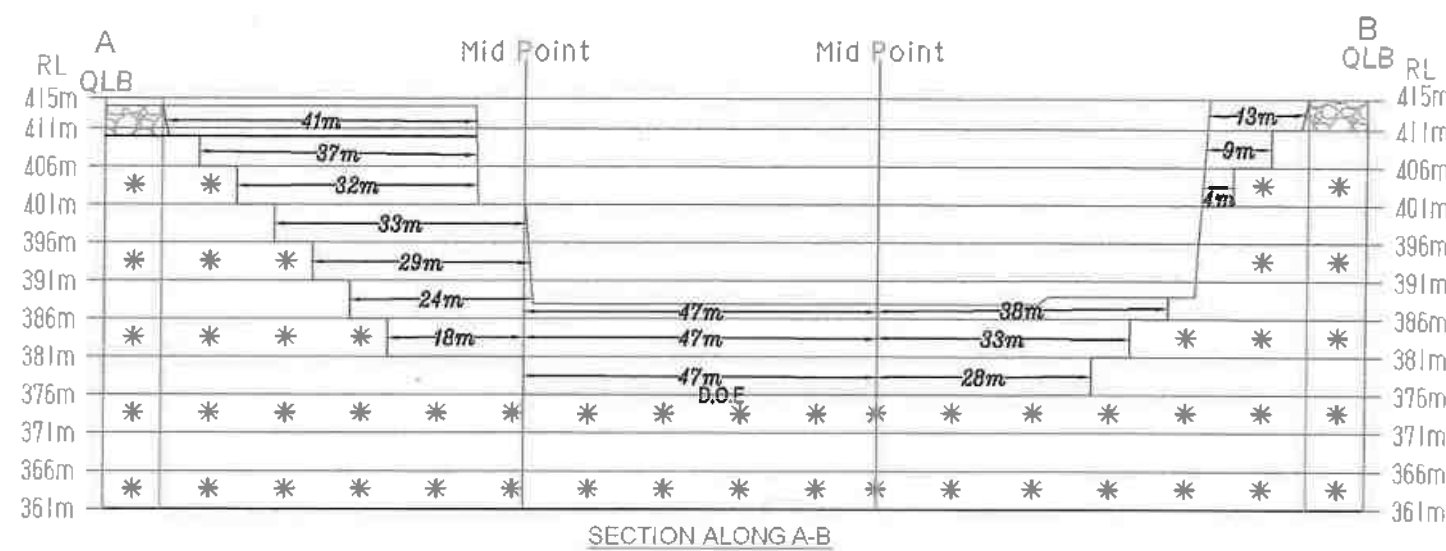
DATE OF SURVEY: 19.02.2025

PREPARED BY:

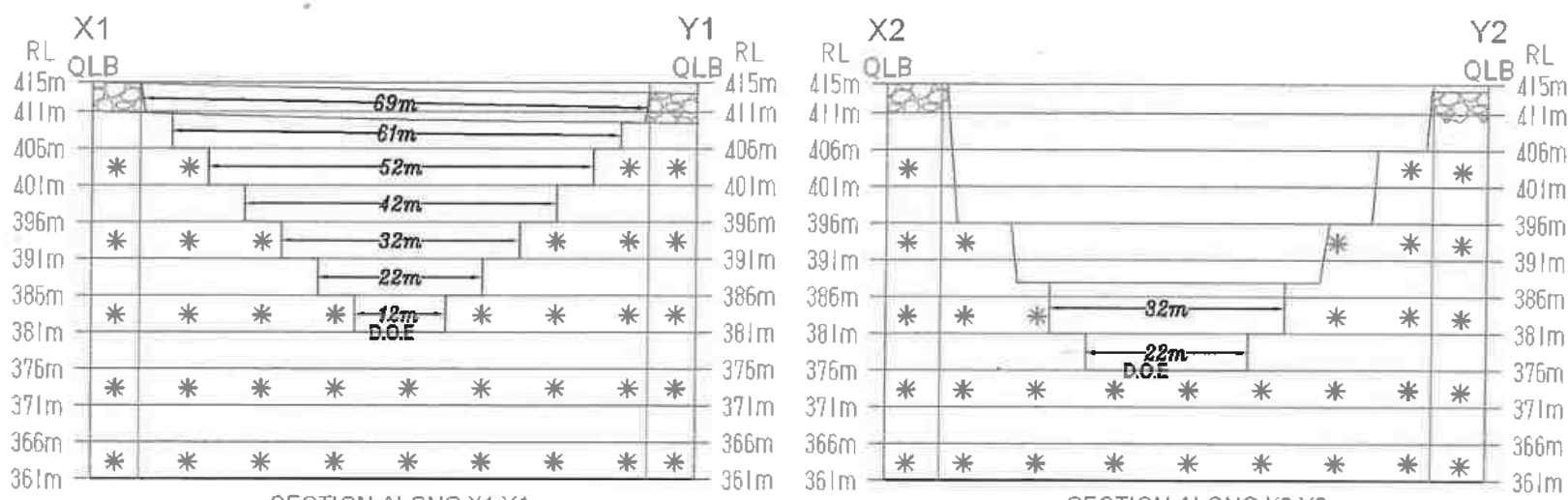
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A.ALLIMUTHU
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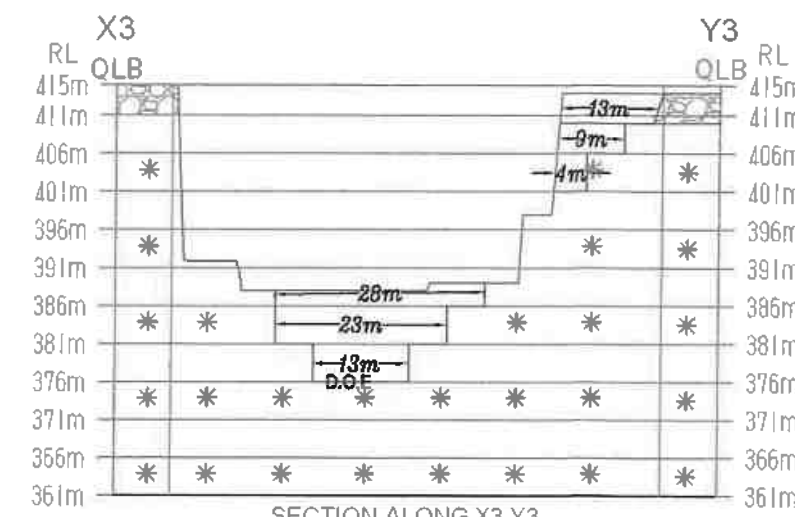
SECTION ALONG A-B



SECTION ALONG X1-Y1

SECTION ALONG X2-Y2

Mineable Reserves by Cross Sectional Method						
Section	MSL	Length (m)	Width (m)	Depth(m)	Volume (m³)	Gravel (m³)
AB-X1Y1	415-411	41	69	4	-	11316
	411-406	37	61	5	11285	-
	406-401	32	52	5	8320	-
	401-396	33	42	5	6930	-
	396-391	29	32	5	4640	-
	391-376	24	22	5	2640	-
AB-X2Y2	386-381	18	12	5	1080	-
	386-381	47	32	2	3008	-
	381-376	47	22	5	5170	-
AB-X3Y3	415-411	13	13	4	-	676
	411-406	9	9	5	405	-
	406-401	4	4	5	80	-
	388-386	38	28	2	2128	-
	386-381	33	23	5	3795	-
TOTAL	381-376	28	13	5	1820	-
					58821.0	11992.0

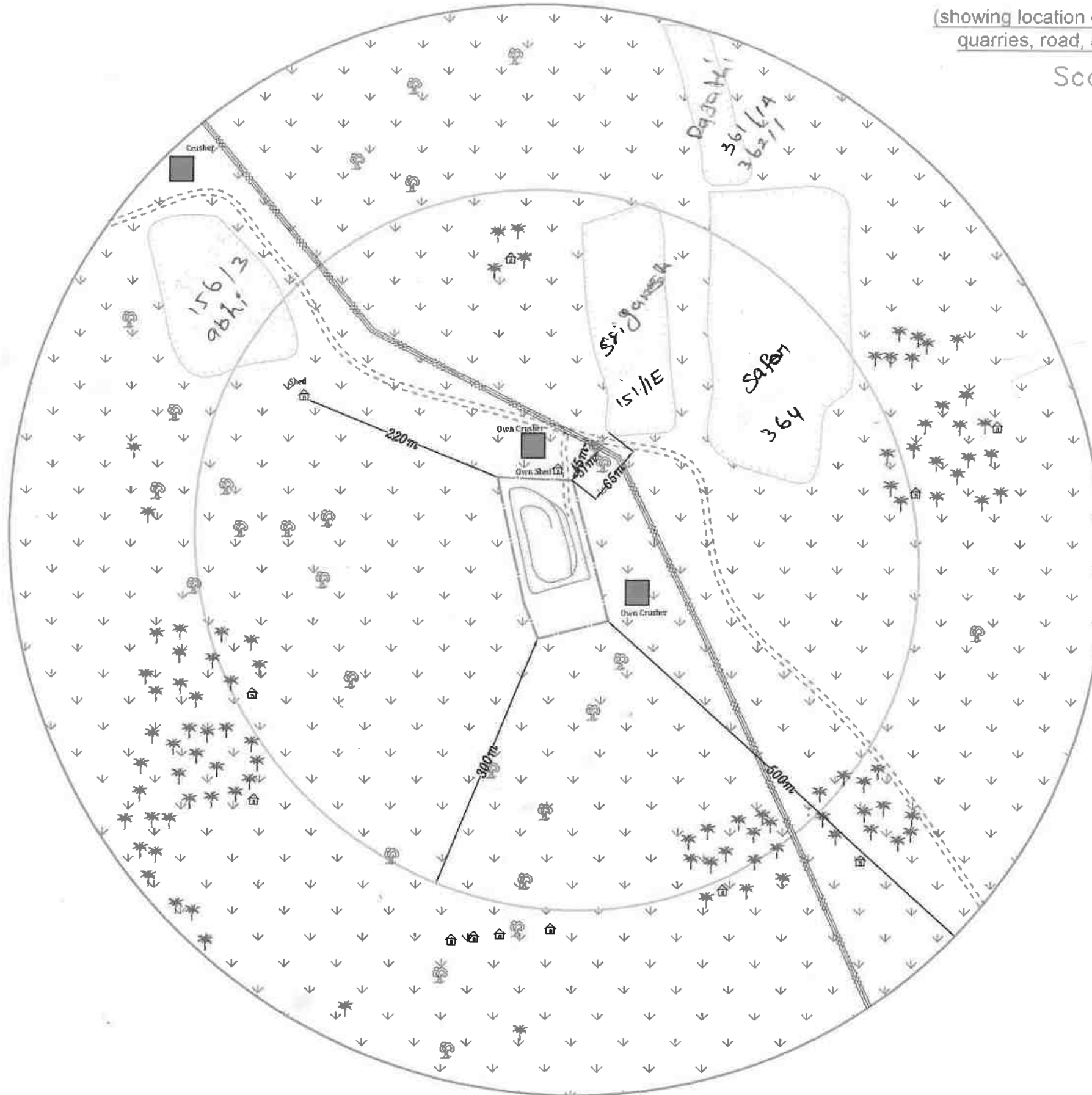


SECTION ALONG X3-Y3

ENVIRONMENT PLAN

(showing location of habitation, water bodies, Vegetation, quarries, road, infra structure around 500m Radius)

Scale - 1:5,000



DESCRIPTION	NEAREST DISTANCE (m)	DIRECTION
LEASE BOUNDARY	---	CENTRE
HOUSE / CRUSHER / SHED	220m	NORTH WEST
WATER BODIES	---	---
VILLAGE ROAD	45m	NORTH EAST
PRIVATE ROAD	---	---
QUARRIES	65m	NORTH EAST
EB LINE	51m	NORTH EAST
WIND MILL	---	---
500m SAFETY ZONE	---	---
300m SAFETY ZONE	---	---
TREES	---	---
DRY/ AGRILAND	---	---
ODAI	---	---
EXTENT : 1.41.00 HECTARES S.F.No. : 144/2A2(P) & 144/3A(P) VILLAGE : ARASAMPALAYAM TALUK : KINATHUKADAVU DISTRICT : COIMBATORE STATE : TAMILNADU	LOCATION APPLICANT THIRU.C.SHANMUGAM, S/o.CHINNARANGASAMY GOUNDER, MERKKUTHOTTAM, KARACHERY, PERIYAKUYILAI POST, KINATHUKADAVU TALUK, COIMBATORE DISTRICT-641 201.	

DATE OF SURVEY: 19.02.2025

PREPARED BY:

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