DRAFT ENVIRONMENTAL IMPACT ASSESSMENT
&
ENVIRONMENT MANAGEMENT PLAN

FOR OBTAINING

Environmental Clearance under EIA Notification – 2006
Schedule Sl. No. 1 (a) (i): Mining Project

"B1" CATEGORY (Cluster) – MINOR MINERAL – CLUSTER –PATTA LAND - EXISTING QUARRY

THIRU. S. SAMINATHAN ROUGH STONE AND GRAVEL QUARRY

Cluster Extent – 6.46.48 Ha

Project Proponent

Thiru.S. Saminathan

S/o. Sennimalaigounder,
No.19, S.K. Palayam,
V.Ramalingapuram, Chennimalai,
Perundurai Taluk, Erode District,
Tamilnadu – 638 051

PROJECT LOCATION	PROPOSED PRODUCTION
S.F.Nos. 206/1(Part), **Extent: 2.53.80 Ha** of Ekkattampalayam Village Perundurai Taluk, Erode District	**Reserves:** 3,72,875m^3 of Rough stone, 13,924 m^3 of Gravel Peak Production = 87,300m^3 of Rough Stone Proposed Depth =57m bgl **(2m Gravel +5m Weathered Rock + 50m Rough Stone)**

ToR obtained vide

File No.12370 TOR Identification No. TO25B0108TN5933563N Dated:22.08.2025

Environmental Consultant

GEO EXPLORATION AND MINING SOLUTIONS

Old No. 260-B, New No. 17,

Advaitha Ashram Road, Alagapuram,

Salem – 636 004, Tamil Nadu, India

Accredited for sector 1 Cat 'A', sector 31 & 38 Cat 'B'

Certificate No : NABET/EIA/25-28/RA 0424

Validity Period: 25.08.2025 – 06.08.2028

Phone: 0427-2431989,

Email: ifthiahmed@gmail.com, geothangam@gmail.com

Web: www.gemssalem.com

Laboratory

GLOBAL LAB AND CONSULTANCY SERVICES

Approved by ISO:9001:2015, NABL, FSSAI, Experts in QHSE

S.F No:92/3A2, Geetha Nagar, Alagapuram Pudur,

Salem-636016.

Baseline Monitoring Period

October 2025 to December 2025

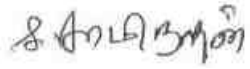
JANUARY 2026

DECLARATION BY THE PROJECT PROPONENT

I, S.Saminathan– Authorized Signatory of **Thiru.S.Saminathan Rough Stone and Gravel Quarry** hereby declare that this EIA & EMP report prepared by **M/s. Geo Exploration and Mining Solutions** for our Rough Stone & Gravel Quarry situated in S.F.No 206/1(Part) over an extent of 2.53.80 Ha in Ekkattampalayam Village, Perundurai Taluk, Erode District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide Letter No. File No: 12370 ToR Identification No: TO25B0108TN5933563N Dated: 22.08.2025

I hereby assured that the Data's submitted and information given by me is true and correct to the best of my knowledge.

Signature of the Project Proponent



S. Saminathan

Place : Erode

Dated :

UNDERTAKING BY THE EIA COORDINATOR

I, S. Nagamani, EIA Coordinator given undertaking that, this EIA & EMP report prepared for Thiru.S. Saminathan Rough Stone & Gravel Quarry situated in S.F.No 206/1 (Part) over an extent of 2.53.80 Ha in Ekkattampalayam Village, Perundurai Taluk, Erode District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide Letter No. File no. 12370 TOR Identification No. TO25B0108TN5933563N Dated: 22.08.2025

I hereby assured that the Data's submitted and information given by me is true and correct to the best of my knowledge

Signature of the EIA Co Ordinator



S. Nagamani EIA Co Ordinator

M/s. Geo Exploration and Mining Solutions

Place : Salem

Dated :

DECLARATION BY THE HEAD OF THE ACCREDITED CONSULTANT ORGANIZATION

I, Dr. M. Ifthikhar Ahmed, Managing Partner, Geo Exploration and Mining Solutions, hereby, confirm that the below-mentioned Functional Area Experts and Team Members prepared the EIA/EMP for Thiru.S. Saminathan Rough Stone and Gravel Quarry over an Extent of 2.53.80 ha in Ekkattampalayam Village, Perundurai Taluk, Erode District of Tamil Nadu. It is also certified that information furnished in the EIA study are true and correct to the best of our knowledge.

Signature & Date:

Name:	**Dr. M. Ifthikhar Ahmed**
Designation:	**Managing Partner**
Name of the EIA Consultant Organization:	**M/s. Geo Exploration and Mining Solutions**
NABET Certificate No & Issue Date:	**NABET/EIA/25-28/RA0424 Dated: 25-08-2025**
Validity:	**Valid till 06.08.2028**

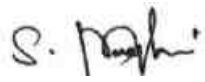
DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA/EMP

Declaration by experts contributing to the EIA/EMP for Thiru.S. Saminathan Rough Stone & Gravel Quarry Project over an Extent of 2.53.80 ha in Ekkattampalayam Village of Perundurai Taluk, Erode District of Tamil Nadu. It is also certified that information furnished in the above EIA study are true and correct to the best of our knowledge.

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

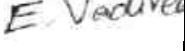
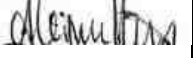
Name: **Mr. S. Nagamani**

Designation: **EIA Coordinator**

Date & Signature: 

Period of Involvement: **November 2024 to till date**

FUNCTIONAL AREA EXPERTS ENGAGED IN THE PROJECT

Sl. No.	Functional Area	Involvement	Name of the Expert/s	Signature
1	AP	▪ Identification of different sources of air pollution due to the proposed mine activity ▪ Prediction of air pollution and propose mitigation measures / control measures	Mr. N.Sathishkumar	
2	WP	▪ Suggesting water treatment systems, drainage facilities ▪ Evaluating probable impacts of effluent/waste water discharges into the receiving environment/water bodies and suggesting control measures.	Mr. P. Govindasamy	
3	HG	▪ Interpretation of ground water table and predict impact and propose mitigation measures. ▪ Analysis and description of aquifer Characteristics	Mr. E. Vadivel	
4	GEO	▪ Field Survey for assessing the regional and local geology of the area. ▪ Preparation of mineral and geological maps. ▪ Geology and Geo morphological analysis/description and Stratigraphy/Lithology.	Mr. S. Nagamani	
5	SE	▪ Revision in secondary data as per Census of India, 2011. ▪ Impact Assessment & Preventive Management Plan ▪ Corporate Environment Responsibility.	Mr. A. Allimuthu	
6	EB	▪ Collection of Baseline data of Flora and Fauna. ▪ Identification of species labelled as Rare, Endangered and threatened as per IUCN list. ▪ Impact of the project on flora and fauna. ▪ Suggesting species for greenbelt development.	Mr.P.Panneer Selvam	
7	RH	▪ Identification of hazards and hazardous substances ▪ Risks and consequences analysis ▪ Vulnerability assessment ▪ Preparation of Emergency Preparedness Plan ▪ Management plan for safety.	Mr. J. R. Vikram Krishna	

8	LU	▪ Construction of Land use Map ▪ Impact of project on surrounding land use ▪ Suggesting post closure sustainable land use and mitigative measures.	Mr. S.Ilavarasan	
9	NV	▪ Identify impacts due to noise and vibrations ▪ Suggesting appropriate mitigation measures for EMP.	Mr. J. R. Vikram Krishna	
10	AQ	▪ Identifying different source of emissions and propose predictions of incremental GLC using AERMOD. ▪ Recommending mitigations measures for EMP	Mr. N. Senthilkumar	
11	SC	▪ Assessing the impact on soil environment and proposed mitigation measures for soil conservation	Mr.M. Shaik Nawas	
12	SHW	▪ Identify source of generation of non-hazardous solid waste and hazardous waste. ▪ Suggesting measures for minimization of generation of waste and how it can be reused or recycled.	Mr. J. R. Vikram Krishna	

NABET CERTIFICATE

भारतीय गुणवत्ता परिषद्
QUALITY COUNCIL OF INDIA
Creating an Ecosystem for Quality

NABET

National Accreditation Board for Education and Training

Certificate of Accreditation

Geo Exploration and Mining Solutions, Salem

No. 17, Advaitha Ashram Road, Fairlands, Salem, Tamil Nadu – 636 004

*Geo Exploration and Mining Solutions, Salem is Re-Accredited (RA3) **as Category-A organization** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations (Version 3), for the preparation of EIA/EMP reports in the sectors listed below, as per the specified categories*

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including opencast / underground mining	1	1 (a) (i)	A
2.	Mineral beneficiation	7	2 (b)	A
3.	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7 (c)	A
4.	Building and construction projects	38	8 (a)	B

Note: Names of approved experts and sectors are mentioned in RAAC minutes dated August 21, 2025, 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/25/3827 dated August 25, 2025. The accreditation needs to be renewed before the expiry date by Geo Exploration and Mining Solutions, Salem following due process of assessment.

Valid up to
August 06, 2028

Issue Date
August 25, 2025

Certificate No.
NABET/EIA/25-28/RA 0424

Varinder S Kanwar

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

For easy represantation of Proposed and Existing, Expired and Abandoned Quarries in the Cluster are given unique codes and identifies and studied in this EIA/ EMP Report.

CODE	Name of the Owner	Village	S.F. Nos	Extent in Ha	Status
PROPOSED QUARRY					
P1	**Thiru.S.Saminathan**, S/o. Sennimalaigounder, No.19, S.K.Palayam, V.Ramalingapuram, Chennimalai, Perundurai Taluk, Erode District, Tamilnadu – 638 051	Ekkatampalayam	206/1(P)	2.53.80 Ha	File No.12370 TOR Identification No. TO25B0108TN5933563N Dated:22.08.2025
P2	**Thiru.M.Ponnusamy**	Ekkatampalayam	221/2A(P),223/2	1.29.68 Ha	EC Granted
	TOTAL EXTENT			**3.83.48 Ha**	
EXISTING QUARRY					
E-1	**Thiru. P.Mahendran**	Ekkatampalayam	202/1(P), 2(P)	2.63.0Ha	30.06.2022 to 16.08.2027
	TOTAL EXTENT			**2.63.0 Ha**	
EXPIRED/ ABANDONED QUARRIES					
EX-1	**G.Banugopal**	Ekkatampalayam	226(P)	0.63.4 Ha	06.09.2022
EX-2	**S.Shanmuga sundaram**		221/1	1.55.0 Ha	06.09.2022
EX-3	**P.Mahendran**		203/2	2.27.0 Ha	29.06.2022
EX-3	**G.banugpoal**		50/1B	2.02.5 Ha	16.10.2023
EX-3	**G.Banugopal**		52	0.85.0 Ha	28.02.2021
	TOTAL EXTENT			**7.32.9 Ha**	
	TOTAL CLUSTER EXTENT			**6.46.48 Ha**	

Cluster area is calculated as per MoEF& CC Notification – S.O. 2269 (E) Dated: 01.07.2016

TERMS OF REFERENCE (ToR) COMPLIANCE

File No: 12370

ToR Identification No: TO25B0108TN5933563N Dated: 22.08.2025

SEIAA SPECIFIC CONDITIONS		
1.1	The CCR shall be submitted along with the EIA Report by the project proponent	**Noted and agreed.** The Project Proponent has obtained the Certified Compliance Report (CCR) from the MoEF &CC IRO, Chennai, vide letter No. EP/12.1/2025-26/SEIAA/146/TN/1792 dated 28.11.2025.
SEAC CONDITIONS – SITE SPECIFIC		
2.1	i. 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: (i) Copy of the agreement forming CMC. (ii) The Organisation chart of the Committee with defining the role of the members (iii) The 'Standard Operating Procedures' (SoP) executing the planned activities.	**Noted and agreed** A CMC with an organizational chart outlining the members' roles and standard operating procedures will be formed by the project authority. Copy of agreement will be submitted during the appraisal meeting.
	ii. The PP shall ensure the installation of CCTV at the proposed quarry site and ensure its inclusion during the EIA presentation	**Noted & agreed.** The Project Proponent agreed to the installation of CCTV cameras to facilitate ongoing monitoring of mining operations. The photographic and video evidence produced by the surveillance system will be methodically documented and submitted during the appraisal meeting
SEAC STANDARD CONDITIONS		
3.1	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: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m.	Noted & agreed Lessee: Thiru. S. Saminathan Lease Period: 07.09.2017 to 06.09.2022 EC - Lr. No. DEIAA-ERD/F.No.16977/2016/EC.No.(12/17), Dated: 30.08.2017
	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.	Noted and Agreed Project Proponent obtained VAO certificate and there is no approved habitation within the radius of 300m & enclosed in Annexure.
	3. The proponent is requested to carry out a survey and enumerate on the structures located	Noted & agreed

	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.	The enumeration of structure detailed in chapter 3 in Socio Economic Environment.
	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.	Noted and agreed. The Hydrogeological study has been carried out in the project site considering the water bodies located within the radius of 1km. The hydrogeological study (Resistivity survey) is detailed in the EIA report, Chapter No.3.
	5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report.	Noted and agreed The Bio diversity study has been conducted by the Functional Area Expert approved by the NABET. The same has been detailed in the Chapter No. 3
	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.	Noted and agreed Nearest Reserve Forest: Chennimalai RF – 60 m – North
	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.	Noted and Agreed It is an existing quarry the maximum depth of the mining reached up to 16m. For this mining plan period it is proposed 57m bgl. The slope stability study will be carried out after commencement of the mining operation or when the mine reaches 30m depth.
	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	Noted and Agreed It is an existing quarry the maximum depth of the mining reached up to 16m. For this mining plan period it is proposed 57m bgl. The slope stability study will be carried out after commencement of the mining operation or when the mine reaches 30m depth.
	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.	Noted and agreed Proponent given under taking that the blasting will be carried out by the statutory person as per the MMR 1961.
	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.	Noted and agreed Chapter-2 sub - 2.5.1 Drilling & Blasting Parameters NONEL initiation based controlled blasting operation involving line drilling and muffle blasting in the proposed quarry Chapter-4, Sub 4.4.2 Common Mitigation Measures for Respective Individual Proposed Projects

		The blasting will be carried out during favorable atmospheric condition and less human activity timings by using nonelectrical initiation system
	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.	
	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,	Noted & agreed Lessee: Thiru. S. Saminathan
	13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?	Lease Period: 07.09.2017 to 06.09.2022 EC - Lr. No. DEIAA-ERD/F.No.16977/2016/EC.No.(12/17), Dated: 30.08.2017
	14. Quantity of minerals mined out. · 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.	
	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).	Project area boundary coordinates superimposed on Toposheet Chapter-1, Figure. No. 1.3, Page No. 6. Surface Features around the project area covering 10km radius Chapter-2, Figure. No. 2.5, Page No. 17. Geology map of the project area covering 10km radius Chapter-2, Figure. No. 2.8, Page No. 19. Geomorphology Map of the Study Area covering 10 km radius Chapter-2, Figure. No. 2.9, Page No. 24.
	16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc.,	Noted & agreed It will be submitted on final EIA appraisal.
	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.	Noted & agreed Fencing, garland drainage & green belt photographs are enclosed in chapter 2. There are no trees in inside lease area.
	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.	Noted and Agreed Details of Geological Resources and Proposed reserves are discussed under Chapter No. 2, Table No.2.6 & 2.7
	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.	Noted and agreed Organization chart for the Competent persons to be appointed as per the provisions of the Mines Act 1952 is given in the Chapter No.6

	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.	Noted and agreed The hydro-geological study was conducted to evaluate the possible impact on the ground water table. No significant impacts are anticipated on the water bodies around the project area. Details are discussed under Chapter No. 3.
	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.	Noted and agreed Baseline Data were collected for retreating monsoon season October 2025 to December 2025. Details in Chapter No. 3
	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.	Noted and agreed The Cumulative impact study due to mining operations are detailed in chapter 7, Page no. 135.
	23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	Noted and agreed The lower part of the mine pit will act as temporary rainwater harvesting structure, besides Rainwater harvesting structure will be constructed near the mine office and labour shed after commencement of mining operation.
	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.	Land use and land cover of the study area is discussed in Chapter No. 3, Page no. 104. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2, Table No 2.3, Page no.: 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.	Not applicable There is no waste anticipated in this Rough Stone and gravel quarrying operation. The entire quarried out materials will be utilized (100%).
	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.	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.

	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.	Noted and agreed The lower part of the mine pit will be utilized as rain water harvesting structure (Temporary) and the water will be used for the water sprinkling on haul roads and Greenbelt development purpose. Rainwater harvesting structure will be constructed near the mine office.
	28. Impact on local transport infrastructure due to the Project should be indicated.	Noted and agreed Traffic density survey was carried out to analyse the impact of transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no significant impact due to the proposed transportation from the project area. Details have been provided in Chapter No.2, Page No. 30.
	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.	Noted and agreed It was proposed 1270 Nos of trees were planted as a part of greenbelt development programme all along the periphery of the lease applied area and approach roads and village roads.
	30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	Noted and agreed After the completion of mining operation, the quarried-out land will be utilized as temporary storage reservoir. The details are given in the Chapter No.4
	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.	Noted and Agreed
	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.	Noted and agreed The varieties of plantations have been proposed as per the Appendix given in the ToR. It is a Proposed Lease. Around 1270 trees are proposed to plant in the boundary area and in the village roads.
	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	Noted and 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.	Noted and Agreed Disaster management Plan details in Chapter-7.
	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.	Noted and Agreed A Risk Assessment and management Plan Chapter- 7.
	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	Noted and Agreed Occupational Health impacts are given in the Chapter-10

	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.	
	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.	Noted and agreed. No Public Health Implications anticipated due to this project.
	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.	Noted and Agreed Details explained Socio economic and impacts studies regarding Chapter No. 3
	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	Noted and Agreed No Litigation is 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.	Noted and agreed The benefits of the project are given in the Chapter No 8. • Through this project around 1270 Nos of trees will be planted • The government will get revenue from the way of Seigniorage fee, royalty etc., Around 37 people will get direct employment through this project.
	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.	Noted & agreed Lessee: Thiru. S. Saminathan Lease Period: 07.09.2017 to 06.09.2022 EC - Lr. No. DEIAA-ERD/F.No.16977/2016/EC.No.(12/17), Dated: 30.08.2017 CCR –/12.1/2025-26/SEIAA/146/TN/1792 Dated: 28.11.2025
	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	Noted and Agreed Details are discussed in chapter no 10, Table no 10.9
	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.	Noted and Agreed
SEIAA STANDARD CONDITION		
Cluster Management Committee		
1	Cluster Management Committee, which must include all the proponents in the cluster as members including the existing as well as proposed quarry.	Noted and agreed Cluster management committee detailed in chapter 7. Cluster management committee has been formed with mutual agreement with the proponents including Proposed quarry at present are framed.

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..	Noted and agreed. As per the committee agreement proponents will coordinates for the Greenbelt development, Water sprinkling and tree plantation activities combined.
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.	Noted and agreed. The formation of committee with list of members has been submitted to the AD mines office, Erode and the same will be update in every year.
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.	As per the committee agreement the blasting frequency will be discussed and carryout by the Mines Manager appointed by the proponents and the same will be updated in the committee minutes. Transport details in chapter-2.
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.	The risk management plan and disaster management plan will be followed as per this EIA report.
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.	Noted and 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	Noted and agreed A proper action plan regarding the restoration will be followed by the committee.
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.	Noted and agreed.
Agriculture & Agro - Biodiversity		
9	Impact on surrounding agricultural fields around the proposed mining Area.	Noted and agreed As the proposed lease area is dominantly surrounded by mining land, barren land, and fallow land, the impact on the surrounding agricultural fields if present will be low. With proper mitigation measures, the project will be carried out to reduce the impact further to the level of negligence.
10	Impact on soil flora & vegetation around the project site.	Noted and agreed The vegetation details have been provided in chapter 3. There is no schedule I species of animals observed within study area as per Wildlife Protection Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
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.	Noted and agreed The vegetation details have been provided in Chapter No 3. There is no schedule I species of animals observed within study area as per Wildlife Protection Act, 1972 and no species falls in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.

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	Noted and agreed The EIA study has been carried out as per this ToR Condition. The details are given in the EIA report Chapter No.3
13	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	Noted and agreed The Eco System of the area will be retained during the mining operation by the way of planting trees in the boundary barrier and un utilized areas. After completion of mining operation, the quarried-out pit will be facilitated to collect the rainwater to pit act as temporary reservoir.
14	The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.	The project area is bounded by Existing quarries on the all side of the lease area.
Forests		
15	The project proponent shall detail study on impact of mining on Reserve forests free ranging wildlife.	The Nearest R.F is Chennimalai RF – 60 m – North. The Project Proponent will obtain the DFO letter and submit the same during the appraisal meeting.
16	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	Details of flora and fauna studies given in the Chapter No.3
17	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	Noted and agreed
18	The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.	Noted and agreed.
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 I km (radius) so as to assess the impacts on the nearby waterbodies due to mining any ecological fragile areas. 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.	Hydro-geological study considering the open well and borewell within the radius of 1km along with water level contour map. The details are given in the Chapter No.3.
20	Erosin Control measures	Noted and agreed Garland drainage structures will be constructed around the lease area to control the erosion, as discussed in Section 4.3 under Chapter 4.
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.	Details in Chapter 3- Detailed EIA study has been carried out considering the impact to the water bodies and eco system of the area. Details are covered in the Chapter No.3 and 4.
22	The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.	Noted & agreed Details discussed in Chapter 3 and 4 impact of bio diversity
23	The project proponent shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.	Noted & agreed

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.	Noted & agreed. Details discussed under Chapter 3.
25	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	Noted & agreed Details of impact on soil health, soil erosion, the soil, physical, chemical components and microbial components described in chapter-3.
26	The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.	Noted & agreed
27	The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including Environmental stress.	Noted & agreed
Energy		
28	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.	The mitigation measures to control the Noise, Air, Water and dust is given in the Chapter No.4.
Climate Change		
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.	Details of carbon emission and mitigation activities are given int the Chapter No.4
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.	Noted & agreed
31	Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood.	Noted & agreed
Mine Closure Plan		
32	Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued and the scope for achieving SDGs.	Details in Chapter 2 mine closure plan
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.	The detailed Environmental Management plan has been prepared and given in the Chapter No.10
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	Details in Green belt development in chapter 4
Risk Assessment		
35	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.	The risk assessment and its management plan for this project has been provided in Chapter No. 7.
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 for this project has been provided in Chapter No. 7.
Others		
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.	The Project Proponent have obtained VAO certificate and it will be attached in the annexure.
38	As per the MoEF& CC office memorandum F.No.22-65/20l7-IA.lll dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	Noted and agreed
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.	Details of carbon emission and mitigation activities are given int the Chapter No.4

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.	Not applicable. This is Not a violation category project. This proposal falls under B1 Category (Cluster Condition).
2	A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given	The applied land for quarrying is a Patta Land. Document is enclosed along with Approved Mining Plan as Annexure Volume 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	Noted & agreed.
4	All comer 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)	Map showing – Project area is superimposed on Satellite imagery is enclosed in Figure No. 2.4, page no. 16. Project area boundary coordinates superimposed on Toposheet – Figure No. 1.3, page no. 6. Surface Features around the project area covering 10km radius – Figure No. 2.5, page no. 17. Geology map of the project area covering 10km radius - Figure No. 2.8, page no. 23 Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.9, page no. 24.
5	Information should be provided in Survey of India Topo sheet in l: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	Map showing – Geology map of the project area covering 10km radius - Figure No. 2.8, page no. 23 Geomorphology Map of the Study Area covering 10 km radius – Figure No. 2.9
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	The applied area was inspected by the officers of Department of Geology along with revenue officials and found that the land is fit for quarrying under the policy of State Government.
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	The proponent has framed their Environmental Policy and the same is discussed in the Chapter No 10

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	It is an opencast quarrying operation proposed to operate in Mechanized method. The rough stone formation is a hard, compact and homogeneous body. The height and width of the bench will be maintained as 5m with 90^0 bench angles. Quarrying activities will be carried out under the supervision of Competent Persons like Mines Manager, Mines Foreman and Mining Mate. Necessary permissions will be obtained from DGMS after obtaining Environmental Clearance.
9	The study area will comprise of l0 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.	Noted & agreed. The study area considered for this study is 10 km radius and all data contained in the EIA report such as waste generation etc., is 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.	Land use and land cover of the study area is discussed in Chapter No. 3. Land use plan of the project area showing pre-operational, operational and post-operational phases are discussed in Chapter No. 2, Table No 2.3
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.	Not Applicable. There is no waste anticipated during this quarry operation. The entire quarried out rough stone will be transported to the needy customers. No Dumps is proposed outside the lease area.
12	Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, il 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	Not Applicable. There is no Forest Land involved in the proposed project area. The proposed project area is a patta land. Approved Mining Plan is enclosed as Annexure Volume 1.
13	Status of forestry clearance for the broken-up area and virgin forest land 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.	Not Applicable. The proposed project area does not involve any Forest Land.
14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest fights) Act, 2006 should be indicated.	Not Applicable. The project doesn't attract Recognition of Forest Rights Act, 2006.
15	The vegetation in the RF / PF areas in the study area, with necessary, details, should be given	The Nearest R.F is Chennimalai RF – 60 m – North

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	Not Applicable. There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area.
17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/ (existing as well as proposed), if any, within l0 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.	Not Applicable. There are No National Parks, Biosphere Reserves, Wildlife Corridors, and Tiger/Elephant Reserves within 10 km Radius from the periphery of the project area.
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-l 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.	Detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] was carried out and discussed under Chapter No. 3 There is no schedule I species of animals observed within study area as per Wildlife Protection Act 1972 as well as no species is in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area.
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. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.
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).	Not Applicable. The project doesn't attract The C. R. Z. Notification, 2018.
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	Not Applicable. There are no approved habitations within a radius of 300 meters.

	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 socioeconomic aspects should be discussed in the Report.	Therefore, R&R Plan / Compensation details for the Project Affected People (PAP) is not anticipated and Not Applicable for this project.
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 ol sensitive receprors. There should be at least one monitoring station within 500 m of the mine lease in the predominant downwind direction. The mineralogical composition of PM_{10}, particularly for free silica. should be given.	Baseline Data were collected for One Season (Retreating Monsoon) October 2025 to December 2025 as per CPCB Notification and MoEF & CC Guidelines. Details in Chapter No. 3
23	Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided. 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.	Air Quality Modelling for prediction of incremental GLC's of pollutant was carried out using AERMOD view 9.6.1 Model. Details in Chapter No. 4, Page no. 107.
24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	Total Water Requirement: 2.0 KLD Discussed under Chapter 2, Table No 2.14.
25	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project, should be provided.	Not Applicable. Water for dust suppression, greenbelt development and domestic use will be sourced from accumulated rainwater/seepage water in mine pits and purchased from local water vendors through water tankers on daily requirement basis. Drinking water will be sourced from the approved water vendors.
26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rain water harvesting proposed in the project, if any, should be provided.	Part of the working pit will be allowed to collect rain water during the spell of rain will be used for greenbelt development and dust suppression.

		The Mine Closure Plan is prepared for converting the excavated pit into rain water harvesting structure and serve as water reservoir for the project village during draught season.
27	Impact of the Project on the water quality, both surface and groundwater. should be assessed and necessary safeguard measures, if any required, should be provided.	Impact Studies and Mitigation Measures of Water Environment including Surface Water and Ground Water are discussed in Chapter 4.
28	Based on actual monitored data, it may clearly be shown whether working will intersect. Ground water. 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.	Not Applicable. The ground water table inferred 63-68m below ground level. The ultimate depth of quarry is 57m bgl. This proposal of 57m bgl will not intersect the ground water table, which is inferred from the hydro-geological studies carried out at the project site. Discussed under Chapter 3.
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.	Not Applicable. There is no stream, seasonal or other water bodies passing within the project area. Therefore, no modification/ diversion of water bodies is anticipated.
30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.	Highest elevation of the project area is 280m (max) AMSL. The ultimate depth of quarry is 57m bgl. Water level of the area is 63-68m BGL
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.	Greenbelt Development Plan is discussed under Chapter 4 & 7.
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.	Traffic density survey was carried out to analyse the impact of Transportation in the study area as per IRC guidelines 1961 and it is inferred that there is no significant impact due to the proposed transportation from the project area. Details in Chapter 2.

33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.	Infrastructure & other facilities will be provided to the Mine Workers after the grant of quarry lease and the same has been discussed in the Chapter No. 2.
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	Discussed under Chapter 2, Mine Closure Plan is a part of Approved Mining Plan enclosed as Annexure Volume – 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 examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational Health Impacts of the project and preventive measures are detailed under Chapter 4.
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.	No Public Health Implications anticipated due to this project. Details of CER and CSR are discussed under Chapter 8.
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.	No Negative Impact on Socio Economic Environment on the Study Area is anticipated and this project shall benefit the Socio-Economic Environment by ways of employment for 38 people directly and 50 people indirectly. Details in Chapter 4.
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.	Detailed Environment Management Plan for the project to mitigate the anticipated impacts described under Chapter 4 is discussed under Chapter 10.
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.	The outcome of public hearing will be updated in the final EIA/AMP report
40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.	No litigation is pending in any court against this 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.	Project Cost is Rs. 1,02,39,000/- CER Cost is Rs.3,00,000/- The EMP budget detailed in chapter 10, table no. 10.9
42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report.	Details in Chapter 7.
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.	Details in Chapter 8.
44	Besides the above, the below mentioned general points are also to be followed: -	
a	Executive Summary of the EIA/EMP Report	Enclosed as separate booklet.
b	All documents to be properly referenced with index and continuous page numbering.	All the documents are 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.	List of Tables and source of the data collected are 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	Baseline monitoring reports are enclosed with This report in Chapter 3. Original Baseline monitoring reports will be submitted in the final EIA report during appraisal.
e	Where the documents provided are in a language other than English, an English translation should be provided.	Not Applicable.
f	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	Will be enclosed along with Final EIA EMP Report.
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-IAII(I) Dated: 4th August, 2009, which are available on the website of this Ministry, should be followed.	Noted & agreed. Instructions issued by MoEF & CC O.M. No. J-11013/41/2006-IAII (I) Dated: 4th August, 2009 are 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	Noted & agreed.
i	As per the circular no. J-11011/618/2010-IAII(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.	Not 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.	Surface Plan – Figure No. 2.3 – Page No. 15. Topography, Geological, Year-Wise Development Production Plan and Sections Plan - Figure No.2.10 – Page No. 26. Mine Closure Plan – Figure No.2.11 – Page No. 27.

TABLE OF CONTENTS

1.INTRODUCTION 1

1.0 PREAMBLE 1

1.1 PURPOSE OF THE REPORT 1

1.2 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT 3

1.3 BRIEF DESCRIPTION OF THE PROJECT 4

1.4 ENVIRONMENTAL CLEARANCE 8

1.5 TERMS OF REFERENCE (ToR) 9

1.6 POST ENVIRONMENT CLEARANCE MONITORING 9

1.7 GENERIC STRUCTURE OF EIA DOCUMENT 9

1.8 THE SCOPE OF THE STUDY 9

2. PROJECT DESCRIPTION 11

2.0 GENERAL 11

2.1 DESCRIPTION OF THE PROJECT 11

2.2 LOCATION OF THE PROJECT 11

2.3 GEOLOGY 20

2.4 RESOURCES AND RESERVES 23

2.5 METHOD OF MINING 27

2.6 GENERAL FEATURES 28

2.7 PROJECT REQUIREMENT 30

2.8 EMPLOYMENT REQUIREMENT: 31

2.9 PROJECT IMPLEMENTATION SCHEDULE 31

3. DESCRIPTION OF ENVIRONMENT 32

3.0 GENERAL 32

3.1 LAND ENVIRONMENT 34

3.2 WATER ENVIRONMENT 45

3.3 AIR ENVIRONMENT 57

3.4 NOISE ENVIRONMENT 67

3.5 Biological Environment 71

3.6 SOCIO ECONOMIC ENVIRONMENT 90

4. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES 103

4.0 GENERAL 103

4.1 LAND ENVIRONMENT: 103

4.2 WATER ENVIRONMENT *105*
4.3 AIR ENVIRONMENT *105*
4.4 NOISE ENVIRONMENT *111*
4.5 ECOLOGY AND BIODIVERSITY *115*
4.6 SOCIO ECONOMIC *120*
4.7 OCCUPATIONAL HEALTH AND SAFETY *120*
4.8 MINE WASTE MANAGEMENT *121*
4.9 MINE CLOSURE *121*
5. ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE) 124
5.0 INTRODUCTION *124*
5.1 FACTORS BEHIND THE SELECTION OF PROJECT SITE *124*
5.2 ANALYSIS OF ALTERNATIVE SITE *124*
5.3 FACTORS BEHIND SELECTION OF PROPOSED TECHNOLOGY *124*
5.4 ANALYSIS OF ALTERNATIVE TECHNOLOGY *125*
6. ENVIRONMENTAL MONITORING PROGRAMME 126
6.0 GENERAL *126*
6.1 METHODOLOGY OF MONITORING MECHANISM *126*
6.2 IMPLEMENTATION SCHEDULE OF MITIGATION MEASURES *127*
6.3 MONITORING SCHEDULE AND FREQUENCY *128*
6.4 BUDGETARY PROVISION FOR EMP *128*
6.5 REPORTING SCHEDULES OF MONITORED DATA *129*
7. ADDITIONAL STUDIES 130
7.0 GENERAL *130*
7.1. PUBLIC CONSULTATION *130*
7.2 RISK ASSESSMENT *130*
7.3 DISASTER MANAGEMENT PLAN *132*
7.4 CUMULATIVE IMPACT STUDY *134*
7.5 PLASTIC WASTE MANAGEMENT PLAN *143*
7.6 CLUSTER MANAGEMENT COMMITTEE *143*
8.PROJECT BENEFITS 150
8.0 GENERAL *150*
8.1 EMPLOYMENT POTENTIAL *150*
8.2 SOCIO-ECONOMIC WELFARE MEASURES PROPOSED *150*
8.3 IMPROVEMENT IN PHYSICAL INFRASTRUCTURE *150*
8.4 IMPROVEMENT IN SOCIAL INFRASTRUCTURE *150*

8.5 OTHER TANGIBLE BENEFITS 151
9. ENVIRONMENTAL COST BENEFIT ANALYSIS 152
10.ENVIRONMENTAL MANAGEMENT PLAN – Thiru.S. Saminathan 153
10.0. GENERAL 153
10.1. ENVIRONMENTAL POLICY 153
10.2. LAND ENVIRONMENT MANAGEMENT – 154
1.3. SOIL MANAGEMENT 155
10.4. WATER MANAGEMENT 155
10.5. AIR QUALITY MANAGEMENT 156
10.6. NOISE POLLUTION CONTROL 156
10.7. GROUND VIBRATION AND FLY ROCK CONTROL 157
10.8. BIOLOGICAL ENVIRONMENT MANAGEMENT 157
10.9. OCCUPATIONAL SAFETY & HEALTH MANAGEMENT 159
10.10 CONCLUSION – 164
11. SUMMARY AND CONCLUSION 165
12. DISCLOSURE OF CONSULTANT 166

LIST OF TABLES

TABLE 1.1: DETAILS OF PROJECT PROPONENT 3
TABLE 1.2: SALIENT FEATURES OF THE PROPOSED PROJECT 3
TABLE 1.3: ENVIRONMENT ATTRIBUTES 9
TABLE 2.1: SITE CONNECTIVITY 11
TABLE 2.2: CO-ORDINATES– PROJECT BOUNDARY 12
TABLE 2.3: LAND USE PATTERN 19
TABLE 2.4: PRODUCTION DETAILS 19
TABLE 2.5: GROUND WATER LEVEL VARIATIONS OF ERODE DISTRICT 20
TABLE 2.6: RESOURCES AND RESERVES 23
TABLE 2.7: YEAR-WISE PRODUCTION PLAN 23
TABLE 2.8: ULTIMATE PIT DIMENSION 24
TABLE 2.9: PROPOSED MACHINERY DEPLOYMENT 28
TABLE.2.10: TRAFFIC SURVEY LOCATIONS 29
TABLE 2.11: EXISTING TRAFFIC VOLUME 29
TABLE 2.12: ROUGH STONE & GRAVEL HOURLY TRANSPORTATION REQUIREMENT 29
TABLE 2.13: SUMMARY OF TRAFFIC VOLUME 29
TABLE 2.14: WATER REQUIREMENT FOR THE PROJECT 30
TABLE 2.15: PROPOSED MANPOWER DEPLOYMENT 31
TABLE 2.16: EXPECTED TIME SCHEDULE 31
TABLE 3.1: MONITORING ATTRIBUTES AND FREQUENCY OF MONITORING 33
TABLE 3.2: LAND USE / LAND COVER TABLE 10 Km RADIUS 34
TABLE 3.3: DETAILS OF ENVIRONMENT SENSITIVITY AROUND THE CLUSTER 38
TABLE 3.4: NEARBY WATER BODIES FROM THE PROPOSED PROJECT SITE 39
TABLE 3.5: SOIL SAMPLING LOCATIONS 39
TABLE 3.6: METHODOLOGY OF SAMPLING COLLECTION 40
TABLE 3.7: SOIL QUALITY OF THE STUDY AREA 43
TABLE 3.8: WATER SAMPLING LOCATIONS 45
TABLE 3.9: SURFACE WATER SAMPLING RESULTS 47
TABLE 3.10: GROUND WATER SAMPLING RESULTS 49
TABLE 3.11: POST-MONSOON SEASON WATER LEVEL OF OPEN WELLS 1 KM RADIUS 51

TABLE 3.12: POST-MONSOON SEASON WATER LEVEL OF BOREWELLS 1 KM RADIUS 52

TABLE 3.13: RAINFALL DATA 58

TABLE 3.14: METEOROLOGICAL DATA RECORDED AT SITE 58

TABLE 3.15: METHODOLOGY AND INSTRUMENT USED FOR AAQ ANALYSIS 60

TABLE 3.16: NATIONAL AMBIENT AIR QUALITY STANDARDS 60

TABLE 3.17: AMBIENT AIR QUALITY (AAQ) MONITORING LOCATIONS 61

TABLE 3.18: SUMMARY OF AAQ 1 to AAQ 7 63

TABLE 3.19: ABSTRACT OF AMBIENT AIR QUALITY DATA 63

TABLE 3.22: DETAILS OF SURFACE NOISE MONITORING LOCATIONS 67

TABLE 3.23: AMBIENT NOISE QUALITY RESULT 69

Table No: 3.23. Flora in the Core zone of Ekkattampalayam, Rough stone and Gravel quarry, Perundurai Taluk, Erode District. 73

Table No: 3.24. Flora in the Buffer zone of Ekkattampalayam, Rough stone and Gravel quarry, Perundurai Taluk, Erode District. 76

Table 3.25: Number of floral life forms in the Study Area 81

Table No: 3.26. Fauna in the Core zone of Ekkattampalayam, Rough stone and Gravel quarry, Perundurai Taluk, Erode District 85

Table 3.27. List of Fauna & Their Conservation Status, ... 86

Mammals: (*directly sighted animals & Secondary data) 86

Table 3.28. Listed birds 86

Table 3.29. List of Reptiles either spotted or reported from the study area. 88

(*indicates direct observations & Secondary data) 88

Table 3.30. List of insects either spotted or reported from the study area 88

Table.3.31. List of Butterflies reported from the study area 88

Table No.3.32. Description of Macrophytes 89

Table no. 3.33. Amphibians Observed/Recorded from the Study Area 89

Table 3.34. Based on Actual Sighting, based on inputs from locals and Perused from Secondary Data 89

TABLE 3.40: ENUMERATION OF STRUCTURES 0- 300m radius 92

TABLE 3.41: CENSUS DATA OF VILLAGE EKKATTAMPALAYAM --CENSUS 2011 93

TABLE 3.42: DEMOGRAPHICS POPULATION OF EKKATTAMPALAYAM VILLAGE 93

TABLE 3.43: EKKATTAMPALAYAM VILLAGE CENSUS 2011 DATA ---CENSUS 2011 93

TABLE 3.44: EKKATTAMPALAYAM WORKING POPULATION ---CENSUS 2011 94

TABLE 3.45: EKKATTAMPALAYAM VILLAGE DATA ---CENSUS 2011 95

TABLE 3.47: POPULATIN DATA AROUND 5KM RADIUS 96

TABLE 3.48: COMMUNICATION & TRANSPORT FACILITIES IN THE STUDY AREA 98

TABLE 3.49: WATER & DRAINAGE FACILITIES IN THE STUDY AREA 99

TABLE 3.50: OTHER FACILITIES IN THE STUDY AREA 99

TABLE 3.51: EDUCATIONAL FACILITIES IN THE STUDY AREA 100

TABLE 3.52: MEDICAL FACILITIES IN THE STUDY AREA 100

TABLE 4.1: ESTIMATED EMISSION RATE 107

TABLE 4.2: INCREMENTAL & RESULTANT GLC OF PM_{10} 109

TABLE 4.3: INCREMENTAL & RESULTANT GLC OF $PM_{2.5}$ 109

TABLE 4.4: INCREMENTAL & RESULTANT GLC OF SO_2 109

TABLE 4.5: INCREMENTAL & RESULTANT GLC OF NO_X 109

TABLE 4.7: ACTIVITY AND NOISE LEVEL PRODUCED BY MACHINERY 112

TABLE 4.8: PREDICTED NOISE INCREMENTAL VALUES 112

TABLE 4.9: PREDICTED PPV VALUES DUE TO BLASTING 113

Table 4.10: LIST OF PLANT SPECIES PROPOSED FOR GREENBELT DEVELOPMENT 117

Table 4.11: SPECIES SUITABLE FOR ABATEMENT OF NOISE AND DUST POLLUTION 118

Table 4.12: OVERALL ECOLOGICAL IMPACT ASSESSMENTS 119

TABLE 6.1 IMPLEMENTATION SCHEDULE 127

TABLE 6.2: PROPOSED MONITORING SCHEDULE POST EC 128

TABLE 6.3 ENVIRONMENT MONITORING PROGRAM BUDGET 129

TABLE 7.1 RISK ASSESSMENT & CONTROL MEASURES 130

TABLE 7.2: PROPOSED TEAMS TO DEAL WITH EMERGENCY SITUATION 132

TABLE 7.3: PROPOSED FIRE EXTINGUISHERS AT DIFFERENT LOCATIONS 134

TABLE 7.4: LIST OF QUARRIES WITHIN 500 METER RADIUS 135

TABLE 7.5: SALIENT FEATURES OF PROPOSAL “P1” 136

TABLE 7.6: SALIENT FEATURES OF PROPOSAL “P2” 137

TABLE 7.7: SALIENT FEATURES OF PROPOSAL “E1” 138

TABLE 7.8: CUMULATIVE PRODUCTION LOAD OF ROUGH STONE 138

TABLE 7.9: CUMULATIVE PRODUCTION LOAD OF GRAVEL/ TOPSOIL 139

TABLE 7.10: EMISSION ESTIMATION FROM QUARRIES WITHIN 500 METER RADIUS 139

TABLE 7.11: INCREMENTAL & RESULTANT GLC WITHIN CLUSTER 139

TABLE 7.12: PREDICTED NOISE INCREMENTAL VALUES FROM CLUSTER 140

TABLE 7.13: NEAREST HABITATION FROM EACH MINES 141

TABLE 7.14: GROUND VIBRATIONS AT EACH MINES 141

TABLE 7.15: SOCIO ECONOMIC BENEFITS FROM EACH MINES 142

TABLE 7.16: EMPLOYMENT BENEFITS FROM EACH MINES 142

TABLE 7.17: GREENBELT DEVELOPMENT BENEFITS FROM EACH MINES 142

TABLE 7.18: ACTION PLAN TO MANAGE PLASTIC WASTE 143

TABLE 8.1 CER – ACTION PLAN 151

TABLE 10.1. PROPOSED CONTROLS FOR LAND ENVIRONMENT 154

TABLE 10.2. PROPOSED CONTROLS FOR SOIL MANAGEMENT 155

TABLE 10.3. PROPOSED CONTROLS FOR WATER ENVIRONMENT 155

TABLE 10.4. PROPOSED CONTROLS FOR AIR ENVIRONMENT 156

TABLE 10.5. PROPOSED CONTROLS FOR NOISE ENVIRONMENT 156

TABLE 10.6. PROPOSED CONTROLS FOR GROUND VIBRATIONS & FLY ROCK 157

TABLE 10.7. RECOMMENDED SPECIES FOR THE PLANTATION 159

TABLE 10.8. MEDICAL EXAMINATION SCHEDULE 160

TABLE 10.9: EMP BUDGET FOR PROPOSED PROJECT 162

LIST OF FIGURES

FIGURE 1.1: SATELLITE IMAGERY CLUSTER QUARRIES 2

FIGURE 1.2: LOCATION MAP OF THE PROJECT SITE 5

FIGURE 1.3: TOPOSHEET MAP OF THE STUDY AREA 10 KM RADIUS 6

FIGURE 1.4: TOPOSHEET MAP OF THE STUDY AREA 2KM RADIUS 7

FIGURE 2.1: TOPOGRAPHICAL VIEW OF PROJECT AREA 12

FIGURE 2.1-A: FENCING, GARLAND DRAIN AND GREEN BELT PHOTOGRAPHS 12

FIGURE 2.2: GOOGLE IMAGE OF THE PROJECT AREA 13

FIGURE 2.3: QUARRY LEASE PLAN / SURFACE PLAN 14

FIGURE 2.4: VILLAGE MAP SUPERIMPOSED ON GOOGLE EARTH IMAGE 15

FIGURE 2.5: IMAGE SHOWING SURFACE FEATURES AROUND 10 KM RADIUS 16

FIGURE 2.6: IMAGE SHOWING SURFACE FEATURES AROUND 5 KM RADIUS 17

FIGURE 2.7: IMAGE SHOWING SURFACE FEATURES AROUND 1 KM RADIUS 18

FIGURE 2.8: REGIONAL GEOLOGY MAP 21

FIGURE 2.9: GEOMORPHOLOGY MAP 22

FIGURE 2.10: TOPOGRAPHY, GEOLOGICAL, YEAR-WISE DEVELOPMENT PRODUCTION PLAN AND SECTIONS 24

FIGURE 2.11: CLOSURE PLAN AND SECTIONS 25

FIGURE.2.12: MINERAL TRANSPORTATION ROUTE MAP 29

FIGURE 3.2: LAND USE LAND COVER MAP 2KM AND 10KM RADIUS 35

FIGURE 3.3: PHYSIOGRAPHIC MAP 10KM RADIUS 36

FIGURE 3.1: PIE DIAGRAM OF LAND USE AND LAND COVER - 10KM RADIUS IN AREA_% 37

FIGURE 3.1-A: PIE DIAGRAM OF LAND USE AND LAND COVER - 2KM RADIUS IN AREA_% 37

FIGURE 3.4: SOIL SAMPLING LOCATIONS AROUND 10 KM RADIUS 41

FIGURE 3.5: SOIL MAP 42

FIGURE 3.6: WATER SAMPLING LOCATIONS AROUND 10 KM RADIUS 46

FIGURE 3.7: OPEN WELL CONTOUR MAP OCTOBER to DECEMBER 2025 51

FIGURE 3.8: BOREWELL CONTOUR OCTOBER TO DECEMBER 2025 52

FIGURE 3.9: DRAINAGE MAP AROUND 10 KM RADIUS FROM PROJECT SITE 54

FIGURE 3.10: GROUND WATER PROSPECT MAP 55

FIGURE 3.11: WINDROSE DIAGRAM 59

FIGURE 3.12: AMBIENT AIR QUALITY LOCATIONS AROUND 10 KM RADIUS 62

FIGURE 3.13: BAR DIAGRAM OF SUMMARY OF AAQ 1 – AAQ7 64

FIGURE 3.14: BAR DIAGRAM OF PARTICULATE MATTER $PM_{2.5}$ 65

FIGURE 3.15: BAR DIAGRAM OF PARTICULATE MATTER PM_{10} 65

FIGURE 3.16: BAR DIAGRAM OF GASEOUS POLLUTANT SO_2 66

FIGURE 3.17: BAR DIAGRAM OF GASEOUS POLLUTANT NO_x 66

FIGURE 3.20: NOISE MONITORING STATIONS AROUND 10 KM RADIUS 68

FIGURE 3.21: DAY TIME NOISE LEVELS IN CORE AND BUFFER ZONE 69

FIGURE 3.22: NIGHT TIME NOISE LEVELS IN CORE AND BUFFER ZONE 70

FIGURE 3.27: STRUCTURE MAP 91

FIGURE 4.1: AERMOD TERRAIN MAP 107

FIGURE 4.2: PREDICTED INCREMENTAL CONCENTRATION OF PM_{10} 107

FIGURE 4.3: PREDICTED INCREMENTAL CONCENTRATION OF $PM_{2.5}$ 108

FIGURE 4.4: PREDICTED INCREMENTAL CONCENTRATION OF NO_X 108

FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF SO_2 108

FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF FUGITIVE 108

FIGURE 4.6: GROUND VIBRATION PREDICTION 114

FIGURE 6.1: PROPOSED ENVIRONMENTAL MONITORING CELL 127

FIGURE 7.1: DISASTER MANAGEMENT TEAM LAYOUT 132

FIGURE 10.1: PERSONAL PROTECTIVE EQUIPMENT TO THE MINE WORKERS 161

1.INTRODUCTION

1.0 PREAMBLE

The project proponent Thiru.S. Saminathan applied for rough stone and Gravel quarry over an extent of 2.53.80 Ha in S.F.Nos. 206/1(Part)of Ekkattamapalayam Village, Perundurai Taluk, Erode District, Tamil Nadu State.

- Proponent applied for Rough stone and Gravel quarry lease on 14.11.2024
- Precise area communication letter was issued by the District Collector vide letter no. 980/Kanimam/2024 Dated: 11.03.2025
- The Mining plan has been prepared by the Qualified person and got approved by the Deputy Director vide letter no. 980/Kanimam/2024 Dated: 28.03.2025
- Previous Environmental Clearance granted vide Lr.No.DEIAA-ERD/F.No.16977/2016 EC.No.(12/17) Dated: 30.08.2017
- The mining plan has been approved for the quantity of 3,72,875m^3 of Rough stone and 13,924 m^3 of Gravel up to a depth of 57m bgl for the period of Five years.

As per the EIA Notification, 2006 and subsequent amendments and OM The proposal falls in the B1 Category (Cluster quarries - 2 proposal and 1 Exiting quarry forming Cluster Category {Total Extent of the Cluster is 6.46.48Ha}- Cluster area calculated as per MoEF& CC Notification S.O. 2269(E) Dated 1st July 2016).

- Proponent applied for Terms of Reference vide Proposal No. SIA/TN/MIN/542823/2025, Dated: 27.06.2025 and the ToR was Granted vide File No: 12370 ToR Identification No: TO25B0108TN5933563N Dated: 22.08.2025

Based on the ToR Baseline Monitoring study has been carried out for one season i.e., **October to December 2025** and this EIA/EMP report is prepared for considering cumulative impacts arising out of these projects, the Cumulative Environmental Impact Assessment study is undertaken, which is followed by preparation of a detailed Environmental Management Plan (EMP) to minimize those adverse impacts.

Environmental Impact Assessment (EIA) is the management tool to ensure the sustainable development and it is a process, used to identify the environmental, social and economic impacts of a project prior to decision-making. It is a decision-making tool, which guides the decision makers in taking appropriate decisions for any project. EIA systematically examines both beneficial and adverse consequences of the project and ensures that these impacts are taken into account during the project designing. It also reduces conflicts by promoting community participation, information, decision makers, and helps in developing the base for environmentally sound project.

1.1 PURPOSE OF THE REPORT

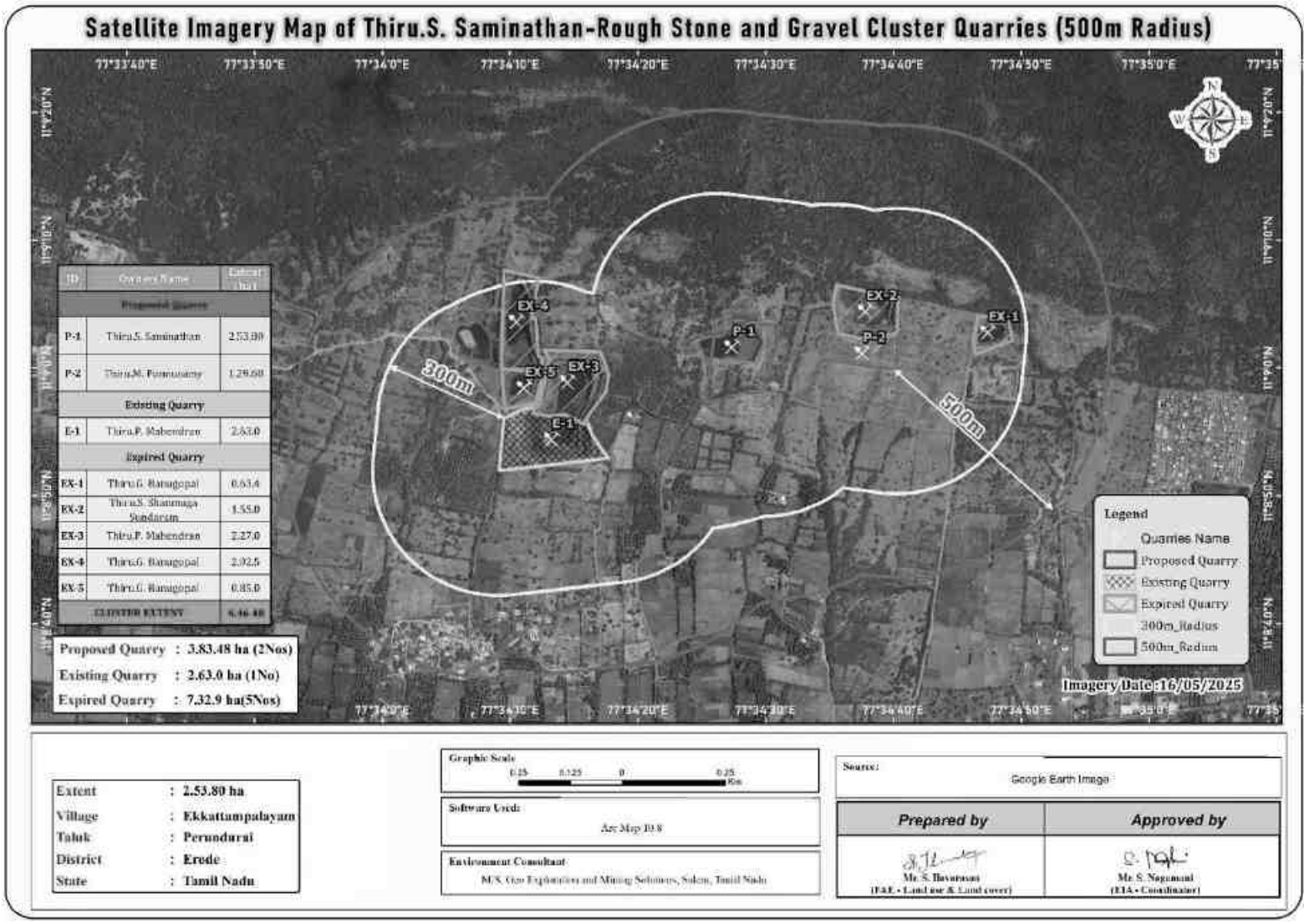
The Ministry of Environment and Forests, Govt. of India, through its EIA notification S.O. 1533(E) of 14th September 2006 and its subsequent amendments as per Gazette Notification S.O. 1886 of 20thApril 2022, Mining Projects are classified under two categories i.e. A (>250 Ha) and B (≤ 250 Ha), and Schematic Presentation of Requirements on Environmental Clearance of Minor Minerals including cluster situation in Appendix–XI.

Now, as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF& CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018 clarified the requirement for EIA, EMP and therefore, Public Consultation for all areas from 5 to 25 ha falling in Category B1 and appraised by SEAC/ SEIAA as well as for cluster situation.

The proposed project is categorized under category "B1" Activity 1(a) (mining lease area in cluster situation) and will be considered at SEIAA – TN after conducting Public Hearing and Submission of EIA/EMP Report for Grant of Environmental Clearance.

"Draft EIA report prepared on the basis of ToR Issued for carrying out public hearing for the grant of Environmental Clearance from SEIAA, Tamil Nadu"

FIGURE 1.1: SATELLITE IMAGERY CLUSTER QUARRIES



1.2 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

1.2.1 Identification of Project Proponent

TABLE 1.1: DETAILS OF PROJECT PROPONENT

Name of the Project Proponent	Thiru.S. Saminathan
Address	S/o. Sennimalaigounder, No. 19, S.K. Palayam, V. Ramalingapuram, Chennimalai, Perundurai Taluk, Erode District - 638 051.
Mobile	+91 79045 88455
Email	-
Status	Individual

1.2.2 Identification of Project

TABLE 1.2: SALIENT FEATURES OF THE PROPOSED PROJECT

Name of the Project	Thiru. S.Saminathan Rough stone and Gravel quarry		
S.F. No.	206/1(Part)		
Extent	2.53.80 Ha		
Village Taluk and District	Ekkattampalayam Village, Perundurai Taluk, Erode District		
Land Type	It is a Patta land, registered in the name of the applicant (Thiru.S.Saminathan), vide Patta No. 2470.		
Toposheet No	58 – E/12		
Latitude between	11°08'57.16"N to 11°09'03.83"N		
Longitude between	77°34'25.26"E to 77°34'31.09"E		
Previous Lease Details	Lessee: Thiru. S.Saminathan, Lease Period: 07.09.2017 to 06.09.2022 EC - Lr. No. DEIAA-ERD/F.No.16977/2016/EC.No.(12/17), Dated: 08.12.2018 CCR – EP/12.1/2025-26/SEIAA/146/TN/1792 Dated: 28.11.2025		
Existing Pit	16m (Avg)		
Elevation of the area	280m AMSL		
Revised Scheme of Mining Plan period	5 Years		
Proposed Depth of Mining	42m bgl		
	Rough Stone in m^3	**Weathered Rock in m^3**	**Gravel in m^3**
Geological Resources	11,02,200	56,040	18,486
Mineable Reserves	3,72,875	62,640	13,924
Year wise Production	3,72,875	62,640	13,924
Peak Production	87,300	38,000	5,900
Ultimate Pit Dimension	170m (L) X 138m (W) X 57m (D)		
Water Level in the region	63m-68m bgl		
Method of Mining	Opencast Mechanized Mining Method is being carried out with 5.0-meter vertical bench with a bench width is not less than the bench height		
Topography	The lease applied area is almost flat terrain. The area has gentle sloping towards South-eastern side and altitude of the area is 280m (max) above Mean Sea level. The area is covered by 2m thickness of Gravel and 5m		

	thickness of weathered rock and followed by massive Charnockite which is clearly inferred from the existing quarry pit.	
Machinery proposed	Jack Hammer	8 Nos
	Compressor	2 No
	Excavator with Bucket and Rock Breaker	2 Nos
	Trucks	4 Nos
	Water sprinkler	1 No
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	37 Nos	
Project Cost	Rs. 1,02,39,000/-	
CER Cost	Rs. 3,00,000/-	
Nearby Water Bodies	Odai	50m East
	Kuttai	90m West
	Lower Bhavani Canal	1.1km SW
	Stream	2.3km SW
	Noyyal River	3.2km SE
	Palatholuvu Kulam	5.2km NW
	Orathupalayam Dam	5.8km SW
Greenbelt Development Plan	Proposed to plant 1270 Nos of trees considering 500 Nos of trees/ Ha criteria The plantation will be developed around the project site and nearby village roads	
Proposed Water Requirement	2.0 KLD	
Nearest Habitation	650m – South West	
Nearest Reserve Forest	Chennimalai RF – 60m – North	
Nearest Wild Life Sanctuary	Vellode Bird Sanctuary – 13.5km – North East	

Source: Approved Mining & Land Documents.

1.3 BRIEF DESCRIPTION OF THE PROJECT

1.3.1 Nature and Size of the Project

The quarrying operation is proposed to be carried out by Opencast Mechanized Mining method with 5.0m bench height and 5.0m bench width by deploying Jack Hammer Drilling & Slurry Explosive during blasting. Hydraulic Excavator and tippers are used for Loading and transportation. Rock Breakers are deployed to avoid secondary blasting.

The peak production of Rough stone is 87,300m^3 maximum in a year (291m^3 per day/ 24 Tippers per day considering 12m^3 per load). The depth of the mining is 57m bgl.

1.3.2 Location of the Project

- The project sites located in Ekkattampalayam Village, Perundurai Taluk, Erode District, Tamil Nadu State.
- The lease applied area is located about 26km Southwest side of Erode, 14km Southwest side of Perundurai town and 3km Nothwestern side of Ekkattampalayam Village.

	35.0km		6.5km		1.0km	
Erode	⟶	Perundurai	⟶	Ekkattampalayam	⟶	Lease applied area
	SW		South		NW	

FIGURE 1.2: LOCATION MAP OF THE PROJECT SITE

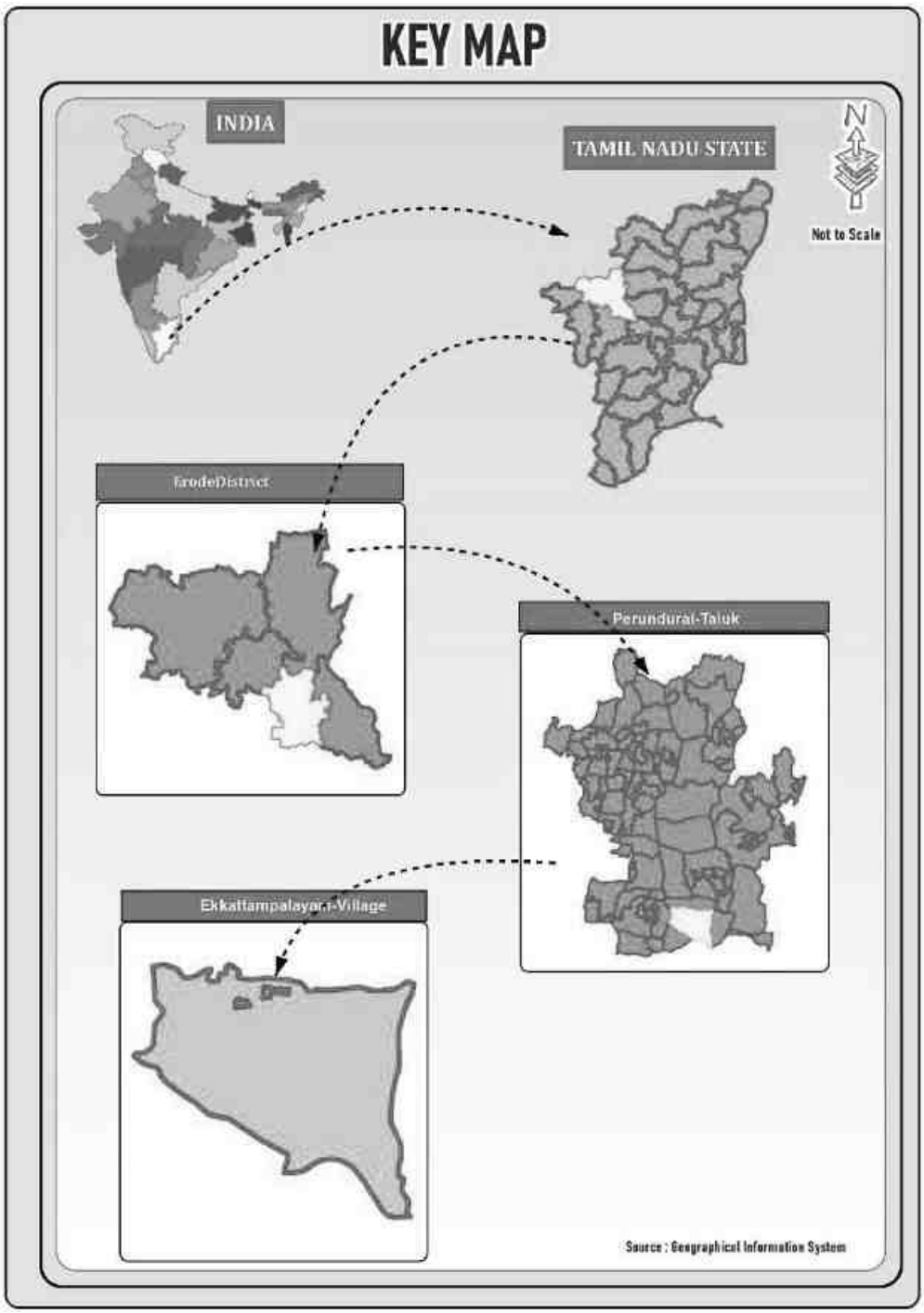


FIGURE 1.3: TOPOSHEET MAP OF THE STUDY AREA 10 KM RADIUS

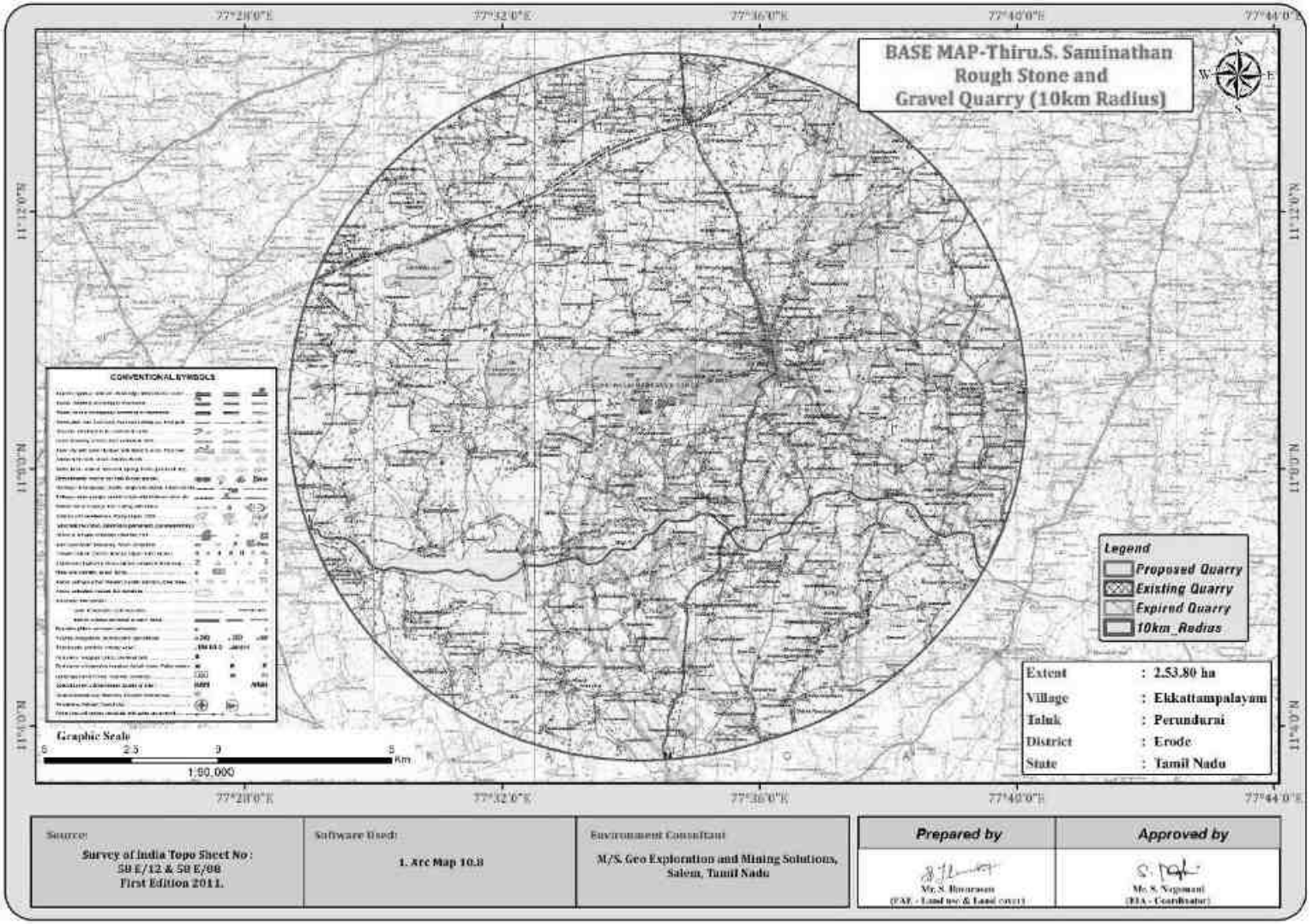
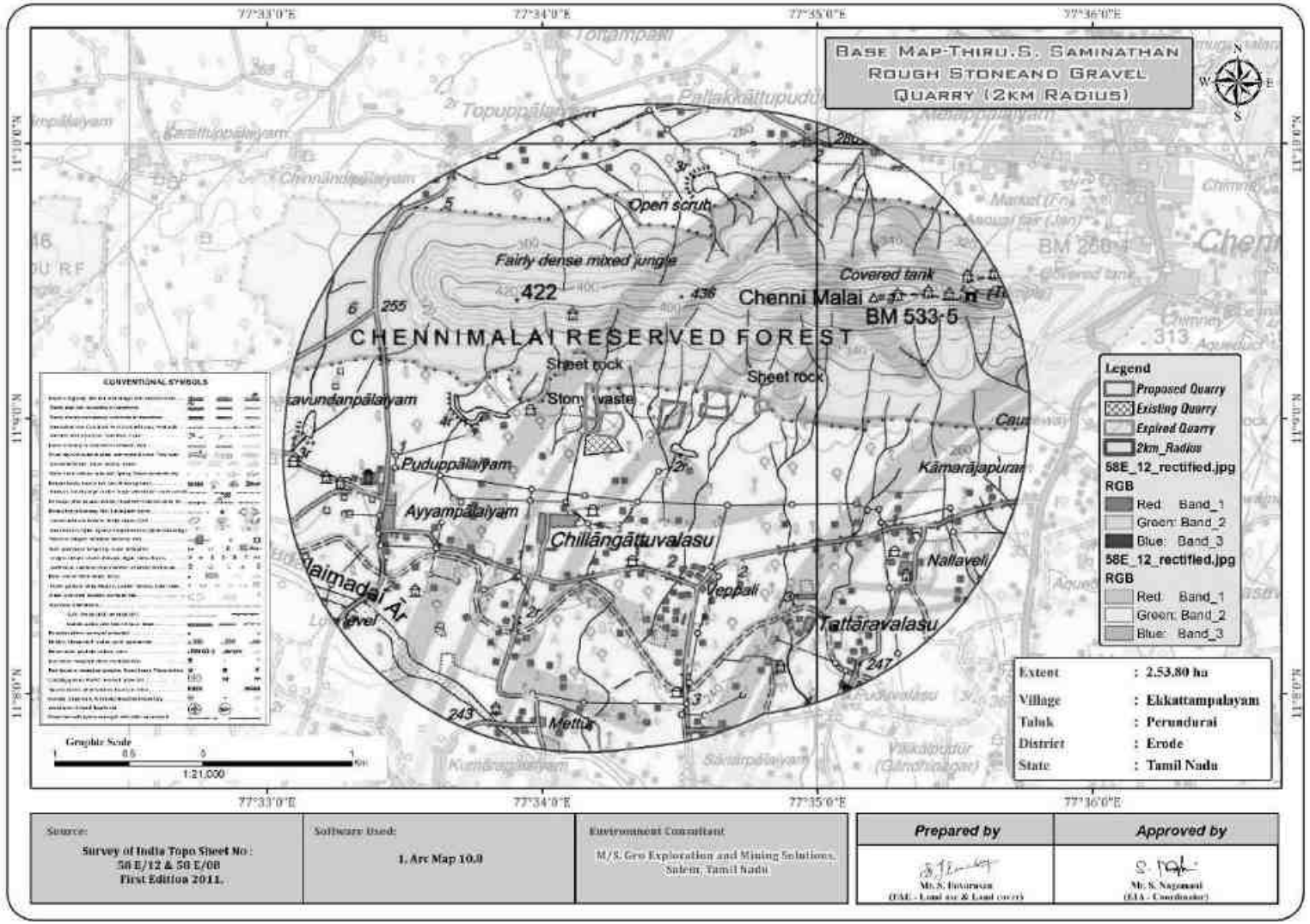


FIGURE 1.4: TOPOSHEET MAP OF THE STUDY AREA 2KM RADIUS



1.4 ENVIRONMENTAL CLEARANCE

The Environmental Clearance process for the project will comprise of four stages. These stages in sequential order are given below: -

- Screening,
- Scoping
- Public consultation &
- Appraisal

SCREENING

- Proponent applied for Rough stone and Gravel quarry lease on 14.11.2024
- Precise area communication letter was issued by the Assistant Director, Department of Geology and Mining, Erode vide letter no. 980/Kanimam/2024 Dated: 11.03.2025
- The Mining plan has been prepared by the Qualified person and got approved by the Assistant Director, Department of Geology and Mining, Erode vide letter no. 980/Kanimam/2024 Dated: 28.03.2025
- Previous Environmental Clearance granted vide Lr.No.DEIAA-ERD/F.No.16977/2016 EC.No.(12/17) Dated: 30.08.2017
- The mining plan has been approved for the quantity of 3,72,875m^3 of Rough stone and 13,924 m^3 of Gravel up to a depth of 57m bgl for the period of Five years.
- The proposed project falls under "B1" Category as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF& CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018

SCOPING:

- Proponent applied for Terms of Reference vide Proposal No. SIA/TN/MIN/542823/2025, Dated: 27.06.2025
- The proposal was placed in 598th SEAC meeting held on 28.07.2025 and the committee recommended for issue of ToR.
- The proposal was considered in 871st SEIAA meeting held on 13.08.2025 and issued ToR vide File No: 12370 ToR Identification No: TO25B0108TN5933563N Dated: 22.08.2025

PUBLIC CONSULTATION

Application to The Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site or in its close proximity in the district is submitted along with this Draft EIA/ EMP Report and the outcome of public hearing proceedings will be detailed in the Final EIA/EMP Report.

APPRAISAL –

Appraisal is the detailed scrutiny by the State Expert Appraisal Committee (SEAC) of the application and other documents like the final EIA & EMP Report, outcome of the Public Consultations including Public Hearing Proceedings, submitted by the proponent to the regulatory authority concerned for grant of environmental clearance.

1.5 TERMS OF REFERENCE (ToR)

The ToR was issued by the SEIAA vide File No: 12370 ToR Identification No: TO25B0108TN5933563N Dated: 22.08.2025. The Details of the ToR Compliance is given in the Page No. i-xvii

1.6 POST ENVIRONMENT CLEARANCE MONITORING

The proponent shall submit a half-yearly compliance report in respect of stipulated Environmental Clearance terms and conditions to MoEF& CC Regional Office & SEIAA after grant of EC on 1st June and 1st December of each calendar year as per MoEF& CC Notification S.O. 5845 (E) Dated: 26.11.2018.

1.7 GENERIC STRUCTURE OF EIA DOCUMENT

The overall contents of the EIA report follow the list of contents prescribed in the EIA Notification 2006 and the "Environmental Impact Assessment Guidance Manual for Mining of Minerals" published by MoEF& CC.

1.8 THE SCOPE OF THE STUDY

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the Post monsoon season (October 2025 to December 2025) for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suggest suitable mitigation measures for likely adverse impacts due to the proposed project.

TABLE 1.3: ENVIRONMENT ATTRIBUTES

Sl.No.	Attributes	Parameters	Source and Frequency
1	Ambient Air Quality	PM_{10}, PM $_{2.5}$, SO_2, NO_2	Continuous 24-hourly samples twice a week for three months at 7 locations (2 Core & 5 Buffer)
2	Meteorology	Wind speed and direction, temperature, relative humidity and rainfall	Near project site continuous for three months with hourly recording and from secondary sources of IMD station
3	Water quality	Physical, Chemical and Bacteriological parameters	Grab samples were collected at 6 locations – 2 Surface water and 4 Ground water samples; once during study period.

4	Ecology	Existing terrestrial and aquatic flora and fauna within 10 km radius circle.	Limited primary survey and secondary data was collected from the Forest department.
5	Noise levels	Noise levels in dB(A)	7 Locations – data monitored once for 24 hours during EIA study
6	Soil Characteristics	Physical and Chemical Parameters	Once at 6 locations during study period
7	Land use	Existing land use for different categories	Based on Survey of India topographical sheet and satellite imagery and primary survey.
8	Socio-Economic Aspects	Socio-economic and demographic characteristics, worker characteristics	Based on primary survey and secondary sources data like census of India 2011.
9	Hydrology	Drainage pattern of the area, nature of streams, aquifer characteristics, recharge and discharge areas	Based on data collected from secondary sources as well as hydro-geology study report prepared.
10	Risk assessment and Disaster Management Plan	Identify areas where disaster can occur by fires and explosions and release of toxic substances	Based on the findings of Risk analysis done for the risk associated with mining.

Source: Field Monitoring Data

1.8.1 Regulatory Compliance & Applicable Laws/Regulations for all Proposed Quarries

- Application for Quarrying Lease as per Tamil Nadu Minor Mineral Concession Rules, 1959.
- Obtained Precise Area Communication Letter asper Tamil Nadu Minor Mineral Concession Rules, 1959 for Preparation of Mining Plan and obtaining Environmental Clearance.
- The Mining Plan has been approved under Rule 41 & 42 as amended of Tamil Nadu Minor Mineral Concession Rules, 1959.
- Environment Protection Act,1986
- EIA Notification, 2006
- ToR vide File No: 12370 ToR Identification No: TO25B0108TN5933563N Dated: 22.08.2025

****

2. PROJECT DESCRIPTION

2.0 GENERAL

The Proposed Rough Stone and Gravel Quarry requires Environmental Clearance. There are 2 proposed, and 1 existing quarry forming a cluster; calculated as per MoEF& CC Notification S.O. 2269(E) Dated 1st July 2016 and the total extent of cluster is 6.46.48ha.

As the extent of cluster are more than 5 ha, the proposal falls under B1 Category as per the Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF& CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018, and requirement for EIA, EMP and Public Consultation for obtaining Environmental Clearance.

2.1 DESCRIPTION OF THE PROJECT

The proposed project is site specific and there is no additional area required for this project. There is no effluent generation/discharge from this project. Method of mining is opencast mechanized method involving splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers and rock breakers to avoid secondary blasting.

2.2 LOCATION OF THE PROJECT

- The project sites located in Ekkattampalayam Village, Perundurai Taluk, Erode District, Tamil Nadu State.
- The lease applied area is located about 26km Southwest side of Erode, 14km Southwest side of Perundurai town and 3km Nothwestern side of Ekkattampalayam Village.

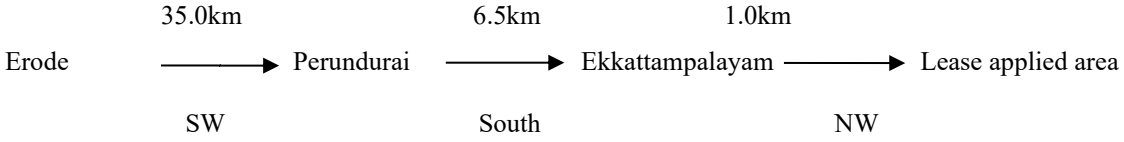


TABLE 2.1: SITE CONNECTIVITY

Nearest Roadway	National Highway – (NH-544) Coimbatore to Salem – 11.8km – NW State Highway – (SH-96) Perundurai – Kangayam 2.5km – East
Nearest Village	Chennimalai – 940m – East
Nearest Town	Chennimalai – 3.0km – North East
Nearest Railway Station	Vijayamangalam Railway station – 7.6km – North West
Nearest Airport	Coimbatore Airport – 60.0km – South West
Seaport	Thoothukudi Seaport – 272km – South East

Source: Survey of India Toposheet

TABLE 2.2: CO-ORDINATES– PROJECT BOUNDARY

Corner Nos.	Latitude	Longitude
1	11°08'57.16"N	77°34'25.26"E
2	11°09'03.83"N	77°34'26.19"E
3	11°09'03.21"N	77°34'31.09"E
4	11°08'57.94"N	77°34'29.75"E
5	11°08'57.96"N	77°34'29.58"E
6	11°08'57.93"N	77°34'28.07"E

Source: Approved Mining Plan

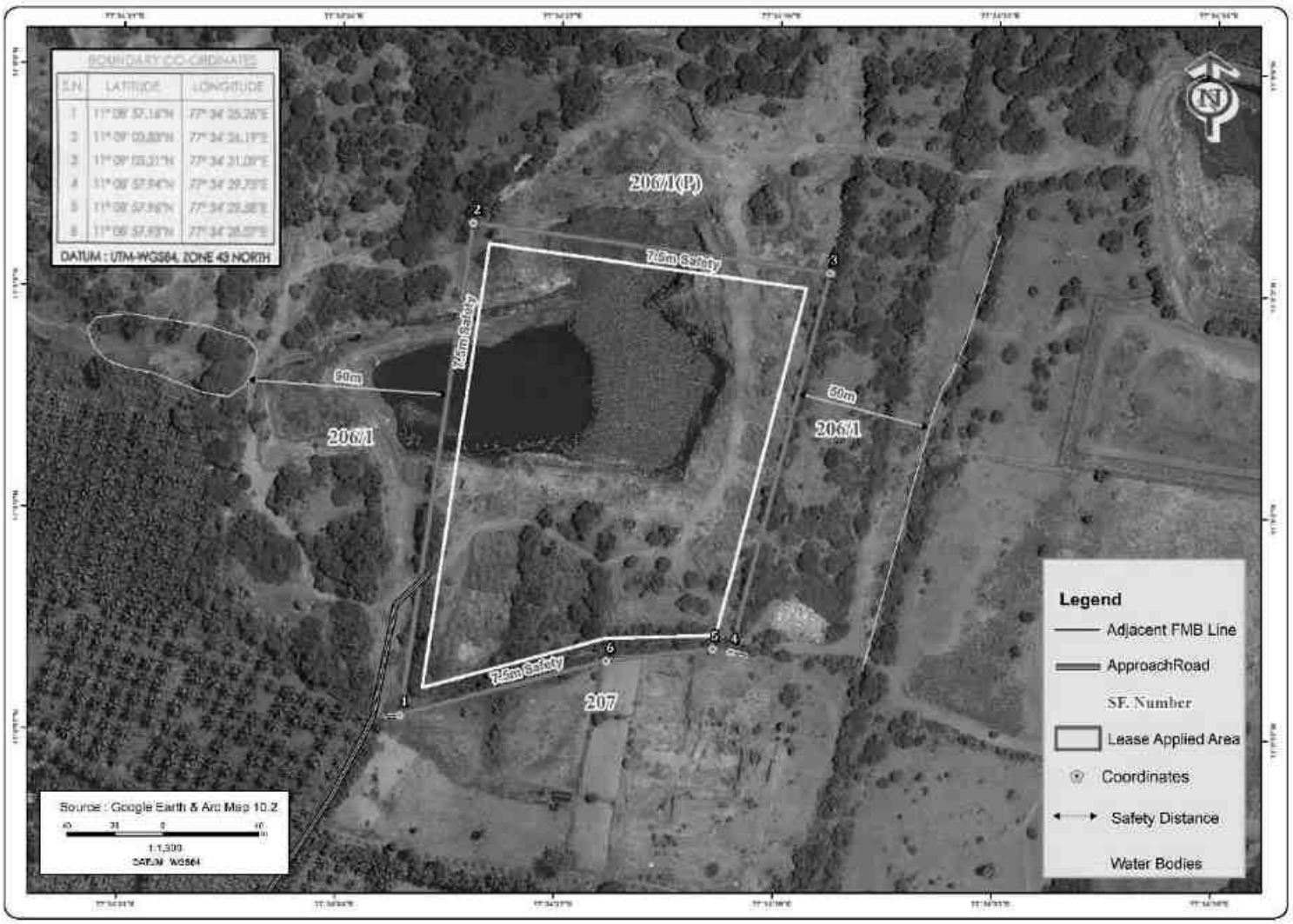
FIGURE 2.1: TOPOGRAPHICAL VIEW OF PROJECT AREA



FIGURE 2.1-A: FENCING, GARLAND DRAIN AND GREEN BELT PHOTOGRAPHS

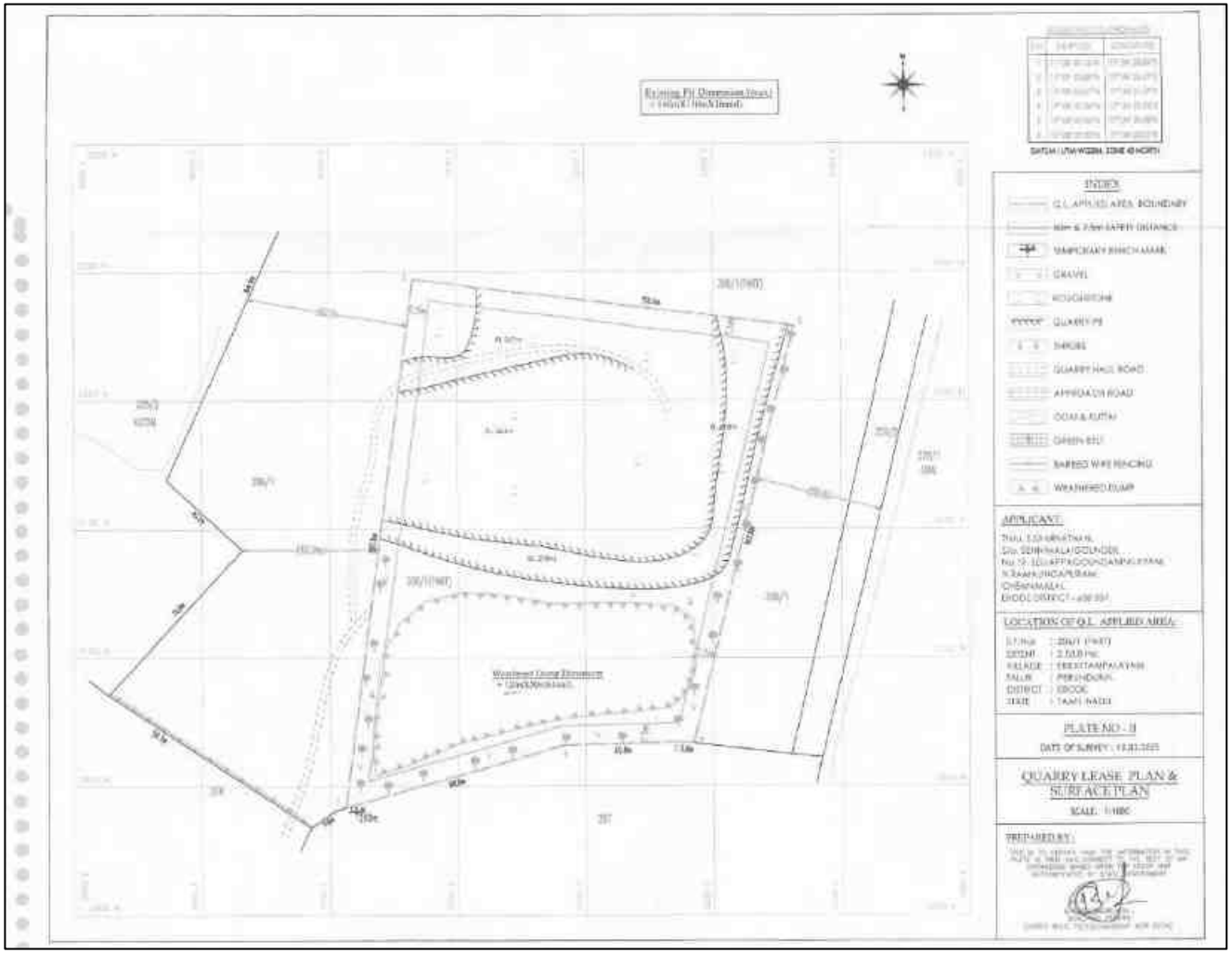


FIGURE 2.2: GOOGLE IMAGE OF THE PROJECT AREA



Source: Google Earth Imagery

FIGURE 2.3: QUARRY LEASE PLAN / SURFACE PLAN



Source: Approved Mining Plan

FIGURE 2.4: VILLAGE MAP SUPERIMPOSED ON GOOGLE EARTH IMAGE

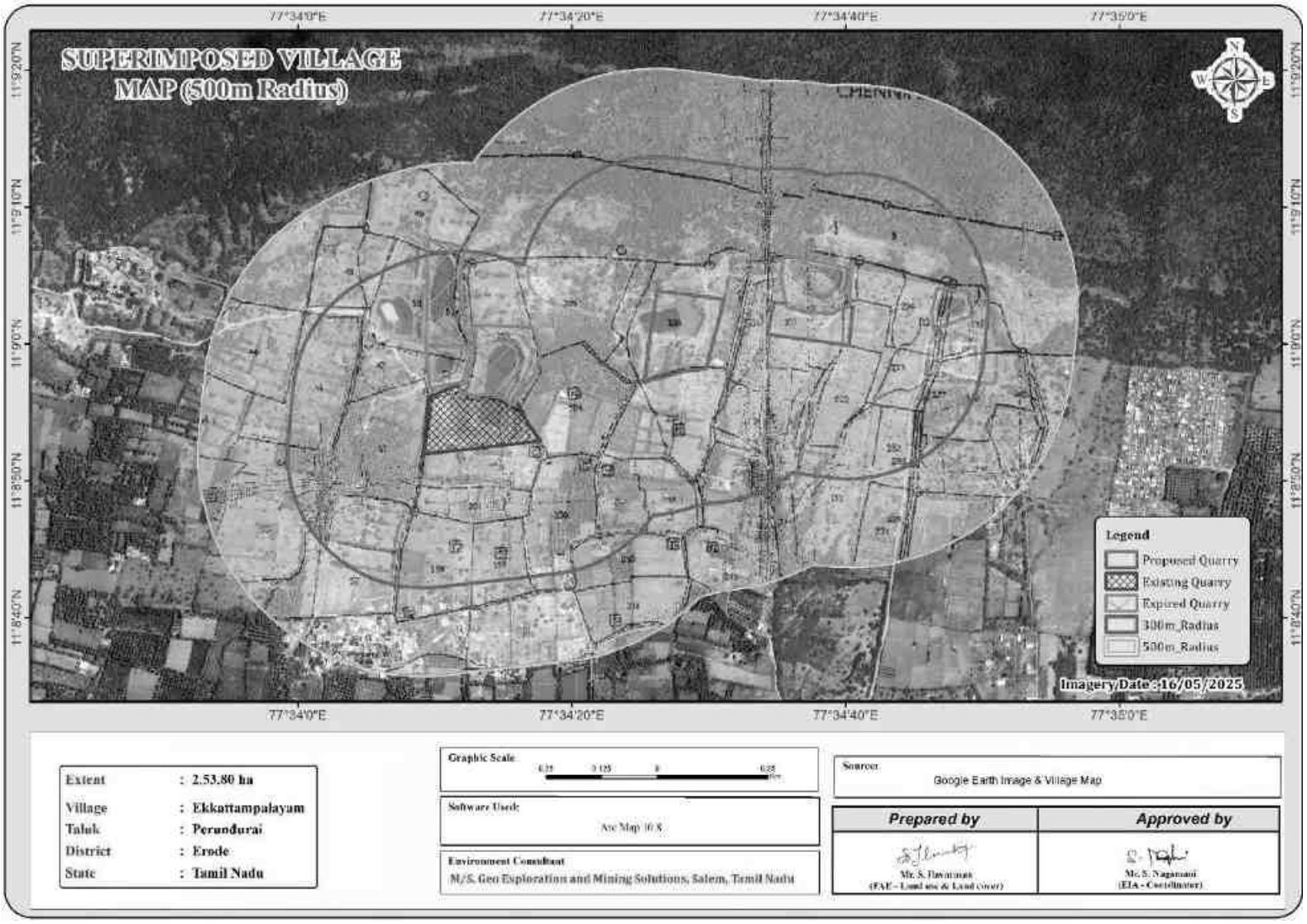


FIGURE 2.5: IMAGE SHOWING SURFACE FEATURES AROUND 10 KM RADIUS

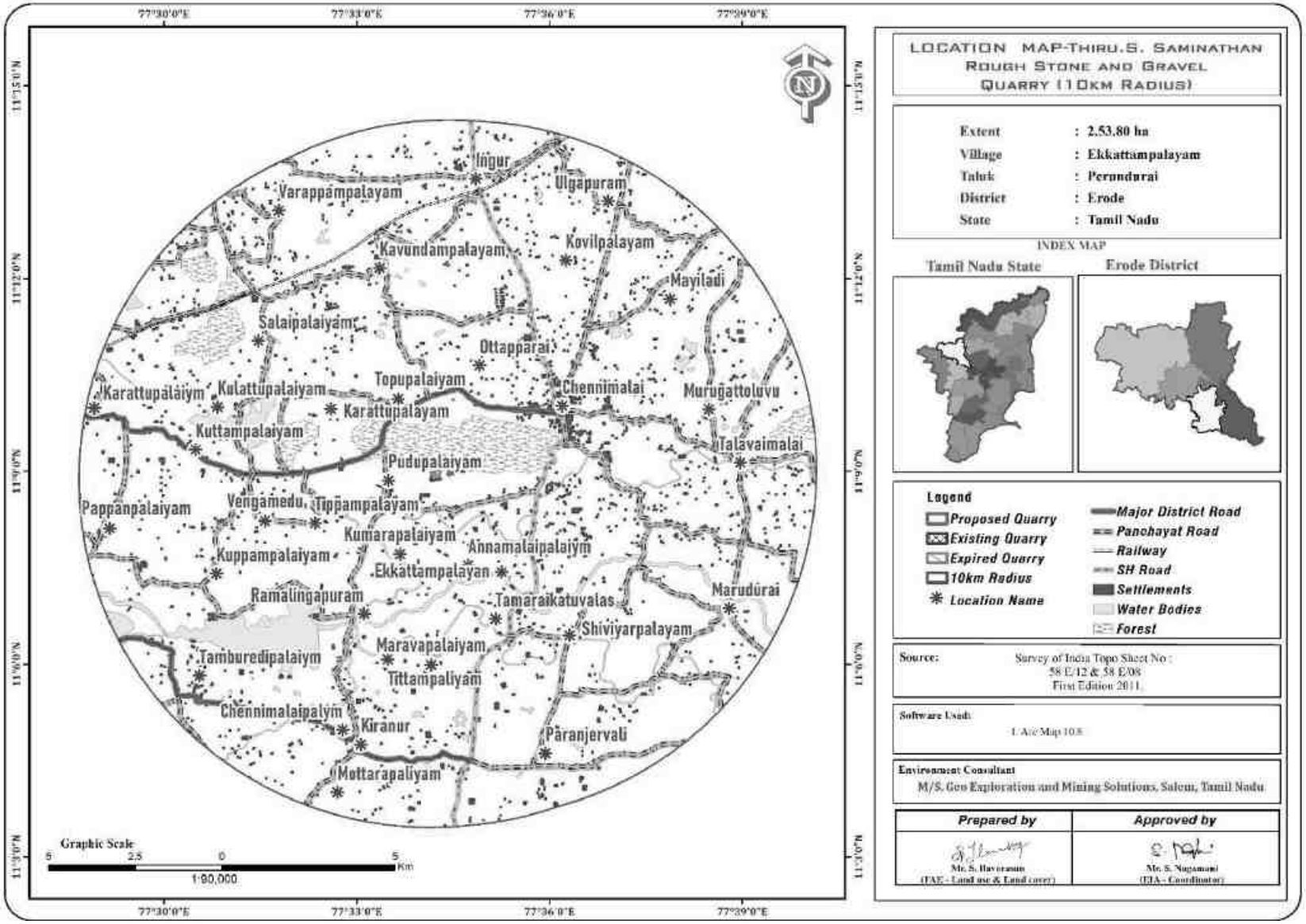


FIGURE 2.6: IMAGE SHOWING SURFACE FEATURES AROUND 5 KM RADIUS

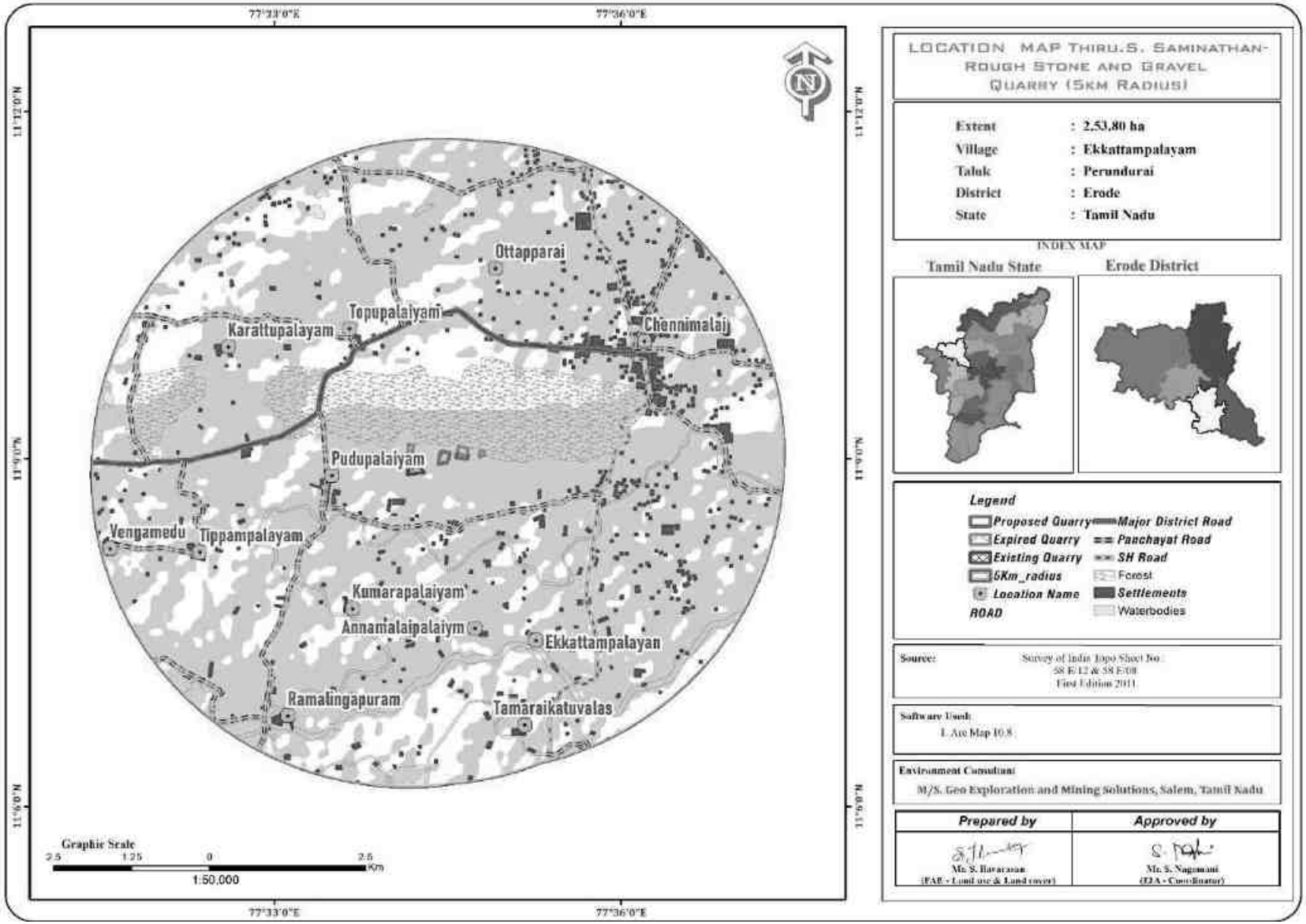
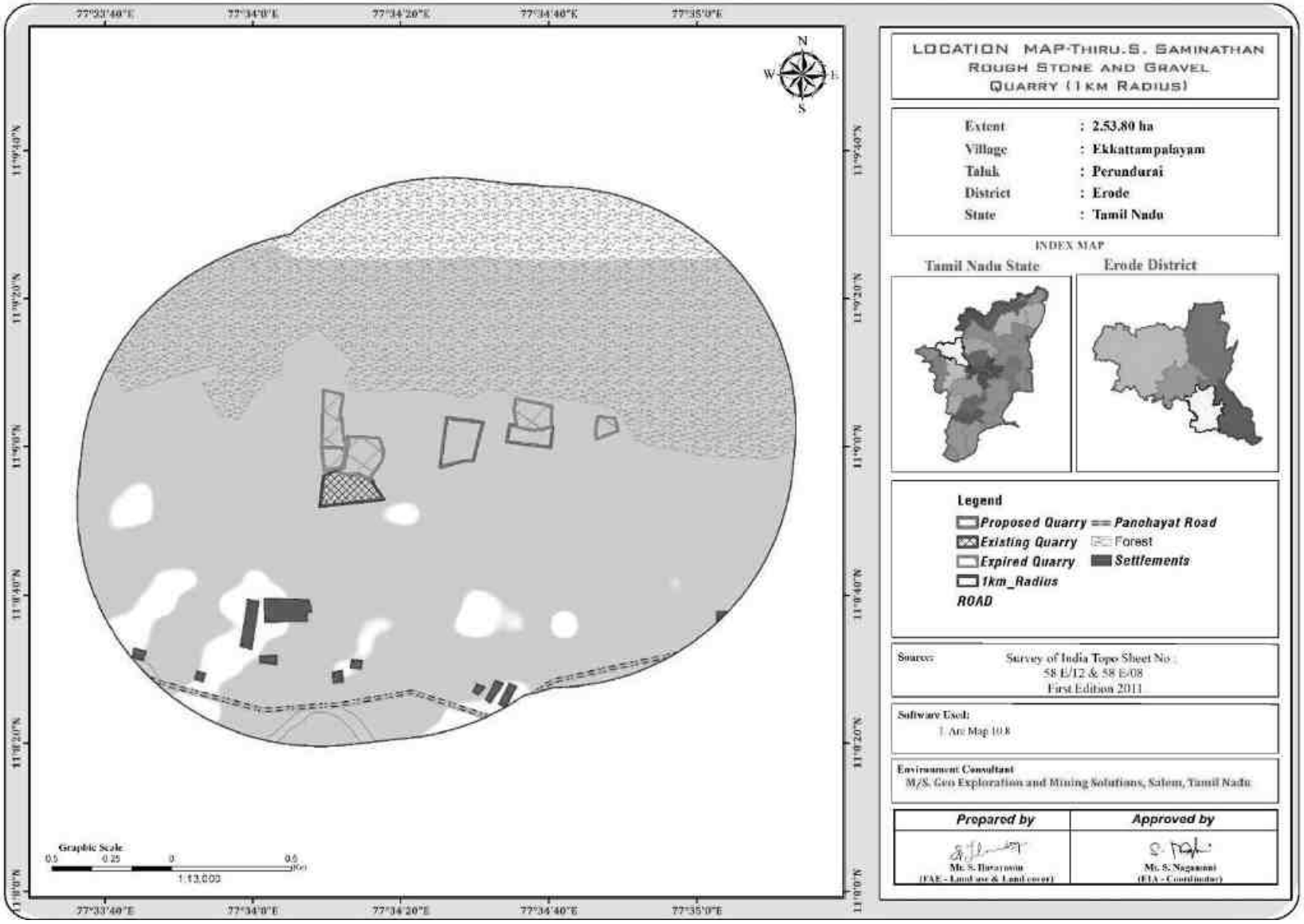


FIGURE 2.7: IMAGE SHOWING SURFACE FEATURES AROUND 1 KM RADIUS



2.2.1 Project Area

- The project is specific site &no beneficiation or processing in the project site.
- There is no forest land involved in the proposed projects and is devoid of major vegetation and trees.

TABLE 2.3: LAND USE PATTERN

Description	Present area (Ha)	Area at the end of Lease period (Ha)
Area Under Quarrying	1.51.00	2.25.00
Dump	0.60.00	Nil
Site Services	Nil*	0.01.00
Roads	0.02.00	0.02.00
Green Belt	0.25.00	0.25.00
Unutilized Area	0.15.80	0.00.80
Grand Total	**2.53.80**	**2.53.80**

Source: Approved Mining Plan

TABLE 2.4: PRODUCTION DETAILS

PARTICULARS	DETAILS		
	Rough Stone in m^3	Weathered Rock in m^3	Gravel in m^3
Geological Resources	11,02,200	56,040	18,486
Mineable Reserves	3,72,875	62,640*	13,924
Year wise Production	3,72,875	62,640*	13,924
Peak Production	87,300	38,000	5,900
Revised Scheme of Mining Period	5 Years		
Number of Working Days	300 Days		
Production per day	291		
No of Lorry loads	24		
Total Depth of Mining	57m BGL		

*-Including Dump

Source: Approved mining plan.

2.3 GEOLOGY

The major part of the district is covered by metamorphosed crystalline rocks of the Charnockite Group and the Migmatite Complex of Archaean age. The area where the Charnockite Group of rocks is spread over comprises charnockite, pyroxene granulite, magnetite quartzites and younger basic dykes intruding into them.

The Migmatite Complex comprising biotite gneisses, agmatitic gneisses, sub-augen gneiss, quartzo feldspathic gneisses and gneissic granites with pink permeation

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale of the Charnockite body is N30°E – S30°W with dipping towards SE60º.

The general geological sequences of the rocks in this area are given below:

AGE **FORMATION**

Recent - Quaternary Formation (Gravel)

---------Unconformity----------

Archaean - Charnockite

Peninsular Gneiss Complex

2.3.3 Hydrogeology

Erode district is underlain entirely by Archaean Crystalline formations with Recent alluvial deposits occurring along the river and streams courses. Weathered, fissured and fractured crystalline rock sand their alluvial deposits constitute the important aquifer systems in the district. The hard consolidated crystalline rocks of Archaean age represent weathered, fissured and fractured formations of gneisses, granites, charnockites and other associated rocks. The Specific capacity of large diameter wells tested in crystalline rocks from 31 to 200 lpm / m. of drawdown. The yield characteristics of wells vary considerably depending on the topographic set-up, lithology and the degree of weathering.

TABLE 2.5: GROUND WATER LEVEL VARIATIONS OF ERODE DISTRICT

Jan 2020	May 2020	Jan 2021	May 2021	Jan 2022	May 2022	Jan 2023	May 2023	Jan 2024	May 2024	5 Years Pre-Monsoon Average	5Years Post Monsoon Average
9.10	14.05	10.55	13.54	5.36	10.66	3.38	6.47	6.08	12.97	11.54	6.89

Source: https://www.twadboard.tn.gov.in/content/erode

FIGURE 2.8: REGIONAL GEOLOGY MAP

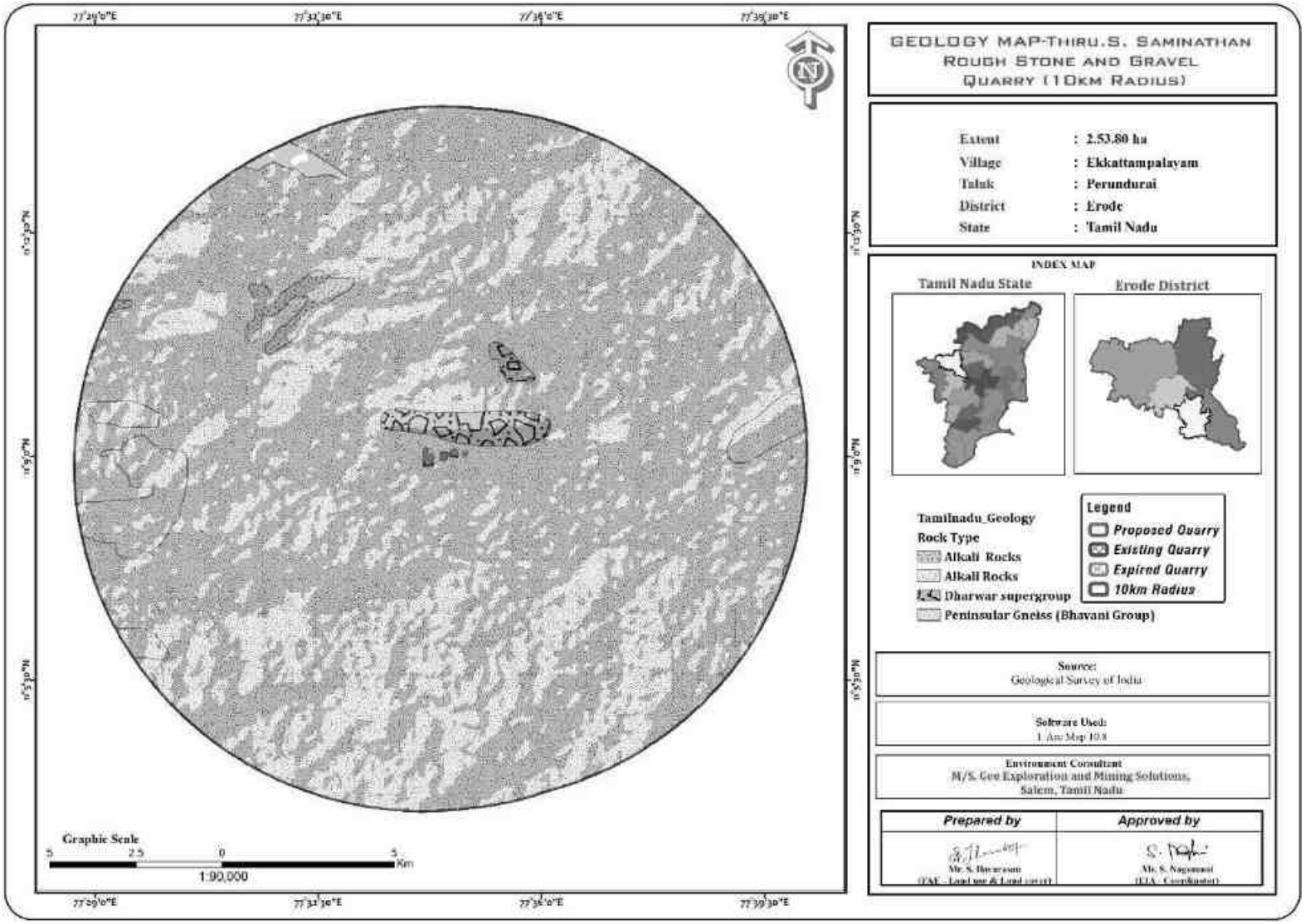
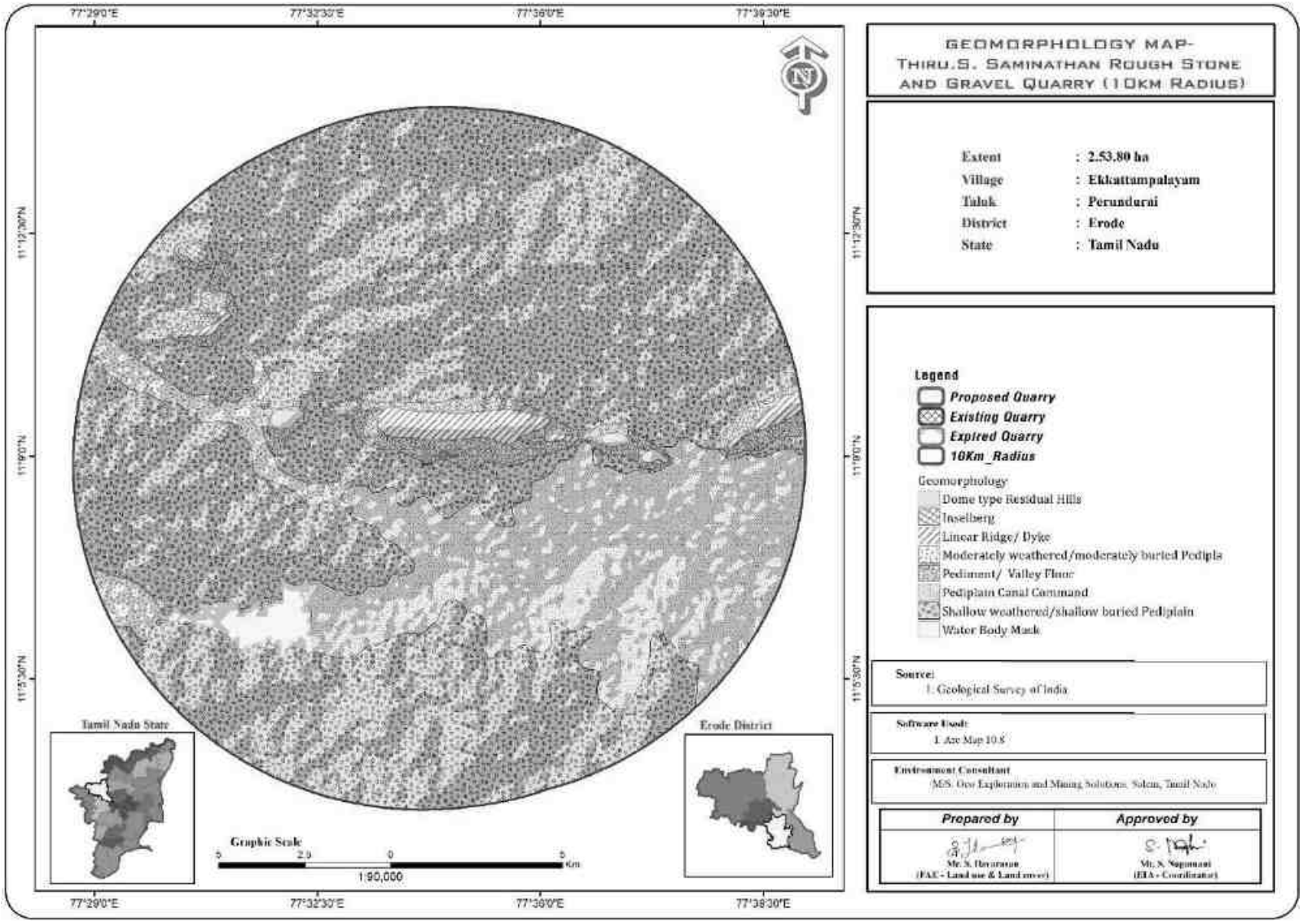


FIGURE 2.9: GEOMORPHOLOGY MAP



2.4 RESOURCES AND RESERVES

The Resources and Reserves of Rough Stone and Gravel were calculated based on Cross-Section Method by plotting sections to cover the maximum lease area. Based on the availability of Geological Resources the Mineable Reserves are calculated by considering excavation system of bench formation and leaving essential safety distance of 7.5 m (Safety Barrier all around the applied area) and safety distance as per precise area communication letter and deducting the locked up reserves during bench formation (Also called as Bench Loss) and the Mineable Reserves is calculated considering there is no waste / overburden / side burden (100% Recovery Anticipated).

TABLE 2.6: RESOURCES AND RESERVES

Description	Rough Stone in m^3	Weathered Rock in m^3	Gravel in m^3
Geological Resource in m^3	11,02,200	56,040	18,486
Mineable Resource in m^3	3,72,875	62,640 (Including Dump)	13,924

Source: Approved Mining Plan

TABLE 2.7: YEAR-WISE PRODUCTION PLAN

Years	Rough stone in m^3	Weathered Rock in m^3	Gravel in m^3
I	77,550	38,000	3,540
II	87,300	14,000	5,900
III	82,325	10,640	4,484
IV	71,405	-	-
V	54,295	-	-
Total	**3,72,875**	**62,640**	**13,924**

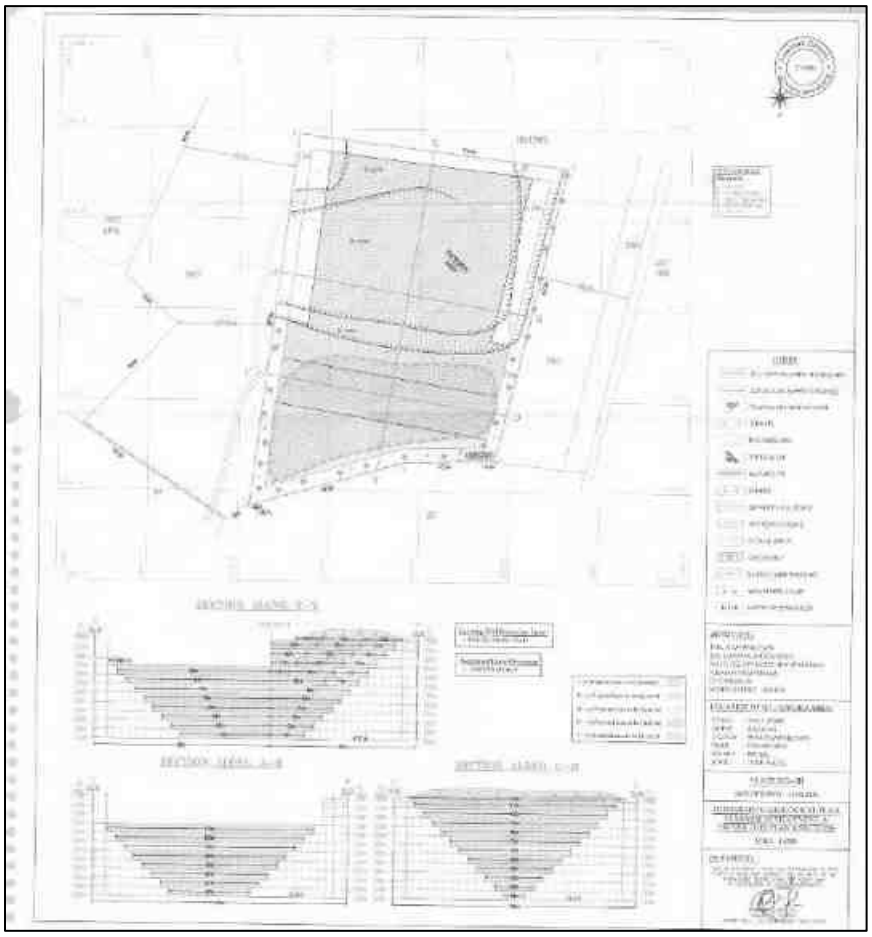
Source: Approved Mining Plan

Disposal of Waste

There is no Waste anticipated during this plan period hence, disposal of waste does not arise. The overburden in the form of Gravel and Weathered rock are already removed during the previous

lease period. The excavated rough stone (100%) will be directly loaded into Trucks to the needy customers.

FIGURE 2.10: TOPOGRAPHY, GEOLOGICAL, YEAR-WISE DEVELOPMENT PRODUCTION PLAN AND SECTIONS



Source: Approved Mining Plan

Conceptual Mining Plan/ Final Mine Closure Plan

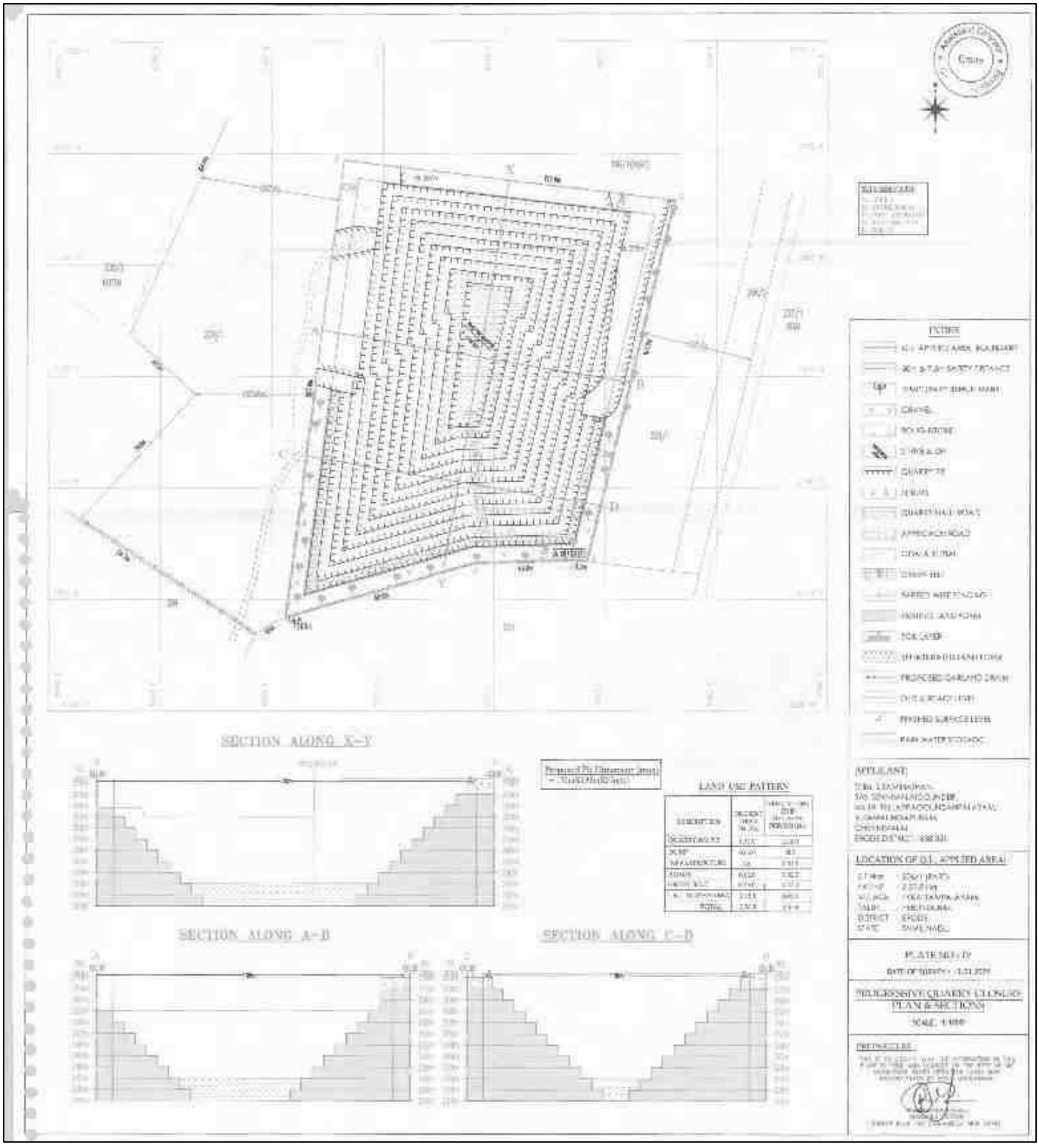
The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.

TABLE 2.8: ULTIMATE PIT DIMENSION

Length (Max) (m)	Width (Max) (m)	Depth (Max)
170	138	57m

Source: Approved Mining Plan

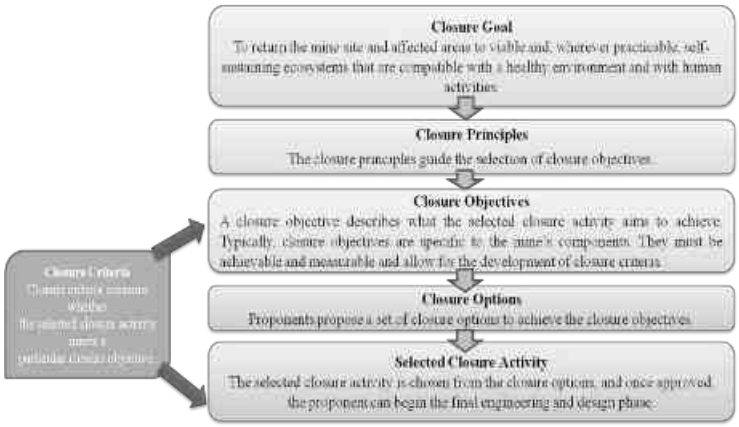
FIGURE 2.11: CLOSURE PLAN AND SECTIONS



Source: Approved Mining Plan

- At the end of life of mine, the excavated mine pit / void will act as artificial reservoir for collecting rain water and helps to meet out the demand or crises during drought season.
- After mine closure the greenbelt developed along the safety barrier and top benches and temporary water reservoir will enhance the ecosystem
- Mine Closure is a process of returning a disturbed site to its natural state or which prepares it for other productive uses that prevents or minimizes any adverse effects on the environment or threats to human health and safety.
- The principal closure objectives are for rehabilitated mines to be physically safe to humans and animals, geo-technically stable, geo-chemically non-polluting/ non-contaminating, and capable of sustaining an agreed post-mining land use.

Closure Objectives –



- Access to be limited, for the safety of humans and wildlife.
- The open pit mine workings and pit boundary are physically and geo-technically stable.
- Water quality in flooded pits is safe for humans, aquatic life, and wildlife.
- Discharge of contaminated drainage has been minimized and controlled.
- Original or desired new surface drainage patterns have been established.
- For flooded pits, in-pit aquatic habitat has been established where practical and feasible.
- Emergency access and escape routes from flooded pits for humans and wildlife are in place.
- Dust levels are safe for people, vegetation, aquatic life, and wildlife.

Closure Planning & Options Considerations in Mine Design –

- The closure of mine is well planned at the initial stage of planning & design consideration by the internal and external stake holders
- Construction of 2m height bund all along the mine pit boundary and ensure its stability all time & construction of garland drain along the natural slope to avoid sliding and collection of soil to the pit & surface runoff during rainfall
- After complete exploitation of mineral, the lowest bench foot wall side will be maintained as plain surface without any sump pits to avoid any accidents

- All the sharp edges will be dressed to smoother face before the closure of mine and ensure no loose debris on hanging wall side
- The project proponent as a part of social responsibilities assures to supply the stored mine pit water to the nearby villages after effective treatment process as per the standards of TNPCB & TWAD
- Native species will be planted in 3 row patterns on the boundary barriers and 1st bench, a full-time sentry will be appointed at the gate to prevent inherent entry of public & cattle.
- The access road to the quarry will be cut-off immediately after the closure
- The layout design shall be prepared and get approved from Department of Geology and Mining.
- The proponent is instructed to construct as per the layout approved
- Physical and chemical stability of structures left in place at the site, the natural rehabilitation of a biologically diverse, stable environment, the ultimate land use is optimized and is compatible with the surrounding area and the requirements of the local community, and taking the needs of the local community into account and minimizing the socio-economic impact of closure
- There will be a positive change in the environmental and ecology due to the mine closure

2.5 METHOD OF MINING

Opencast Mechanized Mining Method is proposed by formation of 5.0-meterheight bench with a bench width not less than the bench height. Bench slope will be maintained as 60^0.

The Rough Stone is a batholith formation and the splitting of rock mass of considerable volume from the parent rock mass will be carried out by deploying jackhammer drilling and Slurry Explosives will be used for blasting. Hydraulic Excavator attached with rock breaker/ bucket with tipper combination will be involved for the excavation/breaking of rough stone after blasting. Hydraulic excavators attached with bucket unit will be deployed for loading the Rough Stone into the tippers and then the stone is transported from pithead to the nearby crushers.

It is recommended to obtain necessary statutory permission from the Department of Geology and Mining for Using Heavy Earth Moving Machineries, Blasting and appointment of Mines Manager etc.,

2.5.1 Drilling & Blasting Parameters

Drilling will be carried out using Jack hammer and compressor, the depth of the hole will be maximum 1.5m Drilling & Blasting will be carried out as per parameters given below: -

Spacing	–	1.2m
Burden	–	1.0 m
Depth of hole	–	1.5 m
Charge per hole	–	0.50 – 0.75kg
Powder factor	–	6.0 tonnes/kg
Diameter of hole	–	32 mm
Production Capacity	=	127m^3 of Rough stone per day
Spacing X Burden X Depth	=	1.2m X 1.0m X 1.5m = 1.8m^3
		= 1.8m^3 X 2.75 (Bulk Density) = 4.95Ts per hole

hence for the production of 291m^3 (803Ts) = 134 Nos of holes to be drilled per day

Type of Explosives to be used –

Slurry explosives (An explosive material containing substantial portions of a liquid, oxidizers, and fuel, plus a thickener), NONEL / Electric Detonator &Detonating Fuse.

Storage of Explosives

No proposal for storage of explosives within the project area, the project proponent will made agreement with authorized explosives agencies for carrying out blasting activities and competent person as per DGMS guidelines will be employed for safety and supervision of overall quarrying activities.

The explosives will be sourced from the blasting agency on daily basis and the blasting will be carried out under the supervision of competent qualified Blaster and it will be ensured that there shall be no balance of explosive stock; any balance stock will be taken back by the supplier.

2.5.2 Extent of Mechanization

TABLE 2.9: PROPOSED MACHINERY DEPLOYMENT

S.NO.	TYPE	NOS	SIZE/CAPACITY	MOTIVE POWER
1	Jack hammer	8	1.2m to 2.0m	Compressed air
2	Compressor	2	400psi	Diesel Drive
3	Excavator with Bucket and Rock Breaker	2	300 HP	Diesel Drive
4	Trucks	4	30 Tonnes	Diesel Drive
5	Water Sprinkler	1	6000 ltrs	Diesel Drive

Source: Approved Mining Plan

2.6 GENERAL FEATURES

2.6.1 Existing Infrastructures

Infrastructures like Mine office, Temporary Rest shelters for workers, Latrine and Urinal Facilities are already constructed as per the Mine Rule after the grant of quarry lease in all the proposed quarries.

2.6.2 Drainage Pattern

There are no streams, canals or water bodies crossing within the project area. The drainage pattern of the area is dendritic – sub dendritic.

2.6.3 Traffic Density

The traffic survey conducted based on the transportation route of material, the Rough Stone is proposed to be transported mainly through

Traffic density measurements were performed at two locations and given below in table no. 2.10.

Traffic density measurement was made continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., Heavy motor vehicles, light motor vehicles and two/three wheelers. As traffic densities on the roads are high, two skilled persons were deployed simultaneously at each station during each shift- one person on either direction for counting the traffic. At the end of each hour, fresh counting and recording was undertaken.

TABLE.2.10: TRAFFIC SURVEY LOCATIONS

Station Code	Road Name	Distance and Direction	Type of Road
TS-1	Veppali-Iyyampalayam Panchayat Road	1.0km -SE	Panchayat Road
TS-2	Chennimalai-Uthukuli-District Road	2.2km -NW	District Road

Source: On-site monitoring by GEMS FAE & TM

TABLE 2.11: EXISTING TRAFFIC VOLUME

Station code	HMV		LMV		2/3 Wheelers		Total PCU
	No	PCU	No	PCU	No	PCU	
TS1	20	60	30	30	100	50	140
TS2	60	180	60	60	300	150	390

Source: On-site monitoring by GEMS FAE & TM

* PCU conversion factor: HMV (Trucks and Bus) = 3, LMV (Car, Jeep and Auto) = 1 and 2/3 Wheelers = 0.5

TABLE 2.12: ROUGH STONE & GRAVEL HOURLY TRANSPORTATION REQUIREMENT

Transportation of Rough Stone & Gravel per day		
Capacity of trucks	No. of Trips per day	Volume in PCU
20 tonnes	40	120

FIGURE.2.12: MINERAL TRANSPORTATION ROUTE MAP

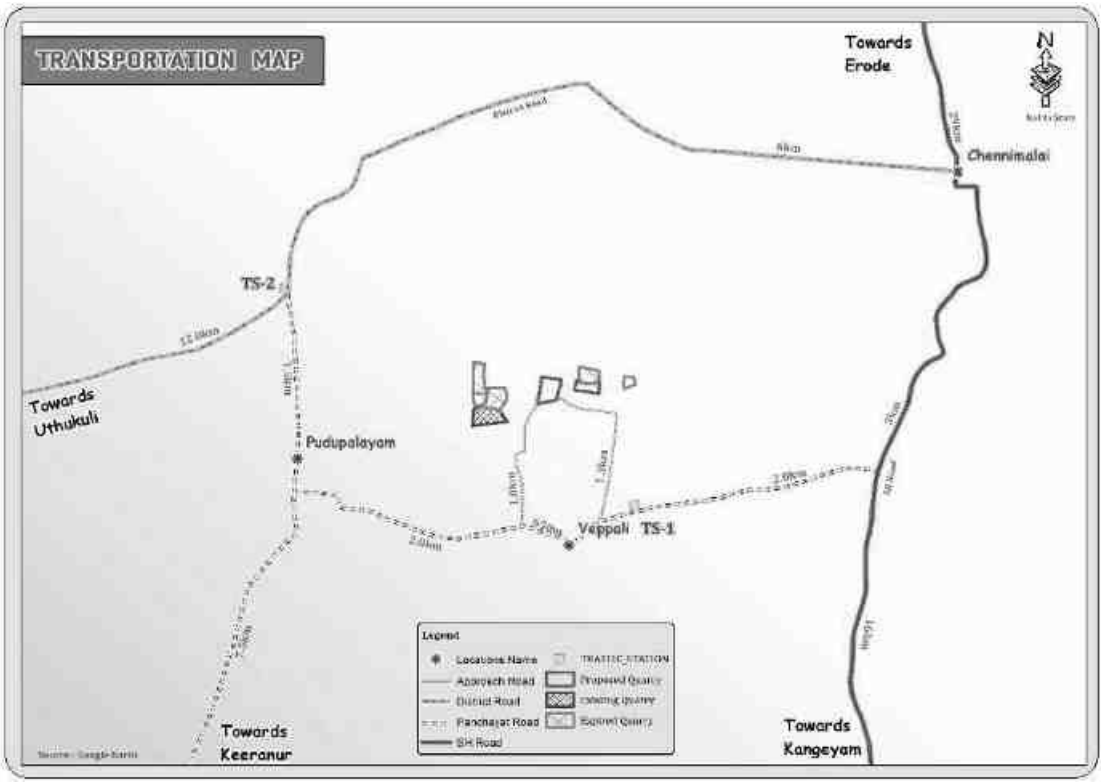


TABLE 2.13: SUMMARY OF TRAFFIC VOLUME

Route	Existing Traffic volume in PCU	Incremental traffic due to the project	Total traffic volume	Hourly Capacity in PCU as per IRC – 1960 guidelines
TS1	140	120	260	1200
TS2	390	120	510	1500

Source: On-site monitoring analysis summary by GEMS FAE & TM

- Due to these projects the existing traffic volume will not exceed
- As per the IRC 1960 this existing village road can handle 1200 PCU in hour and Major district road can handle 1500 PCU in hour hence there will not be any conjunction due to this proposed transportation.

2.6.4 Mineral Beneficiation and Processing

There is no proposal for the mineral processing or ore beneficiation in any of the proposed project.

2.7 PROJECT REQUIREMENT

2.7.1 Water Source & Requirement

Detail of water requirements in KLD as given below:

TABLE 2.14: WATER REQUIREMENT FOR THE PROJECT

Purpose	Quantity	Source
Dust Suppression	1.0KLD	From the existing pit or from the water vendors
Green Belt	0.7KLD	From the existing pit or from the water vendors
Sanitation & Drinking	0.3KLD	From the existing pit or from the water vendors.
Total	**2.0KLD**	

Source: Prefeasibility report

2.7.2 Power and Other Infrastructure Requirement

Power is not required for the mining operation; the mining operation will be carried out using Diesel Generator and Earth moving machineries using diesel. The quarrying activity is proposed during day time only (General Shift 8 AM – 5 PM, Lunch Break 1 PM – 2 PM). Electricity for use in office and other internal infrastructure will be obtained from TNEB by project proponent.

No workshops are proposed inside the project area hence there will not be any process effluent generation from the project area. Domestic effluent from the mine office will be discharged to septic tank and soak pit. There is no toxic effluent expected to generate in the form of solid, liquid or gaseous form hence there is no requirement of waste treatment plant.

2.7.3 Fuel Requirement

The proposed quarrying activity requires HSD (High Speed Diesel) for machineries as per below quantum-

Rough stone:

Per hour Excavator will consume = 16 liters / hour

Per hour Excavator will excavate = 20$m^3$of Rough stone

Rough stone quantity = 3,72,875/20 = 18,644 hours

Diesel consume = 18,644 hours x 16 liters

Total diesel consumption = **2,98,304** Liters of HSD will be utilized for Rough stone

Total diesel consumption = **2,98,304** Liters of HSD will be utilized for entire project life.

2.7.4 Project Cost

The Environmental Management plan has been prepared considering the mode of working, Safety of the employees and Monitoring periods the total Cost is Rs. 1,02,39,000/.

2.8 EMPLOYMENT REQUIREMENT:

The following manpower's are proposed in the mining plan to carry out the day-to-day quarrying activities, the same employment is maintaining aimed at the proposed production target and also to comply with the statutory provisions of the Metalliferous mine's regulations, 1961.

TABLE 2.15: PROPOSED MANPOWER DEPLOYMENT

Designation	No of persons
a) Supervisory Category	
Mines Manager	1
Geologist	1
b) Skilled Labour	
Mines Foreman	1
Mate/Blaster	1
Excavator Operator	2
Truck driver	4
Water sprinkler Driver	1
Jack hammer operator	16
c) Unskilled labour	
Security	1
Labour & Helper	2
Cleaner & Co-operator	7
Total	**37**

Source: Approved Mining Plan & Pre-Feasibility report.

2.9 PROJECT IMPLEMENTATION SCHEDULE

The mining operation will commence after the grant of Environmental Clearance, Consent to operate (CTO), Execution of Lease Deed and Obtaining permission from the DGMS (Notice of Opening).

TABLE 2.16: EXPECTED TIME SCHEDULE

Sl.No.	Particulars	Time Schedule (In Month)					Remarks if any
		1st	2nd	3rd	4th	5th	
1	Environmental Clearance						
2	Consent to Operate						
3	Execution of Lease deed						
4	Permission from DGMS						
Time line may vary; subjected to rules and regulations /& other unforeseen circumstances							

Source: Anticipated based on Timelines framed in EIA Notification & CPCB Guidelines.

3. DESCRIPTION OF ENVIRONMENT

3.0 GENERAL

The baseline environment quality represents the background environmental scenario of various environmental components such as Land, Water, Air, Noise, Biological and Socio-economic status of the study area. Field monitoring studies to evaluate the base line status of the project site were carried out covering **October to December 2025** by Global Lab and Consultancy Services with CPCB guidelines for the following attributes-

- Land
- Water
- Air
- Noise
- Biological
- Socio-economic status

Environmental data has been collected with reference to cluster quarries by Global Lab and Consultancy Services

Study Area

An area of 10 km radius (aerial distance) from the periphery of the cluster is considered for EIA study. The study area has been divided into two zones viz **core zone** and **buffer zone**.

- Core zone is considered as cluster area
- Buffer zone taken as 10km radius from the periphery of the Cluster. Both Core zone and Buffer zone is taken as the study area.

Study Period

The baseline study was conducted during the post monsoon season i.e., **October to December 2025**

Study Methodology

- The project area was surveyed in detail with the help of Total Station Survey instruments and pillars were marked. The boundary coordinates were superimposed on the satellite imagery to understand the relief of the area, besides Land use pattern of the area was studied through the Bhuvan (ISRO)
- Soil samples were collected and analysed for relevant physio-chemical characteristics in order to assess the impact due to mining activities and to recommend saplings for Greenbelt development.
- Ground water samples were collected from the existing bore wells, Surface water was collected from water bodies in the buffer zone and analysed as per CPCB Guidelines.
- An onsite meteorological station was setup in cluster area, to collect data about wind speed, wind direction, temperature, relative humidity, rainfall and general weather conditions were recorded throughout the study period.
- Air quality Data were collected by installation of Respiratory Dust Samplers (RDS) for Fugitive dust, PM_{10} and SO_2, NO_X with gaseous attachments & Fine Dust Samplers (FDS) for $PM_{2.5}$ and other parameters as per NAAQ norms and analysed for primary air pollutants to work out the existing status of air quality.

- The Noise level measurements were also made at various locations in different intervals of time with the help of sound level meter to establish the baseline noise levels in the impact zone.
- Baseline biological studies were carried out to assess the ecology of the study area to study the existing flora and fauna pattern of the area.
- Socio-Economic survey was conducted at village and household level in the study area to understand the present socio-economic conditions and assess the extent of impact due to the proposed mining project. The sampling methodologies for the various environmental parameters required for the study, frequency of sampling, method of samples analysis, etc., are given below Table 3.1.

TABLE 3.1: MONITORING ATTRIBUTES AND FREQUENCY OF MONITORING

Attribute	Parameters	Frequency of Monitoring	No. of Locations	Protocol
Land-use Land cover	Land-use Pattern within 10 km radius of the study area	Data from census handbook 2011 and from the satellite imagery	Study Area	Satellite Imagery Primary Survey
*Soil	Physio-Chemical Characteristics	Once during the study period	6 (1 core & 5 buffer zone)	IS 2720 Agriculture Handbook - Indian Council of Agriculture Research, New Delhi
*Water Quality	Physical, Chemical and Bacteriological Parameters	Once during the study period	6 (2 surface water & 4 Ground water)	IS 10500& CPCB Standards
Meteorology	Wind Speed Wind Direction Temperature Cloud cover Dry bulb temperature Rainfall	1Hourly Continuous Mechanical/Automatic Weather Station	1	Site specific primary data& Secondary Data from IMD Station
*Ambient Air Quality	PM10 PM2.5 SO2 NOX Fugitive Dust	24 hourlies twice a week (Oct to Dec 2025)	7 (3 core & 4 buffer)	IS 5182 Part 1-23 National Ambient Air Quality Standards, CPCB
*Noise Levels	Ambient Noise	Hourly observation for 24 Hours per location	7(3 core & 4 buffer zone)	IS 9989 As per CPCB Guidelines
Ecology	Existing Flora and Fauna	Through field visit during the study period	Study Area	Primary Survey by Quadrate & Transect Study Secondary Data – Forest Working Plan
Socio Economic Aspects	Socio–Economic Characteristics, Population Statistics and Existing Infrastructure in the study area	Site Visit & Census Handbook, 2011	Study Area	Primary Survey, census handbook & need based assessments.

Source: On-site monitoring/sampling by GLOBAL LAB AND CONSULATANCY SERVICES in association with GEMS. * All monitoring and testing have been carried out as per the Guidelines of CPCB and MoEF& CC.

3.1 LAND ENVIRONMENT

The main objective of this section is to provide a baseline status of the study area covering 10km radius around the proposed mine site so that temporal changes due to the mining activities on the surroundings can be assessed in future.

3.1.1 Land Use/ Land Cover

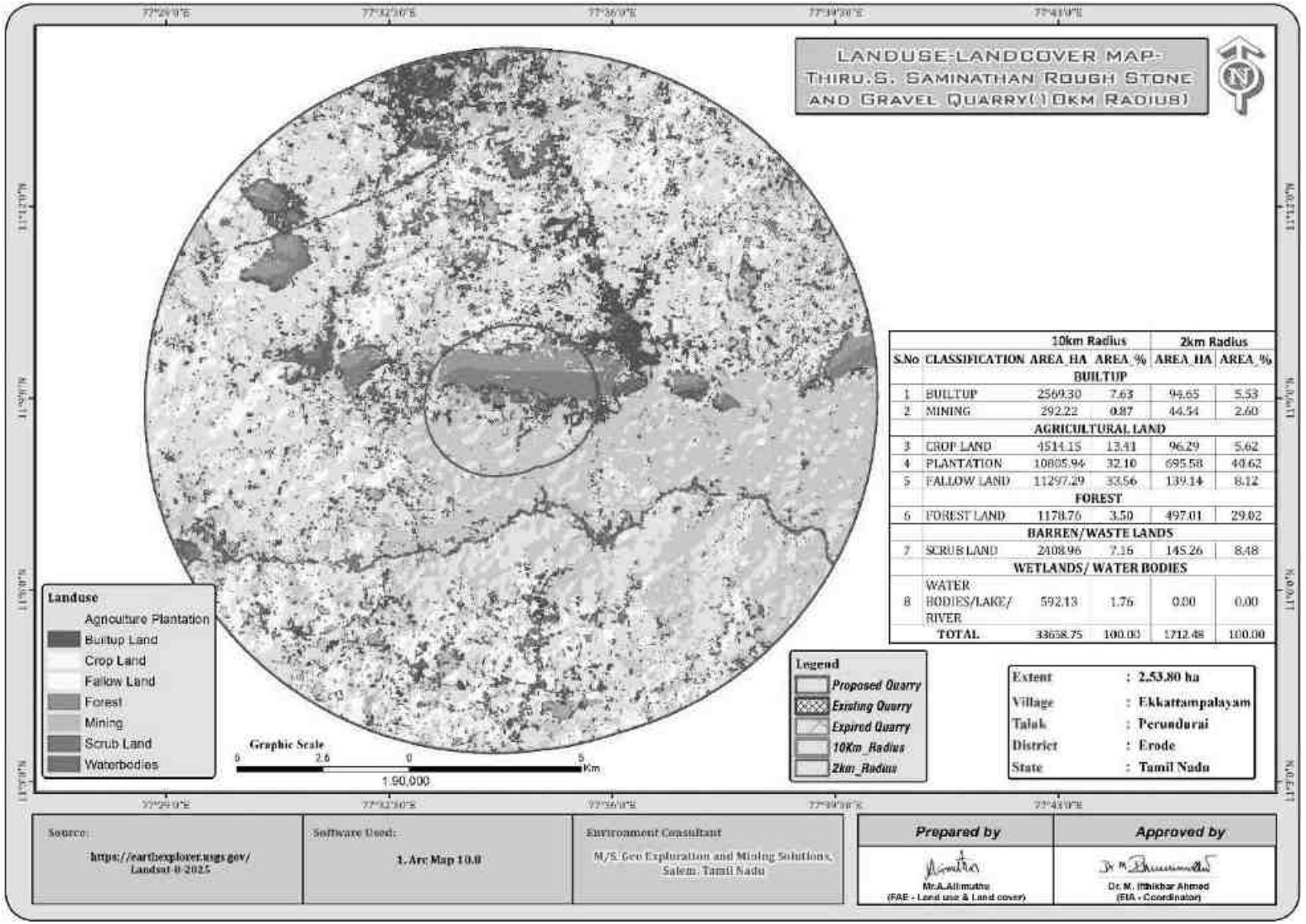
A visual interpretation technique has been adopted for land use classification based on the keys suggested in the chapter – V of the guidelines issued by NNRMS Bangalore & Level III classification with 1:50,000 scale for the preparation of land use mapping. Land use pattern of the area was studied through LISS III imagery of Bhuvan (ISRO). The 10 km radius map of study area was taken for analysis of Land use cover.

TABLE 3.2: LAND USE / LAND COVER TABLE 10 Km RADIUS

S.No	CLASSIFICATION	AREA_HA	AREA_%	AREA_HA	AREA_%
	BUILTUP				
1	BUILTUP	2569.30	7.63	94.65	5.53
2	MINING	292.22	0.87	44.54	2.60
	AGRICULTURAL LAND				
3	CROP LAND	4514.15	13.41	96.29	5.62
4	PLANTATION	10805.94	32.10	695.58	40.62
5	FALLOW LAND	11297.29	33.56	139.14	8.12
	FOREST				
6	FOREST LAND	1178.76	3.50	497.01	29.02
	BARREN/WASTE LANDS				
7	SCRUB LAND	2408.96	7.16	145.26	8.48
	WETLANDS/ WATER BODIES				
8	WATER BODIES/LAKE/ RIVER	592.13	1.76	0.00	0.00
TOTAL		33658.75	100.00	1712.48	100.00

Source: Survey of India Toposheet and Landsat Satellite Imagery

FIGURE 3.2: LAND USE LAND COVER MAP 2KM AND 10KM RADIUS



S.No	CLASSIFICATION	10km Radius AREA_HA	10km Radius AREA_%	2km Radius AREA_HA	2km Radius AREA_%
	BUILTUP				
1	BUILTUP	2569.30	7.63	94.65	5.53
2	MINING	292.22	0.87	44.54	2.60
	AGRICULTURAL LAND				
3	CROP LAND	4514.15	13.41	96.29	5.62
4	PLANTATION	10805.94	32.10	695.58	40.62
5	FALLOW LAND	11297.29	33.56	139.14	8.12
	FOREST				
6	FOREST LAND	1178.76	3.50	497.01	29.02
	BARREN/WASTE LANDS				
7	SCRUB LAND	2408.96	7.16	145.26	8.48
	WETLANDS/ WATER BODIES				
8	WATER BODIES/LAKE/ RIVER	592.13	1.76	0.00	0.00
	TOTAL	33658.75	100.00	1712.48	100.00

FIGURE 3.3: PHYSIOGRAPHIC MAP 10KM RADIUS

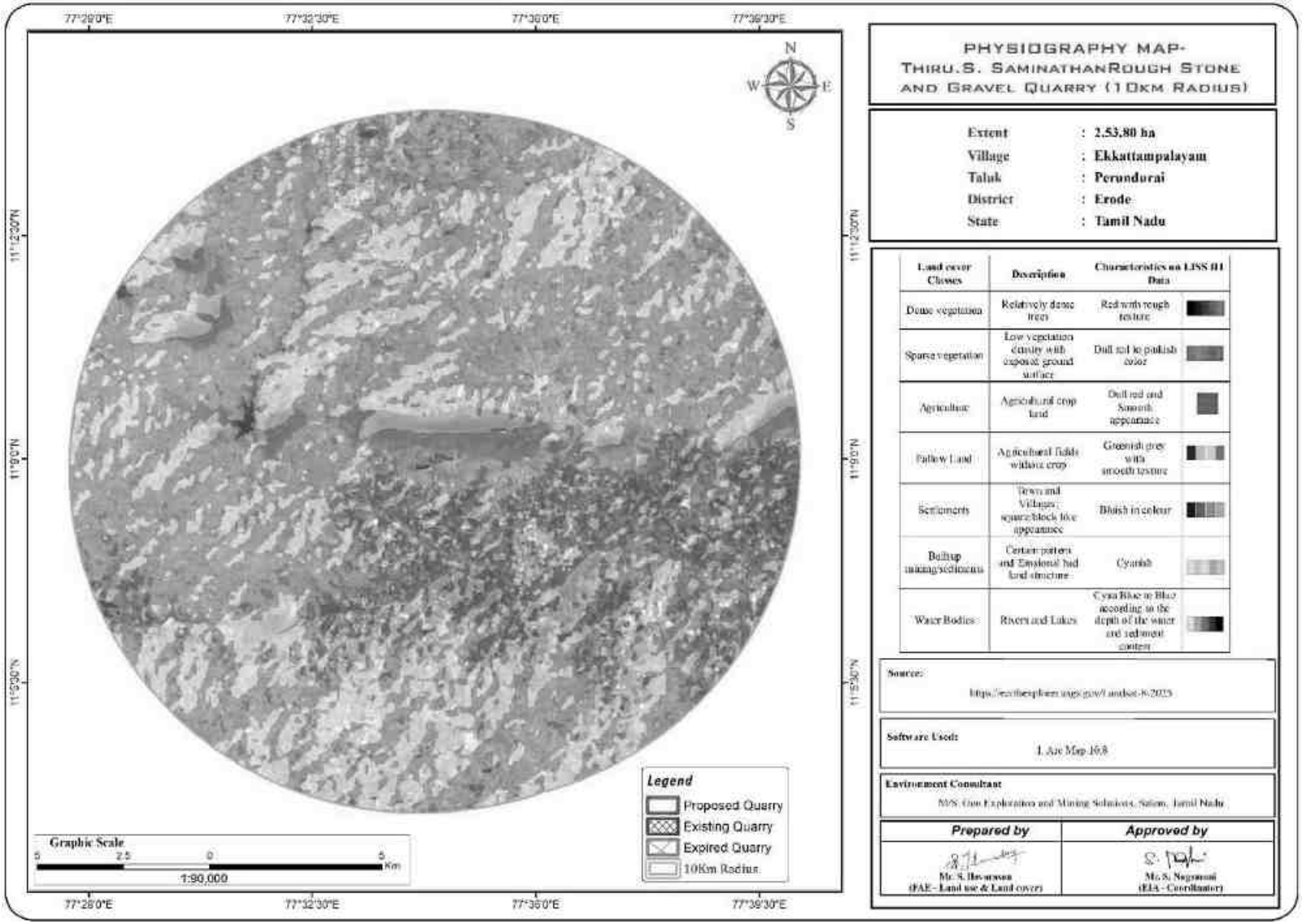
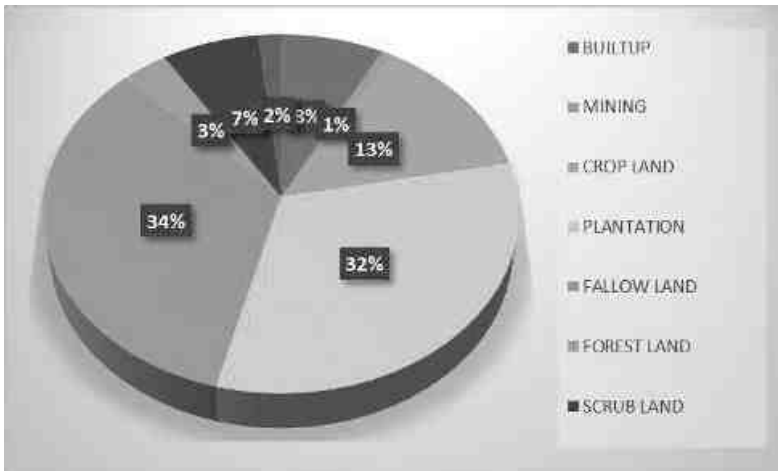


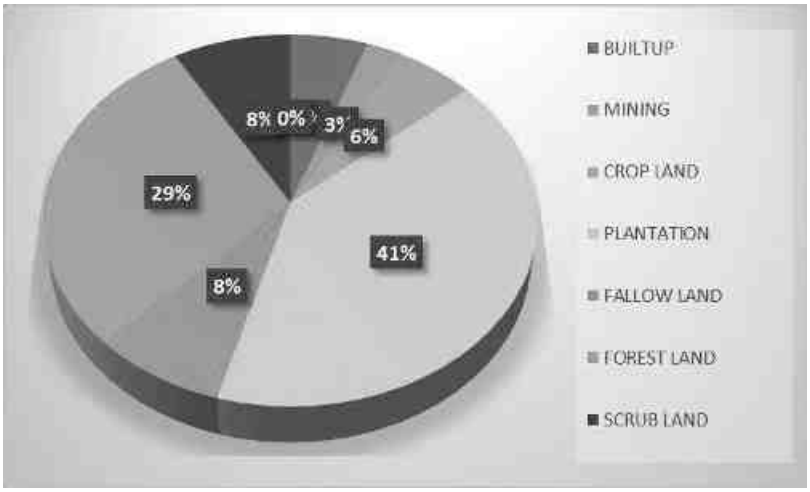
FIGURE 3.1: PIE DIAGRAM OF LAND USE AND LAND COVER - 10KM RADIUS IN AREA_%



From the Table No.3.2, Pie Diagram 3.1 and Land Use Map (Fig No.3.2) is inferred that the majority of the land in the study area is Agriculture land (includes crop land – 13.41%, plantation – 32.10% and Fallow land – 33.56%) range is 79.07% & in Build Up Land, mining area occupied 8.5%.

The total mining area within the study area is 292.22ha i.e., 0.87%. The cluster area of 6.46.48ha contributes about 2.21% of the total mining area within the study area. This small percentage of Mining Activities shall not have any significant impact on the environment

FIGURE 3.1-A: PIE DIAGRAM OF LAND USE AND LAND COVER - 2KM RADIUS IN AREA_%



From the Table No.3.2, Pie Diagram 3.1-A and Land Use Map (Fig No.3.2) is inferred that the majority of the land in the study area is Agriculture land (includes crop land – 5.62%, plantation – 40.62% and Fallow land – 8.12%) range is 54.36% & in Build Up Land, Mining area occupied 8.13%.

The total mining area within the study area is 44.54ha i.e., 2.60%. The cluster area of 6.46.48ha contributes about 14.51% of the total mining area within the study area. This small percentage of Mining Activities shall not have any significant impact on the environment.

3.1.2 Topography

The project area is almost plain terrain having gentle slope towards South East side and the quarry was surrounded by an expire & an existing quarry on South East side.

3.1.3 Drainage Pattern of the 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. They are governed by the topography of the land, whether a particular region is dominated by hard or soft rocks, and the gradient of the land. There are no streams, canals or water bodies crossing within the project area.

3.1.4 Seismic Sensitivity

The proposed project site falls in the seismic Zone II, least active zone as per BMTPC, Vulnerability Atlas of Seismic zone of India IS: 1893 – 2002. The project area falls in the hard rock terrain on the peninsular shield of south India which is highly stable.

3.1.5 Environmental Features in the Study Area

There is no National Park and Archaeological monuments within project area. No Protected and Reserved Forest area is involved in the project area. Therefore, there will be no need to acquisition/diversion of forest land. The details related to the environment sensitivity around the proposed mine lease area i.e., 10 km radius, are given in the below Table 3.3.

TABLE 3.3: DETAILS OF ENVIRONMENT SENSITIVITY AROUND THE CLUSTER

Sl.No	Sensitive Ecological Features	Name	Arial Distance in km from Cluster
1	National Park / Wild life Sanctuaries	Vellode Bird Sanctuary	13.5km – North East
2	Reserved Forest	Chennimalai RF	60 m – North
3	Tiger Reserve/ Elephant Reserve/ Biosphere Reserve	None	Nil within 10km Radius
4	Critically Polluted Areas	None	Nil within 10km Radius
5	Mangroves	None	Nil within 10km Radius
6	Mountains/Hills	None	Nil within 10km Radius
7	Notified Archaeological Sites	None	Nil within 10km Radius
8	Industries/ Thermal Power Plants	None	Nil within 10km Radius
9	Defence Installation	None	Nil within 10km Radius

Source: Survey of India Toposheet

TABLE 3.4: NEARBY WATER BODIES FROM THE PROPOSED PROJECT SITE

Sl.No	NAME	DISTANCE & DIRECTION
1	Odai	50m East
2	Kuttai	90m West
3	Lower Bhavani Canal	1.1km SW
4	Stream	2.3km SW
5	Noyyal River	3.2km SE
6	Palatholuvu Kulam	5.2km NW
7	Orathupalayam Dam	5.8km SW

Source: Village Cadastral Map and Field Survey

3.1.6 Soil Environment

Soil quality of the study area is one of the important components of the land environment. The composite soil samples were collected from the study area and analysed for different parameters. The locations of the monitoring sites are detailed in Table 3.5 and Figure 3.4.

The objective of the soil sampling is -

To determine the baseline soil characteristics of the study area; study the impact of proposed activity on soil characteristics and study the impact on soil more importantly agriculture production point of view.

TABLE 3.5: SOIL SAMPLING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	S-1	Near Project Area (Barren Land)	Project Area	11° 8'59.47"N 77°34'28.28"E
2	S-2	Near Existing Quarry (Agriculture Land)	400m SW	11° 8'46.88"N 77°34'16.87"E
3	S-3	Ekkattampalayam (Agriculture Land)	2.5km SE	11° 7'44.01"N 77°35'3.46"E
4	S-4	Karattupalayam (Barren Land)	3.6km NW	11° 9'52.36"N 77°32'36.48"E
5	S-5	Tippampalayam (Agriculture Land)	3.9km SW	11° 8'15.80"N 77°32'21.79"E
6	S-6	Ottapparai (Residential)	2.3km NE	11° 9'58.07"N 77°35'31.03"E

Source: On-site monitoring/sampling by GLOBAL LAB AND CONSULATANCY SERVICES in association with GEMS.

Methodology –

For studying soil quality, sampling locations were selected to assess the existing soil conditions in and around the project site representing various land use conditions. The samples were collected by auger boring into the soil up to 90-cm depth. Six (6) locations were selected for soil sampling on the basis of soil types, vegetative cover, industrial & residential activities including infrastructure facilities, which would accord an overall idea of the soil characteristics. The samples were analysed for physical and chemical characteristics. The samples were sent to laboratory for analysis. The samples were filled in Polythene bags, coded and sent to laboratory for analysis and the details of methodology in respect are given in below Table 3.6.

TABLE 3.6: METHODOLOGY OF SAMPLING COLLECTION

Particulars	Details
Frequency	One grab sample from each station-once during the study period
Methodology	Composite grab samples of the topsoil were collected from 3 depths, and mixed to provide a representative sample for analysis. They were stored in airtight Polythene bags and analysed at the laboratory.

Source: On-site monitoring/sampling by GLOBAL LAB AND CONSULATANCY SERVICES in association with GEMS.

Soil Testing Result –

The samples were analysed as per the standard methods prescribed in "Soil Chemical Analysis (M.L. Jackson, 1967) & Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India". The important properties analysed for soil are bulk density, porosity, infiltration rate, pH and Organic matter, kjeldahi Nitrogen, Phosphorous and Potassium. The standard classifications of soil are presented below in Figure 3.4 and the physico-chemical characteristics of the soil & Test Results in Table 3.7.

FIGURE 3.4: SOIL SAMPLING LOCATIONS AROUND 10 KM RADIUS

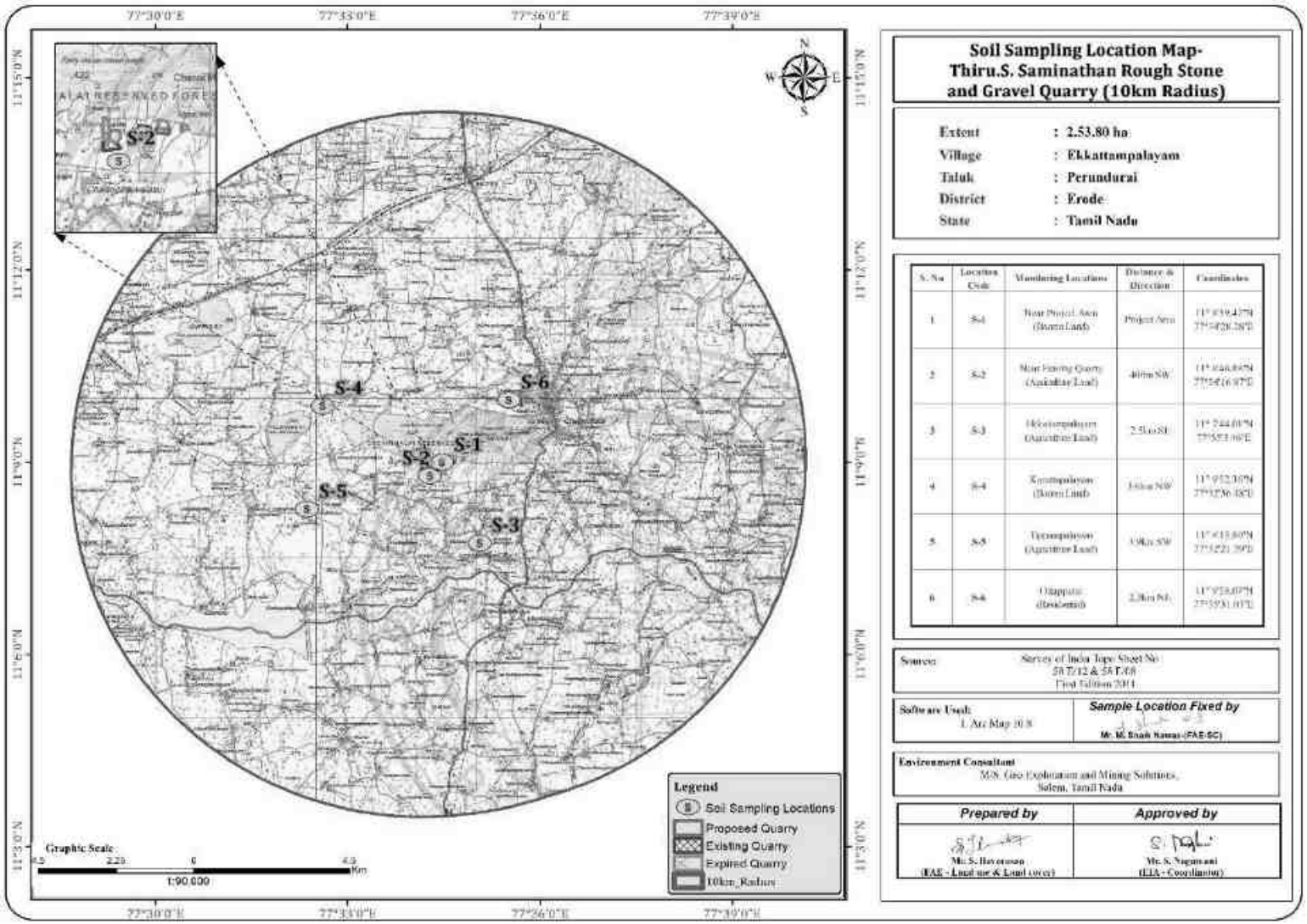


FIGURE 3.5: SOIL MAP

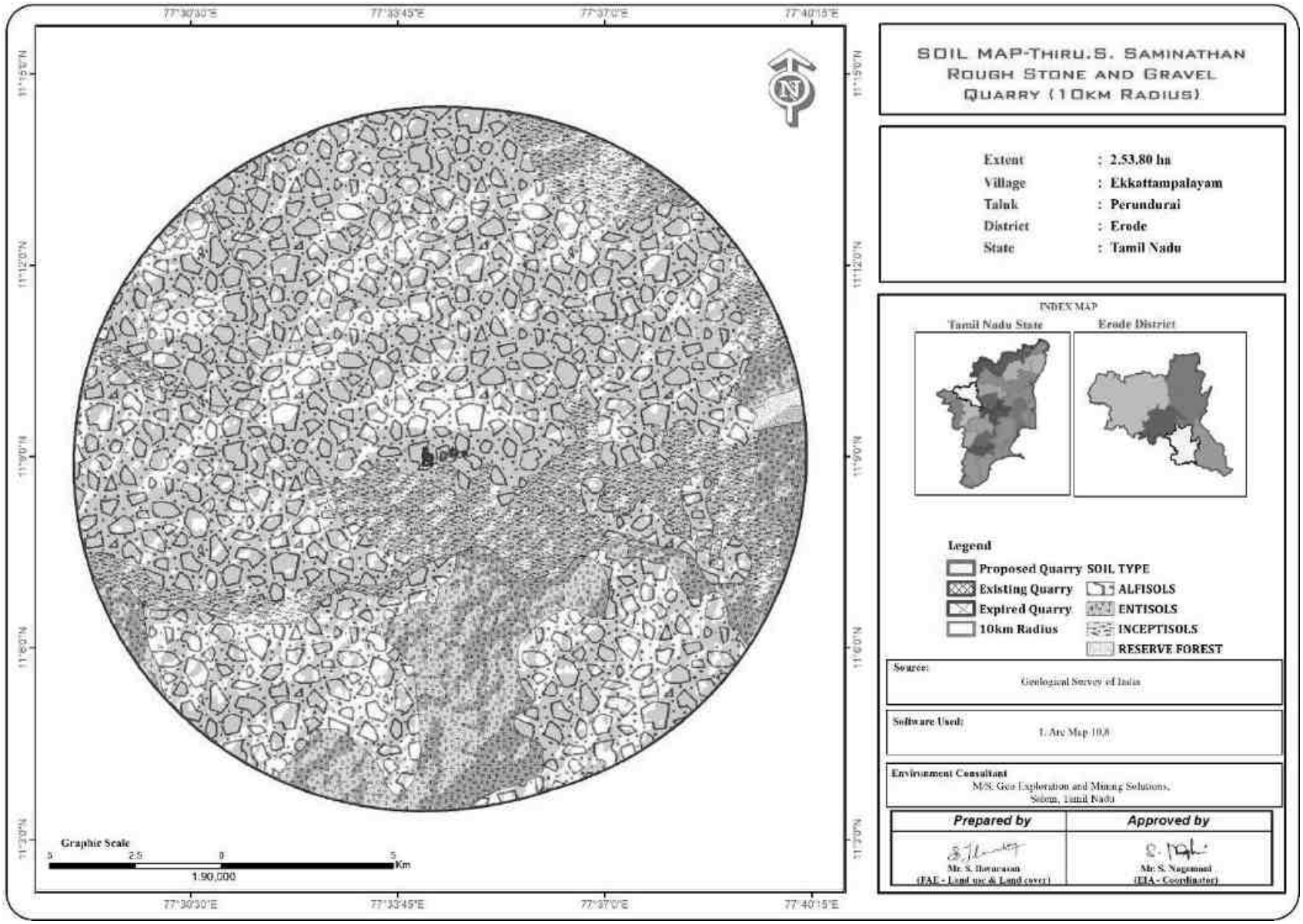


TABLE 3.7: SOIL QUALITY OF THE STUDY AREA

Parameter		Units	S-1	S-2	S-3	S-4	S-5	S-6
1	Available Nitrogen as N	kg/ha	263.4	238.3	301	226	251	213
2	Available Phosphorous(as P)	mg/kg	14.9	11	13.4	12.8	13.9	14.8
3	Boron	mg/kg	9.5	6.75	4.25	7.0	13.75	3.0
4	Bulk Density	g/cc	1.062	1.1	1.08	1.06	1.12	1.16
5	Cadmium	mg/kg	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)
6	Cation Exchange Capacity	meq/100g	39.2	36.8	40.8	39.2	42	36.8
7	Chlorides (as Cl-) in saturation extract	meq/l	3.6	3.2	2.8	4.1	2.7	3.4
8	Chromium	mg/kg	BDL (DL:0.5)	8.25	15	6.5	14.5	28.25
9	Copper	mg/kg	13.5	8.5	6.0	8.0	7.75	22
10	Exchangeable Calcium (as Ca)	meq/100g	1.6	1.5	2.0	1.4	1.6	1.9
11	Exchangeable Magnesium (as Mg)	meq/100g	1.6	1.3	1.8	1.6	1.9	2.1
12	Iron	mg/kg	27.8	86.75	3.75	20.25	5.25	125
13	Lead	mg/kg	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)
14	Manganese	mg/kg	26	9.75	11.75	18.75	18.5	23.25
15	Organic Carbon	%	0.32	0.94	0.60	0.56	0.988	0.58
16	Organic Matter	%	0.55	1.6	1.034	0.97	1.7	1.0
17	pH Value	-	7.56	7.89	8.20	8.12	7.63	7.94
18	Soluble Potassium (as K) in saturation extract	mg/100g	0.98	1.38	0.96	1.28	1.68	1.5
19	Specific Electrical Conductivity	µS/cm	386	378	486	586	382	412
20	Sulphate (as SO4)	mg/100g	2.6	5.5	4.5	6.6	5.0	6.9
21	Texture : Clay	%	23.2	25.10	24.90	26.24	26.21	26.063
22	Texture : Sand	%	39.12	35.10	38.61	43.70	39.75	37.34
23	Texture : Silt	%	37.68	39.80	36.49	30.06	34.04	36.57
24	Water Holding Capacity	%	53.6	61.6	52	42	59	48
25	Zinc	mg/kg	39	7.5	16.25	34.75	20.5	39.5

Source: Sampling Results by GLOBAL LAB AND CONSULATANCY SERVICES in association with GEMS

Interpretation & Conclusion

Physical Characteristics –

The physical properties of the soil samples were examined for texture, bulk density, porosity and water holding capacity. The soil texture found in the study area is Clay varied between 23.2- 26.24%, Sand varied between 35.1-43.7% and Silt varied between 30.06- 39.8% and Bulk Density of Soils in the study area varied between 1.06- 1.16g/cc. The Water Holding Capacity of the soil samples is found to be medium i.e., ranging from 42-61.6%.

Chemical Characteristics

- The nature of soil is slightly alkaline to strongly alkaline with pH range 7.56 – 8.2
- The available Nitrogen content range between 213-301 kg/ha
- The available Phosphorus content range between 11-14.9mg/kg
- The available Potassium range between 0.96 – 1.68 mg/100g

3.2 WATER ENVIRONMENT

The water resources, both surface and groundwater play a significant role in the development of the area. The purpose of this study is to assess the water quality characteristics for critical parameters and evaluate the impacts on agricultural productivity, domestic community usage, recreational resources and aesthetics in the vicinity. The water samples were collected and transported as per the norms in pre-treated sampling cans to laboratory for analysis.

3.2.1 Surface Water Resources:

Vaippar River is the major surface water body in the study area and the rainfall over the area is moderate, the rainwater storage in open wells and trenches are in practice over the area and the stored water acts as source of drinking water for few months after rainy season.

3.2.2 Ground Water Resources:

Groundwater occurs in all the crystalline formations of oldest Achaeans and Recent Alluvium. The occurrence and behaviour of groundwater are controlled by rainfall, topography, geomorphology, geology, structures etc., The weathering is controlled by the intensity of weathering and fracturing. Dug wells as wells as bore wells are more common ground water abstraction structures in the area. The diameter of the dug well is in the range of 7 to 10 m and depth of dug wells range from 7.2 to 13 m bgl. The dug wells yield up to 1 lps in summer months and few wells remains dry. The yield is adequate for irrigation for one or two crops in monsoon period.

3.2.3 Methodology

Reconnaissance survey was undertaken and monitoring locations were finalized based on;

- Drainage pattern;
- Location of Residential areas representing different activities/likely impact areas; and
- Likely areas, which can represent baseline conditions

Two (2) surface water and Four (4) ground water samples were collected from the study area and were analysed for physio-chemical, heavy metals and bacteriological parameters in order to assess the effect of mining and other activities on surface and ground water. The samples were analysed as per the procedures specified by CPCB, IS-10500:2012 and 'Standard methods for the Examination of Water and Wastewater' published by American Public Health Association (APHA). The water sampling locations are given in Table 3.8 and shown as Figure 3.6.

TABLE 3.8: WATER SAMPLING LOCATIONS

S.NO	CODE	LOCATIONS	DISTANCE & DIRECTION	CO-ORDINATES
SURFACE WATER				
1	SW-1	Palatholuvu Kulam	5.5km NW	11° 9'22.38"N 77°31'24.47"E
2	SW-2	Noyyal River	3.2km SE	11° 7'21.63"N 77°35'2.94"E
GROUND WATER				
3	WW-1	Near Project Area	210m SW	11° 8'51.50"N 77°34'21.44"E
4	WW-2	Tippampalayam	4km SW	11° 8'8.47"N 77°32'24.67"E
5	BW-1	Near Project Area	250m South	11° 8'50.06"N 77°34'30.42"E
6	BW-2	Ottapparai	2.4km NE	11° 9'59.30"N 77°35'22.90"E

Source: On-site monitoring/sampling by GLOBAL LAB AND CONSULATANCY SERVICES in association with GEMS

FIGURE 3.6: WATER SAMPLING LOCATIONS AROUND 10 KM RADIUS

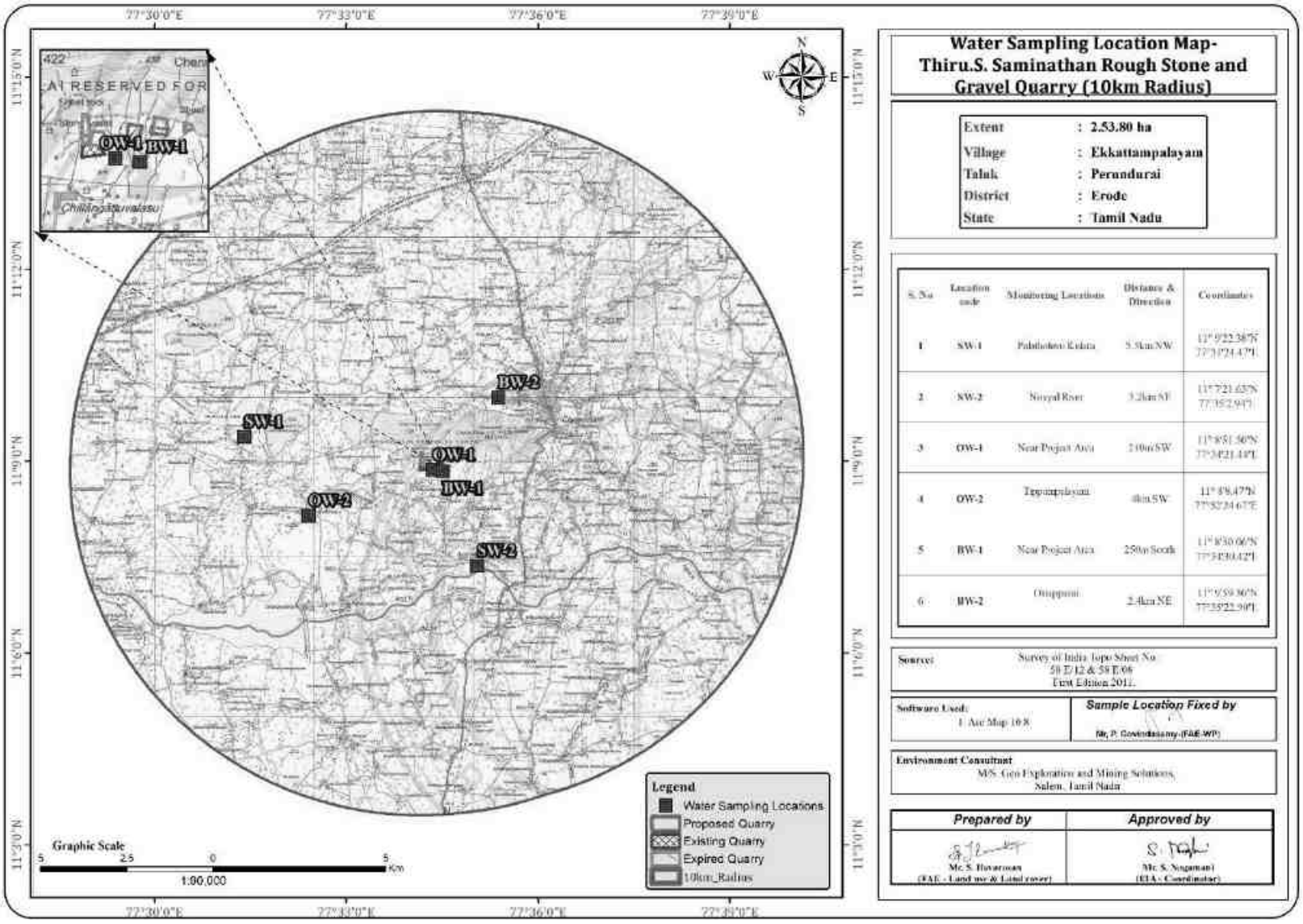


TABLE 3.9: SURFACE WATER SAMPLING RESULTS

Sl. No.	Parameter	Unit	RESULT SW1	RESULT SW2
1	Aluminium	mg/l	0.026	0.048
2	Ammoniacal Nitrogen as NH3-N	mg/l	BDL (DL:1.0)	BDL (DL:1.0)
3	Arsenic as As	mg/l	BDL (DL:0.002)	BDL (DL:0.002)
4	Barium as Ba	mg/l	0.039	0.072
5	Biochemical Oxygen Demand (BOD) at 27ºC for 3 Days	mg/l	3.0	BDL (DL:2.0)
6	Boron as B	mg/l	BDL (DL:0.1)	BDL (DL:0.1)
7	Cadmium as Cd	mg/l	BDL (DL:0.01)	BDL (DL:0.01)
8	Calcium as Ca	mg/l	100	128
9	Chemical Oxygen Demand (COD)	mg/l	20	BDL (DL:10.0)
10	Chloride as Cl-	mg/l	220	280
11	Chromium as Cr	mg/l	BDL (DL:0.01)	BDL (DL:0.01)
12	Color	CU	<1	<1
13	Copper as Cu	mg/l	BDL (DL:0.01)	BDL (DL:0.01)
14	Cyanide as CN	mg/l	BDL (DL:0.01)	BDL (DL:0.01)
15	Dissolved Oxygen (DO)	mg/l	4.8	5.2
16	Electrical Conductivity	µS/cm	1978	2078
17	Fluoride as F-	mg/l	0.46	0.47
18	Free Residual Chlorine as Cl2	mg/l	BDL (DL:1.0)	BDL (DL:1.0)
19	Iron as Fe	mg/l	0.27	0.28
20	Lead as Pb	mg/l	BDL (DL:0.01)	BDL (DL:0.01)
21	Magnesium as Mg	mg/l	65.7	80.0
22	Manganese as Mn	mg/l	BDL (DL:0.1)	BDL (DL:0.1)
23	Mercury as Hg	mg/l	BDL (DL:0.002)	BDL (DL:0.002)
24	Molybdenum as Mo	mg/l	BDL (DL:0.01)	0.030
25	Nitrate as NO3	mg/l	BDL (DL:2.0)	3.4
26	Odor	-	Agreeable	Agreeable
27	pH	-	8.06	7.86
28	Phenols	mg/l	BDL (DL:0.1)	BDL (DL:0.1)
29	Selenium as Se	mg/l	BDL (DL:0.005)	BDL (DL:0.005)
30	Sulphate as SO4	mg/l	136	125
31	Sulphide as S (Iodometric Method)	mg/l	BDL (DL:1.0)	BDL (DL:1.0)
32	Total Alkalinity as CaCO3	mg/l	450	510
33	Total Dissolved Solids (TDS)	mg/l	1286	1350
34	Total Hardness as CaCO3	mg/l	520	650
35	Total Suspended Solids	mg/l	7.0	BDL (DL:2.0)
36	Turbidity	NTU	4	<1

37	Zinc as Zn	mg/l	BDL (DL:0.01)	BDL (DL:0.01)
38	Escherichia coli	Per 100ml	Absent	Absent
39	Total Coliforms	Per 100ml	Present	Present

Source: On-site monitoring/sampling by GLOBAL LAB AND CONSULATANCY SERVICES in association with GEMS

TABLE 3.10: GROUND WATER SAMPLING RESULTS

S.NO	Parameter	Units	WW-1	WW-2	BW-1	BW-2 S
1	Aluminium	mg/l	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)
2	Ammoniacal Nitrogen as NH3-N	mg/l	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)
3	Arsenic as As	mg/l	BDL (DL:0.002)	BDL (DL:0.002)	BDL (DL:0.002)	BDL (DL:0.002)
4	Barium as Ba	mg/l	0.013	0.011	0.012	BDL (DL:0.01)
5	Boron as B	mg/l	BDL (DL:0.1)	BDL (DL:0.1)	BDL (DL:0.1)	BDL (DL:0.1)
6	Cadmium as Cd	mg/l	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)
7	Calcium as Ca	mg/l	68	92	80	108
8	Chloride as Cl-	mg/l	190	210	170	340
9	Chromium as Cr	mg/l	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)
10	Color	CU	<1	<1	<1	<1
11	Copper as Cu	mg/l	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)
12	Cyanide as CN	mg/l	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)
13	Electrical Conductivity (EC)	µS/cm	1302	1330	1358	1920
14	Fluoride as F-	mg/l	0.19	0.17	0.26	0.25
15	Free Residual Chlorine as Cl2	mg/l	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)
16	Iron as Fe	mg/l	BDL (DL:0.1)	BDL (DL:0.1)	0.23	0.34
17	Lead as Pb	mg/l	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)
18	Magnesium as Mg	mg/l	51	56	54	63
19	Manganese as Mn	mg/l	BDL (DL:0.1)	BDL (DL:0.1)	BDL (DL:0.1)	BDL (DL:0.1)
20	Mercury as Hg	mg/l	BDL (DL:0.002)	BDL (DL:0.002)	BDL (DL:0.002)	BDL (DL:0.002)
21	Molybdenum as Mo	mg/l	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)
22	Nitrate as NO3	mg/l	BDL (DL:2.0)	BDL (DL:2.0)	BDL (DL:2.0)	4.5
23	Odor	-	Agreeable	Agreeable	Agreeable	Agreeable
24	pH	-	7.46	7.68	7.36	7.73
25	Phenols	mg/l	BDL (DL:0.1)	BDL (DL:0.1)	BDL (DL:0.1)	BDL (DL:0.1)
26	Selenium as Se	mg/l	BDL (DL:0.005)	BDL (DL:0.005)	BDL (DL:0.005)	BDL (DL:0.005)
27	Sulphate as SO4	mg/l	81	82	136	86
28	Sulphide as S (Iodometric Method)	mg/l	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)
29	Total Alkalinity as CaCO3	mg/l	320	310	270	460
30	Total Dissolved Solids (TDS)	mg/l	846	864	882	1248
31	Total Hardness as CaCO3	mg/l	380	460	420	530
32	Total Suspended Solids (TSS)	mg/l	BDL (DL:2.0)	BDL (DL:2.0)	BDL (DL:2.0)	BDL (DL:2.0)
33	Turbidity	NTU	<1	<1	<1	<1
34	Zinc as Zn	mg/l	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)	BDL (DL:0.01)
35	Escherichia coli	Per/100ml	Absent	Absent	Absent	Absent
36	Total Coliforms	Per/100ml	Present	Present	Present	Present

Source: On-site monitoring/sampling by GLOBAL LAB AND CONSULATANCY SERVICES in association with GEMS

3.2.4 Interpretation& Conclusion

Surface Water

The pH varied from 7.86 to 8.06 while turbidity found within the standards (Optimal pH range for sustainable aquatic life is 6.5 to 8.5 pH).

Total Dissolved Solids:

Total Dissolved Solids varied from 1286 to 1350 mg/l, the TDS mainly composed of carbonates, bicarbonates, Chlorides, phosphates and nitrates of calcium, magnesium, sodium and other organic matter.

Other parameters:

Chloride content is 220 to 280.2mg/l, Nitrates content is BDL (DL:2.0) to 3.4mg/l and Sulphates varied from 125 to 136mg/l.

Ground Water

The pH of the water samples collected ranged from 7.36 to 7.73 and within the acceptable limit of 6.5 to 8.5. pH, Sulphates and Chlorides of water samples from all the sources are within the limits as per the Standard. On Turbidity, the water samples meet the requirement. Total Dissolved Solids were found in the range of 846 to 1248mg/l in all samples. Total hardness varied between 380 to 530mg/l for all samples.

On Microbiological parameters, the water samples from all the locations meet the requirement. The parameters thus analysed were compared with IS 10500:2012 and are well within the prescribed limits.

3.2.5 Hydrology and Hydrogeological studies

The district is underlain by hard rock formation fissured and fractured crystalline rocks constitute the important aquifer systems in the district. Geophysical prospecting was carried out in that area by SSRMP-80 Instrument by qualified Geo physicist with the help of IGIS software and it was inferred that the low resistance encountered at the depth between 63-68m. The maximum depth proposed out of proposed projects is 57m BGL.

Ground water levels and Flow Direction based on the Bore well and open well Data's

In general, the ground water movement is based on the gradient i.e., water moves from the highest static ground water elevation to lowest static ground water elevation point. The ground water movement is important aspect to locating the recharge and discharge areas. Therefore, the data has been collected in the study area. Water level measured in the 8 open wells and 7 borewells.

The average water level in the open well is varies from = 10.7m to 12.9m bgl

The water level in the bore well is varies from = 60.4m to 62.5m bgl

The water level in the area is above 63m-68m hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area.

TABLE 3.11: POST-MONSOON SEASON WATER LEVEL OF OPEN WELLS 1 KM RADIUS

S.NO	LABEL	LONGITUDE	LATITUDE	October-25	Novermber 25	December-25
1	OW-1	77° 34' 21.3639" E	11° 08' 51.4921" N	14.8	15.4	16
2	OW-2	77° 34' 18.0100" E	11° 08' 22.1810" N	14.6	15.2	15.8
3	OW-3	77° 33' 39.3813" E	11° 08' 49.4769" N	13.9	14.5	15.1
4	OW-4	77° 33' 52.4707" E	11° 09' 50.9400" N	13.8	14.4	15
5	OW-5	77° 34' 45.6335" E	11° 09' 57.8997" N	14.1	14.7	15.3
6	OW-6	77° 34' 34.4235" E	11° 08' 42.0446" N	14.8	15.4	16
7	OW-7	77° 35' 08.2522" E	11° 08' 38.3707" N	14.2	14.8	15.4

Source: Onsite monitoring data

FIGURE 3.7: OPEN WELL CONTOUR MAP OCTOBER to DECEMBER 2025

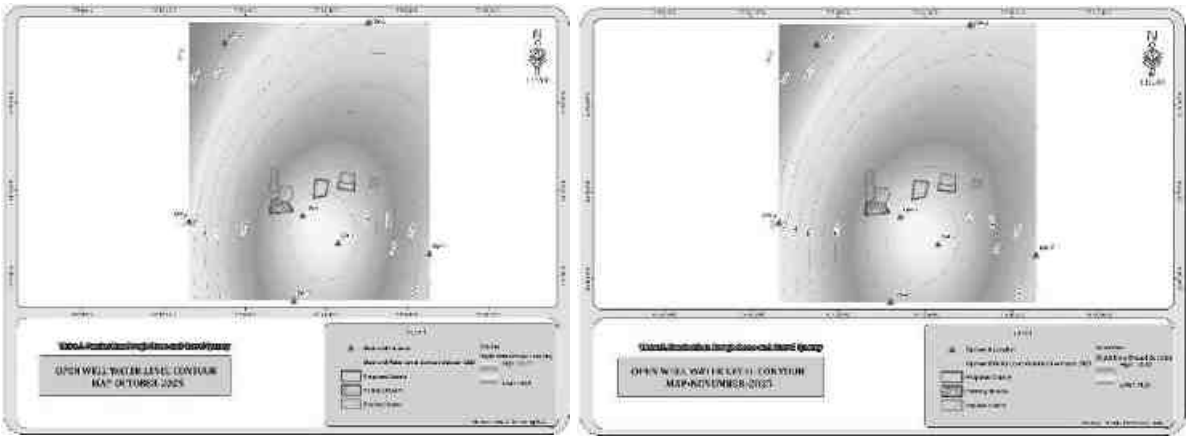


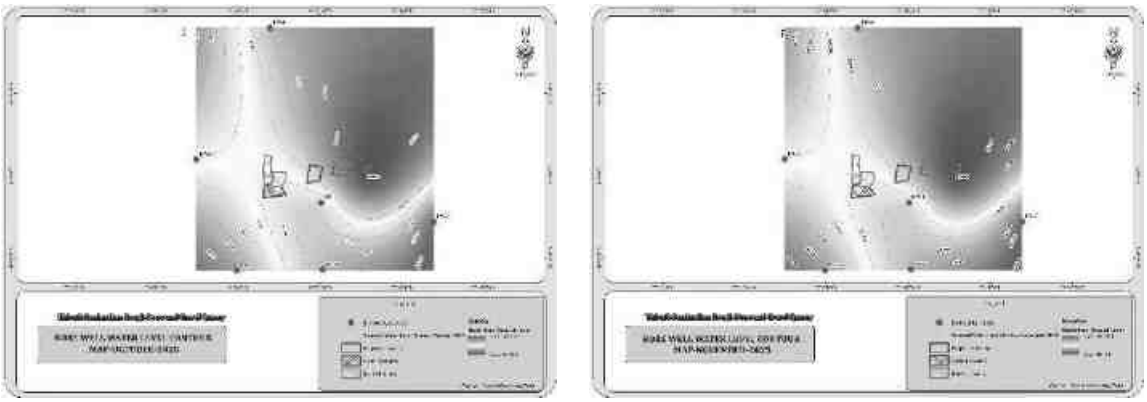


TABLE 3.12: POST-MONSOON SEASON WATER LEVEL OF BOREWELLS 1 KM RADIUS

S.No	Name	LONGITUDE	LATITUDE	October-25	Novermber 25	December-25
1	BW1	77° 34' 30.4427" E	11° 08' 50.0806" N	65.2	65.8	66.4
2	BW2	77° 33' 59.5588" E	11° 08' 25.2990" N	64.8	65.4	66
3	BW3	77° 33' 44.7305" E	11° 09' 05.9879" N	65.1	65.7	66.3
4	BW4	77° 34' 11.5709" E	11° 09' 54.0291" N	64.9	65.5	66.1
5	BW5	77° 34' 46.4186" E	11° 08' 57.5872" N	64.5	65.1	65.7
6	BW6	77° 34' 31.0511" E	11° 08' 25.6472" N	65.3	65.9	66.5
7	BW7	77° 35' 11.8189" E	11° 08' 43.1540" N	65.6	66.2	66.8

Source: Onsite monitoring data

FIGURE 3.8: BOREWELL CONTOUR OCTOBER TO DECEMBER 2025



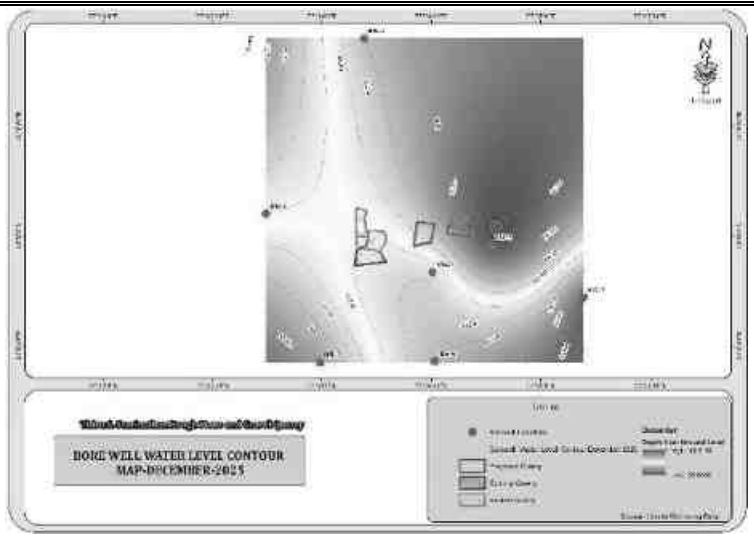

BORE WELL WATER LEVEL CONTOUR
MAP-DECEMBER-2025

FIGURE 3.9: DRAINAGE MAP AROUND 10 KM RADIUS FROM PROJECT SITE

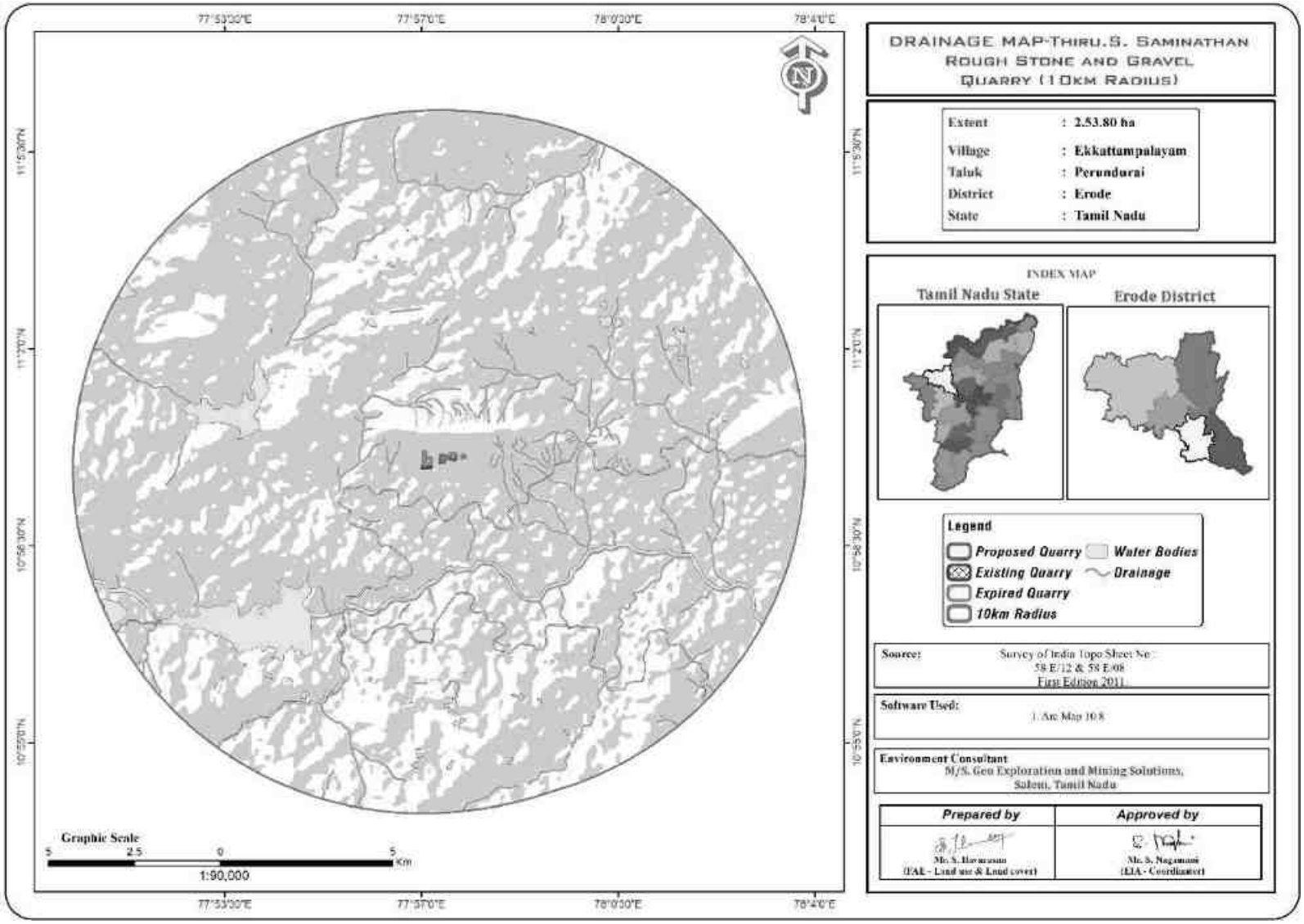
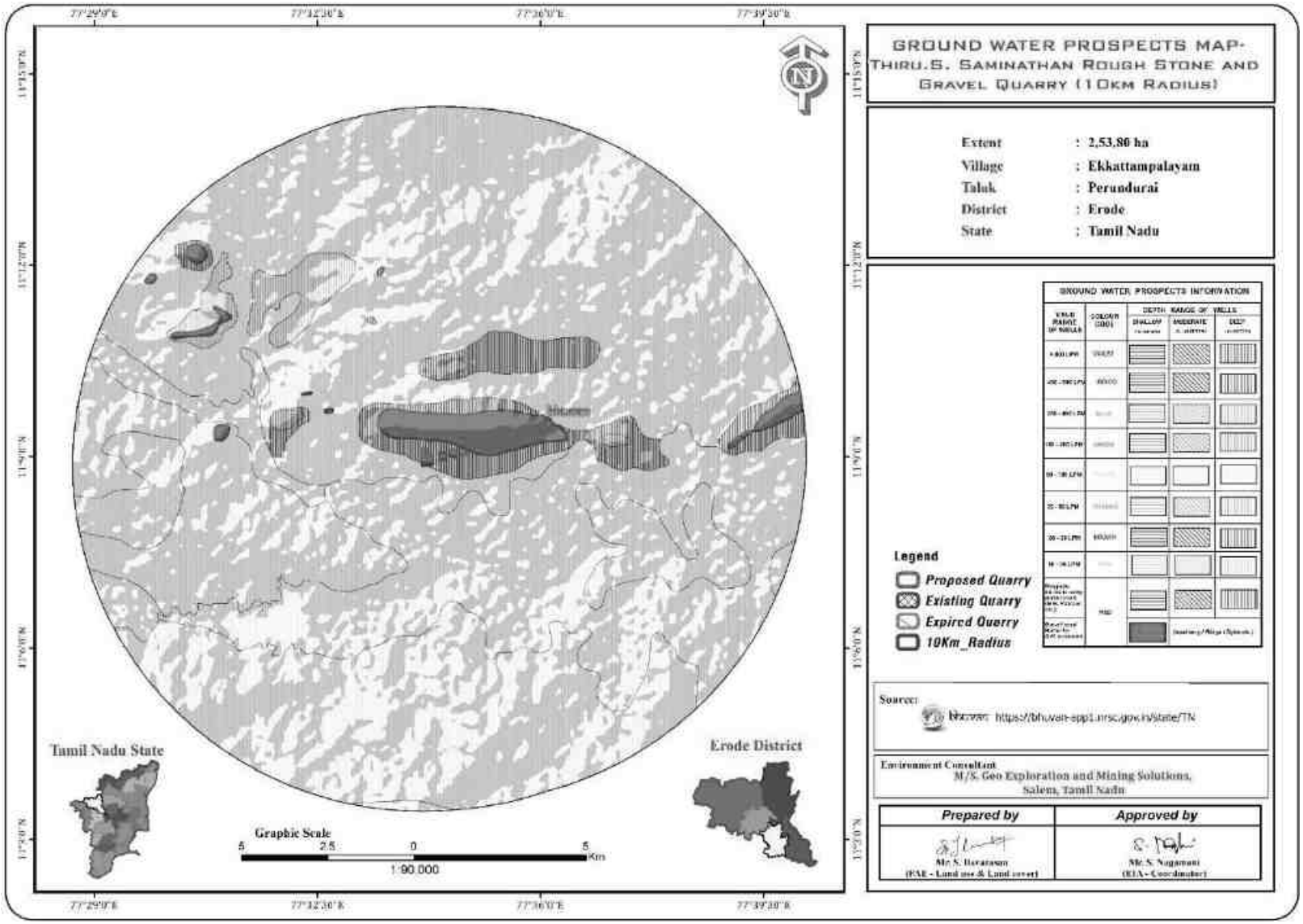


FIGURE 3.10: GROUND WATER PROSPECT MAP



Geophysical Resistivity Survey

3.2.5.1 Methodology and Data Acquisition

The Geophysical Electrical Resistivity survey conducted in the area Schlumberger configuration, Vertical Electrical Sounding (VES) method. Schlumberger electrode set up was employed for making sounding measurements. Since it is least influenced by lateral in homogeneities and is capable of providing higher depth of investigation. This is four electrodes collinear set up where in the outer electrodes send current into the ground and the inner electrodes measure the potential difference.

The present study utilizes maximum current electrode separation AB/2. The data from this survey are commonly arranged and contoured in the farm of Pseudo-section that gives an approximate of the subsurface resistivity. This technique is used for the inversion of Schlumberger VES data to predict the layer parameter namely layer resistivity and Geo electric layer thickness. The main goal of the present study is to search the vertical in homogeneities that is consistent with the measured data.

For a Schlumberger among the Apparent resistivity can be calculated as follows.

$$\rho_a = \frac{G\Delta V}{I}$$

ΔV = potential difference between receiving electrodes

G = Geometric Factor.

Rocks show wide variation in resistivity ranging from 10-8 more than 10+14 ohmmeter. On a broad classification, one can group the rocks falling in the range of 10-8 to 1 ohmmeter as good conductors. 1 to 106 ohmmeter as intermediate conductors and 106 to 1012 ohmmeter as more as poor conductor. The resistivity of rocks and subsurface lithology, which is mostly dependent on its porosity and the pore fluid resistivity is defined by Archie's Law,

$$\rho_r = F\rho_w = a\,Ø^m\rho_w$$

ρr = Resistivity of Rocks

ρw = Resistivity of water in pores of rock

F = Formation Factor

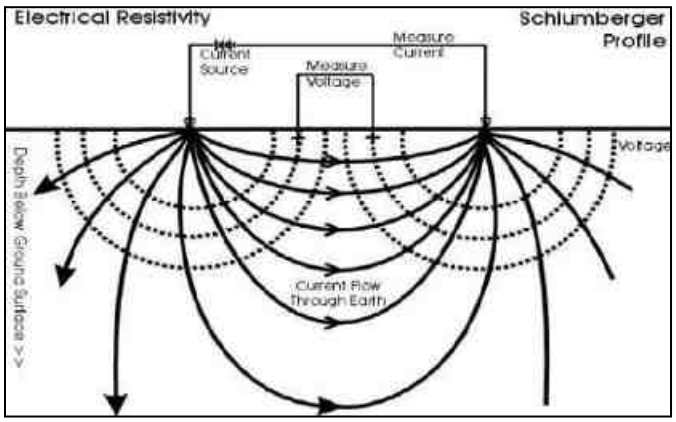
Ø = Fractional pore volume

A = Constants with values ranging from 0.5 to 2.5

3.2.5.2 Survey Layout

The field equipment deployed for the study is in a deep resistivity meter with a model of SSR – MP – AT. This Signal stacking Resistivity meter is a high-quality data acquisition system incorporating several innovation features for Earth resistivity. In the presence of random earth Noises the signal to nose ration can be enhanced by √N where N is the number of stacked readings. This SSR meter in which running averages of measurements [1, (1+2)/2, (1+2+3)/3 … (1+2...+16/16)] up to the chosen stacks are displayed and the final average is stored automatically, in memory utilizing the principles of stacking to achieve the benefit of high signals to noise ratio. Based on these above significations the signal stacking resistivity meter was used for (VES) Vertical Electric Resistivity Sounding.

RESISTIVITY SURVEY PROFILE



Measurements of ground Resistivity is essentially done by sending a current through two electrodes called current electrodes (C_1& $C_{2)}$ and measuring the resulting potential by two other electrodes called potential electrode (P_1& P_2). The amount of current required to be sent into the ground depends on the contact resistance at the current electrode, the ground resistivity and the depth of interest.

3.2.5.3 Data Presentation

It was inferred that the low resistance encountered at the depth between 60-65m. The maximum depth proposed out of proposed projects 42m BGL. Hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area.

3.2.5.4 Geophysical Data Interpretation

The geophysical data was obtained to study the lateral variations, vertical in homogeneities in the sub – surface with respect to the availability of groundwater. From the interpreted data, it has inferred that the area has moderate groundwater potential in the investigated area. This small quarrying operation will not have any significant impact on the natural water bodies.

It is inferred that the existing quarries in the surrounding area not intersected the water table is, only the seepage water during rainy season encountered from the upper layer and it will be used for the Greenbelt development, Dust suppression and quarrying operation.

3.3 AIR ENVIRONMENT

The existing ambient air quality of the area is important for evaluating the impact of mining activities on the ambient air quality.

The baseline studies on air environment include identification of specific air pollution parameters and their existing levels in ambient air. The ambient air quality with respect to the study zone of 10 km radius around the cluster forms the baseline information. The prime objective of the baseline air quality study was to establish the existing

ambient air quality of the study area. These will also be useful for assessing the conformity to standards of the ambient air quality during the operation of proposed projects in cluster.

3.3.1 Meteorology & Climate

Meteorology is the key to understand the Air quality. The essential relationship between meteorological condition and atmospheric dispersion involves the wind in the broadest sense. Wind fluctuations over a very wide range of time, accomplish dispersion and strongly influence other processes associated with them.

A temporary meteorological station was installed at project site by covering cluster quarries. The station was installed at a height of 3 m above the ground level in such a way that there are no obstructions facilitating flow of wind, wind speed, wind direction, humidity and temperature are recorded on hourly basis.

Climate -

- The climate here is tropical. During the winter season, there is a significant decrease in precipitation levels within Erode as compared to the summer months. Köppen and Geiger classify this climate as Aw. The average temperature in Erode is 27.3 °C | 81.2 °F. About 802 mm | 31.6 inch of precipitation falls annually.
- The region of Erode is characterized by a temperate climate, and the summer season presents some challenges in terms of precise categorization. The period of January, February, July, August, September, October, November, December is widely regarded as the peak season for visitation.
- The driest month is January, with 6 mm | 0.2 inch of rain. The month of October experiences the highest amount of precipitation, with an average value of 150 mm | 5.9 inch.
- April is the warmest month of the year. The temperature in April averages 31.1 °C | 87.9 °F. The month of December is characterized by the lowest temperatures, which have an average reading of 24.5 °C | 76.0 °F. https://en.climate-data.org/asia/india/tamil-nadu/erode-3878/

Rainfall

TABLE 3.13: RAINFALL DATA

Actual Rainfall in mm						Normal Rainfall in mm
2019	2020	2021	2022	2023	2024 (As On 30.09.2024)	
664.2	959.4	1010.1	1179.0	833.3	454.8	703.0

Source: https://www.twadboard.tn.gov.in/content/erode

TABLE 3.14: METEOROLOGICAL DATA RECORDED AT SITE

S.No	Parameters		Oct–2025	Nov–2025	Dec–2025
1	Temperature (^{0}C)	Max	28.36	25.36	25.95
		Min	24.72	20.29	21.56

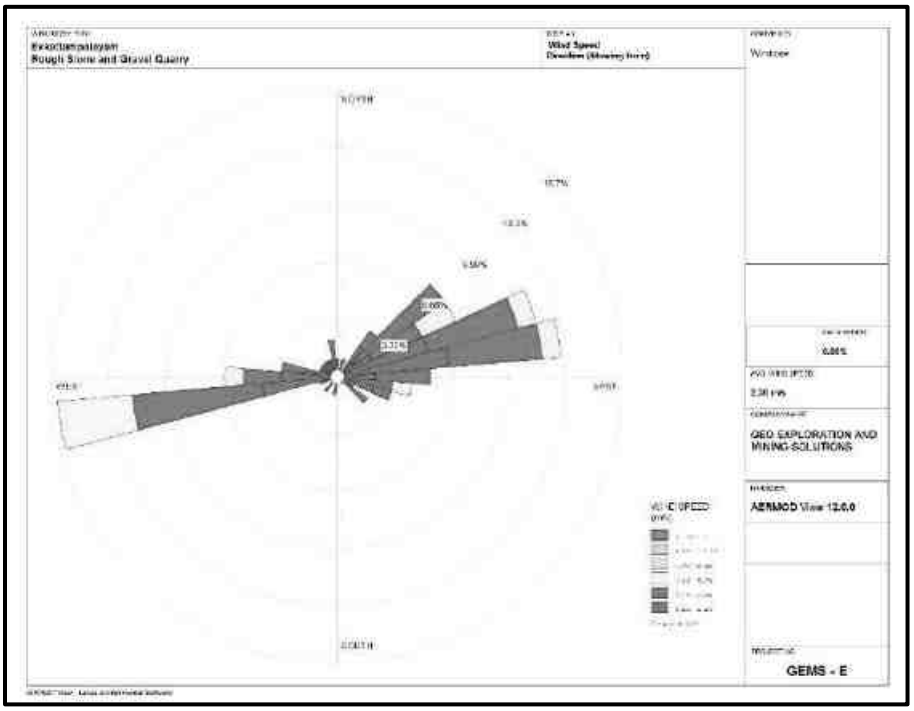
		Avg	26.54	22.82	23.75
2	Relative Humidity (%)	Avg	79.23	88.86	85.56
3	Wind Speed (m/s)	Max	4.66	2.99	4.08
		Min	1.57	1.12	0.79
		Avg	3.11	2.05	2.43
4	Cloud Cover (OKTAS)		0-8	0-8	0-8
5	Wind Direction		W,E	ENE,E	NE,ENE

Correlation between Secondary and Primary Data

The average rainfall over the period of five years 703m. The meteorological data collected at the site is almost similar to that of secondary data collected from IMD Board – Erode.

Wind rose diagram of the study site is depicted in Figure. 3.11. Predominant downwind direction of the area during study season is West to East & NE

FIGURE 3.11: WINDROSE DIAGRAM



In the abstract of collected data wind rose were drawn on presented in figure No.3.11 during the monitoring period in the study area

1. Predominant winds were from W,E,ENE,E
2. Wind speed readings were recorded between 2.05 to 3.11m/s
3. Temperature readings ranging from 22.82 to 26.54°C
4. Relative humidity ranging from 79.23 to 88.86%

5. The monitoring was carried out continuously for three months.(Oct to Dec 2025)

3.3.2 Methodology and Objective

The prime objective of the ambient air quality study is to assess the existing air quality of study area and its conformity to NAAQS. The observed sources of air pollution in the study area are industrial, traffic and domestic activities. The baseline status of the ambient air quality has been established through a scientifically designed ambient air quality monitoring network considering the followings:

- Meteorological condition on synoptic scale;
- Topography of the study area;
- Representatives of regional background air quality for obtaining baseline status;
- Location of residential areas representing different activities;
- Accessibility and power availability; etc.,

3.3.3 Sampling and Analytical Techniques

TABLE 3.15: METHODOLOGY AND INSTRUMENT USED FOR AAQ ANALYSIS

Parameter	Method	Instrument
PM2.5	Gravimetric Method Beta attenuation Method	Fine Particulate Sampler Make – Thermo Environmental Instruments – TEI 121
PM10	Gravimetric Method Beta attenuation Method	Respirable Dust Sampler Make –Thermo Environmental Instruments – TEI 108
SO2	IS-5182 Part II (Improved West & Gaeke method)	Respirable Dust Sampler with gaseous attachment
NOx	IS-5182 Part II (Jacob & Hochheiser modified method)	Respirable Dust Sampler with gaseous attachment
Free Silica	NIOSH – 7601	Visible Spectrophotometry

Source: Sampling Methodology followed by GLOBAL LAB AND CONSULATANCY SERVICES & CPCB Notification

TABLE 3.16: NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl.No.	Pollutant	Time Weighted Average	Concentration in ambient air	
			Industrial, Residential, Rural & other areas	Ecologically Sensitive area (Notified by Central Govt.)
1	Sulphur Dioxide (µg/m3)	Annual Avg.*	50.0	20.0

		24 hours**	80.0	80.0
2	Nitrogen Dioxide (µg/m3)	Annual Avg. 24 hours	40.0 80.0	30.0 80.0
3	Particulate matter (size less than 10µm) PM10 (µg/m3)	Annual Avg. 24 hours	60.0 100.0	60.0 100.0
4	Particulate matter (size less than 2.5 µm PM2.5 (µg/m3)	Annual Avg. 24 hours	40.0 60.0	40.0 60.0

Source: NAAQS CPCB Notification No. B-29016/20/90/PCI-I Dated: 18th Nov 2009

*Annual Arithmetic mean of minimum 104 measurements in a year taken twice a Week 24 hourly at uniform interval,

** 24 hourly / 8 hourly or 1 hourly monitored value as applicable shall be complied with 98 % of the time in a year. However, 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

3.3.4 Frequency & Parameters for Sampling

Ambient air quality monitoring has been carried out with a frequency of two samples per week at seven (7) locations, adopting a continuous 24 hourly (3 shift of 8-hour) schedule for the period October to December 2025. The baseline data of ambient air has been generated for PM_{10}, $PM_{2.5}$, Sulphur Dioxide (SO_2) & Nitrogen Dioxide (NO_2) Monitoring has been carried out as per the CPCB, MoEF guidelines and notifications.

The equipment was placed preferably at a height of at least 3 ± 0.5m above the ground level at each monitoring station, for negating the effects of wind-blown ground dust. The equipment was placed at open space free from trees and vegetation which otherwise act as a sink of pollutants resulting in lower levels in monitoring results.

3.3.5 Ambient Air Quality Monitoring Stations

Seven (7) monitoring stations were set up in the study area as depicted in Figure 3.12 for assessment of the existing ambient air quality. Details of the sampling locations are as per given below.

TABLE 3.17: AMBIENT AIR QUALITY (AAQ) MONITORING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	AAQ-1	Core Zone	Project Area	11° 8'59.62"N 77°34'29.00"E
2	AAQ-2	Near Crusher	450m East	11° 8'59.96"N 77°34'45.77"E
3	AAQ-3	Near Existing Quarry	400m SW	11° 8'47.18"N 77°34'16.68"E
4	AAQ-4	Ekkattampalayam (School)	2.5km SE	11° 7'42.71"N 77°35'3.02"E
5	AAQ-5	Karattupalayam (Residential)	3.6km NW	11° 9'53.32"N 77°32'35.74"E
6	AAQ-6	Tippampalayam (School)	3.9km SW	11° 8'17.76"N 77°32'22.59"E
7	AAQ-7	Ottapparai (Residential)	2.3km NE	11° 9'57.91"N 77°35'32.18"E

Source: On-site monitoring/sampling by GLOBAL LAB AND CONSULATANCY SERVICES in association with GEMS.

FIGURE 3.12: AMBIENT AIR QUALITY LOCATIONS AROUND 10 KM RADIUS

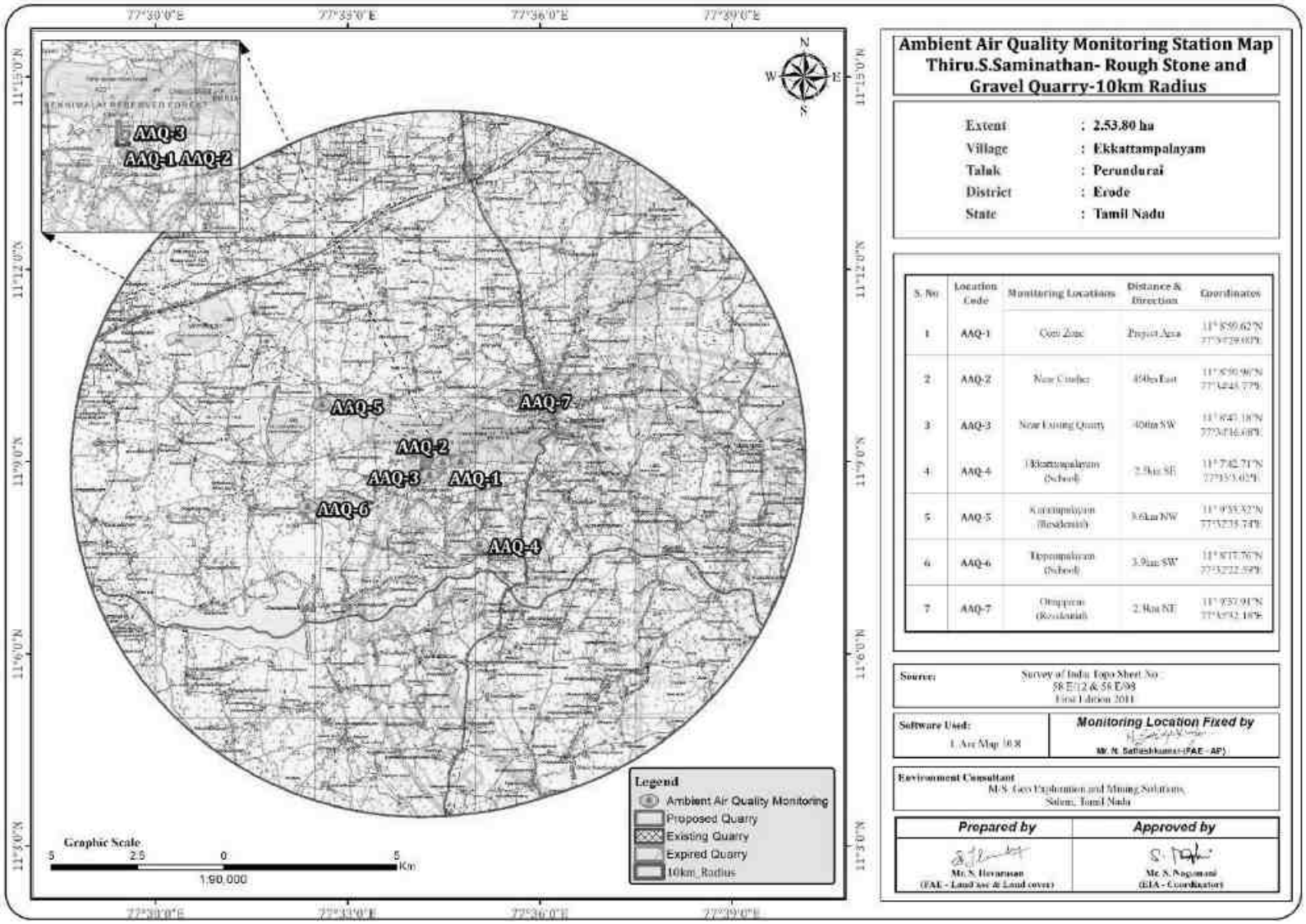


TABLE 3.18: SUMMARY OF AAQ 1 to AAQ 7

PM10	**AAQ1**	**AAQ2**	**AAQ3**	**AAQ4**	**AAQ5**	**AAQ6**	**AAQ7**
Arithmetic Mean	39.8	41.6	43.0	43.0	43.3	43.5	42.9
Minimum	38.1	37.9	40.6	40.5	40.3	40.2	40.8
Maximum	41.9	44.6	45.6	46.2	47.1	47.8	45.2
NAAQ Norms	39.8	41.6	43.0	43.0	43.3	43.5	42.9
PM2.5	**AAQ1**	**AAQ2**	**AAQ3**	**AAQ4**	**AAQ5**	**AAQ6**	**AAQ7**
Arithmetic Mean	19.3	20.4	21.4	21.4	22.0	21.9	21.5
Minimum	17.5	18.3	19.5	19.2	19.5	19.1	19.5
Maximum	20.4	23.3	26.2	25.3	25.4	26.2	25.8
NAAQ Norms	60.0	60.0	60.0	60.0	60.0	60.0	60.0
SO2	**AAQ1**	**AAQ2**	**AAQ3**	**AAQ4**	**AAQ5**	**AAQ6**	**AAQ7**
Arithmetic Mean	4.8	4.7	4.8	4.5	4.4	4.5	4.5
Minimum	4.1	4.0	4.0	4.1	4.0	4.0	4.1
Maximum	5.8	6.1	6.0	5.4	4.9	5.2	5.0
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0
NO2	**AAQ1**	**AAQ2**	**AAQ3**	**AAQ4**	**AAQ5**	**AAQ6**	**AAQ7**
Arithmetic Mean	20.0	20.2	20.0	20.0	20.1	20.0	20.0
Minimum	17.3	18.5	17.6	16.6	18.3	16.9	18.3
Maximum	24.2	25.3	23.5	22.8	23.6	25.6	24.7
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0

TABLE 3.19: ABSTRACT OF AMBIENT AIR QUALITY DATA

1	**Parameter**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_2**
2	No. of Observations	260	260	260	260
3	10th Percentile Value	39.7	19.1	4.1	18.5
4	20th Percentile Value	41.3	20.0	4.3	19.0
5	30th Percentile Value	41.9	20.4	4.4	19.3
6	40th Percentile Value	42.3	20.8	4.5	19.6
7	50th Percentile Value	42.7	21.2	4.5	19.9
8	60th Percentile Value	43.2	21.6	4.6	20.2
9	70th Percentile Value	43.7	22.0	4.7	20.5
10	80th Percentile Value	44.6	22.8	4.9	20.8
11	90th Percentile Value	45.3	23.7	5.1	21.7
12	95th Percentile Value	45.7	24.5	5.2	22.7
13	98th Percentile Value	46.9	26.1	6.0	25.0
14	Arithmetic Mean	43.4	22.0	4.8	20.7

15	Geometric Mean	43.3	21.9	4.7	20.6
16	Standard Deviation	2.1	2.1	0.5	1.9
17	Minimum	39.7	19.1	4.1	18.5
18	Maximum	46.9	26.1	6.0	25.0
19	**NAAQ Norms***	**100.0**	**60.0**	**80.0**	**80.0**

FIGURE 3.13: BAR DIAGRAM OF SUMMARY OF AAQ 1 – AAQ7

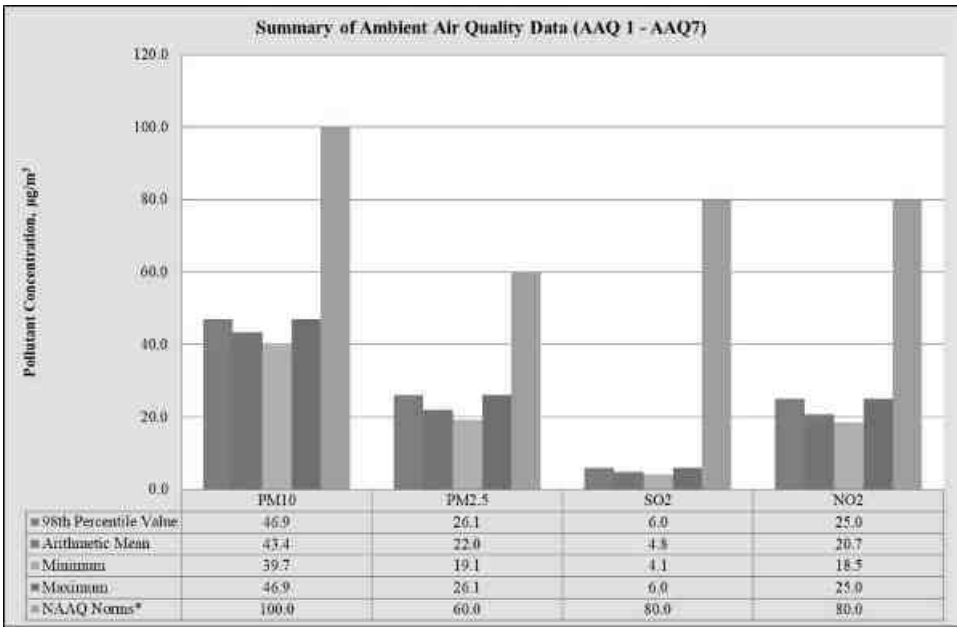
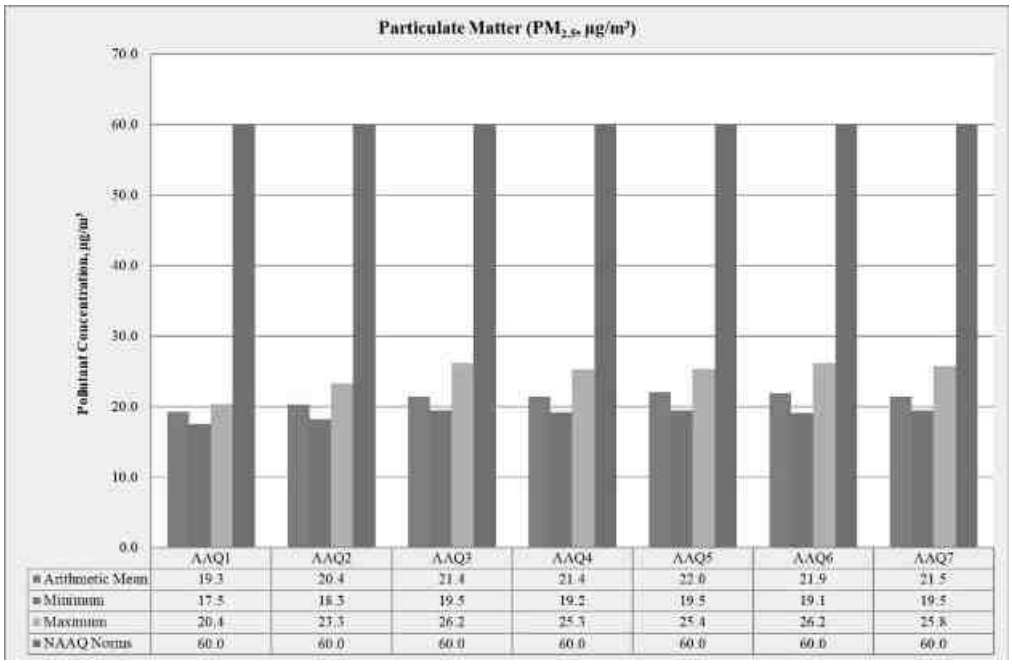
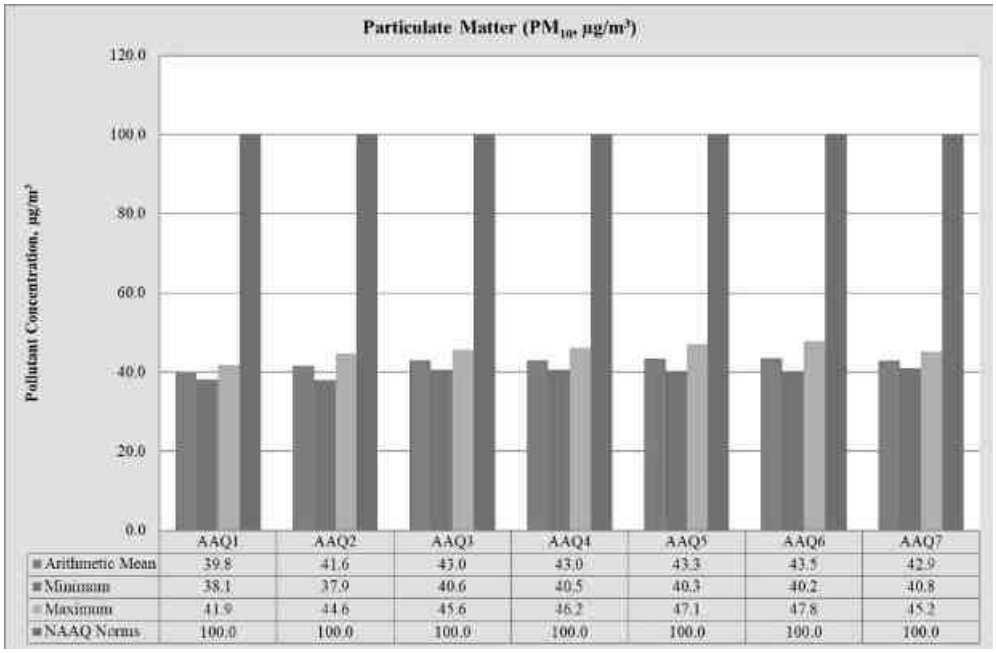


FIGURE 3.14: BAR DIAGRAM OF PARTICULATE MATTER $PM_{2.5}$



	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	19.3	20.4	21.4	21.4	22.0	21.9	21.5
Minimum	17.5	18.3	19.5	19.2	19.5	19.1	19.5
Maximum	20.4	23.5	26.2	25.3	25.4	26.2	25.8
NAAQ Norms	60.0	60.0	60.0	60.0	60.0	60.0	60.0

FIGURE 3.15: BAR DIAGRAM OF PARTICULATE MATTER PM_{10}



	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	39.8	41.6	43.0	43.0	43.3	43.5	42.9
Minimum	38.1	37.9	40.6	40.5	40.3	40.2	40.8
Maximum	41.9	44.6	45.6	46.2	47.1	47.8	45.2
NAAQ Norms	100.0	100.0	100.0	100.0	100.0	100.0	100.0

FIGURE 3.16: BAR DIAGRAM OF GASEOUS POLLUTANT SO_2

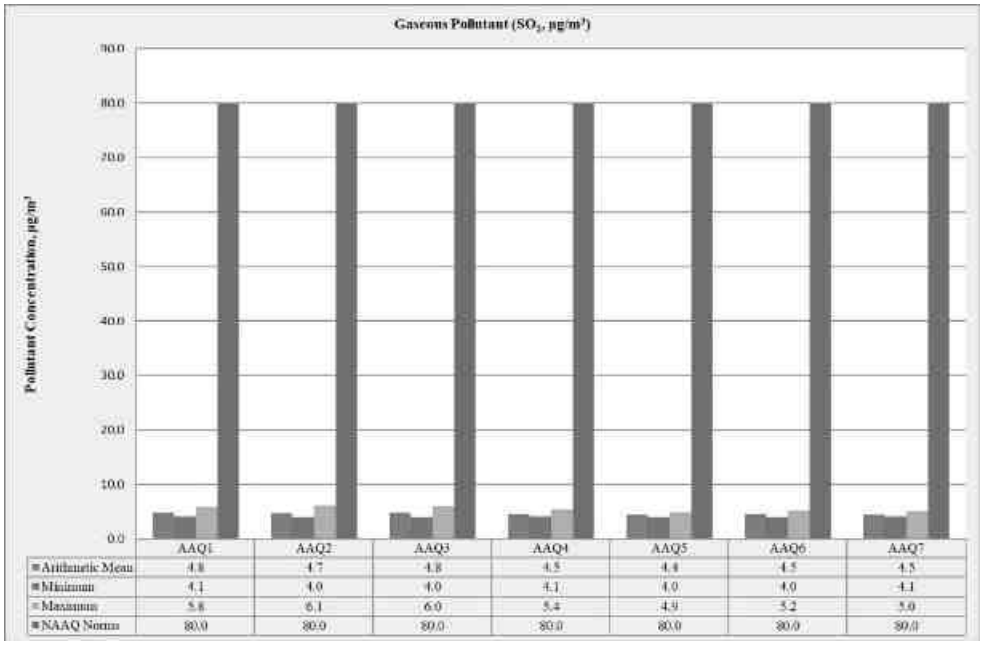
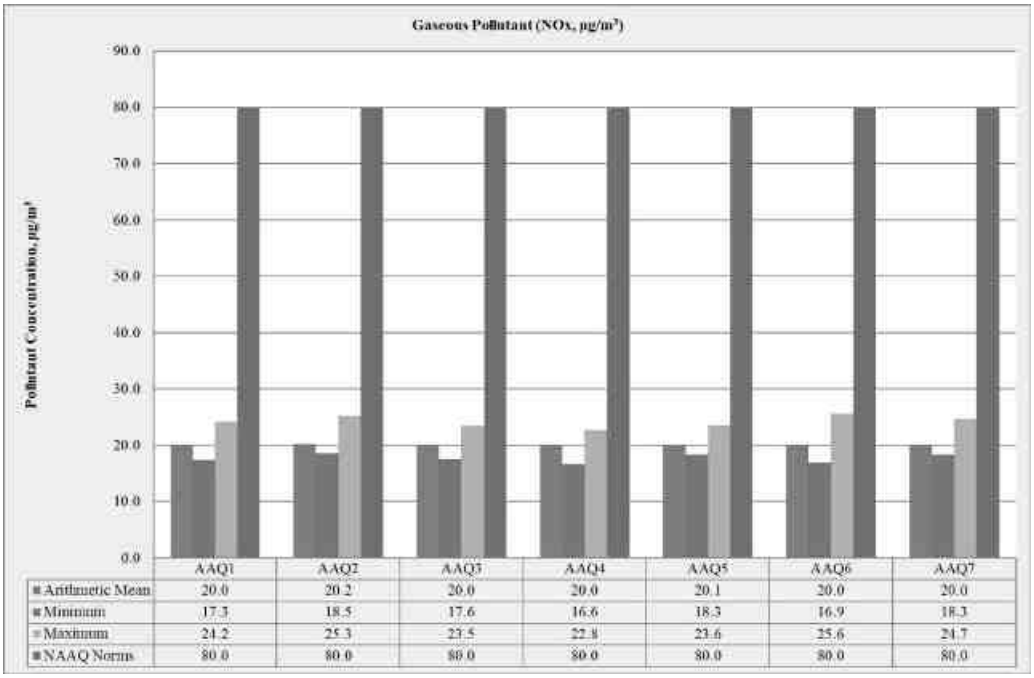


FIGURE 3.17: BAR DIAGRAM OF GASEOUS POLLUTANT NO_x



3.3.6 Interpretations & Conclusion

As per monitoring data, PM_{10} ranges from 39.8 to 43.5µg/m^3, $PM_{2.5}$ data ranges from 19.3 to 22.0µg/m^3, SO_2 ranges from 4.4 to 4.8µg/m^3 and NO_2 data ranges from 20.0 to 20.2µg/m^3. The concentration levels of the above criteria pollutants were observed to be well within the limits of NAAQS prescribed by CPCB.

3.4 NOISE ENVIRONMENT

The vehicular movement on road and mining activities is the major sources of noise in study area, the environmental assessment of noise from the mining activity and vehicular traffic can be undertaken by taking into consideration various factors like potential damage to hearing, physiological responses, and annoyance and general community responses. The main objective of noise monitoring in the study area is to establish the baseline noise level and assess the impact of the total noise expected to be generated during the project operations around the project site.

3.4.1 Identification of Sampling Locations

In order to assess the ambient noise levels within the study area, noise monitoring was carried out at Seven (7) locations. The noise level measurement was carried out at each ambient air quality station. The main aim of the noise level monitoring is

- To assess the ambient Noise level in the study area
- Type of noise pollution generated in the core zone
- To predict the temporal changes in the ambient noise level in the area

The noise level monitoring locations were carried out by covering commercial, residential, rural areas within the radius of 10km. A noise monitoring methodology was chosen such that it best suited the purpose and objectives of the study.

TABLE 3.22: DETAILS OF SURFACE NOISE MONITORING LOCATIONS

S. No	Location Code	Monitoring Locations	Distance & Direction	Coordinates
1	N-1	Core Zone	Project Area	11° 8'59.91"N 77°34'26.36"E
2	N-2	Near Crusher	450m East	11° 8'59.55"N 77°34'45.86"E
3	N-3	Near Existing Quarry	400m SW	11° 8'47.69"N 77°34'17.12"E
4	N-4	Ekkattampalayam (School)	2.5km SE	11° 7'42.73"N 77°35'2.76"E
5	N-5	Karattupalayam (Residential)	3.6km NW	11° 9'53.03"N 77°32'35.77"E
6	N-6	Tippampalayam (School)	3.9km SW	11° 8'18.43"N 77°32'22.72"E
7	N-7	Ottapparai (Residential)	2.3km NE	11° 9'58.07"N 77°35'32.41"E

Source: On-site monitoring/sampling by GLOBAL LAB AND CONSULATANCY SERVICES in association with GEMS.

3.4.2 Method of Monitoring

Digital Sound Level Meter was used for the study. All reading was taken on the 'A-Weighting' frequency network, at a height of 1.5 meters from ground level. The sound level meter does not give a steady and consistent

reading and it is quite difficult to assess the actual sound level over the entire monitoring period. To mitigate this shortcoming, the Continuous Equivalent Sound level, indicated by Leq, is used. Equivalent sound level, 'Leq', can be obtained from variable sound pressure level, 'L', over a time period by using following equation. The equivalent noise level is defined mathematically as,

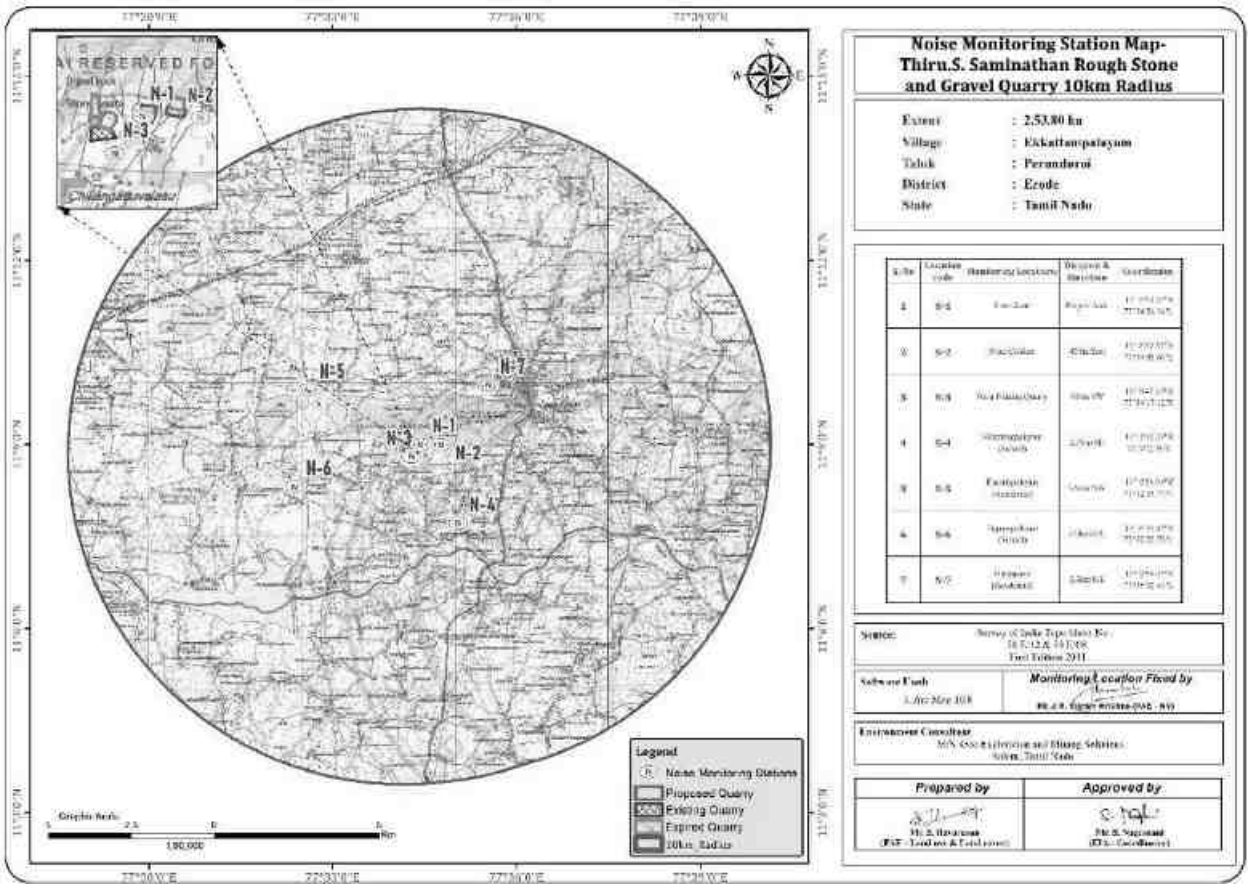
Leq = 10 Log L / T∑ (10Ln/10)

Where L = Sound pressure level at function of time dB (A)

T = Time interval of observation

Measured noise levels, displayed as a function of time, is useful for describing the acoustical climate of the community. Noise levels recorded at each station with a time interval of about 60minutes are computed for equivalent noise levels. Equivalent noise level is a single number descriptor for describing time varying noise levels.

FIGURE 3.20: NOISE MONITORING STATIONS AROUND 10 KM RADIUS



3.4.3 Analysis of Ambient Noise Level in the Study Area

The Digital Sound pressure level has been measured by a sound level meter (Model: HTC SL-1352)

An analysis of the different Leq data obtained during the study period has been made. Variation was noted during the day-time as well as night-time. The results are presented in below Table 3.23.

Day time: 6:00 hours to 22.00 hours.

Night time: 22:00 hours to 6.00 hours.

TABLE 3.23: AMBIENT NOISE QUALITY RESULT

S. No	Locations	Noise level (dB (A) Leq)		Ambient Noise Standards
		Day Time	Night Time	
1	Core Zone	45.4	37.7	**Industrial Day Time- 75 dB (A) Night Time- 70 dB (A)**
2	Near Crusher	51.9	44.2	
3	Near Existing Quarry	52.5	40.7	**Residential Day Time– 55 dB (A) Night Time- 45 dB (A)**
4	Ekkattampalayam (School)	49.5	39.2	
5	Karattupalayam (Residential)	53.2	39.1	
6	Tippampalayam (School)	55.5	38.8	
7	Ottapparai (Residential)	53.3	38.7	

Source: On-site monitoring/sampling by GLOBAL LAB AND CONSULATANCY SERVICES in association with GEMS.

FIGURE 3.21: DAY TIME NOISE LEVELS IN CORE AND BUFFER ZONE

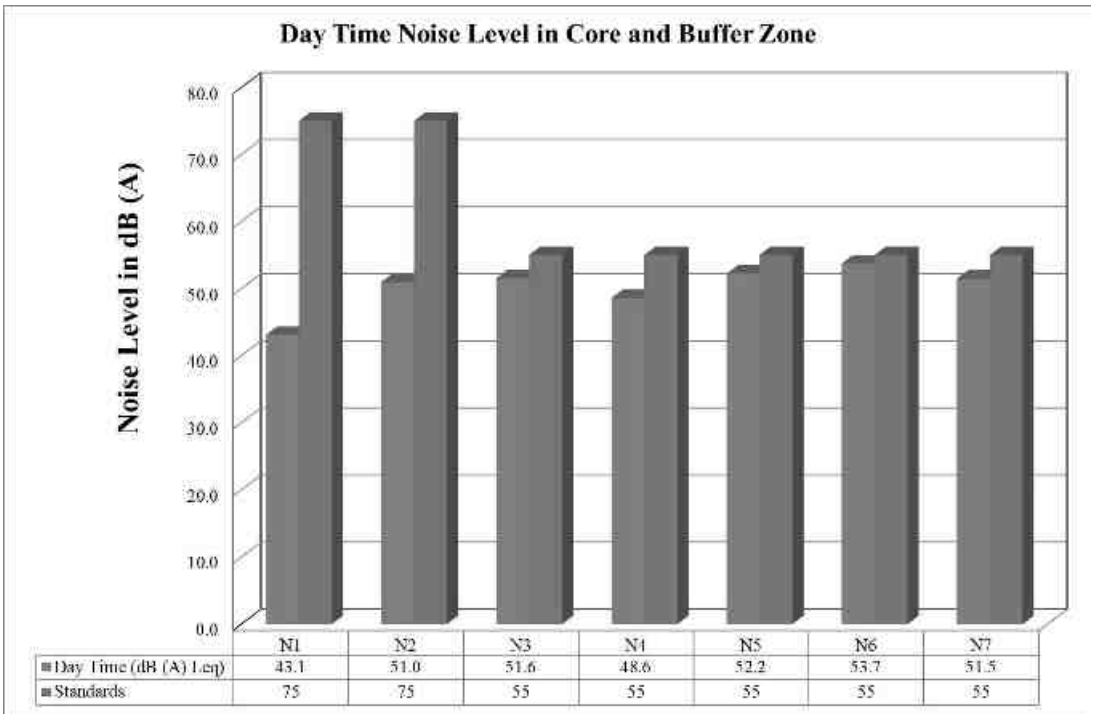
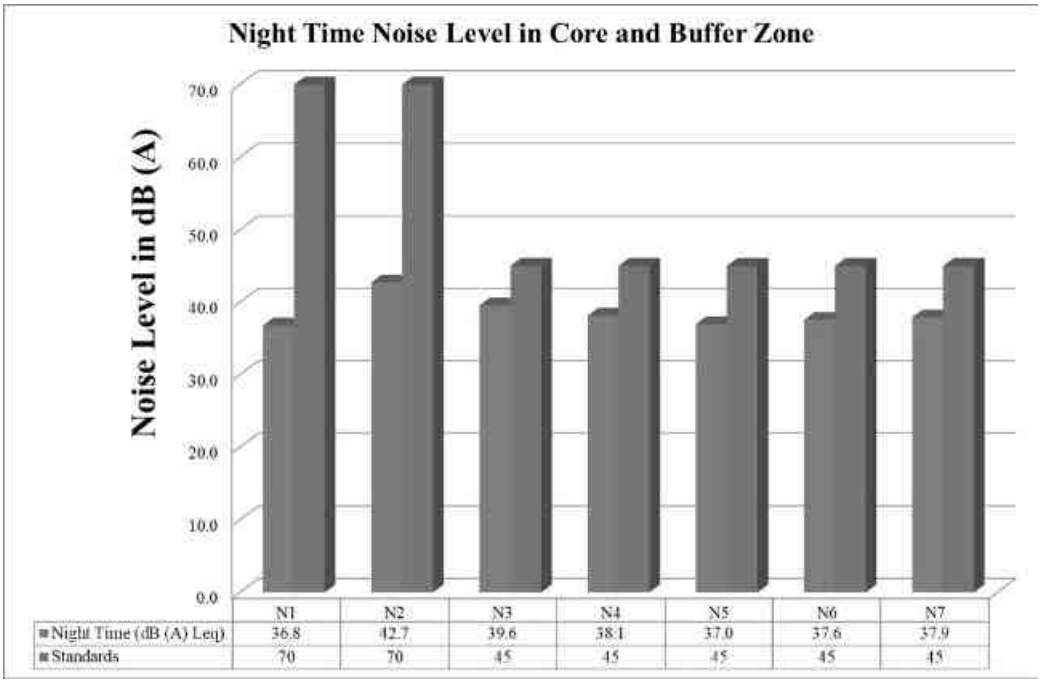


FIGURE 3.22: NIGHT TIME NOISE LEVELS IN CORE AND BUFFER ZONE



3.4.4 Interpretation & Conclusion:

Ambient noise levels were measured at 7 (Seven) locations around the proposed project area. Noise levels recorded in core zone during day time were from 43.1-51.6 dB (A) Leq and during night time were from 36.8-42.7dB (A) Leq. Noise levels recorded in buffer zone during day time were from 48.6-53.7dB (A) Leq and during night time were from 37.0-38.1dB (A)Leq. Thus, the noise level for Industrial and Residential area meets the requirements of CPCB.

3.5 Biological Environment

3.5.1.Study area Ecology

The core area extent of **2.53.80 Ha** of Rough stone and gravel quarry has an impact on diversity of flora and fauna of the surrounding area. But present work was carried out on detailed study of the impacts of Rough stone and gravel quarry on the ecology and biodiversity of the core lease area with the proper mitigation and sustainable management plan. The proposed mine lease area is flat terrain. The following methods were applied during the baseline study of flora, fauna, and diversity assessment.

3.5.2. Objectives of Biological Studies

a) To study the likely impact of the proposed mining project on the local biodiversity and to suggest mitigation measures, if required, for vulnerable biota.
b) Undertake intensive field survey to assess the status of floral & faunal component in different habitats in the core and buffer areas of the project site.
c) Identification and listing of flora and fauna which are important as per the Wildlife (Protection) Act 1972.
d) Suggest Wildlife conservation (species specific/habitat specific) and management plan for the threatened (critically endangered & endangered species - schedule I) faunal species if any reported within the study area.
e) To identify the impacts of mining on agricultural lands and how it affects.
f) Proper collection of information about wildlife Sanctuaries/ national parks/ biosphere reserves of the project area.
g) Devise management & conservation measures for biodiversity.

3.5.3. Methodology of Sampling

Identification of vegetation in relation to the natural flora and crops was conducted through reconnaissance field surveys and onsite observations in core and buffer zone. The plant species identification was done based on the reference materials and also by examining the morphological characteristics and reproductive materials i.e. flowers, fruits and seeds. Land use pattern in relation to agriculture crop varieties were identified through physical verification of land and interaction with local villagers.

The faunal elements (animal species) of core and buffer zone were identified by direct sightings or indirect evidences viz. pug marks, skeletal remains, scats and droppings etc. (Jayson and Easa 2004). Standard binocular was used for the observations. The authenticity of faunal elements occurrence was confirmed by interaction with the local people. Avifauna identification was done with pictorial descriptions of published literature. Information pertaining to existence of any migratory corridors and paths were obtained from local inhabitants. The status of each faunal element was determined and wildlife schedule category was ascertained as per the IUCN-Red Data Book and Indian wildlife (Protection) Act, 1972.

Plot method is used in the floral documentation in the core and buffer zone. For trees (10x10-m), shrubs (5x5-m) and herbs (1x1-m) plots were taken. Birds and butterflies were mainly focused during faunal assessment, transect method was employed for birds and butterflies. Transect is a path along which one counts and records the occurrence of an individual for study. A straight-line walk covering desired distance, within a time span of one hour to 30 minutes was carried out in the proposed region. Bird species were recorded during the hours of peak activity. 0700 to 1100 Hrs and 1430 to 1730 Hrs (Bibby et al. 2000).

Direct observations and bird calls were used for bird documentation. Same transects were used for counting butterflies. Opportunistic observations were made for Amphibians, reptiles and ordinates. The presence of mammals was recorded by direct and indirect signs. All possible transects were taken for birds and butterflies. Birds and butterflies were classified into species level. Recorded bird species were identified to species level using standard books (Ali & Ripley 1987, Grimmett et al., 2016).

3.5.3.1. Sampling

A stratified simple random sampling procedure was employed to obtain a sample from study area. The study area was further stratified in different land use/ecosystems.

3.5.3.2. Sampling Size

Keeping in mind both random sampling technique and covering all land use patterns for the study following sampling locations were chosen depending up on the area of the proposed site.

3.5.3.3. Timing of Study

The study was carried out during morning and evening hours, to cover the different activity phases for important species such as time resting, feeding, hunting, and daily movements.

3.5.3.4. Observations from Sampling

The various observations relating to flora and fauna species are discussed in detail below, in separate sections.

3.5.3.5. Equipment/ References

- Canon Mark III Camera with 50-500mm lens– Snap shots taken
- Leica Binoculars (8x 20) to spot/identify species
- IUCN Red Data Book – https://www.iucnredlist.org/species

Ornithological/Entomological/Herpetological/Mammalian catalogues and pictorial descriptions from various authors and websites are followed for species identification.

3.5.4. Part I Field Sampling Techniques

3.5.4.1. Transect walk – Birds

Six no of transect lines with varying length (100m-300m) and fixed width (2m) were laid which cuts through the core and buffer areas of proposed site. The transect surveys were conducted from 0700 to 1100Hrs and 1430 to 1730Hrs (Bibby et al. 2000). All avifauna found along these transects were recorded for analysing of the data. Counts were conducted while there is no heavy rain, mist or strong wind.

3.5.4.2. Modified Pollard Walk – for Butterflies

The Modified Pollard Walk (Pollard 1977, 1993, Walpole 1999) using fixed width transect walk method were employed to investigate butterfly spatial distribution, diversity, and abundance at the different survey sites.

3.5.4.3. Visual Encounter Survey (VES) - reptiles and amphibians

VES is a time-constrained sampling technique (Campbell and Christman, 1982; Corn and Bury, 1990). It needs a systematic search through an area or habitat for a prescribed time period (Campbell and Christman, 1982). The result of VES is measured against the time spent for search. VES technique is one of the simplest methods and an appropriate technique for both inventory and monitoring Herpetofauna (Heyer et al. 1994).

3.5.4.4. Observational methods- Mammals

For the purpose of recording mammals, we used two different observational techniques: (1) direct observations, and (2) recording of occurrences like holes, markings, scats, hairs, and spines (Menon 2003). For identification confirmations, photographs with a scale reference were used, and locations were recorded using a portable GPS device. Indigenous knowledge particularly that of the locals, was occasionally employed to compile a preliminary list of species and/or aid in the recognition of indicators.

3.5.4.5. Multiple Stage Quadrat – Vegetation

A variety of habitat or vegetation structure variables were measured using the Multiple Stage Quadrat sampling protocol (Sykes and Horrill 1977). All of those areas were sampled, and the major corners were temporarily delineated with colored ribbons. Each site was identified in the field using a compass and clinometer, and the plot's latitude, longitude, and elevation were recorded using a handheld Global Positioning System (Garmin 12XL).

3.5.5. Flora

The quadrat sampling technique was used for sampling vegetation. Sampling quadrats of the regular shape of dimensions 10 × 10 m, 5 × 5 m, and 1 × 1 m, were nested within each other and were defined as the units for sampling the area and measuring the diversity for trees, Shrubs, and herbs respectively.

3.5.5.1. Flora Composition in the Core Zone

Taxonomically a total of 31 species belonging to 17 families have been recorded from the core mining lease area. It is exhibiting plain topography. Based on habitat classification of the enumerated plants the majority of species were Herbs 14, followed by Trees 7, Shrubs 4, Grasses 3, and Climbers/Creepers 1. Details of flora with the scientific name were mentioned in Table No. 3.53. The result of the core zone of flora studies shows that Fabaceae and Poaceae and Lamiaceae are the main dominating species in the study area mentioned in Table No.3.23. No species were found as a threatened category (Table No. 3.23).

Table No: 3.23. Flora in the Core zone of Ekkattampalayam, Rough stone and Gravel quarry, Perundurai Taluk, Erode District.

SI. No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	Neem	Vembu	*Azadirachta indica*	Meliaceae
2.	Mesquite	Mullumaram	*Prosopis juliflora*	Fabaceae
3.	Millettia pinnata	Pongamoiltree	*Pongamia pinnata*	Fabaceae
4.	Pala indigo	Pala maram	*Wrightia tinctoria*	Apocynaeceae
5.	Indian gooseberry	Nelli	*Emblica officinalis*	Phyllanthaceae
6.	White Bark Acacia	Vela maram	*Vachellialeucophloea*	Fabaceae
7.	Banyan tree	Alamaram	*Ficus benghalensis*	Moraceae
Shrubs				
1.	Milk Weed	Erukku	*Calotropis gigantea*	Apocynaceae
2.	Avaram	Avarai	*Senna auriculata*	Fabaceae
3.	Lantana	Unni chedi	*Lantana camara*	Verbenaceae
4.	Night shade plan	Sundaika	*Solanum torvum*	Solanaceae
Herbs				
1.	Common leucas	Thumbai	*Leucas aspera*	Lamiaceae
2.	Devil‘s thorn	Nerunji	*Tribulus terrestris*	Zygophyllales
3.	Asthma-plant	Amman pacharisi	*Euphorbia hirta*	Euphorbiaceae
4.	Pignut	Nattapoochedi	*Hyptissuaveolens*	Lamiaceae
5.	Common Wire weed	Arivalmanaipoondu	*Sida acuta*	Malvaceae
6.	Fish poison	Kolinchi	*Tephrosia purpurea*	Fabaceae
7.	Flannel Weed	Sidamutti	*Sida cordifolia*	Malvaceae
8.	Carrot grass	Parttiniyam	*Parthenium hysterophorus*	Asteraceae
9.	Indian Catmint Plant	Pei viratti	*Anisomelesmalabarica*	Lamiaceae
10.	Indian mallow	Thuthi	*Abutilon indicum*	Meliaceae
11.	Common nut sedge	Korai	*Cyperus rotundus*	Cyperaceae
12.	Indian doab	Arugampul	*Cynodondactylon*	Poaceae
13.	Ban Tulsi	Melakai poondu	*Croton bonplandianus*	Euphorbiaceae
14.	Coat buttons	Thatha poo	*Tridax procumbens*	Asteraceae
Creeper /Climbers				
1	Stemmed vine	Perandai	*Cissus quadrangularis*	Vitaceae
Grass				
1.	Eragrostis	Pullu	*Eragrostisferruginea*	Poaceae
2.	Great brome	Thodappam	*Bromus diandrus*	Poaceae
3.	Nut grass	Korai	*Cyperus rotandus*	Poaceae

Sources: Species observation in the field study



a.Azadirachta indica



b.Calotropis gigantea



c.Leucaenaleucocephala



d. Datura stramonium



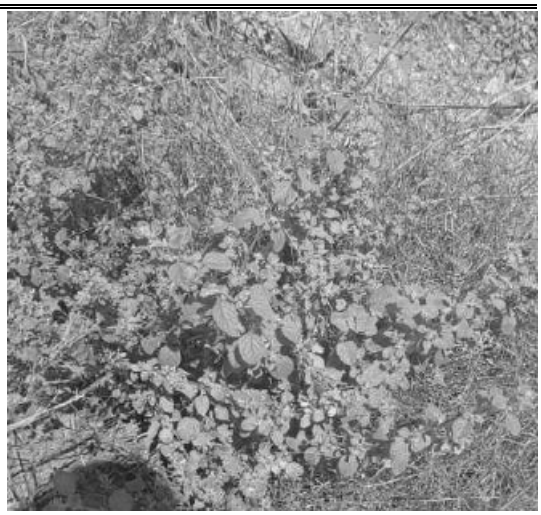
e.Wrightia tinctoria



f.Abutilon indicum



g.Tridax procumbens



h.Hyptis suaveolens



i.Parthenium hysterophorus



j.Tephrosia purpurea



K.Prosopis juliflora



l.Lantana camara

Fig No: 3.33. Flora species observation in the Core zone area

Table No: 3.24. Flora in the Buffer zone of Ekkattampalayam, Rough stone and Gravel quarry, Perundurai Taluk, Erode District.

Sl.No.	English Name	Vernacular Name	Scientific Name	Resource use type *(E,M,EM)
Trees				
1.	Millettia pinnata	Pongamoiltree	*Pongamia pinnata*	E
2.	Tamarind	Puliyamaram	*Tamarindus indica*	EM
3.	Asian Palmyra palm	Panai maram	*Borassus flabellifer*	E
4.	Wild Date Palm	Pericham	*Phoenix sylvestris*	E
5.	Coconut	Thennaimaram	*Cocos nucifera*	EM
6.	River tamarind	Savunda	*Leucaenaleucocephala*	E
7.	Indian siris	Vaagai	*Albizia lebbeck*	E
8.	Lemon	Ezhumuchaipalam	*Citrus lemon*	EM
9.	Mango	Manga	*Mangifera indica*	E
10.	Banyan tree	Alamaram	*Ficus benghalensis*	E
11.	Common jujube	Elanthai	*Zizyphus jujuba*	M
12.	Neem or Indian lilac	Vembu	*Azadirachta indica*	M
13.	Creamy Peacock flower	Vadanarayani	*Delonixelata*	M
14.	Mesquite	Sema Karuvelam	*Prosopis juliflora*	E
15.	Beauty leaf	Punnai	*Calophylluinophyllum*	M
16.	Madras Thorn	Kodukapuli	*Pithecellobium dulce*	E
17.	Castor oil plant	Amanakku	*Ricinus communis*	M
18.	Gum arabic tree	Karuvelam	*Acacia nilotica*	NE
19.	Flame-of-the-forest	Neruppu Kondrai	*Delonix regia*	E
20.	False ashoka	Asoka maram	*Polyalthia longifolia*	E
21.	Mesquite	Seemaikaruvelam	*Prosopis julifera*	E
22.	Monkey pod tree	Thungumoonchi	*Samanea saman*	E
23.	Orchid tree	Cem-mantarai	*Bauhinia variegata*	E
24.	Bitter Albizia	Arappu	*Albizia amara*	M
25.	Giant thorny bamboo	Perumungil	*Bambusabambos*	M
26.	Wood-apple	Vilamaram	*Limoniaacidissima*	M
27.	Orange jessamine	Venkarai	*Murrayapaniculata*	E
28.	Singapore Cherry	Thenpazham	*Muntingiacalabura*	M
29.	Kassod Tree	ManjalKonnai	*Cassia siamea*	M
30.	Black plum	Navalmaram	*Sygygiumcumini*	EM
31.	Eucalyptus	Eucalyptus	*Eucalyptus globules*	EM
32.	Custard apple	Seethapazham	*Annona squamosa*	E

33.	Copperpod	Iyal Vaagai	*Copperpod*	E
34.	Acacia Nilotica	Karuvelammaram	*Vachellianilotica*	M
35.	Indian gooseberry	Nelli	*Emblica officinalis*	EM
36.	Henna	Marudaani	*Lawsoniainermis*	EM
37.	Sacred fig	Arasan	*Ficus religiosa*	E
38.	Indian mulberry	Nuan	*Morinda tinctoria*	E
39.	Teak	Thekku	*Tectona grandis*	E
40.	Papaya	Pappalimaram	*Carica papaya*	EM
41.	Yellow Orchid Tree	Thiruvathi	*Bauhinia tomentosa*	E
42.	Indian cork tree	Maramalli	*Millingtoniahortensi*	E
43.	Peepal	Arasanmaram	*Ficus religiosa*	M
44.	Indian fir tree	Nettilinkam	*Polylathia longifolia*	E
45.	Guava	Koyya	*Psidium guajava*	EM
46.	Curry tree	Velipparuthi	*Murrayakoenigii*	EM
47.	Bamboo	Moonghil	*Bambusabambo*	E
48.	Drumstick tree	Murunga maram	*Moringa oleifera*	EM
49.	Indian almond	Padam maram	*Terminalia catappa*	EM
50.	Mesquite	Velikathanmaram	*Prosopis juliflora*	M
51.	Portia tree	Poovarasan	*Thespesia populnea*	E
Shrubs				
1.	Avaram	Avarai	*Senna auriculata*	M
2.	Night shade plan	Sundaika	*Solanum torvum*	EM
3.	Lantana	Unnichedi	*Lantana camara*	M
4.	Bellyache bush	Kattamanaku	*Jatropha gossypiifolia*	M
5.	Rough cocklebu	Ottarachedi	*Xanthium strumarium*	M
6.	Triangular spruge	Chaturakalli	*Euphorbia antiquorum*	NE
7.	Pinwheelflower	Nanthivattai	*Tabernaemontanadivaricata*	M
8.	Indian jujube	Elanthai	*Ziziphus mauritiana*	M
9.	Coffee senna	Kattuttakarai	*Senna occidentalis*	M
10.	Rosy Periwinkle	Nithyakalyani	*Cathranthus roseus*	M
11.	Chinese chaste tree	Nochi	*Vitex negundo*	E
12.	Bush Morning Glory	NeyvelikKattamanakku	*Ipomoea carnea*	E
13.	Yellow elder	Manjarali	*Tecoma stans*	M
14.	Chinese chastetree	Nochi	*Vitex negundo*	M
15.	Water spinach	Nalikam	*Ipomoea aquatica*	E
16.	Indian Oleander	Arali	*Nerium indicum*	M
17.	Shoe flower	Chemparuthi	*Hibiscu rosa-sinensis*	EM

18.	Puriging nut	Kattamanakku	*Jatropha curcas*	EM
19.	Columnar Cactus	Sappathikalli	*Cereus pterogonus*	M
20.	Thorn apple	Oomathai	*Datura stramonium*	E
21.	Century plant	Anaikathalai	*Agave americana*	M
22.	Jackal jujube	Sooraipazham	*Ziziphus oenopolia*	M
23.	Prickly pear	Nagathali	*Opuntia dillenii*	M
24.	Chinese hibiscus	Chembaruthi	*Hibiscus rosa sinensis*	M
25.	Indian mallow	Thuthi	*Abutilon indicum*	M
26.	Flame of the Woods	Idlipoo	*Xoracoccinea*	M
27.	Peacock Flower	Mayil Kontai	*Caesalpinia pulcherrima*	M
28.	Datura metel	Uumaththai	*Datura metel*	NE
29.	Milk Weed	Erukku	*Calotropis gigantea*	M
30.	Cassava	Maravallikizhangu	*Manihot esculenta*	EM
31.	Hopbush	Virali	*Dodonaeaviscosa*	E
32.	Paper flower	Kahitha poo	*Bougainvillea glabra*	M
33.	Tiger nail	Eli verandi	*Martynia annua*	M
Herbs				
1.	Prickly chaff flower	Nayuruv	*Achyranthes aspera*	M
2.	Tridax daisy	Veetukaayapoondu	*Tridax procumbens*	M
3.	Indian Copperleaf	Kuppaimeni	*Acalypha indica*	M
4.	Indian doab	Arugampul	*Cynodondactylon*	E
5.	Indian Catmint Plant	Pei viratti	*Anisomelesmalabarica*	M
6.	Cleome viscosa	Nai kadugu	*Celomeviscosa*	M
7.	Porcupine flower	Shemmuli	*Barleriaprionitis*	E
8.	Mexican Fireplant	Paaperuki	*Euphorbia heterophylla*	M
9.	Common Wireweed	Arivalmanaipoondu	*Sida acuta*	M
10.	Punarnava	Mukkirattai	*Boerhaaviadiffusa*	EM
11.	Mexican prickly poppy	Kudiyotti	*Argemone mexicana*	M
12.	Common leucas	Thumbai	*Leucas aspera*	M
13.	Ban Tulsi	Melakai poondu	*Croton bonplandianus*	M
14.	Licorice weed	Kallurukki	*Scoparia dulcis*	M
15.	Chay root	Chaaya ver	*Oldenlandiaumbellata*	M
16.	Slender dwarf morning-glory	Vittunu-k-kiranti	*Evolvulusalsinoides*	M
17.	Spiny amaranth	Mullukeerai	*Amaranthus spinosus*	M
18.	Cracker plant	Tapas kaaya	*Ruellia tuberosa*	M
19.	Flannel Weed	Sidamutti	*Sida cordifolia*	M
20.	Green amaranth	Mulai keerai	*Amaranthus viridis*	M

21.	Marsh barbel	Neermulli	*Hygrophila auriculata*	M
22.	Yellow-fruit nightshade	Kandakathirika	*Solanum surattense*	M
23.	Shameplant	Thottachenunki	*Mimosa pudica*	M
24.	Common Purslane	Paruppukeerai	*Portulaca oleracea*	M
25.	Water willow	Kodakasalai	*Justicia procumbens*	M
26.	Threadstem carpetweed	Parpatakam	*Mollugocerviana*	M
27.	Perennial Water Primrose	Muyalkathu Ilai	*Ludwigia perennis*	M
28.	Node Flower	Kumattikkirai	*Allmanianodiflora*	M
29.	Sessile Joyweed	Ponnankanni	*Alternanthera sessilis*	M
30.	Asthma-plant	Ammanpacharisi	*Euphorbia hirta*	M
31.	Pignut	Nattapoochedi	*Hyptissuaveolens*	M
32.	Holy basil	Thulasi	*Ocimumtenuiflorum*	M
33.	Pink Blumea	Suvattrumullangi	*Blumeamollis*	M
34.	Madagascar Periwinkle	Nithykalyani Podi	*Catharanthus roseus*	E
35.	Asian spiderflower	Naaikaduku	*Cleome viscosa L*	M
36.	Digeria muricata	Thoiyakeerai	*Digeria muricata*	EM
37.	Carrot grass	Parttiniyam	*Parthenium hysterophorus*	NE
38.	Europeanblack nightshade	Manathakkali	*Solanumnigrum*	EM
39.	Mountain knotgrass	Thengaipookirai	*Aerva lanata*	M
40.	Ash Fleabane	Puvangkuruntal	*Vernonia cinerea*	M
41.	Bindii	Nerunchi	*Tribulus terrestris*	M
42.	Fish poison	Kolinchi	*Tephrosia purpurea*	M
43.	Chrysanthemum	Samanthi Poo	*Chrysanthemum*	E
44.	East Indian globe thistle	Kottakaranthai	*Sphaeranthus indicus*	M
45.	Tomato	Thakkali	*Solanum lycopersicum*	EM
46.	False daisy	Karisalankanni	*Eclipta alba*	M
47.	Sessile Joyweed	Ponnakanni	*Alternanthera sessilis*	M
48.	Chilli	Milakai	*Capsicum annuum*	EM
49.	Red Spiderling	Mukirattai	*Boerhaviadiffusa*	M
50.	Aloe	Katrazhai	*Aloe vera*	M
51.	Eggplant	Kathrikkai	*Solanum melongena*	EM
52.	Coat buttons	Thatha poo	*Tridax procumbens*	M
53.	Indian mint	Karpuravalli	*Coleus amboinicus*	EM
54.	Aloe barbadensis	Katrazhai	*Aloe vera*	EM
Climber/ Creeper				
1.	Stemmed vine	Perandai	*Cissus quadrangularis*	M
2.	Wild bitter	Pavarkai	*Momordica charantia*	EM

3.	Pointed gourd	Kovakkai	*Trichosanthes dioica*	EM
4.	Balloon vine	Mudakkathan	*Cardiospermum helicacabum*	M
5.	Ivy gourd	Kovai	*Coccinia grandis*	M
6.	Asian pigeonwings	Sangu poo	*Clitoriaternatea*	M
7.	Bottle Guard	Sorakkai	*Lagenaria siceraria*	EM
8.	Wild Water Lemon	Siru Punaikkali	*Passiflora foetida*	M
9.	Ground Spurge	Sithrapaalavi	*Euphorbia prostrata*	EM
10.	Madras Pea Pumpkin	Musu musu	*Mukiamaderaspatena*	M
Grass				
1.	Jungle rice	KuthiraivaalKattuarusi	*Echinochloacolona*	NE
2.	Mauritian Grass	Moongilpul	*Apludamutica*	NE
3.	Swollen Windmill Grass	Kondai Pul	*Chloris barbata*	NE
4.	Needle Grass	Thodappam	*Aristida adscensionis*	E
5.	Eragrostis	Pullu	*Eragrostisferruginea*	E
6.	Needle Grass	-	*Aristida funiculata*	NE
7.	Windmill grass	Chevvarakupul	*Chloris barbata*	NE
8.	Sugarcane	Karumbu	*Saccharum*	E

Sources: Species observation in the field study and secondary data

3.5.6. Flora Composition in the Buffer Zone

Similar habitats may be found in the buffer area as well, although there is a wider variety of plants there than in the core zone area. The proposed project site there are 156 species in the buffer zone study area in total, based on records. The floral (156) varieties among them Trees 51, Herbs 54, Shrubs 33, Climbers/ Creepers 10, and Grasses 8, were identified. The result of the buffer zone of flora studies shows that Fabaceae and Cucurbitaceous, Euphorbiaceae is the main dominating species in the study area mentioned in Table No.3.24 There are no impacts due to this mining activity. There are no Rare, Endangered, and Threatened Flora species in the mining area and their surrounding study area. Apart from the proposed project area, there is agricultural land. Horticulture and agricultural land are untouched. There are no Rare, Endangered, and Threatened Flora species in the mining area and their surrounding study area. A list of floral species has been prepared based on primary survey (site observations) and discussion with local people. The total number of different plant life forms under trees, shrubs, herbs, and climbers is shown in Table 3.25 and their % distribution is shown in Figure 3.34.

Table 3.25: Number of floral life forms in the Study Area

S. No	Plant Life Form	Number of Species
1	Trees	51
2	Shrubs	33
3	Herbs	54
4	Climber/Creepers	10
6	Grasses	8
Total No. of Species		156

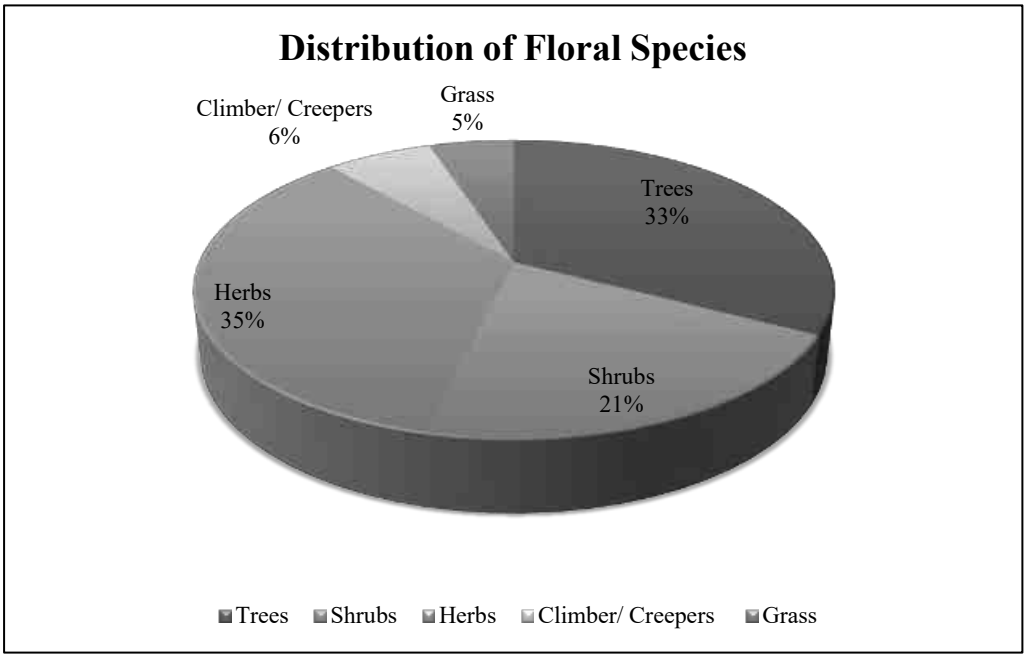


Fig No. 3.34: Diagram showing % distribution of floral life forms



a.Calotropis gigantea



b.Azadirachta indica



c.Lantana camara



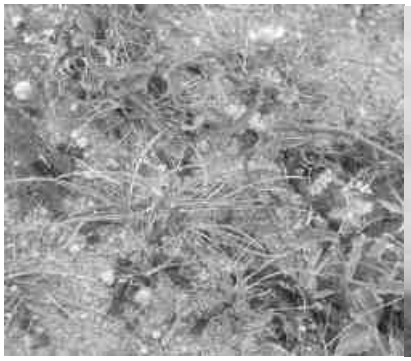
d. Nerium indicum



e. Emblica officinalis



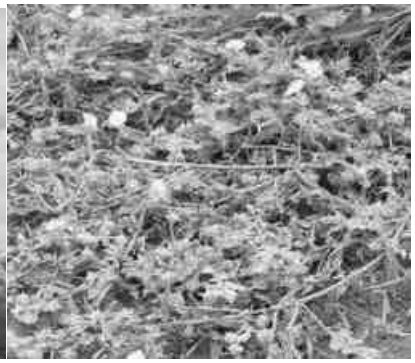
f.Annona reticulata



g.Tridax procumbens



h.Borassus flabellifer



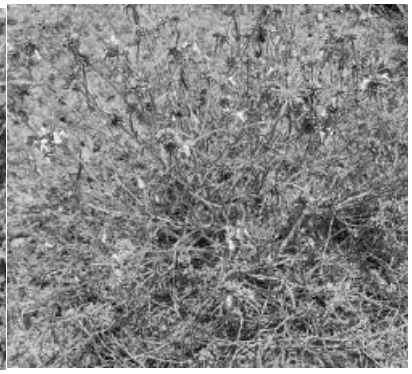
i.Tribulus terrestris



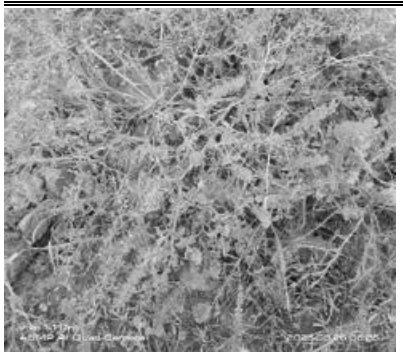
j. Tamarindus indica



k.Jatropha curcas



l. Leucas aspera


m.Ocimum tenuiflorum


n.Euphorbia hirta


o.Croton bonplandianus


P.Cocos nucifera

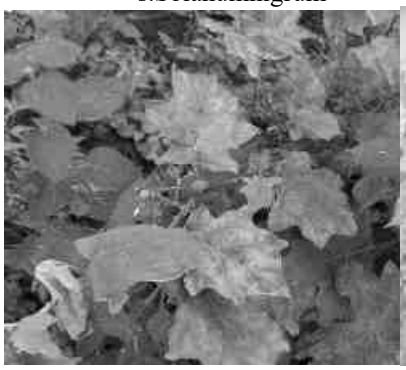

q.Thespesia populnea

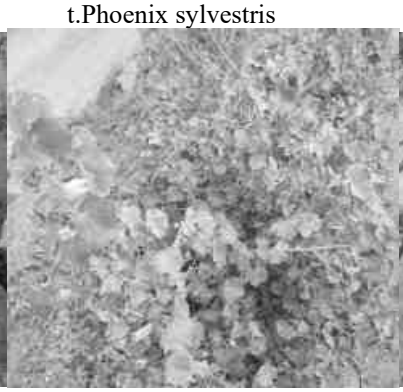

r.Euphorbia antiquorum


s.Solanumnigrum


t.Phoenix sylvestris


u.Prosopis juliflora


V.Solanum torvum


w.Abutilon indicum


x.Morinda tinctoria





Y.Hibiscu rosa-sinensis z.Ficus benghalensis a.Mangifera indica

Fig No: 3.35. Flora species observation in the Buffer zone area

3.5.7. The vegetation in the RF / PF areas, ecologically sensitive areas

There are neither reserved (RF) nor protected (PF) forests either in the mine lease area or in the buffer zone. Thus, no forest land is involved in any manner. Hence, no certificate from the Forest department is required. There are no impacts due to this mining activity.

There are no protected or ecologically sensitive areas such as National parks or Important Bird Areas (IBAs), or Wetlands or migratory routes of fauna or water bodies or human settlements within the proposed mine lease area. There are no Biosphere reserves or wildlife sanctuaries or National parks or Important Bird Areas (IBAs), or migratory routes of fauna. Thus, the area under study (Mine lease area and the 10 Km buffer zone) is not ecologically sensitive. It is away from the proposed project site.

There are neither forests nor forest dwellers nor forest-dependent communities in the mine lease area. There shall be no forest-impacted families (PF) or people (PP). Thus, the rights of Traditional Forest Dwellers will not be compromised on account of the project.

3.6. Fauna

The faunal survey has been carried out as per the methodology cited and listed out Mammals, birds, Reptiles, Amphibians, and Butterflies. All the listed species were compared with the Red Data Book and the Indian Wildlife Protection Act, 1972. There are no rare, endangered, threatened (RET), and endemic species present in the core area.

3.6.1. Fauna Composition in the Core Zone

Core Zone: During the study, it was found that the faunal diversity in the core site was limited to Butterflies, insects, and some species of mammals & and reptiles among them numbers Insects 8, Reptiles 6, Mammals 3, and Avian 9. The core site has avifauna species like crow, Black drongo, Koel, etc. None of these species are threatened or endemic in the study area and surroundings. There is no Schedule I species and 13 species are under Schedule IV according to the Indian Wildlife Act 1972. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

There are no critically endangered, endangered, vulnerable and endemic species were observed. Details of fauna in core zone with the scientific name were mentioned in Table No. 3.56.

Table No: 3.26. Fauna in the Core zone of Ekkattampalayam, Rough stone and Gravel quarry, Perundurai Taluk, Erode District

SI. No	Common Name	Scientific Name	Schedule list WLPC 1972
Insects			
1.	Common Tiger	*Danaus genutia*	NL
2.	Red-veined darter	*Sympetrum fonscolombii*	NL
3.	Tawny coster	*Danaus chrysippus*	Schedule IV
4.	House fly	*Musca domestica*	-
5.	Dragonfly	*Agriansp*	-
6.	Striped tiger	*Danaus plexippus*	Schedule IV
7.	Grey pansy	*Junoniaatlites*	LC
8.	Common Tiger	*Danaus genutia*	LC
Reptiles			
1.	Oriental garden lizard	*Calotes versicolor*	NL
2.	Green vine snake	*Ahaetulla nasuta*	Schedule IV
3.	Oriental garden lizard	*Calotes versicolor*	NL
4.	Rat snake	*Ptyas mucosa*	Sch IV (Part II)
5.	Indian forest skink	*Sphenomorphus indicus*	NL
6.	House lizards	*Hemidactylus flaviviridis*	Schedule IV
Mammals			
1.	Indian Field Mouse	*Mus booduga*	Schedule IV
2.	Asian Small Mongoose	*Herpestesjavanicus*	Schedule (Part II)
3.	Squirrel	*Funambulus palmarum*	Schedule IV
Aves			
1.	Rose-ringed parkeet	*Psittaculakrameri*	Schedule IV
2.	Common myna	*Acridotheres tristis*	NL
3.	Blue-rock pigeon	*Colombalivia*	Schedule IV
4.	Yellow wagtail	*Motacilla flava*	Schedule IV
5.	Pond heron	*Ardeolagrayii*	Schedule IV
6.	Asian koel	*Eudynamysscolopacea*	Schedule IV
7.	Koel	*Eudynamys*	Schedule IV
8.	Black drongo	*Dicrurusmacrocercus*	Schedule IV
9.	House crow	*Corvussplendens*	NL

(Sources: Species observation in the field study)

3.6.2. Fauna Composition in the Buffer Zone

As animals, especially vertebrates move from place to place in search of food, shelter, mate or other biological needs, separate lists for core and buffer areas are not feasible however, a separate list of fauna pertaining to core and buffer zone are listed separately. Though there is no reserved forests in the buffer zone. As such there are no chances of occurrence of any rare or endangered or endemic or threatened (REET) species within the core or buffer area.

There are no Sanctuaries, National Parks, Tiger Reserve or Biosphere reserves or Elephant Corridor or other protected areas within 10 km radius of from the core area. It is evident from the available records, reports, and circumstantial evidence that the entire study area including the core and buffer areas were free from any endangered animals. There were no resident birds other than common bird species such as Red-whiskered Bulbul, Asian Koel, House crow, Black drangos, Crows, Pond heron etc.

The list of Mammals (*directly sighted animals & Secondary data) is given in table No.3.26. The list of bird species recorded during the field survey and literature from the study area are given in Table 3.27. The list of reptilian species recorded during the field survey and literature from the study area is given in Table 3.28. The list of insect species recorded during the field survey and literature from the study area are given in Table 3.29. The list of Butterflies species recorded during the field survey and literature from the study area are given in Table 3.30. It is apparent from the list that none of the species either spotted or reported is included in Schedule I of the Wildlife Protection Act. Similarly, none of them comes under the REET category.

Taxonomically a total of 66 species recorded were from the buffer zone area. Based on habitat classification the majority of species were birds 30, followed by Butterflies 12, Reptiles 10, Insects 5, Mammals 5, and Amphibians 4. There are five Schedule II species, two species are under the schedule III and forty-nine species are under Schedule IV according to the Indian Wildlife Act 1972. A total of 30 species of bird were sighted in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed. There are no impacts on nearby fauna species.

Dominant species are mostly birds, butterflies, and insects, and four amphibian was observed during the extensive field visit Sphaerotheca breviceps, Euphlyctishexadactylus,Bufomelanostictus,etc. There is no Schedule I Species in the study area. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

Table 3.27. List of Fauna & Their Conservation Status,

Mammals: (*directly sighted animals & Secondary data)

SI. No	Scientific Name	Common Name/English Name	Schedule list wildlife Protection act 1972
1.	*Rattus norwegicus*	Brown rat	Schedule IV
2.	*Funambulus palmarum*	Indian palm squirrel	Schedule IV
3.	*Herpestesjavanicus*	Asian Small Mongoose	Schedule (Part II)
4.	*Lepus nigricollis*	Indian hare	Schedule (Part II)
5.	*Mus booduga*	Indian Field Mouse	Schedule IV

Table 3.28. Listed birds

SI. No	Scientific Name	Common Name/English Name	Schedule list wildlife Protection act 1972
1.	*Turdoides striata*	Jungle babbler	Schedule IV
2.	*Saxicoloidesfulicatus*	Indian robin	Schedule IV
3.	*Eudynamys*	Asian Koel	Schedule IV
4.	*Bubulcus ibis*	Cattle egret	Schedule IV
5.	*Columbidae*	Rock pigeon	Schedule IV
6.	*Acridotheres tristis*	Common myna	Schedule IV
7.	*Corvussplendens*	House crow	Schedule IV
8.	*Pycnonotuscafer*	Red Vented Bulbul	Schedule IV
9.	*Meropsorientalis*	Small Bee Eater	Schedule IV
10.	*Cinnyris asiaticus*	Purple sunbird	Schedule IV
11.	*Hierococcyxvarius*	Common hawk-cuckoo	Schedule IV
12.	*Passer domesticus*	House sparrow	Schedule IV
13.	*Alcedo atthis*	Small blue Kingfisher	Schedule IV
14.	*Psittaculakrameri*	Rose-ringed parkeet	Schedule IV
15.	*Cypsiurusbalasiensis*	Asian Palm Swift	Schedule IV

16.	*Coturnix coturnix*	Common quail	Schedule IV
17.	*Ardeolagrayii*	Pond herons	Schedule IV
18.	*Dicrurusmacrocercus*	Black drongo	Schedule IV
19.	*Picidae*	Woodpecker bird	Schedule IV
20.	*Ploceusphilippines*	Weaver bird	Schedule IV
21.	*Dicrurusmacrocercus*	Two-tailed Sparrow	Schedule IV
22.	*Dicruruslongicaudatus*	Grey drongo	Schedule IV
23.	*Francolinuspondicerianus*	Grey Francolin	Schedule IV
24.	*Tringaglareola*	Wood Sandpiper	Schedule IV
25.	*Meropsphilippinus*	Blue-Tailed Bee Eater	Schedule IV
26.	*Coracias benghalensis*	Indian Roller	Schedule IV
27.	*Hirundo rustica*	Common Swallow	Schedule IV
28.	*Orthotomussutorius*	Common Tailor Bird	NL
29.	*Cinnyris asiaticus*	Purple Sunbird	NL
30.	*Dinopiumbenghalense*	Lesser Golden Backed Woodpecker	Schedule IV

Reference: Ali, S. (2002). The Book of Indian Birds (13th revised edition). Oxford University Press, New Delhi. 326pp**.**

Table 3.29. List of Reptiles either spotted or reported from the study area.

(*indicates direct observations & Secondary data)

SI. No	Scientific Name	Common Name/English Name	Schedule list wildlife Protection act 1972
1.	*Calotes versicolor*	Oriental garden lizard	NL
2.	*Hemidactylus flaviviridis*	House lizards	Schedule IV
3.	*Naja naja*	Indian cobra	Sch II (Part II)
4.	*Ahaetulla nasuta*	Green vine snake	Schedule IV
5.	*Ptyas mucosa*	Rat snake	Sch IV (Part II)
6.	*Bungarus caeruleus*	Common krait	Schedule IV
7.	*Mabuyacarinatus*	Common skink	NL
8.	*Viperarussseli*	Russell's viper	Sch II (Part II)
9.	*Nerodia piscator*	Fresh water snake	Sch III (Part II)
10.	*Groemydabijuga*	Fresh water tortoise	Sch III (Part II)

Table 3.30. List of insects either spotted or reported from the study area

SI. No	Scientific Name	Common Name/English Name	Schedule list wildlife Protection act 1972
1.	*Apis cerana*	Indian honey bee	-
2.	*Hamitermessilvestri*	Termite	NE
3.	*Hieroglyphussp*	Grasshopper	NL
4.	*CamponotusVicinus*	Ant	NL
5.	*Ceratogomphus pictus*	Dragonfly	-

Table.3.31. List of Butterflies reported from the study area

SI. No	Scientific Name	Common Name/English Name	Schedule
1.	*Suastusgremius*	Indian palm bob	Schedule IV
2.	*Papilio polytes*	Common Mormon	Schedule IV
3.	*Pachlioptaaristolochiaee*	Common rose	Schedule IV
4.	*Euremalaeta*	Spotless grass yellow	Schedule IV
5.	*Danaus genutia*	Common Tiger	Schedule IV
6.	*Catopsiliapomona*	Common emigrant	Schedule IV
7.	*Colotisdanae*	Crimson tip	Schedule IV
8.	*Euploea core*	Common Indian crow	Schedule IV
9.	*Papilio demoleus*	Lime Butterfly	Schedule IV
10.	*Junoniahierta*	Yellow Pansy	Schedule IV
11.	*Junoniaiphita*	Chocolate Pansy	Schedule IV
12.	*Euploeasylvester*	Double-branded Black Crow	Schedule IV

3.6.3. Aquatic Ecology

Mining activities will not have an impact on aquatic ecosystems because no effluent discharge from the Limestone mine is planned. There are no natural perennial surface water bodies, such as marshes, rivers, streams, lakes, or agricultural sites, inside the mining lease area. The study region contains a few seasonal bodies of water. There is no aquatic flora and, aquatic faun. Hence, it does not harbour any significant aquatic life. Therefore, the project is not likely to affect the aquatic ecology.Aquatic weeds are found to be growing everywhere in 10 km radius area, in every water bog, pond, etc. Typha angustata can be found growing all along the drains of villages, small water-logged depressions, and agricultural fields lacking water but containing enough moisture to support its growth. And where water is present, Eichhornia crassipes has taken its roots and covers the entire water surface by its sprawl and invasion.

3.6.3.1. Objectives of Aquatic Studies

- ✓ Generating data through actual field collection in these locations over the study period.
- ✓ Impacts on aquatic fauna/flora
- ✓ Consulted with locals to obtain knowledge about aquatic flora and animals.

3.6.3.2. Macrophytes

The macrophytes observed within the study area are tabulated in Table 3.32.

Table No.3.32. Description of Macrophytes

Sl.No	Scientific name	Common Name	Vernacular Name (Tamil)	IUCN Red List of Threatened Species
1.	*Eichorniacrassipe*	Water hyacinth	Agayatamarai	NA
2.	*Aponogetonnatans*	Floating lace plant	Kottikizhnagu	NA
3.	*Nymphaea nouchali*	Blue water lily	Nellambal	LC
4.	*Typha angustifolia*	Sambu	Narrowleaf cattail	LC
5.	*Carexcruciata*	Cross Grass	Koraipullu	NA
6.	*Cyperus exaltatus*	Tall Flat Sedge	Koraikizhangu	LC

Sources: Species observation in the field study

3.6.3.3. Aquatic Faunal Diversity

Amphibian species like the common Indian Burrowing frog, and Green pond frog, and etc. were sighted near the water bodies located in the study area.

Table no. 3.33. Amphibians Observed/Recorded from the Study Area

SI. No	Scientific Name	Common Name/English Name	Schedule list wildlife Protection act 1972
1.	*Sphaerotheca breviceps*	Indian Burrowing frog	Schedule IV
2.	*Euphlyctishexadactylus*	Green pond frog	Schedule IV
3.	*Bufomelanostictus*	Indian Toad	Schedule IV
4.	*Euphlyctiscynophlyctis*	Skipper	Schedule IV

3.6.3.4. Other Aquatic Fauna

3.6.3.4.1. Fishes

The study area has low aquatic diversity, with few types of fish living. The species of fish reported during the primary visit are Rohu, Catla, Catfish, etc. Species of fish reported in the study area are given in table 3.64.

Table 3.34. Based on Actual Sighting, based on inputs from locals and Perused from Secondary Data

S.No	Scientific name	Common name	Family
1.	*Puntius sophore*	Ponthia	Cyprinidae
2.	*CatlaCatla*	Catla	Cyprinidae
3.	*Lepidopuscaudatus*	Silver scabbardfish	Trichiuridae
4.	*Siluriformes*	Catfish	-
5.	*Labeorohita*	Rohu	Cyprinidae
6.	*Electrophorus electricus*	Eel fish	Gymnotidae

Sources: Species observation in the field study

3.6.4. Findings/Results

The assessment was carried out during the Post monsoon season. The inspection day was quite alright with respectable weather. The details of the flora and fauna observed are given below.

Records of threatened species in the area

No threatened species were observed

Endangered Species as per Wildlife (Protection) Act

No Endangered fauna was recorded in the project area**.**

Endemic Species of the Project areas

No endemic species were observed in the project area.

Migratory species of the Project areas

No migratory fauna observed in project area.

Migratory corridors and Flight paths

No migratory corridors and Flight paths were observed in project area.

Breeding and spawning grounds

No breeding and spawning grounds were earmarked for the wildlife fauna in project area.

There are no critically endangered, endangered, vulnerable and endemic species were observed. As the rainfall in the area is scanty and as no toxic wastes are produced or discharged on account of mining, the proposed mining activity is not going to have any additional and adverse impacts on these RET species. There are no ecologically sensitive areas or protected areas within the 10 Km radius. Hence no specific conservation for conservation of any RET species or Wildlife is envisaged.

There are no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar sites, Tiger/Elephant Reserves/(existing as well as proposed) within 10 km of the mine lease area. There are no protected forests within the project area. Hence submission of clearance from the National Board of Wildlife does not arise.

There is no endangered, endemic and RET Species. There is no Schedule I species in study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] The proposed project is not going to have any direct or indirect adverse impact on the species mentioned above.

3.7. Conclusion

The observations and assessment of the overall ecological scenario involve details such as classification of Biogeographic zone, eco-region, habitat types and land cover, distances from natural habitats, vegetation/forest types, and sensitive ecological habitats such as Wetlands sites, Important Bird areas, migration corridors of important wildlife etc. Such baseline information provides better understanding of the situation and overall ecological importance of the area. This baseline information viewed against proposed project activities help in predicting their impacts on the wildlife and their habitats in the region. Data collected and information gathered from secondary literature on flora, fauna, protected area, natural habitats, and wildlife species etc., and consulted and discussed with local people, from the villages, herders and farmers who inhabit close to the proposed project area.

3.6 SOCIO ECONOMIC ENVIRONMENT

Socio-economic study is an essential part of environmental study. It includes demographic structure of the area, provision of basic amenities viz., housing, education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern as well as feature like temples, historical monuments etc., at the baseline level. This will help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project. It is expected that the Socio-Economic Status of the area will substantially improve because of this proposed project. As the proposed project will provide direct and indirect employment and improve the infrastructural facilities in that area and, thus, improve their standard of living.

3.6.1 STRUCTURE STUDY

There are few structures within the radius of 300m from the project site, the details of the structures are given below:

FIGURE 3.27: STRUCTURE MAP



TABLE 3.40: ENUMERATION OF STRUCTURES 0- 300m radius

Enumeration of Structure from 0 – 500m Radius						
Structure Numbers	**Distance & Direction from the project site**	**Structure Details and Usage Purpose**	**Type of Structure Structures (Kutcha/ Brick/ Cement/ RCC/ Framed Structures)**	**No. of Occupants**	**Structure belongs to owner (Yes/No)**	**Remarks**
1	170m – South West	Farm House & Used to store agriculture goods and materials	Commercial	Nil	No	Used as store Room
2	260m – South East	Farm House & Used to store agriculture goods and materials	Commercial	Nil	No	Used as store Room

3.6.2 Objectives of the Study

The objectives of the socio-economic study are as follows:

- To study the socio-economic status of the people living in the study area.
- To assess the impact of the project on Quality of life of the people in the study area.
- To recommend Community Development measures needs to be taken up in the study Area.

3.6.3 Scope of Work

- To study the Socio-economic Environment of the area from the secondary sources;
- Data Collection & Analysis
- Prediction of project impact
- Mitigation Measures

3.6.4 District Profile

Erode District lies on the extreme north of Tamil Nadu. It is bounded mostly by Karnataka State and also River Palar covers pretty long distance. To the East lies Namakkal and Karur Districts. Dindigal District is its immediate neighbour to the South and on the West, it has Coimbatore and Nilgiri Districts, as its boundaries. Thus, Erode District is essentially a land-locked area having no sea-cost of its own. Erode District situated at between 10 36” and 11 58” North Latitude and between 76 49” and 77 58” East Longitude.

Now Erode District consists of 10 taluks viz., Erode, Modakkurichi, Kodumudi, Perundurai, Bhavani, Anthiyur, Gobichettipalayam, Sathyamangalam, Thalavadi and Nambiyur. There are 4 Municipalities in the district viz., Sathyamangalam, Bhavani, Gobichettipalayam, and Punjai Puliampatti. The other four Municipalities in the district viz. Periasemur, Kasipalayam, Surampatti and Veerappanchatram have been merged recently with Erode Corporation. There are 42 Town Panchayats, 230 Village Panchayats and 375 Revenue Villages. There are 14 Community Development Blocks in the district.

https://erode.nic.in/about-district/

Village profile

Ekkattampalayam is a large village located in Perundurai Taluka of Erode district, Tamil Nadu with total 1506 families residing. The Ekkattampalayam village has population of 4720 of which 2360 are males while 2360 are females as per Population Census 2011.In Ekkattampalayam village population of children with age 0-6 is 346 which makes up 7.33 % of total population of village. Average Sex Ratio of Ekkattampalayam village is 1000 which is higher than Tamil Nadu state average of 996. Child Sex Ratio for the Ekkattampalayam as per census is 880, lower than Tamil Nadu average of 943.

TABLE 3.41: CENSUS DATA OF VILLAGE EKKATTAMPALAYAM --CENSUS 2011

Population	Area (Ha)	Sex Ratio	Literacy
4720	1383.96	1000	64.43%

The village Ekkattampalayam is located in Perundurai Taluk of Erode District in the State of Tamil Nadu in India. It is governed by Ekkattampalayam Gram Panchayat. It comes under Chennimalai Community Development Block. The nearest town is Chennimalai, which is about 2 kilometers away from Ekkattampalayam. Pincode of Ekkattampalayam village is 638051. As per census 2011 village code of village Ekkattampalayam is 635015.

TABLE 3.42: DEMOGRAPHICS POPULATION OF EKKATTAMPALAYAM VILLAGE

Total Population	Male Population	Female Population
4720	2360	2360

Sex Ratio of Ekkatamplayam Village -Census 2011

As per the Census Data 2011 there are 2360 Females per 2360 males out of 4720 total population of village. There are 831 girls per 1000 boys under 6 years of age in the village.

Literacy of Ekkatampalayam Village

Out of total population total 2818 people in Ekkatamplayam Village are literate, among them 1606 are male and 1212 are female in the village. Total literacy rate of Ekkatamplayam is 64.43%, for male literacy is 73.81% and for female literacy rate is 55.14%.

TABLE 3.43: EKKATTAMPALAYAM VILLAGE CENSUS 2011 DATA ---CENSUS 2011

Description	Census 2011 Data
Village Name	Ekkatampalayam
Taluk Name	Perundurai
District Name	Erode
State Name	Tamil Nadu
Total Population	4720

Description	Census 2011 Data
Total Area	1383.96 (Hectares)
Total No of House Holds	1506
Total Male Population	2360
Total Female Population	2360
0-6 Age group Total Population	346
0-6 Age group Male Population	184
0-6 Age group Female Population	162
Total Person Literates	2818
Total Male Literates	1606
Total Female Literates	1212
Total Person Illiterates	1902
Total Male Illiterates	754
Total Female Illiterates	1148
Scheduled Cast Persons	1122
Scheduled Cast Males	576
Scheduled Cast Females	546
Scheduled Tribe Persons	0
Scheduled Tribe Males	0
Scheduled Tribe Females	0

Worker's profile of Ekkatampalayam Village

In Ekkattampalayam village out of total population, 2,984 were engaged in work activities. 98.4% of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 1.6% were involved in Marginal activity providing livelihood for less than 6 months. Of 2,984 workers engaged in Main Work, 600 were cultivators (owner or co-owner) while 1,161 were Agricultural labourers.

TABLE 3.44: EKKATTAMPALAYAM WORKING POPULATION ---CENSUS 2011

	Total	Male	Female
Total Workers	2327	1309	1018
Main Workers	2936	1623	1313
Main Workers Cultivators	600	306	294
Agriculture Labourer	1161	503	658

	Total	Male	Female
Household Industries	94	51	43
Other Workers	1081	763	318
Marginal Workers	48	14	34
Non-Working Persons	1736	723	1013

TABLE 3.45: EKKATTAMPALAYAM VILLAGE DATA ---CENSUS 2011

Description	Data
Village Name	Ekkatampalayam
Gram Panchayat Name	Ekkatampalayam
Taluk Name	Perndurai
Reference Year	2011
Sub District HQ Name	Perundurai
Sub District HQ Distance	19 Km
District HQ Name	Erode
District HQ Distance	35.9 Km
Nearest Town	Chennimalai
Nearest Town Distance	2 Km
Pincode	638051

TABLE 3.47: POPULATIN DATA AROUND 5KM RADIUS

Sl.No.	Village Name	No of HH	Total Population	Male	Female	Total SC Population	Male SC	Female SC	Total ST Population	Male ST	Female ST	Total Literate Population	Male Literate	Female Literate	Total Illiterate Population	Male Illiterate	Female Illiterate	Total Workers Population
1	Basuvapatti	1081	3406	1715	1691	1255	630	625	0	0	0	2037	1186	851	1369	529	840	2090
2	Chennimalai	19904	66334	34461	31873	13899	7047	6852	14	8	6	42536	25475	17061	23798	8986	14812	37540
3	Ekkattampalayam	1506	4720	2360	2360	1268	647	621	0	0	0	2818	1606	1212	1902	754	1148	2984
4	Ellaigramam	350	1101	558	543	177	88	89	0	0	0	603	350	253	498	208	290	743
5	Kuppuchipalayam	386	1209	601	608	145	71	74	0	0	0	746	416	330	463	185	278	830
6	Kuthampalayam	414	1364	692	672	702	359	343	0	0	0	698	403	295	666	289	377	789
7	Mukasi Pulavapalayam	313	1020	495	525	236	109	127	0	0	0	718	391	327	302	104	198	588
8	Murungatholuvu	2166	7097	3614	3483	1172	599	573	6	3	3	4517	2605	1912	2580	1009	1571	4202
9	Nanjai Palatholuvu	74	179	86	93	94	41	53	0	0	0	102	60	42	77	26	51	123
10	Orathupalayam	133	385	194	191	45	23	22	0	0	0	203	118	85	182	76	106	248
11	Pudupalayam .	399	1217	621	596	387	189	198	0	0	0	722	445	277	495	176	319	870
12	Punjai Palatholuvu	604	1879	944	935	555	289	266	0	0	0	1098	663	435	781	281	500	1176
13	Voipadi	591	1791	896	895	153	76	77	0	0	0	1134	672	462	657	224	433	1094

Sl.No	Village Name	Male Workers	Female Workers	Total Main Workers	Main Workers Male	Main Workers Female	Main Cultivation Workers	Main Cultivation Workers Male	Main Cultivation Workers Female	Main Agriculture Workers	Main Agriculture Workers Male	Main Agriculture Workers Female	Main Other Workers	Main Other Workers Male	Main Other Workers Female	Total Margin Workers

1	Basuvapatti	1161	929	2052	1146	906	351	196	155	1019	480	539	585	423	162	38
2	Chennimalai	21810	15730	36290	21316	14974	8340	4647	3693	10992	4915	6077	15307	10870	4437	1250
3	Ekkattampalayam	1637	1347	2936	1623	1313	600	306	294	1161	503	658	1081	763	318	48
4	Ellaigramam	401	342	739	401	338	300	163	137	356	176	180	69	53	16	4
5	Kuppuchipalayam	441	389	784	425	359	225	114	111	328	158	170	203	137	66	46
6	Kuthampalayam	465	324	675	401	274	137	80	57	305	149	156	220	161	59	114
7	Mukasi Pulavapalayam	331	257	449	244	205	126	71	55	90	42	48	214	126	88	139
8	Murungatholuvu	2406	1796	4145	2381	1764	974	537	437	795	347	448	2109	1353	756	57
9	Nanjai Palatholuvu	63	60	122	63	59	18	13	5	65	22	43	36	26	10	1
10	Orathupalayam	138	110	248	138	110	113	59	54	67	25	42	64	50	14	0
11	Pudupalayam .	467	403	848	460	388	165	125	40	455	165	290	227	169	58	22
12	Punjai Palatholuvu	654	522	1174	653	521	478	258	220	428	192	236	203	156	47	2
13	Voipadi	631	463	817	537	280	179	108	71	78	39	39	483	344	139	277

S.No	Village Name	Margin Workers Male	Margin Workers Female	Margin Cultivation Workers	Margin Cultivation Workers Male	Margin Cultivation Workers Female	Margin House Hold Workers	Margin House Hold Workers Male	Margin House Hold Workers Female	Margin Other Workers	Margin Other Workers Male	Margin Other Workers Female	Non Worker Population	Non Worker Male	Non Worker Female
1	Basuvapatti	15	23	0	0	0	5	1	4	19	10	9	1316	554	762
2	Chennimalai	494	756	77	38	39	59	15	44	771	336	435	28794	12651	16143
3	Ekkattampalayam	14	34	0	0	0	0	0	0	26	10	16	1736	723	1013
4	Ellaigramam	0	4	0	0	0	0	0	0	0	0	0	358	157	201
5	Kuppuchipalayam	16	30	1	1	0	1	0	1	19	13	6	379	160	219
6	Kuthampalayam	64	50	1	0	1	0	0	0	25	18	7	575	227	348
7	Mukasi Pulavapalayam	87	52	1	1	0	8	1	7	129	84	45	432	164	268

8	Murungatholuvu	25	32	10	2	8	10	7	3	29	12	17	2895	1208	1687
9	Nanjai Palatholuvu	0	1	0	0	0	0	0	0	1	0	1	56	23	33
10	Orathupalayam	0	0	0	0	0	0	0	0	0	0	0	137	56	81
11	Pudupalayam .	7	15	2	1	1	0	0	0	3	1	2	347	154	193
12	Punjai Palatholuvu	1	1	0	0	0	1	1	0	0	0	0	703	290	413
13	Voipadi	94	183	8	2	6	15	1	14	247	90	157	697	265	432

TABLE 3.48: COMMUNICATION & TRANSPORT FACILITIES IN THE STUDY AREA

Sl	Village Name	PO	SPO	PTO	T	PCO	MP	IC / CSC	PCF	BS	PBS	RS	NH	SH	MDR	BTR	GR	NWR	FP
1	Basuvapatti	2	1	2	1	1	1	2	2	1	2	2	2	1	1	1	1	2	1
2	Chennimalai	2	2	2	1	1	1	2	2	1	2	2	2	2	2	1	1	2	1
3	Ekkattampalayam	2	1	2	1	2	1	2	2	1	1	2	2	1	1	1	1	2	1
4	Ellaigramam	2	1	2	1	2	1	2	2	1	2	2	2	2	2	1	1	2	1
5	Kuppuchipalayam	2	2	2	1	2	1	2	2	1	2	2	2	1	1	1	1	2	1
6	Kuthampalayam	2	1	2	1	1	1	2	2	1	2	2	2	2	2	1	1	2	1
7	Mukasi Pulavapalayam	2	2	2	1	1	1	2	2	1	2	2	2	2	2	1	1	2	1
8	Murungatholuvu	2	1	2	1	2	1	2	2	1	1	2	2	2	1	1	1	2	1
9	Nanjai Palatholuvu	2	2	2	1	2	1	2	2	1	2	2	2	2	1	1	1	2	1
10	Orathupalayam	2	2	2	1	2	1	2	2	1	2	2	2	2	2	1	1	2	1
11	Pudupalayam .	2	1	2	1	2	1	2	2	1	2	2	2	2	2	2	1	2	1
12	Punjai Palatholuvu	2	1	2	1	1	1	2	2	1	2	2	2	2	1	1	1	2	1
13	Voipadi	2	1	2	1	1	1	2	2	1	2	1	2	2	2	1	1	2	1

TABLE 3.49: WATER & DRAINAGE FACILITIES IN THE STUDY AREA

Sl	Village Name	TP	CW	UCW	HP	TW/BH	S	R/C	T/P/L	CD	OD	CT
1	Basuvapatti	1	1	1	1	1	2	2	2	1	1	2
2	Chennimalai	1	1	1	2	1	2	2	2	1	1	2
3	Ekkattampalayam	1	1	1	1	1	2	2	2	1	1	1
4	Ellaigramam	1	1	1	2	1	2	2	2	1	1	2
5	Kuppuchipalayam	1	1	1	1	1	2	2	2	1	1	2
6	Kuthampalayam	1	2	2	2	2	2	2	2	2	1	2
7	Mukasi Pulavapalayam	1	2	1	2	1	2	2	2	1	1	2
8	Murungatholuvu	1	1	1	1	1	2	2	2	1	1	2
9	Nanjai Palatholuvu	1	2	2	1	2	2	2	2	2	2	2
10	Orathupalayam	1	2	2	2	2	2	2	2	1	1	2
11	Pudupalayam .	1	1	1	1	1	1	2	2	1	1	2
12	Punjai Palatholuvu	1	2	1	2	1	2	2	2	1	1	1
13	Voipadi	1	2	2	2	1	1	2	2	1	1	2

TABLE 3.50: OTHER FACILITIES IN THE STUDY AREA

Sl	Village Name	ATM	CB	COB	ACS	SHG	PDS	RM	AMS	NC	NC-AC	CC	SF	PL		NPS	APS	BDRO	PS
1	Basuvapatti	2	2	2	2	1	2	2	2	1	1	2	1	2		2	2	2	1
2	Chennimalai	2	2	2	2	2	1	2	2	1	1	1	2	2		2	1	1	1
3	Ekkattampalayam	2	2	2	2	1	1	2	1	1	1	1	1	1		1	1	1	1
4	Ellaigramam	2	2	2	2	1	1	2	2	1	1	2	2	2		1	1	1	1
5	Kuppuchipalayam	2	2	2	2	1	1	2	2	1	1	1	1	1		1	1	1	1
6	Kuthampalayam	2	2	2	2	1	1	2	2	1	1	1	1	1		1	1	1	1
7	Mukasi Pulavapalayam	2	2	2	2	1	1	2	2	1	1	2	1	2		1	1	1	1
8	Murungatholuvu	2	2	2	1	1	1	2	2	1	1	2	1	1		1	1	1	1

9	Nanjai Palatholuvu	2	2	2	2	1	1	2	2	2	2	2	2	1		1	2	1	1
10	Orathupalayam	2	2	2	2	1	1	2	2	2	2	2	1	2		1	2	2	1
11	Pudupalayam .	2	2	2	2	1	1	2	2	1	1	1	1	2		1	1	1	1
12	Punjai Palatholuvu	2	2	2	2	1	1	2	2	1	1	2	1	1		1	1	1	1
13	Voipadi	2	2	2	1	1	1	2	2	1	1	2	2	1		1	1	1	1

TABLE 3.51: EDUCATIONAL FACILITIES IN THE STUDY AREA

		PPS		PS		MS		SS		SSS		DC		EC		MC		MI		PT		VTS		SSD	
Sl	Village Name	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P
1	Basuvapatti	1	2	1	1	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	Chennimalai	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	Ekkattampalayam	1	2	1	1	1	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
4	Ellaigramam	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
5	Kuppuchipalayam	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6	Kuthampalayam	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	Mukasi Pulavapalayam	1	1	1	2	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	1	2	2	2	2
8	Murungatholuvu	1	2	1	1	1	1	1	2	1	2	2	2	2	1	2	2	2	1	2	1	2	2	2	2
9	Nanjai Palatholuvu	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
10	Orathupalayam	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
11	Pudupalayam .	1	2	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
12	Punjai Palatholuvu	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
13	Voipadi	1	2	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

TABLE 3.52: MEDICAL FACILITIES IN THE STUDY AREA

Sl. No.	Village Name	CHC	PHC	PHSC	MCW	TBC	HA	HAM	D	VH	MHC	FWC	NGM-I/O
1	Basuvapatti	0	0	1	0	0	0	0	0	0	0	0	b
2	Chennimalai	0	0	1	0	0	0	0	0	0	0	0	b

3	Ekkattampalayam	0	0	1	0	0	0	0	0	0	0	0	a
4	Ellaigramam	0	0	1	0	0	0	0	0	0	0	0	b
5	Kuppuchipalayam	0	0	0	0	0	0	0	0	0	0	0	c
6	Kuthampalayam	0	0	0	0	0	0	0	0	0	0	0	b
7	Mukasi Pulavapalayam	0	0	0	0	0	0	0	0	0	0	0	a
8	Murungatholuvu	0	0	1	1	0	0	0	0	1	0	0	b
9	Nanjai Palatholuvu	0	0	0	0	0	0	0	0	0	0	0	b
10	Orathupalayam	0	0	0	0	0	0	0	0	0	0	0	b
11	Pudupalayam .	0	0	0	0	0	0	0	0	0	0	0	b
12	Punjai Palatholuvu	0	1	1	1	1	0	0	1	0	0	1	b
13	Voipadi	0	0	1	1	0	0	0	0	0	0	0	b

3.6.5 Basic Amenities

A better network of physical infrastructure facilities (well-built roads, rail links, irrigation, power and telecommunication, information technology, market-network and social infrastructure support, viz. health and education, water and sanitation, veterinary services and co-operative) is essential for development of the rural economy.

A review of infrastructure facilities available in the area has been given on the basis of field survey. In this study the villages which fall within 10 km radius around the site has been covered. Infrastructure facilities available in the area are presented below.

All basic amenities Education (higher education, colleges, universities, medical college, Transport facilities, Railway station, Bus station area available in the district headquarters Virdhunagar.

3.6.6 Recommendation and Suggestion

- The main activities in the area are agriculture, quarry operation and Crushing units.
- Due to the project about 37 Nos of peoples will be benefitted directly due to employment and more than 50 Nos of peoples and Crushers will be benefitted through this project
- As part of CER activities proponent intends to spend Rs. 3.0 Lakhs.
- At the end of the life of the mine the mined-out pit will act as temporary reservoir, the collected rain water in the mine pit may utilized for the nearby agriculture lands.

Apart from the following general activities will be conducted

- Awareness program to be conducted to make the population aware to get education and a better livelihood.
- Vocational training programme can be organized to make the people self - employed, particularly for women and unemployed youth.
- On the basis of qualification and skills local community may be preferred. Long term and short-term employments can be generated.
- While developing an Action Plan, it is very important to identify the population who falls under the marginalized and vulnerable groups. So that special attention can be given to these groups with special provisions while making action plans.

3.6.7 Summary &Conclusion

The socio-economic study of surveyed villages gives a clear picture of its population, average household size, literacy rate and sex ratio etc. It is also found that a part of population is suffering from lack of permanent job to run their day-to-day life. Their expectation is to earn some income for their sustainability on a long-term basis. The proposed project will aim to provide preferential employment to the local people there by improving the employment opportunity in the area and in turn the social standards will improve.

4. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

4.0 GENERAL

Environmental impacts both direct and indirect on various environmental attributes due to proposed mining activity will be created in the surrounding environment, during the operational and post–operational phases. The occurrence of mineral deposits, being site specific, their exploitation, often, does not allow for any choice except adoption of eco-friendly operation. The methods are required to be selected in such a manner, so as to maintain environmental equilibrium ensuring sustainable development.

In order to maintain the environmental commensuration with the mining operation, it is essential to undertake studies on the existing environmental scenario and assess the impact on different environmental components. This would help in formulating suitable management plans sustainable resource extraction.

Several scientific techniques and methodologies are available to predict impacts of physical environment. Mathematical models are the best tools to quantitatively describe the cause-and-effect relationships between sources of pollution and different components of environment. In cases where it is not possible to identify and validate a model for a particular situation, predictions have been arrived at based on logical reasoning /consultation / extrapolation.

The following parameters are of significance in the Environmental Impact Assessment and are being discussed in detail

- Land environment
- Soil environment
- Water Environment
- Air Environment
- Noise Environment
- Socio economic environment
- Biological Environment

Based on the baseline environmental status at the project site, the environmental factors that are likely to be affected (Impacts) are identified, quantified and assessed.

4.1 LAND ENVIRONMENT:

4.1.1 Anticipated Impact

- 2.25.0 Ha of the land will be under mining site the Permanent or temporary change on land use and land cover will occur
- Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations due to dust, noise and it also causes traffic hazards.
- Due to degradation of land by pitting the aesthetic environment of the core zone may be affected.
- Earthworks during the rainy season increase the potential for soil erosion and sediment laden water entering the water ways.
- If no due care is taken wash off from the exposed working area may choke the water course & can also causes the siltation of water course

4.1.2 Mitigation Measures

- The 2.25.0Ha of the land will be converted into temporary reservoir which will full fill the water scarcity in the drought season and the nearby agriculture land will be benefitted by the supply of water
- About 1270 Nos of trees will be planted in the lease area and approach road will retain the eco system
- The mining activity will be gradual confined in blocks and excavation will be undertaken progressively along with other mitigative measures like phase wise development in the production
- Construction of garland drains all around the quarry pits and construction of silt trap at strategic location in lower elevations to prevent erosion due to surface runoff during rainfall and also to collect the storm water for various uses within the proposed area.
- Green belt development along the boundary within safety zone. The small quantity of water stored in the mined-out pit will be used for greenbelt.
- Thick plantation will be carried out on unutilized area, top benches of mined out pits, on safety barrier, etc.,
- Fencing will be constructed before starting the mining operation and it will be maintained in the conceptual stage Security will be posted round the clock, to prevent inherent entry of the public and cattle.

4.1.1.1 Soil Environment

Impact on Soil Environment

Erosion and Sedimentation (Removal of protective vegetation cover; Exposure of underlying soil horizons that may be less pervious, or more erodible than the surface layers; Reduced capacity of soils to absorb rainfall; Increased energy in storm-water runoff due to concentration and velocity; and Exposure of subsurface materials which are unsuitable for vegetation establishment).

Mitigation Measures

- Garland drains will be constructed all around the project boundary to prevent surface flows from entering the quarry. And will be discharged into vegetated natural drainage lines, or as distributed flow across an area stabilised against erosion.
- Sedimentation ponds - Run-off from working areas will be routed towards sedimentation ponds (Silt Pond). These trap sediments and reduce suspended sediment loads before runoff is discharged from the quarry site. Sedimentation ponds should be designed based on runoff, retention times, and soil characteristics. There may be a need to provide a series of sedimentation ponds to achieve the desired outcome.
- Retain vegetation – Retain existing or re-plant the vegetation at the site wherever possible.
- Monitoring and maintenance – Weekly monitoring and daily maintenance of erosion control systems so that they perform as specified specially during rainy season.

Waste Dump Management

There is no waste anticipated in this Rough Stone and gravel quarrying operation. The entire quarried out materials will be utilized (100%).

4.2 WATER ENVIRONMENT

4.2.1 Anticipated Impact

- The major sources of water pollution normally associated due to mining and allied operations are:
  - Generation of waste water from vehicle washing.
  - Washouts from surface exposure or working areas
  - Domestic sewage
  - Disturbance to drainage course in the project area
  - Mine Pit water discharge
- Increase in sediment load during monsoon in downstream of lease area
- This being a mining project, there will be no process effluent. Waste from washing of machinery may result in discharge of Oil & grease, suspended solids.
- The sewage from soak pit may percolate to the ground water table and contaminate it.
- Surface drainage may be affected due to Mining
- Abstraction of water may lead to depletion of water table
- 2.0 KLD water will be utilized for the quarrying operation

4.2.2 Mitigation Measures

- Water for the quarrying operation such as sprinkling on haul roads, Greenbelt development will be sourced from the lower part of the mine pit which is specifically allotted to collect the rain water.
- Garland drain, settling tank will be constructed along the proposed mining lease area. The Garland drain will be connected to settling tank and sediments will be trapped in the settling traps and only clear water will be discharged out to the natural drainage
- Rainwater will be collected in sump in the mining pits and will be allowed to store and pumped out to surface setting tank of 15 m x 10m x 3m to remove suspended solids if any. This collected water will be judiciously used for dust suppression and such sites where dust likely to be generated and for developing green belt. The proponent will collect and judicially utilize the rainwater as part of rainwater harvesting system.
- Periodic (every 6 month once) analysis of quarry pit water and ground water quality in nearby villages.
- Domestic sewage from site office & urinals/latrines provided in ML is discharged in septic tank followed by soak pits.
- Wastewater discharge from mine will be treated in settling tanks before using for dust suppression and tree plantation purposes.
- De-silting will be carried out before and immediately after the monsoon season.

4.3 AIR ENVIRONMENT

4.3.1 Anticipated Impact

- During mining, at various stages activities such as excavation, drilling, blasting, and transportation of materials, particular matter (PM), gases such as Sulphur dioxide, oxides of Nitrogen from vehicular exhaust are the main air pollutants.

- Emissions of noxious gases due to incomplete detonation of explosive may sometimes pollute the air.
- The fugitive dust released from the mining operations may cause effect on the mine workers who are directly exposed to the fugitive dust.
- Simultaneously, the air-borne dust may travel to longer distances and settle in the villages located near the mine lease area.

4.3.2 Modelling of Incremental Concentration from all Proposed Projects

Wind erosion of the exposed areas and the air borne particulate matter generated by quarrying operation, and transportation are mainly PM_{10}& $PM_{2.5}$ and emissions of Sulphur dioxide (SO_2) & Oxides of Nitrogen (NOx) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

Similarly, loading -unloading and transportation of Rough Stone, wind erosion of the exposed area and movement of light vehicles causes of pollution. This leads to an impact on the ambient air environment around the project area.

Anticipated incremental concentration due to this quarrying activity and net increase in emissions due to quarrying activities within 500 meters around the project area is predicted by Open Pit Source modelling using **AERMOD Software.**

Prediction of impacts on air environment has been carried out taking into consideration cumulative production all the quarries fall in the Cluster. Air environment and net increase in emissions by Open pit source modelling in AERMOD Software AERMOD 12.

4.3.2.1 Emission Estimation

An emissions factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant.

The general equation for emissions estimation is:

$$E = A \times EF \times (1-ER/100)$$

Where:

E = emissions;

A = activity rate;

EF = emission factor, and

ER =overall emission reduction efficiency, %

The proposed mining activity includes various activities like ground preparation, excavation, handling and transport of Rough Stone. These activities have been analysed systematically basing on USEPA-Emission Estimation Technique Manual, for Mining AP-42, to arrive at possible emissions to the atmosphere and estimated emissions are given in Table 4-2.

4.3.2.2 Frame work of Computation & Model details

Suspended Particulate Matter (SPM)is the major pollutant occurred during quarrying activities. The prediction included the impact of Excavation, Drilling, Blasting (Occasionally), loading and movement of vehicles

during transportation and meteorological parameters such as wind speed, wind direction, temperature, rainfall, humidity and Cloud cover.

Impact was predicted over the distance of 10 km around the source to assess the impact at each receptor separately at the various locations and maximum incremental GLC value at the project site. Maximum impact of PM_{10} was observed close to the source due to low to moderate wind speeds. Incremental value of PM_{10} was superimposed on the base line data monitored at the proposed site to predict total GLC of PM_{10} due to combined impacts

TABLE 4.1: ESTIMATED EMISSION RATE

PM_{10}			
Activity	**Source type**	**Value**	**Unit**
Drilling	Point Source	0.099350603	g/s
Blasting	Point Source	0.002341354	g/s
Mineral Loading	Point Source	0.043808175	g/s
Haul Road	Line Source	0.002495776	g/s/m
Overall Mine	Area Source	0.076319674	g/s
So2	Area Source	0.001029563	g/s
Nox	Area Source	0.000107772	g/s

FIGURE 4.1: AERMOD TERRAIN MAP

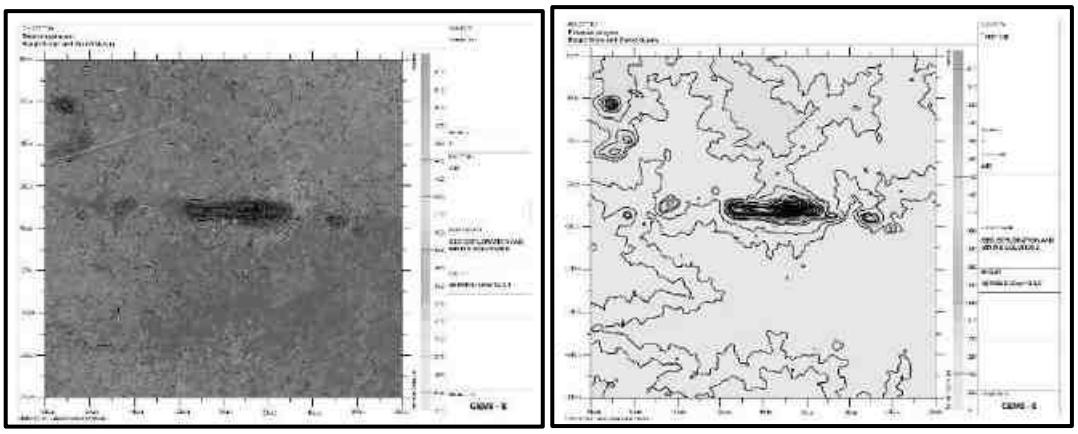


FIGURE 4.2: PREDICTED INCREMENTAL CONCENTRATION OF PM_{10}

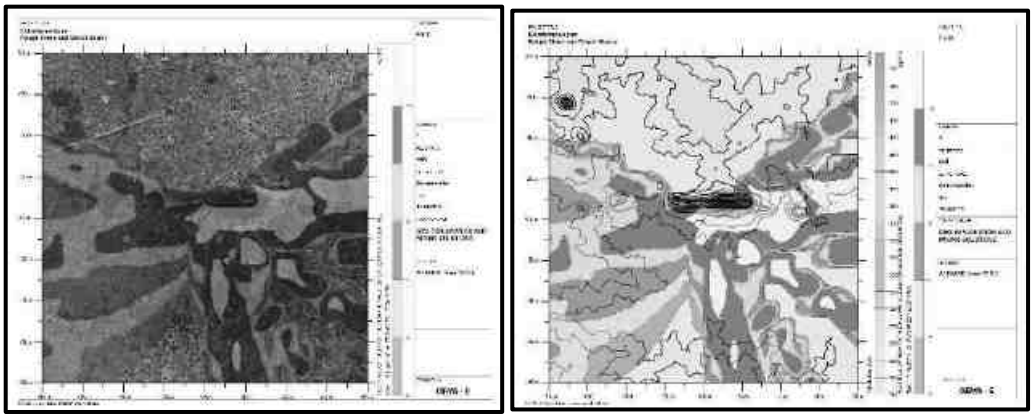


FIGURE 4.3: PREDICTED INCREMENTAL CONCENTRATION OF $PM_{2.5}$

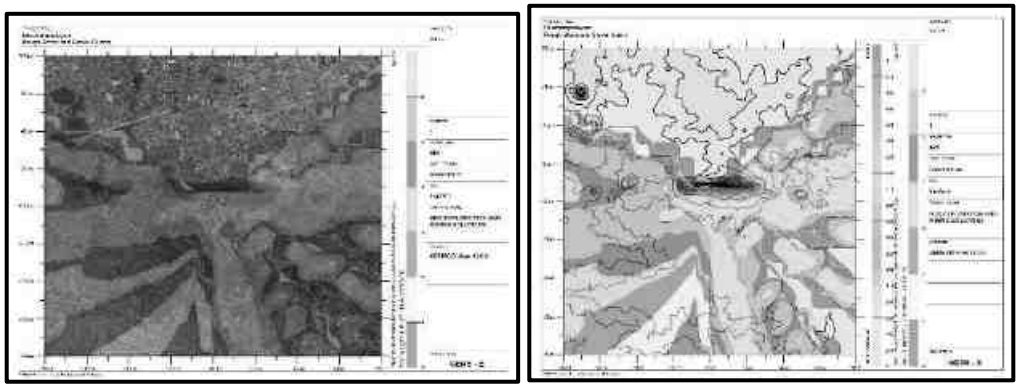


FIGURE 4.4: PREDICTED INCREMENTAL CONCENTRATION OF NO_X

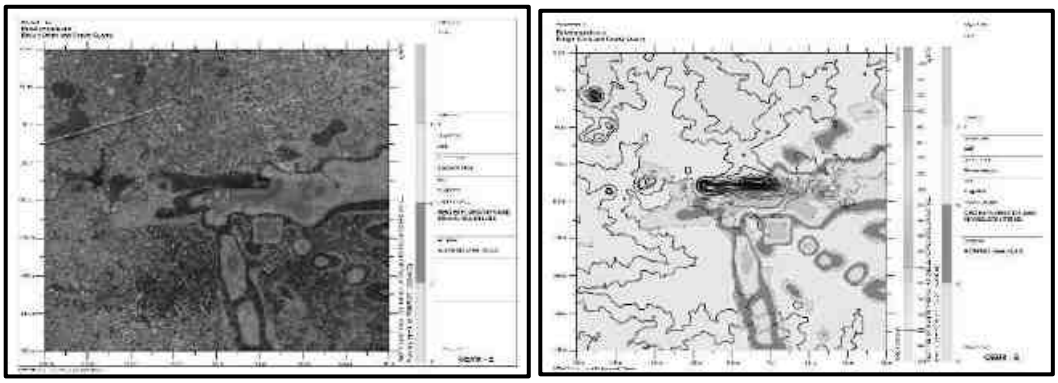


FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF SO_2

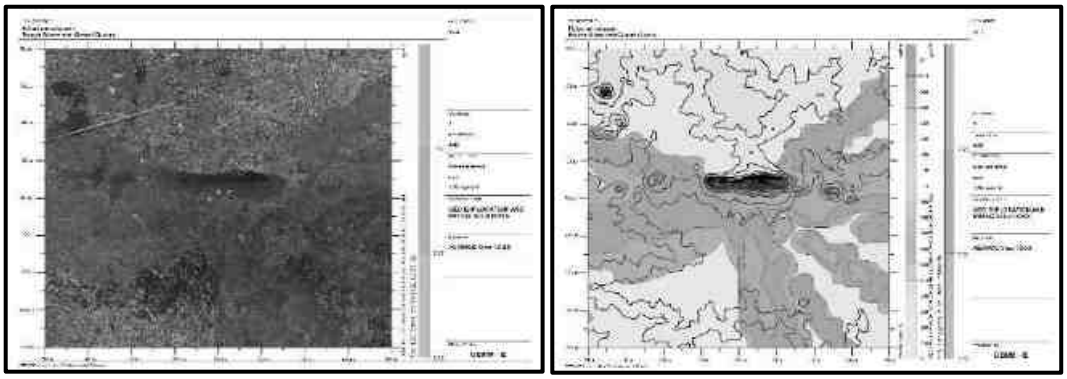
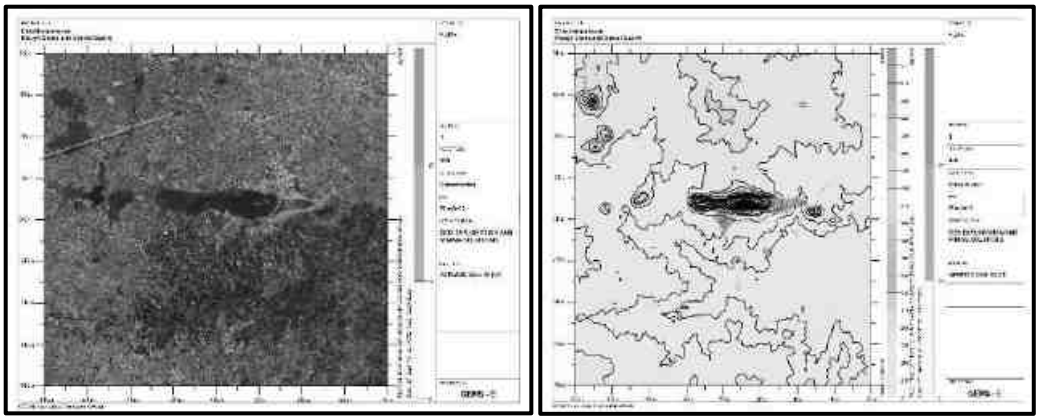


FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF FUGITIVE



4.3.2.3 Model Results

The post project Resultant Concentrations of PM_{10}, $PM_{2.5}$, SO_2&NO_X (GLC) is given in Table below:

TABLE 4.2: INCREMENTAL & RESULTANT GLC OF PM_{10}

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	AverageBaselinePM10 (µg/m3)	Incremental value ofPM10 due to mining(µg/m3)	Total PM10 (µg/m3)
AAQ1	11° 8'59.62"N 77°34'29.00"E	16	-27	39.8	14.71	54.51
AAQ2	11° 8'59.96"N 77°34'45.77"E	529	-17	41.6	14.29	55.89
AAQ3	11° 8'47.18"N 77°34'16.68"E	-359	-417	43.0	13.80	56.8
AAQ4	11° 7'42.71"N 77°35'3.02"E	1062	-2413	43.0	13.00	56
AAQ5	11° 9'53.32"N 77°32'35.74"E	-3447	1635	43.3	12.60	55.9
AAQ6	11° 8'17.76"N 77°32'22.59"E	-3853	-1325	43.5	11.90	55.4
AAQ7	11° 9'57.91"N 77°35'32.18"E	1952	1781	42.9	1.00	43.9

TABLE 4.3: INCREMENTAL & RESULTANT GLC OF $PM_{2.5}$

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM2.5(µg/m3)	Incremental value of PM2.5 due to mining (µg/m3)	Total PM2.5 (µg/m3)
AAQ1	11° 8'59.62"N 77°34'29.00"E	16	-27	19.3	6.91	26.21
AAQ2	11° 8'59.96"N 77°34'45.77"E	529	-17	20.4	6.58	26.98
AAQ3	11° 8'47.18"N 77°34'16.68"E	-359	-417	21.4	6.30	27.7
AAQ4	11° 7'42.71"N 77°35'3.02"E	1062	-2413	21.4	5.86	27.26
AAQ5	11° 9'53.32"N 77°32'35.74"E	-3447	1635	22.0	5.48	27.48
AAQ6	11° 8'17.76"N 77°32'22.59"E	-3853	-1325	21.9	5.30	27.2
AAQ7	11° 9'57.91"N 77°35'32.18"E	1952	1781	21.5	2.50	24

TABLE 4.4: INCREMENTAL & RESULTANT GLC OF SO_2

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline SO2 (µg/m3)	Incremental value due to mining (µg/m3)	Total SO2 (µg/m3)
AAQ1	11° 8'59.62"N 77°34'29.00"E	16	-27	4.8	1.78	6.58
AAQ2	11° 8'59.96"N 77°34'45.77"E	529	-17	4.7	1.71	6.41
AAQ3	11° 8'47.18"N 77°34'16.68"E	-359	-417	4.8	1.62	6.42
AAQ4	11° 7'42.71"N 77°35'3.02"E	1062	-2413	4.5	1.41	5.91
AAQ5	11° 9'53.32"N 77°32'35.74"E	-3447	1635	4.4	1.29	5.69
AAQ6	11° 8'17.76"N 77°32'22.59"E	-3853	-1325	4.5	1.08	5.58
AAQ7	11° 9'57.91"N 77°35'32.18"E	1952	1781	4.5	0	4.5

TABLE 4.5: INCREMENTAL & RESULTANT GLC OF NO_X

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline NOx (µg/m3)	Incremental value due to mining(µg/m3)	Total NOx (µg/m3)
AAQ1	11° 8'59.62"N 77°34'29.00"E	16	-27	20.0	9.77	29.77
AAQ2	11° 8'59.96"N 77°34'45.77"E	529	-17	20.2	9.40	29.6

AAQ3	11° 8'47.18"N 77°34'16.68"E	-359	-417	20.0	5.00	25
AAQ4	11° 7'42.71"N 77°35'3.02"E	1062	-2413	20.0	2.79	22.79
AAQ5	11° 9'53.32"N 77°32'35.74"E	-3447	1635	20.1	2.05	22.15
AAQ6	11° 8'17.76"N 77°32'22.59"E	-3853	-1325	20.0	1.41	21.41
AAQ7	11° 9'57.91"N 77°35'32.18"E	1952	1781	20.0	0	20

From the resultant of cumulative concentration i.e., Background + Incremental Concentration of pollutant in all the receptor locations without effective mitigation measures are still within the prescribed NAAQ limits of 100, 80 & 80 µg/m3 for PM10, SO2 & NOX respectively. By adopting suitable mitigation measures, the pollutant levels in the atmosphere can be further being controlled.

4.3.3 Mitigation Measures

Drilling –To control dust at source, wet drilling will be practiced. Where there is a scarcity of water, suitably designed dust extractor will be provided for dry drilling along with dust hood at the mouth of the drill-hole collar.

Advantages of Wet Drilling: -

- In this system dust gets suppressed close to its formation. Dust suppression become very effective and the work environment will be improved from the point of occupational comfort and health.
- Due to dust free atmosphere, the life of engine, compressor etc., will be increased.
- The life of drill bit will be increased.
- The rate of penetration of drill will be increased.
- Due to the dust free atmosphere visibility will be improved resulting in safer working conditions.

Blasting –

- Establish time of blasting to suit the local conditions and water sprinkling on blasting face
- Avoid blasting i.e., when temperature inversion is likely to occur and strong wind blows towards residential areas
- Controlled blasting includes Adoption of suitable explosive charge and short delay detonators, adequate stemming of holes at collar zone and restricting blasting to a particular time of the day i.e., at the time lunch hours, controlled charge per hole as well as charge per round of hole
- Before loading of material water will be sprayed on blasted material
- Dust mask will be provided to the workers and their use will be strictly monitored

Haul Road& Transportation –

- Water will be sprinkled on haul roads twice a day to avoid dust generation during transportation
- Transportation of material will be carried out during day time and material will be covered with taurpaulin
- The speed of tippers plying on the haul road will be limited below 20 km/hr to avoid generation of dust.
- Water sprinkling on haul roads & loading points will be carried out twice a day
- Main source of gaseous pollution will be from vehicle used for transportation of mineral; therefore, weekly maintenance of machines improves combustion process & makes reduction in the pollution.

- The un-metaled haul roads will be compacted weekly before being put into use.
- Over loading of tippers will be avoided to prevent spillage.
- It will be ensured that all transportation vehicles carry a valid PUC certificate
- Grading of haul roads and service roads to clear accumulation of loose materials

Green Belt –

- 1270 trees will be planted along the safety barrier located in the leased area to prevent dust generation due to movement of tippers/trucks.
- Some trees will be planted along village road and nearby schools.

Occupational Health –

- Dust mask will be provided to the workers and their use will be strictly monitored
- Annual medical checkups, trainings and campaigns will be arranged to ensure awareness about importance of wearing dust masks among all mine workers & tipper drivers
- Ambient Air Quality Monitoring will be conducted six months once to assess effectiveness of mitigation measures proposed

4.4 NOISE ENVIRONMENT

Noise pollution is mainly due to operation like drilling & blasting and plying of trucks& HEMM. These activities will not cause any problem to the inhabitants of this area because there is no human settlement within 300m radius from the project site. Noise modelling has been carried out considering blasting and compressor operation (drilling) and transportation activities.

Predictions have been carried out to compute the noise level at various distances around the working pit due to these major noise-generating sources. Noise modelling has been carried out to assess the impact on surrounding ambient noise levels.

Basic phenomenon of the model is the geometric attenuation of sound. Noise at a point generates spherical waves, which are propagated outwards from the source through the air at speed of 1,100 ft/sec, with the first wave making an ever-increasing sphere with time. As the wave spreads the intensity of noise diminishes as the fixed amount of energy is spread over an increasing surface area of the sphere. The assumption of the model is based on point source relationship i.e., for every doubling of the distance the noise levels are decreased by 6 dB(A).

For hemispherical sound wave propagation through homogeneous loss free medium, one can estimate noise levels at various locations at different sources using model based on first principle.

$$\mathbf{Lp_2 = Lp_1 - 20 \log (r_2/r_1) - Ae_{1,2}}$$

Where:

Lp_1& Lp_2 are sound levels at points located at distances r_1& r_2 from the source.

$Ae_{1,2}$ is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

$$\mathbf{Lp_{total} = 10 \log \{10^{(Lp1/10)} + 10^{(Lp2/10)} + 10^{(Lp3/10)} + \ldots\ldots\}}$$

4.4.1 Anticipated Impact

Attenuation due to Green Belt has been taken to be 4.9 dB (A). The inputs required for the model are:

- Source data
- Receptor data
- Attenuation factor

Source data has been computed taking into account of all the machinery and activities used in the mining process. Same has been listed in Table 4-8.

TABLE 4.7: ACTIVITY AND NOISE LEVEL PRODUCED BY MACHINERY

Sl.No.	Machinery / Activity	Impact on Environment?	Noise Produced in dB(A) at 50 ft from source*
1	Blasting	Yes	94
2	Jack Hammer	Yes	88
3	Compressor	No	81
4	Excavator	No	85
5	Tipper	No	84
Total Noise Produced			95.8

Source: U.S. Department of Transportation (Federal Highway Administration) – Construction Noise Handbook

The total noise to be produced by mining machineries 95.8 dB(A). Generally, most mining operations produce noise between 100-109 dB(A). We have considered equipment and operation noise levels (max) to be approx. 109 dB(A) for nose prediction modelling.

TABLE 4.8: PREDICTED NOISE INCREMENTAL VALUES

Location ID	**N1**	**N2**	**N3**	**N4**	**N5**	**N6**	**N7**
Maximum Monitored Value (Day) dB(A)	48.4	48.4	53.1	54.2	55.1	52.9	51.2
Incremental Value dB(A)	60.1	60.1	46.1	23.8	23.6	24.8	25.0
Total Predicted Noise level dB(A)	60.4	60.4	53.9	54.2	55.1	52.9	51.2

The incremental noise level is found within the range of 48.4-53.1dB (A) in Core Zone and 51.2-54.2 dB(A) in Buffer zone. The noise level at different receptors in buffer zone is lower due to the distance involved and other topographical features adding to the noise attenuation. The resultant Noise level due to monitored values and calculated values at the receptors are based on the mathematical formula considering attenuation due to Green Belt as 4.9 dB (A) the barrier effect. From the above table, it can be seen that the ambient noise levels at all the locations are within permissible limits of Industrial area (core zone) & Residential area (buffer zone) as per THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000 (The Principal Rules were published in the Gazette of India, vide S.O. 123(E), dated 14.2.2000 and subsequently amended vide S.O. 1046(E), dated 22.11.2000, S.O. 1088(E), dated 11.10.2002, S.O. 1569 (E), dated 19.09.2006 and S.O. 50 (E) dated 11.01.2010 under the Environment (Protection) Act, 1986.).

4.4.2 Mitigation Measures

The following noise mitigation measures are proposed for control of Noise

- Usage of sharp drill bits while drilling which will help in reducing noise;
- Secondary blasting will be totally avoided and hydraulic rock breaker will be used for breaking boulders;
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will be maintained;

- Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise;
- Provision of sound insulated chambers for the workers working on machines (HEMM) producing higher levels of noise;
- Silencers / mufflers will be installed in all machineries;
- Green Belt/Plantation will be developed around the project area and along the haul roads. The plantation minimizes propagation of noise;
- Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM and their use will be ensured though training and awareness.
- Regular medical check–up and proper training to personnel to create awareness about adverse noise level effects

4.4.3 Ground Vibrations

Ground vibrations due to the proposed mining activities are anticipated due to operation of Mining Machines like Excavators, drilling and blasting, transportation vehicles, etc., However, the major source of ground vibration from the quarry is blasting. The major impact of the ground vibrations is observed on the domestic houses located in the villages nearby the mine lease area. The kuchha houses are more prone to cracks and damage due to the vibrations induced by blasting whereas RCC framed structures can withstand more ground vibrations. Apart from this, the ground vibrations may develop a fear factor in the nearby settlements.

Another impact due to blasting activities is fly rocks. These may fall on the houses or agricultural fields nearby the mining lease area and may cause injury to persons or damage to the structures. Nearest habitation from the proposed project areas is listed in below table. The ground vibrations due to the blasting in the quarry are calculated using the empirical equation.

The empirical equation for assessment of peak particle velocity (PPV) is:

$$V = K\,[R/Q^{0.5}]^{-B}$$

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

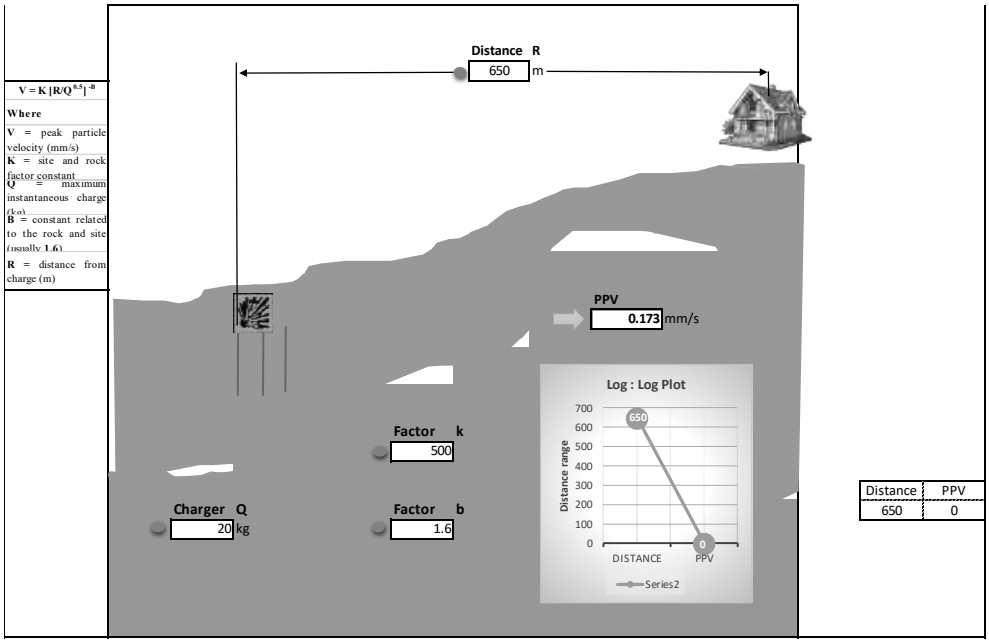
B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

TABLE 4.9: PREDICTED PPV VALUES DUE TO BLASTING

Maximum Charge in kgs	Nearest Habitation in m	PPV in mm/s
20	650	0.024

FIGURE 4.6: GROUND VIBRATION PREDICTION



From the above graph, the charge per blast of 20 kg is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. But the all the project proponent ensures that the charge per blast shall be carry out blasting twice or thrice a day based on the onsite conditions under the supervision of competent person employed. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

Mitigation Measures

- It is proposed to carry out blasting operation 10kg per round so that the vibration will be minimal
- The mining operation will be carried out without deep hole drilling, 25mm small Di cartridge will be utilized for the blasting
- The blasting operations in the project site without deep hole drilling and blasting using delay detonators, which reduces the ground vibrations;
- Proper quantity of explosive, suitable stemming materials and appropriate delay system will be adopted to avoid overcharging and for safe blasting;
- Adequate safe distance from blasting will be maintained as per DGMS guidelines;
- Blasting shelter will be provided as per DGMS guidelines;
- Blasting operations will be carried out only during day time;
- The charge per delay will be minimized and preferably a greater number of delays will be used per blasts;
- During blasting, other activities in the immediate vicinity will be temporarily stopped;
- Drilling parameters like depth, diameter and spacing will be properly designed to give proper blast;
- A fully trained explosives blast man (Mining Mate, Mines Foreman, 2nd Class Mines Manager/ 1st Class Mines Manager) will be appointed.

- A set of shot firing rules will be drawn up and blasting shall commence outlining the detailed operating procedures that will be followed to ensure that shot firing operations on site take place without endangering the workforce or public.
- The detonators will be connected in a predetermined sequence to ensure that only one charge is detonated at any one time and a NONEL or similar type initiation system will be used.
- The detonation delay sequence shall be designed so as to ensure that firing of the holes is in the direction of free faces so as to minimise vibration effects.
- Appropriate blasting techniques shall be adopted such that the predicted peak particle velocity shall not exceed 8 mm/s.
- Vibration monitoring will be carried out every 6 months to check the efficacy of blasting practices

4.5 ECOLOGY AND BIODIVERSITY

4.5. Impact on the Biological Environment

The developmental programs, policies, and projects operated or managed by government or private bodies can cause potentially significant changes in the physical, biological, and socio-economic environment. In some cases, the changes may be beneficial while in others they may be harmful to the environment. Accordingly, environmental impact studies are required for systematic identification, qualification, and interpretation of the anticipated changes.

4.5.1. Impact Identification and Evaluation

In general, impact prediction methods argue that the foremost step in impact appraisal must consider and identify project actions that are likely to bring significant changes in the project environment. Likely impacts identified were categorized into different levels like direct or primary and indirect or secondary impacts based on the influence of sources of impacts.

There is no National Park or Wildlife Sanctuary in the study area. In addition, No Biosphere Reserves, Wildlife corridors, or, Tiger / Elephant reserves within 10 km of the project area. No Schedule- I species were found in the buffer zone of the proposed project area during the biodiversity assessment.

4.5.2. Impact on Flora

The proposed projects areas are undulated terrain and it is not fit for cultivation. It is mostly devoid of any considerable vegetation. The proposed project area (core zone) does not encompass any designated forest land within it. The vegetation is very sparse and scanty. So, there will be no impact on flora from the mining operation. There will not be much contamination of soil or any other materials from the mining operation. No threatened plant species were reported in the core and buffer study area during the field survey.

4.5.2.1. Anticipated Impact on agricultural land associated with flora

1. There are no impacts on the nearby agricultural land due to this mining activity.
2. None of the plants will be cut during the operational phase of the mine.
3. There shall be negligible air emissions or effluents from the project site. During the loading of the truck, dust generation will be likely. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly.

Most of the land in the buffer area is undulating terrain with croplands, grass patches, and small shrubs. Hence,

there will be no effect on the flora of the region.

4.5.3 Mitigation Measures

4.5.3.1. General Guidelines for Green Belt Development

In selecting plant species for green belt and plantation purposes in and around the proposed mine lease area native species, fruit-bearing trees, medicinal plants, and dense canopy trees should be selected. These species should be tolerant to pollution levels as per Bio- Geography zones of India.

After the operation of mining production capacity, green belt and Plantation species should be in accordance with the Terms and Conditions of the Environmental Clearance Green belt is created not only for the purpose of protecting sensitive areas or maintaining the ecological balance but because they also act as efficient biological filters or sinks for particulate and gaseous emissions, generated by vehicular movements and various industrial and mining activities. Optimally designed green belts can be effective in reducing the impact of fugitive emissions and pollutants accidentally or otherwise released at ground levels.

4.5.3.2. Proposed Green Belt

Extensive green belt development will be started during the construction phase, which will continue till the operation of the plant. About 1270 trees will be planted per hectare all around the plant, approach roads, and township premises. Locally available types of trees that are resistant to pollutants will be planted. In addition to the above, all open spaces available within the premises will be developed as nurseries, parks, gardens, and other forms of greenery. 5 m wide greenbelt will be developed along the plant premises, as per land available.

4.5.3.3. Guidelines & Techniques for Green Belt Development

An extensive survey of the project area was undertaken to observe the structure and composition of vegetation. Hence a combination of plants is selected depending upon the topographical suitability and species selected as per the SPCB Guideline and ToR. The soil characteristics were kept in mind. Based on this survey and environmental conditions suitable native plant species have been proposed for the green belt development plan.

Development of Green Belt

Table 4.10: LIST OF PLANT SPECIES PROPOSED FOR GREENBELT DEVELOPMENT

S. No	Scientific name	Tamil Name
1	*Aegle marmelos*	Vilva maram
2	*Albizia lebbeck*	Vaagai maram
3	*Cassia fistula*	Konrai tree
4	*Lannea coromandelica*	Othiyam
5	*Limonia acidissima*	Vila maram
6	*Syzygium cumini*	Naval maram
7	*Toona ciliata*	Santhana Vembu
8	*Ficus hispida*	Aththi maram
9	*Borassus flabellifer*	Panai-maram
10	*Madhuca longifolia*	Illupai maram

(*Source: Term of Reference-ToR)

The plantation matrix adopted for the green belt development includes pit of 0.3 m x 0.3 m in size with a spacing of 2 m x 2 m. In addition, earth filling and manure may also be required for the proper nutritional balance and nourishment of the sapling. It is also recommended that the plantation has to be taken up randomly and the landscaping aspects could be taken into consideration. Multi-layered plantations comprising of medium height trees (7 m to 10 m) and shrubs (5 m height) are proposed for the green belt.

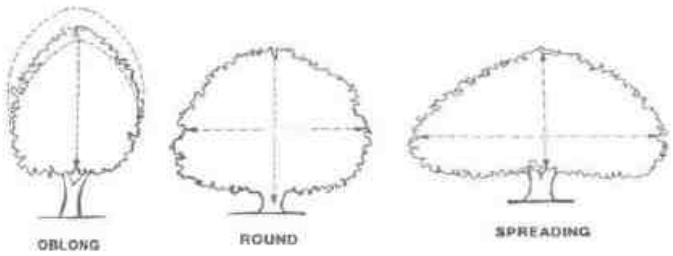
A greenbelt is a set of rows of trees planted in such a fashion, to create an effective barrier between the project and its surroundings. The greenbelt helps to capture fugitive emissions, attenuate the noise levels in the existing project, and simultaneously improve aesthetics of the surroundings.

4.5.3.4. Design of Green Belt

The present plan comprises the details of field investigations. Plant species for greenbelt development are selected as per CPCB guidelines. The greenbelt development plan has been formulated considering the parameters such as climate, soil types, topography, etc.

a. Characteristic features of plants to be used for Absorption of pollutant gases

- Plant species should be perennial and evergreen with thick canopy cover.
- The crown of the tree (mass of foliage/leaves and branches growing outward from the trunk of the tree) should be either Oblong, Round, or Spreading for effective absorption of pollutant gases.
- Plant should have foliage of longer duration.
- The foliage should be freely exposed through: Adequate height of crown, Openness of foliage/leaves in canopy, Big leaves (long and broad laminar surfaces).



(*Source: Guidance for Developing Green belts Manual, CPCB 2000)

Table 4.11: SPECIES SUITABLE FOR ABATEMENT OF NOISE AND DUST POLLUTION

S. No	Botanical name	Common name
1	*Azadirachta indica*	Vembhu maram
2	*Ficus religiosa*	Arasan maram
3	*Ficus hispida*	Aththi maram
4	*Bombax ceiba*	Mul Elavu
5	*Syzygium cumini*	Naval maram
6	*Tamarindus indica*	Puliyamaram
7	*Mangifera indica*	Manga maram
8	*Harwickia binata*	Anjan maram
9	*Delonix regia*	Neruppu Kondrai
10	*Cassia Fistula*	Sara Kondrai

(*Source: Guidance for Developing Green belts Manual, CPCB 2000)

The above-suggested list covers species with thick canopy cover, perennial green nature, native origin, and a large leaf area index. The proposed species will help in forming an effective barrier between the mine site area and the surroundings.

These species need to be planted along the periphery of the lease area for absorb fugitive emissions and noise levels which is generated during mining activities. All the open spaces, where tree plantation may not be possible, should be covered with shrubs and grass to prevent erosion of topsoil.

Some of the important aspects to be considered are:

- ✓ Planting of trees in each row will be in staggered orientation.
- ✓ In the front row, shrubs will be grown.
- ✓ Since the trunks of the tall trees are generally devoid of foliage, it will be useful to have shrubs in front of the trees so as to give coverage to this portion.
- ✓ The spacing between the trees will be maintained slightly less than the normal spaces, so that the trees may grow vertically and slightly increase the effective height of the green belt.

4.5.4. Anticipated Impact on Fauna

- Since the terrestrial fauna in the study area are distributed away from the mine site, the impacts of project are likely to be much low on terrestrial fauna of the region. The proposed mining lease area is devoid of any significant vegetation, it is not suitable for permanent habitat for any specific wildlife.
- Habitat degradation and disturbance to faunal group due to ground vibration and increase in noise level will be minimize or resolved by modern technologies. So, from above facts it is revealed that there will be no impact on fauna. No threatened fauna species reported in the core and buffer study area.

4.5.4.1. Measures for protection and conservation of wildlife species

- Topsoil has a large number of seeds of native plant species in the mining area.
- Topsoil will be used for restoration and suitable surfaces for planted seedlings.
- Checks and controls the movement of vehicles in and out of the mine.
- Undertaking mitigative measures for a conducive environment to the flora and fauna in consultation with Forest Department.
- A dust suppression system will be installed within the mine and periphery of the mine.

- Plantation around the mine area will help in creating habitats for small faunal species and create a better environment for various fauna. Creating and developing awareness for nature and wildlife in the adjoining villages.

4.5.3. Impact on Aquatic Biodiversity

There is no natural perennial surface water body within the mine lease area, like wetlands, rivers streams, lakes, and farmer sites. There are few water bodies located in the study area. There are a few Odai and Canals located in the study area. There is no impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. Aquatic biodiversity is observed in the study area.

4.5.4. Impacts on Bird Fauna:

The project does not involve any tree felling or removal of vegetation. Therefore, there may not be loss of nesting and roosting habitat of avian fauna.

4.5.5. Impacts on wildlife

There is no National Park, Wildlife Sanctuary, Biosphere Reserve, Wildlife corridors, and Tiger/Elephant Reserve found within 10 km radius of the project site.

Table 4.12: OVERALL ECOLOGICAL IMPACT ASSESSMENTS

S.No	Attributes	Assessment
1	Impact of mining activity on agricultural land nearby the proposed project site.	Agricultural land is located away from the proposed project site. There are no impacts on the agricultural land & Horticulture. Kindly refer to the conclusion.
	Activities of the project affect the breeding/nesting sites of birds and animals	No breeding and nesting site was identified in the mining lease site. The fauna sighted mostly migrated from the buffer area.
2	Located near an area populated by rare or endangered species	No Endangered, Critically Endangered, or vulnerable species were sighted in the core mining lease area.
3	Proximity to national park/wildlife sanctuary/reserve forest /mangroves/ coastline/estuary/sea	There is no National Park/ Wildlife Sanctuary/ Reserve Forest/ Mangroves and Eco-Sensitive zone/ Critically polluted area/ HACA/CRZ located within 10 km radius of the area.
4	The proposed project restricts access to waterholes for wildlife	'No '
5	Proposed mining project impact surface water quality that also provides water to wildlife	'No 'scheduled or threatened wildlife animals are sighted regularly core in the core area.
6	Proposed mining project increase siltation that would affect nearby biodiversity areas.	Surface runoff management such as drains is constructed properly so there will be no siltation effect in the nearby mining area.
7	Risk of fall/slip or cause death to wild animals due to project activities.	'No'
8	The project release effluents into a water body that also supplies water to a wildlife.	No water body near to core zone so the chances of water becoming polluted is low.
9	Mining projects affect the forest-based livelihood/ any specific forest product on which local livelihood depended.	'No'

10	The project likely to affect migration routes.	'No 'migration route was observed during the monitoring period.
11	The project is likely to affect the flora of an area, which have medicinal value	'No'
12	Forestland is to be diverted, has carbon high sequestration.	'No 'There was no forest land diverted.
13	The project is likely to affect wetlands, Fish breeding grounds, and marine ecology.	'No'. Wetland was not present in the near core Mining lease area. No breeding and nesting ground is present in the core mining area.

(*Source: EIA Guidance Manual-Mining and Minerals, 2010)

4.6 SOCIO ECONOMIC

4.6.1 Anticipated Impact

- Dust generation from mining activity can have negative impact on the health of the workers and people in the nearby area.
- Approach roads can be damaged by the movement of tippers
- Increase in Employment opportunities both direct and indirect thereby increasing economic status of people of the region

4.6.2 Mitigation Measures

- Good maintenance practices will be adopted for all machinery and equipment, which will help to avert potential noise problems.
- Green belt will be developed in and around the project site as per Central Pollution Control Board (CPCB) guidelines.
- Air pollution control measure will be taken to minimize the environmental impact within the core zone.
- For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices will be provided as per mines act and rules.
- Benefit to the State and the Central governments through financial revenues by way of royalty, tax, duties, etc.., from this project directly and indirectly.
- From above details, the quarry operations will have highly beneficial positive impact in the area

4.7 OCCUPATIONAL HEALTH AND SAFETY

Occupational health and safety hazards occur during the operational phase of mining and primarily include the following:

- Respiratory hazards
- Noise
- Physical hazards
- Explosive storage and handling

4.7.1 Respiratory Hazards

Noise

Workers are likely to get exposed to excessive noise levels during mining activities. The following measures are proposed for implementation

- No employee will be exposed to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection
- The use of hearing protection will be enforced actively when the equivalent sound level over 8 hours reaches 85 dB(A), the peak sound levels reach 140 dB(C), or the average maximum sound level reaches 110 dB(A)
- Ear muffs provided will be capable of reducing sound levels at the ear to at least 85 dB(A)
- Periodic medical hearing checks will be performed on workers exposed to high noise levels

Physical Hazards

The following measures are proposed for control of physical hazards

- Specific personnel training on work-site safety management will be taken up;
- Work site assessment will be done by rock scaling of each surface exposed to workers to prevent accidental rock falling and / or landslide, especially after blasting activities;
- Natural barriers, temporary railing, or specific danger signals will be provided along rock benches or other pit areas where work is performed at heights more than 2m from ground level;
- Maintenance of yards, roads and footpaths, providing sufficient water drainage and preventing slippery surfaces with an all-weather surface, such as coarse gravel will be taken up

4.7.2 Occupational Health Survey

All the persons will undergo pre-employment and periodic medical examination. Employees will be monitored for occupational diseases by conducting the following tests

- General physical tests
- Audiometric tests
- Full chest, X-ray, Lung function tests, Spirometric tests
- Periodic medical examination – yearly
- Lung function test – yearly, those who are exposed to dust
- Eye test

Essential medicines will be provided at the site. The medicines and other test facilities will be provided at free of cost. The first aid box will be made available at the mine for immediate treatment. First aid training will be imparted to the selected employees regularly. The lists of first aid trained members shall be displayed at strategic places.

4.8 MINE WASTE MANAGEMENT

No waste is anticipated, the entire mined out material will be sold to needy crushers and customers.

4.9 MINE CLOSURE

The ultimate depth of the mine is 57m bgl and the life of the mine is 5 years, after completion of mining operation the following action will be taken in the project site as a part of Mine closure plan

- The total Mined out land would be around 2.25.0Ha this land will be converted into temporary water reservoir which will facilitate to collect the rain water
- The stagnant water will be supplied to the nearby agriculture land during drought seasons

- Fencing will be re constructed around the pit after closure, the warning/ danger display board will be placed on all the sides of the project site
- The un utilized area and haul roads will be converted as plantation area, fruit bearing trees will be planted to retain the eco system of the area
- Final Mine closure plan will be prepared and submitted to the concerned authority

Mine closure plan is the most important environmental requirement in mining project. The mine closure plan should cover technical, environmental, social, legal and financial aspects dealing with progressive and post closure activities. The closure operation is a continuous series of activities starting from the decommissioning of the project.

As progressive mine closure is a continuous series of activities, it is obvious that the proposals of scientific mining have included most of the activities to be included in the closure plan. While formulating the closure objectives for the site, it is important to consider the existing or the pre-mining land use of the site; and how the operation will affect this activity.

The primary aim is to ensure that the following broad objectives along with the abandonment of the mine can be successfully achieved:

- To create a productive and sustainable after-use for the site, acceptable to mine owners, regulatory agencies, and the public
- To protect public health and safety of the surrounding habitation
- To minimize environmental damage
- To conserve valuable attributes and aesthetics
- To overcome adverse socio-economic impacts.

4.9.1 Mine Closure Criteria

The criteria involved in mine closure are discussed below:

4.9.1.1 Physical Stability

All anthropogenic structures, which include mine workings, buildings, rest shelters etc., remaining after mine decommissioning should be physically stable. They should present no hazard to public health and safety as a result of failure or physical deterioration and they should continue to perform the functions for which they were designed. The design periods and factors of safety proposed should take full account of extreme events such as floods, hurricane, winds or earthquakes, etc. and other natural perpetual forces like erosion, etc.,

4.9.1.2 Chemical Stability

The solid wastes on the mine site should be chemically stable. This means that the consequences of chemical changes or conditions leading to leaching of metals, salts or organic compounds should not endanger public health and safety nor result in the deterioration of environmental attributes. If the pollutant discharges likely to cause adverse impacts is predicted in advance, appropriate mitigation measures like settling of suspended solids or passive treatment to improve water quality as well as quantity, etc., could be planned. Monitoring should demonstrate that there is no adverse effect of pollutant concentrations exceeding the statutory limits for the water, soil and air qualities in the area around the closed mine.

4.9.1.3 Biological Stability

The stability of the surrounding environment is primarily dependent upon the physical and chemical characteristics of the site, whereas the biological stability of the mine site itself is closely related to rehabilitation and final land use. Nevertheless, biological stability can significantly influence physical or chemical stability by stabilizing soil cover, prevention of erosion/wash off, leaching, etc.,

A vegetation cover over the disturbed site is usually one of the main objectives of the rehabilitation programme, as vegetation cover is the best long-term method of stabilizing the site. When the major earthwork components of the rehabilitation programme have been completed, the process of establishing a stable vegetation community begins. For re-vegetation, management of soil nutrient levels is an important consideration. Additions of nutrients are useful under three situations.

- Where the nutrient level of spread topsoil is lower than material in-situ e.g., for development of social forestry
- Where it is intended to grow plants with a higher nutrient requirement than those occurring naturally e.g., planning for agriculture
- Where it is desirable to get a quick growth response from the native flora during those times when moisture is not a limiting factor e.g., development of green barriers

The Mine closure plan should be as per the approved mine plan. The mine closure is a part of approved mine plan and activities of closure shall be carried out as per the process described in mine closure plan.

5. ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

5.0 INTRODUCTION

Consideration of alternatives to a project proposal is a requirement of EIA process. During the scoping process, alternatives to a proposal can be considered or refined, either directly or by reference to the key issues identified. A comparison of alternatives helps to determine the best method of achieving the project objectives with minimum environmental impacts or indicates the most environmentally friendly and cost-effective options.

5.1 FACTORS BEHIND THE SELECTION OF PROJECT SITE

The surrounding areas already undergone quarrying operation, there are 1 Crusher within the radius of 1km. Most of the quarries in the regions are abandoned and Existing quarries. Hence this quarry will feed the Rough stone material to the crushing units.

The Rough Stone and Gravel Quarry Project for excavation of Rough Stone, which is site specific. The proposed mining lease areas have following advantages: -

- The mineral deposit occurs in a non-forest area.
- There is no habitation within the project area; hence no R & R issues exist.
- There is no river, stream, nallah and water bodies in the applied mine lease areas.
- Availability of skilled, semi-skilled and unskilled workers in this region.
- All the basic amenities such as medical, firefighting, education, transportation, communication and infrastructural facilities are well connected and accessible.
- The mining operations will not intersect the ground water level. Hence, no impact on ground water environment.
- Study area falls in seismic zone – II, there is no major history of landslides, earthquake, subsidence etc., recorded in the past history.

5.2 ANALYSIS OF ALTERNATIVE SITE

No alternatives are suggested as all the mine sites are mineral specific

5.3 FACTORS BEHIND SELECTION OF PROPOSED TECHNOLOGY

The existing quarries in the area operated by Opencast Mechanised Mining operation with drilling and blasting method will be used to extract Rough Stone in the area. All the applied mining lease area shave following advantages –

- As the mineral deposition is homogeneous and batholith formation, therefore opencast method of working is preferred over underground method
- The material will be loaded with the help of excavators into dumpers / trippers and transported to the needy customers.
- Blasting and availability of drills along with controlled blasting technology gives desired fragmentation so that the mineral is handled safely and used without secondary blasting.

- Semi-skilled labours fit for quarrying operations are easily available around the nearby villages.

5.4 ANALYSIS OF ALTERNATIVE TECHNOLOGY

Open cast mechanized method has been selected for these projects. This technology is having least gestation period, economically viable, safest and less labour intensive. The method has inbuilt flexibility for increasing or decreasing the production as per market condition.

6. ENVIRONMENTAL MONITORING PROGRAMME

6.0 GENERAL

The main objective of environmental monitoring is to ensure that the obtained results in respect of environmental attributes and prevailing conditions during operation stage are in conformity with the prediction during the planning stage. In case of substantial deviation from the earlier prediction of results, this forms as base data to identify the cause and suggest remedial measures. Environmental monitoring is mandatory to meet compliance of statutory provisions under the Environment (Protection) Act, 1986, relevant conditions regarding monitoring covered under EC orders issued by the SEIAA as well as the conditions set forth under the order issued by Tamil Nadu Pollution Control Board while granting CTO.

6.1 METHODOLOGY OF MONITORING MECHANISM

Implementation of EMP and periodic monitoring will be carried out by the project proponent. A comprehensive monitoring mechanism has been devised for monitoring of impacts due to this project; Environmental protection measures like dust suppression, control of noise and blast vibrations, maintenance of machinery and vehicles, housekeeping in the mine premises, plantation, implementation of Environmental Management Plan and environmental clearance conditions will be monitored by Mine Management. On the other hand, implementation of area level protection measures like green belt development, environmental quality monitoring etc., are taken up by a senior executive who reports to their Mine Management.

An Environment monitoring cell (EMC) will be constituted to monitor the implementation of EMP and other environmental protection measures in all the proposed quarries.

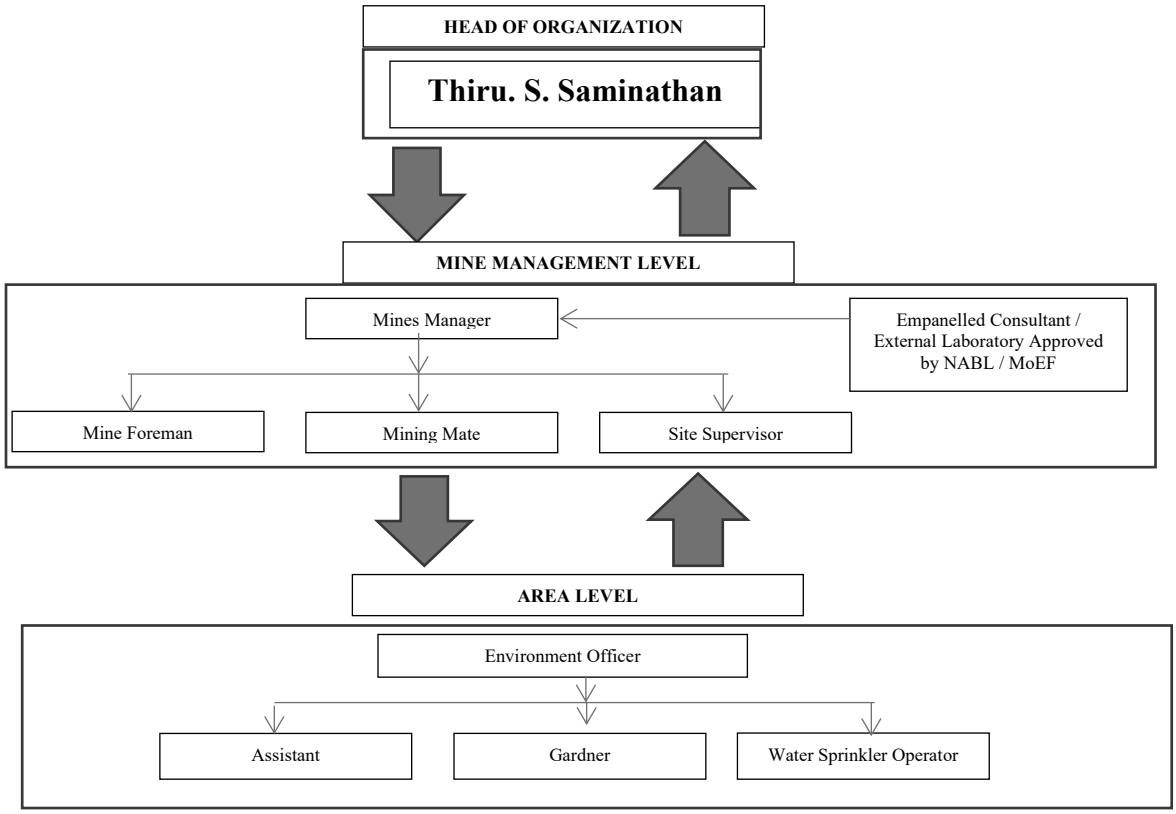
The responsibilities of this cell will be:

- Implementation of pollution control measures
- Monitoring programme implementation
- Post-plantation care
- To check the efficiency of pollution control measures taken
- Any other activity as may be related to environment
- Seeking expert's advice when needed.

The environmental monitoring cell will co-ordinate all monitoring programs at site and data thus generated will be regularly furnished to the State regulatory agencies as compliance status reports. The sampling and analysis report of the monitored environmental attributes will be submitted to the Tamil Nadu Pollution Control Board (TNPCB) at a frequency of half-yearly and yearly by each proposed project proponent. The half-yearly reports are submitted to Ministry of Environment and Forest, Regional Office and SEIAA as well.

The sampling and analysis of the environmental attributes will be as per the guidelines of Central Pollution Control Board (CPCB)/Ministry of Environment, Forest and Climate Change (MoEF& CC).

FIGURE 6.1: PROPOSED ENVIRONMENTAL MONITORING CELL



6.2 IMPLEMENTATION SCHEDULE OF MITIGATION MEASURES

The mitigation measures proposed in Chapter-4 will be implemented so as to reduce the impact on the environment due to the operations of the proposed project. Implementation schedule of mitigation measures is given in Table 6.1.

TABLE 6.1 IMPLEMENTATION SCHEDULE

SI No.	Recommendations	Time Period	Schedule
1	Land Environment Control Measures	Before commissioning of the project	Immediately after the commencement of project
2	Soil Quality Control Measures	Before commissioning of the project	Immediately after the commencement of project
3	Water Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
4	Air Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
5	Noise Pollution Control Measures	Before commissioning of the project and along with mining operation	Immediately and as project progress
6	Ecological Environment	Phase wise implementation every year along with mine operations	Immediately and as project progress

6.3 MONITORING SCHEDULE AND FREQUENCY

The environmental monitoring will be conducted in the mine operations as follows:

- Air quality;
- Water and wastewater quality;
- Noise levels;
- Soil Quality; and
- Greenbelt Development

The details of monitoring are detailed in Table 6.2

TABLE 6.2: PROPOSED MONITORING SCHEDULE POST EC

S.No.	Environment Attributes	Location	Monitoring		Parameters
			Duration	Frequency	
1	Air Quality	2 Locations (1 Core & 1 Buffer)	24 hours	Once in 6 months	Fugitive Dust, $PM_{2.5}$, PM_{10}, SO_2 and NO_x.
2	Meteorology	At mine site before start of Air Quality Monitoring & IMD Secondary Data	Hourly / Daily	Continuous online monitoring	Wind speed, Wind direction, Temperature, Relative humidity and Rainfall
3	Water Quality Monitoring	2 Locations (1SW & 1 GW)	-	Once in 6 months	Parameters specified under IS:10500, 1993 & CPCB Norms
4	Hydrology	Water level in open wells in buffer zone around 1 km at specific wells	-	Once in 6 months	Depth in bgl
5	Noise	2 Locations (1 Core & 1 Buffer)	Hourly – 1 Day	Once in 6 months	Leq, Lmax, Lmin, Leq Day &Leq Night
6	Vibration	At the nearest habitation (in case of reporting)	–	During blasting Operation	Peak Particle Velocity
7	Soil	2 Locations (1 Core & 1 Buffer)	–	Once in six months	Physical and Chemical Characteristics
8	Greenbelt	Within the Project Area	Daily	Monthly	Maintenance

Source: Guidance of manual for mining of minerals, February 2010

6.4 BUDGETARY PROVISION FOR EMP

The cost in respect of monitoring of environmental attributes, parameter to be monitored, sampling/monitoring locations with frequency and cost provision against each proposal is shown in Table 6.3. Monitoring work will be outsourced to external laboratory approved by NABL / MoEF.

The proposed capital cost for Environmental Monitoring Programme is Rs 76,000/- per annum for Proposed Project.

TABLE 6.3 ENVIRONMENT MONITORING PROGRAM BUDGET

PROPOSAL			
Sl.No.	**Parameter**	**Capital Cost**	**Recurring Cost per annum**
1	Air Quality	Rs. 76,000/-	Rs. 76,000/-
2	Meteorology		
3	Water Quality		
4	Hydrology		
5	Soil Quality		
6	Noise Quality		
7	Vibration Study		
Total		**Rs 76,000/-**	**Rs 76,000/-**

Source: Approved Mining Plan

6.5 REPORTING SCHEDULES OF MONITORED DATA

The monitored data on air quality, water quality, noise levels and other environmental attributes will be periodically examined by the Cluster Mine Management Coordinator and Respective Head of Organization for taking necessary corrective measures. The monitoring data will be submitted to Tamil Nadu State Pollution Control Board in the Compliance to CTO Conditions & environmental audit statements every year to MoEF& CC and Half-Yearly Compliance Monitoring Reports to MoEF& CC Regional Office and SEIAA.

Periodical reports to be submitted to: -

- MoEF& CC – Half yearly status report
- TNPCB - Half yearly status report
- Department of Geology and Mining: quarterly, half yearly annual reports

Besides the Mines Manager/Agent of respective project will submit the periodical reports to –

- Director of mines safety,
- Labour enforcement officer,
- Controller of explosives as per the norms stipulated by the department.

7. ADDITIONAL STUDIES

7.0 GENERAL

The following Additional Studies were done as per items identified by project proponent and items identified by regulatory authority. And items identified by public and other stakeholders will be incorporated after Public Hearing.

- Public Consultation
- Risk Assessment
- Disaster Management Plan
- Cumulative Impact Study
- Plastic Waste Management

7.1. PUBLIC CONSULTATION

Application to The Member Secretary of the Tamil Nadu Pollution Control Board (TNPCB) to conduct Public Hearing in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site or in its close proximity in the district is submitted along with this Draft EIA / EMP Report and the outcome of public hearing proceedings will be detailed in the Final EIA/EMP Report.

7.2 RISK ASSESSMENT

The methodology for the risk assessment has been based on the specific risk assessment guidance issued by the Directorate General of Mine Safety (DGMS), Dhanbad, vide Circular No.13 of 2002, dated 31st December, 2002. The DGMS risk assessment process is intended to identify existing and probable hazards in the work environment and all operations and assess the risk levels of those hazards in order to prioritize those that need immediate attention. Further, mechanisms responsible for these hazards are identified and their control measures, set to timetable are recorded along with pinpointed responsibilities.

The whole quarry operation will be carried out under the direction of a Qualified Competent Mine Manager holding certificate of competency to manage a metalliferous mine granted by the DGMS, Dhanbad for all proposed projects. Risk Assessment is all about prevention of accidents and to take necessary steps to prevent it from happening.

Factors of risks involved due to human induced activities in connection with these proposed mining & allied activities with detailed analysis of causes and control measures for the mine is given in below Table 7.1.

TABLE 7.1 RISK ASSESSMENT & CONTROL MEASURES

S. No	Risk factors	Causes of risk	Control measures
1	Accidents due to explosives and heavy mining machineries	Improper handling and unsafe working practice	All safety precautions and provisions of Mine Act, 1952, Metalliferous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations; Workers will be sent to the Training in the nearby Group Vocational Training Centre Entry of unauthorized persons will be prohibited; Fire-fighting and first-aid provisions in the mine office complex and mining area;

			Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the employees and regular check for their use Working of quarry, as per approved plans and regularly updating the mine plans; Cleaning of mine faces on daily basis shall be daily done in order to avoid any overhang or undercut; Handling of explosives, charging and firing shall be carried out by competent persons only under the supervision of a Mine Manager; Maintenance and testing of all mining equipment as per manufacturer 's guidelines.
2	Drilling	Improper and unsafe practices Due to high pressure of compressed air, hoses may burst Drill Rod may break	Safe operating procedure established for drilling (SOP) will be strictly followed. Only trained operators will be deployed. No drilling shall be commenced in an area where shots have been fired until the blaster/blasting foreman has made a thorough Examination of all places, Drilling shall not be carried on simultaneously on the benches at places directly one above the other. Periodical preventive maintenance and replacement of worn-out accessories in the compressor and drill equipment as per operator manual. All drills unit shall be provided with wet drilling shall be maintained in efficient working in condition. Operator shall regularly use all the personal protective equipment.
4	Blasting	Fly rock, ground vibration, Noise and dust. Improper charging, stemming & Blasting/ fining of blast holes Vibration due to movement of vehicles	Restrict maximum charge per delay as per regulations and by optimum blast hole pattern, vibrations will be controlled within the permissible limit and blasting can be conducted safely. SOP for Charging, Stemming & Blasting/Firing of Blast Holes will be followed by blasting crew during initial stage of operation Shots are fired during daytime only. All holes charged on any one day shall be fired on the same day. The danger zone will be distinctly demarcated (by means of red flags)
5	Transportation	Potential hazards and unsafe workings contributing to accident and injuries Overloading of material While reversal & overtaking of vehicle Operator of truck leaving his cabin when it is loaded.	Before commencing work, drivers personally check the dumper/truck/tipper for oil(s), fuel and water levels, tyre inflation, general cleanliness and inspect the brakes, steering system, warning devices including automatically operated audio-visual reversing alarm, rear view mirrors, side indicator lights etc., are in good condition. Not allow any unauthorized person to ride on the vehicle nor allow any unauthorized person to operate the vehicle. Concave mirrors should be kept at all corners All vehicles should be fitted with reverse horn with one spotter at every tipping point Loading according to the vehicle capacity Periodical maintenance of vehicles as per operator manual
6	Natural calamities	Unexpected happenings	Escape Routes will be provided to prevent inundation of storm water Fire Extinguishers & Sand Buckets

7	Failure of Mine Benches and Pit Slope	Slope geometry, Geological structure	Ultimate or over all pit slope shall be below 60° and each bench height shall be 5m height.

Source: Analysed and proposed by FAE & EC

7.3 DISASTER MANAGEMENT PLAN

Natural disasters like Earthquake, Landslides have not been recorded in the past history as the terrain is categorized under seismic zone II. The area is far away from the sea hence the disaster due to heavy floods and tsunamis are not anticipated

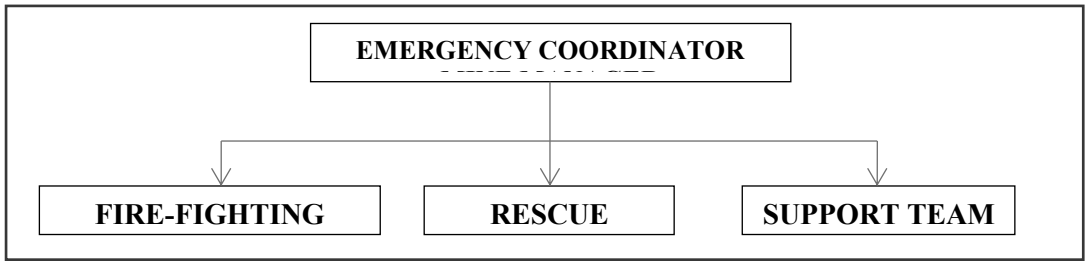
The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities.

The objective of the Disaster Management Plan is to make use of the combined resources of the mine and the outside services to achieve the following:

- Rescue and medical treatment of casualties;
- Safeguard other people;
- Minimize damage to property and the environment;
- Initially contain and ultimately bring the incident under control;
- Secure the safe rehabilitation of affected area; and
- Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency.

In case a disaster takes place, despite preventive actions, disaster management will have to be done in line with the descriptions below. There is an organization proposed for dealing with the emergency situations and the coordination among key personnel and their team has been shown in Fig 7.1.

FIGURE 7.1: DISASTER MANAGEMENT TEAM LAYOUT



The emergency organization shall be headed by emergency coordinator who will be qualified competent mine manager. In his absence senior most people available at the mine shall be emergency coordinator till arrival of mine manager. There would be three teams for taking care of emergency situations – Fire-Fighting Team, Rescue Team and Support Team. The proposed composition of the teams is given in Table 7.2.

TABLE 7.2: PROPOSED TEAMS TO DEAL WITH EMERGENCY SITUATION

DESIGNATION	QUALIFICATION

FIRE-FIGHTING TEAM	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Team Member	Mines Foreman
Team Member	Mining Mate
RESCUE TEAM	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Team Member/ Incident Controller (IC)	Environment Officer
Team Member	Mining Foreman
SUPPORT TEAM	
Team Leader/ Emergency Coordinator (EC)	Mines Manager
Assistant Team Leader	Environment Officer
Team Member	Mining Mate
Security Team Leader/ Emergency Security Controller	Mines Foreman

Once the mine becomes operational, the above table along with names of personnel will be prepared and made easily available to workers. A mobile communication network and wireless shall connect Mine Emergency Control Room (MECR) to control various departments of the mine, fire station and neighbouring industrial units/mines.

Roles and responsibilities of emergency team –

(a) Emergency coordinator (EC)

The emergency coordinator shall assume absolute control of site and shall be located at MECR.

(b) Incident controller (IC)

Incident controller shall be a person who shall go to the scene of emergency and supervise the action plan to overcome or contain the emergency. Shift supervisor or Environmental Officer shall assume the charge of IC.

(c) Communication and advisory team

The advisory and communication team shall consist of heads of Mining Departments i.e., Mines Manager

(d) Roll call coordinator

The Mine Foreman shall be Roll Call Coordinator. The roll call coordinator will conduct the roll call and will evacuate the mine personnel to assembly point. His prime function shall be to account for all personnel on duty.

(e) Search and rescue team

There shall be a group of people trained and equipped to carryout rescue operation of trapped personnel. The people trained in first aid and fire-fighting shall be included in search and rescue team.

(f) Emergency security controller

Emergency Security Controller shall be senior most security person located at main gate office and directing the outside agencies e.g., fire brigade, police, doctor and media men etc.,

Emergency control procedure –

The onset of emergency, will in all probability, commence with a major fire or explosion or collapse of wall along excavation and shall be detected by various safety devices and also by members of operational staff on duty. If located by a staff member on duty, he (as per site emergency procedure of which he is adequately briefed) will go to nearest alarm call point, break glass and trigger off the alarms. He will also try his best to inform about location and nature of accident to the emergency control room. In accordance with work emergency procedure the following key activities will immediately take place to interpret and take control of emergency.

- On site fire crew led by a fireman will arrive at the site of incident with fire foam tenders and necessary equipment.
- Emergency security controller will commence his role from main gate office
- Incident controller shall rush to the site of emergency and with the help of rescue team and will start handling the emergency.
- Site main controller will arrive at MECR with members of his advisory and communication team and will assume absolute control of the site.
- He will receive information continuously from incident controller and give decisions and directions to:
    - Incident controller
    - Mine control rooms
    - Emergency security controller

Proposed fire extinguishers at different locations –

The following type of fire extinguishers has been proposed at strategic locations within the mine.

TABLE 7.3: PROPOSED FIRE EXTINGUISHERS AT DIFFERENT LOCATIONS

LOCATION	TYPE OF FIRE EXTINGUISHERS
Electrical Equipment's	CO_2 type, foam type, dry chemical powder type
Fuel Storage Area	CO_2 type, foam type, dry chemical powder type, Sand bucket
Office Area	Dry chemical type, foam type

Alarm system to be followed during disaster –

On receiving the message of disaster from Site Controller, fire-fighting team, the mine control room attendant will sound siren wailing for 5 minutes. Incident controller will arrange to broadcast disaster message through public address system. On receiving the message of "Emergency Over" from Incident Controller the emergency control room attendant will give "All Clear Signal", by sounding alarm straight for 2 minutes.

7.4 CUMULATIVE IMPACT STUDY

For easy representation of Proposed and Existing Quarries in the Cluster are given unique codes and identifies and studied in this EIA EMP Report.

TABLE 7.4: LIST OF QUARRIES WITHIN 500 METER RADIUS

CODE	Name of the Owner	Village	S.F. Nos	Extent in Ha	Status
PROPOSED QUARRY					
P1	**Thiru.S.Saminathan**, S/o. Sennimalaigounder, No.19, S.K.Palayam, V.Ramalingapuram, Chennimalai, Perundurai Taluk, Erode District, Tamilnadu – 638 051	Ekkatampalayam	206/1(P)	2.53.80 Ha	File No: 11531 ToR Identification No: TO24B0108TN5686765N Dated: 19.07.2025
P2	**Thiru.M.Ponnusamy**	Ekkatampalayam	221/2A(P),223/2	1.29.68 Ha	EC Granted
	TOTAL EXTENT			**3.83.48 Ha**	
EXISTING QUARRY					
E-1	**Thiru. P.Mahendran**	Ekkatampalayam	202/1(P), 2(P)	2.63.0Ha	30.06.2022 to 16.08.2027
	TOTAL EXTENT			**2.63.0 Ha**	
EXPIRED/ ABANDONED QUARRIES					
EX-1	**G.Banugopal**	Ekkatampalayam	226(P)	0.63.4 Ha	06.09.2022
EX-2	**S.Shanmuga sundaram**		221/1	1.55.0 Ha	06.09.2022
EX-3	**P.Mahendran**		203/2	2.27.0 Ha	29.06.2022
EX-3	**G.banugpoal**		50/1B	2.02.5 Ha	16.10.2023
EX-3	**G.Banugopal**		52	0.85.0 Ha	28.02.2021
	TOTAL EXTENT			**7.32.9 Ha**	
	TOTAL CLUSTER EXTENT			**6.46.48 Ha**	

- **Cluster area is calculated as per MoEF& CC Notification – S.O. 2269 (E) Dated: 01.07.2016**

TABLE 7.5: SALIENT FEATURES OF PROPOSAL "P1"

Name of the Project	Thiru. S. Saminathan Rough stone and Gravel quarry		
S.F. No.	206/1(Part)		
Extent	2.53.80 Ha		
Village Taluk and District	Ekkattampalayam Village, Perundurai Taluk, Erode District		
Land Type	It is a Patta land, registered in the name of the applicant (Thiru.S. Saminathan), vide Patta No. 2470.		
Toposheet No	58 – E/12		
Latitude between	11°08'57.16"N to 11°09'03.83"N		
Longitude between	77°34'25.26"E to 77°34'31.09"E		
Previous Lease Details	Lessee: Thiru. S. Saminathan, Lease Period: 07.09.2017 to 06.09.2022 EC - Lr. No. DEIAA-ERD/F.No.16977/2016/EC.No.(12/17), Dated: 08.12.2018 CCR – EP/12.1/2025-26/SEIAA/146/TN/1792 Dated: 28.11.2025		
Existing Pit	16m (Avg)		
Elevation of the area	280m AMSL		
Revised Scheme of Mining Plan period	5 Years		
Proposed Depth of Mining	42m bgl		
	Rough Stone in m^3	**Weathered Rock in m^3**	**Gravel in m^3**
Geological Resources	11,02,200	56,040	18,486
Mineable Reserves	3,72,875	62,640	13,924
Year wise Production	3,72,875	62,640	13,924
Peak Production	87,300	38,000	5,900
Ultimate Pit Dimension	170m (L) X 138m (W) X 57m (D)		
Water Level in the region	63m-68m bgl		
Method of Mining	Opencast Mechanized Mining Method is being carried out with 5.0-meter vertical bench with a bench width is not less than the bench height		
Topography	The lease applied area is almost flat terrain. The area has gentle sloping towards South-eastern side and altitude of the area is 280m (max) above Mean Sea level. The area is covered by 2m thickness of Gravel and 5m thickness of weathered rock and followed by massive Charnockite which is clearly inferred from the existing quarry pit.		
Machinery proposed	Jack Hammer	8 Nos	
	Compressor	2 No	
	Excavator with Bucket and Rock Breaker	2 Nos	
	Trucks	4 Nos	
	Water sprinkler	1 No	
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.		
Proposed Manpower Deployment	37 Nos		
Project Cost	Rs. 1,02,39,000/-		
CER Cost	Rs. 3,00,000/-		

Nearby Water Bodies	Odai	50m East
	Kuttai	90m West
	Lower Bhavani Canal	1.1km SW
	Stream	2.3km SW
	Noyyal River	3.2km SE
	Palatholuvu Kulam	5.2km NW
	Orathupalayam Dam	5.8km SW
Greenbelt Development Plan	Proposed to plant 1270 Nos of trees considering 500 Nos of trees/ Ha criteria The plantation will be developed around the project site and nearby village roads	
Proposed Water Requirement	2.0 KLD	
Nearest Habitation	650m – South West	
Nearest Reserve Forest	Chennimalai RF – 60m – North	
Nearest Wild Life Sanctuary	Vellode Bird Sanctuary – 13.5km – North East	

TABLE 7.6: SALIENT FEATURES OF PROPOSAL "P2"

Name of the Quarry	Thiru.M. Ponnusamy Rough stone and Gravel Quarry	
S.F.No	221/2A (Part) & 223/2	
Extent	1.29.68 Ha	
Toposheet No	58-E/12	
Latitude between	11°08'59.92"N to 11°09'03.03"N	
Longitude between	77°34'34.00"E to 77°34'40.27"E	
Proposed Depth of Mining	25m BGL	
Geological Resources	Rough Stone in m^3	Gravel m^3
	2,98,425	25,950
Mineable Reserves	Rough Stone in m^3	Gravel m^3
	1,21,905	18,970
Year wise production details	Rough Stone in m^3	Gravel m^3
	1,21,905	18,970
Water Level in the surrounds area	60-65m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards south side and covered by grayish black cotton soil followed by weathered rock formation and massive charnockite rock formation.	
Machinery proposed	Jack Hammer	2 Nos
	Compressor	1 No
	Excavator	1 No
	Tippers	2 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	18 Nos	
Project Cost	Rs. 61.68 lakhs	
CER Cost	Rs. 5.0 Lakhs	

Greenbelt Development Plan	648 trees in the 7.5 m Safety Zone and approach road
Proposed Water Requirement	3.0 KLD
Nearest Habitation	920m Southwest

Source: Approved Mining Plan

TABLE 7.7: SALIENT FEATURES OF PROPOSAL "E1"

Name of the Quarry	Thiru.P. Mahendran Rough stone and Gravel Quarry	
S.F.No	202/1(P), 2(P)	
Extent	2.63.0 Ha	
Toposheet No	58 G/11	
Latitude between	11°08'51.95"N to 11°08'57.02"N	
Longitude between	77°34'09.10"E to 77°34'17.69"E	
Proposed Depth of Mining	37m BGL	
Mineable Reserves	Rough Stone in m^3	Gravel m^3
	2,77,411	20,394
Proposed production for five years plan period	Rough Stone in m^3	Gravel m^3
	2,77,411	20,394
Water Level in the surrounds area	63-68m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards south side and covered by grayish black cotton soil followed by weathered rock formation and massive charnockite rock formation	
Machinery proposed	Jack Hammer	2 Nos
	Compressor	1 No
	Excavator	1 No
	Tippers	2 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	37 Nos	
Project Cost (excluding EMP cost)	Rs.52,49,900/-	
CER Cost	Rs.5,00,000/-	
Greenbelt Development Plan	1320 trees in the 7.5 m Safety Zone and approach road	
Proposed Water Requirement	2.0 KLD	
Nearest Habitation	350m - South	

The Cumulative Impact is mainly anticipated due to drilling & blasting and excavation and transportation activities in all the quarries (proposed and existing) within the cluster and major impact anticipated is on Air & Noise Environment and Ground Vibrations due to blasting.

Air Environment –

Calculating the Cumulative Load of Mining within the cluster is as shown in table 7.8 to 7.9.

TABLE 7.8: CUMULATIVE PRODUCTION LOAD OF ROUGH STONE

Quarry	Year wise production (Five Years)	Per Year Production in m^3	Per Day Production in m^3	Number of Lorry Load Per Day
P1	3,72,875	74575	249	21
P2	1,21,905	24381	81	7
Total	**4,94,780**	**98,956**	**330**	**28**
E1	2,77,411	55482	185	15
Total	**2,77,411**	**55482**	**185**	**15**
Grand Total	**7,72,191**	**1,54,438**	**515**	**43**

TABLE 7.9: CUMULATIVE PRODUCTION LOAD OF GRAVEL/ TOPSOIL

Quarry	Year wise production	Per Year Production in m^3	Per Day Production in m^3	Number of Lorry Load Per Day
P1	13,924	4641	15	1
P2	18,970	6323	21	2
Total	**32,894**	**10,964**	**36**	**3**
E1	20,394	6,798	23	2
Total	**20,394**	**6,798**	**23**	**2**
Grand Total	**53,288**	**17,762**	**59**	**5**

On a cumulative basis considering the proposed quarries, it can be seen that the overall production of Rough Stone is $515m^3$ per day with a capacity of 43trips of Rough Stone per day and Gravel/Topsoil is $59m^3$ per day with a capacity of 5trips of from the cluster.

Based on the above production quantities the emissions due to various activities in all the mines includes various activities like ground preparation, excavation, handling and transport of ore. These activities have been analysed systematically basing on USEPA-Emission Estimation Technique Manual, for Mining AP-42, to arrive at possible emissions to the atmosphere and estimated emissions are given in Table 7.10.

TABLE 7.10: EMISSION ESTIMATION FROM QUARRIES WITHIN 500 METER RADIUS

EMISSION ESTIMATION FOR QUARRY "P1"				
	Activity	**Source type**	**Value**	**Unit**
Estimated Emission Rate for PM_{10}	Drilling	Point Source	0.099350603	g/s
	Blasting	Point Source	0.002341354	g/s
	Mineral Loading	Point Source	0.043808175	g/s
	Haul Road	Line Source	0.002495776	g/s/m
	Overall Mine	Area Source	0.076319674	g/s
Estimated Emission Rate for SO_2	Overall Mine	Area Source	0.001029563	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000107772	g/s
EMISSION ESTIMATION FOR QUARRY "P2"				
	Activity	**Source type**	**Value**	**Unit**
Estimated Emission Rate for PM_{10}	Drilling	Point Source	0.085844997	g/s
	Blasting	Point Source	0.001127689	g/s
	Mineral Loading	Point Source	0.044286389	g/s
	Haul Road	Line Source	0.002497337	g/s/m
	Overall Mine	Area Source	0.067434403	g/s
Estimated Emission Rate for SO_2	Overall Mine	Area Source	0.0010121	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000080094	g/s
EMISSION ESTIMATION FOR QUARRY "E1"				
	Activity	**Source type**	**Value**	**Unit**
Estimated Emission Rate for PM_{10}	Drilling	Point Source	0.061031309	g/s
	Blasting	Point Source	0.000204823	g/s
	Mineral Loading	Point Source	0.037940242	g/s
	Haul Road	Line Source	0.002485392	g/s/m
	Overall Mine	Area Source	0.039049420	g/s
Estimated Emission Rate for SO_2	Overall Mine	Area Source	0.0002072	g/s
Estimated Emission Rate for NOx	Overall Mine	Area Source	0.000005126	g/s

Source: Emission Calculation

TABLE 7.11: INCREMENTAL & RESULTANT GLC WITHIN CLUSTER

PM_{10} in $\mu g/m^3$

Background	39.1
Incremental	12.77
Resultant	51.87
NAAQ Norms	**100 µg/m^3**
$PM_{2.5}$ in µg/m^3	
Background	18.9
Incremental	5.82
Resultant	24.72
NAAQ Norms	**60 µg/ m^3**
So2 in µg/m^3	
Background	4.7
Incremental	6.51
Resultant	11.21
NAAQ Norms	**80 µg/ m^3**
No2 in µg/m^3	
Background	18.3
Incremental	1.1
Resultant	19.4
NAAQ Norms	**80 µg/ m^3**

Noise Environment –

Noise pollution is mainly due to operation like drilling & blasting and plying of trucks& HEMM. Cumulative Noise modelling has been carried out considering blasting and compressor operation (drilling) and transportation activities. Predictions have been carried out to compute the noise level at various distances around the different quarries within the 500 m radius.

For hemispherical sound wave propagation through homogeneous loss free medium, one can estimate noise levels at various locations at different sources using model based on first principle.

$$\mathbf{Lp_2 = Lp_1 - 20 \log (r_2/r_1) - Ae_{1,2}}$$

Where:

Lp_1& Lp_2 are sound levels at points located at distances r_1& r_2 from the source.

$Ae_{1,2}$ is the excess attenuation due to environmental conditions. Combined effect of all sources can be determined at various locations by logarithmic addition.

$$\mathbf{Lp_{total} = 10 \log \{10^{(Lp1/10)} + 10^{(Lp2/10)} + 10^{(Lp3/10)} + \ldots\ldots\}}$$

Attenuation due to Green Belt has been taken to be 4.9 dB (A). The inputs required for the model are:

Source data has been computed taking into account of all the machinery and activities used in the mining process.

TABLE 7.12: PREDICTED NOISE INCREMENTAL VALUES FROM CLUSTER

Location ID	Background Value (Day) dB(A)	Incremental Value dB(A)	Total Predicted dB(A)	Industrial Standards dB(A)
P1	48.4	60.1	60.4	**Industrial Day Time- 75 dB (A) Night Time- 70 dB (A)**
P2	53.1	46.1	53.9	
E1	53.1	46.1	53.9	

Source: Lab Monitoring Data

The incremental noise level is found within the range of 48.4dB (A) in Core zone. The noise level at different receptors in buffer zone is lower due to the distance involved and other topographical features adding to the noise attenuation. The resultant Noise level due to monitored values and calculated values at the receptors are based on the mathematical formula considering attenuation due to Green Belt as 4.9 dB (A)the barrier effect. From the above table, it can be seen that the ambient noise levels at all the locations near habitations are within permissible limits of Residential Area (buffer zone) as per THE NOISE POLLUTION (REGULATION AND CONTROL) RULES, 2000(The Principal Rules were published in the Gazette of India, vide S.O.123(E), dated 14.2.2000 and subsequently amended vide S.O. 1046(E),dated 22.11.2000, S.O. 1088(E), dated 11.10.2002, S.O. 1569 (E), dated19.09.2006 and S.O. 50 (E) dated 11.01.2010 under the Environment (Protection) Act, 1986).

Ground Vibrations

Ground vibrations due to mining activities in the all the 4 Mines within cluster are anticipated due to operation of Mining Machines like Excavators, drilling and blasting, transportation vehicles, etc. However, the major source of ground vibration from each mine is blasting. The major impact of the ground vibrations is observed on the domestic houses located in the villages nearby the mine lease area. The kuchha houses are more prone to cracks and damage due to the vibrations induced by blasting whereas RCC framed structures can withstand more ground vibrations. Apart from this, the ground vibrations may develop a fear factor in the nearby settlements nearby the mining areas and may cause injury to persons or damage to the structures. Nearest Habitations from each mine respectively are as in below.

TABLE 7.13: NEAREST HABITATION FROM EACH MINES

Location ID	Distance & Direction
P1	650m – South West
P2	920m -South West
E1	350m - South

The ground vibrations due to the blasting in all the mines are calculated using the empirical equation for assessment of peak particle velocity (PPV) is:

$$V = K\,[R/Q^{0.5}]^{-B}$$

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

TABLE 7.14: GROUND VIBRATIONS AT EACH MINES

Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in mm/s
P1	20	650m – South West	0.173
P2	20	920m -South West	0.099
E1	20	350m - South	0.467

Source: Blasting Calculations

From the above table, the charge per blast is considered as maximum in each mine and the resultant PPV is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997.

Socio Economic Environment –

Each mine shall contribute towards CER and the community shall develop.

TABLE 7.15: SOCIO ECONOMIC BENEFITS FROM EACH MINES

Location ID	Project Cost	CER
P1	Rs. 1,02,39,000/-	Rs. 3,00,000/-
E1	Rs. 61,68,000/-	Rs. 5,00,000/-
Total	**Rs.1,64,07,000/-**	**Rs. 13,00,000/-**
E1	Rs.52,49,900/-	Rs. 5,00,000/-
Total	**Rs.52,49,900/-**	**Rs. 5,00,000/-**
Grand. Total	**Rs. 2,16,56,000/-**	**Rs. 18,00,000/-**

Allocation for Corporate Environment Responsibility (CER) shall be made as per Government of India, MoEF & CC Office Memorandum F.No.22-65/2017-IA.III, Dated: 01.05.2018 by all the mines.

TABLE 7.16: EMPLOYMENT BENEFITS FROM EACH MINES

Description	Employment
P1	37
P2	18
Total	**55**
E1	37
Total	**37**
Grand Total	**92**

A total of 55 people will get employment due to 2 proposed mine in cluster and remaining people are already employed at existing mines.

TABLE 7.17: GREENBELT DEVELOPMENT BENEFITS FROM EACH MINES

Code	No of Trees proposed to be planted	Area Covered Sq.m	Name of the Species
P1	1,270	The safety zone along the boundary barrier has been identified to be utilized for Greenbelt development	Neem, Pungan and Poovarasu, etc.,
P2	648		
E1	1320		
G. Total	**1,918**		

For the proposed mining plan 1,918 Nos of trees will be planted around lease area and approach road and 1320 trees are planted for existing quarry.

7.5 PLASTIC WASTE MANAGEMENT PLAN

The project Proponent shall comply with Tamil Nadu Government Order (Ms) No. 84 Environment and Forest (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.

Objective –

- To investigate the actual supply chain network of plastic waste.
- To identify and propose a sustainable plastic waste management by installing bins for collection of recyclables with all the plastic waste
- Preparation of a system design layout, and necessary modalities for implementation and monitoring.

TABLE 7.18: ACTION PLAN TO MANAGE PLASTIC WASTE

Sl.No.	Activity	Responsibility
1	Framing of Layout Design by incorporating provision of the Rules, user fee to be charged from waste generators for plastic waste management, penalties/fines for littering, burning plastic waste or committing any other acts of public nuisance	Mines Manager
2	Enforcing waste generators to practice segregation of bio-degradable, recyclable and domestic hazardous waste	Mines Manager
3	Collection of plastic waste	Mines Foreman
4	Setting up of Material Recovery Facilities	Mines Manager
5	Segregation of Recyclable and Non-Recyclable plastic waste at Material Recovery Facilities	Mines Foreman
6	Channelization of Recyclable Plastic Waste to registered recyclers	Mines Foreman
7	Channelization of Non-Recyclable Plastic Waste for use either in Cement kilns, in Road Construction	Mines Foreman
8	Creating awareness among all the stakeholders about their responsibility	Mines Manager
9	Surprise checking's of littering, open burning of plastic waste or committing any other acts of public nuisance	Mine Owner

Source: Proposed by FAE's and EC

7.6 CLUSTER MANAGEMENT COMMITTEE

The cluster management committee is proposed to form including of 2 Proposed quarries and 1 Existing quarry total extent of the cluster is 6.46.48 Ha

In the cluster management committee, the following Environmental Management plan will be followed the activities such as

- Transportation of Minerals and blasting activities with the coordination between the individual quarry owners.
- Sprinkling of water regularly thrice a day in the mutual understanding with the quarry owners
- Carrying out blasting operation as specified times by the Mines Managers and as per the EIA report
- Usage of Haul roads in a time specified by the Cluster Management Committee
- Following Safe operating procedure prescribed by the Mines Manager during natural calamities
- Planting Trees in the Government Land, School and within the project site

- Celebrating Safety month, Environmental Month along with the Mines Managers in every six months once
- Regularly follow the health of the workers and take medical examination as per the DGMS norms under the guidance of Mines Manager
- Meet at Association Hall monthly once to review the Environmental Management and Safety activities prescribed by the Cluster Management Committee
- We have read and understood all the above steps and we ensure to follow these specific steps Quarry owners in the Cluster management committee

Quarries in the Cluster Management Committee

CODE	Name of the Owner	Village	S.F. Nos	Extent in Ha	Status
PROPOSED QUARRY					
P1	**Thiru.S.Saminathan**, S/o. Sennimalaigounder, No.19, S.K.Palayam, V.Ramalingapuram, Chennimalai, Perundurai Taluk, Erode District, Tamilnadu – 638 051	Ekkatampalayam	206/1(P)	2.53.80 Ha	File No: 11531 ToR Identification No: TO24B0108TN5686765N Dated: 19.07.2025
P2	**Thiru.M.Ponnusamy**	Ekkatampalayam	221/2A(P),223/2	1.29.68 Ha	EC Granted
	TOTAL EXTENT			**3.83.48 Ha**	
EXISTING QUARRY					
E-1	**Thiru. P.Mahendran**	Ekkatampalayam	202/1(P), 2(P)	2.63.0Ha	30.06.2022 to 16.08.2027
	TOTAL EXTENT			**2.63.0 Ha**	
EXPIRED/ ABANDONED QUARRIES					
EX-1	**G.Banugopal**	Ekkatampalayam	226(P)	0.63.4 Ha	06.09.2022
EX-2	**S.Shanmuga sundaram**		221/1	1.55.0 Ha	06.09.2022
EX-3	**P.Mahendran**		203/2	2.27.0 Ha	29.06.2022
EX-3	**G.banugpoal**		50/1B	2.02.5 Ha	16.10.2023
EX-3	**G.Banugopal**		52	0.85.0 Ha	28.02.2021
	TOTAL EXTENT			**7.32.9 Ha**	
	TOTAL CLUSTER EXTENT			**6.46.48 Ha**	

STANDARD OPERATING PROCEDURE FOR EKKATTAMPALAYAM VILLAGE CLUSTER MANAGEMENT COMMITTEE

1. **Maintenance of Haul Roads and Village Roads:**
    - Water will be sprinkled on haul roads twice a day to avoid dust generation during transportation
    - Transportation of material will be carried out during day time and material will be covered with tarpaulin
    - The speed of tippers plying on the haul road will be limited below 20 km/hr to avoid generation of dust.
    - Water sprinkling on haul roads & loading points will be carried out twice a day

- Main source of gaseous pollution will be from vehicle used for transportation of mineral; therefore, weekly maintenance of machines improves combustion process & makes reduction in the pollution.
- The un-metaled haul roads will be compacted weekly before being put into use.
- Over loading of tippers will be avoided to prevent spillage.
- It will be ensured that all transportation vehicles carry a valid PUC certificate
- Grading of haul roads and service roads to clear accumulation of loose materials

2. Maintenance of Drilling Activities

- In this system dust gets suppressed close to its formation. Dust suppression become very effective and the work environment will be improved from the point of occupational comfort and health.
- Due to dust free atmosphere, the life of engine, compressor etc., will be increased.
- The life of drill bit will be increased.
- The rate of penetration of drill will be increased.
- Due to the dust free atmosphere visibility will be improved resulting in safer working conditions.
- Usage of sharp drill bits while drilling which will help in reducing noise;
- Secondary blasting will be totally avoided and hydraulic rock breaker will be used for breaking boulders;
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will be maintained;
- The blasting will be carried out during favourable atmospheric condition and less human activity timings by using nonelectrical initiation system;
- Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise;
- Provision of sound insulated chambers for the workers working on machines (HEMM) producing higher levels of noise;
- Silencers / mufflers will be installed in all machineries;
- Green Belt/Plantation will be developed around the project area and along the haul roads. The plantation minimizes propagation of noise;
- Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM and their use will be ensured though training and awareness.
- Regular medical check–up and proper training to personnel to create awareness about adverse noise level effects

3. Maintenance of Blasting Activities

- Establish time of blasting to suit the local conditions and water sprinkling on blasting face
- Avoid blasting i.e., when temperature inversion is likely to occur and strong wind blows towards residential areas

- Controlled blasting includes Adoption of suitable explosive charge and short delay detonators, adequate stemming of holes at collar zone and restricting blasting to a particular time of the day i.e., at the time lunch hours (1.00 PM to 2.00 PM), controlled charge per hole as well as charge per round of hole
- Before loading of material water will be sprayed on blasted material
- Dust mask will be provided to the workers and their use will be strictly monitored
- The blasting operations in the cluster quarries are carried out without deep hole drilling and blasting using delay detonators, which reduces the ground vibrations;
- Proper quantity of explosive, suitable stemming materials and appropriate delay system will be adopted to avoid overcharging and for safe blasting;
- Adequate safe distance from blasting will be maintained as per DGMS guidelines;
- Blasting shelter will be provided as per DGMS guidelines;
- Blasting operations will be carried out only during day time;
- The charge per delay will be minimized and preferably a greater number of delays will be used per blasts;
- During blasting, other activities in the immediate vicinity will be temporarily stopped;
- Drilling parameters like depth, diameter and spacing will be properly designed to give proper blast;
- A fully trained explosives blast man (Mining Mate, Mines Foreman, 2nd Class Mines Manager/ 1st Class Mines Manager) will be appointed.
- A set of shot firing rules will be drawn up and blasting shall commence outlining the detailed operating procedures that will be followed to ensure that shot firing operations on site take place without endangering the workforce or public.
- Sufficient angular stemming material will be used to confine the explosive force and minimise environmental disturbance caused by venting / misfire.
- The detonators will be connected in a predetermined sequence to ensure that only one charge is detonated at any one time and a NONEL or similar type initiation system will be used.
- The detonation delay sequence shall be designed so as to ensure that firing of the holes is in the direction of free faces so as to minimise vibration effects.
- Appropriate blasting techniques shall be adopted such that the predicted peak particle velocity shall not exceed 8 Hz.
- Vibration monitoring will be carried out every 6 months to check the efficacy of blasting practices

4. Maintenance of Greenbelt Activities

- Planting of trees all along main mine haul roads and regular grading of haul roads will be practiced to prevent the generation of dust due to movement of dumpers/trucks
- Green belt of adequate width will be developed around the project areas
- Suitable plan for conservation of Schedule-I Species have prepared and necessary fund for implement for the same will be made.

- All the preventive measures will be taken for growth & development of fauna.
- Creating and development awareness for nature and wildlife in the adjoin villages.
- The workers shall be trained to not harm any wildlife, should it come near the project site. No work shall be carried out after 6.00 pm

5. Maintenance of Occupational Health

- Dust mask will be provided to the workers and their use will be strictly monitored
- Annual medical checkups, trainings and campaigns will be arranged to ensure awareness about importance of wearing dust masks among all mine workers & tipper drivers
- Ambient Air Quality Monitoring will be conducted six months once to assess effectiveness of mitigation measures proposed
- Specific personnel training on work-site safety management will be taken up;
- Work site assessment will be done by rock scaling of each surface exposed to workers to prevent accidental rock falling and / or landslide, especially after blasting activities;
- Natural barriers, temporary railing, or specific danger signals will be provided along rock benches or other pit areas where work is performed at heights more than 2m from ground level;
- Maintenance of yards, roads and footpaths, providing sufficient water drainage and preventing slippery surfaces with an all-weather surface, such as coarse gravel will be taken up

Occupational health and safety hazards occur during the operational phase of mining and primarily include the following:

- Respiratory hazards
- Noise
- Physical hazards
- Explosive storage and handling

All the persons will undergo pre-employment and periodic medical examination. Employees will be monitored for occupational diseases by conducting the following tests

- General physical tests
- Audiometric tests
- Full chest, X-ray, Lung function tests, Spirometric tests
- Periodic medical examination – yearly
- Lung function test – yearly, those who are exposed to dust
- Eye test

Essential medicines will be provided at the site. The medicines and other test facilities will be provided at free of cost. The first aid box will be made available at the mine for immediate treatment.

First aid training will be imparted to the selected employees regularly. The lists of first aid trained members shall be displayed at strategic places.

6. Cluster Management Committee Policy

- Meet the requirements of all laws, acts, regulations, and standards relevant to its operations and activities
- Implement a program to train employees in general environmental issues and individual workplace environmental responsibilities
- Allocate necessary resources to ensure the implementation of the environmental policy
- Ensure that an effective closure strategy is in place at all stages of project development and that progressive reclamation is undertaken as early as possible to reduce potential long-term environmental and community impacts
- Implement monitoring programme to provide early warning of any deficiency or unanticipated performance in environmental safeguards
- Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement
- Monitoring of the water/ waste water quality, air quality and solid waste generated
- Analysis of the water and air samples collected through external laboratory
- Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
- Co-ordination of the environment related activities within the project as well as with outside agencies
- Collection of health statistics of the workers and population of the surrounding villages
- Green belt development
- Monitoring the progress of implementation of the environmental monitoring programme

Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

8.PROJECT BENEFITS

8.0 GENERAL

The Proposed Project for Quarrying Rough Stone and Gravel at Ekkattampalayam Village aims to produce 3,72,875m^3 Rough Stone over a period of 5 years and 13,924m^3 Gravel over a period of 3 years This will enhance the socio-economic activities in the adjoining areas and will result in the following benefits.

- Increase in Employment Potential
- Improvement in Socio-Economic Welfare
- Improvement in Physical Infrastructure
- Improvement in Social infrastructure

8.1 EMPLOYMENT POTENTIAL

It is proposed to provide employment to about 37 persons for carrying out mining operations and give preference to the local people in providing employment in the three proposed quarries in the cluster. In addition, there will be opportunity for indirect employment to many people in the form of contractual jobs, business opportunities, service facilities etc. the economic status of the local people will be enhanced due to mining project.

8.2 SOCIO-ECONOMIC WELFARE MEASURES PROPOSED

The impact of mining activity in the area will be more positive on the socio-economic environment in the immediate project impact area. The employment opportunities both direct and indirect will contribute to enhanced money incomes to job seekers with minimal skill sets especially among the local communities.

8.3 IMPROVEMENT IN PHYSICAL INFRASTRUCTURE

The proposed quarry was located in Ekkatampalayam Village, Vembakottai Taluk, Virudhunagar District of Tamil Nadu and the area have communications, roads and other facilities already well established. The following physical infrastructure facilities will further improve due to proposed mine.

- Road Transport facilities
- Communications
- Medical, Educational and social benefits will be made available to the nearby civilian population in addition to the workmen employed in the mine.

8.4 IMPROVEMENT IN SOCIAL INFRASTRUCTURE

Employment is expected during civil construction period, in trade, garbage lifting, sanitation and other ancillary services, Employment in these sectors will be primarily temporary or contractual and involvement of unskilled labour will be more. A major part of the labour force will be mainly from local villagers who are expected to engage themselves both in agriculture and mining activities. This will enhance their income and lead to overall economic growth of the area.

8.5 OTHER TANGIBLE BENEFITS

The proposed mine is likely to have other tangible benefits as given below.

- Indirect employment opportunities to local people in contractual works like construction of infrastructural facilities, transportation, sanitation, for supply of goods and services to the mine and other community services.
- Additional housing demand for rental accommodation will increase
- Cultural, recreation and aesthetic facilities will also improve
- Improvement in communication, transport, education, community development and medical facilities and overall change in employment and income opportunity
- The State Government will also benefit directly from the proposed mine, through increased revenue from royalties, cess, DMF, GST etc.,

8.5.1 CORPORATE SOCIAL RESPONSIBILITY

The Project Proponent will take responsibility to develop awareness among all levels of their staff about CSR activities and the integration of social processes with business processes. Those involved with the undertaking of CSR activities will be provided with adequate training and re-orientation.

CSR Cost Estimation

- CSR activities will be taken up in the Ethirkottai Village mainly contributing to education, health, training of women self-help groups and contribution to infrastructure etc., CSR budget is allocated as 2.5% of the profit.

8.5.2 CORPORATE ENVIRONMENT RESPONSIBILITY

For the proposed quarry allocation for Corporate Environment Responsibility (CER) shall be made as per Government of India, MoEF& CC Office Memorandum F.No.22-65/2017-IA.III, Dated: 01.05.2018.

Proponent intends to spent Rs 3,00,000/- towards CER for the Government School near the project site the details are given below:

TABLE 8.1 CER – ACTION PLAN

Activity	CER
• Renovation/ Construction of Existing Toilet • Providing Environmental Related books to the school Library • Carrying out plantation and maintenance in the school Ground • Any other requirements in consultation with the school Head master	Rs 3,00,000/-

9. ENVIRONMENTAL COST BENEFIT ANALYSIS

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

10.ENVIRONMENTAL MANAGEMENT PLAN – Thiru.S. Saminathan

10.0. GENERAL

Environment Management Plan (EMP) aims at the preservation of ecological system by considering in-built pollution abatement facilities at the proposed site. Good practices of Environmental Management plan will ensure to keep all the environmental parameters of the project in respect of Ambient Air quality, Water quality, Socio – economic improvement standards.

Mitigation measures at the source level and an overall environment management plan at the study area are elicited so as to improve the supportive capacity of the receiving bodies. The EMP presented in this chapter discusses the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness monitored after approval of the EIA.

10.1. ENVIRONMENTAL POLICY

The Project Proponent is committed to conduct all its operations and activities in an environmentally responsible manner and to continually improve environmental performance.

The Proponent Thiru.S. Saminathan will –

- Meet the requirements of all laws, acts, regulations, and standards relevant to its operations and activities
- Implement a program to train employees in general environmental issues and individual workplace environmental responsibilities.
- Allocate necessary resources to ensure the implementation of the environmental policy.
- Ensure that an effective closure strategy is in place at all stages of project development and that progressive reclamation is undertaken as early as possible to reduce potential long-term environmental and community impacts.
- Implement monitoring programmes to provide early warning of any deficiency or unanticipated performance in environmental safeguards.
- Conduct periodic reviews to verify environmental performance and to continuously strive towards improvement.

Description of the Administration and Technical Setup –

The Environment Monitoring Cell discussed under Chapter 6 will ensure effective implementation of environment management plan and to ensure compliance of environmental statutory guidelines through Mine Management Level of each Proposed Quarry.

The said team will be responsible for:

- Monitoring of the water/ waste water quality, air quality and solid waste generated
- Analysis of the water and air samples collected through external laboratory

- Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
- Co-ordination of the environment related activities within the project as well as with outside agencies
- Collection of health statistics of the workers and population of the surrounding villages
- Green belt development
- Monitoring the progress of implementation of the environmental monitoring programme
- Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

10.2. LAND ENVIRONMENT MANAGEMENT –

Landscape of the area will be changed due to the quarrying operation, restoration of the land by converting the quarry pit into temporary reservoir and the remaining part of the area (un utilized areas, infrastructure, haul Roads) will be utilized for greenbelt development. There is no major vegetation in the project area during the course of quarrying operation and after completion of the quarrying operation thick plantation will be developed under greenbelt development programme.

TABLE 10.1. PROPOSED CONTROLS FOR LAND ENVIRONMENT

CONTROL	RESPONSIBILITY
Design vehicle wash-down areas so that all runoff water is captured and passed through oil water separators and sediment catchment devices.	Mines Manager
Refuelling to be undertaken in a safe location, away from vehicle movement pathways & 100 m away of any watercourse Refuelling activity to be under visual observation at all times. Drainage of refuelling areas to sumps with oil/water separation	Mine Foreman & Mining Mate
Soil and groundwater testing as required following up a particular incident of contamination.	Mines Manager
At conceptual stage, the mining pits will be converted into Rain Water Harvesting. Remaining area will be converted into greenbelt area	Mines Manager
No external dumping i.e., outside the project area	Mine Foreman
Garland drains with catch pits / settlement traps to be provided all around the project area to prevent run off affecting the surrounding lands.	Mines Manager
The periphery of Project area will be planted with thick plantation to arrest the fugitive dust, which will also act as acoustic barrier.	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

1.3. SOIL MANAGEMENT

There is no Waste anticipated during this plan period hence, disposal of waste does not arise. The overburden in the form of Gravel and Weathered rock are already removed during the previous lease period. The excavated rough stone (100%) will be directly loaded into Trucks to the needy customers.

TABLE 10.2. PROPOSED CONTROLS FOR SOIL MANAGEMENT

CONTROL	RESPONSIBILITY
Surface run-off from the project boundary via garland drains will be diverted to the mine pits	Mine Foreman & Mining Mate
Design haul roads and other access roads with drainage systems to minimize concentration of flow and erosion risk	Mines Manager
Empty sediment from sediment traps Maintain, repair or upgrade garland drain system	Mines Manager
Test soils for pH, EC, chloride, size & water holding capacity	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

10.4. WATER MANAGEMENT

In the proposed quarrying project, no process is involved for the effluent generation, only oil & grease from the machinery wash is anticipated and domestic sewage from mine office. The quarrying operation is proposed up to a depth of 57m BGL, the water table in the area is 63-68m below ground level, hence the proposed projects will not intersect the Ground water table during entire quarry period.

TABLE 10.3. PROPOSED CONTROLS FOR WATER ENVIRONMENT

CONTROL	RESPONSIBILITY
To maximize the reuse of pit water for water supply	Mines Foreman
Temporary and permanent garland drain will be constructed to contain the catchments of the mining area and to divert runoff from undisturbed areas through the mining areas	Mines Manager
Natural drains/nallahs/brooklets outside the project area should not be disturbed at any point of mining operations	Mines Manager
Ensure there is no process effluent generation or discharge from the project area into water bodies	Mines Foreman
Domestic sewage generated from the project area will be disposed in septic tank and soak pit system	Mines Foreman
Monthly or after rainfall, inspection for performance of water management structures and systems	Mines Manager
Conduct ground water and surface water monitoring for parameters specified by CPCB	Manager Mines

Source: Proposed by FAE's & EIA Coordinator

10.5. AIR QUALITY MANAGEMENT

The proposed quarrying activity would result in the increase of particulate matter concentrations due to fugitive dust. Daily water sprinkling on the haul roads, approach roads in the vicinity would be undertaken and will be continued as there is possibility for dust generation due to truck mobility. It will be ensured that vehicles are properly maintained to comply with exhaust emission requirements

TABLE 10.4. PROPOSED CONTROLS FOR AIR ENVIRONMENT

CONTROL	RESPONSIBILITY
Generation of dust during excavation is minimized by daily (twice) water sprinkling on working face and daily (twice) water sprinkling on haul road	Mines Manager
Wet drilling procedure /drills with dust extractor system to control dust generation during drilling at source itself is implemented	Mines Manager
Maintenance as per operator manual of the equipment and machinery in the mines to minimizing air pollution	Mines Manager
Ambient Air Quality Monitoring carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted air pollution control measures	Mines Manager
Provision of Dust Mask to all workers	Mines Manager
Greenbelt development all along the periphery of the project area	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.6. NOISE POLLUTION CONTROL

There will be intermittent noise levels due to vehicular movement, trucks loading, drilling and blasting and cutting activities. No mining activities are planned during night time.

TABLE 10.5. PROPOSED CONTROLS FOR NOISE ENVIRONMENT

CONTROL	RESPONSIBILITY
Development of thick greenbelt all along the Buffer Zone (7.5 Meters) of the project area to attenuate the noise and the same will be maintained	Mines Manager
Preventive maintenance of mining machinery and replacement of worn-out accessories to control noise generation	Mines Foreman
Deployment of mining equipment with an inbuilt mechanism to reduce noise	Mines Manager
Provision of earmuff / ear plugs to workers working in noise prone zones in the mines	Mining Mate
Provision of effective silencers for mining machinery and transport vehicles	Mines Manager
Provision of sound proof AC operator cabins to HEMM	Mines Manager
Sharp drill bits are used to minimize noise from drilling	Mines Foreman

Controlled blasting technologies are adopted by using delay detonators to minimize noise from blasting	Mines Manager
Annual ambient noise level monitoring is carried out in the project area and in surrounding villages to access the impact due to the mining activities and the efficacy of the adopted noise control measures. Additional noise control measures will be adopted if required as per the observations during monitoring	Mines Manager
Reduce maximum instantaneous charge using delays while blasting	Mining Mate
Change the burden and spacing by altering the drilling pattern and/or delay layout, or altering the hole inclination	Mines Manager
Undertake noise or vibration monitoring	Mines Manager

Source: Proposed by FAE's & EIA Coordinator

10.7. GROUND VIBRATION AND FLY ROCK CONTROL

The Rough stone quarry operation creates vibration due to the blasting and movement of Heavy Earth moving machineries, fly rocks due to the blasting.

TABLE 10.6. PROPOSED CONTROLS FOR GROUND VIBRATIONS & FLY ROCK

CONTROL	RESPONSIBILITY
Controlled blasting using delay detonators will be carried out to maintain the PPV value (below 8Hz) well within the prescribed standards of DGMS	Mines Manager
Drilling and blasting will be carried under the supervision of qualified persons	Mines Manager
Proper stemming of holes should be carried out with statutory competent qualified blaster under the supervision of statutory mines manager to avoid any anomalies during blasting	Mines Manager
Suitable spacing and burden will be maintained to avoid misfire / fly rocks	Manager Mines
Number of blast holes will be restricted to control ground vibrations	Manager Mines
Blasting will be carried out only during noon time	Mining Mate
Undertake noise or vibration monitoring	Mines Manager
ensure blast holes are adequately stemmed for the depth of the hole and stemmed with suitable angular material	Mines Foreman

Source: Proposed by FAE's & EIA Coordinator

10.8. BIOLOGICAL ENVIRONMENT MANAGEMENT

The proponent will take all necessary steps to avoid the impact on the ecology of the area by adopting suitable management measures in the planning and implementation stage. During mining, thick plantation will be carried out around the project periphery, on safety barrier zone, on top benches of quarried out area etc.,

Following control measures are proposed for its management and will be the responsibility of the Mines Manager.

- Greenbelt development all along the safety barrier of the project area

- It is also proposed to implement the greenbelt development programme and post plantation status will be regularly checked for every season.
- The main attributes that retard the survival of sapling is fugitive dust, this fugitive dust can be controlled by water sprinkling on the haul roads and installing a sprinkler unit near the newly planted area.
- Year wise greenbelt development will be recorded and monitored
    - Based on the area of plantation.
    - Period of plantation
    - Type of plantation
    - Spacing between the plants
    - Type of manuring and fertilizers and its periods
    - Lopping period, interval of watering
    - Survival rate
    - Density of plantation
- The ultimate reclamation planned leaves a congenial environment for development of flora & immigration of small fauna through green belt and water reservoir. The green belt and water reservoir developed within the Project at the end of mine life will attract the birds and animals towards the project area in the post mining period.

10.8.1. Green Belt Development Plan

About 1270nos. of saplings is proposed to be planted for the Mining plan period in safety barrier of applied mine lease area. The greenbelt development plan has been prepared keeping in view the land use changes that will occur due to mining operation in the area.

The objectives of the greenbelt development plan are –

- Provide a green belt around the periphery of the quarry area to combat the dispersal of dust in the adjoining areas,
- Protect the erosion of the soil, Conserve moisture for increasing ground water recharging,
- Restore the ecology of the area, restore aesthetic beauty of the locality and meet the requirement of fodder, fuel and timber of the local community.

A well-planned Green Belt with multi rows (three tiers) preferably with long canopy leaves shall be developed with dense plantations around the boundary and haul roads to prevent air, dust noise propagation to undesired places and efforts will be taken for the enhancement of survival rate.

10.8.2. Species Recommended for Plantation

Following points have been considered while recommending the species for plantation:

- Creating of bio-diversity.
- Fast growing, thick canopy cover, perennial and evergreen large leaf area,
- Efficient in absorbing pollutants without major effects on natural growth

TABLE 10.7. RECOMMENDED SPECIES FOR THE PLANTATION

S.No	Botanical Name	Local Name
1	*Aegle marmelos*	Vilvamaram
2	*Albizia lebbeck*	Vaagai maram
3	*Cassia fistula*	Konrai tree
4	*Lannea coromandelica*	Othiyam
5	*Limoniaacidissima*	Vila maram
6	*Syzygiumcumini*	Naval maram
7	*Toona ciliata*	Santhana Vembu
8	*Ficus hispida*	Aththimaram
9	*Borassus flabellifer*	Panai-maram

Source: Proposed by FAE's & EIA Coordinator

10.9. OCCUPATIONAL SAFETY & HEALTH MANAGEMENT

Occupational safety and health are very closely related to productivity and good employer-employee relationship. The main factors of occupational health impact in quarries are fugitive dust and noise. Safety of employees during quarrying operation and maintenance of mining equipment will be taken care as per Mines Act 1952 and Rule 29 of Mines Rules 1955. To avoid any adverse effect on the health of workers due to dust, noise and vibration sufficient measures have been provided.

10.9.1. Medical Surveillance and Examinations –

The health status of workers in the mine will be regularly monitored under an occupational surveillance program. Under this program, all the employees are subjected to a detailed medical examination at the time of employment. The medical examination covers the following tests under mines act 1952.

- General Physical Examination and Blood Pressure
- X-ray Chest and ECG
- Sputum test
- Detailed Routine Blood and Urine examination

The medical histories of all employees will be maintained in a standard format annually. Thereafter, the employees will be subject to medical examination annually. The below tests keep upgrading the database of medical history of the employees.

TABLE 10.8. MEDICAL EXAMINATION SCHEDULE

Sl.No	Activities	1st Year	2nd Year	3rd Year	4th Year	5th Year
1	Initial Medical Examination (Mine Workers)					
A	Physical Check-up					
B	Psychological Test					
C	Audiometric Test					
D	Respiratory Test					
2	Periodical Medical Examination (Mine Workers)					
A	Physical Check – up					
B	Audiometric Test					
C	Eye Check – up					
D	Respiratory Test					
3	Medical Camp (Mine Workers & Nearby Villagers)					
4	Training (Mine Workers)					

10.9.2 Proposed Occupational Health and Safety Measures –

- The mine site will have adequate drinking water supply so that workers do not get dehydrated.
- Lightweight and loose-fitting clothes having light colours will be preferred to wear.
- Noise exposure measurements will be taken to determine the need for noise control strategies.
- The personal protective equipment will be provided for mine workers.
- At noisy working activity, exposure time will be minimized.
- Dust generating sources will be identified and proper control measure will be adopted.
- Periodic medical examinations will be provided for all workers.
- In respect of contract work, safety code for contractors and workers will be implemented. They will be allowed to work under strict supervision of statutory person/officials only after they will impart training at vocational training centres. All personal protective equipment's will be provided to them.
- A safety committee meeting every month will be organized to discuss the safety of the mines and the persons employed.
- Celebration of annual mines safety week and environmental week in order to develop safety awareness and harmony amongst employees and co quarry owners.

FIGURE 10.1: PERSONAL PROTECTIVE EQUIPMENT TO THE MINE WORKERS



10.9.3: Health and Safety Training Programme

The Proponent will provide special induction program along with machinery manufacturers for the operators and co-operators to run and maintain the machinery effectively and efficiently. The training program for the supervisors and office staffs will be arranged in the Group Vocational Training Centres in the State and engage Environmental Consultants to provide periodical training to all the employees to carry out the mining operation in and eco-friendly manner as per Metalliferous Mines Regulation, 1961.

10.9.4.: Budgetary Provision for Environmental Management –

Adequate budgetary provision has been made by the Company for execution of Environmental Management Plan. The Table 10.9 gives overall investment on the environmental safeguards and recurring expenditure for successful monitoring and implementation of control measures.

TABLE 10.9: EMP BUDGET FOR PROPOSED PROJECT

Activities	Mitigation Measure	Provision for Implementation	Capital	Recurring per annum
Air Environment	Haul road maintenance & Water sprinkling	Lump sum fund allocation for daily maintenance of haul roads and thrice a day water sprinkling by fixed sprinklers or water tankers	0	50000
	Muffle blasting – To control fly rocks during blasting	Lump sum fund allocation Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure	Lump sum fund allocation for ensuring wet drilling by covering drill holes with wet gunny bags and spraying water while drilling	0	10000
	No overloading of trucks/tippers/tractors	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Enforcing speed limits of 20 km/hr within ML area	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Regular monitoring of exhaust fumes as per RTO norms	Lump sum fund allocation Manual Monitoring through Security guard	0	5000
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	5000
Noise Environment	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Competent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000

	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	0
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
Mine Closure	1. Progressive Closure Activity - Surface Runoff management	Provision made in Operating Cost	0	0
	2. Progressive Closure Activity Barbed Wire Fencing to quarry area will be provisioned.	Provision made in Operating Cost	0	0
	3. Greenbelt development under safety zone during the mining period	Provision made in Operating Cost	0	0
Implementation of EC, Mining Plan & DGMS Condition	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000
	Air, Water, Noise and Soil Quality Sampling every 6 Months for Compliance Report of EC Conditions	Submission of 2 Half Yearly Compliance - Lab Monitoring Report as per CPCB norms	0	100000
	Workers will be provided with Personal Protective Equipment's	Lumpsum fund allocation	50000	15000
	Health checkup for workers will be provisioned	IME & PME Health checkup for all the employees will be covered batch wise.	0	50000
	First aid facility will be provided	Lumpsum fund allocation	0	5000
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000
	No parking will be provided on the transport routes. Separate provision will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Lumpsum fund allocation	50000	10000
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Appointment of Competent person for ensuring the safety operation	Provision made in operational cost	0	0

CER	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Lumpsum fund allocation	300000	0
TOTAL			**5,60,000**	**3,02,000**

Year Wise Break Up	
I Year	**₹ 8,62,000/-**
II Year	₹ 3,17,100/-
III Year	₹ 3,32,955/-
IV Year	₹ 3,49,603/-
V Year	₹ 3,67,083/-
Total	**₹ 22.29 Lakhs**

Cost inflation 5% per annum

Note: This Environmental Management plan cost will vary according to the public consultation comments

10.10 CONCLUSION –

Various aspects of mining activities were considered and related impacts were evaluated. Considering all the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and fund has been allocated for the same. The EMP is dynamic, flexible and subjected to periodic review. For project where the major environmental impacts are associated, EMP will be under regular review. Senior Management responsible for the project will conduct a review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area.

****

11. SUMMARY AND CONCLUSION

The Draft EIA & EMP report prepared for the proposed Rough Stone and Gravel Quarry project located in S.F.Nos. 206/1(P) of Ekkattampalayam Village, Perundurai Taluk, Erode District, Tamil Nadu State belongs to Thiru.S. Saminathan the Project falls in the Cluster category consist of 2 Proposed & 1 Existing Quarries falls under "B" category as per MoEF & CC Notification S.O. 3977 (E).

Now, as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green Tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF& CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018 clarified the requirement for EIA, EMP and therefore, Public Consultation for all areas from 5 to 25 ha falling in Category B-1 and appraised by SEAC/ SEIAA as well as for cluster situation.

The proposed project is categorized under category "B1" Activity 1(a) (mining lease area in cluster situation) and will be considered at SEIAA – TN after conducting Public Hearing and Submission of EIA/EMP Report for Grant of Environmental Clearance. **"**Draft EIA report prepared on the basis of ToR issued for carrying out public hearing for the grant of Environmental Clearance from SEIAA, Tamil Nadu".

Environmental monitoring and audit mechanism have been recommended before and after commencement of the project, where necessary, to verify the accuracy of the EIA predictions and the effectiveness of recommended mitigation measures.

The main scope of the EIA study is to quantify the cumulative impact in the study area due to cluster quarries and formulate the effective mitigation measures for each individual leases. A detailed account of the emission sources, emissions control equipment, background Air quality levels, Meteorological measurements, Dispersion model and all other aspects of pollution like effluent discharge, Dust generation etc., have been discussed in this report. The baseline monitoring study has been carried out during the months October- December 2025 for various environmental components so as to assess the anticipated impacts of the cluster quarry projects on the environment and suitable mitigation measures for likely adverse impacts due to the proposed project is suggested individually for the respective proposed project under Chapter 10.

The project proponent ensures to obtain necessary clearances and quarrying will be carried out as per rules and regulations. The Mining Activity will be carried out in a phased manner as per the approved mining plan after obtaining EC, CTO from TNPCB, execution of lease deed and obtaining DGMS Permission and working will be carried out under the supervision of Competent Persons employed. Overall, the EIA report has predicted that the project will comply with all environment standards and legislation after commencement of the project and operational stage mitigation measures are implemented.

Mining operations has positive impact on environment and socio economy such as landscape improvement, water as by-product, economy development and better public services, providing and supply of Rough Stone as per market demand. Sustainable and modern mining leads us to see positive impact of mining operation and providing consistent employment for nearly 37 people directly in the proposed projects and indirectly around 50 people.

As discussed, it is safe to say that the proposed quarries are not likely to cause any significant impact to the ecology of the area, as adequate preventive measures will be adopted to keep the various pollutants within the permissible limits. Green belt development around the area will also be taken up as an effective pollution mitigate technique, as well as to serve as biological indicators for the pollutants released from the Thiru.S. Saminathan Rough Stone and Gravel Quarry (Extent 2.53.80ha).

12. DISCLOSURE OF CONSULTANT

The Project Proponent Thiru.S. Saminathan have engaged M/s Geo Exploration and Mining Solutions, an Accredited Organization under Quality Council of India – National Accreditation Board for Education & Training, New Delhi, for carrying out the EIA Study as per the ToR Issued.

Name and address of the consultancy:

GEO EXPLORATION AND MINING SOLUTIONS
No 17, Advaitha Ashram Road,
Alagapuram, Salem – 636 004
Tamil Nadu, India
Email: infogeoexploration@gmail.com
Web: **www.gemssalem.com**
Phone: 0427 2431989.

The Accredited Experts and associated members who were engaged for this EIA study as given below –

Sl.No.	Name of the expert	In house/ Empanelled	EIA Coordinator		FAE	
			Sector	Category	Sector	Category
1	**Mr.S.Nagamani**	**In-house**	**1**	**B**	GEO	B
2	Mr. J. R. Vikram Krishna	Empanelled	1 38	A B	SHW RH NV	A A A
3	Mr. N. Senthilkumar	Empanelled	31 38	A B	AQ WP RH	A A B
4	Mr. N.Sathishkumar	In-house	-	-	AP	B
5	Mr. P. Govindasamy	In-house	-	-	WP	B
6	Mr. E.Vadivel	In-house	-	-	HG	B
7	Mr. A. Allimuthu	In-house	-	-	SE	B
8	Mr.P.Panneer Selvam	In-house	-	-	EB	B
9	Mr. S.Ilavarasan	In-house	-	-	LU	B
10	Mr.M. Shaik Nawas	In-house	-	-	SC	B

Abbreviations

EC	EIA Coordinator	EB	Ecology and bio-diversity
AEC	Associate EIA Coordinator	NV	Noise and vibration
FAE	Functional Area Expert	SE	Socio economics
FAA	Functional Area Associates	HG	Hydrology, ground water and water conservation
TM	Team Member	SC	Soil conservation
GEO	Geology	RH	Risk assessment and hazard management
WP	Water pollution monitoring, prevention and control	SHW	Solid and hazardous wastes
AP	Air pollution monitoring, prevention and control	MSW	Municipal Solid Wastes
LU	Land Use	ISW	Industrial Solid Wastes
AQ	Meteorology, air quality modeling, and prediction	HW	Hazardous Wastes

****

ANNEXURE

THIRU. S. SAMINATHAN ROUGH STONE AND GRAVEL QUARRY

S.F.Nos. 206/1(Part),

Extent: 2.53.80 Ha

Ekkattampalayam Village

Perundurai Taluk,

Erode District

Cluster Extent – 6.46.48 Ha

Project Proponent

Thiru.S. Saminathan

S/o. Sennimalaigounder,

No.19, S.K. Palayam,

V.Ramalingapuram, Chennimalai,

Perundurai Taluk, Erode District,

Tamilnadu – 638 051

LIST OF ANNEXURES

Annexures	DESCRIPTION	PAGE NO
P1- Thiru.S.SAMINATHAN	COPY OF TERMS OF REFERENCE	1A - 22A
	COPY OF 500M LETTER & APPROVAL LETTER	23A - 26A
	COPY OF MINING PLAN WITH PLATES	27A – 87A
	COPY OF EXPLOSIVE CERTIFICATE	88A – 98A
	COPY OF 300M LETTER	99A - 100A
	COPY OF HYDROLOGY REPORT	101A-116A
	COPY OF BASE LINE MONITORING DATA	117A-218A
	COPY OF CONSULTANT ACCREDITATION CERTIFICATE	219A

File No: 12370
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)
***

Dated **22/08/2025**

To,

Thiru.S SWAMINATHAN
No. 19, S.K. Palayam, V. Ramalingapuram, Chenniamalai, Perundurai taluk, Erode District. , TAMIL NADU, 638051
swaminathanvbm1966@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 – Existing Rough stone and Gravel Quarry lease over an extent of 2.53.80 Ha at S.F.No. 206/1 (Part) of Ekkattampalayam Village, Perundurai Taluk, Erode District, Tamil Nadu, by Thiru. S. Saminathan - under project category – "B1" and Schedule S.No. 1(a) – ToR issued along with Public Hearing- preparation of EIA report – Regarding.
Ref:
1. Online proposal No. SIA/TN/MIN/542823/2025, Dated: 27/06/2025.
2. Your application submitted for Terms of Reference dated: 27.06.2025.
3. Minutes of the 598th SEAC -I Meeting held on 28.07.2025.
4. Minutes of the 871st Authority meeting held on 13.08.2025.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO25B0108TN5933563N
(ii) File No.	12370
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	EKKATTAMPALAYAM VILLAGE, Rough Stone and Gravel Quarry Project Belongs to S. Saminathan.
(viii) Name of Company/Organization	S SWAMINATHAN
(ix) Location of Project (District, State)	ERODE, TAMIL NADU
(x) Issuing Authority	SEIAA

(xi) Applicability of General Conditions no

(xii) 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 13.08.2025 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 Thiru. S. Saminathan 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 OMNo.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 Principal Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Natural Resources Department, Tamil Nadu.
4. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
5. The Chair Person, TNPC Board,76, Mount Salai, Guindy, Chennai-32
6. The District Collector, Erode District
7. The Commissioner of Geology and Mines, Guindy, Chennai-32
8. The Assistant Director, Department of Geology & Mining, Erode District
9. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. Integrated Regional office of MoEF&CC, Sasthri Bhawan, Nungambakkam, Chennai
11. File Copy

Annexure 1

Specific Terms of Reference for (Mining Of Minerals)

1. Seiaa Specific Conditions:

S. No	Terms of Reference
1.1	The Authority noted that the subject was placed in the **598th meeting of SEAC-I held on 28.07.2025**. After detailed discussions, the Authority accepts the recommendation of SEAC and decided to grant **Terms of Reference (ToR) along with Public Hearing for the quantity 3,72,875**

S. No	Terms of Reference
	cu.m of rough stone and 13,924 cu.m of Gravel up to the depth of 57 m BGL 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 & normal conditions & the conditions mentioned in Annexure of this minutes. 1. The CCR shall be submitted along with the EIA Report by the project proponent

2. Seac Conditions - Site Specific

S. No	Terms of Reference
2.1	i. 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 required statutory personnel, appropriate environmental management, system of maintaining the haul roads and village/panchayat roads, authorized blasting operation, Monitoring system of the environmental & other statutory compliances & its reporting status, 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. ii. The PP shall ensure the installation of CCTV at the proposed quarry site and ensure its inclusion during the EIA presentation.

3. Seac Standard Conditions

S. No	Terms of Reference
3.1	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: (i) Original pit dimension (ii) Quantity achieved Vs EC Approved Quantity (iii) Balance Quantity as per Mineable Reserve calculated. (iv) Mined out Depth as on date Vs EC Permitted depth (v) Details of illegal/illicit mining (vi) Violation in the quarry during the past working. (vii) Quantity of material mined out outside the mine lease area (viii) Condition of Safety zone/benches (ix) Revised/Modified Mining Plan showing the benches of not exceeding 6 m height and ultimate depth of not exceeding 50m. 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. 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. 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

S. No	Terms of Reference
	quarry. 5. The Proponent shall carry out Bio diversity study through reputed Institution and the same shall be included in EIA Report. 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. 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. 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. 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. 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. 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. 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, 13. What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines? 14. Quantity of minerals mined out. · 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. 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). 16. The PP shall carry out Drone video survey covering the cluster, green belt, fencing, etc., 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. 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. 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

S. No	Terms of Reference
	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. 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. 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. 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. 23. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted. 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. 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. 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. 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. 28. Impact on local transport infrastructure due to the Project should be indicated. 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. 30. A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific. 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. 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. 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

S. No	Terms of Reference
	the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner 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. 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. 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. 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. 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. 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. 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. 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. 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. 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.

4. Seiaa Standard Conditions:

S. No	Terms of Reference
4.1	**<u>Cluster Management Committee</u>** 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

S. No	Terms of Reference
	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. **Agriculture & Agro-Biodiversity** 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, horti-cultural 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. **Forests** 15. The project proponent shall detailed study on impact of mining on Reserve forests and free ranging wildlife. 16. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna. 17. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection. 18. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site. **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. 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. 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. 22. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir. 23. The project proponent shall study and furnish the details on potential fragmentation impact on natural Environment, by the activities. 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. 25. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components. 26. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites. 27. The EIA shall include the impact of mining activity on the following: a) Hydrothermal/Geothermal effect due to destruction in the Environment. b) Bio-geochemical processes and its foot prints including Environmental stress.

S. No	Terms of Reference
	c) Sediment geochemistry in the surface streams. **Energy** 28. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished. Climate Change 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. 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. 31. Impact of mining on pollution leading to GHGs emissions and the impact of the same on the local livelihood. **Mine Closure Plan** 32. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued. **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. 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. **Risk Assessment** 35. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining. **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. **Others** 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. 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. 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.

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

S. No	Terms of Reference
	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 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 rea 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 rea 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

S. No	Terms of Reference
	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 State 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/ 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 Wildlifeand 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

S. No	Terms of Reference
	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
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

S. No	Terms of Reference
	(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 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

S. No	Terms of Reference
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 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

e-Compliance
e-Payments
e-Processing
CPC GREEN
Nature Protects if She is Protected

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 cle arly 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 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 is acquisition, nearby (in 2-3 km.) water body, population, with in 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 -l1013/77/2004-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 MoEF&CC O.M.No.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Signature Not Verified
Digitally Signed by : A R Rahul Nadh IAS
Member Secretary, SEIAA
Date: 26/08/2025

From

Thiru. V. Sasikumar, M.Sc.,
Assistant Director,
Geology and Mining,
Erode

To

Thiru. S. Saminathan,
S/o. Sennimalai gounder,
No. 19, S.K. Palayam,
V. Ramalingapuram, Chennimalai,
Perundurai - 638 051.

R.c. No. 980/ Mines / 2024 dated: 28.03.2025.

Sub: Mines and Minerals – Minor Mineral – Rough Stone and Gravel- Erode District - Perundurai Taluk - Ekkattampalayam Village- S.F.No. 206/1 (part)- Over an Extent of 2.53.80 Hectares of patta land- Quarry lease for Rough Stone and Gravel - Application preferred by Thiru. S. Saminathan, S/o. Sennimalai gounder - Precise area communicated for the proposed grant of quarry lease - Mining Plan Submitted - Approved - further details called - send regarding.

Ref:
1. Application for Rough Stone and Gravel quarry permission preferred by Thiru. S. Saminathan, S/o. Sennimalai gounder dated: 14.11.2024.
2. G.O. Ms. No. 79 / Industries (MMC 1) Department dated 06.04.2015.
3. The Assistant Director, Geology and Mining, Erode letter R.C. No. 980/Mines/2024 dated 11.03.2025.
4. Mining Plan submitted by Thiru. S. Saminathan letter dated: -- (Received on 24.03.2025).

****

In the reference 3rd cited, precise area was communicated to the applicant Thiru. S. Saminathan for submission of mining plan, for grant of Rough Stone and Gravel quarry lease, over an extent of 2.53.80 hectares, comprising in S.F.No. 206/1 (part) of Ekkattampalayam Village of Perundurai Taluk, Erode District. As directed the applicant submitted the mining plan and same was approved vide reference 5th cited.

As requested by the applicant, the details of existing, proposed and expired quarries situated within the radius of 500 meters from the subject area are furnished as follows:-

1. Existing quarries:

SNo	Name of the Applicant	S.F.Nos	Extent (Hect)	Lease Details
1.	P. Mahendran	202/1(p), 2(p)	2.63.0	30.06.2022 to 29.06.2027

2. Proposed quarries :

Sl.No	Name of the Applicant	S.F.Nos	Extent (Hect)	Date of application
1.	M. Ponnusamy	221/2A (p), 223/2	1.29.68	10.07.2024
2.	S. Saminathan	206/1 (part)	2.53.80	14.11.2024

3. Lease expired and abandoned quarries:

Sl. No	Name of the Applicant	S.F.Nos	Extent (Hect)	lease Expired date
1.	G. Banugopal	Perundurai / Ekkattampalayam	226(p) 0.63.4	06.09.2022
2.	S. Shanmuga sundaram	Perundurai / Ekkattampalayam	221/1 1.55.0	06.09.2022
3.	P. Mahendran	Perundurai / Ekkattampalayam	203/2 2.27.0	29.06.2022
4.	G. Banugopal	Perundurai / Ekkattampalayam	50/1B 2.02.5	16.10.2023
5.	G. Banugopal	Perundurai / Ekkattampalayam	52 0.85.0	28.02.2021

Assistant Director,
Geology and Mining,
Erode

28/3/25

From

Thiru. V. Sasikumar, M.Sc.,
Assistant Director,
Geology and Mining,
Erode

To

Thiru. S. Saminathan,
S/o. Sennimalai gounder,
No. 19, S.K. Palayam,
V. Ramalingapuram, Chennimalai,
Perundurai - 638 051.

R.c. No. 980/ Mines / 2024 dated: 28.03.2025.

Sub: Mines and Minerals – Minor Mineral – Rough Stone and Gravel- Erode District - Perundurai Taluk - Ekkattampalayam Village- S.F.No. 206/1 (part)- Over an Extent of 2.53.80 Hectares of patta land- Quarry lease for Rough Stone and Gravel - Application preferred by Thiru. S. Saminathan, S/o. Sennimalai gounder - Precise area communicated for the proposed grant of quarry lease - Mining Plan Submitted for approval - Approved - regarding.

Ref:
1. Application for Rough Stone and Gravel quarry permission preferred by Thiru. S. Saminathan, S/o. Sennimalai gounder dated: 14.11.2024.
2. G.O. Ms. No. 79 / Industries (MMC 1) Department dated 06.04.2015.
3. The Assistant Director, Geology and Mining, Erode letter R.C. No. 980/Mines/2024 dated 11.03.2025.
4. Mining Plan submitted by Thiru. S. Saminathan letter dated: -- (Received on 24.03.2025).

****

Thiru. S. Saminathan, S/o. Sennimalai gounder preferred an application for the grant of Rough Stone and Gravel quarry lease over an extent of 2.53.80 Hectare of Patta land in S.F.No. 206/1 (part) of Ekkattampalayam Village of Perundurai Taluk, Erode District vide the reference 1st cited and the precise area was communicated to the applicant vide the reference 3rd cited with a direction to submit the approved mining plan and Environmental Clearance.

As directed, the applicant submitted three copies of mining plan for approval vide the reference 4th cited. The Mining Plan has been verified in detail and found that it was prepared in accordance with the guidelines / instructions issued by the Commissioner of Geology and Mining in letter RC. No. 3868 / LC / 2012 dated 19.11.2012.

Therefore in exercise of the powers conferred under Rule 41(2) of Tamil Nadu Minor Mineral Concession Rules, 1959, read with G.O. (Ms). No.79 /

Industries (MMC 1) Department dated 06.04.2015, the mining plan is hereby approved, subject to the following conditions:

Part-I:-

(i) 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 convey the approval of the Government in terms or 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, Explosives Act, 1884 (Central Act IV of 1884) Minor Mineral Concession and Development Rules, 2010 and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.

(iii) The mining plan is approved without prejudice to any other order or direction from any court of competent jurisdiction.

(iv) The validity of the mining plan is co-terminus with the lease period.

(v) Quarrying shall be done in accordance with the approved Mining Plan and 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.

(vi) If anything is found to be concealed as required by the Mines Act in the contents of the Mining Plan and the proposal for rectification has not been made, the approval shall be deemed to have been withdrawn with immediate effect.

(vii) A safety distance of 7.5 meters shall be provided for the patta lands situated adjacent to the applied area.

(viii) A safety distance of 50 meters shall be provided and without affecting for the Odai situated in the Easteren and western side of the applied area.

(ix) Quarrying Should be carried out without any disturbance to the reserved forest at a distance of about 60m in the northern side of the applied area

Encl.: Approved Mining Plan.

Assistant Director,
Geology and Mining,
Erode

28/3/23

MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR EKKATTAMPALAYAM ROUGH STONE AND GRAVEL QUARRY

Assistant Director
Erode
Geology and Mining

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED UNDER TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959)

Patta Land / Lease period = Five years

IN

LOCATION OF THE QUARRY LEASE APPLIED AREA

EXTENT	:	2.53.80 Ha
S.F.NO.	:	206/1 (Part)
VILLAGE	:	EKKATTAMPALAYAM
TALUK	:	PERUNDURAI
DISTRICT	:	ERODE
STATE	:	TAMIL NADU

FOR

APPLICANT

Thiru. S. Saminathan,

S/o. Sennimalaigounder,

No. 19, S.K. Palayam,

V. Ramalingapuram, Chennimalai,

Perundurai Taluk, Erode District,

Tamil Nadu State – 638 051.

PREPARED BY

B. Vengadagiri, M.Sc.,

Qualified Person

(As per Rule 15(I)(a) and (I)(b) of MCR, 2016)

No.105, 5th Cross,

Alagapuram, Salem District,

Tamil Nadu – 636 010.

Mobile No.: +91 86953 32233.

E-mail ID: vengatb6@gmail.com

Assistant Director * Erode * Geology and Mining

ABBREVIATIONS

- EIA - Environment Impact Assessment.
- EMP - Environment Management Plan.
- SEIAA - State Level Environment Impact Assessment Authority.
- SEAC - State Expert Appraisal Committee
- MoEF&CC - Ministry of Environment, Forest and Climate changes.
- CPCB - Central Pollution control board.
- TNPCB - Tamil Nadu Pollution control board.
- DMS - Director of Mines Safety.
- DGMS - Director of General Mines Safety.
- CRZ - Coastal Regulatory Zone.
- HACA - Hill Area Conservation Authority.
- S.F.No. - Survey Field Number.
- MMR - Metalliferous Mines Regulations.
- MCR - Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules.
- TNMMCR - Tamil Nadu Minor Mineral Concession Rules.
- NONEL - Non-Electric.
- PPV - Peak Particle Velocity.
- DGPS - Differential Global Positioning System.
- TS - Tonnes
- QP - Qualified Person.
- MSL - Mean Sea Level
- BGL - Below Ground Level

S. Saminathan,
S/o. Sennimalaigounder,
No. 19, S.K. Palayam,
V. Ramalingapuram, Chennimalai,
Perundurai Taluk, Erode District,
Tamil Nadu State – 638 051.

Assistant Director
Erode
Geology and Mining

CONSENT LETTER FROM THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Ekkattampalayam Rough Stone and Gravel Quarry over an extent 2.53.80 Hectares of patta land in S.F.No. 206/1 (Part) of Ekkattampalayam Village, Perundurai Taluk, Erode District, Tamil Nadu State has been prepared by

B. Vengadagiri, M.Sc.,
Qualified Person

I have entrusted the works to prepare this Mining Plan based upon the production requirements to meet as per the Mines Acts, Rules, Regulations and Amendments as on date. I request to the Assistant Director, Department of Geology and Mining, Erode District, Tamil Nadu State to make further correspondence regarding the corrections of the Mining Plan with the said Qualified Person at his following address.

B. Vengadagiri, M.Sc.,
No. 105, 5th Cross,
Alagapuram,
Salem District,
Tamil Nadu – 636 010.

I hereby undertake that all the responsibilities of contents in the Mining Plan and if any corrections made in the Mining Plan by the 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. If there is any substantial change during operation I will carried out a Modified Mining plan and seek its approval from concerned Authorities.

Signature of the Applicant

(S. Saminathan)

Place: Erode
Date: 12.03.2025

Assistant Director
Erode
Geology and Mining

S. Saminathan,
S/o. Sennimalaigounder,
No. 19, S.K. Palayam,
V. Ramalingapuram, Chennimalai,
Perundurai Taluk, Erode District,
Tamil Nadu State – 638 051.

DECLARATION OF THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Ekkattampalayam Rough Stone and Gravel Quarry over an extent 2.53.80 Hectares of patta land in S.F.No. 206/1 (Part) of Ekkattampalayam Village, Perundurai Taluk, Erode District, Tamil Nadu State has been prepared in full consultation with me.

I have understood its contents and agree to implement the same in accordance with Laws, Rules and Act applicable to quarry from time to time as per Tamil Nadu Minor Mineral Concession Rules, 1959.

Signature of the Applicant

(S. Saminathan)

Place: Erode
Date: 21.03.2025

Assistant Director
Erode
Geology and Mining

CERTIFICATE

Certified that I am, **B. Vengadagiri, M.Sc.,** No. 105, 5th Cross, Alagapuram, Salem District, Tamil Nadu – 636 010, holding a Master Degree in M.Sc., (Applied Geology) from Annamali University, Chidambaram and I worked in the field of Mining in a role of Geologist.

Rule 15(I)(a) and (b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016 stipulates the eligibility for preparing Mining plans as "(I)(a) a degree in mining engineering or a post-graduate degree in geology granted by a university established" and (I)(b) "Professional experience of five years of working in a supervisory capacity in the field of mining after obtaining the degree". Since my qualification and experience are satisfied the Rule (I)(a) and (I)(b) of 15 of the said Rules, I am eligible to prepare Mining Plans for both Major and Minor Minerals.

Accordingly, I prepared this Mining Plan and Progressive Quarry Closure Plan in Respect of Ekkattampalayam Rough Stone and Gravel Quarry over an extent 2.53.80 Hectares of patta land in S.F.No. 206/1 (Part) of Ekkattampalayam Village, Perundurai Taluk, Erode District, Tamil Nadu for **Thiru. S. Saminathan,** S/o. Sennimalaigounder, residing at No. 19, S.K. Palayam, V. Ramalingapuram, Chennimalai, Perundurai Taluk, Erode District, Tamil Nadu State – 638 051. Since the Mining Plan is prepared as per the provisions contained in Rule 15(I)(a) and (I)(b) of Minerals (Other than Atomic and Hydro Carbons Energy Minerals) Concession Rules, 2016.

Signature of the Qualified Person

(B. Vengadagiri, M.Sc.,)

Place: Salem
Date: 21.03.2025

B. Vengadagiri, M.Sc.,
No.105, 5th Cross, Alagapuram,
Salem District – 636 010.
Mobile No.: +91 86953 32233.
E-Mail ID - vengatb6@gmail.com.

Assistant Director
Erode
Geology and Mining

CERTIFICATE FROM THE QUALIFIED PERSON

This is to certify that the Provisions of Prepared under Rules 41 & 42 as Amended in Tamil Nadu Minor Mineral Concession Rules, 1959. The preparation of Mining Plan and Progressive Quarry Closure Plan for Ekkattampalayam Rough Stone and Gravel Quarry over an extent 2.53.80 Hectares of patta land in S.F.No. 206/1 (Part) of Ekkattampalayam Village, Perundurai Taluk, Erode District, Tamil Nadu State has been prepared for

Thiru. S. Saminathan,
S/o. Sennimalaigounder,
No. 19, S.K. Palayam,
V. Ramalingapuram, Chennimalai,
Perundurai Taluk, Erode District,
Tamil Nadu State – 638 051.

Whenever specific permissions / exemptions / relaxations and approvals are required, the applicant will approach the concerned authorities of the Assistant Director, Department of Geology and Mining, Erode District, Tamil Nadu State for such permissions / exemptions / relaxations and approvals.

It is also certified that information furnished in the above Mining Plan are true and correct to the best of my knowledge.

Signature of the Qualified Person

(B. Vengadagiri, M.Sc.,)

Place: Salem
Date: 21.03.2025

B. Vengadagiri, M.Sc.,
No.105, 5th Cross, Alagapuram,
Salem District – 636 010.
Mobile No.: +91 86953 32233.
E-Mail ID - vengatb6@gmail.com.

Assistant Director ★ Erode ★ Geology and Mining

CERTIFICATE FROM THE QUALIFIED PERSON

Certified that the Provisions of Mines Act, Rules and Regulations or Orders made there under have been observed in the preparation of Mining Plan and Progressive Quarry Closure Plan for Ekkattampalayam Rough Stone and Gravel Quarry over an extent 2.53.80 Hectares of patta land in S.F.No. 206/1 (Part) of Ekkattampalayam Village, Perundurai Taluk, Erode District, Tamil Nadu State has been prepared for

Thiru. S. Saminathan,
S/o. Sennimalaigounder,
No. 19, S.K. Palayam,
V. Ramalingapuram, Chennimalai,
Perundurai Taluk, Erode District,
Tamil Nadu State – 638 051.

Whenever specific permissions / exemptions / relaxations and approvals are required, the Applicant will approach the concerned authorities of Director of Mines Safety (DMS), No.5, II Street, Block–AA, Anna Nagar, Chennai-40, Tamil Nadu State for such permissions / exemptions / relaxations and approvals.

It is also certified that information furnished in the Mining Plan are true and correct to the best of my knowledge.

Signature of the Qualified Person

(B. Vengadagiri, M.Sc.,)

Place: Salem
Date: 21.03.2025

Assistant Director Erode Geology and Mining

LIST OF CONTENTS

S. No.	Description	Page No.
Introduction and Executive Summary		1
1.0	General Information	5
2.0	Location and Accessibility	6
3.0	PART-A Geology and Exploration	7
4.0	Mining	12
5.0	Blasting	17
6.0	Mine Drainage	19
7.0	Stacking of Mineral Waste and Disposal of Waste	20
8.0	Use of Mineral	20
9.0	Others	20
10.0	Mineral Processing	23
11.0	PART-B Environment Management Plan	24
12.0	Progressive Quarry Closure Plan	33
13.0	Statutory Compliance to be followed during the course & closure of quarry lease.	37
Site Photographs		

LIST OF ANNEXURES

Assistant Director Geology and Mining Erode

S. No.	Description	Annexure No.
1.	Copy of Precise area Communication letter	I
2.	Copy of FMB	II
3.	Copy of Combined sketch	III
4.	Copy of Patta	IV
5.	Copy of Adangal	V
6.	Copy of A-Register	VI
7.	Copy of ID Proof	VII
8.	Copy of Educational Certificate of Qualified Person	VIII
9.	Copy of Experience Certificate of Qualified Person	IX

LIST OF PLATES

S. No.	Description	Plate No.
1.	Location Plan	I
2.	Toposketch of Quarry Lease Applied Area for 10km Radius	IA
3.	Environmental and Land use Plan	IB
4.	Route Map	IC
5.	Quarry Lease Plan & Surface Plan	II
6.	Topography, Geological, Yearwise Development & Production Plan & Sections	III
7.	Progressive Quarry Closure Plan & Sections	IV
8.	Conceptual Plan & Sections	V

MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR EKKATTAMPALAYAM ROUGH STONE AND GRAVEL QUARRY

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959)

Assistant Director Erode Geology and Mining

INTRODUCTION AND EXECUTIVE SUMMARY

The applicant **Thiru. S. Saminathan,** S/o. Sennimalaigounder, residing at No. 19, S.K. Palayam, V. Ramalingapuram, Chennimalai, Perundurai Taluk, Erode District, Tamil Nadu State – 638 051, has entrust and given consent to preparation of Mining plan and Progressive Mine Closure Plan as per the provisions of Mines Act, Rules, Regulations and as amended till date.

The applicant (Thiru. S. Saminathan) has applied for Rough stone and Gravel quarry lease for over an extent 2.53.80 Hectares of Patta land in S.F.No. 206/1 (Part) of Ekkattampalayam Village, Perundurai Taluk, Erode District for the period of five years under rule 19 (1), 20, 22 of Tamil Nadu Minor Mineral Concession Rules, 1959.

The application was examined, Scrutinized, Inspected and processed by the Assistant Director, Department of Geology and Mining, Erode District and passed a precise area communication letter vide **Rc.No.980/Mines/2024, Dated: 11.03.2025** under rule 19 (1), 20, 22 of Tamil Nadu Minor Mineral Concession Rules, 1959 for submission of Draft Mining plan and obtain approval within 90 days under Rules 41 and 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 the applicant should obtain Environmental Clearance from the State Level Environment Impact Assessment Authority, Tamil Nadu to quarrying Rough stone for the period of five years with conditions (Refer Annexure No. I).

This Mining Plan along with Progressive quarry closure Plan is prepared in full consent with **Thiru. S. Saminathan,** S/o. Sennimalaigounder, residing at No. 19, S.K. Palayam, V. Ramalingapuram, Chennimalai, Perundurai Taluk, Erode District, Tamil Nadu State – 638 051 for his proposed Rough stone and Gravel quarry over an extent 2.53.80 Hectares of patta land in S.F.No. 206/1 (Part) of Ekkattampalayam Village, Perundurai Taluk, Erode District, Tamil Nadu State under amended Rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959 with obtained full consent as per the application and Production schedule in preparation of Mining plan as per the provisions of Mines Act, Rules, Regulations as on date.

Assistant Director Geology and Mining Erode

The Mining plan has been prepared after carrying the field investigation, geological survey, collection of Primary & secondary data, geological attributes, environmental setting and estimated the Resources & Reserves, depth of mining as identified in the field with best our knowledge and experience. This present mining plan is prepared by considering the Rule 41 & 42 as amended in Tamil Nadu Minor Mineral Concession Rules, 1959 and as per the EIA Notification 2006 and its subsequent amendments.

In order to ensure compliance of the order of the Honourable Supreme Court Dated: 27.02.2012 in I.A.No.12/13 of 2011 in Special Leave Petition SLP (C) No 19628-19629/2009, it has been now decided that all mining projects of minor minerals including their renewal is require prior environmental clearance. As per amendment in EIA Notification 2006 vide S.O. 1886(E), Dated:20.04.2022 "All mining lease area in respect of minor mineral mining leases and ≤ 250 ha mining lease area in respect of major mineral mining lease other than coal" would be treated as category B and will be considered by the state notified by Ministry of Environment, Forest and Climate Change as prescribed procedure under EIA notification 2006.

The field investigation was carried out by the Qualified Person and his Team as on 13.03.2025.

Short Notes of Mining plan:

a. Village Panchayat - Ekkattampalayam

b. Panchayat Union - Chennimalai

c. Total extent of the lease applied area is 2.53.80Ha.

d. Topography of the area - Flat topography.

e. The Estimated Geological Resources are **11,02,200m^3 / 30,31,050.5Ts** of Rough stone, **56,040m^3 / 1,12,080Ts** of Weathered Rock and **18,486m^3 / 36,972Ts** of Gravel in the entire area.

f. Tentative Mineable Reserves are **3,72,875m^3 / 10,25,406Ts** of Rough stone, **62,640m^3 / 1,25,280Ts** of Weathered Rock and **13,924m^3 / 27,848Ts** of Gravel in the entire area.

g. The proposed quantity of reserves/ (level of production) to be mined are **3,72,875m^3 / 10,25,406Ts** of Rough stone for five years, **62,640m^3 / 1,25,280Ts** of Weathered Rock and **13,924m^3 / 27,848Ts** of Gravel for first three years.

h. Existing pit Dimension = 16m depth in Northern portion of the area only.

i. Proposed Depth of mining = 57m [2m of Gravel + 5m of Weathered Rock + 50m of Rough stone] below ground level.

j. Mining Plan period = Five Years

k. It is a fresh lease application but, the applied area has been consideration under quarrying operation earlier. The quarry lease was previously granted for quarrying Rough stone and Gravel. The lease details are given table below.

Table – 1

Name of the Lessee	Proceeding No. and Date	Extent (Ha.)	S.F.No.	Lease Period
Thiru. S. Saminathan, S/o. Sennimalaigounder	Rc. No. 16977/2016/X-1, dated: 07.09.2017	4.16.0	206 (P)	07.09.2017 to 06.09.2022

The applicant has obtained Environmental Clearance from the District Level Environment Impact Assessment Authority, Erose vide **letter No. DEIAA – ERD / F.No.16977 / 2016 / EC. No. (12/17) dated: 30.08.2017**. At present there is an existing pit and weathered dump situated within the lease applied area. The maximum dimension of **Existing quarry pit and Weathered dump** is given table below (Refer Plate No. II).

Table – 2

Existing pit dimension (Maximum)		
Length (m)	**Width (m)**	**Depth (m)**
140	110	16m depth in Northern portion
Existing Weathered Rock Dump details of the lease area		
Length (m)	**Width (m)**	**Height (m)**
120	50	4

l. Method of mining / level of mechanization.

Opencast mechanized method, the quarry operation involves shallow jack hammer drilling, slurry blasting with NONEL initiation.

m. Type of machineries proposed in the quarrying operation is given below.

Excavators attached with rock breaker and Bucket.

Shallow Jack hammer, Compressor (Diesel drive) (4 Jack Hammer capacity).

n. No trees will be uprooted due to this quarry operation.

o. The approach road from the main road to quarry is already existence; the same will be maintain in good condition for the haulage of quarry materials and machineries.

p. There is No Export of this Rough stone and Gravel.

q. Topo sketch covering 10km and 1km radius around the proposed area with markings of habitations, water bodies including streams, rivers, roads, major structure like bridges, wells, archaeological importance and places of worships is marked and enclosed as Plate Nos. IA & IC.

r. The lease applied area is about 2.53.80Ha bounded by six corners; the corners are designated as 1 – 6 clock-wise from the Southwestern side and Co-ordinates for all the corners are clearly marked in the Quarry Lease and Surface Plan enclosed as Plate No. II.

s. The plans of proposed quarrying area showing the dimensions of the pit, their proposed depth and maximum area of proposed quarrying are enclosed as Plate Nos. III and V.

t. General conditions will not applicable for the proposed area. The area applied for lease is 10Km away from the,

i) Critically polluted areas as identified by CPCB,

ii) Protected area under wild life protection ACT, 1972,

iii) Notified Eco sensitive areas.

iv) Interstate Boundary.

u. There is no waste anticipated in the Rough stone quarry.

v. Around 37 employees are proposed to deploying the quarrying operation.

w. Total Cost of the project is about **Rs.1,04,44,000/-**.

39 A

1.0 GENERAL INFORMATION

1.1 Name of the Applicant with Address:

Name	:	**Thiru. S. Saminathan,**
		S/o. Sennimalaigounder,
Address	:	No. 19, S.K. Palayam,
		V. Ramalingapuram, Chennimalai,
		Perundurai Taluk, Erode District.
State with PIN Code	:	Tamil Nadu – 638 051.
Mobile No	:	+91 79045 88455
Aadhaar No	:	5086 7390 4941
E-mail	:	

Assistant Director * Erode * Geology and Mining

1.2 Status of the Applicant (Individual / Company / Firm):

The applicant is Individual.

1.3 Mineral which the Applicant intends to mine:

The Applicant intends to quarry Rough stone and Gravel.

1.4 Period of permission / lease to be granted:

Five Years as mentioned in Precise area Communication letter.

1.5 Name and address of the Qualified Person who preparing the Mining Plan:

Name	:	**B. Vengadagiri, M.Sc.,**
		Qualified Person (Under Rule 15(I)(a) and (I)(b) of MCR, 2016)
Address	:	No.105, 5th Cross,
		Alagapuram
		Salem District
State with PIN Code	:	Tamil Nadu – 636 010.
Mobile No.	:	+91 86953 32233
Email ID	:	vengatb6@gmail.com

1.6 Name and Address of the Prospecting Agency:

State Geology and Mining Department, Government of Tamil Nadu, has carried out the regional prospecting and exploration in these areas during 1992 to 1993.

Geological Survey of India has carried out detailed regional exploration studies and geological mapping in Tamil Nadu. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area also the applied area having existing pit and the Rough stone and Gravel is clearly inferred from the existing pit. No detailed Exploration has carried out.

1.7 Reference no. Date of grant/ Precise Area Communication received form the State Government:

The precise area communication letter was received from the Assistant Director, Department of Geology and Mining, Erode District vide **Rc.No.980/Mines/2024, Dated: 11.03.2025** (Refer Annexure No. I) and was given to us for the preparation of mining plan to meet out the applicant's production schedule.

Assistant Director
Erode
Geology and Mining

2.0 LOCATION AND ACCESSIBILITY:

a) Details of the area with location map:

The lease applied area is located about 26km **South**western side of Erode town, 14km Southwestern side of Perundurai town and 3km Northwestern side of Ekkattampalayam Village.

	17km		17km		3km	
Erode	⟶	Perundurai	⟶	Ekkattampalayam	⟶	Lease applied area
	Southwest		South		Northwest	

Location Map of the Lease Applied area

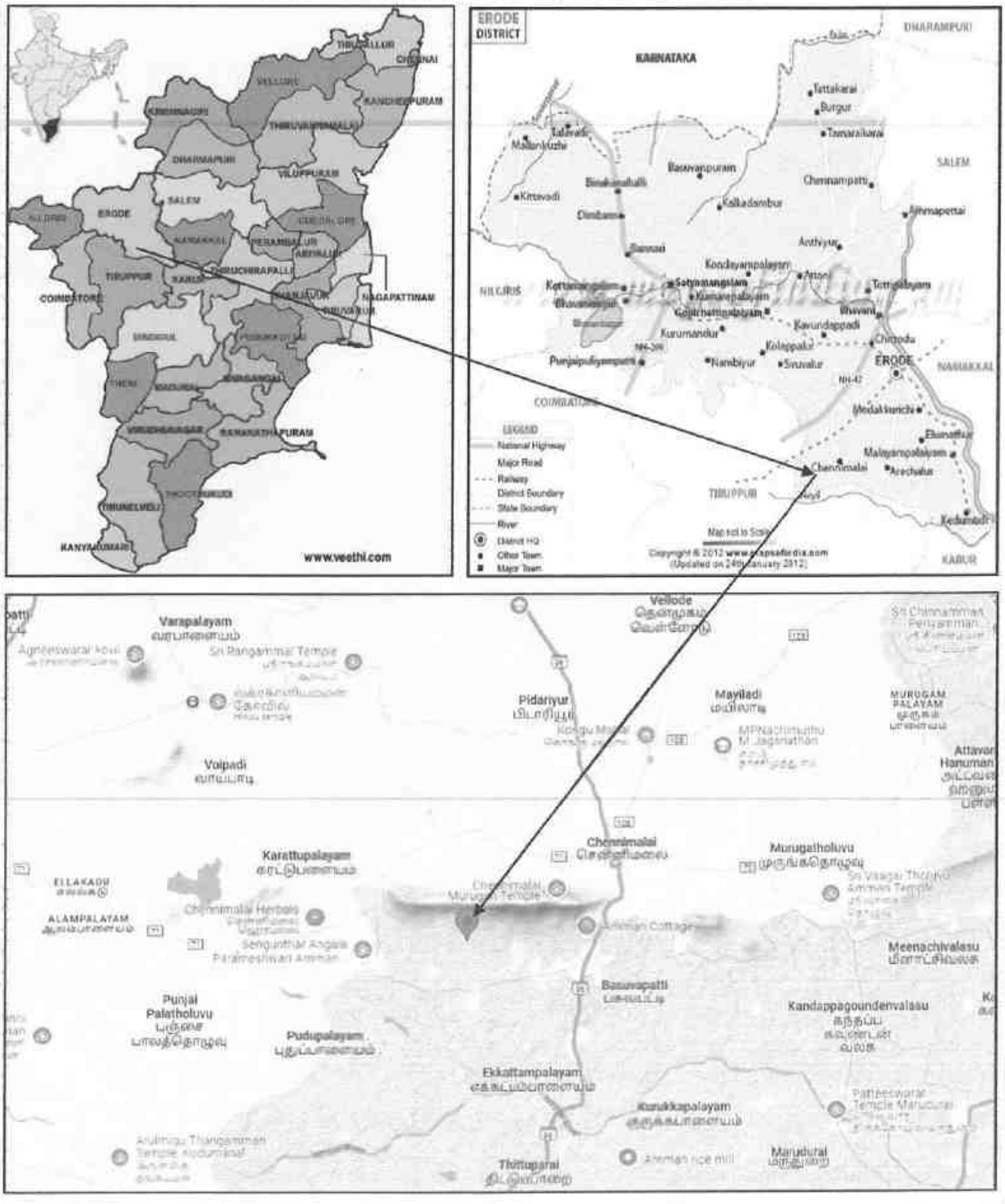


Table – 3

District	Taluk	Village	S.F. No.	Area (Ha)	Patta no.
Erode	Perundurai	Ekkattampalayam	206/1 (P)	2.53.80	2470
			Total	**2.53.80**	-

Source: As per the FMB and 'A' register record furnished by the applicant.

b) Classification of the area (Ryotwari/ Poramboke / others):

It is a patta lands, classified as punsei.

c) Ownership / Occupancy of the applied area (surface right):

It is a Patta lands, registered in the name of the applicant (Thiru. S. Saminathan) vide patta No.2470. (Refer Annexure Nos. IV to VI).

d) Existence of public road / Railway line, if any nearby and approximate distance:

The approach (cart track) road is situated on the Southwestern side, which is connects to the village Road situated at 500m on the Southwestern side of the lease applied area.

Road access is available from the quarry to National Highway, no towns are enrooted hence the traffic density is not much more due to the transportation of Rough stone and Gravel.

The approach road from the quarry is already in existence, the same will be utilized for the haulage and maintained during the entire lease period.

The Nearest Railway line is Salem – Coimbatore which is located at 6.9km on the Northwestern side of the area as per the GSI Toposheet and Google Map.

e) Toposheet No. with latitude and longitude:

The lease applied area falls in the Toposheet No: **58E/12** Latitude between: **11°08'57.16"N to 11°09'03.83"N** and Longitude between: **77°34'25.26"E to 77°34'31.09"E** on WGS datum-1984 as per the GSI Toposheet (Refer Plate Nos. I to II).

PART – A

3.0 GEOLOGY AND EXPLORATION:

3.1 Brief description of the Topography and general Geology of the area (with plans):

The lease applied area is situated in flat terrain. The gradient of the area towards Southern side and altitude of the area is 280m above from Mean Sea Level. The area is covered by Gravel having an average thickness of 2m, 5m thickness of weathered Rock and followed by Massive Charnockite which is clearly inferred from the existing pit.

The Water level in the surrounding area is 63m - 68m below from general ground profile which is observed from the nearby bore wells. The Normal rainfall is about 703mm.

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with accumulation of recent quaternary formation. On regional scale of the Charnockite body is N45°W – S45°E with dipping towards SW30°.

The general geological sequences of the rocks in this area are given below:

AGE		FORMATION
Recent	-	Quaternary formation (Gravel)
---------Unconformity----------		
Archaean	-	Charnockite
		Peninsular Gneissic complex.

3.2 Details of exploration already carried out if any:

State Geology and Mining Department, Govt. of Tamil Nadu, has carried out the regional prospecting and exploration in these areas during 1992 to 1993.

Geological Survey of India has carried out detailed mapping in Erode District. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area without geological exploration. The applied area having existing pit and the Rough stone is clearly inferred from the existing pit.

3.3 Estimation of Reserves:

a) Geological Resources with geological sections on a scale of 1:1000 / 1:2000

As far as Rough stone (Charnockite) is concerned, the only practical method is the systematic geological mapping and delineation of Rough stone within the field and careful evaluation of body luster, physical properties, engineering properties, commercial aspects etc.,

Totally Three sections have been drawn, one cross section drawn length wise as (X-Y) and another two cross sections are drawn as Width wise (A-B and C-D) to cover the maximum area considered for lease upto 57m depth below from the ground level.

The Topographical, Geological plan and sections demarcated the commercial marketable Rough stone (Charnockite) deposit has been prepared in 1:1000 scale (please refer the Geological plan and sections Plate No- III). As the sale of Rough stone is in terms of cubic meters (Volume) only at present but it may converted as tonnage in future. No Exploration has been carried out.

Estimation of Geological Resources (Plate No. III):

The Geological Resources of Rough stone and Gravel are estimated upto a depth of 57m (2m Gravel + 5m Weathered Rock + 50m Rough stone) below from the ground profile of the area. The total **Geological Resources are estimated after depleting the existing pit**. The total geological resources are given below:

TABLE – 4

GEOLOGICAL RESOURCES											
Section	**Bench**	**Length in (m)**	**Width in (m)**	**Depth in (m)**	**Rough stone @ 100% recovery (m^3)**	**Weathered Rock in (m^3)**	**Gravel in (m^3)**	**Bulk Density**	**Rough stone @ 100% recovery (Ts)**	**Weathered Rock (Ts)**	**Gravel in (Ts)**
XY-AB	i	21	3	2	-	-	126	2	-	-	252
	ii	21	13	5	-	1365	-	2	-	2730	-
	iii	21	13	5	1365	-	-	2.75	3754.0	-	-
	iv	21	13	5	1365	-	-	2.75	3754.0	-	-
	v	98	141	5	69090	-	-	2.75	189997.5	-	-
	vi	98	141	5	69090	-	-	2.75	189997.5	-	-
	vii	98	141	5	69090	-	-	2.75	189997.5	-	-
	viii	98	141	5	69090	-	-	2.75	189997.5	-	-
	ix	98	141	5	69090	-	-	2.75	189997.5	-	-
	x	98	141	5	69090	-	-	2.75	189997.5	-	-
	xi	98	141	5	69090	-	-	2.75	189997.5	-	-
	xii	98	141	5	69090	-	-	2.75	189997.5	-	-
	Total				**555450**	**1365**	**126**	-	**1527488.00**	**2730**	**252**
XY-CD	i	68	135	2	-	-	18360	2	-	-	36720
	ii	81	135	5	-	54675	-	2	-	109350	-
	iii	81	135	5	54675	-	-	2.75	150356.25	-	-
	iv	81	135	5	54675	-	-	2.75	150356.25	-	-
	v	81	135	5	54675	-	-	2.75	150356.25	-	-
	vi	81	135	5	54675	-	-	2.75	150356.25	-	-
	vii	81	135	5	54675	-	-	2.75	150356.25	-	-
	viii	81	135	5	54675	-	-	2.75	150356.25	-	-

Assistant Director Geology & Mining Erode

44 A

	ix	81	135	5	54675	-	-	2.75	150356.25	-	-
	x	81	135	5	54675	-	-	2.75	150356.25	-	-
	xi	81	135	5	54675	-	-	2.75	150356.25	-	-
	xii	81	135	5	54675	-	-	2.75	150356.25	-	-
	Total				**546750**	**54675**	**18360**	-	**1503562.5**	**109350**	**36720**
Grand Total					**1102200**	**56040**	**18486**	-	**3031050.5**	**112080**	**36972**

Estimated Geological Resources of Rough Stone : **11,02,200m³ / 30,31,050.5Ts**

Estimated Geological Resources of Weathered Rock : **56,040m³ / 1,12,080Ts**

Estimated Geological Resources of Gravel : **18,486m³ / 36,972Ts**

Geological Resources has been estimated based on the physical investigation and filed survey data.

Tentative Mineable Reserves:

The mineable reserves are estimated after leaving the safety distance, Bench loss and Existing quarry pit.

TABLE – 5

MINEABLE RESERVES											
Section	**Bench**	**Length in (m)**	**Width in (m)**	**Depth in (m)**	**Rough stone @ 100% recovery (m³)**	**Weathered Rock in (m³)**	**Gravel in (m³)**	**Bulk Density**	**Rough stone @ 100% recovery (Ts)**	**Weathered Rock (Ts)**	**Gravel (Ts)**
XY-AB	iv	13	115	5	7475	-	-	2.75	20556	-	-
	v	85	115	5	48875	-	-	2.75	134406	-	-
	vi	80	105	5	42000	-	-	2.75	115500	-	-
	vii	75	95	5	35625	-	-	2.75	97969	-	-
	viii	70	85	5	29750	-	-	2.75	81813	-	-
	ix	65	75	5	24375	-	-	2.75	67031	-	-
	x	60	65	5	19500	-	-	2.75	53625	-	-
	xi	55	55	5	15125	-	-	2.75	41594	-	-
	xii	50	45	5	11250	-	-	2.75	30937	-	-
	Total				**233975**	**0**	**0**	-	**643431**	**0**	**0**

Assistant Director Geology and Mining Erode

45 A

XY-CD	i	59	118	2	-	-	13924	2	-	-	27848
	ii	69	112	5	-	38640	-	2	-	77280	-
	iii	64	102	5	32640	-	-	2.75	89760	-	-
	iv	59	92	5	27140	-	-	2.75	74635	-	-
	v	54	82	5	22140	-	-	2.75	60885	-	-
	vi	49	72	5	17640	-	-	2.75	48510	-	-
	vii	44	62	5	13640	-	-	2.75	37510	-	-
	viii	39	52	5	10140	-	-	2.75	27885	-	-
	ix	34	42	5	7140	-	-	2.75	19635	-	-
	x	29	32	5	4640	-	-	2.75	12760	-	-
	xi	24	22	5	2640	-	-	2.75	7260	-	-
	xii	19	12	5	1140	-	-	2.75	3135	-	-
	Total				**138900**	**38640**	**13924**	-	**381975**	**77280**	**27848**
Grand Total					**372875**	**38640**	**13924**	-	**1025406**	**77280**	**27848**

Existing Weathered Rock Dump details of the lease area					
Length (m)	**Width (m)**	**Height (m)**	**Weathered Rock in (m^3)**	**Bulk Density**	**Weathered Rock (Ts)**
120	50	4	24,000	2	48,000

Tentative mineable reserves of Rough stone : **3,72,875m^3 / 10,25,406Ts**

Estimated Weathered rock : **38,640m^3 / 77,280Ts**

Estimated Weathered rock Dump : **24,000m^3 / 48,000Ts**

Estimated Gravel : **13,924m^3 / 27,848Ts**

Assistant Director Geology and Mining Erode

The Tentative mineable reserves have been estimated as **3,72,875m^3 / 10,25,406Ts** of Rough stone at the rate of 100% recovery, **62,640m^3 / 1,25,280Ts** of Weathered Rock (Including weathered dump) and **13,924m^3 / 27,848Ts** of Gravel to a maximum depth of 57m [2m Gravel + 5m Weathered Rock + 55m Rough stone] below from the ground level.

46 A

Assistant Director Erode Mining

4.0 MINING:

4.1 Method of mining (opencast / underground):

Open cast Mechanized Mining is being carried out with 5.0 meter vertical bench with a bench width is not less than the bench height.

However, as far as the quarrying of Rough Stone is concerned, observance of the provisions of Regulation 106 (2) (b) is available with Director General of Mines Safety. If the applicant/lessee intends to modify the dimensions of benches, relaxation and permission are available with Director General of Mines Safety under 106 (2) (b) of Metalliferous Mines Regulations, 1961. The relaxation will be applied and obtained after execution of lease deed/ commencement of quarry operation. In such a scenario if there is any drastic change in the Resources and Reserves a modified mining plan will be submitted to the concerned authority for necessary relaxation, clearance and permission.

4.2 Mode of working (mechanized/ manual):

The Rough Stone is proposed to quarry at 5m bench height & width with conventional Opencast Mechanized Method.

The quarry operation involves shallow jack hammer drilling, slurry explosives in blasting, excavation, Loading and transportation of Rough stone to the needy crusher.

The production of Rough stone in this quarry involves the following method which is typical for Rough Stone quarrying in contrast to other major mineral mining.

Splitting of rock mass of considerable volume from the parent rock mass by shallow jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers.

Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting. The primary boulders thus splitted 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.

4.3 Proposed Bench Height and Width:

The bench height is proposed 5.0 meter vertical bench the width of the bench is not less than the Height. After obtaining relaxation as per 106 2(b) of Metalliferous Mines Regulations, 1961 from the DMS, the realignment of benches will be carried out.

4.4 Indicate the overburden / mineral production expected pit wise as detailed below (composite plan and section showing pit layout, dumps, disposal of waste if any etc.):

The Composite year wise Development and production plan and sections indicating the pit lay out and green belt development are shown in Plate No. III and given table below.

Year wise Development and Production

TABLE – 6

YEARWISE RESERVES												
Section	**Year**	**Bench**	**Length in (m)**	**Width in (m)**	**Depth in (m)**	**Rough stone @ 100% recovery (m^3)**	**Weathered Rock in (m^3)**	**Gravel in (m^3)**	**Bulk Density**	**Rough stone @ 100% recovery (Ts)**	**Weathered Rock (Ts)**	**Gravel (Ts)**
Weathered Rock Dump			120	50	4	-	24000	-	2		48000	-
XY-CD	I	I	15	118	2	-	-	3540	2	-	-	7080
		II	25	112	5	-	14000	-	2	-	28000	-
		III	20	102	5	10200	-	-	2.75	28050	-	-
		IV	15	92	5	6900	-	-	2.75	18975	-	-
		V	10	82	5	4100	-	-	2.75	11275	-	-
XY-AB		IV	13	115	5	7475	-	-	2.75	20556	-	-
		V	85	115	5	48875	-	-	2.75	134406	-	-
		Total				**77550**	**38000**	**3540**		**213262**	**76000**	**7080**
XY-CD	II	I	25	118	2	-	-	5900	2	-	-	11800
		II	25	112	5	-	14000	-	2	-	28000	-
		III	25	102	5	12750	-	-	2.75	35063	-	-
		IV	25	92	5	11500	-	-	2.75	31625	-	-
		V	25	82	5	10250	-	-	2.75	28187	-	-
		VI	30	72	5	10800	-	-	2.75	29700	-	-
XY-AB		VI	80	105	5	42000	-	-	2.75	115500	-	-
		Total				**87300**	**14000**	**5900**		**240075**	**28000**	**11800**
XY-CD	III	I	19	118	2	-	-	4484	2	-	-	8968
		II	19	112	5	-	10640	-	2	-	21280	-

		III	19	102	5	9690	-	-	2.75	26647	-	-
		IV	19	92	5	8740	-	-	2.75	24035	-	-
		V	19	82	5	7790	-	-	2.75	21423	-	-
		VI	19	72	5	6840	-	-	2.75	18810	-	-
		VII	44	62	5	13640	-	-	2.75	37510	-	-
XY-AB		VII	75	95	5	35625	-	-	2.75	97969	-	-
		Total				**82325**	**10640**	**4484**		**226394**	**21280**	**8968**
	IV	VIII	70	85	5	29750	-	-	2.75	81813	-	-
		IX	65	75	5	24375	-	-	2.75	67031	-	-
XY-CD		VIII	39	52	5	10140	-	-	2.75	27885	-	-
		IX	34	42	5	7140	-	-	2.75	19635	-	-
		Total				**71405**	-	-		**196364**	-	-
	V	X	29	32	5	4640	-	-	2.75	12760	-	-
		XI	24	22	5	2640	-	-	2.75	7260	-	-
		XII	19	12	5	1140	-	-	2.75	3135	-	-
XY-AB		X	60	65	5	19500	-	-	2.75	53625	-	-
		XI	55	55	5	15125	-	-	2.75	41594	-	-
		XII	50	45	5	11250	-	-	2.75	30937	-	-
		Total				**54295**	-	-		**149311**	-	-
Grand Total						**372875**	**62640**	**13924**		**1025406**	**125280**	**27848**

The proposed production schedule have been estimated as **3,72,875m³ / 10,25,406Ts** of Rough stone at 100% recovery for five years **62,640m³ / 1,25,280Ts** of Weathered Rock and **13,924m³ / 27,848Ts** of Gravel for first three years upto a depth of 57m below from the ground Level (Refer Plate No. III). **Annual peak production capacity in the quarry is 87,300m³ / 2,40,075Ts of Rough stone, 38,000m³ / 76,000Ts of Weathered Rock and 5,900m³ / 11,800Ts Gravel** and the proposed production schedule is arrived as per applicant's requirement and the EIA and EMP will be prepared an annual peak production.

49 A

Assistant Director Erode Geology and Mining

The applicant ensures the total quantity proposed in the benches will not exceed during the quarrying operation. Besides the rough stone locked up in benches will be exploited after obtaining necessary permission from the office of Director of Mine Safety, Chennai region by submitting relevant documents, appropriate safety plans and its Mitigation measures.

One lorry load	=	16.50Ts (approximate)
Total Number of Working days	=	300 days per year
Total Rough stone to be removed during the plan period	=	10,25,406Ts
Annual Peak production of Rough Stone	=	2,40,075Ts
Hence total Lorry loads per day	=	2,40,075Ts/16.5Ts
	=	14,550 Lorry loads
	=	14,550/300 days
Rough Stone (Maximum)	=	**48 – 49 Lorry loads per day.**
Annual Peak production of Weathered Rock	=	76,000Ts
Hence total Lorry loads per day	=	76,000Ts/16.5Ts
	=	4,606 Lorry loads
	=	4,606/300 days
Weathered Rock (Maximum)	=	**15 – 16 Lorry loads per day**
Annual Peak production of Gravel	=	11,800Ts
Hence total Lorry loads per day	=	11,800Ts/16.5Ts
	=	715 Lorry loads
	=	715/300 days
Gravel (Maximum)	=	**2 – 3 Lorry loads per day**

Working hours = 8.30 am to 5.30 pm (with 12.30-1.30 P.M. lunch break).

4.5 Machineries to be used:

For Mining:

The following machineries are utilized on rental basis for the development and production work at this quarry.

TABLE – 7

I. DRILLING MACHINE:

S. No.	Type	Nos.	Dia Hole mm	Size Capacity	Motive power
1	Jack-Hammer	8	32	1.2m to 2.0m	Compressed air
2	Compressor	2	-	400 psi	Diesel Drive

II. EXCAVATION & LOADING EQUIPMENT:

S. No.	Type	Nos.	Capacity	Motive Power
1	Excavator with Bucket and Rock Breaker	2	300	Diesel Drive

III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT:

S. No.	Type	Nos.	Capacity	Motive Power
1	Tippers	4	30 tonnes	Diesel Drive
2	Water Sprinkling Tanker	1	6,000 litres	Diesel Drive

4.6 Brief note on conceptual mining plan for the entire lease period base on the geological, mining and environmental considerations:

Conceptual mining plan is prepared with an object of long-term systematic development of benches, layouts, selection of permanent structures, depth of quarrying and ultimate pit dimensions, selection of sites for construction of infrastructure, etc.,

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.,

As the applicant has awarded quarry lease for five years, the ultimate pit limit (dimension) at the end of this lease period is given below:

TABLE – 8

Length (m) (Max.)	Width (m) (Max.)	Depth (m) (Max.)
170	138	57m

All the base line information studies like Air quality monitoring, Noise and vibration monitoring, Water analysis studies will be carried out every year as per the MoEF & CC Norms. Please refer Plate Nos. III, IV and V. As per the NGT orders the applicant is directed to plant 500 tree saplings per hectares along the quarry site either at the regular or the phased manner by planting native species.

There is no waste anticipated during the entire life of quarry. Hence, there is no proposal for backfilling. After completion of quarry operations, the quarry pit will be allowed to collect the seepage and rain water, the water storage will be kept as temporary reservoir to charging the nearby wells and will be utilized for greenbelt development. When the quarry reaches its ultimate pit limit or at the end of life of quarry, greenbelt development will be carried out over the quarried out top bench. The Conceptual Mining is based upon the entire ROM proposed for the life of the Mine.

The quarry area is will be fenced with barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle (Refer Plate No. IV and V).

Assistant Director Geology and Mining Erode

5.0 BLASTING:

5.1 Blasting pattern:

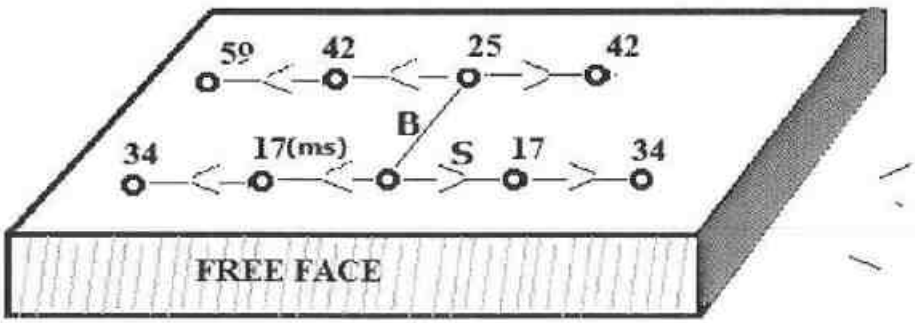
Selection of drilling pattern for blasting varies with the type and size of the drills used, depth of hole, kind of rock, quantity, rapidity of the explosives and amount of steaming. The quarrying operation is proposed to carried out with conventional method of mining using shallow Jack hammer drilling and mild blasting with NONEL initiation of shattering effect for loosen the Rough stone. NONEL initiation provides reasonably good solution to fly rock problem. The main objectives of NONEL Blasting are to reduce the ground vibration, noise, fly rocks generated due to blasting operations. The overall cost of blasting in NONEL is very less compared to electrical blasting and hence it optimizes the cost of blasting.

Drilling and blasting parameters are as follows:

Depth of Each hole	:	1.5m
Spacing between holes	:	1.0m
Burden for hole	:	0.75m
Diameter of hole	:	32-35mm
Pattern of hole	:	Staggered pattern
Inclination of holes	:	80°from horizontal
Use of delay detonators	:	NONEL
Hole to Hole	:	17 milli second delay (ms)
Row to Row	:	25 milli second delay (ms)

Staggered Pattern of Blasting Design

NONEL DELAY PATTERN



Spacing (S)	=	**1.0m**
Burden (B)	=	**0.75m**
Depth of the hole	=	**1.5m**
No. of holes proposed per day (Peak Production)	=	**266 Holes**

5.2 Type of explosives to be used:

Small Dia. 25mm Slurry explosives are proposed to be used for shattering and heaving effect for removal and winning of Rough stone. No deep hole drilling or secondary blasting is proposed. NONEL blasting and muffle blasting may be adopted after permission from DGMS.

5.3 Measures proposed to minimize ground vibration due to blasting:

The quarry is situated more than 300m away from the nearby villages, Controlled blasting measures by NONEL initiation is being adopt for minimizing ground vibration and fly rock.

Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive mainly to give heaving effect in rough stone for easy excavation and to control fly rock.

NONEL Delay detonators:

NONEL blasting permits for bottom initiation and lesser charge per delay.

The major advantages of NONEL blasting are:

- Reduction of ground vibration.
- Reduction in air blast.
- Reduction in over break.
- Improved fragmentation.
- Better control of fly-rock.

Blasting program for the production per day (As per Peak production capacity):

The Hydraulic excavators are attached with rock breakers for breaking the rock mass to reduce the blasting and explosive usage also to avoid secondary blasting. Anyhow, as per day's production schedule the maximum blasting program proposed as given below.

Annual Peak production	= 2,40,075 Tons
No of Holes	= 266 Holes
Yield	= 798 Tons
Powder factor	= 6 Tons/ Kg of explosives
Maximum explosive required	= 133 Kg-Slurry explosives
Charge/ hole	= 0.5 Kg
Blasting at day time only	= 12.30 – 1.00 P.M. (whenever required)

Anticipated theoretical calculation of PPV

The empirical equation for assessment of peak particle velocity (PPV) is:

$$V = K\,[R/Q^{0.5}]^{-B}$$

Where –

V = peak particle velocity (mm/s)

K = site and rock factor constant

Q = maximum instantaneous charge (kg)

B = constant related to the rock and site (usually 1.6)

R = distance from charge (m)

Assistant Director Erode Geology and Mining

PREDICTED PPV VALUES DUE TO BLASTING

Table – 9

Maximum Charge per day (kg)	Number of Round Blast per day	Maximum Charge per Round (kg)	Number of holes blasted per round	Number of holes blasted per day	Maximum Charge blast at a time by NONEL (kg)	Nearest Infrastructure (m)	PPV (mm/s)
133	1	133	266	266	1 (2 Holes)	650	0.790

From the above table, the charge per blast of 133kg is well below the Peak Particle Velocity of 8 mm/s as per Director General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. Anyhow, the company ensures that carry out the **blasting once a day based on the site condition** under the supervision of competent qualified statutory personnel employed. However, as per statutory requirement control measures will be adopted to avoid the impacts due to ground vibrations and fly rocks due to blasting.

5.4 Storage and safety measures to be taken while blasting:

The applicant will engage an authorized explosive agency as approved by Petroleum and Explosives safety Organization (PESO) to carry out the blasting and it will be supervised by competent and statutory foreman/Permit Mines Manager. The explosives agencies should be having the valid Blaster certificate. He will blast holes in the quarry site. After completion of Blasting the explosive Agency will take it out back the remaining quantity of Explosives. The blasting and quarrying operation is advised to handle by competent qualified statutory personnel approved by the DGMS and competent authorities and he will maintain the records of Explosives as per the Indian Explosives Act, Mines Act and EP Act.

6.0 MINE DRAINAGE:

6.1 Depth of water table (based on nearby wells and water bodies):

The lease applied area consist dendritic drainage pattern. The water table in the area is about 63m - 68m which is observed with water level indicator from the existing private boreholes. The lease area is fully covered by Massive Charnockite. The quarry operation confined to well above the water table hence, the Ground Water problem will not arise. If water seepage may occur due to the fracture, the same will be used for Greenbelt. Anyhow, Garland drain will be constructed along the boundary to prevent surface run-off water entering into the quarry.

TABLE – 10

Type	Distance & Direction	Location
Bore Well	560m Southeastern side	11°08'46.41"N 77°34'43.74"E

6.2 Arrangements and places where the mine water is finally proposed to be discharged:

The quarry operations are confined to well above the water table during the entire lease period. If water is encountered at quarry due to rain water and seepage, the same will be pumped out by 5HP water pump and discharge to the Green belt development areas. Besides, the water will also be used for dust suppression on haul roads during Haulage of machineries.

Assistant Director Erode Geology and Mining

7.0 STACKING OF MINERAL WASTE AND DISPOSAL OF WASTE:

There is no mineral waste anticipated during entire life of the quarry, hence, Stacking/disposal of waste does not arise.

8.0 USE OF THE MINERAL:

The excavated rough stone (100%) will be directly loaded into Tippers as raw form to the needy nearby crushing unit to making Road metals and construction materials. The gravel and weathered rock (including weathered dump) will be directly loaded into Tippers for filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fee to the Government.

9.0 OTHERS:

9.1 Other Permanent Structure (also shown in the map)

TABLE – 11

S.No.	Description – Nearest	Particulars	Aerial Distance & Direction
1	National Highway	(NH-544) Coimbatore – Salem	11.8km – NW
2	State Highways	(SH-96) Perundurai – Kangayam	2.5km – SE
3	Railway station	Uthukuli	14km – West
4	Airport	Coimbatore	60km – SW
5	Nearest Town	Perundurai	14 km – NE
6	Government School	Ayyampalayam - Govt. Hr. Sec. School	1.8km – SW
7	Government Hospital	Chennimalai	3 km – NE
8	Reserved Forest	Chennimalai Reserve Forest – 70m – North side.	
9	Water Bodies	Odai – 50m – East Tank – 100m – West	
10	Defence Installation/ Historical Monuments/ Archaeological	Nil within 500m radius.	
11	Interstate Boundary	Around 69.5km – NW (Karnataka state border)	
12	Critically Polluted areas identified by the CPCB	Around 69km – SW (Kurichi – SIDCO, Coimbatore)	
13	Protected areas Notified under wildlife (Protection) Act, 1972.	13.2 km – NE (Vellode Birds Sanctuary)	
14	Applicability of CRZ, Notification 2011 as amended.	Not Applicable	

Assistant Director Geology and Mining Erode

15	Applicability of Hill Area Conservation Authority (HACA) Clearance.	Not Applicable
16	Housing area, EB line (HT & LT Line)	There is no EB-LT/HT line or Housing area located within 50m radius from the lease applied area.
17	Boundaries of the permitted area.	The boundaries of the permitted areas are as follows (Refer Plate No. II): North - S.F.No. 206/1 (Part), East - S.F.No. 206/1 (Part), South - S.F.No. 207 West - S.F.No. 206/1 (Part).
18	Adjacent Patta lands / Govt. Land	(Refer Plate No. II):

Direction	Classification	Safety Distance
North	Patta land	7.5m
East	Patta land	7.5m
South	Patta land	7.5m
West	Patta land	7.5m

9.2 Employment potential (skilled, semi-skilled, un skilled):

TABLE – 12

Designation	Present Employment position	Employees Requirement	Total
a) Supervisory category			
Mine manager	-	1	1
Geologist	-	1	1
b) Skilled labour			
Mine Foreman	-	1	1
Blaster/Mate	-	1	1
Excavator – Operator	-	2	2
Tipper Driver	-	4	4
Water sprinkler Driver	-	1	1
Jack-Hammer Drillers	-	16	16
c) Unskilled			
Security	-	1	1
Labour & Helper	-	2	2
Co-operator and Cleaner	-	7	7
Total	-	**37**	**37**

The proposed output per man shift:

TABLE – 13

Annual Peak Production of Rough stone		2440.075Ts
No. of days likely to be worked		300 days
Average production per day		800Ts
OMS =	Average Production per day / Average employment per day	800Ts / 37 = 21.6Ts

The above manpower is adequate to meet out the production schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations. It is been ensured that the labour will not be employed less than 18 years, **No child labour** will engaged or entertained for any kind of quarrying operations. All the labours engaged for quarrying operations will be insured during the entire quarry lease period.

9.3 Welfare Measures:

a) Drinking Water:

Packaged drinking water is available from the nearby water vendors in Chennimalai which is located about 3km on the Northeastern side of the lease applied area.

b) Sanitary Facilities:

Hygienic modern Sanitary Facilities is available in the safety area as semi-permanent structure and it will be maintained periodically.

c) First aid facility:

First aid kits are kept in Mines office room, in case of such eventuality is the victim will be given first aid immediately at the site by the competent and statutory foreman/permit manager/mate will be in charge of first aid and injured person will be taken to the hospital by the applicant's vehicle. Hospital is available in Chennimalai located at 3km on the Northeastern side of the area.

d) Labour Health:

Periodically medical check-up related to occupational health safety will be conducted to all the workers in applicant own cost.

Assistant Director Geology and Mining Erode

e) Precautionary safety measures to the labourers:



- Helmets,
- Reflector Jackets
- Dust mask
- Mine Goggles,
- Ear plugs,
- Ear muffs
- Safety Shoes

All personnel protective equipment will be provided as per the specification approved by Director of mines safety. Periodically medical check-up will be conducted for all workers for any mine health related problems. Proper training and vocational education will be given by qualified and experienced safety officer to all the employees about the safety and systematic Rough stone quarrying operations. The drillers and workers will be sent for vocational training periodically, to carry out the quarrying operations scientifically and to safe guard the men and machinery and to create awareness about conventional opencast quarrying operations.

10.0 MINERAL PROCESSING:

No mineral processing/beneficiation involved.

PART – B

11.0 ENVIRONMENT MANAGEMENT PLAN

The EMP is prepared based on the Mines act, Rules & amendment from by state & central government. If the SEIAA/SEAC instructed the modification and alter the EMP the outcome of their recon would be final and the applicant is instructed to follow the EIA / EMP for its compliance as per the CPCB / TNPCB Norms.

Environment	Anticipated impact	Mitigation measure
Land Environment	i. Topography of the area will change due to mining activity.	i. Backfilling is the only source for mitigation measure for topographical changes, but no waste will be anticipated during entire life of the Rough stone and Gravel quarrying operation hence, backfilling is not proposed. ii. The Mining benches will not exceed beyond the approved height and width. iii. At the end of life of mine, the pit will be allowed to collect the seepage and rain water and the water storage will be kept as temporary reservoir for charging the nearby wells also the water utilized for greenbelt development purpose.
	ii. Soil quality and agriculture land on surrounding land environment will impact due to; a) Dust propagation during quarry operation like drilling, blasting, loading, unloading and movement of men, Vehicle and machineries. b) Vehicular and machineries emissions and spillage of oil and grease.	i. Regular water sprinkling on dust prone area like haul road and other active area to arrest the dust generation. ii. Additional greenbelt will be developed in the safety zone with thick dong leave plants to arrest the fugitive dust and vehicular emissions propagation. iii. Wet drilling with dust extractor unit by proper drilling pattern and controlled blasting with NONEL initiation will be carried out to minimize the dust generation.

Assistant Director Geology

59 A

	c) Propagation of Non-degradable material like polythene bag, Plastic water and cool drink containers and other waste materials dumping.	iv. Excavated benches shall be developed by planting with grasses, herbs and shrubs of local species to prevent soil erosion and landslide. v. PUC (Pollution under control) certified vehicles will be used for transportation and all vehicles and their exhausts would be well maintained and regularly tested for pollutant concentrations. vi. Oiling and greasing will be managed in respective places at vehicle maintenance shed and oil tray will be use to collect the spillage during maintenance and the same will be disposed in manner. vii. Non-degradable material like polythene bag, Plastic water and cool drink containers or ill managed dumping will not be allowed within quarry premises.
Water Environment	Surface Mining can have direct impact on physico-chemical characteristics of the local drainage and groundwater resources. The detrimental effects, if any, to water resources resulting from surface mining are caused by following: i. Flow direction of Surface run off water will interrupting during rainy season due to modification of topography. ii. Surface water bodies will be contaminated due to dust propagation, machinery and vehicular emissions.	i. Garland drain with check dam will be constructed all along the boundary barrier to prevent the surface run-off rain water entering into the pit. ii. Greenbelt will be developed in the safety barrier with thick long leave plants to arrest the fugitive dust, machinery and vehicular emissions. iii. Further mining will be completely stopped during the monsoon for free flow of surface run off and allowing natural recharge of groundwater. iv. No wastewater will be generated from the quarry activity. The pit water due to rain and seepage will be utilized for water sprinkling on haul Roads and plantations. v. Septic tanks and soak pits will be provided for the disposal of domestic/ washroom effluents, the same will be disposed in manner.

Assistant Director Geology and Mining Erode

60 A

Air Environment	In surface mining operations, the source of air pollution may cause deterioration of air quality due to; a) The fugitive dust emissions from drilling/blasting, scooping, loading- unloading operation of extracted mineral and its transportation. Drilling/blasting and loading of quarry material would be associated with the fugitive dust emission in the active area whereas fugitive emission during transportation would affect the areas/villages situated adjacent to the road side. Another source of air pollution would be emission from the drilling machinery and excavators/tippers vehicles to be used for loading.	i. Regular water sprinkling on haul road and dust prone area to arrest the dust generation. ii. Green belt will be developed in the safety zone with thick long leaves plants to arrest the fugitive dust and vehicular emissions. iii. Wet drilling with dust extractor unit by proper drilling pattern and controlled blasting with NONEL initiation will be carried out to minimize the dust generation. iv. Quarry material will be handled under wet condition during scooping, loading and unloading to minimize the dust propagation, besides loaded materials are covered by Tarpaulin until to reaches its destination. v. Provision of dust filters/ Nose mask to workers working at dust prone areas. vi. Vehicular emission as a result of combustion of diesel generates particulate matter (PM_{10} & $PM_{2.5}$), Nitrogen oxides and Sulphur dioxide (NO_2 & SO_2). High quality diesel will be used in the motor vehicles to control these pollutants. vii. PUC (Pollution under control) certified vehicles will be used for transportation and all vehicles and their exhausts would be well maintained and regularly tested the pollutant concentrations. viii. CPCB Prescribed emission standards for the vehicles would be followed.

Assistant Director Geology and Mining Erode

61 A

Noise Environment	In the present mining activity for building material, noise will be generated from drilling machinery, blasting and vehicular movement. Noise level in the working environment is compared with the standards prescribed by Central Pollution Control Board as adopted and enforced by the Govt. of India through Noise Pollution (Regulation and Control) Rules, 2000.	i. Selection of innovative low – noise equipments for the quarry operation. ii. Green belt will be developed in the safety zone, which will act as acoustic barrier to arrest noise propagation. iii. The noise levels shall be maintained within the permissible levels by involving all the noise regulating measures in vehicles and drilling/blasting operations. iv. To ensure minimum vibrations and noise due to blasting, NONEL in continuous sequence is proposed. v. Personnel Protective Equipment (PPE) like earmuffs and earplugs shall be provided to the employees whose in critical operation like drilling, blasting and excavation as occupational safety measures. vi. Proper maintenance done with regular interval by the Oiling and greasing for the machineries and vehicles to control the Source of noise during operation and transportation. vii. Regular and proper maintenance of machinery and transportation vehicles shall be ensured. viii. Transporting vehicles are enforcing the speed limits of 25km/hour within quarry area and not exceed 40km per hour from quarry to destination to reduce Noise and vibration. ix. There would be restrictions on mining activity and vehicular movement during night hours.

Assistant Director Geology and Mining Erode

62 A

Biological Environment	The area having main floras are Neem, Palm, Cocos nucifera, veld grape, Albizia Amara, Bushes, Grass and shrubs. No plants of botanical interest or animals of zoological interest recorded within 500m radius. The anticipated impacts on biological environment as follows: i. Public and cattle may cause serious injury by inadvertent entry to the pit. ii. Diversity of living insects and soil base organism due to vibration. iii. Natural habitats of the existing faunas will change due to noise and vibration. iv. The mining activities can also disrupt the ecological diversity. v. Deposition of dust on the plant and crop leaves is affecting the photosynthesis, Pollination, growth ratio and agriculture productivity.	i. The quarry area will be fenced with Barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle. ii. The natural habitats of the existing flora and fauna will not be disturbed. iii. No mining will be carried out during the monsoon season to minimize impact on aquatic life which is mainly breeding season for many species. iv. Fruit bearing trees will be planted to survive the existing birds and faunas. v. No clearance of vegetation will be done during the entire mining operations. vi. Regular Water sprinkling on haul roads would be reduces the dust propagation, thus avoiding damage to the crops and plants.

Assistant Director Geology and Mining Erode

63 A

Socio – Economic Environment	Any activity during mining will have adverse impact on Environment, careful mitigation measures are proposed to balance the impact on the existing environment and the applicant is always instruct to carry out safe, sustainable, eco-friendly mining operations at all times. The following positive impact on the society due to this mining activity. i. It is proposed to provide employment to about 37 persons for carrying out mining operations and give preference to the local people in providing employment in this cluster. In addition, there will be opportunity for indirect employment to many people in the form of contractual jobs, business opportunities, service facilities etc. the economic status of the local people will be enhanced due to mining project. ii. The employment opportunities both direct and indirect will contribute to enhanced money incomes to job seekers with minimal skill sets especially among the local communities. iii. Improvement of Physical structure like Road Transport facilities, Communications, Medical, Educational and social benefits will be made available to the nearby civilian population in addition to the workmen employed in the mine. iv. The continuation of opportunity for the employments, the nearby villages, living peoples and their life style would be improved. v. The applicant is advised to invest the CER cost (@ 2% from the total Project Cost) to develop the local Panchayat.	i. Preference employment will be given to the local community. This quarrying activity will also indirectly provide employment to the local community by the way of petty shops, hotels, etc. ii. The CER activity proposed by the applicant will enhance the requirement of the local community. iii. The improvement of physical structure like medical and social benefits of local community will get enhanced. iv. There will be a positive enhancement of lifestyle of the nearby village.

Assistant Director Geology and Mining Erode

64 A

Assistant Director Erode Geology and Mining

11.1 Environmental impact assessment statement describing impact of mining on the next Five years:

In the mining plan proposed for a production of Rough stone and Gravel does not involve deep hole drilling and heavy blasting. Such limited mining activity is not likely to cause any impact adversely on the environment. As far as pollution of air, water and noise concerned, the environmental impact studies will be conducted as per EIA notification issued by MoEF& CC. It is B Category mine. The compliance monitoring will be carried out for every six months as prescribed by the MOEF&CC and with state concerned authorities.

11.2 Proposal for waste management:

There is no waste anticipated in this Rough stone and Gravel quarrying operation. The entire quarried out materials will be utilized (100%). The maintenance of machineries & fuelling will be carried out as per the TNPCB Norms and the waste will be disposed in the Norms.

11.3 Proposal for reclamation of land affected during mining activities and at the end of mining (refilling / fencing etc.):

In the mining plan only to a maximum depth of 57m below from the ground profile has been envisaged as workable depth for safe & economic quarrying operation during entire life of quarry. There is no waste anticipated during entire life of the quarry hence, backfilling is not proposed. After completion of quarry operations, the quarry pit will be allowed to collect the seepage and rain water, the water storage will be kept as temporary reservoir to charging the nearby wells and will be utilized for greenbelt development. When the quarry reaches its ultimate pit limit or at the end of life of quarry, greenbelt development will be carried out over the quarried out top bench. The quarry area will be fenced with Barbed wire fencing also safety bund constructed around the quarry to prevent inadvertent entry of public and cattle.

11.4 Programme of Greenbelt development (indicate extend, number, name of species to be afforested):

The safety zone along the boundary barrier has been identified to be utilized for Greenbelt development. Around 2,500m^2 area already utilized for green belt development on the safety zone. Anyhow, the applicant ensures to carry out additional green belt development by planting around 500 tree saplings in the Approach Road or Panchayat Road at first year of the plan period and 200 tree saplings from forth year onwards in quarried out top benches with 2m height tree saplings with an anticipated survival rate of 80% with maintain at least 560 plants during the entire life of the quarry. Manuring and tree guards will be provided by the lessee to safeguard and maintain the plants. As per the SEIAA recommendation, the plantation will be carried out based on the output Environmental Clearance and the recommended species will be carried out for greenbelt development (Refer Plate No. III).

Assistant Director Erode Geology and Mining

11.5 Proposed financial estimate / budget for the project:

Budget Provision for the Mining Plan period:

TABLE – 14

A. Operational Cost / Project Cost / Investment:		Cost (Rs.)
i) Land cost	The Land value as per the Government Guideline land cost is about, 2.53.80Ha x Rs. 12,38,000/Ha. = Rs. 31,42,044/- Round of Rs. 31,42,000/- (Source: https://tnreginet.gov.in/portal/)	31,42,000
ii) Machinery cost	The following machineries are proposed to meet out the productions. Excavator attached with rock breaker Tipper, Tractor mounted compressor with jack Hammer and loose tools (Rental Basis).	45,00,000
iii) Labourers shed	Labour shed will be constructed as semi-permanent structure. The cost is around	5,00,000
iv) Sanitary facility	Adequate latrine and urinal accommodation has provided at conveniently accessible places the cost would be around.	1,00,000
v) Drinking water facility for the labourers	Packaged drinking water will be provided for all the Labours. Drinking water will be readily available at conveniently accessible points during the whole of the working shift the cost would be around.	2,90,000
vi) Sanitary arrangement	The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around.	1,00,000
vii) Safety kit	All the Safety kit such as Helmet, Earmuffs, Goggles, Reflector Jackets, Safety shoes etc., will be provided to the workers by the applicant own cost which would be around.	80,000
viii) CCTV arrangements.	Installation of CCTV cameras in the quarry area.	50,000
Total Cost		**87,62,000**

B. EMP Cost:	Cost (Rs.)
1. Environmental Monitoring Program (Air Quality, Water Quality Sampling, Noise and Ground vibration test) Rs. 50,000/ year.	2,50,000
2. Water will be sprinkled in the haul roads by own water sprinkler for dust suppression. The cost would be around.	6,00,000
3. Fencing constructed around the lease area to prevent the inadvertent entry of public and cattle. The cost is around (Total Peripheral length 410m x Rs. 300/meter).	1,23,000



4.	Construction of Garland drain with check dam to prevent surface run-off rain water entering to the quarry pit, the construction cost is around (Total Peripheral length 280m x Rs. 300/meter).	84,000
5.	First aid room & accessories	80,000
6.	Dust extractor unit for Jackhammer (8 Nos.)	2,00,000
7. Greenbelt development for dust suppression & Noise control measures	Greenbelt development will be carried out along the quarried out top benches; the cost would be around (200 saplings x Rs. 200/sapling).	40,000
	Greenbelt development will be carried out on haul road; the cost would be around (500 saplings x Rs. 200/sapling).	1,00,000
	Total EMP Cost	**14,77,000/-**

Description	**Cost (Rs.)**
A. Operational Cost	**87,62,000/-**
B. EMP Cost	**14,77,000/-**
Total Project Cost (A+ B)	**1,02,39,000/-**
C. The applicant indents to involve corporate environment responsibilities (CER) activity like Water Purifier, Plantation, Books to Library, sanitary facility and as per requirement to the nearby Govt. School at 2.0% from the total project cost. The Cost would be around **Rs.2,05,000.** If the concerned authority is directed to modify the CER cost and mode of utilization of the cost, the same will be implement by the applicant.	**2,05,000/-**
Total Cost (A+B+C)	**1,04,44,000/-**
The total cost would be around one crore four lakhs and forty four thousand only.	

Assistant Director Erode Geology and Mining

12.0 PROGRESSIVE QUARRY CLOSURE PLAN

12.1 Introduction:

As per guidelines for preparation of mining plan prescribed under Minor Mineral Conservation and Development Rules, 2010 also the entire area is proposed for a short period of 5 years only hence, the progressive quarry closure plan may not be applicable to this quarry. Anyhow, during temporary discontinuance of quarry the following measures will be taken.

a. Barbed wire fencing will be constructed around the quarry.
b. Benches will be smoothening.
c. Quarry will be closed & sentries will be posted round the clock.
d. Green belt development will be maintained.
e. Machineries will be removed from pit and engaged in another site.

12.2 Present and Post Land use pattern:

TABLE – 15

Description	Present area (Ha)	Area at the end of lease period (Ha)
Area Under Quarry	1.51.00	2.25.00
Dump	0.60.00	Nil
Site Services	Nil	0.01.00
Roads	0.02.00	0.02.00
Green Belt	0.25.00	0.25.00
Unutilized Area	0.15.80	0.00.80
Grand Total	**2.53.80**	**2.53.80**

12.3 Statutory obligations:

The applicant ensures to comply all the conditions stipulated in the precise area communication letter before grant of quarry lease and during the course of quarry operations as per the DGMS, Department of Geology and Mines, Labour Enforcement officer, controller of Explosives etc., circulars, Norms, Rules, Regulations and Act.

12.4 Progressive quarry closure plan preparation:

Name and address of the Qualified Person who prepared the progressive closure plan and executing agency who is involved in the Preparation of progressive quarry closure plan.

Name	:	**B. Vengadagiri, M.Sc.,**
		Qualified Person (Under Rule 15(I)(a) and (I)(b) of MCR, 2016)
Address	:	No.105, 5th Cross,
		Alagapuram
		Salem District
State with PIN Code	:	Tamil Nadu – 636 010.
Mobile No.	:	+91 86953 32233
Email ID	:	vengatb6@gmail.com

The applicant will himself implement the closure plan; no outside agency will be involved.

Assistant Director Ecology and Mining Geology

(i) Safety & Security:

Safety measures will be implemented to prevent access in the excavation area an un-authorized persons as per Mine Act 1952, MMR 1961.

- Safety measures will be implemented as per Mine Act 1952, MMR 1961, and Mines Rules 1955.
- Provisions of MMR 1961 shall be strictly followed and all roads shall be wider than the height of the bench or equal to the height of the bench and have a gradient of not more than 1 in 16.
- The bench height will be 5.0m.
- Width of working bench will be kept about 5.0 m for ease of operations and provide sufficient room for the movement of machineries and vehicles.
- Protective equipment like dust masks, ear-plugs/ muffs and other equipment shall be provided for use by the work persons.
- Notices giving warning to prevent inadvertent entry of persons shall be displayed at all conspicuous places and in particular near mine entries.
- Danger signs shall be displayed near the excavations and proper signal by siren alarm will be given to the public before blasting to prevent accident.
- Security guards will be posted.
- In the event of temporary closer, approaches will be fenced off and notice displayed.
- Installation of CCTV cameras in the quarry and entrance of the quarry.
- Monitoring of Quarrying operation by external agency as directed by authorities.

(ii) Disaster Management and Risk Assessment:

This should deal with action plan for high risk accidents like landslides, subsidence, flood, fire, seismic activities, tailing dam failures etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of applicant to meet such eventualities and the assistance to be required from the local authorities should be described.

- The mechanized mining activities in the area may involve any high risk accident due to side falls/collapse, flying stones due to blasting etc.
- The complete mining operation will be carried out under the Management and control of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS.
- All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955, TNMMCR 1959 and other laws applicable to mine will be strictly complied with.
- During heavy rainfall the mining activities will be suspended.
- All persons in supervisory capacity will be provided with proper communication facilities.
- Competent persons will be provided FIRST AID kits which they will always carry.
- The Greenbelt Development will be formed in around the quarried out top benches and panchayat road of the lease applied area.

Environmental Monitoring Cell:

A dedicated team nominated by the mine manager or Agent will monitor and maintain the environmental compliances of the quarry as per the approved Environment Management Plan and report the Compliance to the competent authority from time to time.

Disaster Management Cell:

The Competent Qualified Statutory managers appointed by the applicant as per the Director of Mines Safety will be responsible for Disaster Management. It care any eventualities his mobile number will be displayed and he will take all the precautions and safety measures as per Mines and Minerals (Development and Regulations) Act, 1957.

(iii) Disposal of mining machinery

All the Machineries will be engaged on rental basis, the same has been maintained in good condition during entire life of quarry if required the machineries will be replaced or repaired. Hence, disposal or decommissioning of mining machinery does not arise.

(iv) Care and Maintenance during Temporary Discontinuance:

In case of any temporary discontinuance due to court order or due to statutory requirement or any other unforeseen circumstance following measures shall be taken for care, maintenance and monitoring of conditions.

- Notice of temporary discontinuance of work in mine shall be given to the DGMS as per the MMR 1961.
- All the mining machinery shall be shifted to a safe place.
- Entrance to the mine or part of the mine, to be discontinued shall be fenced off. Fencing shall be as per the circular 11/1959 from DGMS.
- Security Guards shall be posted for the safety and to prevent any unauthorized entry to the area.
- Carry out regular maintenance of the facilities/area detailed below in such a way as would have been done as if the mines were operation:

  Quarry roads and approach roads,

  Fencing on approach roads,

  Checking and maintenance of machines and equipment,

  Drinking water arrangements,

  Quarry office, first aid stations etc.
- Competent persons shall inspect the area regularly.
- Air, water and other environmental monitoring shall be carried out as per CPCB and IBM Guideline.
- Care and upkeep of plantation shall be carried out on regular basis.
- Status of the working and status monitoring for re-opening of the mines shall be discussed daily.

In case of discontinuance due to any natural calamities/abnormal conditions, mining operation will be restarted as early as possible after completing rescue work, restoring safety and security, repairs of roads etc.

Assistant Director Geology and Mining Erode

(v) Economic Repercussion of Closure of Quarry and manpower Retrenchments:

The quarry lease is granted for a period of Five years only. As per the production Programme envisaged, there will be no effect on the man power as the majority of persons belong to nearby villages and will have an option either to be available for employment for the next contract/ lease or do the agriculture in their fields.

(vi) Abandonment Cost:

As at present mining is not going to be closed so abandonment cost could not be assessed. However, based on the progressive quarry closure activities during the plan period, cost is assessed as given below at present scenario:

TABLE – 16

ACTIVITY		YEAR					RATE	COST (Rs.)
		I	II	III	IV	V		
Plantation in quarried out top benches and approach road	No. of saplin g	Approach Road			Quarried out top Benches		Rs. 200 Per Sapling	1,40,000
		300	200	100	100	100		
	Cost	60000	40000	20000	20000	20000		
Wire Fencing for 410 Mtrs length		123000	-	-	-	-	Rs. 300 Per Meter	1,23,000
Garland Drain with settling tanks for 280 Mtrs length		84000	-	-	-	-	Rs. 300 Per Meter	84,000
Total								3,47,000

13.0 STATUTORY COMPLIANCE TO BE FOLLOWED DURING THE COURSE & CLOSURE OF QUARRY LEASE:

The Applicant after execution of lease deed shall ensure to carry out that the quarry operation in accordance to the Approved Mining plan and as per TNMMCR, 1959, Mine Act 1952 & as per MMR 1961.

The conditions in the nutshell as follows:

1. The quarry operation should be fenced with the barbed wire and three tier Greenbelt has to be carried out all along the boundary barriers and should be maintained till the end of the life of the mine.
2. The quarry operation should be carried out as per the regulation 3,4,5 of MMR 1961 as prescribed in the form I, II, III, IVA, IVB, IVC, V, VI.
3. Statutory competent qualified person as per regulation 39, 40, 41, 42, 43, 44, 47, 48 of MMR 1961 should be appointed to carryout day today quarrying operation in scientific & systematic manner.
4. Blasting has to be carried out during the designated timing as per the approved mining plan with sufficient warning all around the mines by only the Qualified blaster as indicated in the regulations 153, 154, 156, 160, 166, 167, 169 of MMR 1961.
5. During the Quarrying operations the benches has to be maintained and haul roads should be maintained as per the regulations 60, 61, 62, 65, 66, 95, 96, 105, 106, 110, 115, 118 of MMR 1961. When the quarry attains 30mts depth from the general ground profile a slope stability study should be carried out with competent authorized agencies only.
6. All PPE should be provided to the employees and initial Medical Examination has to be carried out as per the regulation 124, 127, 177, 178, 181, 183, 185, 188, 190, 191A of MMR 1961.
7. The Applicant should submit the quarterly, half yearly & Annual returns to the concerned Authorities as per regulation 3, 4, 5, 9 &10 MMR 1961 on time and HYCR self-compliance reports should be submitted to the State Pollution control Board.
8. Periodical Hydrology & Hydrogeological Studies has to be carried out during the course of quarrying operation. if any significant seepages is inferred, the applicant should carry out a comprehensive Hydrogeological studies to ensure the impact of agricultural activities in and around the mine (Open well & Tube well). If the impact is noticed considerably the quarry had to be continued only after obtaining permission clearances and approval from the competent regulatory authorities.
9. The lessee should utilize green energy / Solar energy as far as possible for operation of machineries, equipment and illumination in the mine's office, quarry boundaries and avenue roads.
10. The lessee should ensure all the skilled and semi-skilled workers should be provided trainings in nearby Vocational Training center as per the MVTR 1966 and should be registered in Shram Suvidha portal as directed by the Ministry of labour.
11. The lessee should carry out the quarrying operation keeping the view of mineral conservation, development and sustainable mining.
12. If the lessee intends to deviate from the approved mining plan, a modified mining plan has to be prepared submitted and approved from the concerned authority before making any significant changes in the mining operations.
13. The lessee should carry out the mining operation in Eco friendly environment with good hygienic conditions to the employees deployed and maintain good harmony with local communities in the impact zone.
14. The conditions stipulated in the lease deed and Environmental clearance especially the mitigation measures as proposed in EMP to the SEIAA has to be followed during the course of quarrying operation and also to as per the rules of TNMCR 1959, Mine act 1952, MMR 1961, Mine Rule 1955, Environment Protection Act 1986 and Indian Explosive act 1884 and Indian Explosive Rules 2008 and all the amendments issued by the concern State and Central Government authorities from time to time.

Assistant Director Geology and Mining Erode

This Mining plan for Rough stone (Charnockite) and Gravel is under Rules 41 & 42 as per the Amended under Tamil Nadu Minor Mineral Concession Rules, 1959. The provisions of the Mines Act, Rules and Regulations and orders made there under shall be complied within the quarrying operation, so that the safety of the mine, machinery and person will be well protected. Permission, relaxation or exemption wherever required for the safe and scientific quarrying of the deposit will be obtained from the Department of Mines Safety. Any violation pointed out by the inspecting authorities shall be rectified and modified after scrutiny comments as per the guidelines of the Concerned Department and Authorities.

This Mining Plan and mine design is prepared based on the requirement and full consent by the applicant to me. If there is any change in the production schedule, change of technology, change in product mix during the course of operations, the applicant is advice to prepare a modified mining plan and get approval by the concerned authority for subsequent clearance and approval. The same will be monitored by the inspecting authority of Department of Geology and mining and other Concerned Departments under Rule 25 and sub rule (5)(d) in Rule 36 of Tamil Nadu Minor Mineral Concession Rules, 1959.

I hereby ensure that the information provided is correct to best of my knowledge and experience, some of the information contained in this report has been provided by external sources and by the applicant and is presented as the form as submitted by the applicant. The information is not intended to serve as legal advice related to the individual situation. I do not owe and specifically disclaim any liability resulting from the use during the course of quarrying operations after the grant of lease. The document may be scrutinized by the competent authority before approval.

Prepared by

B. Vengadagiri, M.Sc.,

Qualified Person

Place: Salem

Date: 21.03.2025

This Mining Plan ... ject to the condi... ...ing Plan approved ... R.C. No. 980/mines/2024. Dated:

This Mining Plan is approved as per the Powers conferred under Rule 41 (2) of Tamil Nadu Minor Mineral Concession Rules, 1959

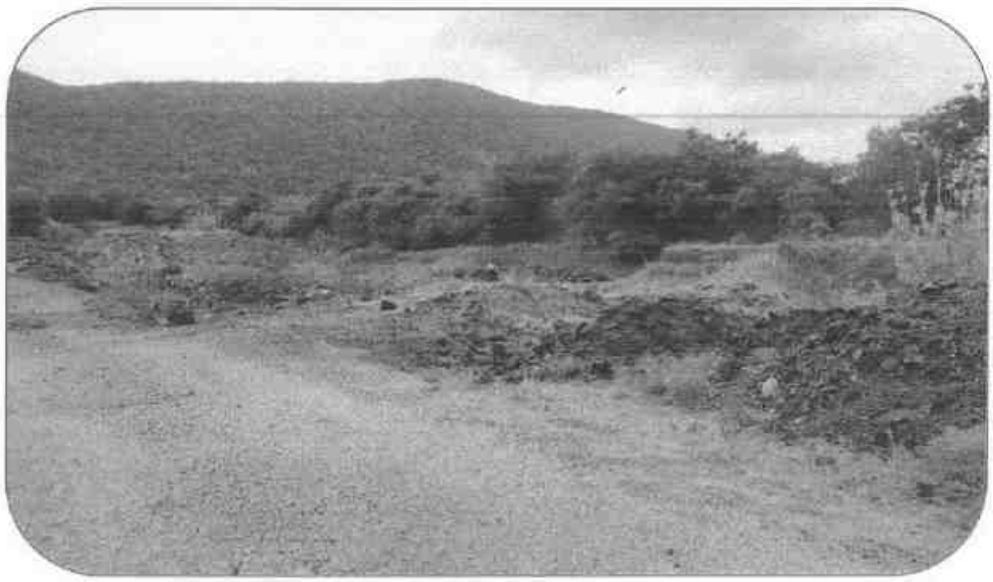
Assistant Director, Geology and Mining

Assistant Director
Erode
Geology and Mining

PHOTOGRAPHS OF THE EKKATTAMPALAYAM ROUGH STONE AND GRAVEL QUARRY LEASE APPLIED AREA







ANNEXURE 1

Assistant Director
Erode

உதவி இயக்குநர் அலுவலகம்,
புவியியல் மற்றும் சுரங்கத்துறை,
ஈரோடு

ந.க. 980 /கனிமம்/2024 நாள்: 11.03.2025.

குறிப்பாணை

பொருள்: கனிமங்களும் குவாரிகளும் - ஈரோடு மாவட்டம் - சிறுகனிமம் - சாதாரணக்கற்கள் மற்றும் கிராவல் - பெருந்துறை வட்டம் - சென்னிமலை உள்வட்டம் - எக்கட்டாம்பாளையம் கிராமம் - புல எண் 206/1 (பகுதி) 2.53.80 ஹெக்டர் பரப்பில் சாதாரணக்கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க குவாரி குத்தகை உரிமம் கோரி திரு. எஸ். சாமிநாதன், த/பெ. சென்னிமலைக் கவுண்டர் என்பவர் விண்ணப்பம் அளித்தது - அங்கீகரிக்கப்பட்ட சுரங்கத்திட்டம் மற்றும் சுற்றுச் சூழல் ஒப்புதல் பெற்று அளிக்க கோருதல் - தொடர்பாக.

பார்வை:
1. திரு. எஸ். சாமிநாதன், த/பெ. சென்னிமலைக்கவுண்டர் என்பவரின் மனு நாள் 14.11.2024.
2. வட்டார வளர்ச்சி அலுவலர் (கி.ஊ), சென்னிமலை கடிதம் ந.க. 3917/2024/ஆ2 நாள் 25.11.2024.
3. மாவட்ட நகர் ஊரமைப்பு துணை இயக்குநர் (பொ), ஈரோடு கடிதம் ந.க. எண் 3312/2024-ஈமா-2 நாள் 09.12.2024.
4. பெருந்துறை வருவாய் வட்டாட்சியரின் அறிக்கை ந.க. 7526/2024/அ2 நாள் 29.01.2025.
5. ஈரோடு வருவாய் கோட்டாட்சியர் அவர்களின் அறிக்கை ந.க. 6351/2024/ஆ1 நாள் 12.02.2025.
6. ஈரோடு புவியியல் மற்றும் சுரங்கத்துறை உதவி புவியியலாளர் மற்றும் தனி வருவாய் ஆய்வாளர் ஆகியோரின் தணிக்கை குறிப்பு நாள்: 13.02.2025.
7. அரசு ஆணை எண் 169 தொழில் (எம்எம்சி1) துறை நாள் 04.08.2020.

ஈரோடு மாவட்டம், பெருந்துறை வட்டம், சென்னிமலை உள்வட்டம், எக்கட்டாம்பாளையம் கிராமம், புல எண். 206/1 (பகுதி)-ல் 2.53.80 ஹெக்டர் பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க ஐந்து ஆண்டுகளுக்கு திரு. எஸ். சாமிநாதன், த/பெ. சென்னிமலைக்கவுண்டர் என்பவர் அளித்த விண்ணப்பித்தின் பேரில் குவாரிக் குத்தகை உரிமம் வழங்குவது தொடர்பாக, வட்டார வளர்ச்சி அலுவலர் (கி.ஊ) சென்னிமலை, ஈரோடு நகர் ஊரமைப்பு துணை இயக்குநர் (பொ), பெருந்துறை வருவாய் வட்டாட்சியர், ஈரோடு வருவாய் கோட்டாட்சியர் மற்றும் புவியியல் மற்றும் சுரங்கத்துறை உதவி புவியியலாளர் (கனிமம்), தனி வருவாய் ஆய்வாளர் (கனிமம்) ஆகியோர் மேற்காணும் விண்ணப்ப புல எண். 206/1 (பகுதி)-ல் 2.53.80 ஹெக்டர் பரப்பில் ஐந்து ஆண்டுகளுக்கு தமிழ்நாடு சிறுகனிம சலுகை விதிகள், 1959-ன் விதி எண். 19 (1), 20, 22 ஆகியவற்றின் கீழ் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க குவாரி குத்தகை உரிம அனுமதி சில நிபந்தனைக்குட்பட்டு வழங்கலாம் என பரிந்துரை செய்துள்ளனர்.

Assistant Director Geology and Mining Erode

எனவே, மேற்காணும் பரிந்துரைகளின் அடிப்படையில் ஈரோடு மாவட்டம், பெருந்துறை வட்டம், சென்னிமலை உள்வட்டம், எக்கட்டாம்பாளையம் கிராமம், புல எண். 206/1 (பகுதி)-ல் 2.53.80 ஹெக்டர் பட்டா நிலத்தில், திரு. எஸ். சாமிநாதன், த/பெ. சென்னிமலைக்கவுண்டர் என்பவருக்கு குவாரி குத்தகை ஒப்பந்த ஆவணம் நிறைவேற்றப்பட்ட நாளிலிருந்து ஐந்து ஆண்டுகளுக்கு சாதாரணக்கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க குவாரி குத்தகை உரிமம் வழங்குவது தொடர்பாக கீழ்க்காணும் நிபந்தனைகளுக்கு உட்பட்டு ஈரோடு உதவி இயக்குநரால் ஏற்பளிக்கப்பட்ட சுரங்கத் திட்டம் மற்றும் மாநில சுற்றுச் சூழல் அமைப்பிடம் இருந்து பெறப்பட்ட சுற்றுச்சூழல் ஒப்புதல் ஆகியன உரிய காலத்திற்குள் விண்ணப்பதாரால் பெற்றளிக்கப்பட வேண்டும் என தெரிவிக்கப்படுகிறது.

1. புலத்தை சுற்றி அமைந்துள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணிபுரிய வேண்டும்.
2. புலத்தின் கிழக்கு பகுதியில் புல எண் 220/1 ல் செல்லும் ஓடைக்கு பாதிப்பு இல்லாமலும், மேற்கு பகுதியில் உள்ள ஓடைக்கும் 50மீ பாதுகாப்பு இடைவெளி விட்டு குவாரிப்பணி புரிய வேண்டும்.
3. புலங்களின் வடக்கு பகுதியில் சுமார் 60மீ தொலைவில் உள்ள ஒதுக்கப்பட்ட காட்டிற்கு எவ்வித பாதிப்பும் இல்லாமல் குவாரிப்பணி புரிய வேண்டும்.

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
ஈரோடு.

11/3/25

பெறுநர்

திரு. எஸ். சாமிநாதன்,
த/பெ. சென்னிமலைக்கவுண்டர்,
19, செ.க.பாளையம்,
வ.ராமலிங்கபுரம்,
சென்னிமலை - 638 051.

ANNEXURE II

Assistant Director Geology and Mining Erode

District : Erode

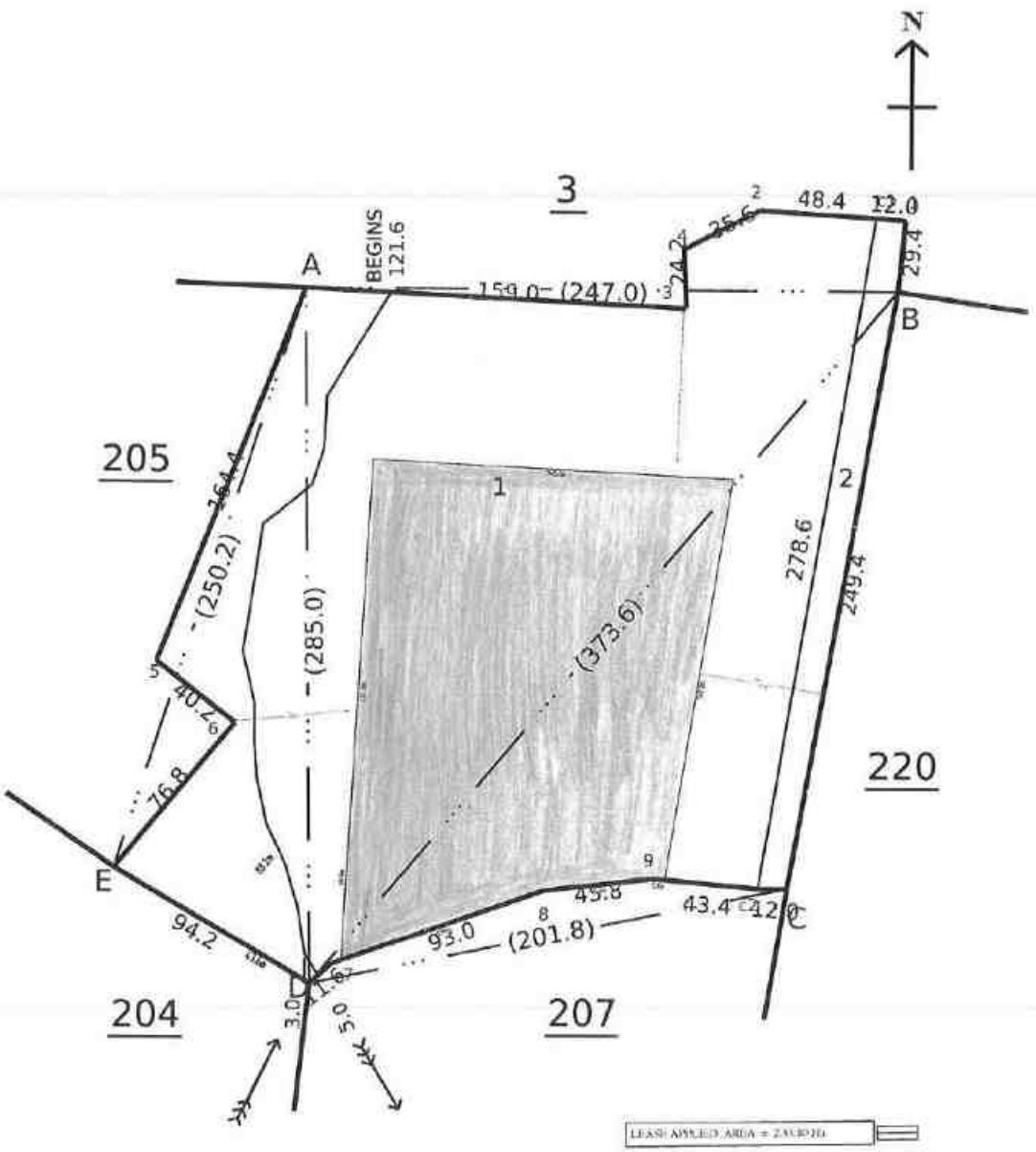
Taluk : Perundurai

Village : Ekkattampalayam [69]

Survey No : 206

Area : Hect 06 Ares 91.50

Scale : 1 : 2861



LEASE APPLIED AREA

Data Digitally Signed By
RAMAKRISHNASAMY R

Assistant Director
Erode
Geology and Mining

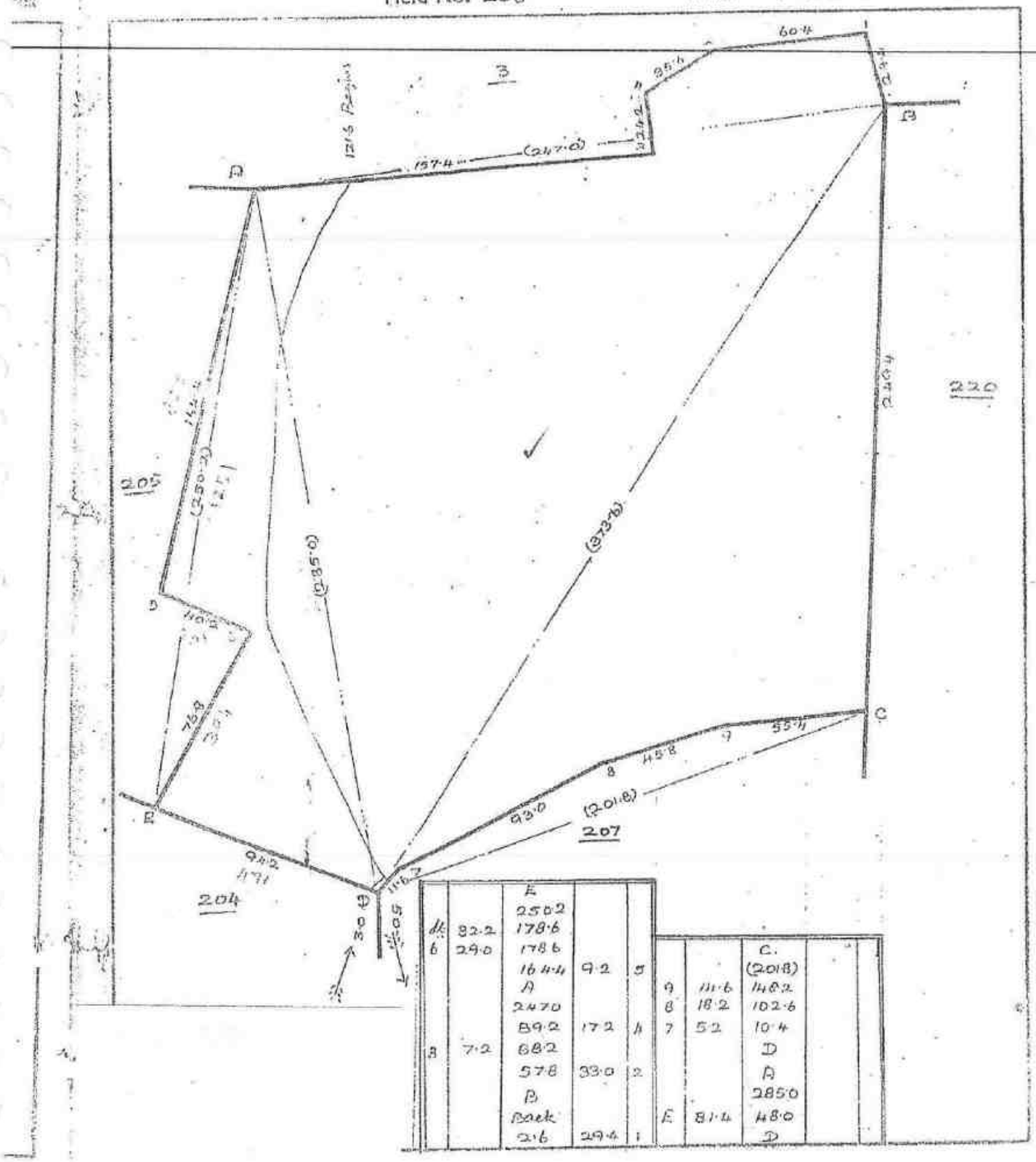
Survey Old No. 23, New No. 21

District Periyar
Taluk Erode

Village { No. 172.
Name Ingurusi Palayam.

Field No. 206

Area 6.91.5 Hect. Acres



		E					C.	
		250·2					(201·8)	
4	82·2	178·6						
6	29·0	178·6			9	111·6	148·2	
		164·4	9·2	9	8	18·2	102·6	
		A			7	5·2	10·4	
		247·0					D	
		89·2	17·2	4			A	
3	7·2	68·2					285·0	
		57·8	33·0	2				
		B			E	81·4	48·0	
		Back					D	
		21·6	29·4	1				

Assistant Director
Erode
Geology and Mining
LEASE APPLIED AREA
CHENNIMALAI
NO. 1175/97

ANNEXURE IV

Assistant Director Erode Geology and Mining

தமிழ்நாடு அரசு

வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை

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

மாவட்டம் : ஈரோடு வட்டம் : பெருந்துறை

வருவாய் கிராமம் : 069 எக்கட்டாம்பாளையம் பட்டா எண் : 2470

உரிமையாளர்கள் பெயர்

1. சென்னிமலைக்கவுண்டர் மகன் சாமிநாதன்

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	
206	1	6 - 55.06	13.10	--	--	--	--	2024/0105/10/318023--2024/10/12/0001245D ------ Digitally signed:Selvakumar C Tahsildar 10/08/2024 02:46:05:PM
		6 - 55.06	13.10					

குறிப்பு :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **10/12/069/02470/120923** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 22-03-2025 அன்று 03:28:38 PM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின்2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

தாலுக்கா கலெக்டர்

– ஆம் பசலியில் மாவட்டம் மாவட்டம்

நில வரித் திட்டத்தின்படி புலனாரின் விபரம்.					கைப்பற்று தாருடைய பெயரும் எண்ணும் அல்லது அனுபோக தாருடைய பெயர்.	சாகுபடி யாளரின் பெயர்.	முதல் போகம்.				
நில அளவை எண்.	உட்பிரிவு எண்.	பரப்பு.	தீர்வை.	ஒரு போகம் அல்லது இரு போகம்.		நிலத்தின் சாகுபடி யாளது சாகுபடியாளரால் பயிரிடப்பட்டுள்ளதா.	எந்த மாதத்தில் பயிர் செய்யப்பட்டது எந்த மாதத்தில் அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிராக / அறுவடை யான பரப்பு.	உண்மையான மகசூல் ஆதாரம்.	விளைச்சல் ஆய்வு விபரத்தின் எண்.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
206	—	6.96	13.35	635	ஆ. ராஜேஸ்வரி மற்றும் 6 பேர்கள்						

இரண்டாம் போகம்.					திரண்டவகையில் பயிரிப்படாது உள்ள நிலத்தின் தன்மை மற்றும் பரப்பின் விவரங்கள் ஒவ்வொரு நில அளவை எண் அல்லது அதன் பகுதியில்.	பயிர் பார்வையிட்ட அலுவலர் குறிப்புகள்.
எந்த மாதத்தில் பயிர் செய்யப்பட்டது எந்த மாதத்தில் அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிராக / அறுவடையான பரப்பு.	உண்மையான மகசூல் ஆதாரம்.	விளைச்சல் ஆய்வு விபரத்தின் எண்.	இனம் அறுதல் பயிர்களில் (1) பயிரிடப்பட்ட பரப்பு (2) கைப்பற்றுதல் நிலமாக பரப்பு (3) முந்தைய மாதத்தில் பயிரிப்பட்ட பரப்பு. எனது பிரிவைச்சார்ந்த வகைக்கு நிர்ணய பரப்பளவுக்கு மிகாமல் பயிரிடப்பட்டுள்ளதா என்பதை பார்வையிட்ட அலுவலர் தெரிவிக்கவும்.	(அ) வண், (ஆ) பயனற்று பயிர் செய்ய இயலாத நிலம், (இ) விவசாயம் மற்றும் இதர காரியங்களுக்கு பயன் படுத்தப் படும் நிலம், (ஈ) பயிரிடுக்க தகிய (உ) நிலையான புல் தரைகளும் மற்றும் இதர மேய்ச்சல் நிலங்களும், (ஊ) விதைக்கப்பட்ட தரிசு பரப்பில் சேர்க்கப்படாத பரவலாய் பயிர்களும் தோப்புகளும், (எ) நடப்பாத் தரிகள் (ஏ) இதரதரிசு நிலங்கள்.
(13)	(14)	(15)	(16)	(17)	(18)	(18அ)

ANNEXURE V

Assistant Director * Geology and Mining * Erode

380/18-RF III-A-10-20,00,000- Cps.-GBP.-MDU.-7-2019.

ANNEXURE V1

Assistant Director Erode Geology and Mining

அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : ஈரோடு

வட்டம் : பெருந்துறை

கிராமம் : 069 எக்கட்டாம்பாளையம்

1. புல எண்	206	9. மண் வயனமும் ரகமும்	8 - 3
2. உட்பிரிவு எண்	1	10. மண் தரம்	5
3. பழைய புல உட்பிரிவு எண்	206--	11. தீர்வை (ரூ - ஹெ)	2.00
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஏர்)	6 - 55.06
5. அரசு / ரயத்துவாரி	ரயத்துவாரி	13. மொத்த தீர்வை (ரூ - பை)	13.10
6. நிலத்தின் வகை	புஞ்சை	14. பட்டா எண்	2470
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	-	16. பெயர்	1.சாமிநாதன்

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **10/12/069/206/1/120923** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

82 A

ANNEXURE VII

Assistant Director
Erode
Geology and Mining

இந்திய அரசாங்கம்
Government of India



சாமிநாதன் எ
Saminathan S
பிறந்த நாள்/DOB: 07/05/1966
ஆண்/ MALE

5086 7390 4941
VID: 9159 0372 5448 9451

எனது ஆதார், எனது அடையாளம்

Unique Identification Authority of India

Address:
S/O Sennimalaigoundar, 19, S K PALAYAM,
V RAMLINGAM, Chennimalai, Erode,
Tamil Nadu - 638051

5086 7390 4941
VID: 9159 0372 5448 9451

आयकर विभाग
INCOME TAX DEPARTMENT

भारत सरकार
GOVT. OF INDIA

S SWAMINATHAN

SENNIMALAIGOUNDER

07/05/1966

Permanent Account Number

BDAPS5573A

Signature



Assistant Director
Erode
Geology and Mining

In case this card is lost / found, kindly inform / return to :
Income Tax PAN Services Unit, UTIITSL
Plot No. 3, Sector 11, CBD Belapur,
Navi Mumbai - 400 614.

इस कार्ड के खोने/पाने पर कृपया सूचित करें/लौटाएं :
आयकर पैन सेवा यूनिट, UTIITSL
प्लाट नं. 3, सेक्टर 11, सीबीडी बेलापुर,
नवी मुंबई- 400 614.

ANNEXURE VIII

அண்ணாமலைப் பல்கலைக்கழகம்
ANNAMALAI UNIVERSITY

Assistant Director ... Geology and Mining



Reg. No. : 090895

அறிவியற்புலம்
FACULTY OF SCIENCE

மே, 2011 இல் நடத்திய தேர்வுகளில் பயன்பாட்டு நிலத்தியல் பிரிவில் வெங்கடகிரி பா கூடுதல் மதிப்புப்புள்ளிகள் 10.00 க்கு சராசரியாக 6.03 பெற்று இரண்டாம் வகுப்பில் தேர்ச்சியடைந்து முறையாக அமைக்கப்பெற்ற தேர்வுக்குழுவினர் சான்றளித்தபடி, **அறிவியல் நிறைஞர்** பட்டம் பெறுவதற்கு உரியவர் ஆகின்றார் என அண்ணாமலைப் பல்கலைக்கழக ஆளவை இதன்வழி அறிவிக்கின்றது.

The Senate of the ANNAMALAI UNIVERSITY hereby makes known that **VENGATAGIRI B** has been admitted to the Degree of **MASTER OF SCIENCE** in **APPLIED GEOLOGY,** he/she having secured **OGPA** of **6.03** out of **10.00** been certified by duly appointed Examiners at the Examination held in **MAY,2011** to be qualified to receive the same, and that he/she was placed in **SECOND CLASS.**

பல்கலைக்கழக முத்திரை பெறுகின்றது
Given under the seal of the University

அண்ணாமலைநகர்
Annamalainagar

நாள்:
Dated: 09/11/2011

துணை தேர்வாணையர் (கல்விசார்ந்த)
Dy. Controller of Examinations (Academic)

Dr.M.Rathinasabapathi
பதிவாளர்
Registrar

Dr.M.Ramanathan
துணை வேந்தர்
Vice-Chancellor

ANNEXURE 1X

Assistant Director
Erode
Geology and Mining

GOVERNMENT OF INDIA
MINISTRY OF LABOUR AND EMPLOYMENT
DIRECTORATE GENERAL OF MINES SAFETY

Certificate of Practical Experience granted by the Manager to a Candidate for a Manager's/ Surveyor's/ Mining foreman/ Mining Mate/ Blasters certificate of competency examination under Metalliferous Mines Regulation, 1961.

I, M.S.Pavel being the Manager of K.Pitchampatti Multicolour Granite Mine belong to M/s. Anupkumar Lohia do hereby certify that **Thiru. B.Vengadagiri** son of **Thiu. Balasubramanian** (whose signature is appended) worked in the above mine from 10.07.2012 to 15.08.2018 and is still working. During his term of work aforesaid, he has obtained practical experience as detailed overleaf. The duties connected with his work have involved continuous attendance at the mine and have been efficiently performed by him.

I believe him to be of good character and a fit and proper candidate to be examined for certificate of competency.

M.S. 15-8

(Signature with date and official seal)

(Mines Manager's class)

MANAGER (MINES)
MULTICOLOUR GRANITE MINE
K. PITCHAMPATTI,
KARUR - TALUK & DIST.

(Signature of Candidate)

State the name of the mineral works: Multi Colour Granite

Assistant Director
Erode
Geology and Mining

S. No.	Particulars of Practical experience (a)	Place of Experience (b) Opencast	Period of Practical experience (c)		Total Experience (e)		
			From	To	Yrs.	Months	Days
1.	As a trainee in drilling operation	Open cast	10.07.2012	24.10.2013	01	03	16
2.	As a trainee in deep hole blasting operation	Open cast	25.10.2013	31.12.2014	01	02	07
3	Production incharge quality control and Supervisor of Earth moving Mining Machinery	Open cast ———	01.01.2015	15.08.2018	3	7	14
GRAND TOTAL					**06**	**1**	**5**
In words : Six years one month ten days					**Six**	**One**	**five**

In below ground working	In open cast working	In all
Nil	Average monthly output 250m³	250m³
Nil	Average daily employment 25Nos	25Nos

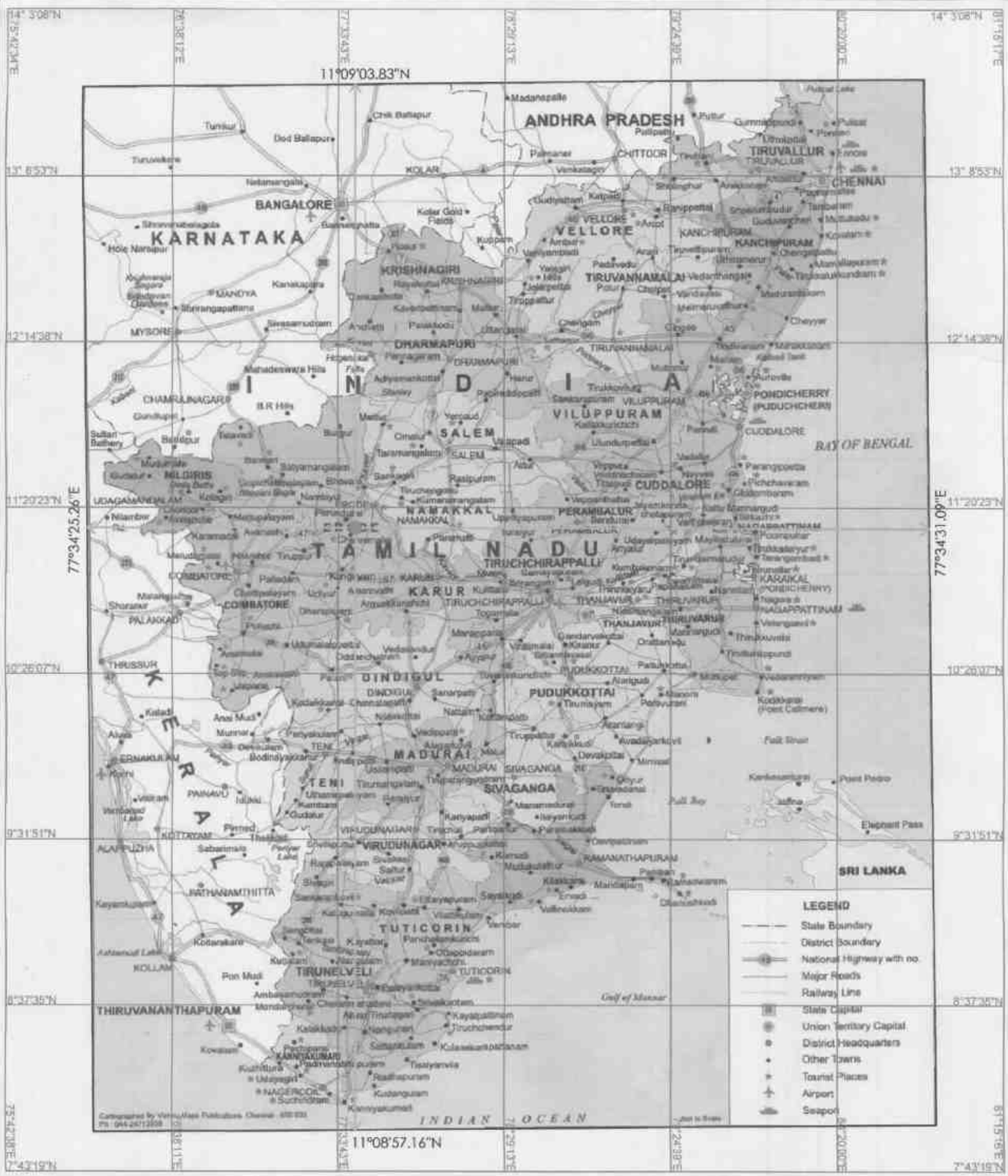
Note: The average employment is less because this is mechanized mines having deep hole drilling, blasting and Heavy Earth Moving Machineries operation.

(Signature of Candidate)

(Signature with date and official seal)

(Mines Manager 1st class)

MANAGER (MINES)
MULTICOLOUR GRANITE MINE
K. PITCHAMPATTI,
KARUR - TALUK & DIST.



Assistant Director
Geology and Mining
Erode

INDEX

Q.L.APPLIED AREA :

TOPO SHEET NO. : 58 E/12

LATITUDE : 11°08'57.16"N to 11°09'03.83"N
LONGITUDE : 77°34'25.26"E to 77°34'31.09"E

APPLICANT:

Thiru. S.SAMINATHAN,
S/o. SENNIMALAIGOUNDER,
No.19, SELLAPPAGOUNDANPALAYAM,
V.RAMALINGAPURAM,
CHENNIMALAI,
ERODE DISTRICT - 638 051.

LOCATION OF Q.L. APPLIED AREA:

S.F.Nos	: 206/1 (PART)
EXTENT	: 2.53.8 Ha.
VILLAGE	: EKKATTAMPALAYAM,
TALUK	: PERUNDURAI,
DISTRICT	: ERODE,
STATE	: TAMIL NADU.

PLATE NO - I

DATE OF SURVEY : 13.03.2025

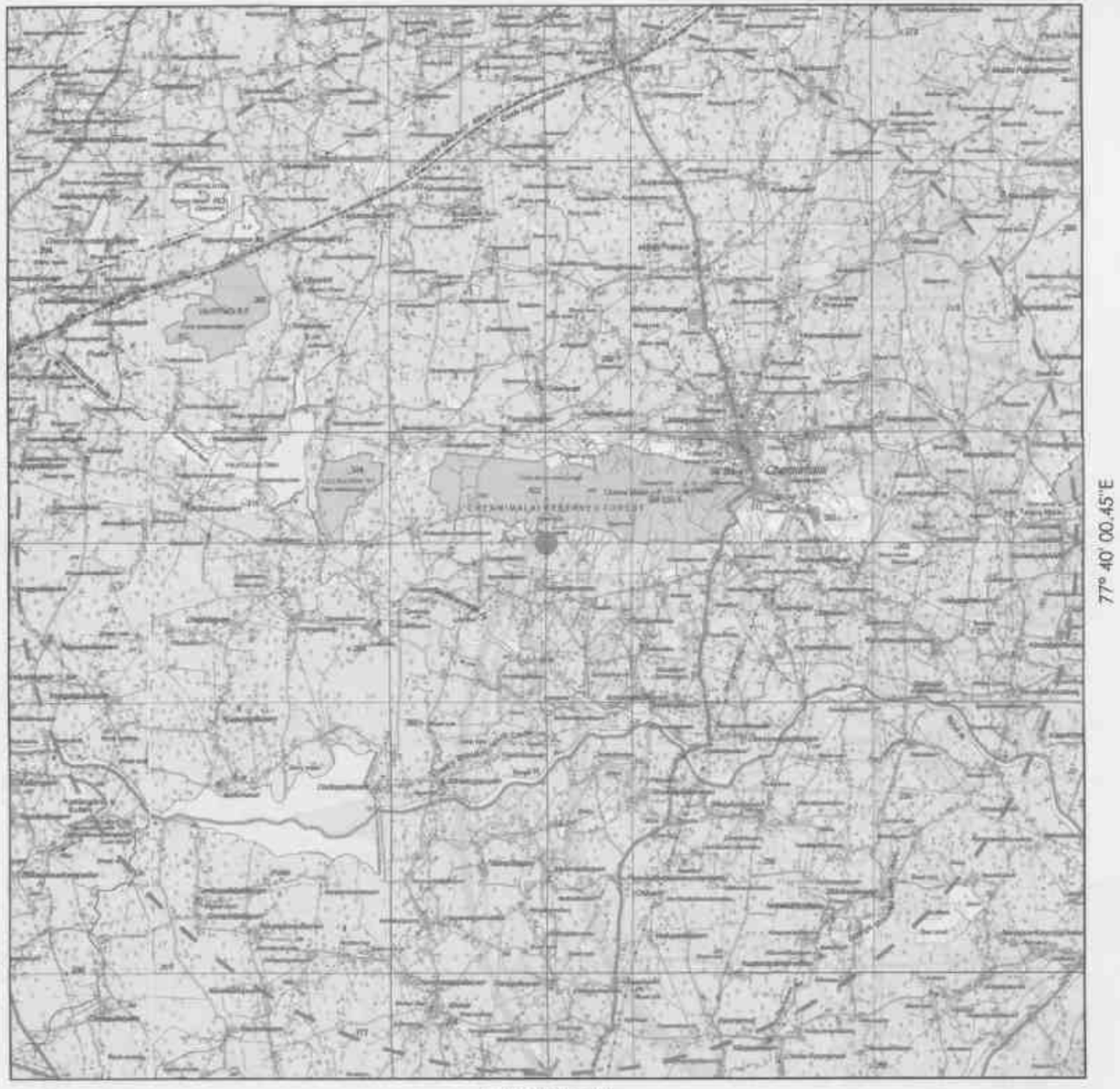
LOCATION PLAN

SCALE. 1:24,00,000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

D.VENGADAGIRI M.Sc.,
QUALIFIED PERSON
(UNDER RULE 15(1)(c)and(e)of MCR 2016)



TOPO SHEET NO. : 58 E/12

LATITUDE : 11°08'57.16"N to 11°09'03.83"N
LONGITUDE : 77°34'25.26"E to 77°34'31.09"E

10km RADIUS :

Q.L. APPLIED AREA :

INDEX

Express highway: with toll; with bridge; with distance stone
Roads metalled: according to importance
Roads, double carriageway; according to importance
Unmetalled road. Cart-track. Pack-track with pass. Foot-path
Streams: with track in bed; undefined. Canal
Dams: masonry or rock-filled; earthwork. Weir
River; dry with water channel; with island & rocks. Tidal river
Submerged rocks. Shoal. Swamp. Reeds
Wells: lined; unlined. Tubewell. Spring. Tanks perennial; dry
Embankments: road or rail; tank. Broken ground
Railways, broad gauge: double; single with station; under constrn.
Railways, other gauges: double; single with distance stone; do.
Mineral line or tramway. Kiln. Cutting with tunnel
Contours with sub-features. Rocky slopes. Cliffs
Sand features: (1)flat. (2)sand-hills(permanent). (3)dunes(shifting).
Towns or Villages: inhabited; deserted. Fort
Huts: permanent; temporary. Tower. Antiquities
Temple. Chhatri. Church. Mosque. Idgah. Tomb. Graves
Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage
Mine. Vine on trellis. Grass. Scrub
Palms: palmyra; other. Plantain. Conifer. Bamboo. Other trees
Areas: cultivated; Wooded. Surveyed trees
Boundary, international
Boundary, state: demarcated; undemarcated
Boundary, district; subdivision; tahsil or taluk; forest
Boundary pillers: surveyed; unlocated
Heights. triangulated: station: point; approximate
Bench-mark: geodetic; tertiary; canal
Post office. Telegraph office. Overhead tank
Rest house or inspection bungalow. Circuit house. Police station
Camping Ground. Forest: reserved; protected
Spaces names: administrative; locality or tribal
Hospital. Dispensary. Veterinary. Hospital/Dispensary
Aerodrome. Helipad. Tourist site
Powerline: with pylons surveyed; with poles unsurveyed



Assistant Director
Geology and Mining
Erode

APPLICANT:

Thiru. S.SAMINATHAN,
S/o. SENNIMALAIGOUNDER,
No.19, SELLAPPAGOUNDANPALAYAM,
V.RAMALINGAPURAM,
CHENNIMALAI, ERODE DISTRICT - 638 051.

LOCATION OF Q.L. APPLIED AREA:

S.F.Nos : 206/1 (PART)
EXTENT : 2.53.8 Ha.
VILLAGE : EKKATTAMPALAYAM,
TALUK : PERUNDURAI,
DISTRICT : ERODE,
STATE : TAMIL NADU.

PLATE NO - I-A

DATE OF SURVEY : 13.03.2025

TOPO SKETCH OF QUARRY LEASE APPLIED AREA FOR 10Km RADIUS

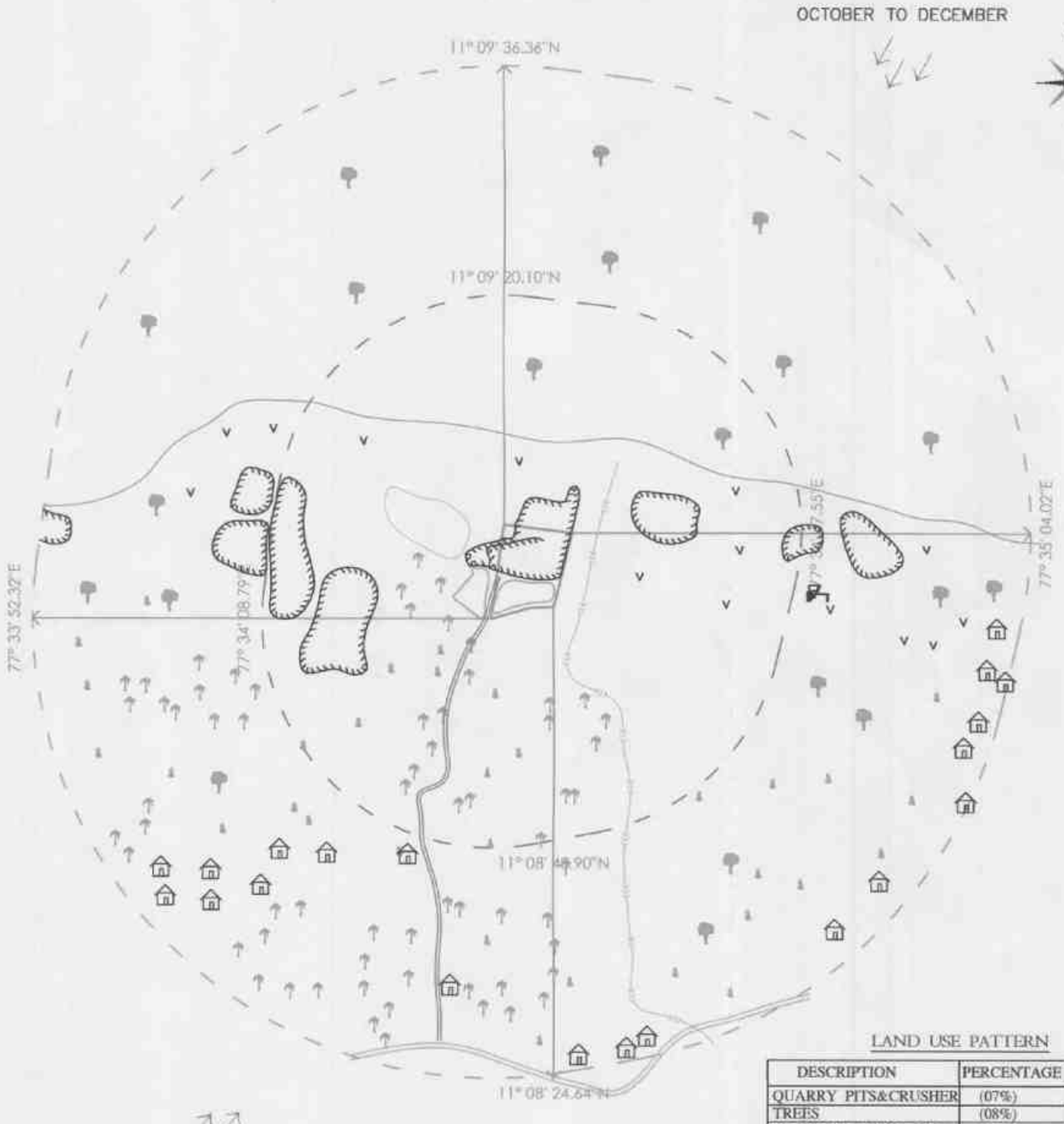
SCALE. 1:1,00,000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

B.VENKATACHARI, M.Sc.,
QUALIFIED PERSON
[UNDER RULE 15(1)(a)and(b)of MCR 2016]

89 A



TOPO SHEET NO. : 58 E/12

LATITUDE : 11°08'57.16"N to 11°09'03.83"N
LONGITUDE : 77°34'25.26"E to 77°34'31.09"E

INDEX

- Q.L. APPLIED AREA
- 1 Km RADIUS
- 500m RADIUS
- SEASONAL AGRICULTURE LAND
- TREES
- HABITATION
- QUARRY PIT & CRUSHER & DUMP
- WIND DIRECTION
- PANCHAYAT ROAD
- APPROACH ROAD
- ELEVATED AREA
- BARREN LAND
- ODAI & KUTTAI

Assistant Director Geology Erode

APPLICANT:

Thiru. S.SAMINATHAN,
S/o. SENNIMALAIGOUNDER,
No.19, SELLAPPAGOUNDANPALAYAM,
V.RAMALINGAPURAM,
CHENNIMALAI, ERODE DISTRICT - 638 051.

LOCATION OF Q.L. APPLIED AREA:

S.F.Nos : 206/1 (PART)
EXTENT : 2.53.8 Ha.
VILLAGE : EKKATTAMPALAYAM,
TALUK : PERUNDURAI,
DISTRICT : ERODE,
STATE : TAMIL NADU.

PLATE NO - I-B

DATE OF SURVEY : 13.03.2025

ENVIRONMENTAL & LAND USE PLAN

SCALE. 1:10,000

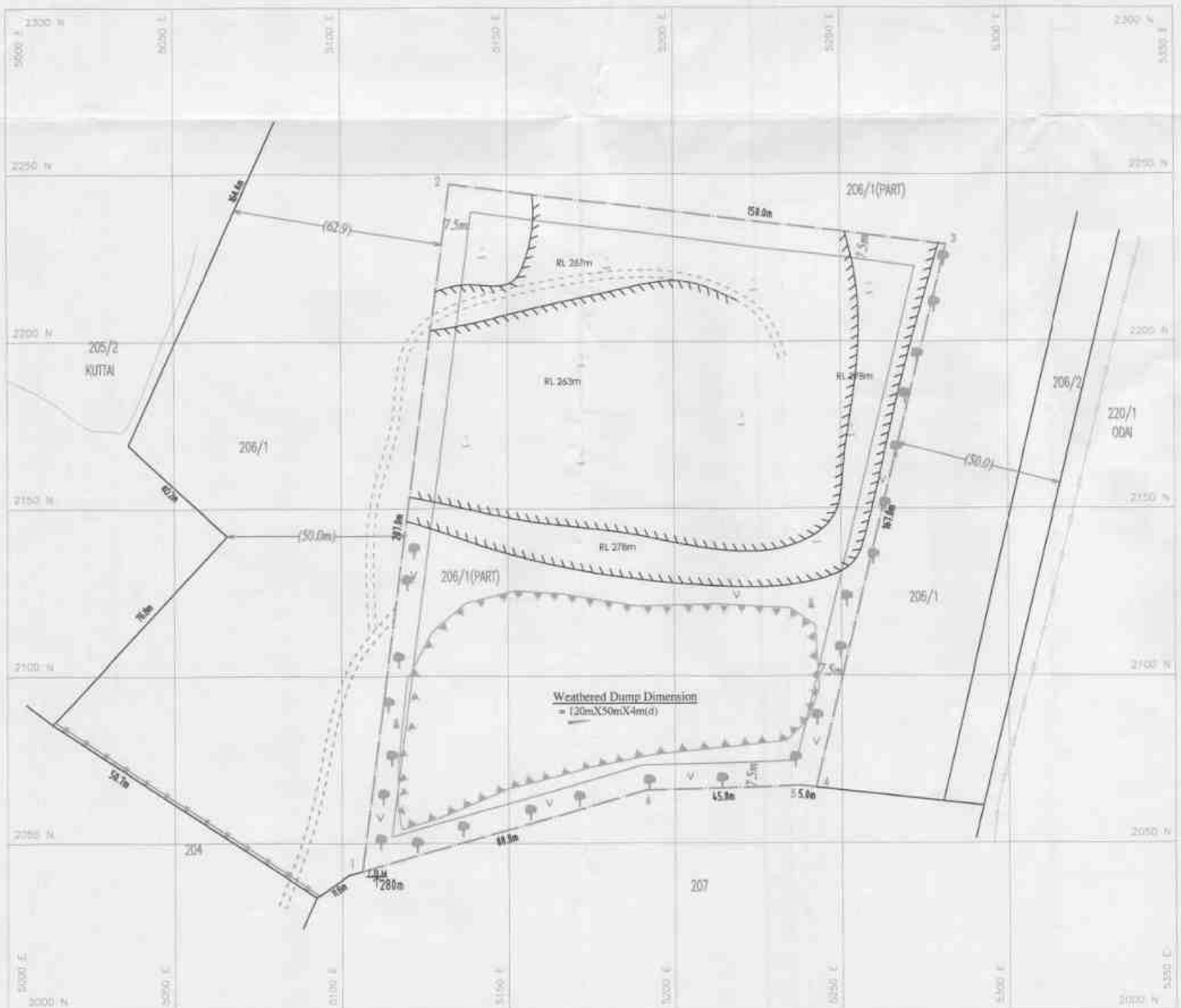
PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

B.YUVARAJAGIRI, M.Sc.,
QUALIFIED PERSON
(UNDER RULE 15(1)(a)and(b)of MCR 2016)

LAND USE PATTERN

DESCRIPTION	PERCENTAGE	INDEX
QUARRY PITS&CRUSHER	(07%)	
TREES	(08%)	
SEASONAL AGRI LAND	(37%)	
ROADS	(05%)	
HABITATION	(03%)	
BARREN LAND	(16%)	
ELEVATED AREA	(22%)	
ODAI&KUTTAI	(02%)	
TOTAL	100%	



BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	11° 08' 57.16"N	77° 54' 25.26"E
2	11° 09' 03.83"N	77° 54' 26.19"E
3	11° 09' 03.23"N	77° 54' 31.09"E
4	11° 08' 57.94"N	77° 54' 29.73"E
5	11° 08' 57.96"N	77° 54' 29.38"E
6	11° 08' 57.93"N	77° 54' 28.03"E

DATUM : UTM-WGS84, ZONE 43 NORTH

INDEX

- Q.L. APPLIED AREA BOUNDARY
- 50m & 7.5m SAFETY DISTANCE
- TBM TEMPORARY BENCH MARK
- V V GRAVEL
- ROUGHSTONE
- QUARRY PIT
- SHRUBS
- QUARRY HAUL ROAD
- APPROACH ROAD
- ODAI & KUTTAI
- GREEN BELT
- BARBED WIRE FENCING
- WEATHERED DUMP

APPLICANT:

Thiru. S.SAMINATHAN,
S/o. SENNIMALAIGOUNDER,
No.19, SELLAPPAGOUNDANPALAYAM,
V.RAMALINGAPURAM,
CHENNIMALAI,
ERODE DISTRICT - 638 051.

LOCATION OF Q.L. APPLIED AREA:

S.F.Nos : 206/1 (PART)
EXTENT : 2.53.8 Ha.
VILLAGE : EKKATTAMPALAYAM.
TALUK : PERUNDURAI.
DISTRICT : ERODE.
STATE : TAMIL NADU.

PLATE NO - II

DATE OF SURVEY : 13.03.2025

QUARRY LEASE PLAN & SURFACE PLAN

SCALE. 1:1000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

B.V.RAMACHANDRAN, M.Sc.,
QUALIFIED PERSON
(UNDER RULE 10(e)(ii) of MCR 2018)

Assistant Director
Erode
Geology and Mining

206/1(PART)

X

Y

A

B

C

D

205/2
KUTTAI

206/1

206/2

220/1
ODAI

204

207

(62.9)

(50.0m)

(50.0)

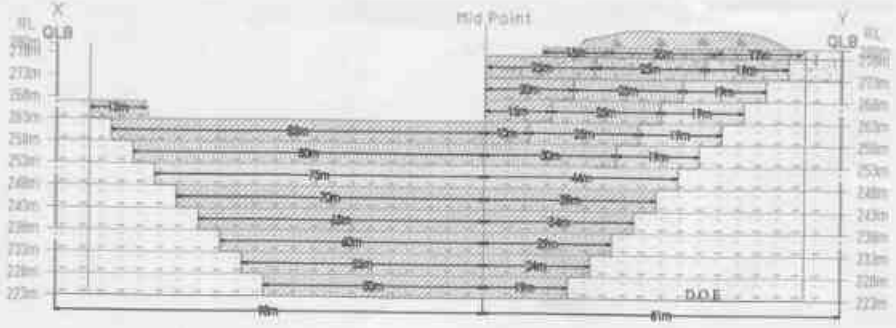
7.5m

SITE SERVICES
(Proposed)
A - OFFICE
B - STORE ROOM
C - FIRST AID ROOM
D - REST SHELTER
E - TOILET

INDEX

- Q.L. APPLIED AREA BOUNDARY
- 50m & 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- ROUGHSTONE
- STRIKE & DIP
- QUARRY PIT
- SHRUBS
- QUARRY HAUL ROAD
- APPROACH ROAD
- ODAI & KUTTAI
- GREEN BELT
- BARBED WIRE FENCING
- WEATHERED DUMP
- D.O.E DEPTH OF ESTIMATION

SECTION ALONG X-Y

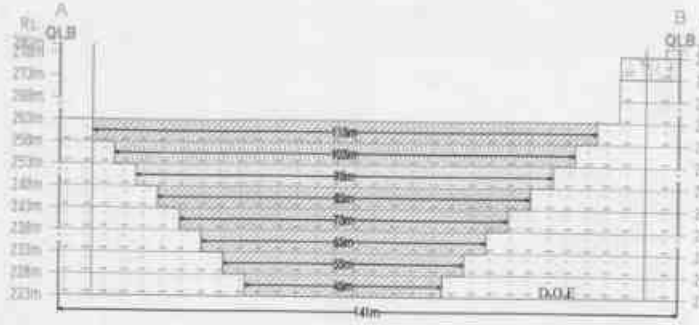


Existing Pit Dimension (max)
= 140mX110mX17m(d)

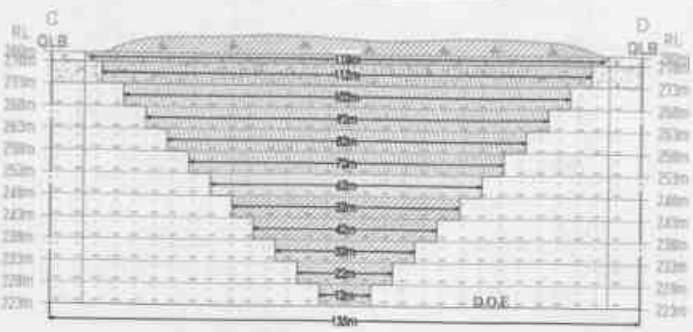
Weathered Dump Dimension
= 120mX50mX4m(d)

I - yr Proposed area to be Quarried
II - yr Proposed area to be Quarried
III - yr Proposed area to be Quarried
IV - yr Proposed area to be Quarried
V - yr Proposed area to be Quarried

SECTION ALONG A-B



SECTION ALONG C-D



APPLICANT:

Thiru. S.SAMINATHAN,
S/o. SENNIMALAIGOUNDER,
No.19, SELLAPPAGOUNDANPALAYAM,
V.RAMALINGAPURAM,
CHENNIMALAI,
ERODE DISTRICT - 638 051.

LOCATION OF Q.L. APPLIED AREA:

S.F.Nos : 206/1 (PART)
EXTENT : 2.53.8 Ha.
VILLAGE : EKKATTAMPALAYAM,
TALUK : PERUNDURAI,
DISTRICT : ERODE,
STATE : TAMIL NADU.

PLATE NO - III

DATE OF SURVEY : 13.03.2025

TOPOGRAPHY, GEOLOGICAL PLAN, YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS

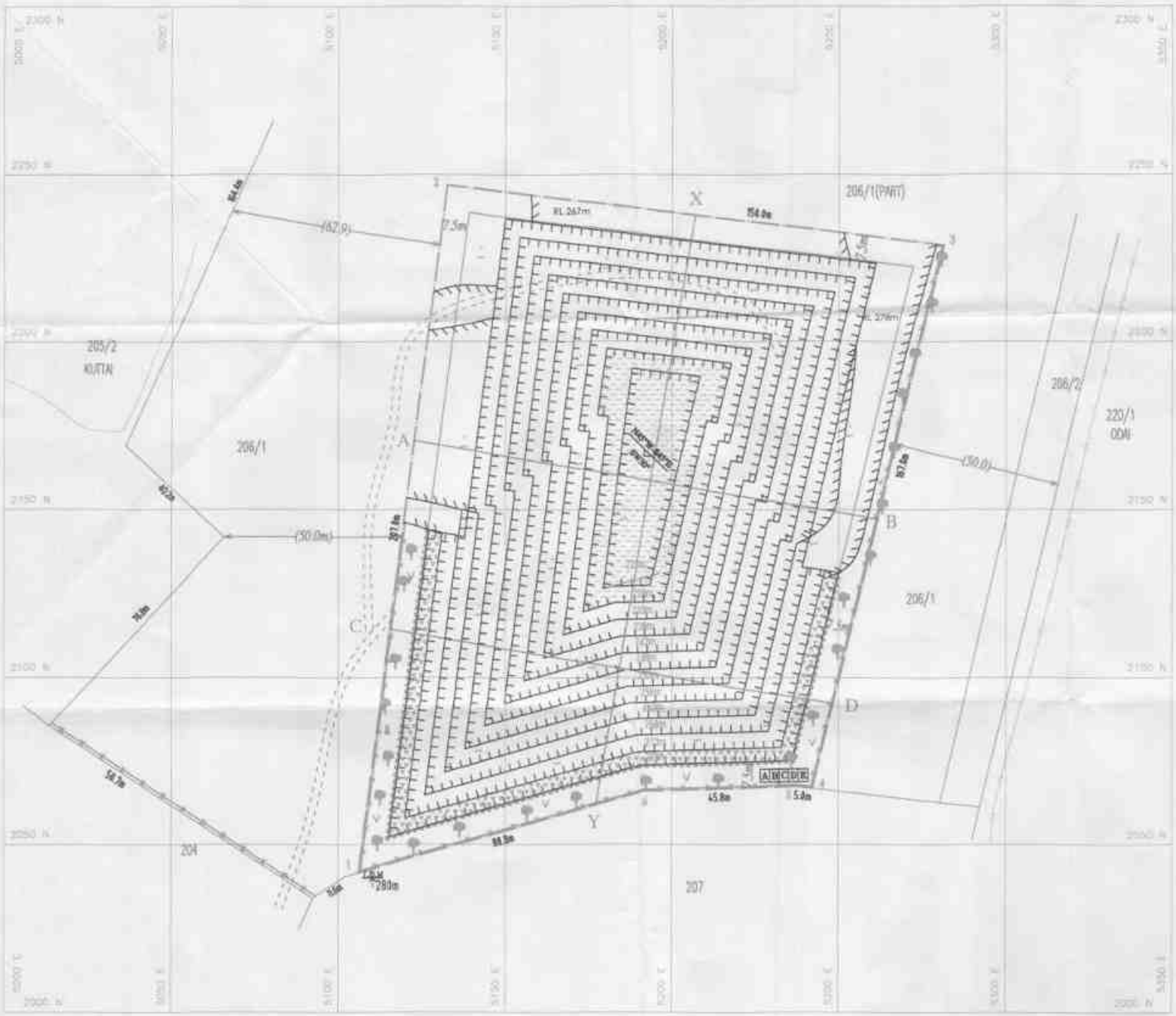
SCALE 1:1000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT.

UNDER RULE [illegible] of MCR 2018)

92 A



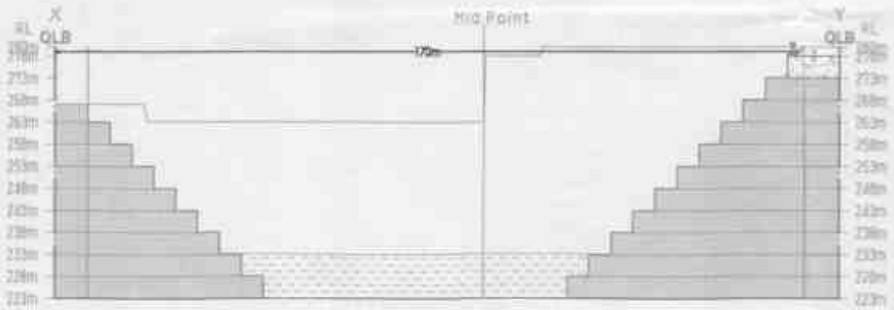
Assistant Director
Erode
Mining

SITE SERVICES
A - OFFICE
B - STORE ROOM
C - FIRST AID ROOM
D - REST SHELTER
E - TOILET

INDEX

- Q.L. APPLIED AREA BOUNDARY
- 50m & 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- ROUGHSTONE
- STRIKE & DIP
- QUARRY PIT
- SHRUBS
- QUARRY HAUL ROAD
- APPROACH ROAD
- ODAI & KUTTAI
- GREEN BELT
- BARBED WIRE FENCING
- EXISTING LAND FORM
- SOIL LAYER
- REHABILITATED LAND FORM
- PROPOSED GARLAND DRAIN
- OLD SURFACE LEVEL
- FINISHED SURFACE LEVEL
- RAIN WATER STORAGE

SECTION ALONG X-Y

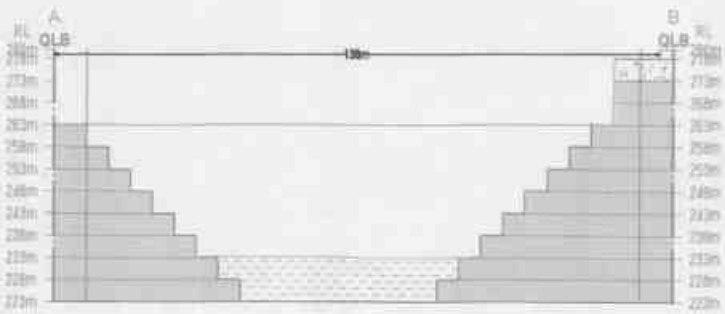


Proposed Pit Dimension (max)
= 170mX138mX57m(d)

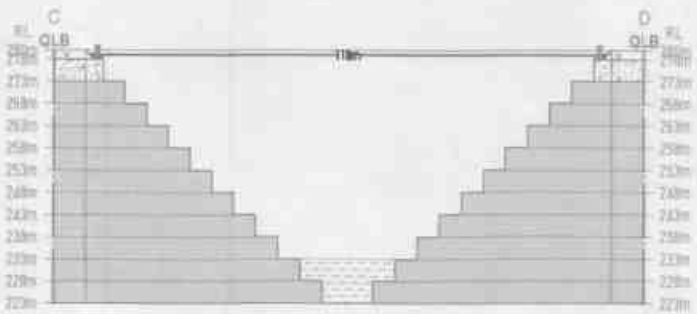
LAND USE PATTERN

DESCRIPTION	PRESENT AREA (IN Ha)	AREA AT THE END OF LEASE PERIOD (Ha)
QUARRYING PIT	1.51.0	2.25.0
DUMP	0.60.0	Nil
INFRASTRUCTURE	Nil	0.01.0
ROADS	0.02.0	0.02.0
GREEN BELT	0.25.0	0.25.0
UN-UTILIZED AREA	0.15.8	0.00.8
TOTAL	2.53.8	2.53.8

SECTION ALONG A-B



SECTION ALONG C-D



APPLICANT:

Thiru. S.SAMINATHAN,
S/o. SENNIMALAIGOUNDER,
No.19, SELLAPPAGOUNDANPALAYAM,
V.RAMALINGAPURAM,
CHENNIMALAI,
ERODE DISTRICT - 638 051.

LOCATION OF Q.L. APPLIED AREA:

S.F.Nos : 206/1 (PART)
EXTENT : 2.53.8 Ha.
VILLAGE : EKKATTAMPALAYAM.
TALUK : PERUNDURAI.
DISTRICT : ERODE.
STATE : TAMIL NADU.

PLATE NO - IV

DATE OF SURVEY : 13.03.2025

PROGRESSIVE QUARRY CLOSURE PLAN & SECTIONS

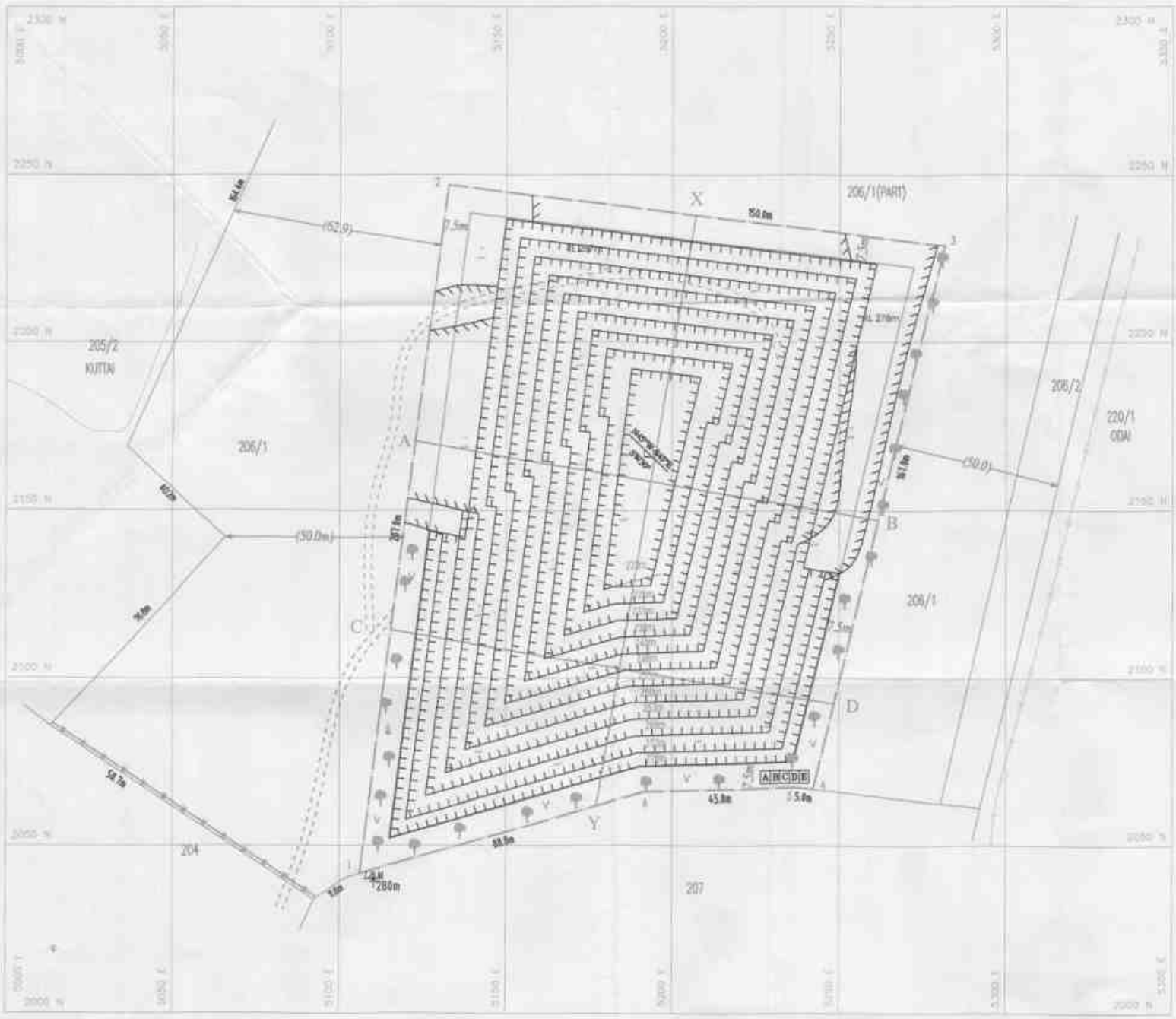
SCALE. 1:1000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

QUALIFIED PERSON
(UNDER [illegible] of MCR 2018)

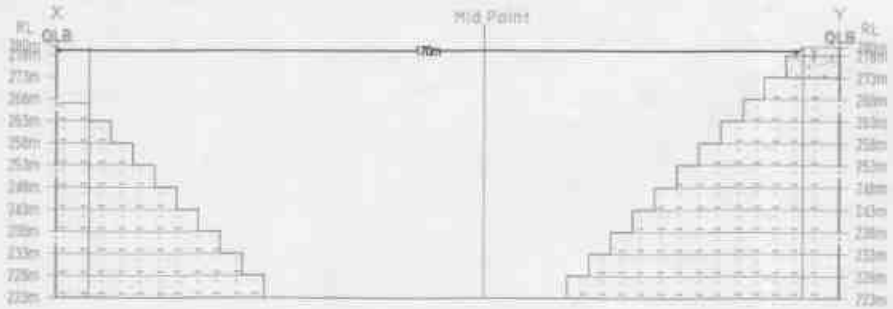
Assistant Director
Erode.
Geology and Mining



SITE SERVICES
A - OFFICE
B - STORE ROOM
C - FIRST AID ROOM
D - REST SHELTER
E - TOILET

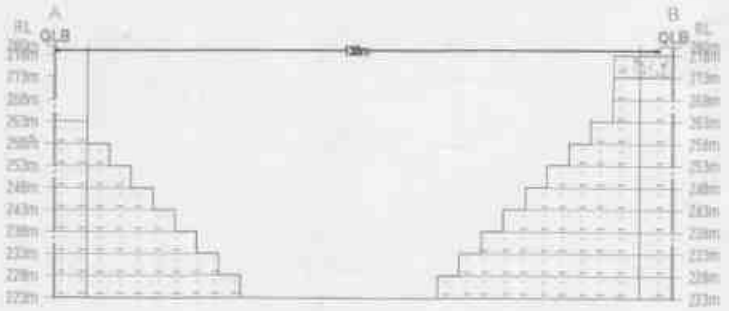
INDEX
- Q.L. APPLIED AREA BOUNDARY
- 50m & 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- ROUGHSTONE
- STRIKE & DIP
- QUARRY PIT
- SHRUBS
- QUARRY HAUL ROAD
- APPROACH ROAD
- ODAI & KUTTAI
- GREEN BELT

SECTION ALONG X-Y

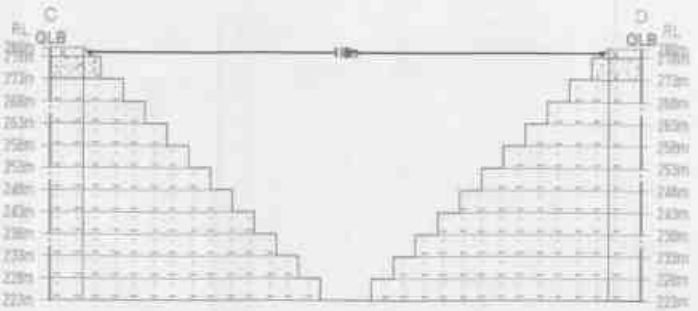


Ultimate Pit Dimension (max)
= 170mX138mX57m(d)

SECTION ALONG A-B



SECTION ALONG C-D



APPLICANT:

Thiru. S.SAMINATHAN,
S/o. SENNIMALAIGOUNDER,
No.19, SELLAPPAGOUNDANPALAYAM,
V.RAMALINGAPURAM,
CHENNIMALAI,
ERODE DISTRICT - 638 051.

LOCATION OF Q.L. APPLIED AREA:

S.F.Nos : 206/1 (PART)
EXTENT : 2.53.8 Ha.
VILLAGE : EKKATTAMPALAYAM.
TALUK : PERUNDURAI.
DISTRICT : ERODE.
STATE : TAMIL NADU.

PLATE NO - V

DATE OF SURVEY : 13.03.2025

CONCEPTUAL
PLAN & SECTIONS

SCALE. 1:1000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

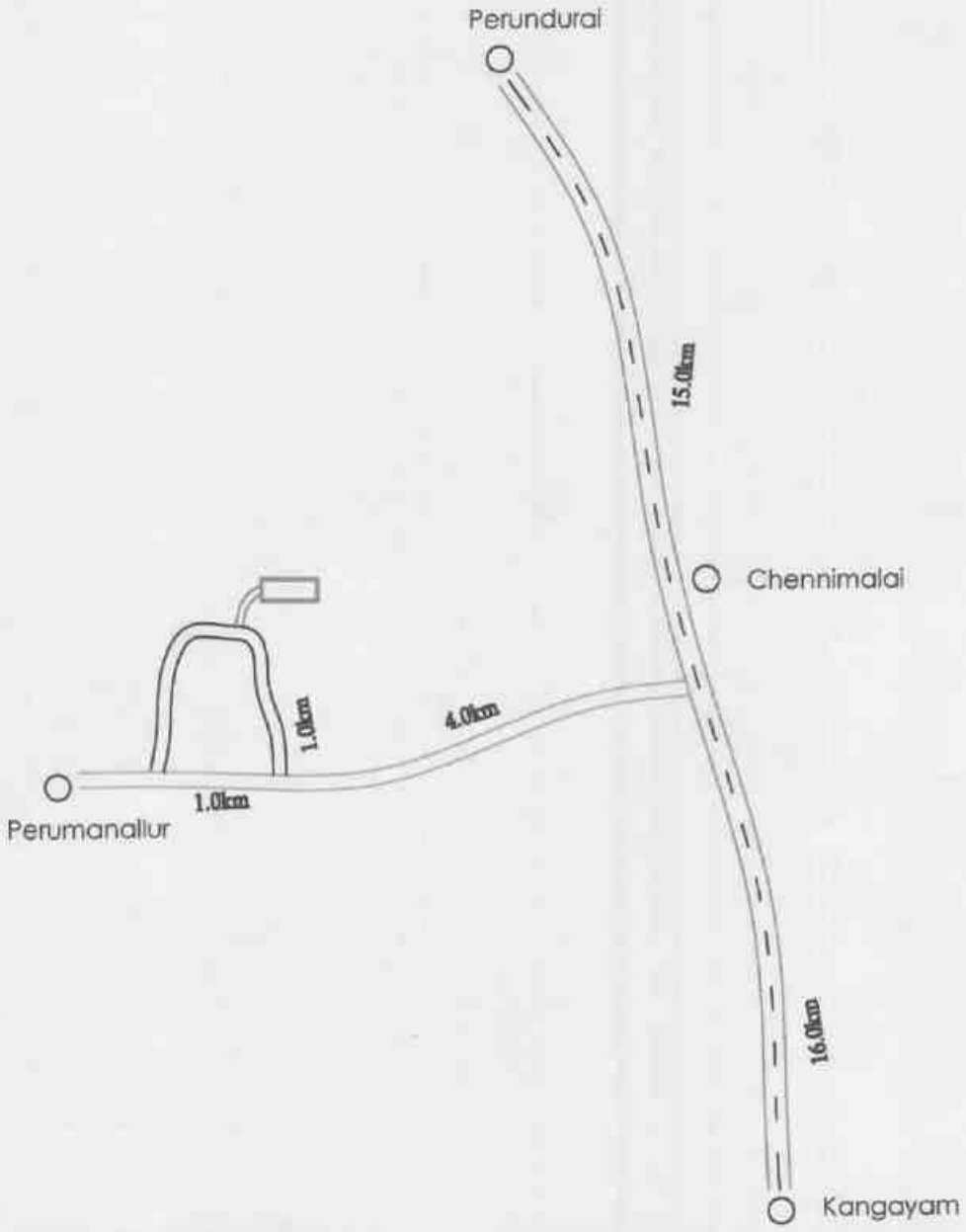
M.Sc.,
ERODE
(UNDER [illegible] MCR 2018)

PLATE NO : I-C

ROUTE MAP

Asst. Director Erode Geology and Mining





INDEX

LEASE APPLIED AREA	
SH ROAD	
PANCHAYAT ROAD	
APPROACH ROAD	
CART TRACK	

APPLICANT:

Thiru. S.SAMINATHAN,
S/o. SENNIMALAIGOUNDER,
No.19,
SELLAPPAGOUNDANPALAYAM,
V.RAMALINGAPURAM,
CHENNIMALAI,
ERODE DISTRICT - 638 051.

LOCATION OF Q.L. A. AREA:

S.F.Nos : 206/1 (PART)
EXTENT : 2.53.8 Ha,
VILLAGE : EKKATTAMPALAYAM,
TALUK : PERUNDURAI,
DISTRICT : ERODE.
STATE : TAMIL NADU.

SCALE :

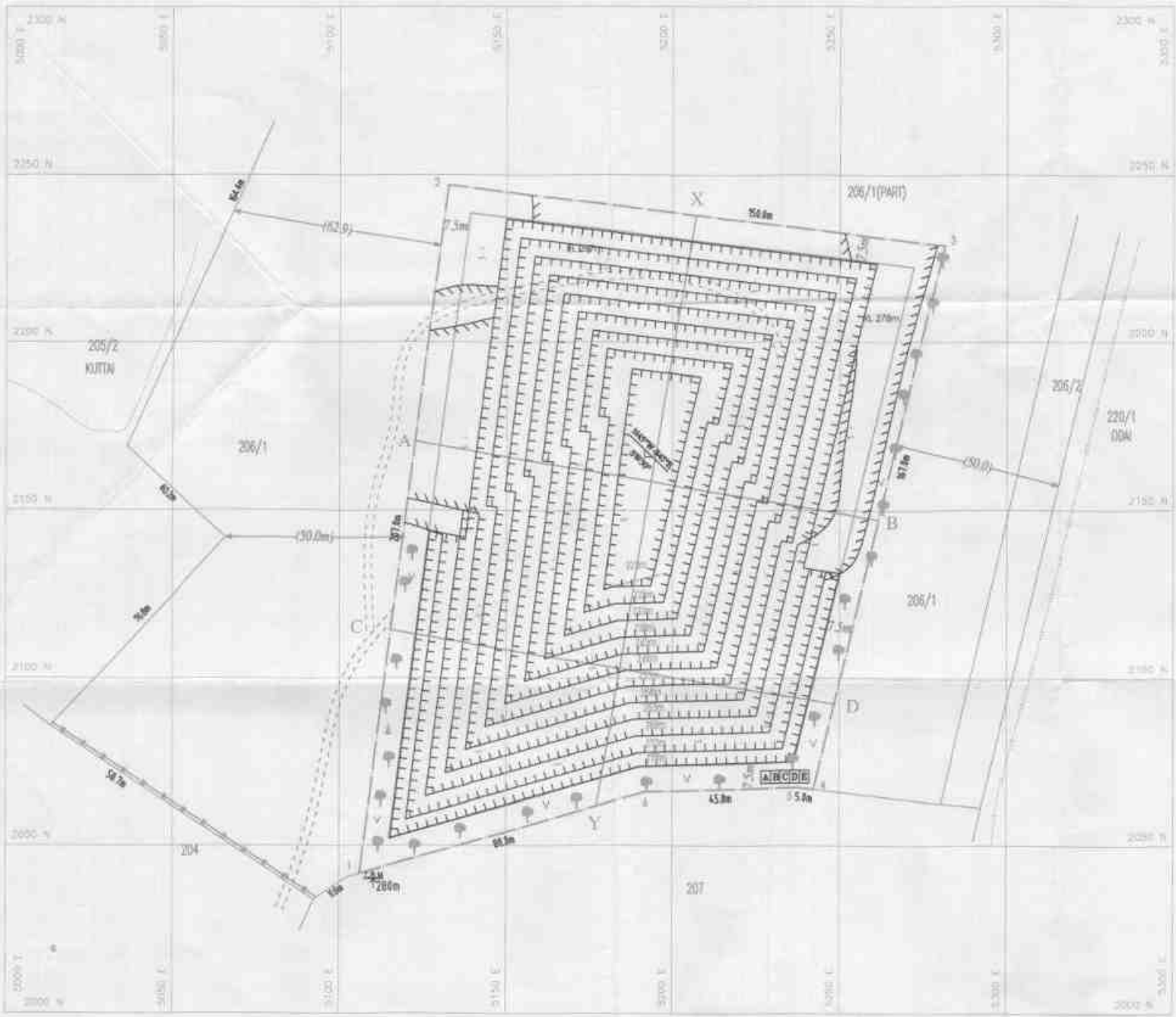
NOT TO SCALE

PREPARED BY:

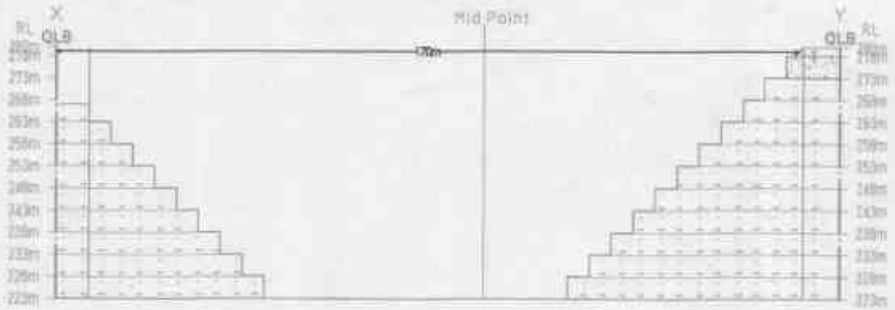
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

B.VENKADAGIRI M.Sc.,
QUALIFIED PERSON
(UNDER RULE 15(1)(a)and(b)of MCR 2016)

Assistant Director
Erode
Geology and Mining

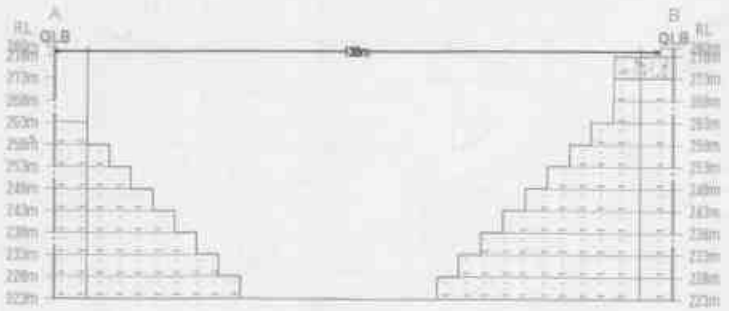


SECTION ALONG X-Y

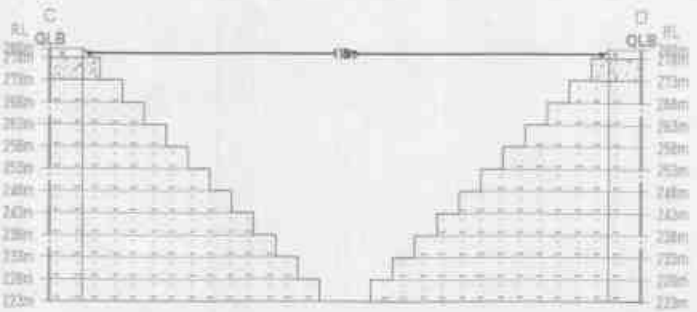


Ultimate Pit Dimension (max)
= 170mX138mX57m(d)

SECTION ALONG A-B



SECTION ALONG C-D



APPLICANT:

Thiru. S.SAMINATHAN,
S/o. SENNIMALAIGOUNDER,
No.19, SELLAPPAGOUNDANPALAYAM,
V.RAMALINGAPURAM,
CHENNIMALAI,
ERODE DISTRICT - 638 051.

LOCATION OF Q.L. APPLIED AREA:

S.F.Nos : 206/1 (PART)
EXTENT : 2.53.8 Ha.
VILLAGE : EKKATTAMPALAYAM,
TALUK : PERUNDURAI,
DISTRICT : ERODE,
STATE : TAMIL NADU.

PLATE NO - V

DATE OF SURVEY : 13.03.2025

CONCEPTUAL PLAN & SECTIONS

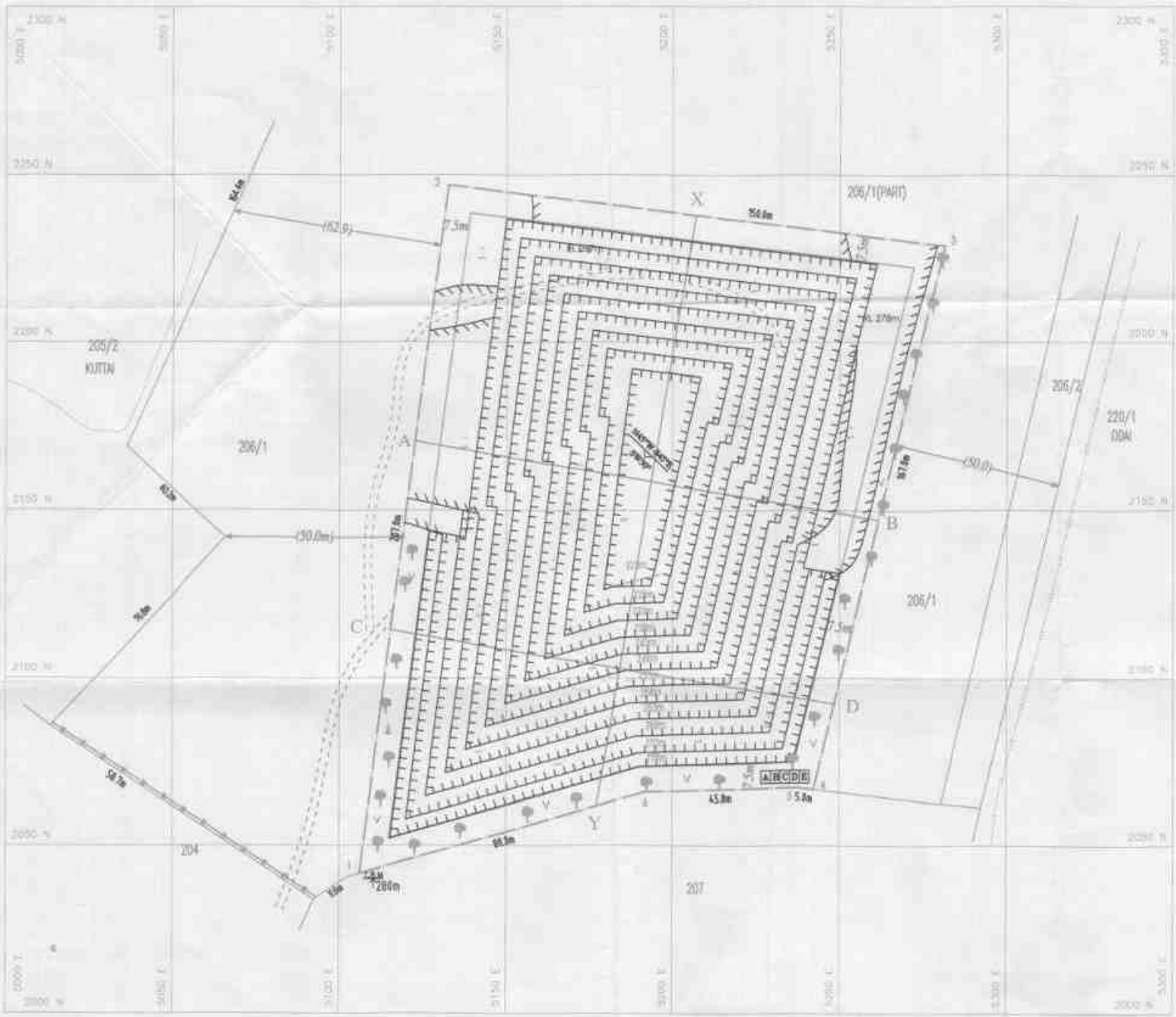
SCALE. 1:1000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

(UNDER Rule 22(1)(a)(ii) of MCR 2016)

Assistant Director
Erode
Geology and Mining



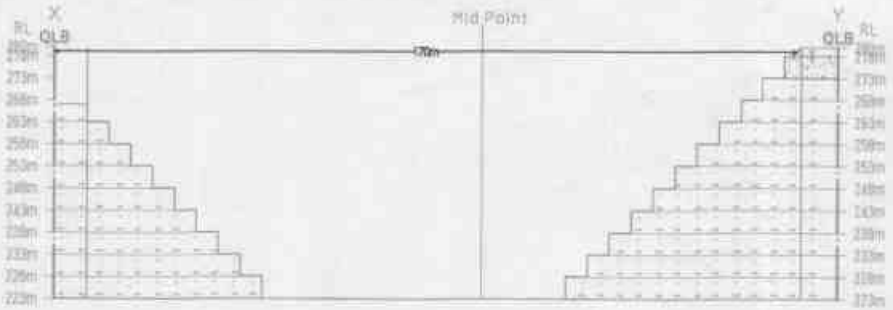
SITE SERVICES

A - OFFICE
B - STORE ROOM
C - FIRST AID ROOM
D - REST SHELTER
E - TOILET

INDEX

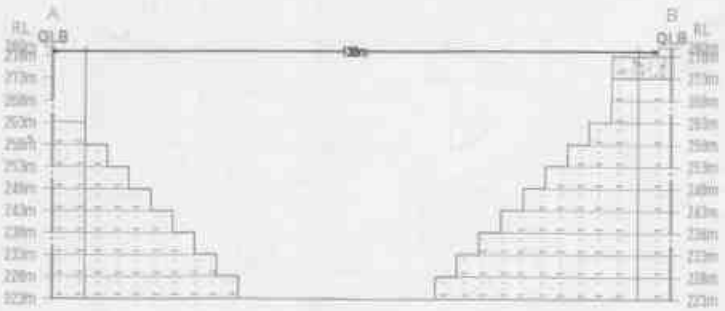
- Q.L. APPLIED AREA BOUNDARY
- 50m & 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- ROUGHSTONE
- STRIKE & DIP
- QUARRY PIT
- SHRUBS
- QUARRY HAUL ROAD
- APPROACH ROAD
- ODAI & KUTTAI
- GREEN BELT

SECTION ALONG X-Y

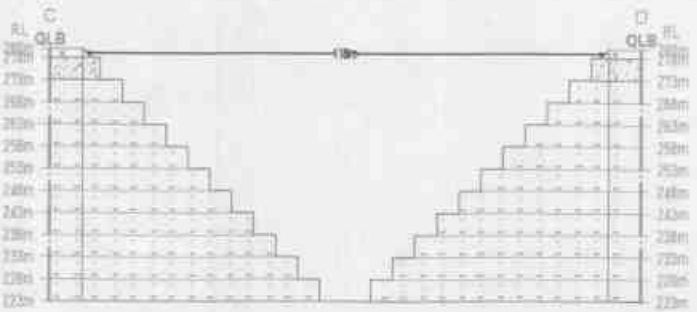


Ultimate Pit Dimension (max)
= 170mX138mX57m(d)

SECTION ALONG A-B



SECTION ALONG C-D



APPLICANT:

Thiru. S.SAMINATHAN,
S/o. SENNIMALAIGOUNDER,
No.19, SELLAPPAGOUNDANPALAYAM,
V.RAMALINGAPURAM,
CHENNIMALAI,
ERODE DISTRICT - 638 051.

LOCATION OF Q.L. APPLIED AREA:

S.F.Nos : 206/1 (PART)
EXTENT : 2.53.8 Ha.
VILLAGE : EKKATTAMPALAYAM,
TALUK : PERUNDURAI,
DISTRICT : ERODE,
STATE : TAMIL NADU.

PLATE NO - V

DATE OF SURVEY : 13.03.2025

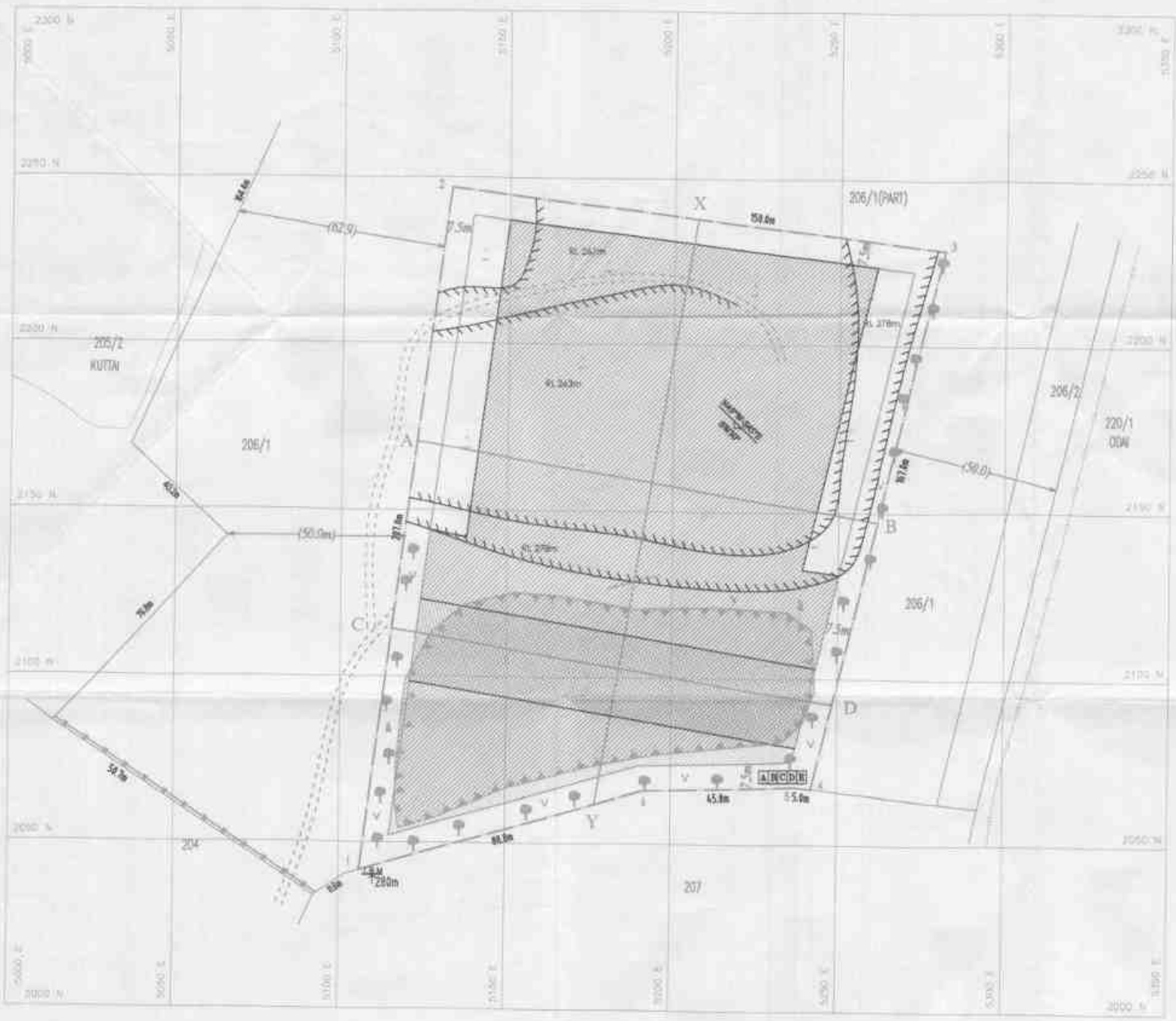
CONCEPTUAL PLAN & SECTIONS

SCALE. 1:1000

PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

(UNDER Rule 22(3)(a) of MCR 2016)

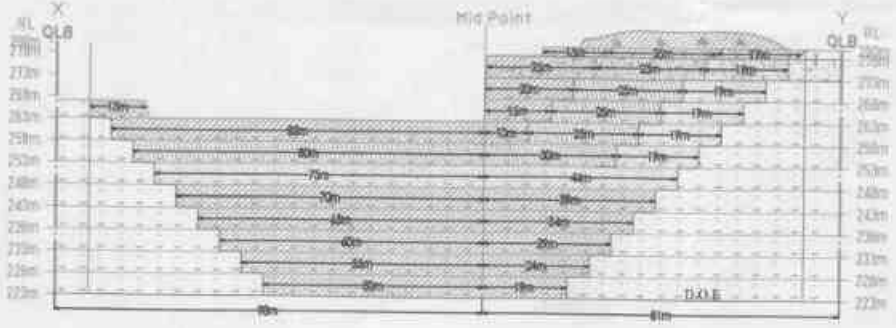


SITE SERVICES
(Proposed)
A - OFFICE
B - STORE ROOM
C - FIRST AID ROOM
D - REST SHED FOR
E - TOILET

INDEX

- Q.L. APPLIED AREA BOUNDARY
- 50m & 7.5m SAFETY DISTANCE
- TBM TEMPORARY BENCH MARK
- GRAVEL
- ROUGHSTONE
- STRIKE & DIP
- QUARRY PIT
- SHRUBS
- QUARRY HAUL ROAD
- APPROACH ROAD
- ODAI & KUTTAI
- GREEN BELT
- BARBED WIRE FENCING
- WEATHERED DUMP
- D.O.E DEPTH OF ESTIMATION

SECTION ALONG X-Y

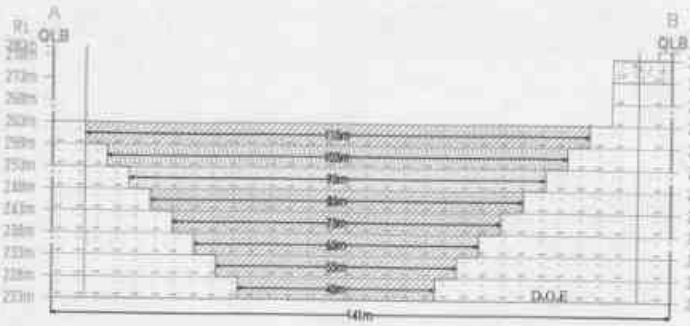


Existing Pit Dimension (max)
= 140mX110mX17m(d)

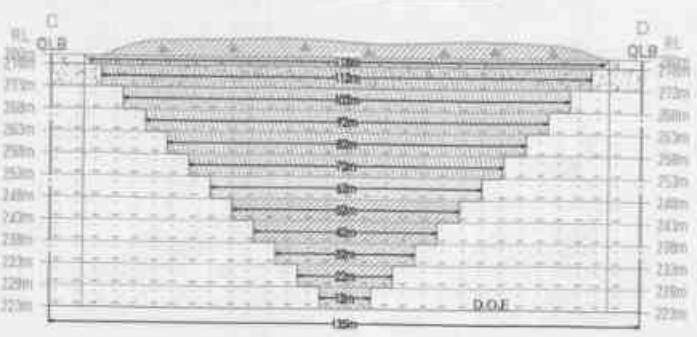
Weathered Dump Dimension
= 120mX50mX4m(d)

I - yr Proposed area to be Quarried
II - yr Proposed area to be Quarried
III - yr Proposed area to be Quarried
IV - yr Proposed area to be Quarried
V - yr Proposed area to be Quarried

SECTION ALONG A-B



SECTION ALONG C-D



APPLICANT:

Thiru. S.SAMINATHAN,
S/o. SENNIMALAIGOUNDER,
No.19, SELLAPPAGOUNDANPALAYAM,
V.RAMALINGAPURAM,
CHENNIMALAI,
ERODE DISTRICT - 638 051.

LOCATION OF Q.L. APPLIED AREA:

S.F.Nos : 206/1 (PART)
EXTENT : 2.53.8 Hq.
VILLAGE : EKKATTAMPALAYAM,
TALUK : PERUNDURAI,
DISTRICT : ERODE,
STATE : TAMIL NADU.

PLATE NO - III

DATE OF SURVEY : 13.03.2025

TOPOGRAPHY, GEOLOGICAL PLAN, YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS

SCALE. 1:1000

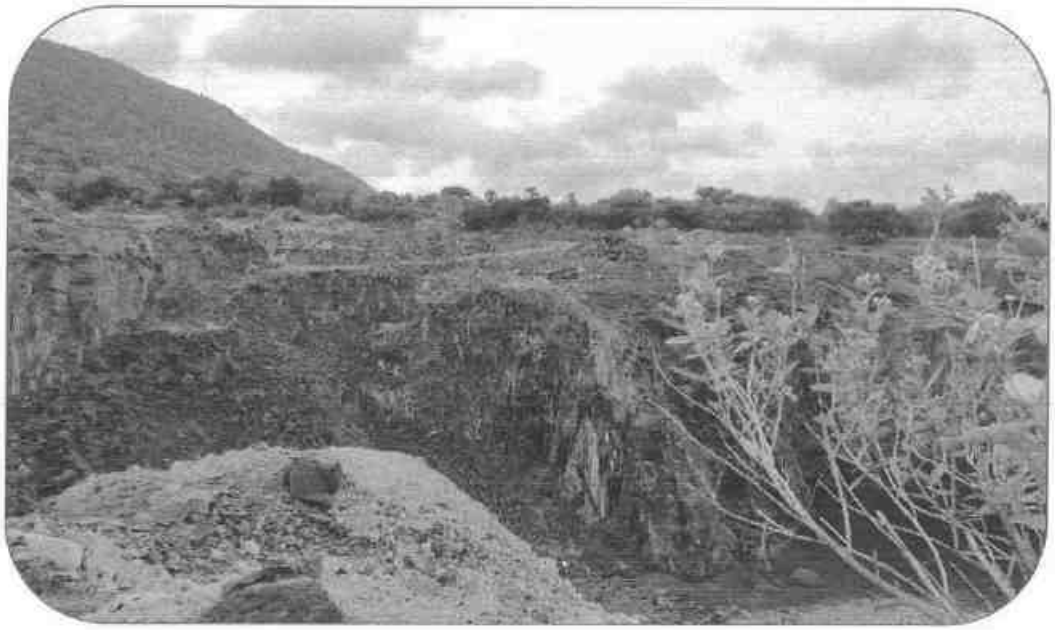
PREPARED BY :

THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

(UNDER RULE [illegible] OF MCR 2016)

TOPOGRAPHICAL VIEW OF EKKATTAMPALAYAM

ROUGH STONE AND GRAVEL QUARRY LEASE APPLIED AREA



Name of the Applicant	:	**Thiru. S. Saminathan,**
		S/o. Sennimalaigounder,
Address	:	No. 19, S.K. Palayam,
		V. Ramalingapuram, Chennimalai,
		Perundurai Taluk, Erode District,
		Tamil Nadu State – 638 051.

Location:

S.F.Nos.	:	206/1 (Part)
Extent	:	2.53.80Ha
Village	:	Ekkattampalayam
Taluk	:	Perundurai
District	:	Erode

Signature of the applicant

(S. Saminathan)

(Village Administrative Officer)

99 A

சீல்

692, தேக்கம்பாளையம்
26/03/25

பி.தேன்மொழி என்பவர்

தபடி என்பவரிடமிருந்து பெற்றுள்ள தாரமங்கலம் கிராமம் தேக்கம்பாளையம் புல எண்: 206/1 - 2.53.80 ஹெக்டேர் பரப்பளவு என்னுடைய பெயர் நிலமாதனுள் எங்களுக்கே பாத்தியப்பட்ட பாகத்தை சேர்ந்த 300 மீட்டர் சிற்றளவில் இருபோகங்கள், தோப்புகள், பள்ளங்களுடன் நிலமானது பிற சிலருக்குரியதாகும்.

கிராம நிர்வாக அலுவலர்
69 'அ', எக்கட்டாம்பாளையம்,
செண்பகமலை உள்வட்டம்,
பெருந்துறை Tk., ஈரோடு Dt.,

HYDRO - GEOLOGICAL STUDIES AT THIRU. S. SAMINATHAN ROUGH STONE AND GRAVEL QUARRY EKKATTAMPALAYAM VILLAGE, PERUNDURAI TALUK, ERODE DISTRICT, TAMIL NADU.

Table of Contents

1. INTRODUCTION 73

1.1. Scope of Study 73

1.2. Profiles in the Study Area. 74

2. STUDY AREA DESCRIPTION 74

2.1 Topography of the Lease Area and Its Surrounding Environments: 75

3. REGIONAL GEOLOGY OF ERODE DISTRICT 76

4. HYDROGEOLOGY 78

5. METHODOLOGY OF STUDY 79

5.2 Geophysical Investigation 79

5.2.1 Vertical Electrical resistivity sounding for aquifer study. 79

5.2.2 Basic Principles 80

6. GEOPHYSICAL DATA INTERPRETATION & GRAPH 82

7. CONCLUSION 85

HYDRO - GEOLOGICAL STUDIES AT THIRU. S. SAMINATHAN ROUGH STONE AND GRAVEL QUARRY EKKATTAMPALAYAM VILLAGE, PERUNDURAI TALUK, ERODE DISTRICT, TAMIL NADU.

1. INTRODUCTION

Proprietor of **Thiru. S. Saminathan** in Rough stone and Gravel Quarry Over an extent of 2.53.80hectares of patta land in S.F. No. 206/1 (Part) of Ekkattampalayam Village, Perundurai Taluk, Erode District, Tamil Nadu state on the hydrological regime of the area, The above area has been studied & investigated for finding out Ground water level and aquifer thickness and water quality in and around mine lease area. The electrical resistivity study in Rough stone and Gravel quarry and determine the shallow and deeper freshwater aquifer in the proposed mining area in Thiru. S. Saminathan, Ekkattampalayam village.

1.1. Scope of Study

In the present study, the main aim of the shallow and deeper aquifer investigation through electrical resistivity VES, Method is used to measure the apparent resistivity of the Study area. The present study is estimating the ground water level in Ekkattampalayam Village, Perundurai Taluk, Erode District, Tamil Nadu village proposed leasehold area and their surrounding area. The study area is mostly covered by Water level, type of sand, type of rock and their basement rock characters. The main aim of the study is to determine the water table and flow movement of this Lease and surrounding area **(Fig.1).**

1.2. Profiles in the Study Area.

Name of the Lessee	: Thiru. S. Saminathan
Survey No	: 206/1 (Part)
Extent	: 2.53.80hectares
Village	: Ekkattampalayam
Taluka	: Perundurai
District	: Erode
State	: Tamil Nadu

2. STUDY AREA DESCRIPTION



Figure.1. Shows proposed mine lease area

The investigated site falls in the Topo sheet No: **58E/12** Latitude between: **11°08'57.16"N to 11°09'03.83"N** and Longitude between: **77°34'25.26"E to 77°34'31.09"E** on WGS datum-1984. The lease applied area is located about 26km South Western side of Erode town, 14km South western side of Perundurai town and 3km Northwestern side of Ekkattampalayam hamlets.

	17km		17km		3km	
Erode	→	Perundurai	→	Ekkattampalayam	→	Lease applied area
	Southwest		South		Northwest	

2.1 Topography of the Lease Area and Its Surrounding Environments:

The lease applied area is situated in flat terrain. The gradient of the area towards Southern side and altitude of the area is 280m above MSL. The area is covered by 2m thickness of Gravel, 5m thickness of weathered rock and followed by Massive Charnockite which is clearly inferred from the nearby existing quarry pit. **(Fig.2).** The Water level in the surrounding area is 67m – 70m below from general ground profile which is observed from the nearby bore wells. Average annual rainfall is about 703mm.



Figure 2. Topography in the lease area

3. REGIONAL GEOLOGY OF ERODE DISTRICT

The rock types exposed in the erode district can be broadly grouped as 1) Granulite group of rocks 2) Migmatite Complex 3) Sathyamangalam Schist Complex 4) Peninsular Gneissic Complex 5) Alkali Complex 6) Acid Intrusives and 7) Quaternary Alluvium.

The Granulite group of rocks comprise of Calc Granulite, Quartzite of Khondalite group, Charnockite, Pyroxene Granulite, Pyroxenite of Charnockite group, Migmatite gneiss, and Metagabbro. Charnockite occurs as a major rock type in the northern part and as thin bands and enclaves in the southern part of the district. Quartzite and Calc Granulite, Pyroxene Granulite, Migmatite Gneiss occurs as thin bands and enclaves.

Hornblende gneiss, Gametiferous – Quartzo Feldspathic gneiss and granite are the important rock types of Migmatite Complex, of which, hornblende gneiss occupies the major part of the District, particularly in southern part and northwesten part. Garnetiferous quartzo feldspathic gneiss is located near Bhavani Sagar reservoir and north of Anthiyur.

The Sathyamangalam Group includes fuchsite Quanrtzite, schistose-quartzite, sillimanite-quartzite, ferruginous Quanrtzite, talc-tremolite / Actinolite schist / hornblende schist, Amphibolite and Gabbro anorthosite and Pyroxenite. Schistose rocks occur as enclaves near Sathyamangalam, west of Chennimalai. Quartzite occurs as thin beds near Kavilanattam, west of Chennimalai, Amphibolite occur as enclaves near Sathyamangalam, Gobi and around Perudnurai. A north site, Pyroxenite occurs as WSW-ENE trending bands in fissile hornblende gneiss of PGC (Bhavani Group) which occupies the ventral part of the district.

Granite bodies are located in the central part of the district around Punjai Puliyampatti and west of Erode. Quaternary fluvial deposits are restricted to the river beds of Cauveri, Noyyil, Amaravathi and Bhavani rivers.

The plains show a large number of ultramafic bodies along the E-W Bhavani lineament. WNW-

ESE to NW-SE trending dykes is a common feature. The Cauveri River which has a NNE-SSW trending straight course between Mettur and Bhavani is considered to represent a major lineament, probably a deep seated fault zone.

The general E-W to ENE-WSW course of the Bhavani River flowing at the foot of the hills indicates a major lineament, probably a deep seated fault zone.

The Moyyar - Bhavani, Noyyil - Cauveri lineaments belong to the NNW-SSE to E-W system. The Mettur fault is a NNE-SSW system. The N-S to NNE-SSW trending dykes show clear truncation against the E-W Bhavani lineament.

Stratigraphy Sequences of Erode district

Lithology	Group	Age
Soil Alluvium		Holocene
Laterite		
Kankar		
Granite	Acid intrusive	Proterozoic
Dolerite dyke / Meta dolerite / Basic intrusive		
Nephelene syenite Corrundum syenite	Alkaline complex	
Pink migmatite	Penninsular gneissic complex (Bhavani)	Proterozoic to Archaen
Fisshile Hornblende biotite gneiss		
Gabbro, anorthosite, pyroxenite	Sathyamangalam Group	
Amphibolite		
Talc - tremolite / Acitionite schist /Hornblende schist		
Fuchsite quartzite, schistose quartzite, Sillimanite quartzite, ferruginous quartzite		
Hornblende biotite gneiss		

Gametiferous- Quartzo fedspathic gneiss	Migmatite Complex	Archaean
Meta gabbophrozenite	Charnockite Group	
Magnetite quartzite		
Pyroxene granulite		
Charnockite		
Calc granulite	Khondalite Group	
Quartzite Anorthosite located in well cuttings		

Peninsular gneiss forms the oldest rock formations, in which the massive formation of Charnockite lies over with accumulation of recent quaternary formation. On regional scale of the Charnockite body is N45°W – S45°E with dipping towards SW30°.

The general geological sequences of the rocks in this area are given below:

AGE **FORMATION**

Recent - Quaternary formation (Gravel)

---------Unconformity----------

Archaean - Charnockite

Peninsular Gneissic complex.

4. HYDROGEOLOGY

Erode district is underlain entirely by Archaean Crystalline formations with Recent alluvial deposits occurring along the river and streams courses and colluvium of valley-fills. The important aquifer systems in the district are constituted by weathered, fissured and fractured crystalline rocks and the recent alluvial deposits. The porous formations in the district are represented by alluvium and colluvium. The alluvial deposits are confined to the major river and stream courses only. Ground water occurs under phreatic conditions. The maximum saturated thickness of these aquifers is up to 5 m depending upon the topographic conditions. The area lying at the foot hill zones which are seen in the

northern parts of the district is underlain by the colluvial material derived from the nearby hill ranges comprising sands and gravels. The maximum saturated thickness of these aquifers is up to 20 m depending upon the topographic conditions. Ground water occurs under phreatic conditions.

The hard consolidated crystalline rocks of Archaean age represent weathered, fissured and fractured formations of gneisses, granites, charnockites and other associated rocks. Ground water occurs under phreatic conditions in the weathered mantle and under semi-confined conditions in the fractured zones. The thickness of the weathered mantle of the hard rocks is varying from place to place.

5. METHODOLOGY OF STUDY

1. Open well and bore well water level measurement, depth of water level diameter of open well, agriculture land survey.
2. Geophysical survey for deep aquifer in nearby site Rock and soil geology also collected for the aquifer characteristic study
3. Aquifer thickness and quality measurement study in nearby proposed mine site areas of the study area.

5.2 Geophysical Investigation

5.2.1 Vertical Electrical resistivity sounding for aquifer study.

The electrical resistivity study is used to determine aquifer and occurred rock inthe proposed site. The DDR 3 equipment was used for data collection **(Fig.3)**



Figure 3. Electrical resistivity survey in the mine lease area.

5.2.2 Basic Principles

The electrical properties of rocks in the upper part of the earth's crust are dependent upon the lithology, porosity, and the degree of pore space saturation and the salinity of the pore water. Saturated rocks have lower resistivity than unsaturated and dry rocks. The higher the porosity of the saturated rock, or the higher the salinity of the saturating fluids, the lower is the resistivity. The presence of clays and conductive minerals also reduces the resistivity of the rock.

The resistivity of earth materials can be studied by measuring the electrical potential distribution produced at the earth's surface by an electric current that is passed through the earth. Current is moved through the subsurface from one current electrode to the other and the potential difference is recorded as the current passes. From this information, resistivity values of various layers are acquired and layer thickness can be identified.

The apparent resistivity values determined are plotted as a log function versus the log of the spacing between the electrodes. These plotted curves identify thickness of layers. If there are multiple layers (more than 2), the acquired data is compared to a master curve to determine layer thickness.

This method is least influenced by lateral in-homogeneities and capable of providing higher depth of investigation.

The resistance R of a certain material is directly proportional to its length L and cross-sectional area A, expressed as:

$$R = Rs * L/A \text{ (in Ohm)}$$

Where Rs is known as the specific resistivity (characteristic of the material and independent of its shape or size)

With Ohm's Law,

$$R = dV/I \text{ (Ohm)}$$

Where dV is the potential difference across the resistor and I is the electric current through the resistor. The specific resistivity may be determined by:

$$Rs = (A/L) * (dV/I) \text{ (in Ohm m)}$$

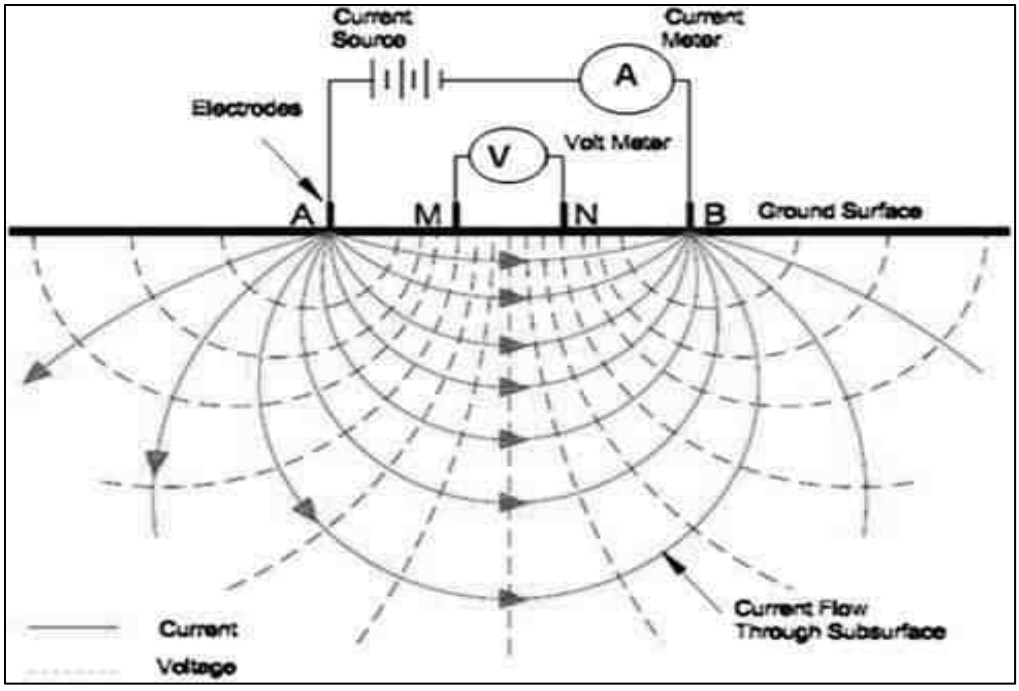


Figure 4. Schematic Diagram of Electrical resistivity principle



Figure 5. Geophysical survey location in the lease area

6. GEOPHYSICAL DATA INTERPRETATION & GRAPH

Table 1 Geophysical data of Station 1

STATION-1				
AB/2 (m)	MN/2(m)	Geometric Factor (K)	Resistance (R) Ohm	Apparent Resistivity Rho Ohm-meter
2	1	4.7	15.68	73.89
5	1	37.7	2.64	99.53
10	1	155.5	1.13	175.73
10	5	23.6	3.65	86.00
15	5	62.8	2.56	160.85
20	5	117.8	2.17	255.65
30	5	274.9	1.84	505.80
40	5	494.8	1.36	672.93
50	5	777.5	1.17	909.73
60	5	1123.1	0.89	999.58
70	5	1531.5	0.68	1041.44
80	5	2002.8	0.62	1241.72
90	5	2536.8	0.57	1446.00
100	5	3133.7	0.48	1504.20

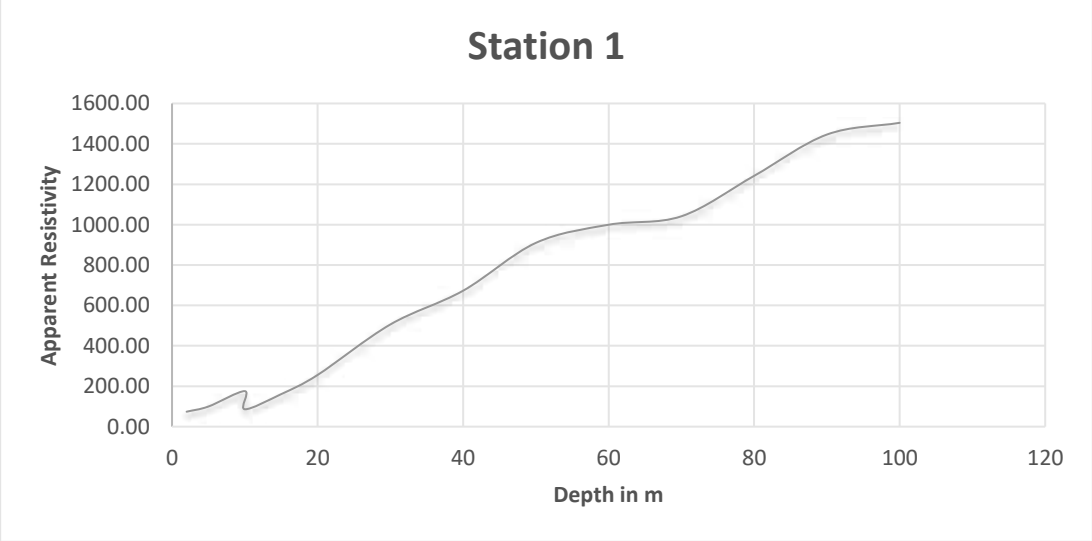


Figure 6 Graphical Representation of Geophysical data Station 1

Table 2 Geophysical data of Station 2

STATION-2				
AB/2 (m)	MN/2(m)	Geometric Factor (K)	Resistance (R) Ohm	Apparent Resistivity Rho Ohm-meter
2	1	4.7	12.46	58.72
5	1	37.7	1.97	74.27
10	1	155.5	0.89	138.40
10	5	23.6	2.16	50.89
15	5	62.8	1.69	106.19
20	5	117.8	1.6	188.50
30	5	274.9	1.57	431.58
40	5	494.8	1.12	554.18
50	5	777.5	0.87	676.47
60	5	1123.1	0.75	842.34
70	5	1531.5	0.59	903.60
80	5	2002.8	0.48	961.33
90	5	2536.8	0.45	1141.58
100	5	3133.7	0.4	1253.50

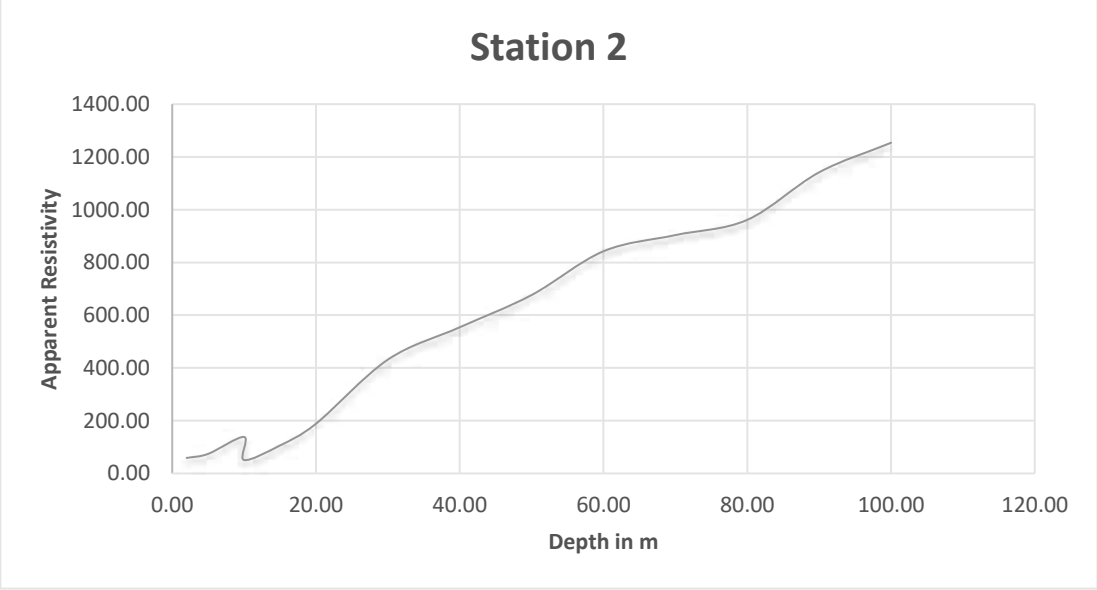


Figure 7 Graphical Representation of Geophysical data Station 2

Table 3 Geophysical data of Station 3

STATION-3				
AB/2 (m)	MN/2(m)	Geometric Factor (K)	Resistance (R) Ohm	Apparent Resistivity Rho Ohm-meter
2	1	4.7	17.32	81.62
5	1	37.7	3.16	119.13
10	1	155.5	1.14	177.28
10	5	23.6	3.28	77.28
15	5	62.8	2.45	153.94
20	5	117.8	2.14	252.11
30	5	274.9	1.71	470.06
40	5	494.8	1.56	771.89
50	5	777.5	1.16	901.95
60	5	1123.1	0.96	1078.20
70	5	1531.5	0.74	1133.33
80	5	2002.8	0.71	1421.97
90	5	2536.8	0.67	1699.68
100	5	3133.7	0.53	1660.89

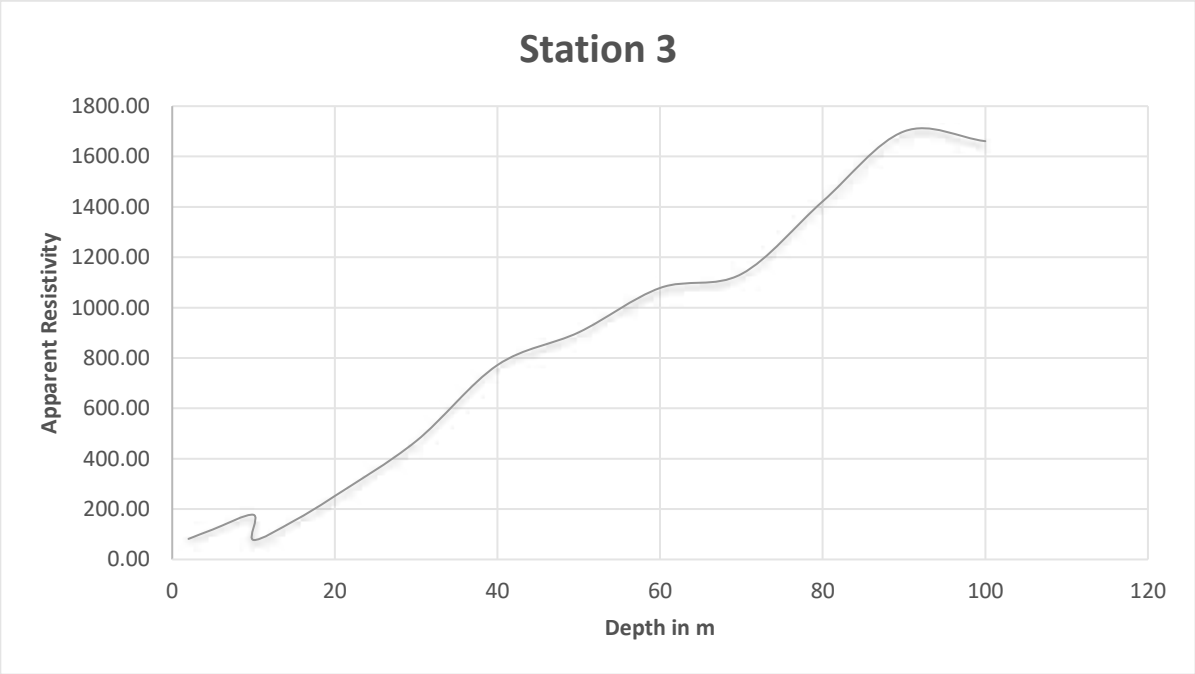


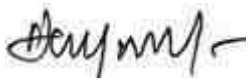
Figure 8 Graphical Representation of Geophysical data Station 3

7.CONCLUSION

- The lease applied area is situated in flat terrain. The gradient of the area towards Southern side and altitude of the area is 280m above from Mean Sea Level.
- The geological study of the given area covered by 2m Thickness of Gravel, 5m thickness of weathered rock and followed by Massive Charnockite in the lease area.
- The study area exhibit SW30º vertical dipping formation. So it act as a barrier and restrict the groundwater flow movement.
- Based on the geophysical investigation, Vertical Electrical Sounding (VES) were conducted to determine the subsurface water table and rock types up to depth of 100 m.
- The subsurface formation up to this depth can be categorized as follows,
    - **0m to 2m (Average) - Top Soil**
    - **2m to 57m (Average) – weathered and Charnockite Formation (Massive Formation)**
- In this mine lease area, groundwater occurs at deeper depths, depending on the intensity of weathering and dipping formation. The mine area such no major intersections of water table are expected up to 50m.
- The aquifer are found within the weathered / fractured formation. Currently the aquifers are located at **67 to 70 meters** below ground level (BGL). However, considering the approved mining plan depth, which is **57meters** below ground level. It will not impact the groundwater table.
- To obviate the impact due to catchment of rainwater as surface runoff management, effective measures like construction of peripheral garland drain, settling pond and ensuring water flow

to the nearby downstream users are devised and will be implemented during the course of mining.

- From the above study it can be concluded there will be no adverse effect on the hydrological regime, water drainage, environment, and livelihood. Agricultural activity in the region.



Dr. P. Thangaraju, M.Sc., Ph.D.,
Govt. Approved Hydro Geologist
M/s. Geo Exploration and Mining Solutions,
Regd. Office: No. 17, Advaitha Ashram Road,
Alagapuram, Salem – 636 004, Tamil Nadu

GLOBAL LAB AND CONSULTANCY SERVICES LLP
GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY
S.F.No.92/3A2, Geetha Nagar,
Alagapuram Pudur,
Salem - 636 016. Tamil Nadu, India.
Phone: +91 427 - 2970989 / +91 70944 52628
E-Mail: lab@glcs.in
Web: www.glcs.in

SUMMARY REPORT

Issued To	**Thiru.S.Saminathan,** S/o. Sennimalai Gounder, No.19, SK Palayam, V.Ramalingapuram, Chennimalai, Perundurai – 638051.		
Site Location	Rough Stone Gravel Quarry, Lease Area :2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai taluk, Erode District.		
Sampling Method	GLCS/SOP/AAQ/015	**Sample Drawn by**	Laboratory
Sample Name	Air Quality Monitoring	**Sampling Location**	AAQ1 – Core Zone - Project Area
Sample Description	Ambient Air Quality Monitoring	**Sample Condition**	Good
Sample Code	**GLCS/9590,9621, 9922,9971,10366,10382,11015, 11071,11457,11806,11951, 12309, 12417,12860, 12911,13360,13391**		
Location Coordinates	11° 8'59.62"N 77°34'29.00"E		
Report Date	**09.01.2026**		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.10.2025	12.05 – 12.05	40.2	19.5	4.6	19.8	BDL(DL:5.0)	BDL(DL:20.0)	BDL(DL:1.15)
02.10.2025	12.15 – 12.15	40.2	19.5	4.8	21.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
09.10.2025	12.05 – 12.05	40.1	19.5	5.8	24.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
10.10.2025	12.15 – 12.15	39.8	20.0	5.2	20.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
16.10.2025	12.00-12.00	39.8	19.5	4.8	20.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
17.10.2025	12.10 – 12.10	40.3	20.4	4.1	19.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
23.10.2025	12.00-12.00	40.2	20.1	4.5	19.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
24.10.2025	12.10 – 12.10	39.7	19.4	4.9	20.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
30.10.2025	07.15 – 07.15	38.8	18.7	5.6	17.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
31.10.2025	7.25 – 7.25	38.2	18.3	4.4	18.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
07.11.2025	07.25 – 07.25	39.4	18.7	BDL(DL:4.0)	18.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
08.11.2025	7.35 – 7.35	38.9	20.3	5.1	18.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
13.11.2025	12.00 – 12.00	40.1	18.3	BDL(DL:4.0)	18.1	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
14.11.2025	12.20 – 12.20	39.7	18.7	BDL(DL:4.0)	18.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
20.11.2025	12.00 – 12.00	39.5	19.1	5.6	18.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
21.11.2025	12.20 – 12.20	40.1	19.5	4.5	20.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
27.11.2025	12.00 – 12.00	40.2	19.5	4.1	22.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
28.11.2025	12.20 – 12.20	38.9	17.5	BDL(DL:4.0)	20.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
04.12.2025	11.00 – 11.00	39.2	18.3	4.6	19.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
05.12.2025	11. 15 – 11.15	38.1	18.3	BDL(DL:4.0)	19.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
11.12.2025	11. 15 – 11.15	41.9	18.5	5.1	21.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
12.12.2025	11.25 – 11.25	40.3	20.0	4.3	20.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
18.12.2025	12.00 – 12.00	39.2	19.3	4.8	21.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
19.12.2025	12.20 – 12.20	41.8	19.7	BDL(DL:4.0)	19.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
25.12.2025	12.00 – 12.00	39.9	20.1	4.9	20.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
26.12.2025	12.20 – 12.20	40.6	20.3	4.5	19.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit
Remarks: The values observed for the pollutants given above are within the NAAQ standards.

Global Lab and Consultancy Services LLP Salem 636016.

Verified by

L. SUDHAPRIYA
Technical Manager

GLOBAL LAB AND CONSULTANCY SERVICES LLP
GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY
S.F.No.92/3A2, Geetha Nagar,
Alagapuram Pudur,
Salem - 636 016. Tamil Nadu, India.
Phone: +91 427 - 2970989 / +91 70944 52628
E-Mail: lab@glcs.in
Web: www.glcs.in

SUMMARY REPORT

Issued To	**Thiru.S.Saminathan,** S/o. Sennimalai Gounder, No.19, SK Palayam, V.Ramalingapuram, Chennimalai, Perundurai – 638051.		
Site Location	Rough Stone Gravel Quarry, Lease Area :2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai taluk, Erode District.		
Sampling Method	GLCS/SOP/AAQ/015	**Sample Drawn by**	Laboratory
Sample Name	Air Quality Monitoring	**Sampling Location**	AAQ1 – Core Zone – Project Area
Sample Description	Ambient Air Quality Monitoring	**Sample Condition**	Good
Sample Code	**GLCS/9590,9621, 9922,9971,10366,10382,11015, 11071,11457,11806,11951, 12309, 12417,12860, 12911,13360,13391**		
Location Coordinates	11° 8'59.62"N 77°34'29.00"E		
Report Date	**09.01.2026**		

Date	Period. hrs	Ni (ng/m³)	As (ng/m³)	C6H6 (µg/m³)	BaP (ng/m³)	Pb (µg/m³)
01.10.2025	12.05 – 12.05	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.10.2025	12.15 – 12.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.10.2025	12.05 – 12.05	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.10.2025	12.15 – 12.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.10.2025	12.00-12.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.10.2025	12.10 – 12.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.10.2025	12.00-12.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.10.2025	12.10 – 12.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.10.2025	07.15 – 07.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
31.10.2025	7.25 – 7.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.11.2025	07.25 – 07.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.11.2025	7.35 – 7.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.11.2025	12.00 – 12.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.11.2025	12.20 – 12.20	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.11.2025	12.00 – 12.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.11.2025	12.20 – 12.20	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.11.2025	12.00 – 12.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.11.2025	12.20 – 12.20	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.12.2025	11.00 – 11.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
05.12.2025	11. 15 – 11.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.12.2025	11. 15 – 11.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
12.12.2025	11.25 – 11.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.12.2025	12.00 – 12.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
19.12.2025	12.20 – 12.20	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.12.2025	12.00 – 12.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
26.12.2025	12.20 – 12.20	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

Note: BDL: Below Detection Limit; DL: Detection Limit
Remarks: The values observed for the pollutants given above are within the NAAQ standards.

Global Lab and Consultancy Services LLP * Salem 636016.

Verified by

L. SUDHAPRIYA
Technical Manager

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

GLOBAL LAB AND CONSULTANCY SERVICES LLP
GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY
S.F.No.92/3A2, Geetha Nagar,
Alagapuram Pudur,
Salem - 636 016. Tamil Nadu, India.
Phone: +91 427 - 2970989 / +91 70944 52628
E-Mail: lab@glcs.in
Web: www.glcs.in

SUMMARY REPORT

Issued To	Thiru.S.Saminathan, S/o. Sennimalai Gounder, No.19, SK Palayam, V.Ramalingapuram, Chennimalai, Perundurai – 638051.		
Site Location	Rough Stone Gravel Quarry, Lease Area :2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai taluk, Erode District.		
Sampling Method	GLCS/SOP/AAQ/015	Sample Drawn by	Laboratory
Sample Name	Air Quality Monitoring	Sampling Location	AAQ2 – Near Crusher
Sample Description	Ambient Air Quality Monitoring	Sample Condition	Good
Sample Code	GLCS/9591,9622, 9923,9972,10367,10383, 11016,11072,11458,11807,11952, 12310,12418,12861, 12912,13361,13392,13879,		
Location Coordinates	11° 8'59.96"N 77°34'45.77"E		
Report Date	09.01.2026		

Date	Period. Hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.10.2025	12.30 - 12.30	41.3	20.0	4.7	21.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
02.10.2025	12.40 – 12.40	41.9	20.3	4.0	20.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
09.10.2025	12.30 – 12.30	42.6	20.8	5.2	25.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
10.10.2025	12.40 – 12.40	42.3	23.3	4.5	21.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
16.10.2025	12.25-12.25	41.3	20.0	4.8	19.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
17.10.2025	12.35 – 12.35	42.6	21.6	6.1	18.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
23.10.2025	12.25-12.25	43.5	21.6	4.9	18.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
24.10.2025	12.35 – 12.35	41.9	20.6	5.1	19.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
30.10.2025	7.30 – 7.30	44.6	23.3	4.5	19.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
31.10.2025	7.40 – 7.40	39.8	19.1	BDL(DL:4.0)	20.1	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
07.11.2025	7.40 – 7.40	38.8	18.3	4.1	18.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
08.11.2025	7.50 – 7.50	43.6	23.3	4.9	20.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
13.11.2025	12.25 – 12.25	41.2	19.1	4.5	19.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
14.11.2025	12.45 – 12.45	40.2	19.1	5.1	19.1	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
20.11.2025	12.25 – 12.25	37.9	18.3	5.3	19.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
21.11.2025	12.45 – 12.45	41.2	20.8	4.3	20.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
27.11.2025	12.25 – 12.25	39.4	18.3	4.3	22.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
28.11.2025	12.45- 12.45	39.1	18.3	BDL(DL:4.0)	19.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
04.12.2025	11.30 – 11.30	42.6	19.5	4.1	19.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
05.12.2025	11.40 – 11.40	39.7	19.1	4.6	19.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
11.12.2025	11.50 – 11.50	42.6	20.8	4.7	19.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
12.12.2025	12.00 – 12.00	42.7	21.2	4.2	20.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
18.12.2025	11.50 – 11.50	39.7	21.4	4.8	20.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
19.12.2025	12.00 – 12.00	40.3	20.9	4.7	20.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
25.12.2025	11.50 – 11.50	39.3	19.9	4.1	20.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
26.12.2025	12.00 – 12.00	41.6	20.3	4.5	20.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit, DL: Detection Limit
Remarks: The values observed for the pollutants given above are within the NAAQ standards.

Global Lab and Consultancy Services LLP * Salem 636016.

Verified by

L. SUDHAPRIYA
Technical Manager

GLOBAL LAB AND CONSULTANCY SERVICES LLP
GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY
S.F.No.92/3A2, Geetha Nagar,
Alagapuram Pudur,
Salem - 636 016. Tamil Nadu, India.
Phone: +91 427 - 2970989 / +91 70944 52628
E-Mail: lab@glcs.in
Web: www.glcs.in

SUMMARY REPORT

Issued To	**Thiru.S.Saminathan,** S/o. Sennimalai Gounder, No.19, SK Palayam, V.Ramalingapuram, Chennimalai, Perundurai – 638051.		
Site Location	Rough Stone Gravel Quarry, Lease Area :2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai taluk, Erode District.		
Sampling Method	GLCS/SOP/AAQ/015	**Sample Drawn by**	Laboratory
Sample Name	Air Quality Monitoring	**Sampling Location**	AAQ2 – Near Crusher
Sample Description	Ambient Air Quality Monitoring	**Sample Condition**	Good
Sample Code	**GLCS/9591,9622, 9923,9972,10367,10383, 11016,11072,11458,11807,11952, 12310,12418,12861, 12912,13361,13392,13879,**		
Location Coordinates	11° 8'59.96"N 77°34'45.77"E		
Report Date	**09.01.2026**		

Date	Period. hrs	Ni (ng/m³)	As (ng/m³)	C6H6 (µg/m³)	BaP (ng/m³)	Pb (µg/m³)
01.10.2025	12.30 - 12.30	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.10.2025	12.40 – 12.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.10.2025	12.30 – 12.30	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.10.2025	12.40 – 12.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.10.2025	12.25-12.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.10.2025	12.35 – 12.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.10.2025	12.25-12.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.10.2025	12.35 – 12.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.10.2025	7.30 – 7.30	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
31.10.2025	7.40 – 7.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.11.2025	7.40 – 7.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.11.2025	7.50 – 7.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.11.2025	12.25 – 12.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.11.2025	12.45 – 12.45	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.11.2025	12.25 – 12.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.11.2025	12.45 – 12.45	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.11.2025	12.25 – 12.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.11.2025	12.45- 12.45	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.12.2025	11.30 – 11.30	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
05.12.2025	11.40 – 11.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.12.2025	11.50 – 11.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
12.12.2025	12.00 – 12.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.12.2025	11.50 – 11.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
19.12.2025	12.00 – 12.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.12.2025	11.50 – 11.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
26.12.2025	12.00 – 12.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

Note: BDL: Below Detection Limit; DL: Detection Limit
Remarks: The values observed for the pollutants given above are within the NAAQ standards.

Global Lab and Consultancy Services LLP Salem 636016.

Verified by

L. SUDHAKARA
Technical Manager

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

GLOBAL LAB AND CONSULTANCY SERVICES LLP
GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY
S.F.No.92/3A2, Geetha Nagar,
Alagapuram Pudur,
Salem - 636 016. Tamil Nadu, India.
Phone: +91 427 - 2970989 / +91 70944 52628
E-Mail: lab@glcs.in
Web: www.glcs.in

SUMMARY REPORT

Issued To	**Thiru.S.Saminathan,** S/o. Sennimalai Gounder, No.19, SK Palayam, V.Ramalingapuram, Chennimalai, Perundurai – 638051.		
Site Location	Rough Stone Gravel Quarry, Lease Area :2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai taluk, Erode District.		
Sampling Method	GLCS/SOP/AAQ/015	**Sample Drawn by**	Laboratory
Sample Name	Air Quality Monitoring	**Sampling Location**	AAQ 3 – Near Existing Quarry
Sample Description	Ambient Air Quality Monitoring	**Sample Condition**	Good
Sample Code	**GLCS/9592, 9623, 9924,9973,10368,10384, 11017,11073,11459,11808, 11953,12311,12419,12862,12913,13362,13393,13880,**		
Location Coordinates	11° 8'47.18"N 77°34'16.68"E		
Report Date	**09.01.2026**		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.10.2025	13.0 – 13.0	43.2	21.2	4.6	21.1	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
02.10.2025	13.10 – 13.10	42.3	21.2	BDL (DL: 4.0)	21.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
09.10.2025	13.0 – 13.0	44.6	21.2	5.2	23.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
10.10.2025	13.10 – 13.10	40.6	21.2	4.9	20.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
16.10.2025	12.55-12.55	44.7	23.3	5.5	20.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
17.10.2025	13.05 – 13.05	45.6	24.5	6.0	19.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
23.10.2025	12.55-12.55	45.3	26.2	5.0	17.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
24.10.2025	13.05 – 13.05	45.5	23.7	4.6	19.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
30.10.2025	7.50 – 7.50	43.1	22.5	4.6	19.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
31.10.2025	8.00 – 8.00	41.5	20.8	BDL(DL:4.0)	19.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
07.11.2025	8.00 – 8.00	41.3	20.0	4.7	19.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
08.11.2025	8.10 – 8.10	42.6	19.9	4.3	19.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
13.11.2025	13.00 – 13.00	42.1	21.2	4.1	17.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
14.11.2025	13.10 – 13.10	43.7	21.6	4.8	18.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
20.11.2025	13.00 – 13.00	42.9	22.5	4.9	20.0	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
21.11.2025	13.10 – 13.10	42.4	21.6	4.1	20.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
27.11.2025	13.00 – 13.00	45.1	23.3	4.4	21.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
28.11.2025	13.10 – 13.10	40.7	20.0	4.4	19.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
04.12.2025	12.00 – 12.00	43.7	20.3	4.0	19.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
05.12.2025	12.10 – 12.10	40.6	19.5	5.1	19.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
11.12.2025	12.10 – 12.10	40.9	19.5	5.0	20.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
12.12.2025	12.20 – 12.20	44.6	22.4	4.4	19.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
18.12.2025	12.10 – 12.10	44.9	19.5	4.8	19.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
19.12.2025	12.20 – 12.20	41.5	19.6	4.9	20.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
25.12.2025	12.10 – 12.10	42.1	19.8	4.8	20.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
26.12.2025	12.20 – 12.20	43.6	20.3	5.0	19.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit
Remarks: The values observed for the pollutants given above are within the NAAQ standards.

Global Lab and Consultancy Services LLP * Salem 636016.

Verified by
L. SUDHAPRIYA
Technical Manager

GLOBAL LAB AND CONSULTANCY SERVICES LLP
GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY
S.F.No.92/3A2, Geetha Nagar,
Alagapuram Pudur,
Salem - 636 016. Tamil Nadu, India.
Phone: +91 427 - 2970989 / +91 70944 52628
E-Mail: lab@glcs.in
Web: www.glcs.in

SUMMARY REPORT

Issued To	**Thiru.S.Saminathan,** S/o. Sennimalai Gounder, No.19, SK Palayam, V.Ramalingapuram, Chennimalai, Perundurai – 638051.		
Site Location	Rough Stone Gravel Quarry, Lease Area :2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai taluk, Erode District.		
Sampling Method	GLCS/SOP/AAQ/015	**Sample Drawn by**	Laboratory
Sample Name	Air Quality Monitoring	**Sampling Location**	AAQ 3 – Near Existing Quarry
Sample Description	Ambient Air Quality Monitoring	**Sample Condition**	Good
Sample Code	**GLCS/9592, 9623, 9924,9973,10368,10384, 11017,11073,11459,11808, 11953,12311,12419,12862,12913,13362,13393,13880,**		
Location Coordinates	11° 8'47.18"N 77°34'16.68"E		
Report Date	**09.01.2026**		

Date	Period. hrs	Ni (ng/m³)	As (ng/m³)	C6H6 (µg/m³)	BaP (ng/m³)	Pb (µg/m³)
01.10.2025	13.0 – 13.0	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.10.2025	13.10 – 13.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.10.2025	13.0 – 13.0	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.10.2025	13.10 – 13.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.10.2025	12.55-12.55	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.10.2025	13.05 – 13.05	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.10.2025	12.55-12.55	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.10.2025	13.05 – 13.05	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.10.2025	7.50 – 7.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
31.10.2025	8.00 – 8.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.11.2025	8.00 – 8.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.11.2025	8.10 – 8.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.11.2025	13.00 – 13.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.11.2025	13.10 – 13.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.11.2025	13.00 – 13.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.11.2025	13.10 – 13.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.11.2025	13.00 – 13.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.11.2025	13.10 – 13.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.12.2025	12.00 – 12.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
05.12.2025	12.10 – 12.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.12.2025	12.10 – 12.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
12.12.2025	12.20 – 12.20	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.12.2025	12.10 – 12.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
19.12.2025	12.20 – 12.20	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.12.2025	12.10 – 12.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
26.12.2025	12.20 – 12.20	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

Note: BDL: Below Detection Limit; DL: Detection Limit
Remarks: The values observed for the pollutants given above are within the NAAQ standards.

Global Lab and Consultancy Services LLP * Salem 636016.

Verified by

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

L. SUDHAPRIYA
Technical Manager

GLOBAL LAB AND CONSULTANCY SERVICES LLP
GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY
S.F.No.92/3A2, Geetha Nagar,
Alagapuram Pudur,
Salem - 636 016. Tamil Nadu, India.
Phone: +91 427 - 2970989 / +91 70944 52628
E-Mail: lab@glcs.in
Web: www.glcs.in

SUMMARY REPORT

Issued To	**Thiru.S.Saminathan,** S/o. Sennimalai Gounder, No.19, SK Palayam, V.Ramalingapuram, Chennimalai, Perundurai – 638051.		
Site Location	Rough Stone Gravel Quarry, Lease Area :2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai taluk, Erode District.		
Sampling Method	GLCS/SOP/AAQ/015	**Sample Drawn by**	Laboratory
Sample Name	Air Quality Monitoring	**Sampling Location**	AAQ 4 – Ekkattampalayam (School)
Sample Description	Ambient Air Quality Monitoring	**Sample Condition**	Good
Sample Code	**GLCS/9593, 9624, 9925,9974,10369,10385, 11018,11074,11460,11809,11954, 12312,12420,12863, 12914,13363,13394,13881,**		
Location Coordinates	11° 7'42.71"N 77°35'3.02"E		
Report Date	**09.01.2026**		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.10.2025	13.25 – 13.25	42.7	22.4	4.2	20.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
02.10.2025	13.35 – 13.35	43.5	22.8	BDL (DL: 4.0)	21.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
09.10.2025	13.25 – 13.25	41.3	20.0	5.4	22.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
10.10.2025	13.35 – 13.35	44.7	25.3	4.4	22.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
16.10.2025	13.20 - 13.20	42.3	22	4.7	20.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
17.10.2025	13.30 – 13.30	41.8	21.2	4.7	18.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
23.10.2025	13.20 - 13.20	41.9	20.8	BDL(DL:4.0)	17.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
24.10.2025	13.30 – 13.30	42.1	20.5	4.3	17.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
30.10.2025	08.00 – 08.00	42.3	21.6	4.9	20.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
31.10.2025	08.15 – 08.15	44.8	22.9	4.2	21.1	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
07.11.2025	08.15 – 08.15	40.5	19.5	4.7	20.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
08.11.2025	08.25 – 08.25	43.7	22.4	4.5	19.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
13.11.2025	13.35- 13.35	44.8	21.6	4.5	17.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
14.11.2025	13.35 – 13.35	42.9	20.4	4.2	16.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
20.11.2025	13.35 – 13.35	44.3	23.7	4.8	18.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
21.11.2025	13.35 – 13.35	43.7	22.9	4.2	20.1	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
27.11.2025	13.35 – 13.35	46.2	24.5	4.5	21.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
28.11.2025	13.35 – 13.35	41.6	20.8	4.6	20.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
04.12.2025	12.30 – 12.30	41.9	19.9	4.5	19.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
05.12.2025	12.50 – 12.50	42.3	20.0	4.8	20.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
11.12.2025	12.50 – 12.50	43.8	19.7	4.5	19.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
12.12.2025	13.00 – 13.00	41.9	20.8	4.5	20.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
18.12.2025	12.50 – 12.50	44.2	19.9	4.3	19.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
19.12.2025	13.00 – 13.00	42.5	20.4	4.1	19.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
25.12.2025	12.50 – 12.50	44.3	21.8	4.5	19.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
26.12.2025	13.00 – 13.00	41.6	19.2	4.8	20.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit
Remarks: The values observed for the pollutants given above are within the NAAQ standards.

Global Lab and Consultancy Services Salem 636016.

Verified by
L. SUDHAPRIYA
Technical Manager

BRANCH OFFICES CHENNAI (Mobile : +91 70944 53636)& COIMBATORE(Mobile :+91 70944 54646)

123 A

GLOBAL LAB AND CONSULTANCY SERVICES LLP
GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY
S.F.No.92/3A2, Geetha Nagar,
Alagapuram Pudur,
Salem - 636 016. Tamil Nadu, India.
Phone: +91 427 - 2970989 / +91 70944 52628
E-Mail: lab@glcs.in
Web: www.glcs.in

SUMMARY REPORT

Issued To	**Thiru.S.Saminathan,** S/o. Sennimalai Gounder, No.19, SK Palayam, V.Ramalingapuram, Chennimalai, Perundurai – 638051.		
Site Location	Rough Stone Gravel Quarry, Lease Area :2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai taluk, Erode District.		
Sampling Method	GLCS/SOP/AAQ/015	**Sample Drawn by**	Laboratory
Sample Name	Air Quality Monitoring	**Sampling Location**	AAQ 4 – Ekkattampalayam (School)
Sample Description	Ambient Air Quality Monitoring	**Sample Condition**	Good
Sample Code	**GLCS/9593, 9624, 9925,9974,10369,10385, 11018,11074,11460,11809,11954, 12312,12420,12863, 12914,13363,13394,13881,**		
Location Coordinates	11° 7'42.71"N 77°35'3.02"E		
Report Date	**09.01.2026**		

Date	Period. hrs	Ni (ng/m³)	As (ng/m³)	C6H6 (µg/m³)	BaP (ng/m³)	Pb (µg/m³)
01.10.2025	13.25 – 13.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.10.2025	13.35 – 13.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.10.2025	13.25 – 13.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.10.2025	13.35 – 13.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.10.2025	13.20 - 13.20	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.10.2025	13.30 – 13.30	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.10.2025	13.20 - 13.20	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.10.2025	13.30 – 13.30	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.10.2025	08.00 – 08.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
31.10.2025	08.15 – 08.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.11.2025	08.15 – 08.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.11.2025	08.25 – 08.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.11.2025	13.35- 13.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.11.2025	13.35 – 13.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.11.2025	13.35 – 13.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.11.2025	13.35 – 13.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.11.2025	13.35 – 13.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.11.2025	13.35 – 13.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.12.2025	12.30 – 12.30	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
05.12.2025	12.50 – 12.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.12.2025	12.50 – 12.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
12.12.2025	13.00 – 13.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.12.2025	12.50 – 12.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
19.12.2025	13.00 – 13.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.12.2025	12.50 – 12.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
26.12.2025	13.00 – 13.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

Note: BDL: Below Detection Limit; DL: Detection Limit
Remarks: The values observed for the pollutants given above are within the NAAQ standards.

Global Lab and Consultancy Services LLP * Salem 636016.

Verified by

L. SUDHARSIYA
Technical Manager

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

GLOBAL LAB AND CONSULTANCY SERVICES LLP
GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY
S.F.No.92/3A2, Geetha Nagar,
Alagapuram Pudur,
Salem - 636 016. Tamil Nadu, India.
Phone: +91 427 - 2970989 / +91 70944 52628
E-Mail: lab@glcs.in
Web: www.glcs.in

SUMMARY REPORT

Issued To	**Thiru.S.Saminathan,** S/o. Sennimalai Gounder, No.19, SK Palayam, V.Ramalingapuram, Chennimalai, Perundurai – 638051.		
Site Location	Rough Stone Gravel Quarry, Lease Area :2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai taluk, Erode District.		
Sampling Method	GLCS/SOP/AAQ/015	**Sample Drawn by**	Laboratory
Sample Name	Air Quality Monitoring	**Sampling Location**	AAQ 5 – Karattupalayam (Residential)
Sample Description	Ambient Air Quality Monitoring	**Sample Condition**	Good
Sample Code	**GLCS/9594, 9625, 9926,9975,10370,10386, 11019,11075,11461,11810,11955,12313,12421,12864,12915,13364,13395,13882,**		
Location Coordinates	**11° 9'53.32"N** 77°32'35.74"E		
Report Date	**09.01.2026**		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.10.2025	13.50 – 13.50	44.3	23.3	4.4	20.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
02.10.2025	14.00 – 14.00	44.2	22.8	4.40	20.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
09.10.2025	13.50 – 13.50	45.7	23.7	4.3	23.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
10.10.2025	14.00 – 14.00	41.7	22.4	BDL(DL:4)	19.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
16.10.2025	13.45 – 13.45	43.6	22.0	4.0	20.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
17.10.2025	13.55 – 13.55	42.8	21.6	4.3	20.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
23.10.2025	13.45 – 13.45	42.9	19.6	4.5	20.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
24.10.2025	13.55 – 13.55	43.3	20.7	4.5	22.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
30.10.2025	08.30 – 08.30	47.1	25.4	4.4	19.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
31.10.2025	08.40 – 08.40	42.1	20.4	4.2	19.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
07.11.2025	08.40 – 08.40	46.0	25.0	4.7	18.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
08.11.2025	8.50 – 8.50	41.9	22.0	4.3	18.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
13.11.2025	14.05 – 14.05	46.2	23.7	4.7	18.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
14.11.2025	14.00 – 14.00	43.7	20.4	4.3	18.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
20.11.2025	14.05 – 14.05	42.4	19.5	4.0	18.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
21.11.2025	14.00 – 14.00	45.4	23.7	BDL(DL:4)	20.1	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
27.11.2025	14.05 – 14.05	42.0	21.2	4.4	21.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
28.11.2025	14.00 – 14.00	43.0	21.2	4.2	19.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
04.12.2025	13.00 – 13.00	41.9	20.0	4.7	18.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
05.12.2025	13.15 – 13.15	40.7	20.3	4.5	19.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
11.12.2025	13.15 – 13.15	41.9	22.0	4.4	19.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
12.12.2025	13.25 – 13.25	40.3	20.4	4.4	21.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
18.12.2025	13.15 – 13.15	41.5	21.1	4.5	19.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
19.12.2025	13.25 – 13.25	46.2	24.5	BDL(DL:4.0)	20.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
25.12.2025	13.15 – 13.15	40.9	22.6	4.8	20.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
26.12.2025	13.25 – 13.25	43.4	23.6	4.9	21.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit
Remarks: The values observed for the pollutants given above are within the NAAQ standards.

Global Lab and Consultancy Services LLP * Salem 636016.

Verified by

L. SUDHAPRIYA
Technical Manager

BRANCH OFFICES:CHENNAI (Mobile : +91 70944 53636)& COIMBATORE(Mobile :+91 70944 54646)

125 A

GLOBAL LAB AND CONSULTANCY SERVICES LLP
GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY
S.F.No.92/3A2, Geetha Nagar,
Alagapuram Pudur,
Salem - 636 016. Tamil Nadu, India.
Phone: +91 427 - 2970989 / +91 70944 52628
E-Mail: lab@glcs.in
Web: www.glcs.in

SUMMARY REPORT

Issued To	**Thiru.S.Saminathan,** S/o. Sennimalai Gounder, No.19, SK Palayam, V.Ramalingapuram, Chennimalai, Perundurai – 638051.		
Site Location	Rough Stone Gravel Quarry, Lease Area :2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai taluk, Erode District.		
Sampling Method	GLCS/SOP/AAQ/015	**Sample Drawn by**	Laboratory
Sample Name	Air Quality Monitoring	**Sampling Location**	AAQ 5 – Karattupalayam (Residential)
Sample Description	Ambient Air Quality Monitoring	**Sample Condition**	Good
Sample Code	**GLCS/9594, 9625, 9926,9975,10370,10386, 11019,11075,11461,11810,11955,12313,12421,12864,12915,13364,13395,13882,**		
Location Coordinates	11° 9'53.32"N 77°32'35.74"E		
Report Date	**09.01.2026**		

Date	Period. hrs	Ni (ng/m³)	As (ng/m³)	C6H6 (µg/m³)	BaP (ng/m³)	Pb (µg/m³)
01.10.2025	13.50 – 13.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.10.2025	14.00 – 14.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.10.2025	13.50 – 13.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.10.2025	14.00 – 14.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.10.2025	13.45 – 13.45	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.10.2025	13.55 – 13.55	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.10.2025	13.45 – 13.45	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.10.2025	13.55 – 13.55	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.10.2025	08.30 – 08.30	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
31.10.2025	08.40 – 08.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.11.2025	08.40 – 08.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.11.2025	8.50 – 8.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.11.2025	14.05 – 14.05	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.11.2025	14.00 – 14.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.11.2025	14.05 – 14.05	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.11.2025	14.00 – 14.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.11.2025	14.05 – 14.05	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.11.2025	14.00 – 14.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.12.2025	13.00 – 13.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
05.12.2025	13.15 – 13.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.12.2025	13.15 – 13.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
12.12.2025	13.25 – 13.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.12.2025	13.15 – 13.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
19.12.2025	13.25 – 13.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.12.2025	13.15 – 13.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
26.12.2025	13.25 – 13.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

Note: BDL: Below Detection Limit; DL: Detection Limit
Remarks: The values observed for the pollutants given above are within the NAAQ standards.

Global Lab and Consultancy Services LLP * Salem 636016.

Verified by

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

L. SUDHAPRIYA
Technical Manager

GLOBAL LAB AND CONSULTANCY SERVICES LLP
GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY
S.F.No.92/3A2, Geetha Nagar,
Alagapuram Pudur,
Salem - 636 016. Tamil Nadu, India.
Phone: +91 427 - 2970989 / +91 70944 52628
E-Mail: lab@glcs.in
Web: www.glcs.in

SUMMARY REPORT

Issued To	**Thiru.S.Saminathan,** S/o. Sennimalai Gounder, No.19, SK Palayam, V.Ramalingapuram, Chennimalai, Perundurai – 638051.		
Site Location	Rough Stone Gravel Quarry, Lease Area :2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai taluk, Erode District.		
Sampling Method	GLCS/SOP/AAQ/015	**Sample Drawn by**	Laboratory
Sample Name	Air Quality Monitoring	**Sampling Location**	AAQ 6 – Tippampalayam (School)
Sample Description	Ambient Air Quality Monitoring	**Sample Condition**	Good
Sample Code	**GLCS/9595, 9626, 9927 ,9976,10371,10387, 11020,11076,11462,11811, 11956,12314,12422,12865,12916,13365,13396, 13883,**		
Location Coordinates	11° 8'17.76"N 77°32'22.59"E		
Report Date	**09.01.2026**		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.10.2025	14.10 – 14.10	45.6	24.1	4.5	21.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
02.10.2025	14.20 -14.20	45.7	22.9	4.0	22.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
09.10.2025	14.10 – 14.10	42.7	21.6	5.1	25.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
10.10.2025	14.20 -14.20	40.2	21.6	4.3	21.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
16.10.2025	14.05 - 14.05	45.2	23.3	4.5	19.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
17.10.2025	14.15 – 14.15	44.4	23.3	5.1	18.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
23.10.2025	14.05 - 14.05	44.7	22.5	BDL(DL:4.0)	20.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
24.10.2025	14.15 – 14.15	45.3	21.9	5.2	20.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
30.10.2025	09.00 – 09.00	45.4	22.9	BDL(DL:4.0)	19.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
31.10.2025	09.10 – 09.10	43.2	22.5	4.1	19.0	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
07.11.2025	09.10 – 09.10	44.5	23.7	4.4	20.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
08.11.2025	09.20 – 09.20	43.3	20.7	4.5	19.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
13.11.2025	14.35 – 14.35	42.8	21.2	4.4	19.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
14.11.2025	14.35 – 14.25	44.7	21.6	4.5	18.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
20.11.2025	14.35 – 14.35	42.0	20.0	BDL(DL:4.0)	16.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
21.11.2025	14.25 – 14.25	47.8	26.2	BDL(DL:4)	20.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
27.11.2025	14.35 – 14.35	40.6	19.5	4.6	21.0	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
28.11.2025	14.25 -14.25	44.6	22.5	4.4	19.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
04.12.2025	13.30 – 13.30	40.7	19.1	4.6	18.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
05.12.2025	13.40 – 13.40	43.3	21.2	4.3	20.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
11.12.2025	13.40 – 13.40	40.6	21.2	4.5	19.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
12.12.2025	13.50 – 13.50	42.4	21.2	4.3	19.8	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
18.12.2025	13.40 – 13.40	41.6	20.8	4.9	19.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
19.12.2025	13.50 – 13.50	42.3	21.5	4.9	19.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
25.12.2025	13.40 – 13.40	43.3	20.6	4.7	18.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
26.12.2025	13.50 – 13.50	44.8	21.9	4.2	19.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit

Remarks: The values observed for the pollutants given above are within the NAAQ standards.

Global Lab and Consultancy Services LLP Salem 636016.

Verified by

L. SUDHAPRIYA
Technical Manager

GLOBAL LAB AND CONSULTANCY SERVICES LLP
GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY
S.F.No.92/3A2, Geetha Nagar,
Alagapuram Pudur,
Salem - 636 016. Tamil Nadu, India.
Phone: +91 427 - 2970989 / +91 70944 52628
E-Mail: lab@glcs.in
Web: www.glcs.in

SUMMARY REPORT

Issued To	**Thiru.S.Saminathan,** S/o. Sennimalai Gounder, No.19, SK Palayam, V.Ramalingapuram, Chennimalai, Perundurai – 638051.		
Site Location	Rough Stone Gravel Quarry, Lease Area :2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai taluk, Erode District.		
Sampling Method	GLCS/SOP/AAQ/015	**Sample Drawn by**	Laboratory
Sample Name	Air Quality Monitoring	**Sampling Location**	AAQ 6 - Tippampalayam (School)
Sample Description	Ambient Air Quality Monitoring	**Sample Condition**	Good
Sample Code	**GLCS/9595, 9626, 9927 ,9976,10371,10387, 11020,11076,11462,11811, 11956,12314,12422,12865,12916,13365,13396, 13883,**		
Location Coordinates	11° 8'17.76"N 77°32'22.59"E		
Report Date	**09.01.2026**		

Date	Period. hrs	Ni (ng/m³)	As (ng/m³)	C6H6 (µg/m³)	BaP (ng/m³)	Pb (µg/m³)
01.10.2025	14.10 – 14.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.10.2025	14.20 -14.20	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.10.2025	14.10 – 14.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.10.2025	14.20 -14.20	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.10.2025	14.05 - 14.05	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.10.2025	14.15 – 14.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.10.2025	14.05 - 14.05	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.10.2025	14.15 – 14.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.10.2025	09.00 – 09.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
31.10.2025	09.10 – 09.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.11.2025	09.10 – 09.10	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.11.2025	09.20 – 09.20	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.11.2025	14.35 – 14.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.11.2025	14.35 – 14.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.11.2025	14.35 – 14.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.11.2025	14.25 – 14.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.11.2025	14.35 – 14.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.11.2025	14.25 -14.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.12.2025	13.30 – 13.30	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
05.12.2025	13.40 – 13.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.12.2025	13.40 – 13.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
12.12.2025	13.50 – 13.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.12.2025	13.40 – 13.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
19.12.2025	13.50 – 13.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.12.2025	13.40 – 13.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
26.12.2025	13.50 – 13.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

Note: BDL: Below Detection Limit; DL: Detection Limit
Remarks: The values observed for the pollutants given above are within the NAAQ standards.

Global Lab and Consultancy Services LLP * Salem 636016.

Verified by

L. SUDHAPRIYA
Technical Manager

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

GLOBAL LAB AND CONSULTANCY SERVICES LLP

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

S.F.No.92/3A2, Geetha Nagar,
Alagapuram Pudur,
Salem - 636 016. Tamil Nadu, India.
Phone: +91 427 - 2970989 / +91 70944 52628
E-Mail: lab@glcs.in
Web: www.glcs.in

SUMMARY REPORT

Issued To	**Thiru.S.Saminathan,** S/o. Sennimalai Gounder, No.19, SK Palayam, V.Ramalingapuram, Chennimalai, Perundurai – 638051.		
Site Location	Rough Stone Gravel Quarry, Lease Area :2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai taluk, Erode District.		
Sampling Method	GLCS/SOP/AAQ/015	**Sample Drawn by**	Laboratory
Sample Name	Air Quality Monitoring	**Sampling Location**	AAQ 7 – Ottampparai (Residential)
Sample Description	Ambient Air Quality Monitoring	**Sample Condition**	Good
Sample Code	**GLCS/9596, 9627,9928,9977,10372,10388, 11021,11077,11463,11812, 11957, 12417,12315, 12423,12866,12917,13366,13397,13884**		
Location Coordinates	11° 9'57.91"N 77°35'32.18"E		
Report Date	**09.01.2026**		

Date	Period. hrs	PM10 (µg/m3)	PM2.5 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)	O3 (µg/m3)	NH3 (µg/m3)	CO (mg/ m3)
01.10.2025	14.30 – 14.30	42.3	21.6	4.6	19.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
02.10.2025	14.40 – 14.40	40.9	20.4	4.2	20.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
09.10.2025	14.30 – 14.30	40.9	19.5	4.8	24.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
10.10.2025	14.40 – 14.40	44.5	25.8	4.4	22.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
16.10.2025	14.25 – 14.25	41.3	21.6	4.9	19.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
17.10.2025	14.35 – 14.35	41.3	20.4	4.5	18.6	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
23.10.2025	14.25 – 14.25	43.7	20.4	4.3	18.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
24.10.2025	14.35 – 14.35	42.9	20.8	5.0	19.7	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
30.10.2025	9.30 – 9.30	43.1	22.5	BDL(DL:4.0)	20.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
31.10.2025	09.40 – 09.40	40.8	20.8	4.4	20.0	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
07.11.2025	09.40 – 09.40	42.7	20.8	4.4	19.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
08.11.2025	09.50 – 09.50	45.2	23.7	4.1	19.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
13.11.2025	14.55 – 14.55	41.9	20.8	4.1	18.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
14.11.2025	14.50 – 14.50	45.2	22.4	4.5	19.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
20.11.2025	14.55 – 14.55	44.7	22.5	4.1	18.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
21.11.2025	14.50 – 14.50	43.6	22.5	BDL(DL:4)	20.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
27.11.2025	14.55 – 14.55	41.9	20.8	4.9	20.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
28.11.2025	14.50 – 14.50	42.3	20.4	4.2	19.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
04.12.2025	14.00 – 14.00	42.8	21.6	4.3	19.2	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
05.12.2025	14.15 – 14.15	45.2	22.0	4.4	20.3	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
11.12.2025	14.15 – 14.15	41.5	20.0	4.6	20.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
12.12.2025	14.25 – 14.25	43.6	21.6	4.7	20.0	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
18.12.2025	14.15 – 14.15	41.8	20.5	4.3	18.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
19.12.2025	14.25 – 14.25	42.7	21.3	4.8	21.4	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
25.12.2025	14.15 – 14.15	43.2	21.9	4.6	19.9	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
26.12.2025	14.25 – 14.25	44.2	21.3	4.2	20.5	BDL(DL:5.0)	BDL(DL:20.0	BDL(DL:1.15)
NAAQ* Standard		<100	<60	<80	<80	<180	<400	<4

Note: BDL: Below Detection Limit; DL: Detection Limit
Remarks: The values observed for the pollutants given above are within the NAAQ standards.

Global Lab and Consultancy Services LLP * Salem 636016.

Verified by

L. SUDHAPRIYA
Technical Manager

GLOBAL LAB AND CONSULTANCY SERVICES LLP
GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY
S.F.No.92/3A2, Geetha Nagar,
Alagapuram Pudur,
Salem - 636 016. Tamil Nadu, India.
Phone: +91 427 - 2970989 / +91 70944 52628
E-Mail: lab@glcs.in
Web: www.glcs.in

SUMMARY REPORT

Issued To	**Thiru.S.Saminathan,** S/o. Sennimalai Gounder, No.19, SK Palayam, V.Ramalingapuram, Chennimalai, Perundurai – 638051.		
Site Location	Rough Stone Gravel Quarry, Lease Area :2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai taluk, Erode District.		
Sampling Method	GLCS/SOP/AAQ/015	**Sample Drawn by**	Laboratory
Sample Name	Air Quality Monitoring	**Sampling Location**	AAQ 7 – Ottampparai (Residential)
Sample Description	Ambient Air Quality Monitoring	**Sample Condition**	Good
Sample Code	**GLCS/9596, 9627,9928,9977,10372,10388, 11021,11077,11463,11812, 11957, 12417,12315, 12423,12866,12917,13366,13397,13884**		
Location Coordinates	11° 9'57.91"N 77°35'32.18"E		
Report Date	**09.01.2026**		

Date	Period. hrs	Ni (ng/m³)	As (ng/m³)	C6H6 (µg/m³)	BaP (ng/m³)	Pb (µg/m³)
01.10.2025	14.30 – 14.30	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
02.10.2025	14.40 – 14.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
09.10.2025	14.30 – 14.30	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
10.10.2025	14.40 – 14.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
16.10.2025	14.25 – 14.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
17.10.2025	14.35 – 14.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
23.10.2025	14.25 – 14.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
24.10.2025	14.35 – 14.35	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
30.10.2025	9.30 – 9.30	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
31.10.2025	09.40 – 09.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
07.11.2025	09.40 – 09.40	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
08.11.2025	09.50 – 09.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
13.11.2025	14.55 – 14.55	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
14.11.2025	14.50 – 14.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
20.11.2025	14.55 – 14.55	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
21.11.2025	14.50 – 14.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
27.11.2025	14.55 – 14.55	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
28.11.2025	14.50 – 14.50	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
04.12.2025	14.00 – 14.00	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
05.12.2025	14.15 – 14.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
11.12.2025	14.15 – 14.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
12.12.2025	14.25 – 14.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
18.12.2025	14.15 – 14.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
19.12.2025	14.25 – 14.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
25.12.2025	14.15 – 14.15	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
26.12.2025	14.25 – 14.25	BDL (DL:.1)	BDL (DL:1)	BDL (DL:1.0)	BDL (DL:0.5)	BDL (DL:0.01)
NAAQ* Standard		<20	<6.0	<5.0	<1.0	<1.0

Note: BDL: Below Detection Limit; DL: Detection Limit
Remarks: The values observed for the pollutants given above are within the NAAQ standards.

Global Lab and Consultancy Services LLP ★ Salem 636016.

Verified by

L. SUDHAPRIYA
Technical Manager

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

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016870F

Report Number : GLCS/TR11824/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -1	**Attention**	-
Location Name	Near Project Area(Barren Land)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11824/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	03.15	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 8'59.47"N** **77°34'28.28"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ;Issue no.02: 2024	kg/ha	263.4
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	14.9
3	Boron	USEPA-6010D:2014	mg/kg	9.5
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.062
5	Cadmium	USEPA-6010 D-2014	mg/kg	BDL (DL:0.5)
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	39.2
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	3.6
8	Chromium	USEPA-6010D-2014	mg/kg	BDL (DL:0.5)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016870F

Report Number : GLCS/TR11824/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -1	**Attention**	-
Location Name	Near Project Area(Barren Land)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11824/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	03.15	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 8'59.47"N** **77°34'28.28"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	13.5
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	1.6
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	1.6
12	Iron	USEPA-6010 D-2014	mg/kg	27.8
13	Lead	USEPA-6010D-2014	mg/kg	BDL (DL:0.5)
14	Manganese	USEPA-6010 D-2014	mg/kg	26
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.32
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	0.55

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016870F

Report Number : GLCS/TR11824/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -1	**Attention**	-
Location Name	Near Project Area(Barren Land)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11824/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	03.15	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 8'59.47"N** **77°34'28.28"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	7.56
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	0.98
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	386
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	2.6
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	23.2
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	39.12
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	37.68
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	53.6

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016870F

Report Number : GLCS/TR11824/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -1	**Attention**	-
Location Name	Near Project Area(Barren Land)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11824/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	03.15	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 8'59.47"N** **77°34'28.28"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	39

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016871F

Report Number : GLCS/TR11825/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -2	**Attention**	-
Location Name	"Near Existing Quarry (Agriculture Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11825/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	03.40	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 8'46.88"N** **77°34'16.87"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ;Issue no.02: 2024	kg/ha	238.3
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	11
3	Boron	USEPA-6010D:2014	mg/kg	6.75
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.1
5	Cadmium	USEPA-6010 D-2014	mg/kg	BDL (DL:0.5)
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	36.8
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	3.2
8	Chromium	USEPA-6010D-2014	mg/kg	8.25

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016871F

Report Number : GLCS/TR11825/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -2	**Attention**	-
Location Name	"Near Existing Quarry (Agriculture Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11825/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	03.40	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 8'46.88"N** **77°34'16.87"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	8.5
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	1.5
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	1.3
12	Iron	USEPA-6010 D-2014	mg/kg	86.75
13	Lead	USEPA-6010D-2014	mg/kg	BDL (DL:0.5)
14	Manganese	USEPA-6010 D-2014	mg/kg	9.75
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.94
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	1.6

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016871F

Report Number : GLCS/TR11825/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -2	**Attention**	-
Location Name	"Near Existing Quarry (Agriculture Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11825/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	03.40	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 8'46.88"N** **77°34'16.87"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	7.89
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.38
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	378
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	5.5
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	25.10
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	35.10
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	39.80
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	61.6

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016871F

Report Number : GLCS/TR11825/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -2	**Attention**	-
Location Name	"Near Existing Quarry (Agriculture Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11825/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	03.40	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 8'46.88"N** **77°34'16.87"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	7.5

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016872F

Report Number : GLCS/TR11826/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -3	**Attention**	-
Location Name	"Ekkattampalayam (Agriculture Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11826/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	04.00	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 7'44.01"N** **77°35'3.46"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ;Issue no.02: 2024	kg/ha	301
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	13.4
3	Boron	USEPA-6010D:2014	mg/kg	4.25
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.08
5	Cadmium	USEPA-6010 D-2014	mg/kg	BDL (DL:0.5)
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	40.8
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	2.8
8	Chromium	USEPA-6010D-2014	mg/kg	15

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016872F

Report Number : GLCS/TR11826/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -3	**Attention**	-
Location Name	"Ekkattampalayam (Agriculture Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11826/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	04.00	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 7'44.01"N** **77°35'3.46"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	6.0
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	2.0
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	1.8
12	Iron	USEPA-6010 D-2014	mg/kg	3.75
13	Lead	USEPA-6010D-2014	mg/kg	BDL (DL:0.5)
14	Manganese	USEPA-6010 D-2014	mg/kg	11.75
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.60
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	1.034

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016872F

Report Number : GLCS/TR11826/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -3	**Attention**	-
Location Name	"Ekkattampalayam (Agriculture Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11826/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	04.00	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 7'44.01"N** **77°35'3.46"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	8.20
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	0.96
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	486
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	4.5
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	24.90
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	38.61
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	36.49
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	52

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016872F

Report Number : GLCS/TR11826/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -3	**Attention**	-
Location Name	"Ekkattampalayam (Agriculture Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11826/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	04.00	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 7'44.01"N** **77°35'3.46"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	16.25

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016873F

Report Number : GLCS/TR11827/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -4	**Attention**	-
Location Name	"Karattupalayam (Barren Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11827/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	04.20	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 9'52.36"N** **77°32'36.48"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ;Issue no.02: 2024	kg/ha	226
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	12.8
3	Boron	USEPA-6010D:2014	mg/kg	7.0
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.06
5	Cadmium	USEPA-6010 D-2014	mg/kg	BDL (DL:0.5)
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	39.2
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	4.1
8	Chromium	USEPA-6010D-2014	mg/kg	6.5

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016873F

Report Number : GLCS/TR11827/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -4	**Attention**	-
Location Name	"Karattupalayam (Barren Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11827/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	04.20	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 9'52.36"N** **77°32'36.48"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	8.0
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	1.4
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	1.6
12	Iron	USEPA-6010 D-2014	mg/kg	20.25
13	Lead	USEPA-6010D-2014	mg/kg	BDL (DL:0.5)
14	Manganese	USEPA-6010 D-2014	mg/kg	18.75
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.56
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	0.97

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016873F

Report Number : GLCS/TR11827/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -4	**Attention**	-
Location Name	"Karattupalayam (Barren Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11827/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	04.20	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 9'52.36"N** **77°32'36.48"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	8.12
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.28
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	586
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	6.6
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	26.24
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	43.70
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	30.06
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	42

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016873F

Report Number : GLCS/TR11827/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -4	**Attention**	-
Location Name	"Karattupalayam (Barren Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11827/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	04.20	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 9'52.36"N** **77°32'36.48"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	34.75

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016874F

Report Number : GLCS/TR11828/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -5	**Attention**	-
Location Name	"Tippampalayam (Agriculture Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11828/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	04.50	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 8'15.80"N** **77°32'21.79"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ;Issue no.02: 2024	kg/ha	251
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	13.9
3	Boron	USEPA-6010D:2014	mg/kg	13.75
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.12
5	Cadmium	USEPA-6010 D-2014	mg/kg	BDL (DL:0.5)
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	42
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	2.7
8	Chromium	USEPA-6010D-2014	mg/kg	14.5

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016874F

Report Number : GLCS/TR11828/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -5	**Attention**	-
Location Name	"Tippampalayam (Agriculture Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11828/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	04.50	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 8'15.80"N** **77°32'21.79"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	7.75
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	1.6
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	1.9
12	Iron	USEPA-6010 D-2014	mg/kg	5.25
13	Lead	USEPA-6010D-2014	mg/kg	BDL (DL:0.5)
14	Manganese	USEPA-6010 D-2014	mg/kg	18.5
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.988
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	1.7

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016874F

Report Number : GLCS/TR11828/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -5	**Attention**	-
Location Name	"Tippampalayam (Agriculture Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11828/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	04.50	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 8'15.80"N** **77°32'21.79"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	7.63
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.68
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	382
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	5.0
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	26.21
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	39.75
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	34.04
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	59

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016874F

Report Number : GLCS/TR11828/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -5	**Attention**	-
Location Name	"Tippampalayam (Agriculture Land)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11828/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	04.50	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 8'15.80"N** **77°32'21.79"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	20.5

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016875F

Report Number : GLCS/TR11829/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -6	**Attention**	-
Location Name	"Ottapparai (Residential)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11829/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	05.15	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 9'58.07"N** **77°35'31.03"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Available Nitrogen as N	GLCS/SOP/S/029 ;Issue no.02: 2024	kg/ha	213
2	Available Phosphorous(as P)	GLCS/SOP/S/005 ; Issue no:02: 2024	mg/kg	14.8
3	Boron	USEPA-6010D:2014	mg/kg	3.0
4	Bulk Density	GLCS/SOP/S/017; Issue no:02: 2024	g/cc	1.16
5	Cadmium	USEPA-6010 D-2014	mg/kg	BDL (DL:0.5)
6	Cation Exchange Capacity	GLCS/SOP/S/024; Issue no:02: 2024	meq/100g	36.8
7	Chlorides (as Cl-) in saturation extract	GLCS/SOP/S/004; Issue no:02: 2024	meq/l	3.4
8	Chromium	USEPA-6010D-2014	mg/kg	28.25

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016875F

Report Number : GLCS/TR11829/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -6	**Attention**	-
Location Name	"Ottapparai (Residential)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11829/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	05.15	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 9'58.07"N** **77°35'31.03"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Copper	USEPA-6010D :2014	mg/kg	22
10	Exchangeable Calcium (as Ca)	GLCS/SOP/S/020; Issue no:02: 2024	meq/100g	1.9
11	Exchangeable Magnesium (as Mg)	GLCS/SOP/S/021; Issue no:02: 2024	meq/100g	2.1
12	Iron	USEPA-6010 D-2014	mg/kg	125
13	Lead	USEPA-6010D-2014	mg/kg	BDL (DL:0.5)
14	Manganese	USEPA-6010 D-2014	mg/kg	23.25
15	Organic Carbon	GLCS/SOP/S/003; Issue no: 02: 2024	%	0.58
16	Organic Matter	GLCS/SOP/S/003; Issue no:02: 2024	%	1.0

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016875F

Report Number : GLCS/TR11829/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -6	**Attention**	-
Location Name	"Ottapparai (Residential)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11829/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	05.15	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 9'58.07"N** **77°35'31.03"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	pH Value	IS 2720 (Part 26): 1987(Reaffirmed 2021)	-	7.94
18	Soluble Potassium (as K) in saturation extract	GLCS/SOP/S/006; Issue no:02 : 2024	mg/100g	1.5
19	Specific Electrical Conductivity	IS 14767: 2000(Reaffirmed 2021)	µS/cm	412
20	Sulphate (as SO4)	GLCS/SOP/S/009; Issue no:02: 2024	mg/100g	6.9
21	Texture : Clay	GLCS/SOP/S/015 ;Issue no:02: 2024	%	26.063
22	Texture : Sand	GLCS/SOP/S/015; Issue no:02: 2024	%	37.34
23	Texture : Silt	GLCS/SOP/S/015 ; Issue no:02: 2024	%	36.57
24	Water Holding Capacity	GLCS/SOP/S/016; Issue no:02: 2024	%	48

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016875F

Report Number : GLCS/TR11829/2025-26 **Report Date** : 22-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SOIL -6	**Attention**	-
Location Name	"Ottapparai (Residential)"	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11829/2025-26	**Sampling Method**	GLCS/SOP/S/014
Sample Description	Solid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	05.15	**Date of Completion**	20-12-2025
Sample Receipt Condition	Good	**Avg Temperature**	- °C
Location Co-ordinates	**11° 9'58.07"N** **77°35'31.03"E**	**Avg Humidity**	- %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Zinc	USEPA-6010D-2014	mg/kg	39.5

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015010F

Report Number : GLCS/TR11830/2025-26 **Report Date** : 19-11-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SURFACE WATER - 1	**Attention**	-
Location Name	Palatholuvu Kulam	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11830/2025-26	**Sampling Method**	GLCS/M/SOP/05
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	09.30	**Date of Completion**	19-11-2025
Sample Receipt Condition	Good	**Avg Temperature**	25.8 °C
Location Co-ordinates	**11° 9'22.38"N** **77°31'24.47"E**	**Avg Humidity**	50.0 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016696F

Report Number : GLCS/TR11830/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SURFACE WATER - 1	**Attention**	-
Location Name	Palatholuvu Kulam	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11830/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-12-2025
Sampling Hours	09.30	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'22.38"N** **77°31'24.47"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.026
2	Ammoniacal Nitrogen as NH3-N	IS 3025 (Part 34)/Sec 1: 2023	mg/l	BDL (DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.039
5	Biochemical Oxygen Demand (BOD) at 27°C for 3 Days	IS 3025 (Part 44): 2023	mg/l	3.0
6	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL (DL:0.1)
7	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
8	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	100

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016696F

Report Number : GLCS/TR11830/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SURFACE WATER - 1	**Attention**	-
Location Name	Palatholuvu Kulam	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11830/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-12-2025
Sampling Hours	09.30	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'22.38"N** **77°31'24.47"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chemical Oxygen Demand (COD)	IS 3025 (Part 58): 2023	mg/l	20
10	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	220
11	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
12	Color	IS 3025 (Part 4): 2021	CU	<1
13	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
14	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL:0.01)
15	Dissolved Oxygen (DO)	IS 3025 (Part 38): 1989 (Reaffirmed 2019)	mg/l	4.8
16	Electrical Conductivity	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1978

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016696F

Report Number : GLCS/TR11830/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SURFACE WATER - 1	**Attention**	-
Location Name	Palatholuvu Kulam	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11830/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-12-2025
Sampling Hours	09.30	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'22.38"N** **77°31'24.47"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Fluoride as F-	GLCS/SOP/W/015; Issue no :02: 2024	mg/l	0.46
18	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL (DL:1.0)
19	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	0.27
20	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
21	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	65.7
22	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL (DL:0.1)
23	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
24	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016696F

Report Number : GLCS/TR11830/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SURFACE WATER - 1	**Attention**	-
Location Name	Palatholuvu Kulam	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11830/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-12-2025
Sampling Hours	09.30	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'22.38"N** **77°31'24.47"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	BDL (DL:2.0)
26	Odor	IS 3025 (Part 5): 2018	-	Agreeable
27	pH	IS 3025 (Part 11): 2022	-	8.06
28	Phenols	IS 3025 PART 43 SECTION 1: 2022	mg/l	BDL (DL:0.1)
29	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.005)
30	Sulphate as SO4	IS 3025 (Part 24) SECTION 1: 2022	mg/l	136
31	Sulphide as S (Iodometric Method)	GLCS/SOP/W/066: 2023	mg/l	BDL (DL:1.0)
32	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	450

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016696F

Report Number : GLCS/TR11830/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SURFACE WATER - 1	**Attention**	-
Location Name	Palatholuvu Kulam	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11830/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-12-2025
Sampling Hours	09.30	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'22.38"N** **77°31'24.47"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	1286
34	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	520
35	Total Suspended Solids	IS 3025 PART 17: 2022	mg/l	7.0
36	Turbidity	IS 3025 (Part 10): 2023	NTU	4
37	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015011F

Report Number : GLCS/TR11831/2025-26 **Report Date** : 19-11-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SURFACE WATER - 2	**Attention**	-
Location Name	Noyyal River	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11831/2025-26	**Sampling Method**	GLCS/M/SOP/05
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	09.55	**Date of Completion**	19-11-2025
Sample Receipt Condition	Good	**Avg Temperature**	26.0 °C
Location Co-ordinates	**11° 7'21.63"N** **77°35'2.94"E**	**Avg Humidity**	50.0 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016697F

Report Number : GLCS/TR11831/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SURFACE WATER - 2	**Attention**	-
Location Name	Noyyal River	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11831/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	09.55	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 7'21.63"N** **77°35'2.94"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.048
2	Ammoniacal Nitrogen as NH3-N	IS 3025 (Part 34)/Sec 1: 2023	mg/l	BDL (DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.072
5	Biochemical Oxygen Demand (BOD) at 27°C for 3 Days	IS 3025 (Part 44): 2023	mg/l	BDL (DL:2.0)
6	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL (DL:0.1)
7	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
8	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	128

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016697F

Report Number : GLCS/TR11831/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SURFACE WATER - 2	**Attention**	-
Location Name	Noyyal River	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11831/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	09.55	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 7'21.63"N** **77°35'2.94"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chemical Oxygen Demand (COD)	IS 3025 (Part 58): 2023	mg/l	BDL (DL:10.0)
10	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	280
11	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
12	Color	IS 3025 (Part 4): 2021	CU	<1
13	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
14	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL:0.01)
15	Dissolved Oxygen (DO)	IS 3025 (Part 38): 1989 (Reaffirmed 2019)	mg/l	5.2
16	Electrical Conductivity	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	2078

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016697F

Report Number : GLCS/TR11831/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SURFACE WATER - 2	**Attention**	-
Location Name	Noyyal River	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11831/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	09.55	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 7'21.63"N** **77°35'2.94"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Fluoride as F-	GLCS/SOP/W/015; Issue no :02: 2024	mg/l	0.47
18	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL (DL:1.0)
19	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	0.28
20	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
21	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	80.0
22	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL (DL:0.1)
23	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
24	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.030

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016697F

Report Number : GLCS/TR11831/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SURFACE WATER - 2	**Attention**	-
Location Name	Noyyal River	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11831/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	09.55	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 7'21.63"N** **77°35'2.94"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	3.4
26	Odor	IS 3025 (Part 5): 2018	-	Agreeable
27	pH	IS 3025 (Part 11): 2022	-	7.86
28	Phenols	IS 3025 PART 43 SECTION 1: 2022	mg/l	BDL (DL:0.1)
29	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.005)
30	Sulphate as SO4	IS 3025 (Part 24) SECTION 1: 2022	mg/l	125
31	Sulphide as S (Iodometric Method)	GLCS/SOP/W/066: 2023	mg/l	BDL (DL:1.0)
32	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	510

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016697F

Report Number : GLCS/TR11831/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	SURFACE WATER - 2	**Attention**	-
Location Name	Noyyal River	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11831/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	09.55	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 7'21.63"N** **77°35'2.94"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	1350
34	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	650
35	Total Suspended Solids	IS 3025 PART 17: 2022	mg/l	BDL (DL:2.0)
36	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
37	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015012F

Report Number : GLCS/TR11832/2025-26 **Report Date** : 19-11-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	WELL WATER - 1	**Attention**	-
Location Name	Near Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11832/2025-26	**Sampling Method**	GLCS/M/SOP/05
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	10.30	**Date of Completion**	19-11-2025
Sample Receipt Condition	Good	**Avg Temperature**	25.3 °C
Location Co-ordinates	**11° 8'51.50"N** **77°34'21.44"E**	**Avg Humidity**	51.0 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016698F

Report Number : GLCS/TR11832/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	WELL WATER - 1	**Attention**	-
Location Name	Near Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11832/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	10.30	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'51.50"N** **77°34'21.44"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
2	Ammoniacal Nitrogen as NH3-N	IS 3025 PART 34/Sec 1: 2023	mg/l	BDL (DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.013
5	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL (DL:0.1)
6	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
7	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	68
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	190

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016698F

Report Number : GLCS/TR11832/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	WELL WATER - 1	**Attention**	-
Location Name	Near Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11832/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	10.30	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'51.50"N** **77°34'21.44"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL:0.01)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1302
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.19
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL (DL:1.0)
16	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	BDL (DL:0.1)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016698F

Report Number : GLCS/TR11832/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	WELL WATER - 1	**Attention**	-
Location Name	Near Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11832/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	10.30	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'51.50"N** **77°34'21.44"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	51
19	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL (DL:0.1)
20	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
21	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
22	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	BDL (DL:2.0)
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.46

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016698F

Report Number : GLCS/TR11832/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	WELL WATER - 1	**Attention**	-
Location Name	Near Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11832/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	10.30	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'51.50"N** **77°34'21.44"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL (DL:0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.005)
27	Sulphate as SO4	IS 3025 (Part 24) Section 1: 2022	mg/l	81
28	Sulphide as S (IodometricMethod)	GLCS/SOP/W/066: 2023	mg/l	BDL (DL:1.0)
29	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	320
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	846
31	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	380
32	Total Suspended Solids (TSS)	IS 3025 (Part 17): 2022	mg/l	BDL (DL:2.0)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016698F

Report Number : GLCS/TR11832/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	WELL WATER - 1	**Attention**	-
Location Name	Near Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11832/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	10.30	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'51.50"N** **77°34'21.44"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015013F

Report Number : GLCS/TR11833/2025-26 **Report Date** : 19-11-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	WELL WATER - 2	**Attention**	-
Location Name	Tippampalayam	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11833/2025-26	**Sampling Method**	GLCS/M/SOP/05
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	10.50	**Date of Completion**	19-11-2025
Sample Receipt Condition	Good	**Avg Temperature**	26.2 °C
Location Co-ordinates	**11° 8'8.47"N** **77°32'24.67"E**	**Avg Humidity**	50.0 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016699F

Report Number : GLCS/TR11833/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	WELL WATER - 2	**Attention**	-
Location Name	Tippampalayam	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11833/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	10.50	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'8.47"N** **77°32'24.67"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
2	Ammoniacal Nitrogen as NH3-N	IS 3025 PART 34/Sec 1: 2023	mg/l	BDL (DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.011
5	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL (DL:0.1)
6	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
7	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	92
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	210

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016699F

Report Number : GLCS/TR11833/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	WELL WATER - 2	**Attention**	-
Location Name	Tippampalayam	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11833/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	10.50	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'8.47"N** **77°32'24.67"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL:0.01)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1330
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.17
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL (DL:1.0)
16	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	BDL (DL:0.1)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016699F

Report Number : GLCS/TR11833/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	WELL WATER - 2	**Attention**	-
Location Name	Tippampalayam	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11833/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	10.50	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'8.47"N** **77°32'24.67"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	56
19	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL (DL:0.1)
20	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
21	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
22	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	BDL (DL:2.0)
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.68

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016699F

Report Number : GLCS/TR11833/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	WELL WATER - 2	**Attention**	-
Location Name	Tippampalayam	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11833/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	10.50	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'8.47"N** **77°32'24.67"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL (DL:0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.005)
27	Sulphate as SO4	IS 3025 (Part 24) Section 1: 2022	mg/l	82
28	Sulphide as S (IodometricMethod)	GLCS/SOP/W/066: 2023	mg/l	BDL (DL:1.0)
29	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	310
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	864
31	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	460
32	Total Suspended Solids (TSS)	IS 3025 (Part 17): 2022	mg/l	BDL (DL:2.0)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016699F

Report Number : GLCS/TR11833/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	WELL WATER - 2	**Attention**	-
Location Name	Tippampalayam	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11833/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	10.50	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'8.47"N** **77°32'24.67"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015014F

Report Number : GLCS/TR11834/2025-26 **Report Date** : 19-11-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	BOREWELL WATER -1	**Attention**	-
Location Name	Near Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11834/2025-26	**Sampling Method**	GLCS/M/SOP/05
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	11.20	**Date of Completion**	19-11-2025
Sample Receipt Condition	Good	**Avg Temperature**	25.5 °C
Location Co-ordinates	**11° 8'50.06"N** **77°34'30.42"E**	**Avg Humidity**	50.0 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016700F

Report Number : GLCS/TR11834/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	BOREWELL WATER -1	**Attention**	-
Location Name	Near Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11834/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	11.20	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'50.06"N** **77°34'30.42"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
2	Ammoniacal Nitrogen as NH3-N	IS 3025 PART 34/Sec 1: 2023	mg/l	BDL (DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	0.012
5	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL (DL:0.1)
6	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
7	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	80
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	170

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016700F

Report Number : GLCS/TR11834/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	BOREWELL WATER -1	**Attention**	-
Location Name	Near Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11834/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	11.20	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'50.06"N** **77°34'30.42"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL:0.01)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1358
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.26
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL (DL:1.0)
16	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	0.23

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016700F

Report Number : GLCS/TR11834/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	BOREWELL WATER -1	**Attention**	-
Location Name	Near Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11834/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	11.20	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'50.06"N** **77°34'30.42"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	54
19	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL (DL:0.1)
20	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
21	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
22	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	BDL (DL:2.0)
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.36

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016700F

Report Number : GLCS/TR11834/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	BOREWELL WATER -1	**Attention**	-
Location Name	Near Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11834/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	11.20	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'50.06"N** **77°34'30.42"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL (DL:0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.005)
27	Sulphate as SO4	IS 3025 (Part 24) Section 1: 2022	mg/l	136
28	Sulphide as S (IodometricMethod)	GLCS/SOP/W/066: 2023	mg/l	BDL (DL:1.0)
29	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	270
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	882
31	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	420
32	Total Suspended Solids (TSS)	IS 3025 (Part 17): 2022	mg/l	BDL (DL:2.0)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016700F

Report Number : GLCS/TR11834/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	BOREWELL WATER -1	**Attention**	-
Location Name	Near Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11834/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	11.20	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'50.06"N** **77°34'30.42"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015015F

Report Number : GLCS/TR11835/2025-26 **Report Date** : 19-11-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	BOREWELL WATER -2	**Attention**	-
Location Name	Ottapparai	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11835/2025-26	**Sampling Method**	GLCS/M/SOP/05
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	11.45	**Date of Completion**	19-11-2025
Sample Receipt Condition	Good	**Avg Temperature**	26.0 °C
Location Co-ordinates	**11° 9'59.30"N** **77°35'22.90"E**	**Avg Humidity**	50.0 %
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Escherichia coli	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Absent
2	Total Coliforms	IS: 15185 - 2016(Reaffirmed 2021)	Per 100ml	Present

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
A. Sathishkumar
Technical Manager- Microbiology

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016701F

Report Number : GLCS/TR11835/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	BOREWELL WATER -2	**Attention**	-
Location Name	Ottapparai	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11835/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	11.45	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'59.30"N** **77°35'22.90"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
1	Aluminium	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
2	Ammoniacal Nitrogen as NH3-N	IS 3025 PART 34/Sec 1: 2023	mg/l	BDL (DL:1.0)
3	Arsenic as As	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
4	Barium as Ba	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
5	Boron as B	IS 3025 (Part 57): 2021	mg/l	BDL (DL:0.1)
6	Cadmium as Cd	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
7	Calcium as Ca	IS 3025 (Part 40): 1991 (Reaffirmed 2019)	mg/l	108
8	Chloride as Cl-	IS 3025 (Part 32): 1988 (Reaffirmed 2019)	mg/l	340

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016701F

Report Number : GLCS/TR11835/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	BOREWELL WATER -2	**Attention**	-
Location Name	Ottapparai	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11835/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	11.45	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'59.30"N** **77°35'22.90"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
9	Chromium as Cr	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
10	Color	IS 3025 (Part 4): 2021	CU	<1
11	Copper as Cu	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
12	Cyanide as CN	IS 3025 part 27/Sec 1: 2021	mg/l	BDL (DL:0.01)
13	Electrical Conductivity (EC)	IS 3025 (Part 14): 2013 (Reaffirmed 2019)	µS/cm	1920
14	Fluoride as F-	GLCS/SOP/W/015; Issue No:02: 2024	mg/l	0.25
15	Free Residual Chlorine as Cl2	IS 3025 (Part 26): 2021	mg/l	BDL (DL:1.0)
16	Iron as Fe	IS 3025 (Part 53): 2024	mg/l	0.34

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016701F

Report Number : GLCS/TR11835/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	BOREWELL WATER -2	**Attention**	-
Location Name	Ottapparai	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11835/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	11.45	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'59.30"N** **77°35'22.90"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
17	Lead as Pb	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
18	Magnesium as Mg	IS 3025 (Part 46): 2023	mg/l	63
19	Manganese as Mn	IS 3025 (Part 59): 2023	mg/l	BDL (DL:0.1)
20	Mercury as Hg	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.002)
21	Molybdenum as Mo	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)
22	Nitrate as NO3	IS 3025 (Part 34)/Sec 1: 2023	mg/l	4.5
23	Odor	IS 3025 (Part 5): 2018	-	Agreeable
24	pH	IS 3025 (Part 11): 2022	-	7.73

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016701F

Report Number : GLCS/TR11835/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	BOREWELL WATER -2	**Attention**	-
Location Name	Ottapparai	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11835/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	11.45	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'59.30"N** **77°35'22.90"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
25	Phenols	IS 3025 PART 43 Section 1: 2022	mg/l	BDL (DL:0.1)
26	Selenium as Se	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.005)
27	Sulphate as SO4	IS 3025 (Part 24) Section 1: 2022	mg/l	86
28	Sulphide as S (IodometricMethod)	GLCS/SOP/W/066: 2023	mg/l	BDL (DL:1.0)
29	Total Alkalinity as CaCO3	IS 3025 (Part 23): 2023	mg/l	460
30	Total Dissolved Solids (TDS)	IS 3025 (Part 16): 2023	mg/l	1248
31	Total Hardness as CaCO3	IS 3025 (Part 21): 2009 (Reaffirmed 2019)	mg/l	530
32	Total Suspended Solids (TSS)	IS 3025 (Part 17): 2022	mg/l	BDL (DL:2.0)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000016701F

Report Number : GLCS/TR11835/2025-26 **Report Date** : 18-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sernnimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai 638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk, **Erode District**
Sample Name	BOREWELL WATER -2	**Attention**	-
Location Name	Ottapparai	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3413/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/11835/2025-26	**Sampling Method**	GLCS/SOP/W/028
Sample Description	Liquid	**Sample Receipt Date**	15-11-2025
Sampling Date	13-11-2025	**Date of Analysis**	15-11-2025
Sampling Hours	11.45	**Date of Completion**	18-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'59.30"N** **77°35'22.90"E**
Other Details (If any)	NA		

Sl.No.	TEST PARAMETER	TEST METHOD	UNITS	RESULT
33	Turbidity	IS 3025 (Part 10): 2023	NTU	<1
34	Zinc as Zn	GLCS/SOP/W/62 Issue No:1:Dated:10.09.2022	mg/l	BDL (DL:0.01)

Note : BDL - Below Detection Limit, **DL -** Detection Limit,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015833F

Report Number : GLCS/TR12316/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 1	**Attention**	-
Location Name	Core Zone - Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12316/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	12.15 - 12.15	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'59.91"N** **77°34'26.36"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	13.15	42.1	53.8	51.07
2	14.15	41.3	52.1	49.44
3	15.15	40.2	52.3	49.55
4	16.15	44.2	56.3	53.55
5	17.15	41.5	49.2	46.87
6	18.15	38.5	44.5	42.46
7	19.15	36.2	42.3	40.24
8	20.15	35.5	43.2	40.87

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015833F

Report Number : GLCS/TR12316/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 1	**Attention**	-
Location Name	Core Zone - Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12316/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	12.15 - 12.15	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'59.91"N** **77°34'26.36"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	21.15	34.4	41.3	39.10
10	22.15	33.7	43.6	41.01
11	23.15	35.9	41.2	39.31
12	00.15	34.1	37.2	35.92
13	01.15	33.9	38.6	36.86
14	02.15	35.2	39.2	37.65
15	03.15	33.7	38.2	36.51
16	04.15	32.6	38.6	36.56

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015833F

Report Number : GLCS/TR12316/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 1	**Attention**	-
Location Name	Core Zone - Project Area	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12316/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	12.15 - 12.15	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'59.91"N** **77°34'26.36"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	05.15	32.1	39.9	37.56
18	06.15	36.6	43.2	41.05
19	07.15	38.1	44.3	42.22
20	08.15	42.9	47.4	45.71
21	09.15	41.5	50.9	48.36
22	10.15	42.3	47.1	45.33
23	11.15	40.9	48.1	45.85
24	12.15	41.7	46.3	44.58
		Day Mean dB(A)		**45.4**
		Night Mean dB(A)		**37.7**
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				**Day Time : 75 dB (A)** **Night Time : 70 dB (A)**

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015832F

Report Number : GLCS/TR12317/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 2	**Attention**	-
Location Name	Near Crusher	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12317/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	12.30 - 12.30	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'59.55"N** **77°34'45.86"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	13.30	43.8	51.1	48.83
2	14.30	41.1	53.3	50.54
3	15.30	40.6	55.2	52.34
4	16.30	42.2	56.7	53.84
5	17.30	41.3	54.3	51.50
6	18.30	43.9	55.1	52.41
7	19.30	43.1	53.7	51.05
8	20.30	45.8	53.7	51.34

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015832F

Report Number : GLCS/TR12317/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 2	**Attention**	-
Location Name	Near Crusher	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12317/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	12.30 - 12.30	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'59.55"N** **77°34'45.86"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	21.30	43.2	52.2	49.70
10	22.30	42.9	50.1	47.85
11	23.30	36.1	44.1	41.73
12	00.30	35.9	46.9	44.22
13	01.30	37.5	45.5	43.13
14	02.30	38.2	48.3	45.69
15	03.30	37.3	43.3	41.26
16	04.30	37.7	44.9	42.65

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015832F

Report Number : GLCS/TR12317/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 2	**Attention**	-
Location Name	Near Crusher	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12317/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	12.30 - 12.30	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'59.55"N** **77°34'45.86"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	05.30	39.5	50.1	47.45
18	06.30	41.9	55.5	52.68
19	07.30	42.4	56.9	54.04
20	08.30	43.8	55.1	52.40
21	09.30	43.5	54.9	52.19
22	10.30	44.7	55.2	52.56
23	11.30	43.3	54.1	51.44
24	12.30	41.4	56.7	53.82
		Day Mean dB(A)		**51.9**
		Night Mean dB(A)		**44.2**
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				**Day Time : 75 dB (A)**
				Night Time : 70 dB (A)

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015831F

Report Number : GLCS/TR12318/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 3	**Attention**	-
Location Name	Near Existing Quarry	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12318/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	13.10 - 13.10	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'47.69"N** **77°34'17.12"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	14.10	44.3	61.5	58.57
2	15.10	44.9	61.6	58.68
3	16.10	45.3	60.3	57.42
4	17.10	43.4	59.5	56.60
5	18.10	42.6	57.2	54.34
6	19.10	43.7	55.5	52.77
7	20.10	42.1	50.2	47.82
8	21.10	42.8	54.1	51.40

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015831F

Report Number : GLCS/TR12318/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 3	**Attention**	-
Location Name	Near Existing Quarry	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12318/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	13.10 - 13.10	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'47.69"N** **77°34'17.12"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	22.10	35.6	48.2	45.42
10	23.10	33.3	43.3	40.70
11	00.10	35.1	42.8	40.47
12	01.10	37.3	42.9	40.95
13	02.10	36.5	41.6	39.76
14	03.10	38.9	42.8	41.27
15	04.10	37.1	40.1	38.85
16	05.10	35.4	39.7	38.06

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

200 A

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015831F

Report Number : GLCS/TR12318/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 3	**Attention**	-
Location Name	Near Existing Quarry	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12318/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	13.10 - 13.10	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'47.69"N** **77°34'17.12"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	06.10	42.1	48.9	46.71
18	07.10	41.3	50.6	48.07
19	08.10	43.8	56.2	53.43
20	09.10	40.6	50.4	47.82
21	10.10	44.1	52.7	50.25
22	11.10	45.9	53.5	51.19
23	12.10	46.2	57.9	55.17
24	13.10	45.8	51.5	49.52
		Day Mean dB(A)		**52.5**
		Night Mean dB(A)		**40.7**
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Industrial Area)				**Day Time : 75 dB (A)** **Night Time : 70 dB (A)**

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015830F

Report Number : GLCS/TR12319/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 4	**Attention**	-
Location Name	Ekkattampalayam (School)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12319/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	13.45 - 13.45	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 7'42.73"N** **77°35'2.76"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	14.45	44.3	46.7	45.66
2	15.45	44.9	53.5	51.05
3	16.45	45.3	57.1	54.37
4	17.45	43.4	52.3	49.82
5	18.45	42.6	51.9	49.37
6	19.45	43.7	52.7	50.20
7	20.45	42.1	50.2	47.82
8	21.45	42.8	54.1	51.40

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015830F

Report Number : GLCS/TR12319/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 4	**Attention**	-
Location Name	Ekkattampalayam (School)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12319/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	13.45 - 13.45	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 7'42.73"N** **77°35'2.76"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	22.45	38.1	46.3	43.90
10	23.45	37.5	40.2	39.06
11	00.45	36.2	41.5	39.61
12	01.45	35.5	40.3	38.53
13	02.45	36.5	39.5	38.25
14	03.45	34.2	40.9	38.73
15	04.45	33.6	38.2	36.48
16	05.45	36.8	40.4	38.96

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015830F

Report Number : GLCS/TR12319/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 4	**Attention**	-
Location Name	Ekkattampalayam (School)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12319/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	13.45 - 13.45	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 7'42.73"N** **77°35'2.76"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	06.45	42.1	50.6	48.16
18	07.45	41.3	49.6	47.19
19	08.45	43.8	51.2	48.92
20	09.45	40.6	50.4	47.82
21	10.45	44.1	52.7	50.25
22	11.45	45.9	53.5	51.19
23	12.45	46.2	52.1	50.08
24	13.45	45.8	50.7	48.91
		Day Mean dB(A)		**49.5**
		Night Mean dB(A)		**39.2**
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				**Day Time : 55 dB (A)** **Night Time : 45 dB (A)**

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015829F

Report Number : GLCS/TR12320/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 5	**Attention**	-
Location Name	Karattupalayam (Residential)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12320/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	14.15 -14.15	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'53.03"N** **77°32'35.77"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	15.15	47.1	59.5	56.73
2	16.15	45.9	56.3	53.67
3	17.15	49.1	53.7	51.98
4	18.15	47.1	52.1	50.28
5	19.15	45.8	50.3	48.61
6	20.15	44.7	53.7	51.20
7	21.15	37.1	52.1	49.22
8	22.15	38.5	49.5	46.82

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015829F

Report Number : GLCS/TR12320/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 5	**Attention**	-
Location Name	Karattupalayam (Residential)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12320/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	14.15 -14.15	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'53.03"N** **77°32'35.77"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	23.15	39.5	42.6	41.32
10	00.15	38.8	40.5	39.73
11	01.15	35.6	40.2	38.48
12	02.15	33.2	39.2	37.16
13	03.15	34.9	38.6	37.13
14	04.15	35.4	38.5	37.22
15	05.15	34.6	35.6	35.13
16	06.15	42.7	54.1	51.39

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015829F

Report Number : GLCS/TR12320/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 5	**Attention**	-
Location Name	Karattupalayam (Residential)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12320/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	14.15 -14.15	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'53.03"N** **77°32'35.77"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	07.15	43.1	53.6	50.96
18	08.15	43.5	54.1	51.45
19	09.15	43.9	55.9	53.16
20	10.15	46.1	58.5	55.73
21	11.15	45.5	56.3	53.64
22	12.15	44.7	59.6	56.73
23	13.15	46.9	61.7	58.83
24	14.15	46.7	60.5	57.67
		Day Mean dB(A)		**53.2**
		Night Mean dB(A)		**39.1**
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				**Day Time : 55 dB (A)** **Night Time : 45 dB (A)**

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015828F

Report Number : GLCS/TR12321/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 6	**Attention**	-
Location Name	Tippampalayam (School)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12321/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	14.45 - 14.45	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'18.43"N** **77°32'22.72"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	15.45	44.5	62.1	59.16
2	16.45	43.7	60.5	57.58
3	17.45	42.2	56.9	54.03
4	18.45	42.8	61.1	58.15
5	19.45	44.7	62.5	59.56
6	20.45	43.2	62.2	59.24
7	21.45	40.9	59.9	56.94
8	22.45	37.5	45.5	43.13

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015828F

Report Number : GLCS/TR12321/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 6	**Attention**	-
Location Name	Tippampalayam (School)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12321/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	14.45 - 14.45	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'18.43"N** **77°32'22.72"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	23.45	36.2	42.8	40.65
10	00.45	35.5	40.2	38.46
11	01.45	34.4	39.6	37.74
12	02.45	35.1	42.9	40.56
13	03.45	35.9	40.5	38.78
14	04.45	33.3	36.6	35.26
15	05.45	32.8	37.5	35.76
16	06.45	37.2	44.5	42.23

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015828F

Report Number : GLCS/TR12321/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 6	**Attention**	-
Location Name	Tippampalayam (School)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12321/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	14.45 - 14.45	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 8'18.43"N** **77°32'22.72"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	07.45	39.9	52.2	49.44
18	08.45	43.6	54.6	51.92
19	09.45	45.5	56.7	54.01
20	10.45	46.9	57.1	54.49
21	11.45	45.1	60.8	57.91
22	12.45	46.2	59.6	56.78
23	13.45	47.9	61.1	58.29
24	14.45	46.9	60.8	57.96
		Day Mean dB(A)		**55.5**
		Night Mean dB(A)		**38.8**
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				**Day Time : 55 dB (A)** **Night Time : 45 dB (A)**

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015855F

Report Number : GLCS/TR12322/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 7	**Attention**	-
Location Name	Ottapparai (Residential)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12322/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	15.10 - 15.10	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'58.07"N** **77°35'32.41"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
1	16.10	43.9	59.1	56.22
2	17.10	43.3	60.5	57.57
3	18.10	42.9	59.5	56.58
4	19.10	43.2	60.1	57.18
5	20.10	42.9	58.5	55.61
6	21.10	40.8	56.6	53.70
7	22.10	35.2	42.9	40.57
8	23.10	35.9	42.1	40.02

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in
for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015855F

Report Number : GLCS/TR12322/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 7	**Attention**	-
Location Name	Ottapparai (Residential)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12322/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	15.10 - 15.10	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'58.07"N** **77°35'32.41"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
9	00.10	36.1	40.5	38.83
10	01.10	33.9	43.5	40.94
11	02.10	32.2	40.3	37.92
12	03.10	35.6	39.7	38.12
13	04.10	33.3	37.2	35.67
14	05.10	34.8	39.5	37.76
15	06.10	35.9	47.1	44.41
16	07.10	36.3	49.1	46.31

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

Global Lab and Consultancy Services LLP Laboratory Salem-636016

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

GLCS
Committed to Precision
LABORATORY | CONSULTANCY | SUSTAINABILITY

GLOBAL LAB AND CONSULTANCY SERVICES LLP
S.F No.92/3A2, Geetha Nagar, Alagapuram Pudur,
Salem – 636 016. Tamil Nadu. India.
Phone Nos.: +91 427 2970 989 / 70944 52628
E-Mail: lab@glcs.in; Web: www.glcs.in

for Accreditation

TC-6060

TEST REPORT

ULR-TC606025000015855F

Report Number : GLCS/TR12322/2025-26 **Report Date** : 05-12-2025

Customer Provided Details:			
Issued To	**Thiru.S.SAMINATHAN** S/o. Sennimalai Gounder, No:19,SK.Palayam V.Ramalingapuram, Chennimalai **Perundurai-638051**	**Site Address**	**Thiru.S.SAMINATHAN** ROUGH STONE GRAVEL QUARRY Lease Area:2.53.80Ha, 206/1(Part), Ekkatampalayam Village, Perundurai Taluk **Erode District -**
Sample Name	AMBIENT NOISE LEVEL MONITORING - 7	**Attention**	-
Location Name	Ottapparai (Residential)	**Other Details (If any)**	NA
Laboratory Provided Details:			
TRF No.	TRF/3531/2025-26	**Sampled by**	Laboratory
Sample Code	GLCS/12322/2025-26	**Sampling Method**	GLCS/SOP/N/014
Sample Description	-	**Sample Receipt Date**	22-11-2025
Sampling Date	20-11-2025 - 21-11-2025	**Date of Analysis**	04-12-2025
Sampling Hours	15.10 - 15.10	**Date of Completion**	04-12-2025
Sample Receipt Condition	Good	**Location Co-ordinates**	**11° 9'58.07"N** **77°35'32.41"E**
Other Details (If any)	NA		

Sl.No.	Time(Hrs)	Min dB (A) Day	Max dB (A) Day	Leq dB (A) Day
17	08.10	34.9	47.2	44.44
18	09.10	38.9	52.1	49.29
19	10.10	41.5	53.9	51.13
20	11.10	42.6	58.5	55.60
21	12.10	43.6	57.1	54.28
22	13.10	45.5	56.9	54.19
23	14.10	44.7	61.1	58.19
24	15.10	45.1	60.5	57.61
		Day Mean dB(A)		**53.3**
		Night Mean dB(A)		**38.7**
Limits as per The Noise Pollution (Regulation & Control) Rules, 2010 of MoEFCC / CPCB (Residential Area)				**Day Time : 55 dB (A)** **Night Time : 45 dB (A)**

Note : MoEFCC - Ministry of Environment, Forest and Climate Change, **CPCB -** Central Pollution Control Board,

for Report

For Global Lab and Consultancy Services LLP

Authorised Signatory
L.Sudha Priya
Technical Manager

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

Note: The test results are only to the sample submitted for test. Any Correction of the test report on full or part shall invalidate the report. Samples are not drawn by us unless otherwise stated. Sample will be retained for 15 days from the date of reporting except in case of regulatory samples or specifically instructed by client. Perishable samples will be discarded immediately after reporting. We do not accept only liability with regard to origin or source from which the samples are extracted. The Laboratory is not responsible for authenticity of photocopied test reports. Any holder of this report is advised that information contained here on reflects the laboratory's finding at the time of its intervention only and within the limits of client instructions. The authenticity of the test reports issued by us can be verified by submitting on E-mail request with report number and report date along with report copy.

भारतीय गुणवत्ता परिषद्
QUALITY COUNCIL® OF INDIA
QCI Creating an Ecosystem for Quality

NABET

National Accreditation Board for Education and Training

Certificate of Accreditation

Geo Exploration and Mining Solutions, Salem

No. 17, Advaitha Ashram Road, Fairlands, Salem, Tamil Nadu – 636 004

*Geo Exploration and Mining Solutions, Salem is Re-Accredited (RA3) **as Category-A organization** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations (Version 3), for the preparation of EIA/EMP reports in the sectors listed below, as per the specified categories*

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including opencast / underground mining	1	1 (a) (i)	A
2.	Mineral beneficiation	7	2 (b)	A
3.	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7 (c)	A
4.	Building and construction projects	38	8 (a)	B

Note: Names of approved experts and sectors are mentioned in RAAC minutes dated August 21, 2025, 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/25/3827 dated August 25, 2025. The accreditation needs to be renewed before the expiry date by Geo Exploration and Mining Solutions, Salem following due process of assessment.

Valid up to
August 06, 2028

Issue Date
August 25, 2025

Certificate No.
NABET/EIA/25-28/RA 0424

Varinder Kanwar
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.