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

KEERANUR ROUGH STONE AND GRAVEL QUARRIES

Cluster Extent:18.78.1 Ha (6 Proposed + 2 Existing Quarries)

P1	P2	P3
Thiru.R. Senthil Kumar, S/o. Ramasamy No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641663	**Thiru.R.Muthusamy** S/o. Rangasami Gounder, No. 77, South Street, Morattupalayam, Tiruppur District, Tamil Nadu State – 638 752.	**Tmt. R. Thulasimani,** W/o. P. Ramasamy, No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641 663.
S.F.No. 16/2(P) & 16/3 (P) **Extent :** 1.01.10 ha	**S.F.No. 71/A** **Extent:** 1.31.0 ha	**S.F.No. 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part),** **Extent:** 2.22.0 ha
Keeranur Village, Kangeyam Taluk, Tiruppur District		
Production 72,250 m^3 of Rough stone & 11,830 m^3 of Gravel **Depth:**28m bgl	**Production** 1,08,350 m^3 of Rough stone & 36,652 m^3 of Gravel **Depth:**34m bgl	**Production** 2,42,962 m^3 of Rough stone & 35,564 m^3 of Gravel **Depth:**49m bgl

ToR obtained vide

File No.12929 TOR Identification No. TO25B0108TN5494983N Dated: 01.12.2025-P1
File No.13011 TOR Identification No. TO25B0108TN5994383N Dated: 06.01.2026-P2
File No.13527 TOR Identification No. TO26B0108TN5465147N Dated: 15.04.2026-P3

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/2225/RA 0276
Phone: 0427-2431989,
Email: infogeoexploration@gmail.com
Web: www.gemssalem.com

Laboratory

CHENNAI METTEX LAB PRIVATE LIMITED
(Approved by AAI, AGMARK, APEDA, BIS, EIC FSSAI, GAFTA,
IOPEPC, MOEF & TEA BOARD)
Jothi Complex, 83, M.K.N Road, Guindy,
Chennai – 600 032

Baseline Monitoring Period

December 2025 – February 2026

MAY 2026

DECLARATION BY THE PROJECT PROPONENT

I, **R.Senthil Kumar**– Authorized Signatory of **R.Senthil Kumar 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 16/2(P) & 16/3 (P) over an extent of 1.01.10 Ha in Keeranur Village, Kangeyam Taluk and Tiruppur District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide File No.12929 TOR Identification No. TO25B0108TN5494983N Dated: 01.12.2025

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

R.Senthil Kumar

Place : Tiruppur
Dated :

UNDERTAKING BY THE EIA COORDINATOR

I, Dr. M. Ifthikhar Ahmed, EIA Coordinator given undertaking that, this EIA & EMP report prepared for Thiru.R.Senthil Kumar Rough Stone & Gravel Quarry situated in S.F.No 16/2(P) & 16/3 (P) over an extent of 1.01.10 Ha in Keeranur Village, Kangeyam Taluk and Tiruppur District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide File No.12929 TOR Identification No. TO25B0108TN5494983N Dated: 01.12.2025

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

Dr. M. Ifthikhar Ahmed

Managing Partner

M/s. Geo Exploration and Mining Solutions

Place : Salem

Dated :

DECLARATION BY THE PROJECT PROPONENT

I, **R.Muthusamy**– Authorized Signatory of **R.Muthusamy 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 71/A over an extent of 1.31.0 Ha in Keeranur Village, Kangeyam Taluk and Tiruppur District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide File No.13011 TOR Identification No. TO25B0108TN5994383N Dated: 06.01.2026.

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

R.Muthusamy

Place : Tiruppur

Dated :

UNDERTAKING BY THE EIA COORDINATOR

I, Dr. M. Ifthikhar Ahmed, EIA Coordinator given undertaking that, this EIA & EMP report prepared for Thiru.R.Muthusamy Rough Stone & Gravel Quarry situated in S.F.No 71/A over an extent of 1.31.0 Ha in Keeranur Village, Kangeyam Taluk and Tiruppur District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide File No.13011 TOR Identification No. TO25B0108TN5994383N Dated: 06.01.2026.

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

Dr. M. Ifthikhar Ahmed

Managing Partner

M/s. Geo Exploration and Mining Solutions

Place : Salem

Dated :

DECLARATION BY THE PROJECT PROPONENT

I, **R.Thulasimani**– Authorized Signatory of **R.Thulasimani 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 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part), over an extent of 2.22.0 Ha in Keeranur Village, Kangeyam Taluk and Tiruppur District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide File No.13527 TOR Identification No. TO26B0108TN5645147N Dated: 15.04.2026.

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

R.Thulasimani

Place : Tiruppur
Dated :

UNDERTAKING BY THE EIA COORDINATOR

I, Dr. M. Ifthikhar Ahmed, EIA Coordinator given undertaking that, this EIA & EMP report prepared for Tmt.R.Thulasimani Rough Stone & Gravel Quarry situated in S.F.No 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part) over an extent of 2.22.0 Ha in Keeranur Village, Kangeyam Taluk and Tiruppur District based on the ToR issued by the State Level Environmental Impact Assessment Authority (SEIAA), Tamil Nadu vide File No.13527 TOR Identification No. TO26B0108TN5645147N Dated: 15.04.2026.

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

Dr. M. Ifthikhar Ahmed

Managing Partner

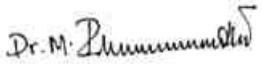
M/s. Geo Exploration and Mining Solutions

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 Keeranur Rough Stone & Gravel Quarries over an cluster extent of 18.78.1 Ha in Keeranur Village, Kangeyam Taluk and Tiruppur 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 Keeranur Rough Stone & Gravel Quarries situated in over an cluster extent of 18.78.1 Ha in Keeranur Village, Kangeyam Taluk and Tiruppur 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.

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

Name**:** **Dr. M. Ifthikhar Ahmed**

Designation**:** **EIA Coordinator**

Date & Signature:

Period of Involvement: **Oct 2023 to till date**

Associated Team Member with EIA Coordinator:

1. **Mr.A.Naveen**
2. **Mr. M. Shaik Nawas**

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. A. Jagannathan	
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.	Dr. M. Ifthikhar Ahmed	
3	HG	▪ Interpretation of ground water table and predict impact and propose mitigation measures. ▪ Analysis and description of aquifer Characteristics	Dr. P. Thangaraju	
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.	Dr. P. Thangaraju	
5	SE	▪ Revision in secondary data as per Census of India, 2011. ▪ Impact Assessment & Preventive Management Plan ▪ Corporate Environment Responsibility.	Dr. T. Sasikala	
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. 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. A. Allimuthu	
9	NV	▪ Identify impacts due to noise and vibrations ▪ Suggesting appropriate mitigation measures for EMP.	Mr. A. Jagannathan	
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	Dr. M. Ifthikhar Ahmed	
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	

LIST OF TEAM MEMBERS ENGAGED IN THIS PROJECT

Sl.No.	Name	Functional Area	Involvement	Signature
1	Mr. M. Shaik Nawas	AQ; NV; SC	▪ Site Visit with FAE ▪ Provide inputs & Assisting FAE with sources of Air Pollution, its impact and suggest control measures ▪ Analyse & provide inputs and assist FAE with meteorological data, emission estimation, AERMOD modelling and suggesting control measures ▪ Assist FAE and provide inputs on impacts due to proposed mine activity and suggest mitigation measures ▪ Assist FAE with prediction modelling ▪ Provide inputs & Assisting FAE with soil conservation methods and identifying impacts	
2	Mr. A. Naveen	LU	▪ Site Visit with FAE ▪ Assisting FAE in preparation of land use maps	

NABET CERTIFICATE

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.

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. R.Senthil Kumar**, S/o. Ramasamy No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641663	Keeranur	. 16/2(P) & 16/3 (P)	1.01.10Ha	File No: 12929 ToR Identification No: TO25B0108TN5494983N Dated: 01.12.2025
P2	**Thiru.R.Muthusamy, S**/o. Rangasami Gounder, No. 77, South Street, Morattupalayam, Tiruppur District, Tamil Nadu State – 638 752	Keeranur	71/A	1.31.00	File No: 13011 ToR Identification No: TO25B0108TN5994383N Dated: 06.01.2026
P3	**Tmt.R.Thulasimani,** W/o. P.Ramasamy, No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641663	Keeranur	16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part),	2.22.00	File No: 13527 ToR Identification No: TO26B0108TN5645147N Dated: 15.04.2026
P4	P.Ramasamy	Keeranur	15,16/3	4.30.00	Applied for lease
P5	M.Manoharan	Keeranur	24/C2	2.27.50	Applied for lease
P6	M/s.Empire Mines Pvt Ltd	Keeranur	50(P)	3.16.50	Applied for lease
	TOTAL EXTENT			**14.28.1**	
EXISTING QUARRY					
E-1	K.Thangavelu	Keeranur	70/A2, 70/B2, 70/C2 (P)	1.43.0Ha	11.05.2022 – 10.05.2027
E-2	R.Muthusamy		66/1, 66/2	3.07.0 Ha	10.11.2022-09.11.2027
	TOTAL EXTENT			**4.50.0 Ha**	
EXPIRED QUARRY					
EX-1	P.Ramasamy	Keeranur	15(P),16/3(P)	1.21.00 Ha	28.08.2020 to 27.08.2025
	TOTAL CLUSTER EXTENT			**18.78.1 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: 12929 – P1

ToR Identification No: TO25B0108TN5494983N Dated: 01.12.2025

SEIAA SPECIFIC CONDITIONS		
1	The Project Proponent shall remove the waste dump at the site which was observed from the KML and furnish photographic/ video graphic evidence of the same, along with the EIA report.	Noted & agreed The Draft EIA was prepared as per the ToR condition. The Environment Management Plan detailed in chapter 10, Page No. 153.
2.	The Project Proponent has furnished consent obtained from the land owners for 5 years, whereas the actual lease period of the project is 10 years. Therefore, the Project Proponent shall furnish a consent land document, valid for the entire lease period of the project.	Noted and Agreed
SEAC CONDITIONS – SITE SPECIFIC		
1.	A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: 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 & agreed A Cluster Management Committee (CMC) was detailed in chapter 7
2.	The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report	Noted & agreed The PP erected DGPS pillars pillars as per MCDR Rules, 1988 and photograph is enclosed in chapter 2,
3.	The details of enumeration of structures including schools, colleges, primary health centers should be submitted along with the EIA report.	Noted and agreed.
4.	The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & up to 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship,	Noted and agreed.

	industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations.	
5.	The proponent shall furnish photographs of adequate fencing; garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Noted & agreed Fencing, garland drainage & green belt photographs are enclosed in chapter 2. There are no trees in inside lease area.
6.	The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the 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,
7.	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, and the sworn affidavit will be submitted after obtaining Environmental Clearance.
8.	The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.	Noted and agreed.
9.	The PP shall prepare a conceptual action plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall.	Noted and agreed.
10.	The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic /videographic evidence along with the EIA report.	Noted & agreed The CCTV camera photographs will be submitted along with Final EIA Report.
	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.	Noted & agreed It is a Fresh lease application,

	(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.	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 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.	Noted & agreed The enumeration of structure detailed in chapter 3 in Socio Economic Environment, Page No. 94.
	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 R.F. – 8.9km – 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	Noted and agreed. It is an Fresh quarry, For this mining plan period it is proposed 28 m bgl. The slope stability study will be carried out after commencement of the mining operation or when the mine reaches 30m depth.

	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	Noted and Agreed It is an Fresh quarry
	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 - 2.5.1Drilling & 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.	Noted & agreed
	12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,	
	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).	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
	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	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.

	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.	Noted and agreed Baseline Data were collected for pre-monsoon season December 2025 – February 2026 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
	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 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
	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 500Nos 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 500 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	Noted and Agreed Disaster management Plan details in Chapter-7

	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.	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 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.	Noted and Agreed Occupational Health impacts are given in the Chapter- 10.
	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 500Nos of trees will be planted • The government will get revenue from the way of Seigniorage fee, royalty etc., Around 24 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 and Agreed
	42. The PP shall prepare the EMP for the entire life of mine and also	Noted and Agreed Details are discussed in chapter no 10, Table no 10.9, Page no. 153.

	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.	Noted and Agreed
SEIAA SPECIFIC CONDITIONS:		
	After detailed discussions, the Authority accepts the recommendation of SEAC-II and decided to grant Terms of Reference (ToR) along with Public Hearing for the quantity of 72,250m3 of Rough Stone & 11,830m3 of Gravel up to the depth of 28m BGL and the annual peak production is 18,300m3 of Rough Stone & 4,930m3 of gravel as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC-II & normal conditions & the SEIAA Standard conditions.	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, Tiruppur 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	The risk management plan and disaster management plan will be followed as per this EIA report.

	to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.	
6	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report.	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.	There is no Reserve Forest within 1km radius from the project area. The mining operation will not cause any significant impact to the Reserve Forest and Wild life Sanctuaries
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

File No: 13011 – P2

ToR Identification No: TO25B0108TN5994383N Dated: 06.01.2026

SEIAA SPECIFIC CONDITIONS		
1	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 of 1,08,350 m3 of Rough Stone & 36,652m3 of Gravel and annual peak production shall not exceed 31,050m3 of Rough Stone & 18,172m3 of Gravel, for a depth of mining 34m 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 SEIAA Standard conditions.	Noted & agreed The Draft EIA was prepared as per the ToR condition.
SEAC CONDITIONS – SITE SPECIFIC		
1.	A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: 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 & agreed A Cluster Management Committee (CMC) was detailed in chapter 7
2.	The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report	Noted & agreed The PP erected DGPS pillars pillars as per MCDR Rules, 1988 and photograph is enclosed in chapter 2,
3.	The details of enumeration of structures including schools, colleges, primary health centers should be submitted along with the EIA report.	Noted and agreed.
4.	The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & up to 1km shall be	Noted and agreed.

	enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations.	
5.	The proponent shall furnish photographs of adequate fencing; garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Noted & agreed Fencing, garland drainage & green belt photographs are enclosed in chapter 2. There are no trees in inside lease area.
6.	The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the 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,
7.	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, and the sworn affidavit will be submitted after obtaining Environmental Clearance.
8.	The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.	Noted and agreed.
9.	The PP shall prepare a conceptual action plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall.	Noted and agreed.
10.	The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic /videographic evidence along with the EIA report.	Noted & agreed The CCTV camera photographs will be submitted along with Final EIA Report.
	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	Noted & agreed It is a Fresh lease application, Previous operation details were not found,

	(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.	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 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.	Noted & agreed The enumeration of structure detailed in chapter 3 in Socio Economic Environment, Page No. 94.
	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 R.F. – 9.2km – 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	Noted and agreed. It is an Fresh quarry, For this mining plan period it is proposed 34 m bgl. The slope stability study will be carried out after commencement of the mining operation or when the mine reaches 30m depth.

	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	Noted and Agreed It is an Fresh quarry
	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 - 2.5.1Drilling & 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.	Noted & agreed
	12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,	
	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).	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
	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	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.

	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.	Noted and agreed Baseline Data were collected for pre-monsoon season December 2025 – February 2026 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
	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 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
	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	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.

	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.	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 660Nos 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 660 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 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.	Noted and Agreed Occupational Health impacts are given in the Chapter- 10.
	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 660Nos of trees will be planted • The government will get revenue from the way of Seigniorage fee, royalty etc., Around 24 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	Noted and Agreed

	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	Noted and Agreed Details are discussed in chapter no 10, Table no 10.9, Page no. 153.
	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, Tiruppur 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	Noted and agreed.

	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	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.	There is no Reserve Forest within 1km radius from the project area. The mining operation will not cause any significant impact to the Reserve Forest and Wild life Sanctuaries
16	The Environmental Impact Assessment should study impact on forest, vegetation, endemic,	Details of flora and fauna studies given in the Chapter No.3

	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.	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.22-65/2017-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

File No: 13527 – P3

ToR Identification No: TO26B0108TN5645147N Dated: 15/04/2026

SEIAA SPECIFIC CONDITIONS		
1	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 of 6,68,148MT of Rough Stone & 71,128MT of Gravel upto the depth of 49m BGL and the annual peak production shall not exceed 1,55,650 MT of Rough Stone & 30,256 MT of Gravel as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions & SEIAA Specific & Standard conditions.	Noted & agreed The Draft EIA was prepared as per the ToR condition.
SEAC CONDITIONS – SITE SPECIFIC		
1.	A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: 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 & agreed A Cluster Management Committee (CMC) was detailed in chapter 7
2.	The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report	Noted & agreed The PP erected DGPS pillars pillars as per MCDR Rules, 1988 and photograph is enclosed in chapter 2,
3.	The details of enumeration of structures including schools, colleges, primary health centers should be submitted along with the EIA report.	Noted and agreed.
4.	The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and	Noted and agreed.

	(iv) 300 m & up to 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations.	
5.	The proponent shall furnish photographs of adequate fencing; garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.	Noted & agreed Fencing, garland drainage & green belt photographs are enclosed in chapter 2. There are no trees in inside lease area.
6.	The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the 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,
7.	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, and the sworn affidavit will be submitted after obtaining Environmental Clearance.
8.	The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.	Noted and agreed.
9.	The PP shall prepare a conceptual action plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall.	Noted and agreed.
10.	The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic /videographic evidence along with the EIA report.	Noted & agreed The CCTV camera photographs will be submitted along with Final EIA Report.
	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.	Noted & agreed It is a Existing Quarry application, Previous operation was carried out by Thiru.P.Ramasamy vide Rc.No.116/2019/Mines Dated.28.08.2020 Lease period – 28.09.2020 – 27.09.2025 Existing Pit Dimesnion 105m(L) * 65m(W) * 15m(D)

	(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.	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 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.	Noted & agreed The enumeration of structure detailed in chapter 3 in Socio Economic Environment, Page No. 94.
	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 R.F. – 8.9 km – North East
	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,	Noted and agreed. It is an Fresh quarry, For this mining plan period it is proposed 49 m bgl. The slope stability study will be carried out after commencement of the mining operation or when the mine reaches 30m depth.

	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	Noted and Agreed It is an Existing quarry, Slope Stability study has been carried out at the time of quarry reaches the Depth of 30m
	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 - 2.5.1Drilling & 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.	Noted & agreed
	12. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,	
	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).	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
	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	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.

	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.	Noted and agreed Baseline Data were collected for pre-monsoon season December 2025 – February 2026 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
	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 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
	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)	Not Applicable. Project area / Study area is not declared in 'Critically Polluted' Area and does not come under 'Aravalli Range.

	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.	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 1200Nos 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 1200 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	Noted and Agreed

	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.	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 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.	Noted and Agreed Occupational Health impacts are given in the Chapter- 10.
	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 1200Nos of trees will be planted • The government will get revenue from the way of Seigniorage fee, royalty etc., Around 29 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	Noted and Agreed

	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	Noted and Agreed Details are discussed in chapter no 10, Table no 10.9, Page no. 153.
	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, Tiruppur 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	Noted and agreed.

	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	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 Proposed 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.	There is no Reserve Forest within 1km radius from the project area. The mining operation will not cause any significant impact to the Reserve Forest and Wild life Sanctuaries
16	The Environmental Impact Assessment should study impact on forest, vegetation, endemic,	Details of flora and fauna studies given in the Chapter No.3

	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.	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.22-65/2017-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, page no. 24.
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, page no. 153.

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, page No 20.
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	No Reserve Forest within the Study Area.

16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted	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 (Pre-Monsoon) December 2025 – February 2026 as per CPCB Notfication and MoEF & CC Guidelines. Details in Chapter No. 3, Page no. 34.
23	Air quality modelling should be carried out lor 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:. 1.8 KLD – P1 2.0 KLD – P2 5.0 KLD – P3 Discussed under Chapter 2, Table No 2.14, page no. 32.
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 110 m below ground level. The ultimate depth of quarry is 28m bgl – P1, 34m Bgl – P2, 49m Bgl – P3 This proposal 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 297m (max) AMSL. The ultimate depth of quarry is 28m bgl – P1, 34m Bgl – P2, 49m Bgl – P3 Water level of the area is 110m 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	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.

	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.	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 73 people directly and 150 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/EMP 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 has been detailed in the Chapter - 1
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.

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1.INTRODUCTION

1.0 PREAMBLE

P1

The project proponent Thiru.R.Senthil Kumar applied for Rough stone and Gravel quarry over an extent of 1.01.10 Ha in S.F.Nos. 16/2(P) & 16/3 (P) of Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu State.

- Proponent applied for Rough stone and Gravel quarry lease on 14.02.2025
- Precise area communication letter was issued by the District Collector vide letter no.Rc.No.319/Mines/2025 Dated: 23.09.2025
- The Mining plan has been prepared by the Qualified person and got approved by the Deputy Director vide letter no.319/Mines/2025 Dated: 15.10.2025
- The mining plan has been approved for the quantity of 72,250m^3 of Rough stone, 5915 m^3 of Weathered Rock and Gravel 11,830 m^3 up to a depth of 28m bgl for the period of Ten years.
- Proponent applied for Terms of Reference vide Proposal No. SIA/TN/MIN/556339/2025, Dated: 30.10.2025 and the ToR was Granted vide File No: 12929 ToR Identification No: TO25B0108TN5494983N Dated: 01.12.2025

P2

The project proponent Thiru.R.Muthusamy applied for Rough stone and Gravel quarry over an extent of 1.31.0 Ha in S.F.Nos. 71/A of Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu State.

- Proponent applied for Rough stone and Gravel quarry lease on 03.05.2025
- Precise area communication letter was issued by the Assistant Director, Department of Geology and Mining, Tiruppur vide letter no.Rc.No.845/Mines/2025 Dated: 22.10.2025
- The Mining plan has been prepared by the Qualified person and got approved by the Assistant Director, Department of Geology and Mining, Tiruppur vide letter no.845/Mines/2025 Dated: 30.10.2025
- The mining plan has been approved for the quantity of 1,08,350m^3 of Rough stone and Gravel 36,652m^3 up to a depth of 34m bgl for the period of Ten years.
- Proponent applied for Terms of Reference vide Proposal No. SIA/TN/MIN/558170/2025, Dated: 14.11.2025 and the ToR was Granted vide File No: 13011 ToR Identification No: TO25B0108TN5994383N Dated: 06.01.2026

P3

- The project proponent Tmt. R. Thulasimani applied for Rough stone and Gravel quarry over an extent of 2.22.0 Ha in S.F.Nos. 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu State.

- Proponent applied for Rough stone and Gravel quarry lease on 02.12.2025
- Precise area communication letter was issued by the Assistant Director, Department of Geology and Mining, Tiruppur vide letter no.Rc.No. .2240/Mines/2025, Dated: 20.02.2026
- The Mining plan has been prepared by the Qualified person and got approved by the Assistant Director, Department of Geology and Mining, Tiruppur vide letter no. 2240/Mines/2025, Dated: 02.03.2026
- The mining plan has been approved for the quantity of 2,42,962 m^3 of Rough stone and Gravel 35,564 m^3 up to a depth of 49 m bgl for the period of Five years.
- Proponent applied for Terms of Reference vide Proposal No. SIA/TN/MIN/572165/2026, Dated: 13.03.2026. and the ToR was Granted vide File No: 13527 ToR Identification No: TO26B0108TN5645147N Dated: 15.04.2026
- The Previous quarry operation was carried out by Thiru.P. Ramasamy, S.F.No.15(P), 16/3(P) over a extent of 1.21.0 Ha vide Ec.No. SEIAA-TN/F.No.7284/1(a)/EC.No:4237/2020 Dated: 17.06.2020 foe a lease period of 28.09.2020 – 27.09.2025

As per the EIA Notification, 2006 and subsequent amendments and OM The proposal falls in the B1 Category (Cluster quarries – 5 proposal and 2 Exiting quarry forming Cluster Category {Total Extent of the Cluster is 15.61.60 Ha}- Cluster area calculated as per MoEF& CC Notification S.O. 2269(E) Dated 1st July 2016).

Based on the ToR Baseline Monitoring study has been carried out for one season i.e., **December 2025 – February 2026** 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

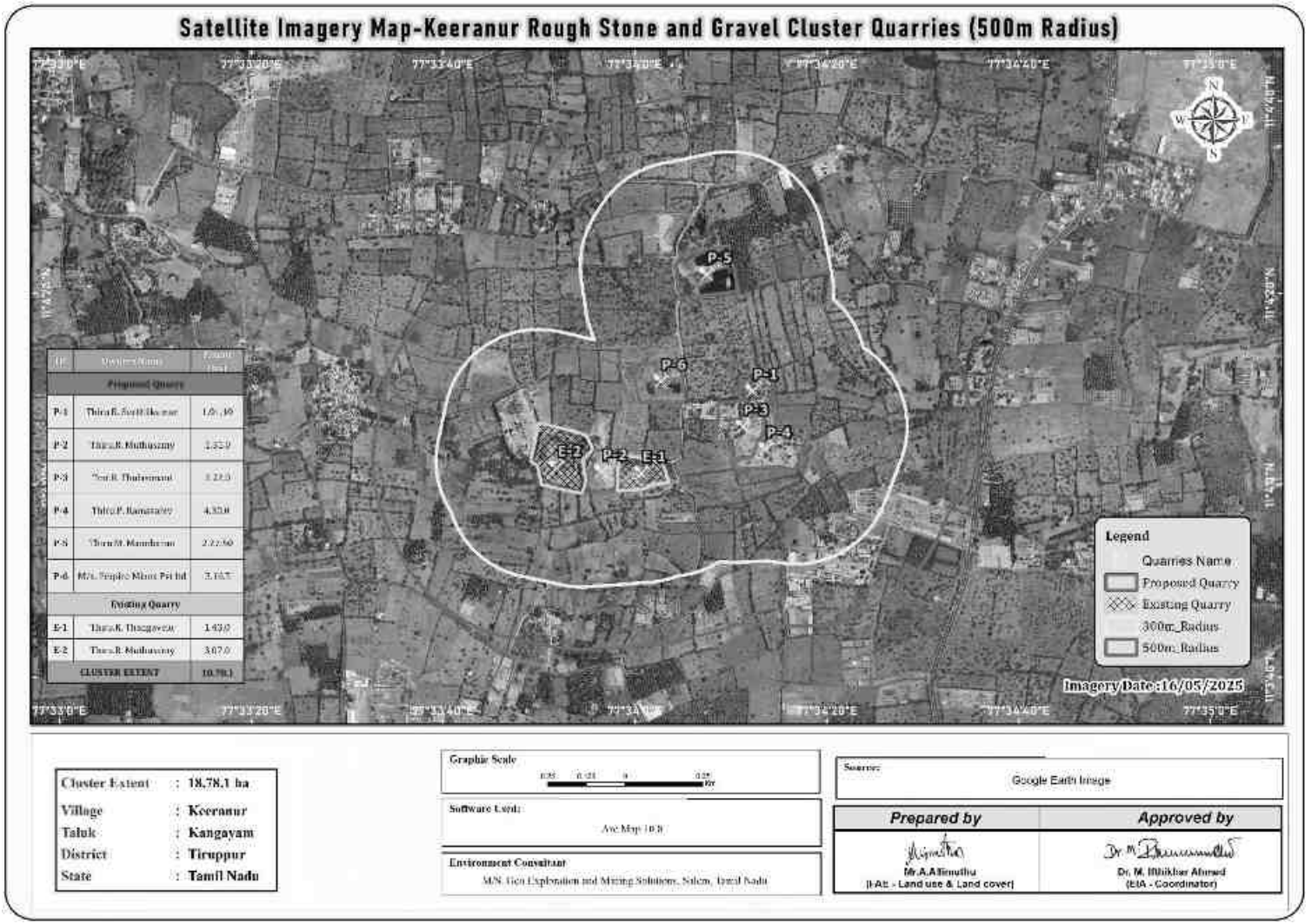
The Ministry of Environment and Forests, Govt. of India, through its EIA notification S.O. 1533(E) of 14th September 2006 and its subsequent amendments as per Gazette Notification S.O. 1886 of 20thApril 2022, Mining Projects are classified under two categories i.e. A (>250 Ha) and B (≤ 250 Ha), and Schematic 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 PROPONENTS

1.2.1 Identification of Project Proponents

TABLE 1.1: DETAILS OF PROJECT PROPONENTS

	P1	P2	P3
Name of the Project Proponent	Thiru. R.Senthil Kumar	Thiru.R.Muthusamy	Tmt. R. Thulasimani
Address	S/o. Ramasamy No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641663	S/o. Rangasami Gounder, No. 77, South Street, Morattupalayam, Tiruppur District, Tamil Nadu State – 638 752	W/o. P. Ramasamy, No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu – 641 663.
Mobile	+91 94432 62685	+91 98659 58538	+91 9443262685
Email	-	-	rsk5854@gmail.com
Status	Individual	Individual	Individual

1.2.2 Identification of Project

TABLE 1.2: SALIENT FEATURES OF THE PROPOSED PROJECT – P1

Name of the Project	Thiru. R.Senthil Kumar Rough stone and Gravel quarry		
S.F. No.	16/2(P) & 16/3 (P)		
Extent	1.01.10 Ha		
Village Taluk and District	Keeranur Village, Kangeyam Taluk, Tiruppur District		
Land Type	It is a Patta land – Punjai, jointly registered in the name of (Thiru . R.Senthil Kumar and Tmt.Thulasimani) vide patta no.184 and Thiru. Ramasamy Vide patta No.3387. The applicant has obtained consent from the pattadars		
Toposheet No	58 – E/12		
Latitude between	11° 04'07.6645"N to 11° 04' 12.0097‘’N		
Longitude between	77° 34' 10.8364"E to 77° 34' 14.5777"E		
Elevation of the area	297m AMSL		
Mining Plan period	10 Years		
Proposed Depth of Mining	28m bgl		
	Rough Stone in m^3	**Weathered Rock in m^3**	**Gravel in m^3**
Geological Resources	2,52,750	10,110	20,220
Mineable Reserves	72,250	5,915	11,830
Year wise Production	72,250	5,915	11,830
Peak Production	13,650	2,465	4,930
Ultimate Pit Dimension	XY-AB : 17 (m) x 16 (W) x 8m BGL (D) XY-CD : 30 (m) x 34 (W) x 13m BGL (D) X1Y1-EF : 67 (m) x 69(W) x 28m BGL (D)		
Water Level in the region	110m 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 plain topography. The area has gentle sloping towards North side and altitude of the area is 297m (max) above Mean Sea level. The area is covered by 2m thickness of Gravel and 2m thickness of weathered rock. Massive Charnockite is found after 4m (Gravel + Weathered Rock) which is clearly inferred from the existing quarry pit.		
Machinery proposed	Hand Jack Hammer	2 Nos	

	Compressor	1 No
	Excavator with Bucket and Rock Breaker	1Nos
	Tippers	2 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	20 Nos	
Project Cost	Rs. 73,81,000/-	
CER Cost	Rs. 3,00,000/-	
Nearby Water Bodies	Vaikkal	270m South
	Lower Bhavani Main Canal	3.5km North
	Noyyal River	4.6km NW
	Orathupalayam Dam	5.2km NW
Greenbelt Development Plan	Proposed to plant 500 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	1.8 KLD	
Nearest Habitation	400m – North East	
Nearest Reserve Forest	Chennimalai R.F. – 8.9km – North	
Nearest Wild Life Sanctuary	Nanjarayan Lake Birds Sanctuary – 20.50km – NW	

Source: Approved Mining & Land Documents.

TABLE 1.3: SALIENT FEATURES OF THE PROPOSED PROJECT – P2

Name of the Project	Thiru. R.Muthusamy Rough stone and Gravel quarry	
S.F. No.	71/A	
Extent	1.31.0 Ha	
Village Taluk and District	Keeranur Village, Kangeyam Taluk, Tiruppur District	
Land Type	It is a Patta land – registered in the name of applicant Thiru.R.Muthusamy Vide Patta no.417	
Toposheet No	58 – E/12	
Latitude between	11° 03'58.99"N to 11° 04' 03.61‘’N	
Longitude between	77° 33' 54.51"E to 77° 33' 58.17"E	
Elevation of the area	280m AMSL	
Mining Plan period	10 Years	
Proposed Depth of Mining	34m bgl	
	Rough Stone in m^3	**Gravel in m^3**
Geological Resources	6,55,000	52,400
Mineable Reserves	1,08,351	36,652
Year wise Production	1,08,351	36,652
Peak Production	31,051	18,172
Ultimate Pit Dimension	119m (L) x 77m(W) x 34m(D) BGL	
Water Level in the region	110m 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 situated in flat terrain. The area has gentle sloping towards Southern side and altitude of the area is 280m (max) above Mean Sea level. The area is covered by 4m thickness of Gravel. Massive Charnockite is found which is clearly inferred from the existing quarry pit.	
Machinery proposed	Hand Jack Hammer	4 Nos
	Compressor	1 No
	Excavator with Bucket and Rock Breaker	1Nos
	Tippers	2 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	24 Nos	
Project Cost	Rs. 1,38,28,000/-	
CER Cost	Rs. 3,00,000/-	
Nearby Water Bodies	Vaikkal	110m NE
	Lower Bhavani Main Canal	3.8km North
	Noyyal River	4.7km NW
	Orathupalayam Dam	5.3km NW
Greenbelt Development Plan	Proposed to plant 660 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	710m – West	
Nearest Reserve Forest	Chennimalai R.F. – 9.2km – North	
Nearest Wild Life Sanctuary	Vellode Birds Sanctuary – 21.7km – North East	

Source: Approved Mining & Land Documents.

TABLE 1.3A: SALIENT FEATURES OF THE PROPOSED PROJECT – P3

Name of the Project	Tmt. R. Thulasimani Rough stone and Gravel quarry	
S.F. No.	16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part),	
Extent	2.22.0 Ha	
Village Taluk and District	Keeranur Village, Kangeyam Taluk, Tiruppur District	
Land Type	It is a Patta land – Consent has been obtained from the respective Pattadars	
Toposheet No	58 – E/12	
Latitude between	11°04'02.68”N to 11°04'10.27”N	
Longitude between	77°34'08.29"E to 77°34'13.60”E	
Elevation of the area	297m AMSL	
Mining Plan period	5 Years	
Proposed Depth of Mining	49m bgl	
	Rough Stone in m^3	**Gravel in m^3**
Geological Resources	8,54,636	51,236
Mineable Reserves	2,42,962	35,564
Year wise Production	2,42,962	35,564
Peak Production	56,600	15,128
Existing Depth	15m	

Previous Operation	Thiru. P. Ramasamy – Lease Period – 28.09.2020 – 27.09.2025	
Ultimate Pit Dimension	XY-AB: 107m (L) X 61m (W) X 49m (D) X1Y1-AB: 100m (L) X 76m (W) X 49m (D) X1Y1-CD: 37m (L) X 62m (W) X 24m (D)	
Water Level in the region	110m 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 situated in flat terrain. The area has gentle sloping towards Southern side and altitude of the area is 280m (max) above Mean Sea level. The area is covered by 4m thickness of Gravel. Massive Charnockite is found which is clearly inferred from the existing quarry pit.	
Machinery proposed	Hand Jack Hammer	7 Nos
	Compressor	2 No
	Excavator with Bucket and Rock Breaker	1Nos
	Tippers	2 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	29 Nos	
Project Cost	Rs. 98,78,000/-	
CER Cost	Rs. 3,00,000/-	
Nearby Water Bodies	Vaikkal	110m NE
	Lower Bhavani Main Canal	3.8km North
	Noyyal River	4.7km NW
	Orathupalayam Dam	5.3km NW
Greenbelt Development Plan	Proposed to plant 1200 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	5.0 KLD	
Nearest Habitation	490m – NE	
Nearest Reserve Forest	Chennimalai R.F. – 8.9 km – North East	
Nearest Wild Life Sanctuary	Nanjarayan Lake Birds Sanctuary – 20.5 km – NW Vellode Birds Sanctuary – 21.4 km – North East	

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.

1.3.2 Location of the Project

- The project sites located in Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu State.

- The lease applied area is located about 25.3 km Southeast side of Tiruppur, 7.0km Northeastern side of Kangeyam town and 2.4km Southeast side of Keeranur Village.

	26.6km		8.0km		2.4km	
Tiruppur	⟶	Kangeyam	⟶	Keeranur	⟶	Lease applied area
	SE		NW		SE	

FIGURE 1.2: LOCATION MAP OF THE PROJECT SITE

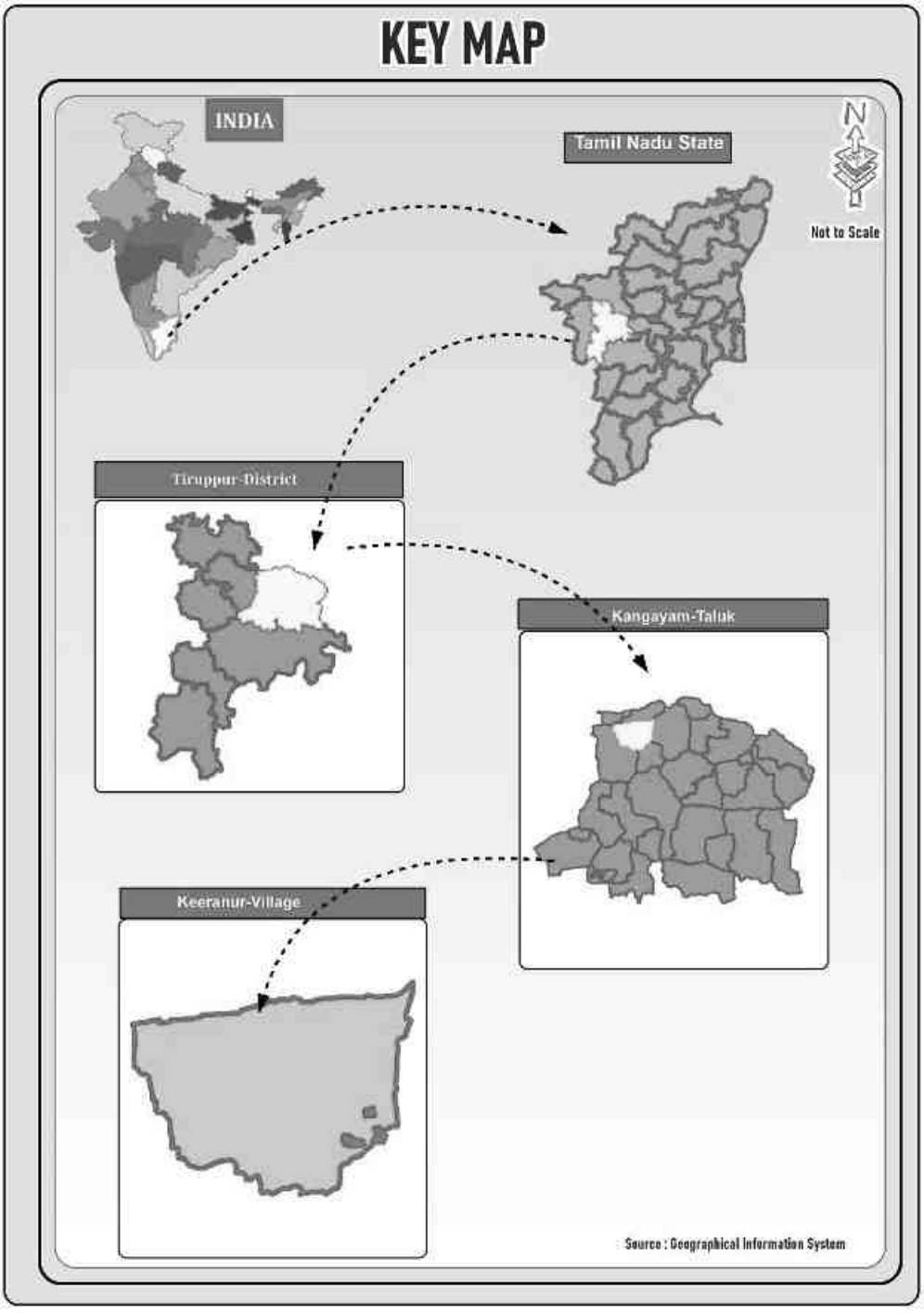


FIGURE 1.3: TOPOSHEET MAP OF THE STUDY AREA 10 KM RADIUS

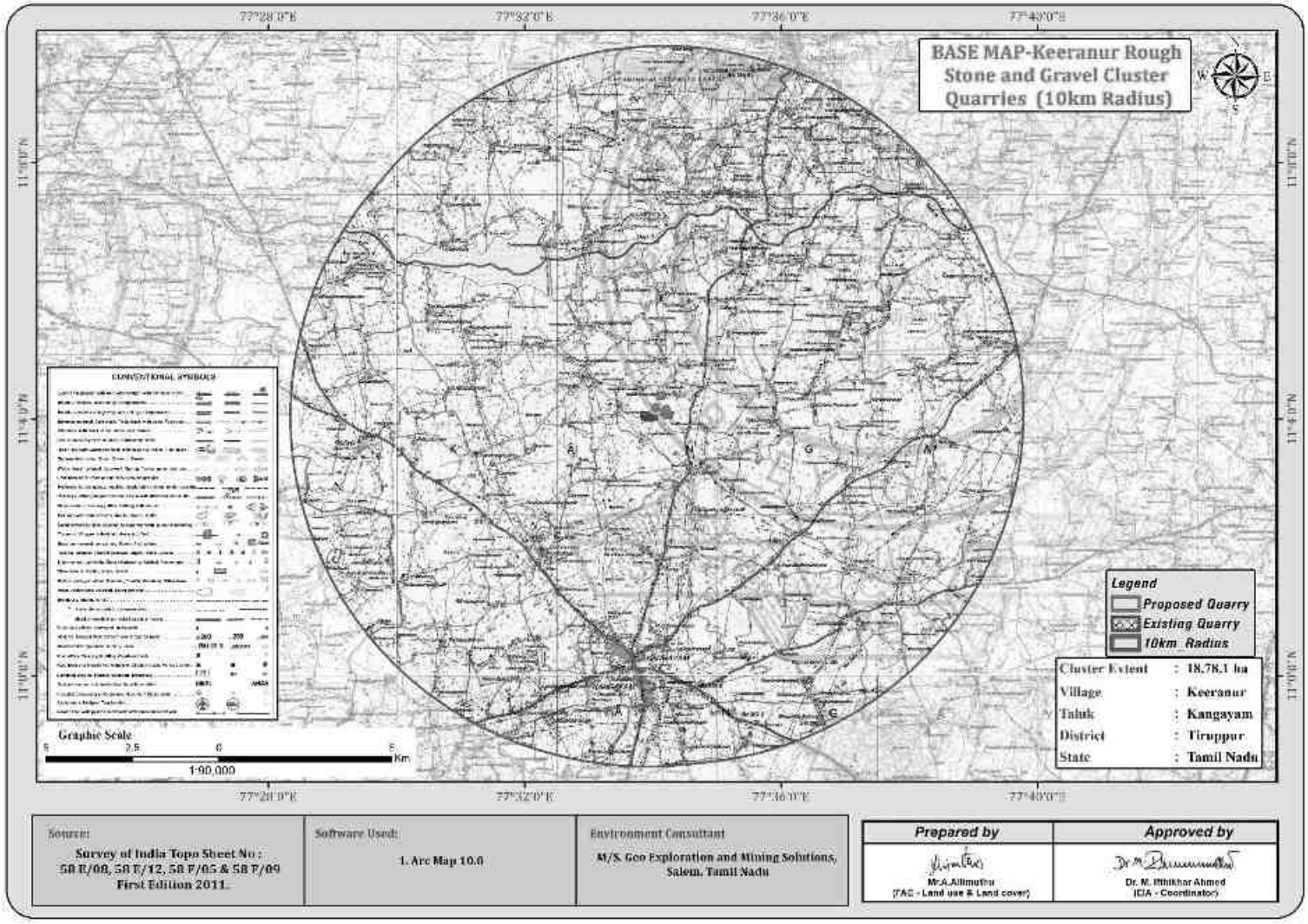
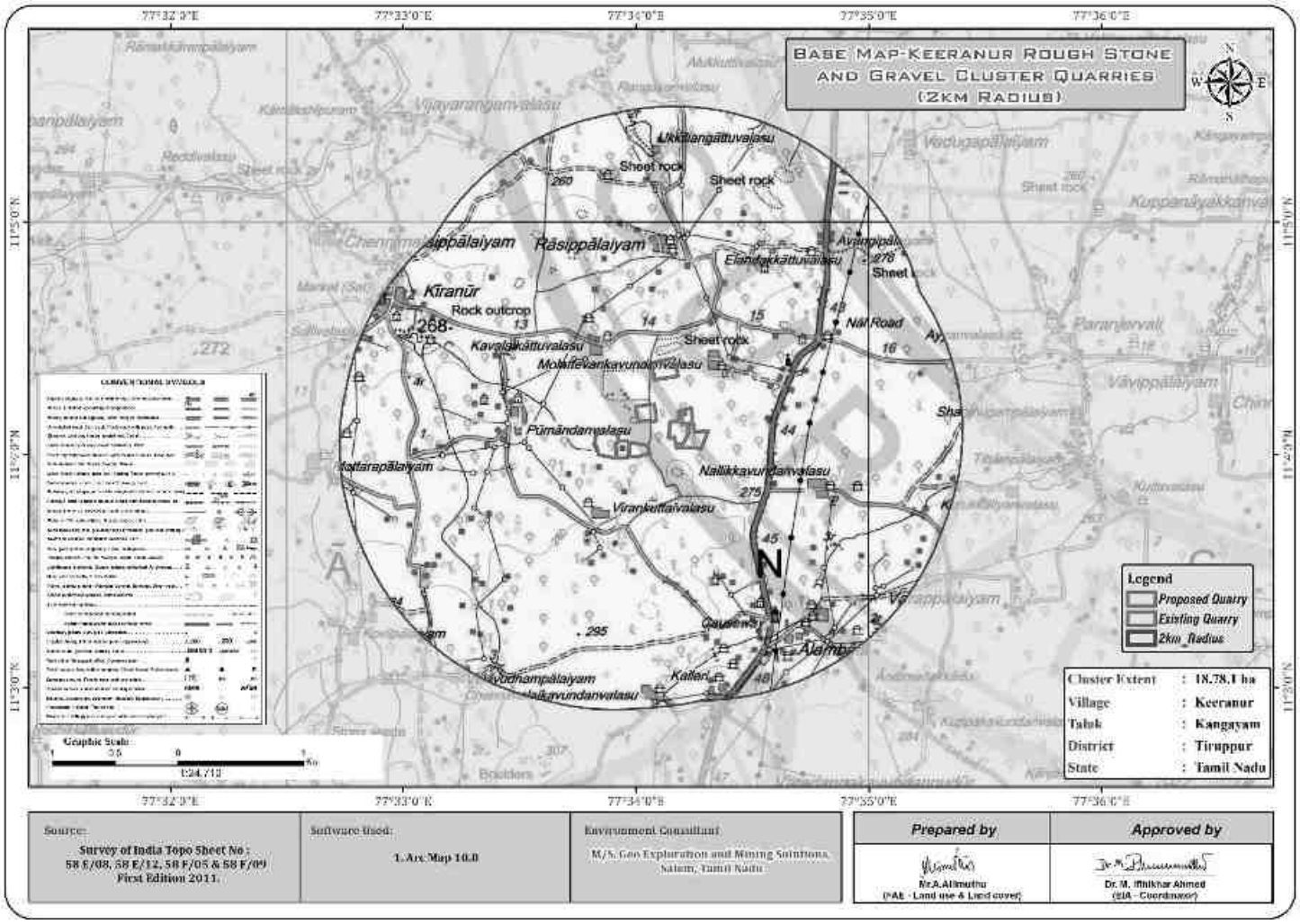


FIGURE 1.4: TOPOSHEET MAP OF THE STUDY AREA 2KM RADIUS



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-P1

- Proponent applied for Rough stone and Gravel quarry lease on 14.02.2025
- Precise area communication letter was issued by the Assistant Director, Department of Geology and Mining vide letter no. R.c. No. 319/Mines/2025, Dated: 23.09.2025
- The Mining plan has been prepared by the Qualified person and got approved by the Assistant Director vide letter no.319/Mines/2025 Dated: 15.10.2025
- The mining plan has been approved for the quantity of 72,250m^3 of Rough stone, 5915m^3 of Weathered Rock and 11,830m^3 of Gravel up to a depth of 28m bgl for the period of Ten 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: -P1

- Proponent applied for Terms of Reference vide Proposal No. SIA/TN/MIN/556339/2025, Dated: 30.10.2025
- The proposal was placed in 642nd SEAC meeting held on 13.11.2025 and the committee recommended for issue of ToR.
- The proposal was considered in 924th SEIAA meeting held on 27.11.2025 and issued ToR vide File No: 12929 ToR Identification No: TO25B0108TN5494983N Dated: 01.12.2025

SCREENING-P2

- Proponent applied for Rough stone and Gravel quarry lease on 03.05.2025
- Precise area communication letter was issued by the Assistant Director, Department of Geology and Mining, Tiruppur vide letter no. R.c. No. 845/Mines/2025, Dated: 22.10.2025
- The Mining plan has been prepared by the Qualified person and got approved by the Assistant Director vide letter no.845/Mines/2025 Dated: 30.10.2025
- The mining plan has been approved for the quantity of 1,08,350m^3 of Rough stone and 36,652m^3 of Gravel up to a depth of 34m bgl for the period of Ten 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: -P2

- Proponent applied for Terms of Reference vide Proposal No. SIA/TN/MIN/558170/2025, Dated: 14.11.2025
- The proposal was placed in 651st SEAC meeting held on 11.12.2025 and the committee recommended for issue of ToR.
- The proposal was considered in 937th SEIAA meeting held on 23.12.2025 and issued ToR vide File No: 13011 ToR Identification No: TO25B0108TN5994383N Dated: 06.01.2026

SCREENING-P3

- Proponent applied for Rough stone and Gravel quarry lease on 02.12.2025
- Precise area communication letter was issued by the Assistant Director, Department of Geology and Mining, Tiruppur vide letter no. R.c. No. 2240/Mines/2025, Dated: 20.02.2026
- The Mining plan has been prepared by the Qualified person and got approved by the Assistant Director vide letter no.2240/Mines/2025, Dated: 02.03.2026
- The mining plan has been approved for the quantity of 2,42,962 m^3 of Rough stone and 35,564 m^3 of Gravel up to a depth of 49m bgl for the period of 5 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: -P3

- Proponent applied for Terms of Reference vide Proposal No. SIA/TN/MIN/572165/2026, Dated: 13.03.2026
- The proposal was placed in 697th SEAC meeting held on 26.03.2026 and the committee recommended for issue of ToR.
- The proposal was considered in 990th SEIAA meeting held on 07.04.2026 and issued ToR vide File No: 13527 ToR Identification No: TO26B0108TN5645147N Dated: 15.04.2026

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.

The report has been prepared using the following references:

- Guidance Manual of Environmental Impact Assessment for Mining of Minerals, Ministry of Environment and Forests, February, 2010
- EIA Notification, 14thSeptember, 2006
- File No.12929 TOR Identification No. TO25B0108TN5494983N Dated 01.12.2025
- File No.13011 TOR Identification No. TO25B0108TN5994383N Dated 06.01.2026
- File No.13527 ToR Identification No: TO26B0108TN5645147N Dated: 15.04.2026
- Approved Mining Plan.

1.5 TERMS OF REFERENCE (ToR)

The ToR was issued by the SEIAA vide

- File No.12929 TOR Identification No. TO25B0108TN5494983N Dated 01.12.2025-P1
- File No.13011 TOR Identification No. TO25B0108TN5994383N Dated 06.01.2026-P2
- File No.13527 ToR Identification No: TO26B0108TN5645147N Dated: 15.04.2026 – P3

The Details of the ToR Compliance is given in the Page No. A

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 to December2025) 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 1.4: 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.12929 TOR Identification No. TO25B0108TN5494983N Dated 01.12.2025-P1
- ToR Vide File No.13011 TOR Identification No. TO25B0108TN5994383N Dated 06.01.2026-P2
- ToR Vide File No.13527 ToR Identification No: TO26B0108TN5645147N Dated: 15.04.2026 – P3

****

2. PROJECT DESCRIPTION

2.0 GENERAL

The Proposed Rough Stone and Gravel Quarries requires Environmental Clearance. There are 5 proposed, and 2 existing quarries forming a cluster; calculated as per MoEF& CC Notification S.O. 2269(E) Dated 1st July 2016 and the total extent of cluster is 13.39.6ha.

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 Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu State.

P1

- ♣ The area is located in S. F. Nos. 16/2(P) & 16/3 (P) of Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu State.
- ♣ The entire quarry lease area falls in the Patta land, the lease applied area is exhibits plain terrain.
- ♣ The area is mentioned in GSI Topo sheet No. 58-E/12
- ♣ The Latitude between of **11°04'07.6645"N to 11°04'12.0097"N**
- ♣ The Longitude between of **77°34'10.8364"E to 77°54'14.5777"E** on WGS 1984 datum.

P2

- ♣ The area is located in S. F. Nos. 71/A of Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu State.
- ♣ The entire quarry lease area falls in the Patta land, the lease applied area is exhibits plain terrain.
- ♣ The area is mentioned in GSI Topo sheet No. 58-E/12
- ♣ The Latitude between of **11°03'58.99"N to 11°04'03.61‘’N**
- ♣ The Longitude between of **77°33' 54.51"E to 77°33'58.17"E** on WGS 1984 datum.

P3

- ♣ The area is located in S. F. Nos. 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu State.
- ♣ The entire quarry lease area falls in the Patta land, the lease applied area is exhibits plain terrain.
- ♣ The area is mentioned in GSI Topo sheet No. 58-E/12
- ♣ The Latitude between of **11°04'02.68”N to 11°04'10.27”N**
- ♣ The Longitude between of **77°34'08.29"E to 77°34'13.60”E** on WGS 1984 datum.

TABLE 2.1: SITE CONNECTIVITY

Nearest Roadway	National Highway – (NH-81) Coimbatore to Karur – 7.4km – SW State Highway – (SH-96) Erode to Kangeyam – 690m – East
Nearest Village	Keeranur– 1.0km – North West
Nearest Town	Kangeyam – 7.0km – South West
Nearest Railway Station	Vijayamangalam Railway station – 15km – North West
Nearest Airport	Coimbatore Airport – 57 km – West
Seaport	Thoothukudi Seaport – 84.0km – South East

Source: Survey of India Toposheet

TABLE 2.2: CO-ORDINATES– PROJECT BOUNDARY-P1

Corner Nos.	Latitude	Longitude
1	11°04'07.8790"N	77°34'11.6273"E
2	11°04'10.1555"N	77°34'11.5397"E
3	11°04'10.3353"N	77°34'10.8743"E
4	11°04'11.2134"N	77°34'10.8364"E
5	11°04'11.4651"N	77°34'11.8928"E
6	11°04'10.4445"N	77°34'12.0353"E
7	11°04'10.4773"N	77°34'12.7524"E
8	11°04'11.5658"N	77°34'12.3153"E
9	11°04'12.0097"N	77°34'14.1784"E
10	11°04'07.8443"N	77°34'14.5777"E
11	11°04'07.6645"N	77°34'13.5997"E
12	11°04'08.0548"N	77°34'13.5952"E

Source: Approved Mining Plan

TABLE 2.2A: CO-ORDINATES– PROJECT BOUNDARY-P2

Corner Nos.	Latitude	Longitude
1	11°03'58.99"N	77°33'54.51"E
2	11°04'00.18"N	77°33'55.00"E
3	11°04'02.40"N	77°33'54.64"E
4	11°04'03.61"N	77°33'55.54"E
5	11°04'03.58"N	77°33'57.34"E
6	11°04'03.26"N	77°33'58.17"E
7	11°03'59.23"N	77°33'57.86"E
8	11°03'58.99"N	77°33'55.26"E

Source: Approved Mining Plan

TABLE 2.2B: CO-ORDINATES– PROJECT BOUNDARY-P3

Corner Nos.	Latitude	Longitude
1	11°04'02.68"N	77°34'10.15"E
2	11°04'04.45"N	77°34'09.96"E
3	11°04'04.38"N	77°34'08.29"E
4	11°04'04.68"N	77°34'08.33"E
5	11°04'06.64"N	77°34'08.60"E
6	11°04'08.47"N	77°34'08.71"E
7	11°04'08.60"N	77°34'10.95"E
8	11°04'10.27"N	77°34'10.87"E
9	11°04'10.09"N	77°34'11.54"E
10	11°04'07.81"N	77°34'11.63"E
11	11°04'07.99"N	77°34'13.60"E
12	11°04'07.60"N	77°34'13.60"E
13	11°04'07.59"N	77°34'13.35"E
14	11°04'05.40"N	77°34'13.38"E
15	11°04'02.85"N	77°34'12.14"E

Source: Approved Mining Plan

FIGURE 2.1: SITE PHOTOGRAPHS-P1

FIGURE 2.1-A: FENCING AND GREEN BELT PHOTOGRAPHS-P1

FIGURE 2.1B: SITE PHOTOGRAPHS-P2

FIGURE 2.1-C: FENCING AND GREEN BELT PHOTOGRAPHS-P2

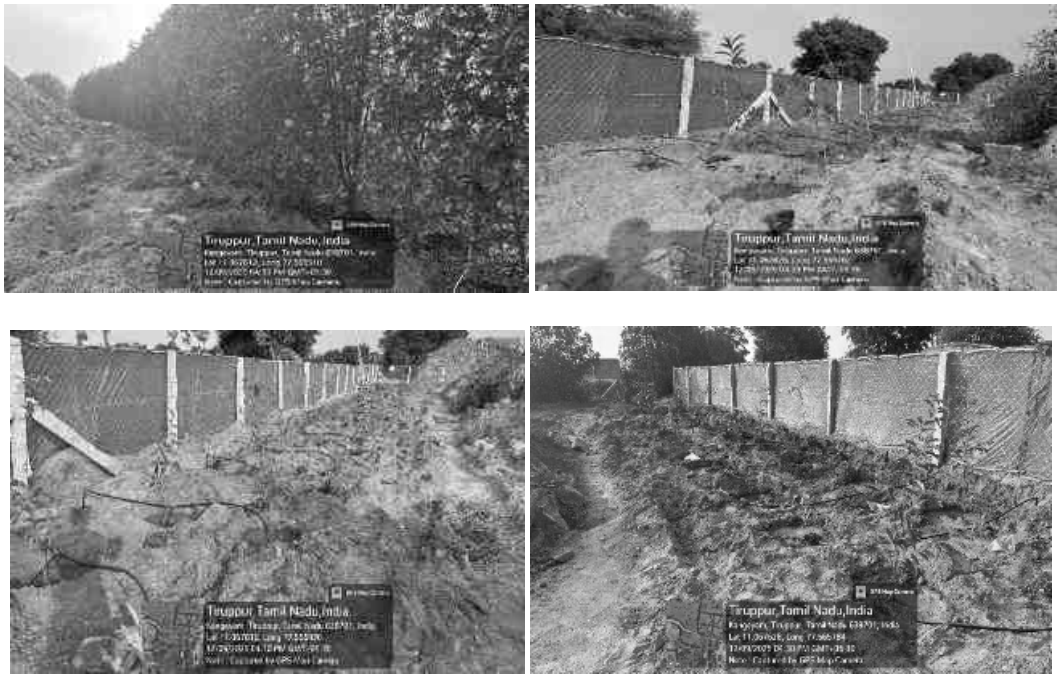
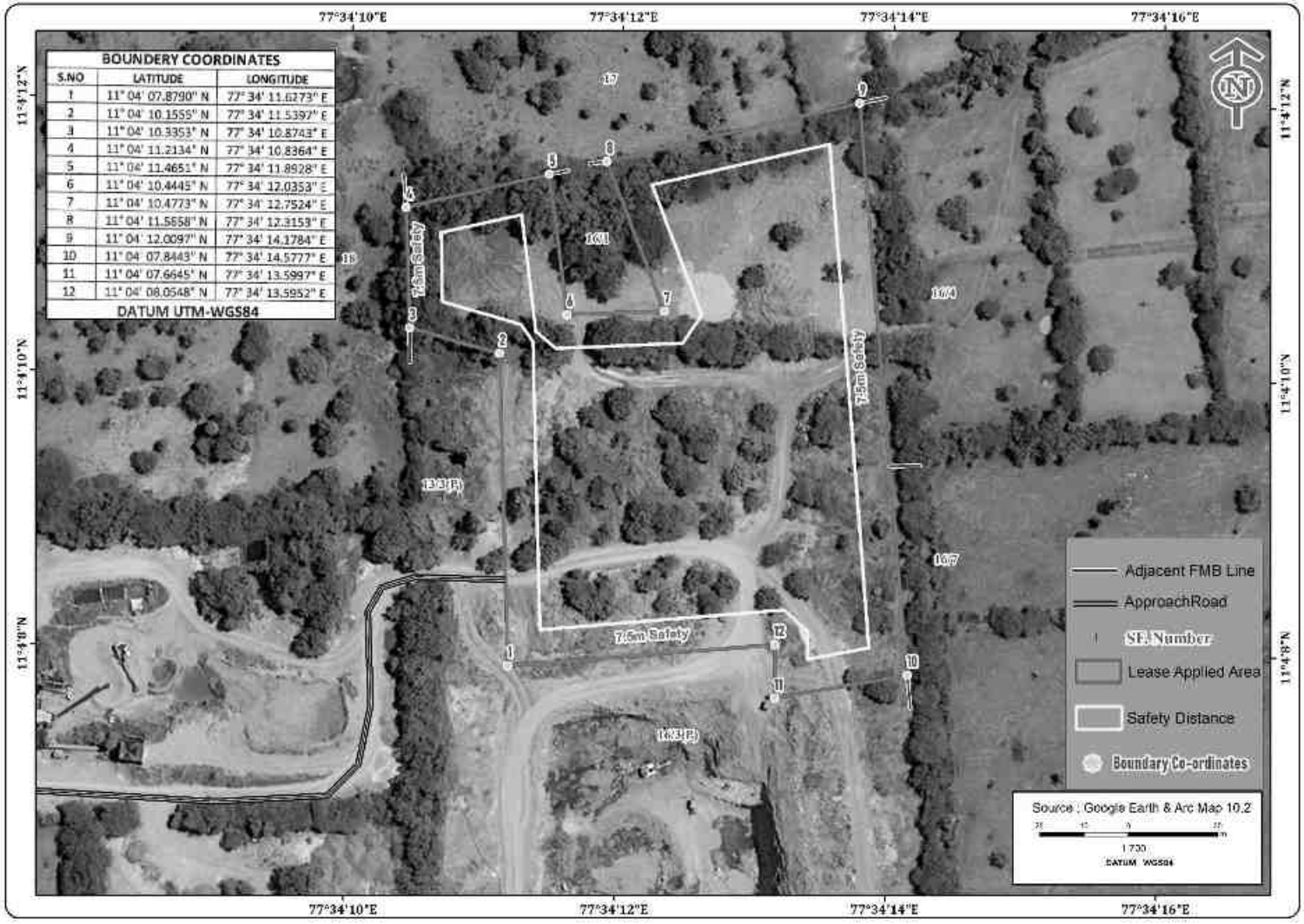


FIGURE 2.1D: SITE PHOTOGRAPHS-P3

FIGURE 2.2: GOOGLE IMAGE OF THE PROJECT AREA-P1



Source: Google Earth Imagery

FIGURE 2.2A: GOOGLE IMAGE OF THE PROJECT AREA-P2

Source: Google Earth Imagery

FIGURE 2.2B: GOOGLE IMAGE OF THE PROJECT AREA-P3

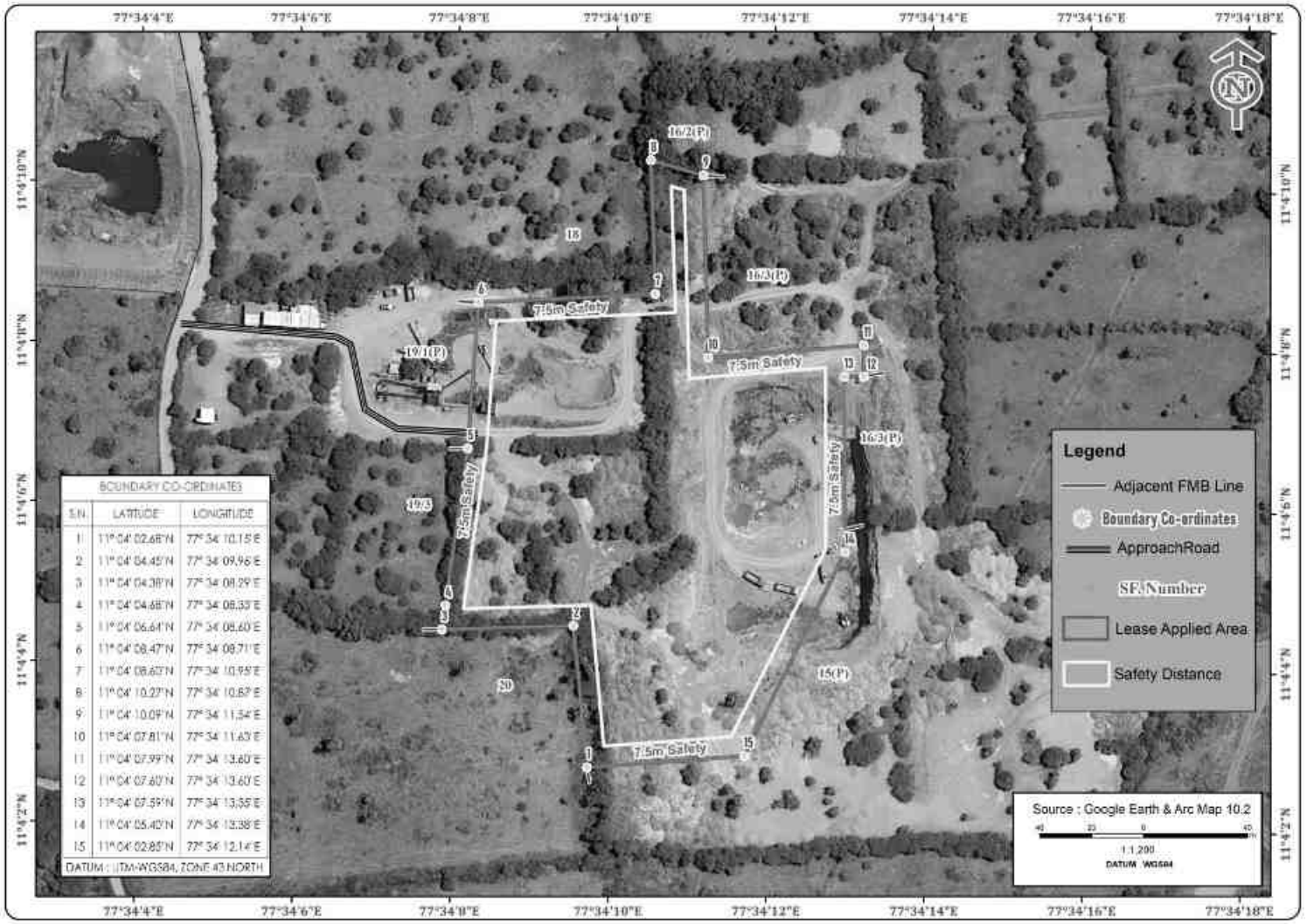
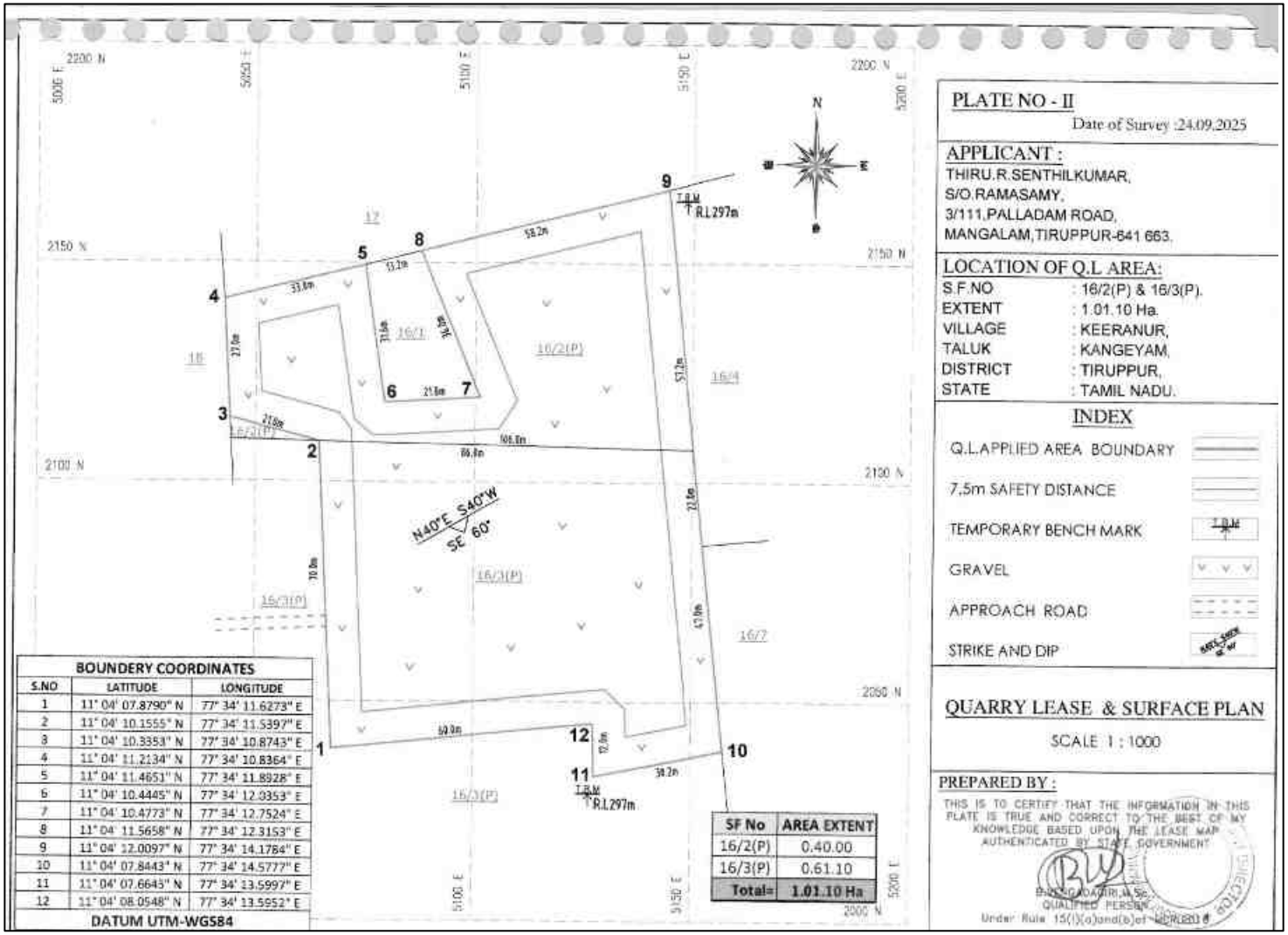
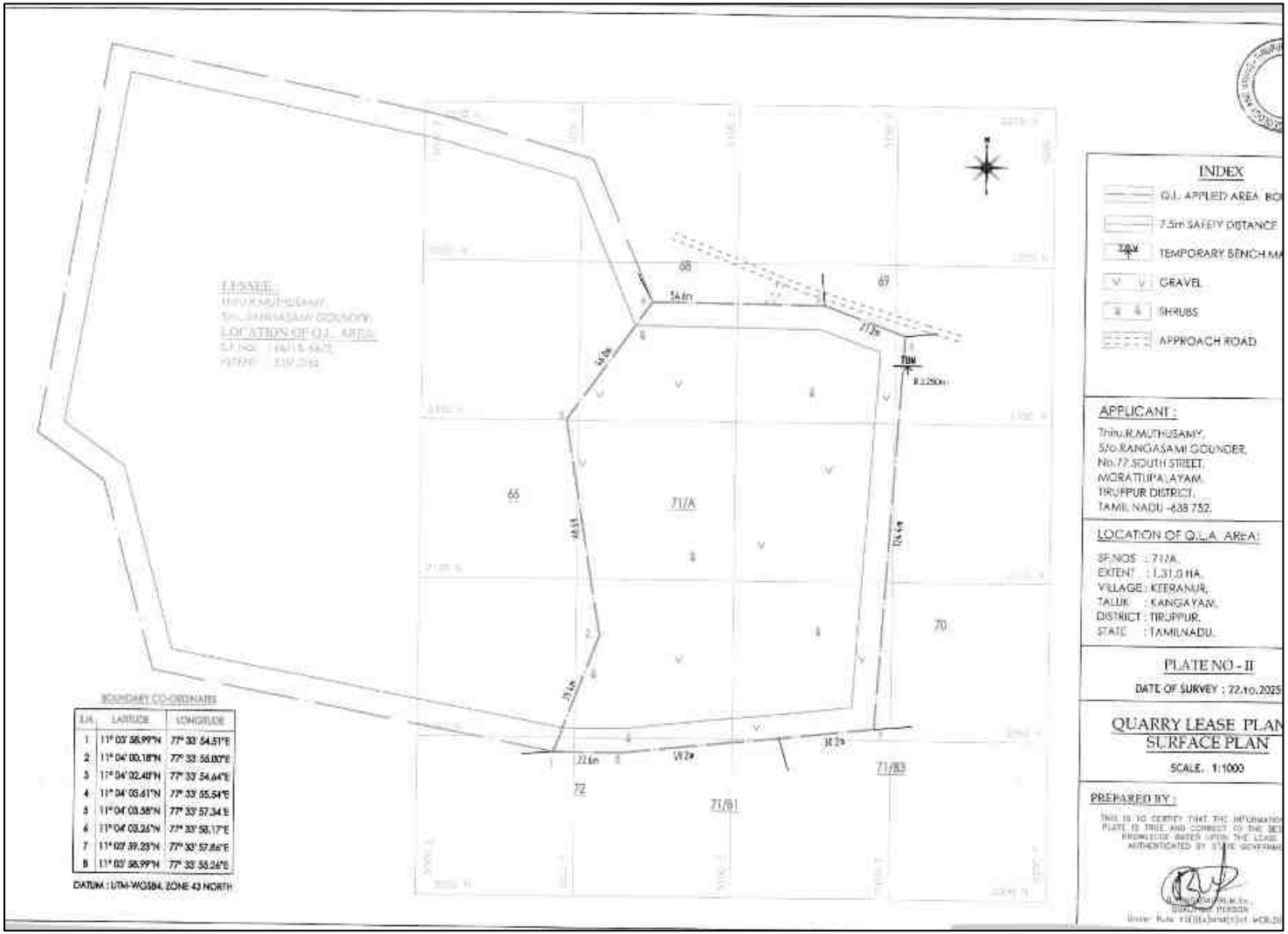


FIGURE 2.3: QUARRY LEASE PLAN / SURFACE PLAN-P1



Source: Approved Mining Plan

FIGURE 2.3A: QUARRY LEASE PLAN / SURFACE PLAN-P2



Source: Approved Mining Plan

FIGURE 2.3B: QUARRY LEASE PLAN / SURFACE PLAN-P3

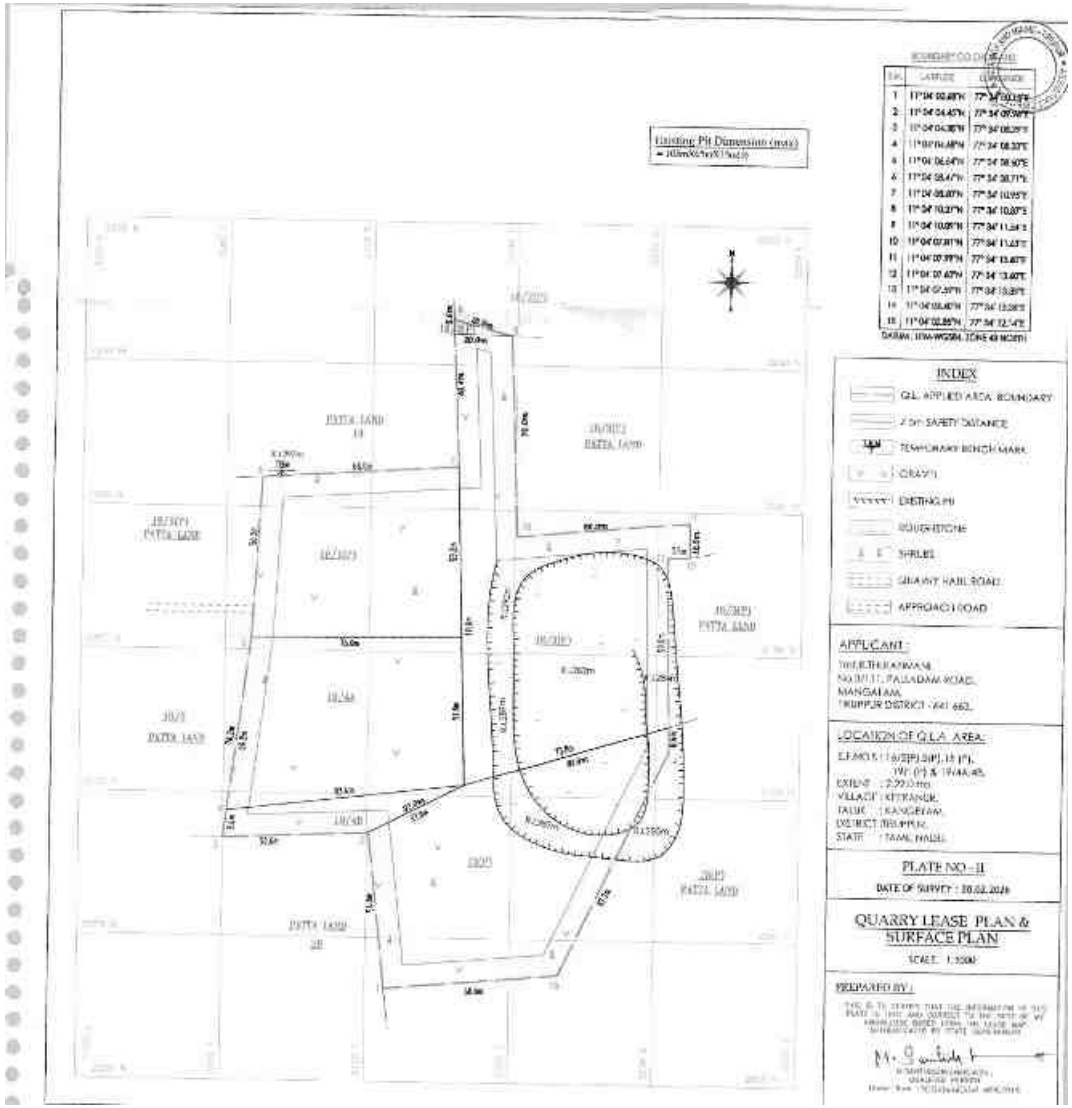


FIGURE 2.4: VILLAGE MAP SUPERIMPOSED ON GOOGLE EARTH IMAGE

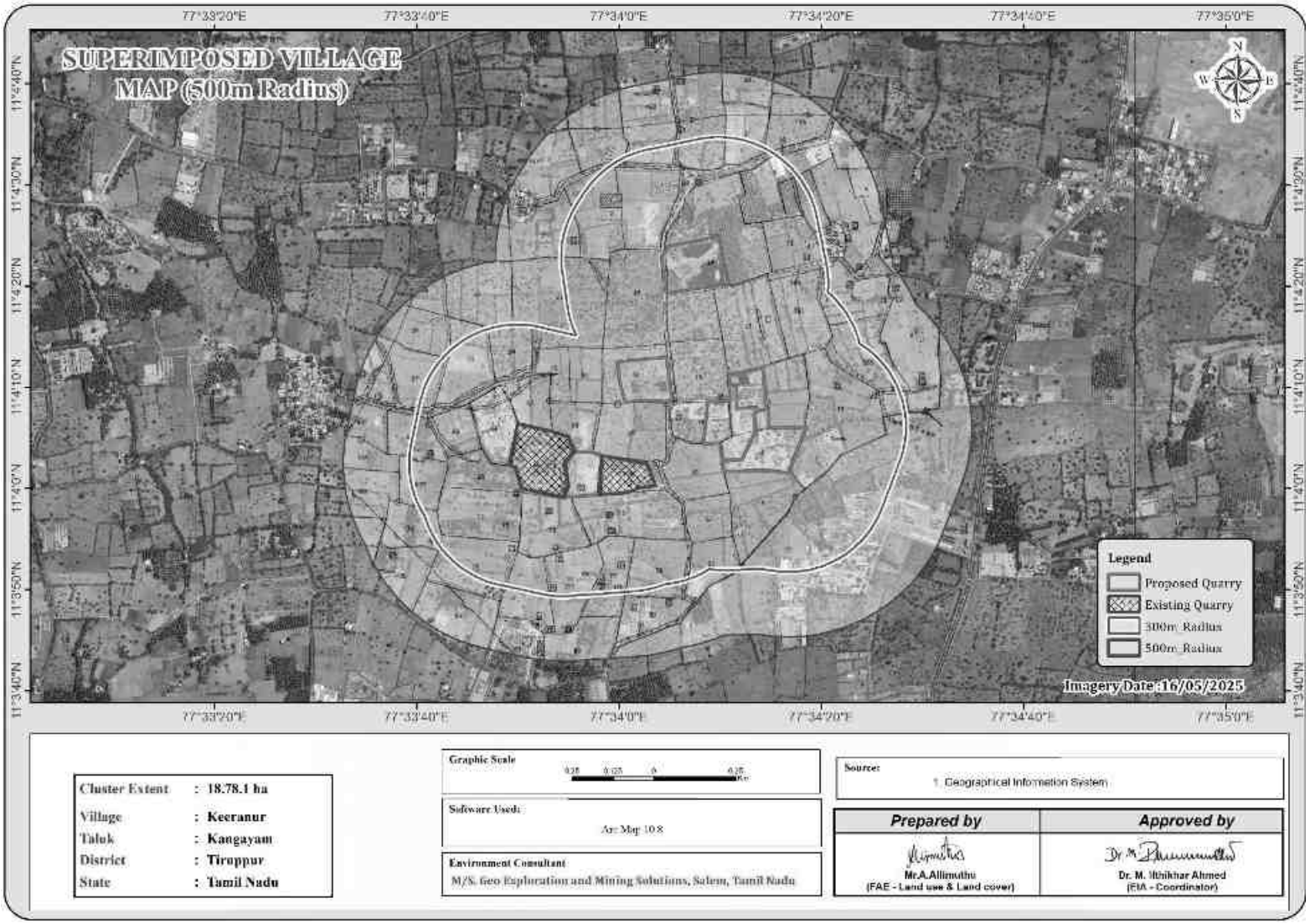


FIGURE 2.5: IMAGE SHOWING SURFACE FEATURES AROUND 10 KM RADIUS

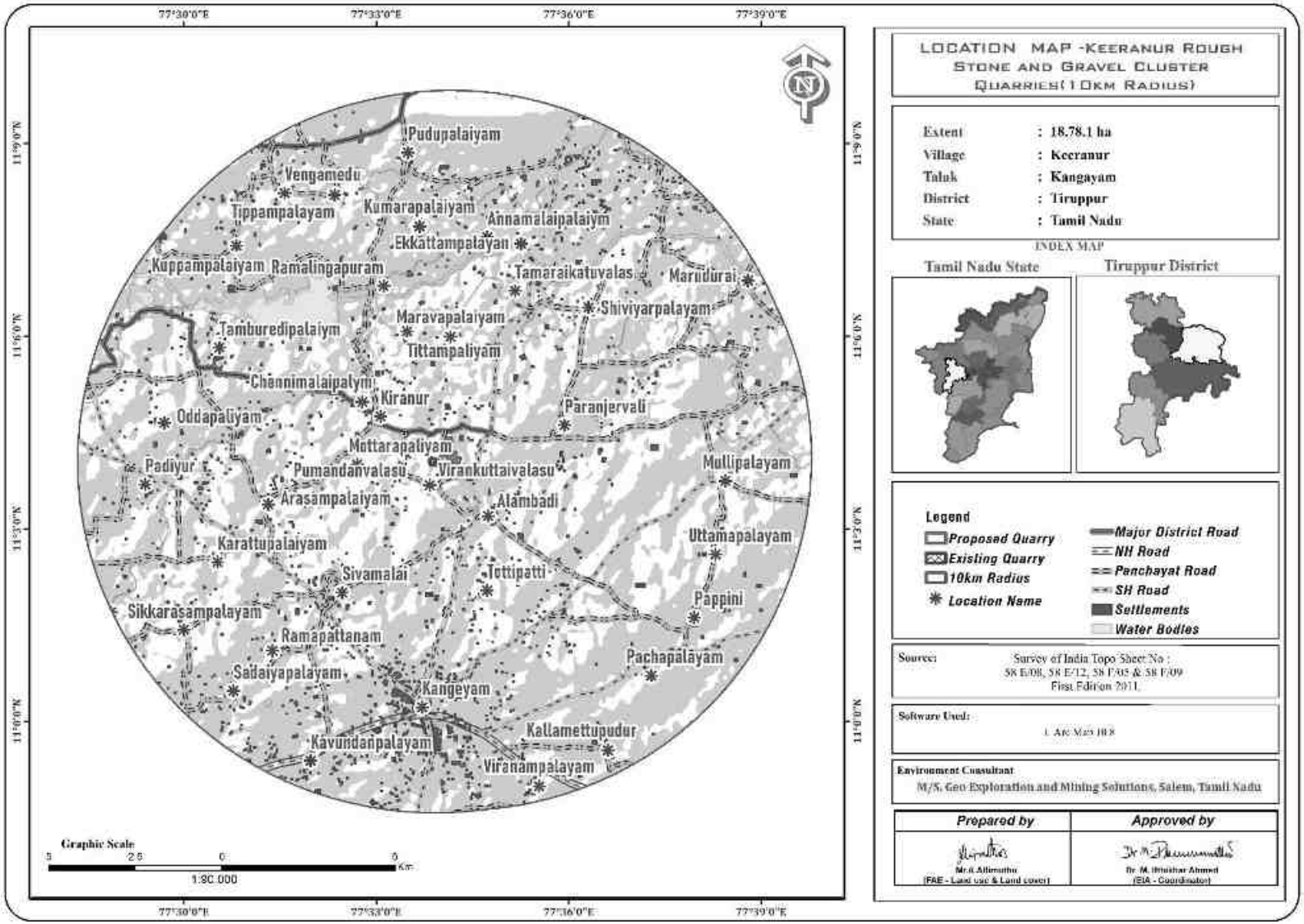


FIGURE 2.6: IMAGE SHOWING SURFACE FEATURES AROUND 5 KM RADIUS

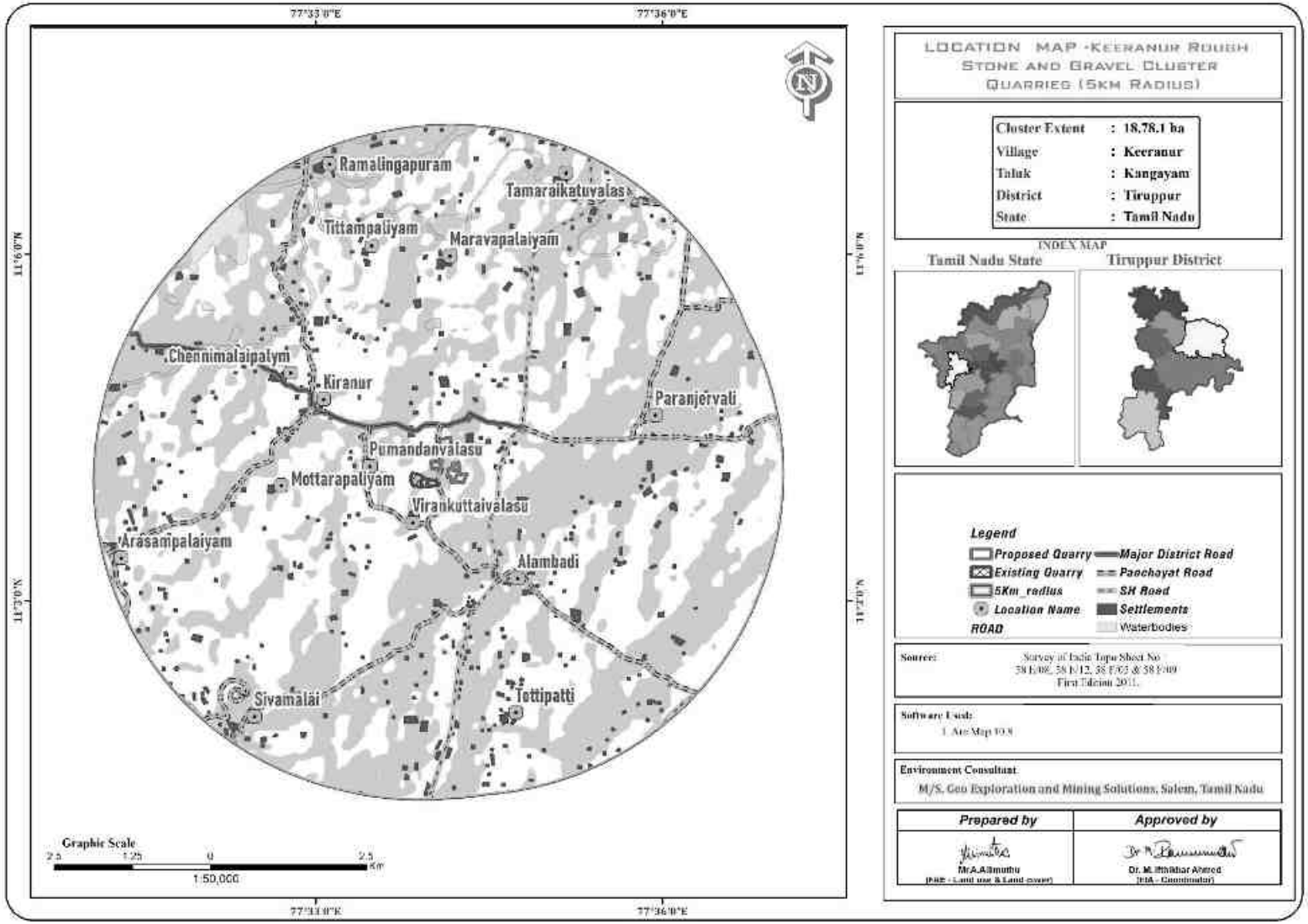
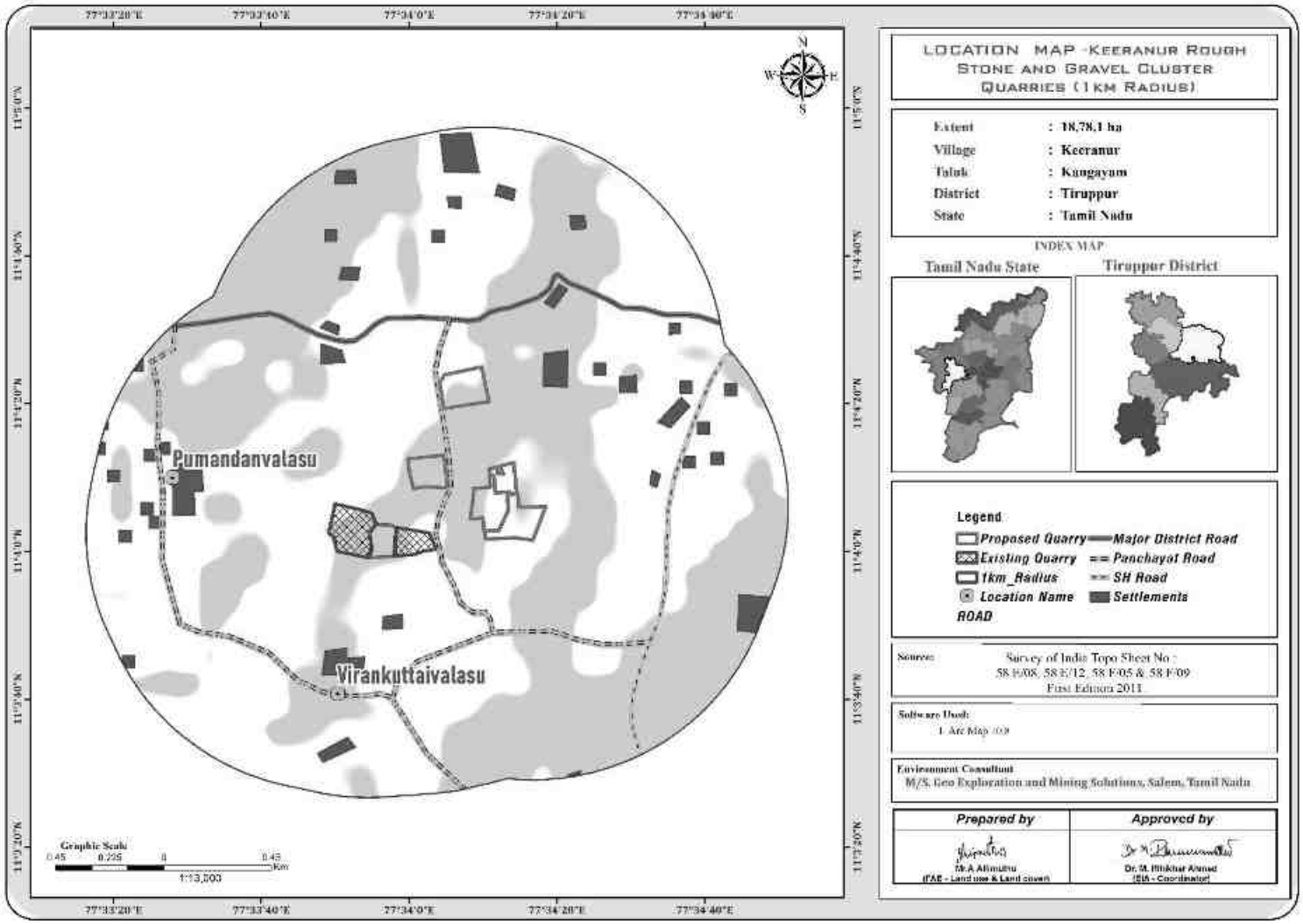


FIGURE 2.7: IMAGE SHOWING SURFACE FEATURES AROUND 1 KM RADIUS



2.2.1 Project Area

- The project is site specific &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-P1

Description	Present area (Ha)	Area required during first five years (Ha)	Area at the end of Lease period (Ha)
Area Under Quarrying	Nil	0.63.64	0.63.64
Infrastructure	Nil	0.01.00	0.01.00
Roads	Nil	0.02.00	0.02.00
Green Belt	Nil	0.34.46	0.34.46
Unutilized Area	1.01.10	Nil	Nil
Grand Total	**1.01.10**	**1.01.10**	**1.01.10**

Source: Approved Mining Plan

TABLE 2.3A: LAND USE PATTERN-P2

Description	Present area (Ha)	Proposed Amalgamation		Leaving safety and Benches	
		Area Required During the First Five years	Area at the end of Lease Period (Ha)	Area Required During the Second Five years	Area at the end of Lease Period (Ha)
Area Under Quarrying	Nil	1.02.3	1.02.3	0.91.6	0.91.6
Site Services	Nil	0.01.0	0.01.0	0.01.0	0.01.0
Roads	Nil	0.02.0	0.02.0	0.02.0	0.02.0
Green Belt	Nil	0.11.0	0.11.0	0.18.0	0.18.0
Unutilized Area	1.31.0	0.14.7	0.14.7	0.18.4	0.18.4
Grand Total	**1.31.0**	**1.31.0**	**1.31.0**	**1.31.0**	**1.31.0**

Source: Approved Mining Plan

TABLE 2.3B: LAND USE PATTERN-P3

Description	Present area (Ha)	Area at the end of Lease Period (Ha)
Area Under Quarrying	0.58.40	1.64.20
Site Services	Nil	0.01.00
Roads	0.02.0	0.02.0
Green Belt	Nil	0.25.0
Unutilized Area	1.61.60	0.29.80
Grand Total	**2.22.0**	**2.22.0**

Source: Approved Mining Plan

TABLE 2.4: PRODUCTION DETAILS-P1

PARTICULARS	DETAILS		
	Rough Stone in m^3	Weathered Rock in m^3	Gravel in m^3
Geological Resources	2,52,750	10,110	20,220
Mineable Reserves	72,250	5,915	11,830
Year wise Production	72,250	5,915	11,830
Peak Production	13,650	2,465	4,930
Mining Plan Period	10 Years		
Number of Working Days	300 Days		
Production per day	46		
No of Lorry loads	4		
Total Depth of Mining	28m BGL		

Source: Approved mining plan.

TABLE 2.4A: PRODUCTION DETAILS-P2

PARTICULARS	DETAILS	
	Rough Stone in m^3	Gravel in m^3
Geological Resources	6,55,000	52,400
Mineable Reserves	1,08,350	36,652
Year wise Production	1,08,350	36,652
Peak Production	31,050	18,172
Mining Plan Period	10 Years	
Number of Working Days	300 Days	
Production per day	36	45
No of Lorry loads	3	4
Total Depth of Mining	34m BGL	

Source: Approved mining plan.

TABLE 2.4B: PRODUCTION DETAILS-P3

PARTICULARS	DETAILS	
	Rough Stone in m^3	Gravel in m^3
Geological Resources	8,54,636	51,236
Mineable Reserves	2,42,962	35,564
Year wise Production	2,42,962	35,564
Peak Production	56,600	15,128
Mining Plan Period	5 Years	
Number of Working Days	300 Days	
Production per day	161	39
No of Lorry loads	13	3
Total Depth of Mining	49 m BGL	

Source: Approved mining plan.

2.3 GEOLOGY

Regional Geology

Tiruppur district of Tamil Nadu forms a part of southern Granulitic terrain and is predominantly occupied

by crystalline rocks of Archaean to late Proterozoic age. Regionally, the rocks can be grouped under five categories namely –

I. Charnockite Group represented by Charnockite, Pyroxene Granulite and Magnetite Quartzite,

II. Peninsular Gneissic Complex (II) comprising hornblende-biotite gneiss,

III. Basic intrusive include Pyroxinite/Dunite

IV. Younger intrusive comprising, Nepheline-Syenite,Pink Granite, Pegmatite and Quartz veins and

V. Quaternary sediments of Kankar and soil.

Stratigraphy of the area

Age	Group	Lithology
Holocene		Block cotton soil/clay±gypsum
Cenozoic		Kankar/calc-tufa
Neoproterozoic	Acid intrusives	Quartz veins Pegmatite Pink Granite
	Sivamalai syenite Complex	Nepheline-syenite
	Chalk Hills (Basic Intrusives)	Pyroxenite/Dunite
Archaean – Palaeoproterozoic	Peninsular Gneissic Complex (II) PGC (II)	Pink Granite Gneiss Hornblende Biotite gneiss
Archaean	Charnockite Group	Charnockite (Unclassified) Pyroxene Granulite Banded Magnetite Quartzite

Tiruppur District is predominantly occupied by hornblende Biotite gneisses of PGC (II) with enclaves of Magnetite Quartzite, Pyroxene Granulite and Charnockite. The area exposes several bands of Pyroxene Granulite which is medium grained, medium to dark grey in colour and stand out prominently in the gneissic country generally parallel to regional foliation. Charnockite is coarse grained, massive, many places it is foliated, grey colored and greasy and exposed as boulder outcrops and small knolls. It is well exposed in Central, Western and Southern parts of the Tiruppur District. The general strike of foliation varies from ENE-WSW, E-W with dipping towards NW and N respectively.

Hornblende-Biotite gneiss is well foliated, medium to coarse grained, pale grey and exposed as sheets and small knolls. Pink Granite gneiss occurs as thin bands and lensoidal bodies. It is a medium grained rock composed of alternating bands of mafic (mainly of biotite and hornblende) and felsic (Feldspar and Quartz) minerals. It is well recognized in Avinasi area.

Basic intrusives such as pyroxinite/dunite occurs as Outcrop and lensoidal bodies in the country rock and mostly concordant to the regional foliation. Many basic intrusive are reported in south and south-east of Tiruppur town. The trend of these bodies is east-west.

Nepheline syenite is a leucocratic, coarse-grained rock and composed mainly of Feldspar with Nepheline and shows pitted appearance due to removal of Nepleline. This alkaline rock is available in and around Sivanmalai area only. Acid intrusives comprising pink granite, pegmatite and quartz veins are traversed country rocks in micro (cm wide-meter long) to meso-scale (few meters wide and several meter long) extend. Granite is exposed around 9 km SW of Avanashi. Small scale pegmatite and quartz veins are noticed almost in all the rock types. Acid intrusives are overlain by sediments of Quaternary age, represented by Kankar and black cotton soil with Gypsum. Most of the area is covered by brown and red brown soil. Some part of the area covered with black cotton soil contains Gypsum as lumps. Black cotton soil covers south-western part of the district.

Source: District Survey Report for Minor Minerals Tiruppur District – May 2019

https://cdn.s3waas.gov.in/s3d1f255a373a3cef72e03aa9d980c7eca/uploads/2019/05/2019052585.pdf

2.3.2 Local Geology:

The study area follows the regional trend and mainly comprises of Hard Rock Formation as a homogeneous

formation / Batholith formation of Charnockite. The project area is plain terrain, covered with gravel formation of 1m thickness; Massive Charnockite formation is found after 1m gravel formation which is inferred from the resistivity survey method.

Peninsular gneiss forms the oldest rock formation, in which the massive formation of Charnockite lies over with rich accumulation of recent quaternary formation. On regional scale the Charnockite body N30ºE – S30ºE with dipping towards SE60º (Source Approved Mining plan).

2.3.3 Hydrogeology

Tiruppur District is underlain by crystalline metamorphic complex in the western parts of district and sedimentary tract in eastern side. An area of 4551 Sq.km is covered by crystalline rocks (63%) and 2671 Sq.km is covered by sediments (37%). The general geological sequence of formation is given below:

Quaternary - Laterites, Sands and Clays

Tertiary - Sandstone, Gravels and Clays

Cretaceous - Limestone, Calcareous Sandstone and Clay unconformity.

Archaean - Charnockites, Gneisses, Granites, Dolerites and Pegmatite

- The major part of the area is covered by metamorphic crystalline rocks of charnockite, granitic gneiss of Archaean age intruded by dolerite dykes and pegmatite veins. These rocks are highly metamorphosed and have been subjected to very severe folding, crushing and faulting.
- Ground Water occurs under the phreatic condition and wherever there are deep seated fractures, it occurs under semi-confined to confined conditions.
- Occurrence of Ground Water in hard rock depends upon the intensity and depth of weathering, fractures and fissures present in the rocks.
- Granites and gneisses yield moderately compared to the yield in Charnockites.
- Depth of well in hard rock generally ranges between 8 and 15m below ground level.
- Generally, yield in open wells ranges from 30 to 250m^3 /day and in bore well between 260 and 430 m^3 /day. The weathered thickness varies from 2.5 m to 42m in general there are 3 to 5 fracture zones within 100 m and 1 to 4 fracture zones between 100 and 200 m.

The Cretaceous formation is represented by Arenaceous Lime stone, Calcareous sand - stone and marl. The Tertiary formation is argillaceous comprising of Silty clay stones, argillaceous Lime stone.

The Quaternary deposits represented by the river deposits of Ponnaiyar and Varahanadhi spread over as patches in Tiruppur District. The alluvium consists of unconsolidated sands, gravelly sands, clays and clayey sands. The thickness of the sands ranges between 15 and 25 m in the alluvial formation which also form potential aquifers. In some areas, sand stone of tertiary formation are the potential groundwater reservoirs.

Aquifer Systems:

Occurrence and storage of groundwater depend upon three factors viz., Geology, Topography and rainfall in the form of precipitation. Apart from Geology, wide variation in topographic profile and intensity of rainfall constitutes the prime factors of groundwater recharge. Aquifers are part of the more complex hydro geological system and the behaviour of the entire system cannot be interpreted easily. In hard rock terrain the occurrence of Ground Water is limited to top weathered, fissured and fractured zone which extends to maximum 30 m on an average it is about 10-15 m in Tiruppur District.

In Sedimentary formations, the presence of primary inter granular porosity enhances the transmitting capacity of groundwater where the yield will be appreciable. The sedimentary area which occupies the eastern part of the district along the coastal tract is more favourable for groundwater recharge. Ground Water occurs both in semi confined and confined conditions. A brief description of occurrence of groundwater in each formation is furnished below.

Alluvial Formations

In the river alluvium groundwater occurs under water table condition. The maximum thickness is 37 m and the average thickness of the aquifer is approximately 12 m. These formations are porous and permeable which have good water bearing zones.

Tertiary Cuddalore sandstone

Tertiary formations are represented by Cuddalore Sandstone and characterised as fluvial to brakish marine deposits. Predominantly this formation is divided into Lower and Upper Cuddalore formations. In the Upper Cuddalore formations the groundwater occurs in semi confined conditions, whereas in the Lower Cuddalore the groundwater occurs in confined condition with good groundwater potential.

Cretaceous Formations

Groundwater occurring in the lens shape in the sandy clay lenses and fine sand is underlain by white and black clay beds which constitute phreatic aquifer depth which ranges 10m to 15m below ground level. Phreatic aquifer in Limestone is potential due to the presence of Oolitic Limestone.

Hard Rock Formations

Groundwater occurs under water table conditions but the intensity of weathering, joint, fracture and its development are much less in other type of rocks when compared to gneissic formation. The groundwater potential is low, when compared with the gneissic formations.

Granitic Gneiss

Groundwater occurs under water table conditions in weathered, jointed and fractural formations. The pore space developed in the weathered mantle acts as shallow granular aquifers and forms the potential water bearing and yielding zones water table is shallow in canal and tank irrigation regions and it is somewhat deeper in other regions.

Charnockite

Groundwater occurs under water table conditions but the intensity of weathering, joint, fracture and its development are much less when compared to gneissic formations. The groundwater potential is low, when compared with the gneissic formations.

Aquifer Parameters

The thickness of aquifer in this district is highly erratic and varies between 15 m to 40 m below ground level. The inter granular Porosity is essentially dependent on the intensity and degree of weathering and fracture development in the bed rock. As discussed earlier deep weathering has developed in Gneissic formations and moderate weathering in charnockite formations. The range of aquifer parameters in hard rock and sedimentary formations are given below:

RANGE OF AQUIFER PARAMETERS

Name	Sp. Capacity (lpm/d)	Specific Yield (%)	T (m^2/d)	K (m/day)	Yield of wells (lps)
Alluvium	2.08	7.2	98	19.7	2.5
Tertiary	78-173	1.4-3.5	46-134	16-33	2-3.3
Cretaceous	33-782	0.3-2.56	33-782	10-66	1.1-3.5
Crystalline	27-224	0.8-2.5	16-60	5-20	1-2

Source: http://nwm.gov.in/sites/default/files/Notes%20on%20Trippur%20District.pdf

The Ground Water levels from the 38 number of observation wells of TWAD have been analyzed for Post-Monsoon and Pre-Monsoon.

GROUND WATER LEVEL VARIATIONS OF TIRUPPUR DISTRICT

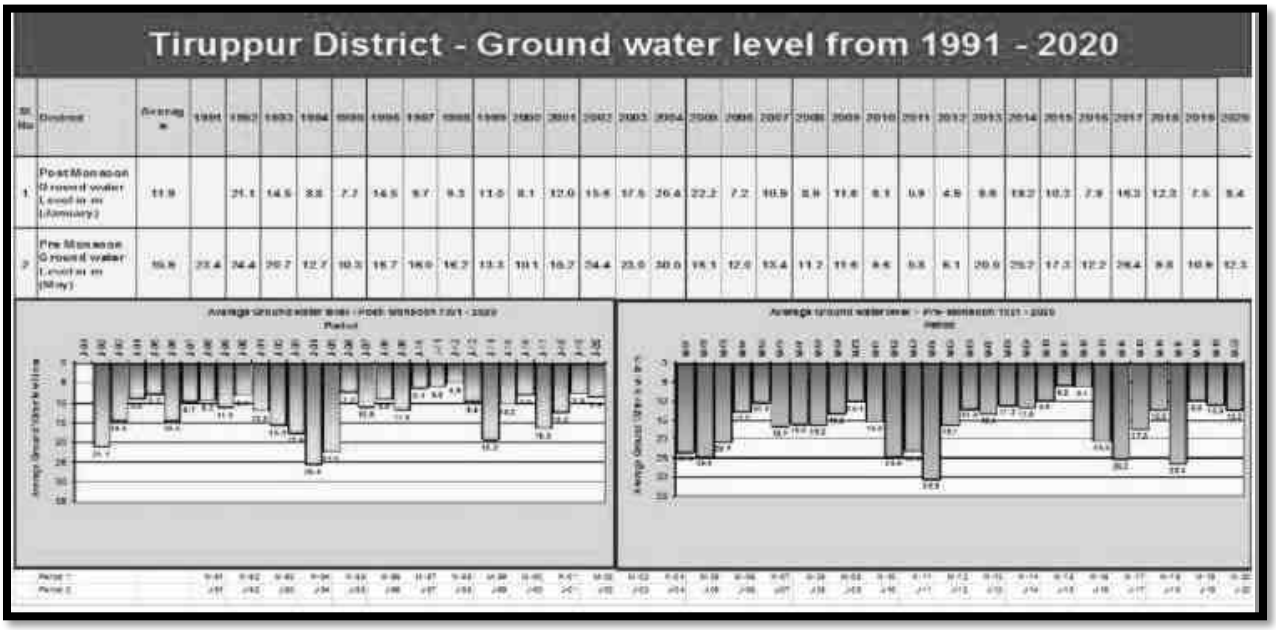


FIGURE 2.8: REGIONAL GEOLOGY MAP

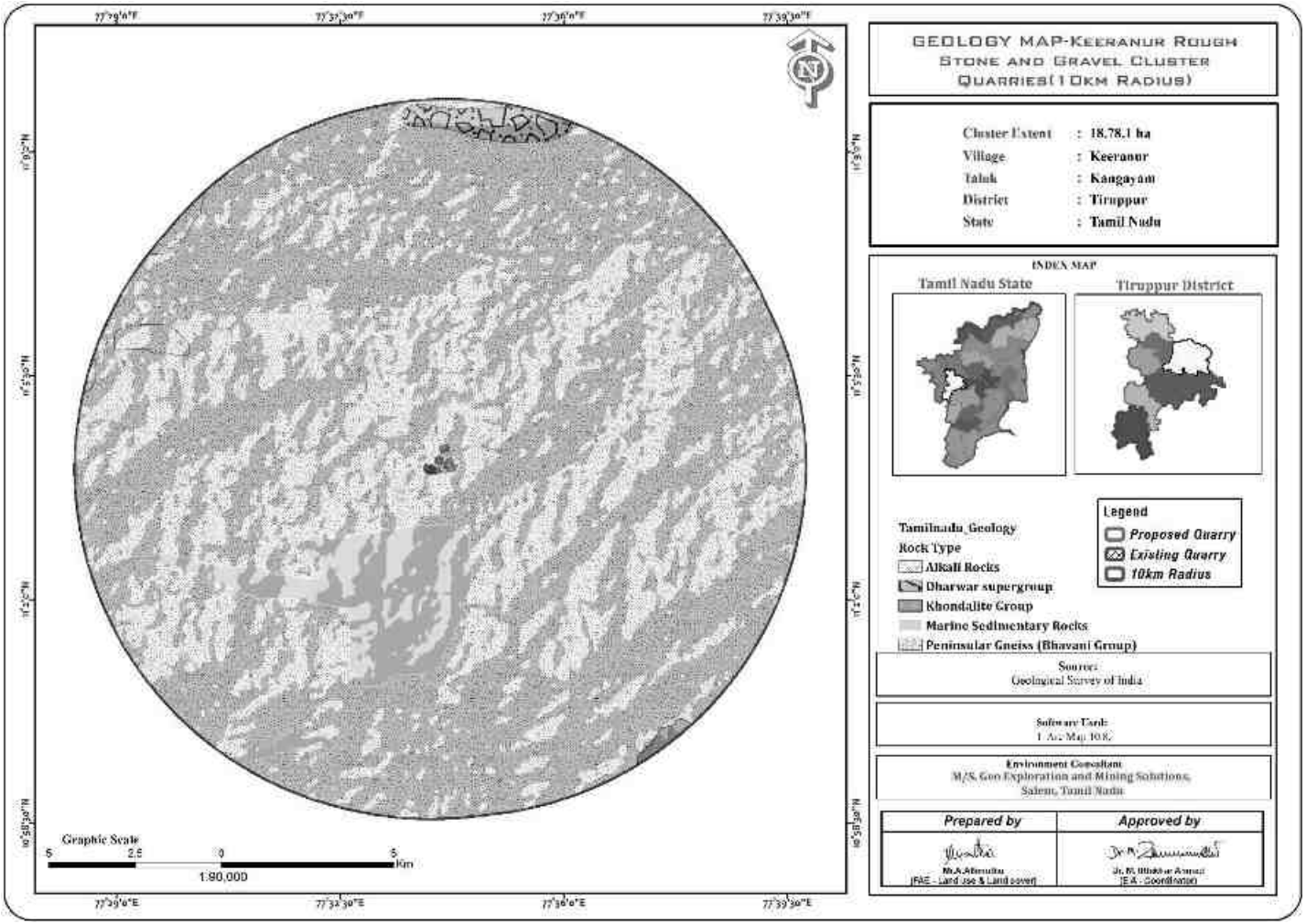
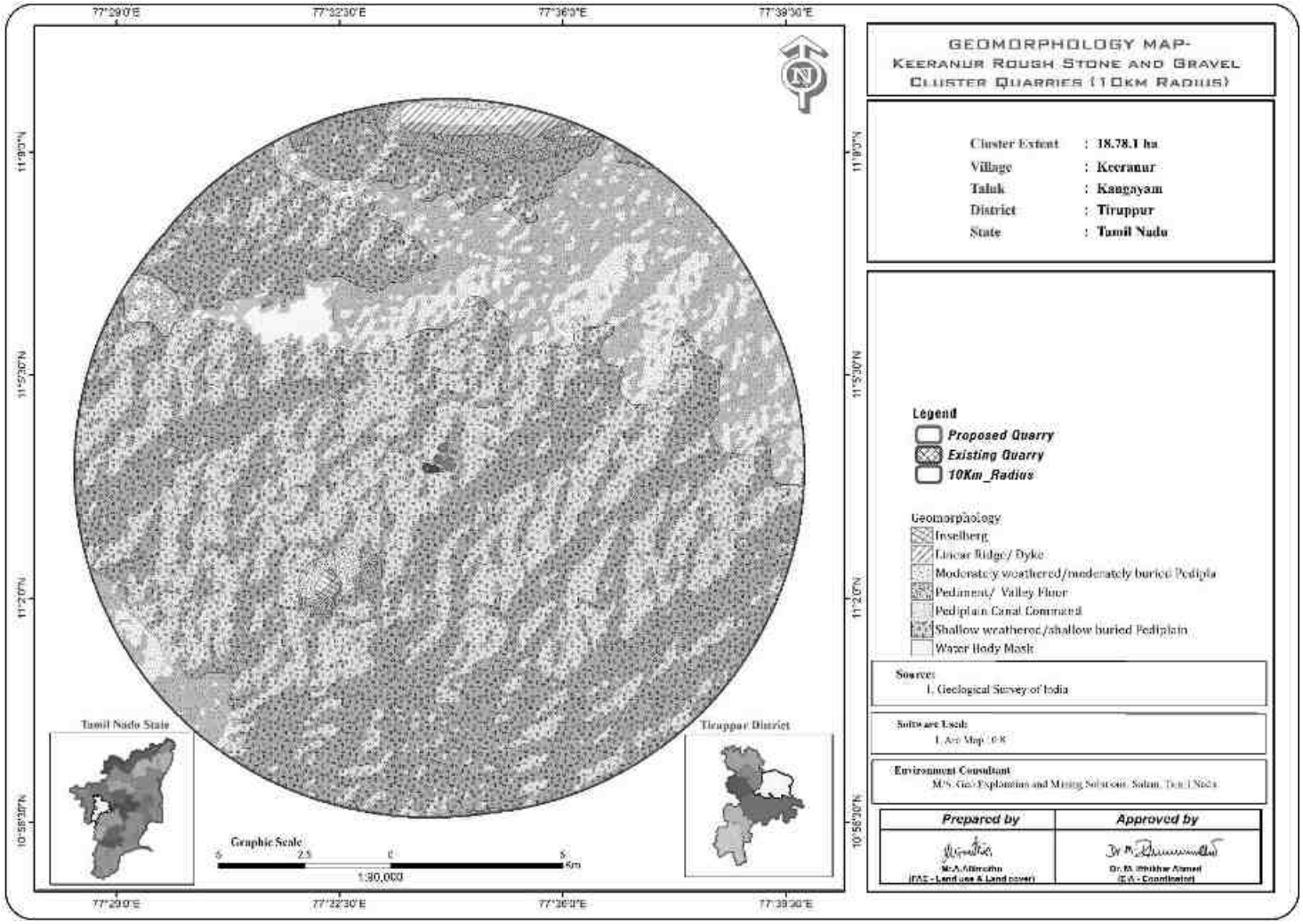


FIGURE 2.9: GEOMORPHOLOGY MAP



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-P1

Description	Rough Stone in m^3	Weathered Rock in m^3	Gravel in m^3
Geological Resource in m^3	2,52,750	10,110	20,220
Mineable Resource in m^3	72,250	5,915	11,830

Source: Approved Mining Plan

TABLE 2.6A: RESOURCES AND RESERVES-P2

Description	Rough Stone in m^3	Gravel in m^3
Geological Resource in m^3	6,55,000	52,400
Mineable Resource in m^3	1,08,350	36,652

Source: Approved Mining Plan

TABLE 2.6B: RESOURCES AND RESERVES-P3

Description	Rough Stone in m^3	Gravel in m^3
Geological Resource in m^3	8,54,636	51,236
Mineable Resource in m^3	2,42,962	35,564

TABLE 2.7: YEAR-WISE PRODUCTION PLAN

YEAR	**Rough stone** (m^3)	**Weathered Rock** (m^3)	**Gravel** (m^3)
I	10,200	2,465	4,930
II	13,650	1,449	2,898
III	18,300	2,001	4,002
IV	10,120	-	

V	9,240	-	
1st Five Years Total	**61,510**	**5,915**	**11,830**
VI	2,300	-	-
VII	1,960	-	-
VIII	2,760	-	-
IX	2,160	-	-
X	1,560	-	-
2nd Five Years Total	**10,740**	-	-
G.TOTAL	**72,250**	**5,915**	**11,830**

Source: Approved Mining Plan

TABLE 2.7A: YEAR-WISE PRODUCTION PLAN-P2

YEAR	Rough stone	Gravel
I	71,637 Ts / 26,050 m^3	36,344 Ts / 18,172 m^3
II	85,389 Ts / 31,050 m^3	18,480 Ts / 9,240 m^3
III	68,063 Ts / 24,750 m^3	18,480 Ts / 9,240 m^3
IV	24,063 Ts / 8,750 m^3	-
V	19.937 Ts / 7,250 m^3	-
1st Five Years Total	**2,69,089 Ts / 97,850 m^3**	**73,304 Ts / 36,652 m^3**
VI	6,738 Ts / 2,450 m^3	-
VII	6,738 Ts / 2,450 m^3	-
VIII	4,812 Ts / 1,750 m^3	-
IX	4,812 Ts / 1,750 m^3	-
X	5,775Ts / 2,100 m^3	-
2nd Five Years Total	**28,875 Ts / 10,500 m^3**	**-**
G.TOTAL	**2,97,964 Ts / 1,08,350 m^3**	**73,304 Ts / 36,652 m^3**

Source: Approved Mining Plan

TABLE 2.7B: YEAR-WISE PRODUCTION PLAN-P3

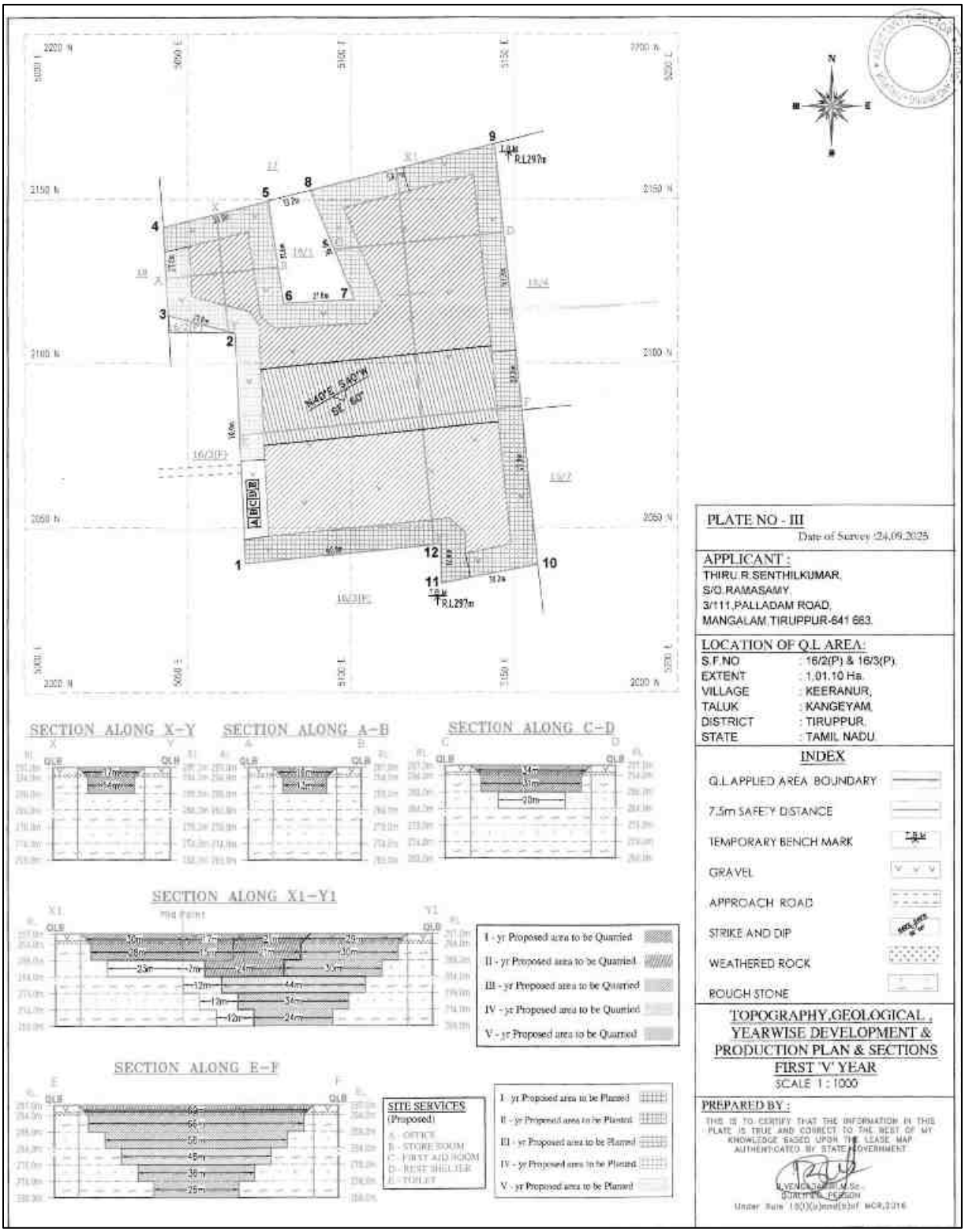
YEAR	Rough stone	Gravel
I	1,22,588Ts/ 44,577m^3	18,912Ts/ 9,456 m^3
II	1,55,650Ts/ 56,600 m^3	30,256Ts/ 15,128 m^3
III	1,28,563Ts/ 46,750 m^3	21,960Ts/ 10,980 m^3
IV	1,37,253Ts/ 49,910 m^3	-
V	1,24,094Ts/ 45,125 m^3	-
TOTAL	**6,68,148Ts/ 2,42,962** m^3	**71,128Ts/ 35,564** m^3

Source: Approved Mining Plan

Disposal of Waste

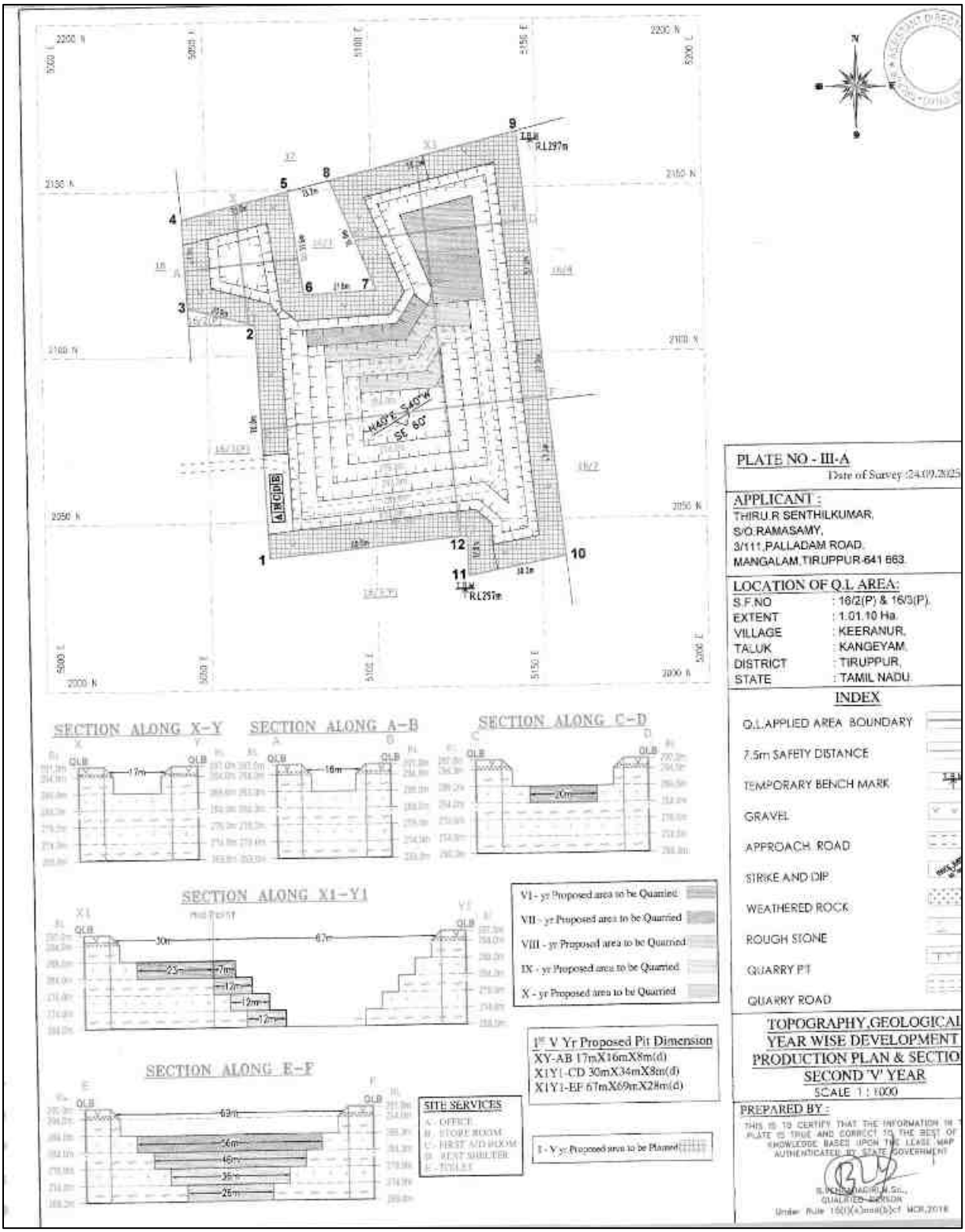
There is no Waste anticipated during this plan period hence, disposal of waste does not arise. The overburden in the form of Gravel and Weathered rock are already removed during the previous lease period. The excavated rough stone (100%) will be directly loaded into Trucks to the needy customers.

FIGURE 2.10: TOPOGRAPHY, GEOLOGICAL, YEAR-WISE DEVELOPMENT PRODUCTION PLAN AND SECTIONS-P1



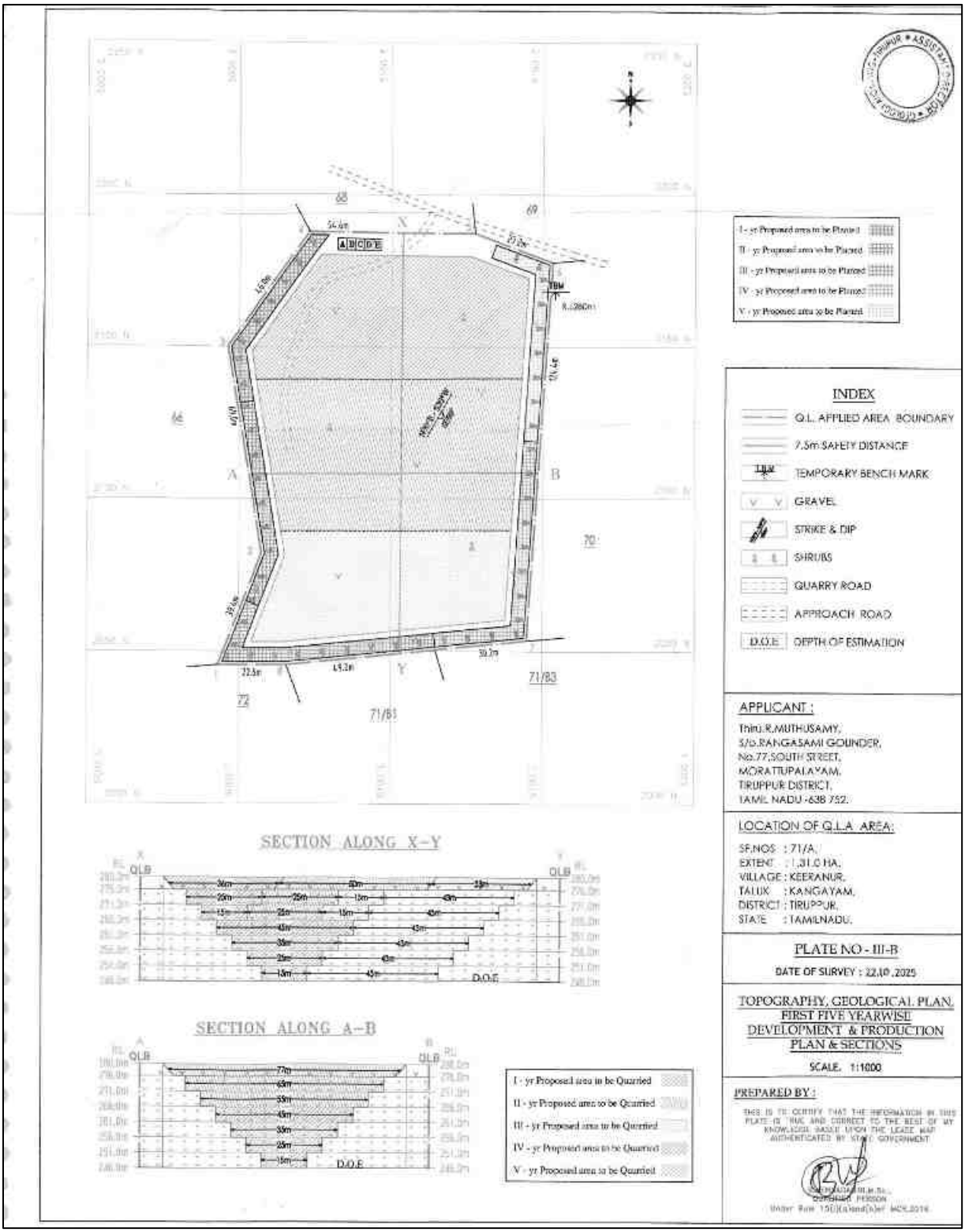
Source: Approved Mining Plan

FIGURE 2.10A: TOPOGRAPHY, GEOLOGICAL, YEAR-WISE DEVELOPMENT PRODUCTION PLAN AND SECTIONS-P1



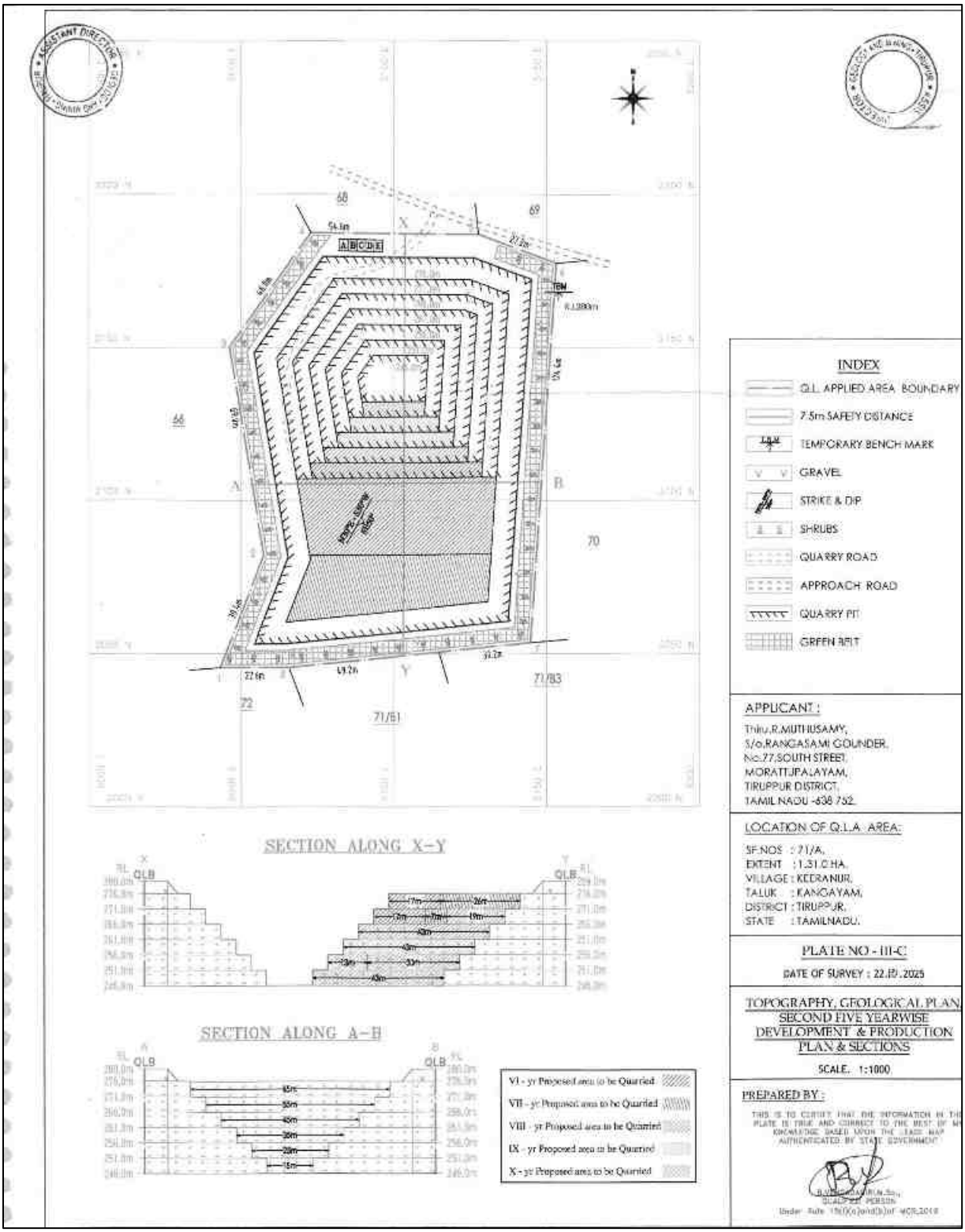
Source: Approved Mining Plan

FIGURE 2.10B: TOPOGRAPHY, GEOLOGICAL, YEAR-WISE DEVELOPMENT PRODUCTION PLAN AND SECTIONS-P2



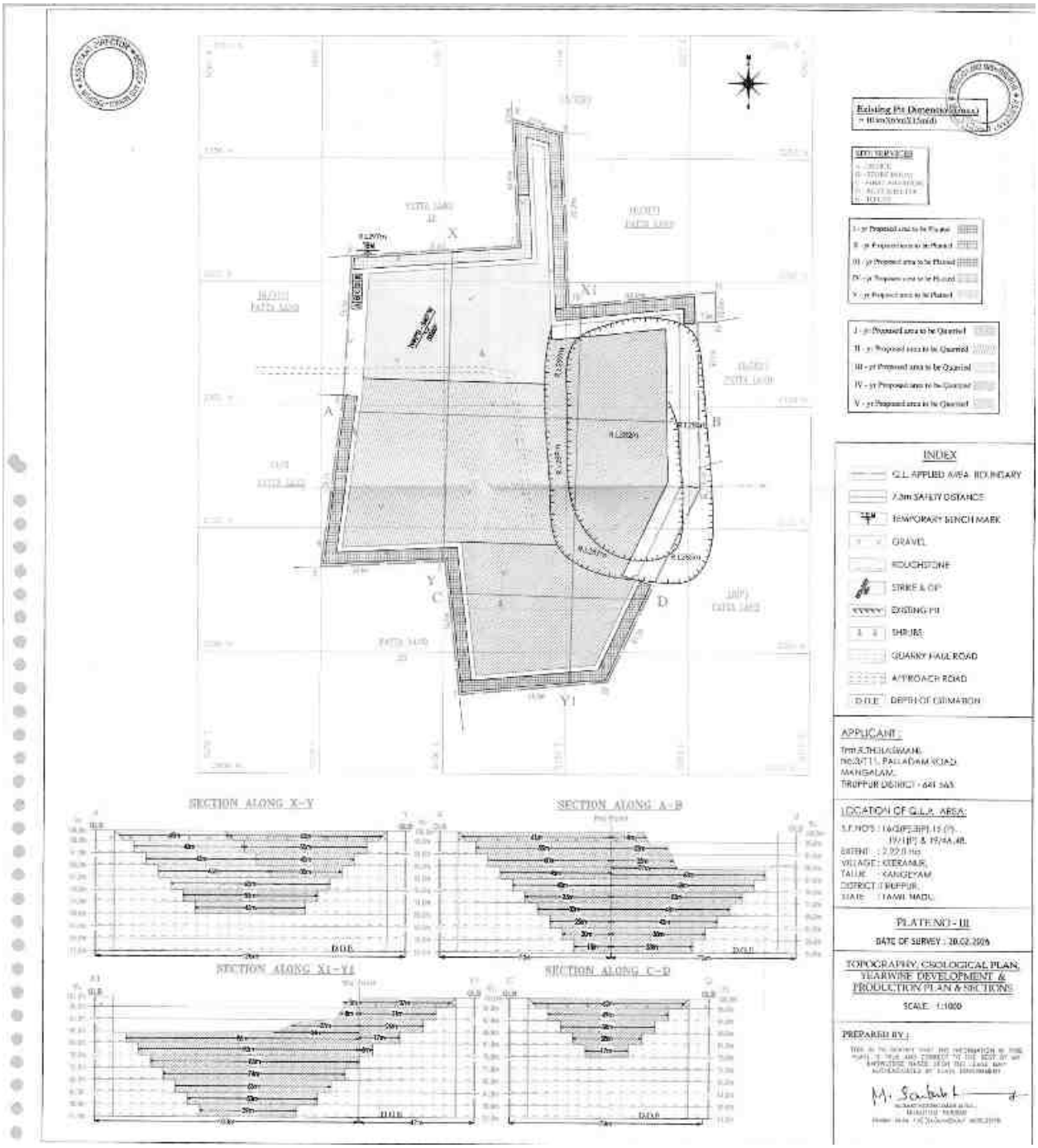
Source: Approved Mining Plan

FIGURE 2.10C: TOPOGRAPHY, GEOLOGICAL, YEAR-WISE DEVELOPMENT PRODUCTION PLAN AND SECTIONS-P2



Source: Approved Mining Plan

FIGURE 2.10D: TOPOGRAPHY, GEOLOGICAL, YEAR-WISE DEVELOPMENT PRODUCTION PLAN AND SECTIONS-P3



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-P1

	Length (Max) (m)	Width (Max) (m)	Depth (Max) (m)
XY-AB	17	16	8m BGL
XY-CD	30	34	13m BGL
X1Y1-EF	67	69	28m BGL

Source: Approved Mining Plan

TABLE 2.8A: ULTIMATE PIT DIMENSION-P2

	Length (Max) (m)	Width (Max) (m)	Depth (Max) (m)
As Per Proposed Amalgamation	119	86	54m BGL
Leaving Safety and Benches	119	77	34m BGL

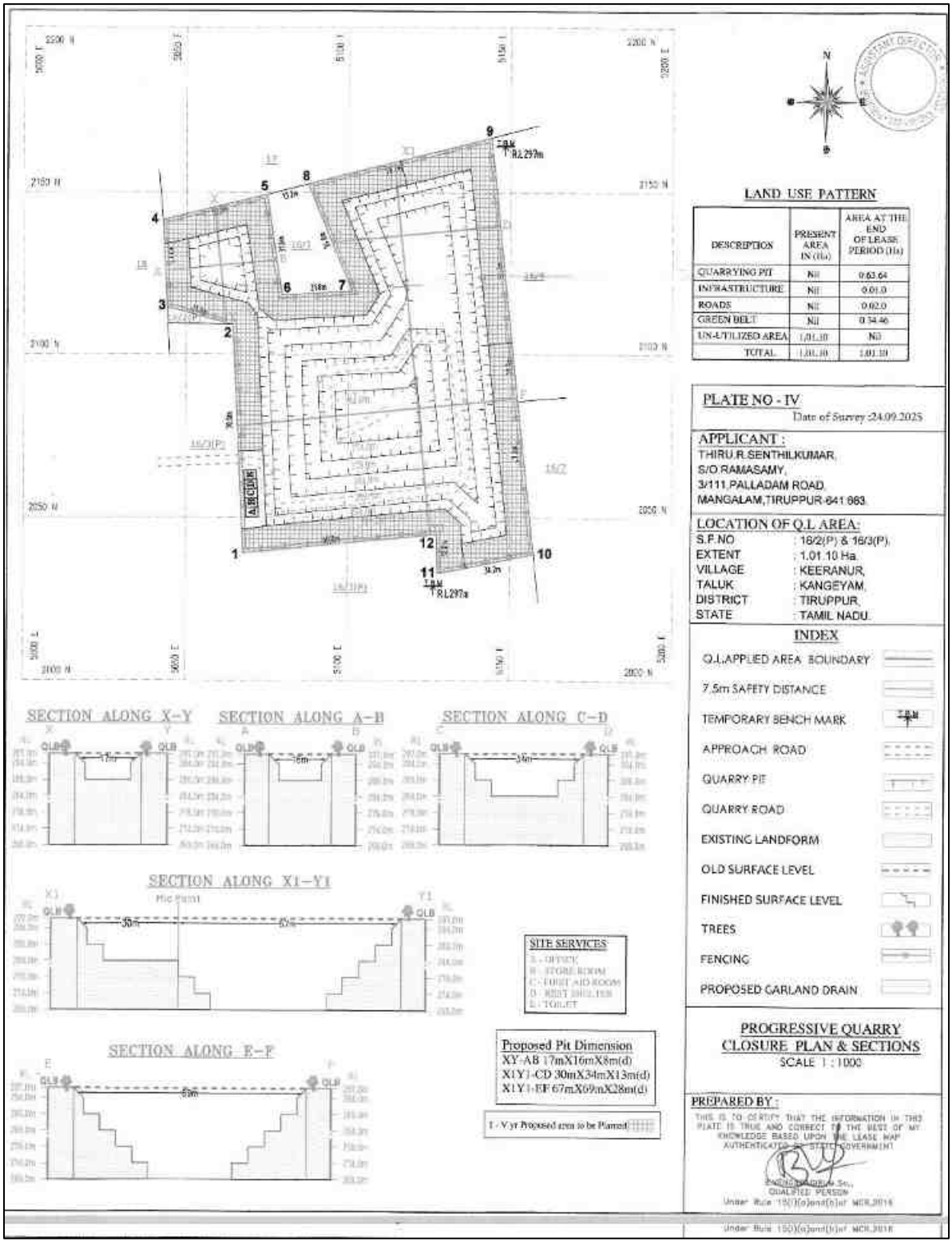
Source: Approved Mining Plan

TABLE 2.8B: ULTIMATE PIT DIMENSION-P3

	Length (Max) (m)	Width (Max) (m)	Depth (Max) (m)
XY-AB	107	61	49m BGL
X1Y1-AB	100	76	49m BGL
X1Y1-CD	37	62	24m BGL

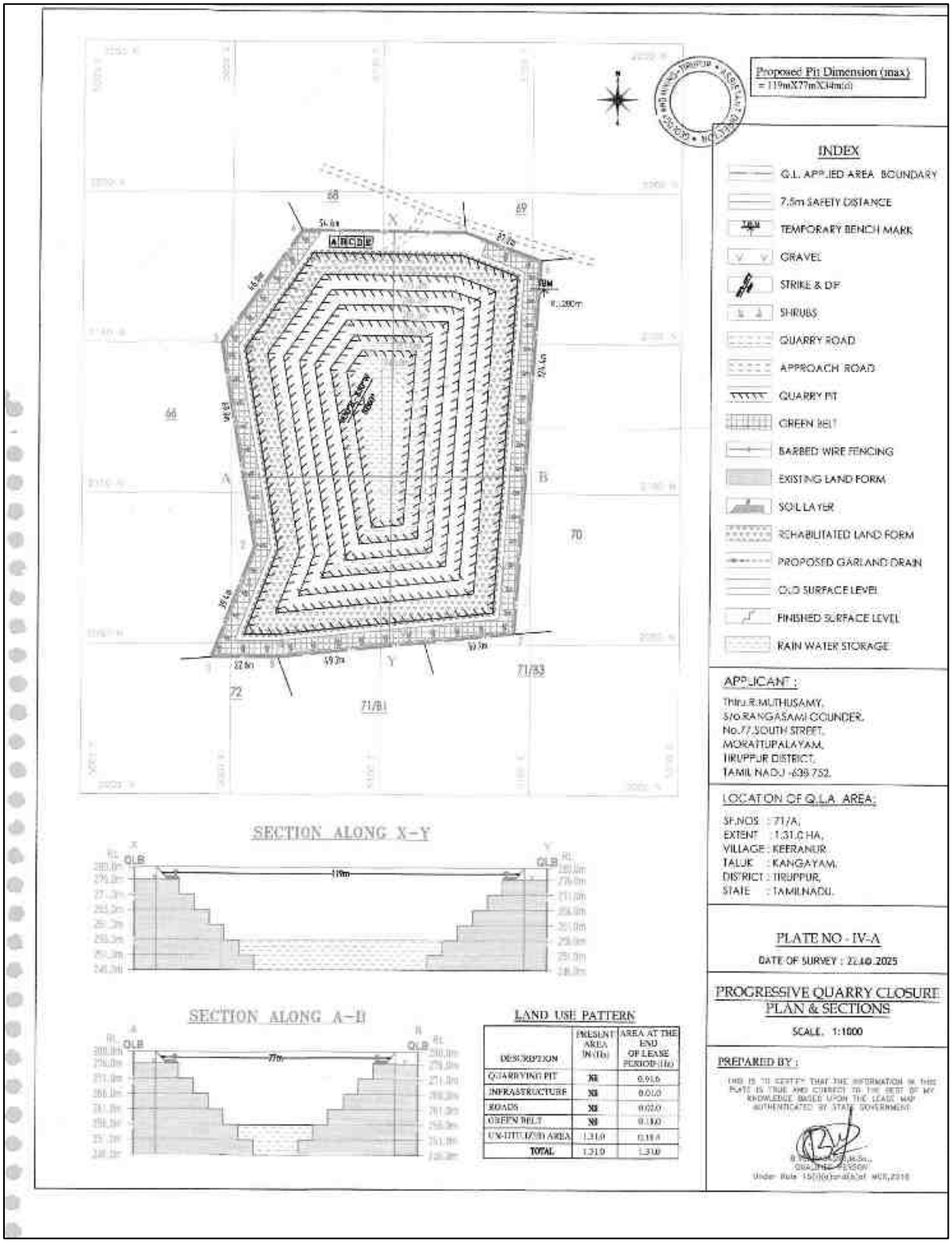
Source: Approved Mining Plan

FIGURE 2.11: CLOSURE PLAN AND SECTIONS-P1



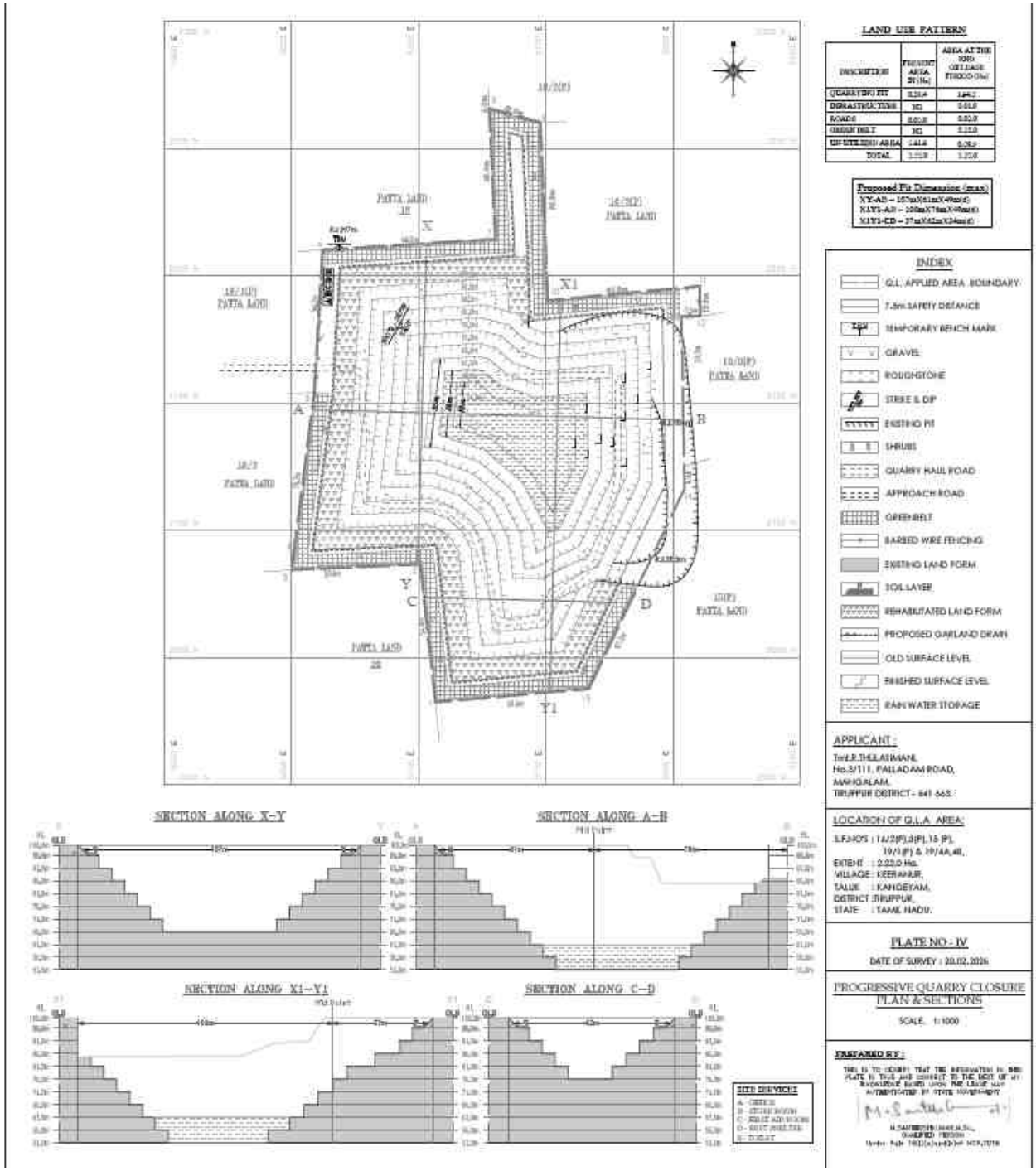
Source: Approved Mining Plan

FIGURE 2.11A: CLOSURE PLAN AND SECTIONS-P2



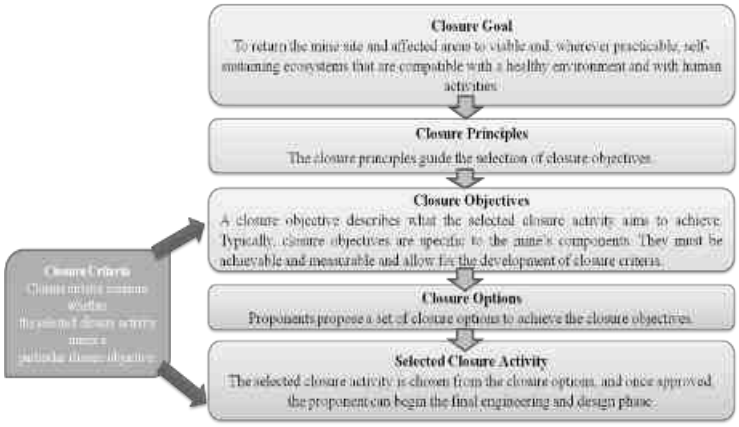
Source: Approved Mining Plan

FIGURE 2.11 B: CLOSURE PLAN AND SECTIONS-P3



- 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

P1

hence for the production of 24m^3 (66Ts) = 22 Nos of holes to be drilled per day

Explosives per hole = ½ kg hence 11 kg of Explosives will be utilized maximum considering the peak production

P2

hence for the production of 36m^3 (99Ts) = 33 Nos of holes to be drilled per day

Explosives per hole = ½ kg hence 16.5 kg of Explosives will be utilized maximum considering the peak production

P3

hence for the production of 161m^3 (445Ts) = 148 Nos of holes to be drilled per day

Explosives per hole = ½ kg hence 74 kg of Explosives will be utilized maximum considering the peak production

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-P1

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

Source: Approved Mining Plan

TABLE 2.9A: PROPOSED MACHINERY DEPLOYMENT-P2

S.NO.	TYPE	NOS	SIZE/CAPACITY	MOTIVE POWER
1	Hand Jack hammer	4	1.2m to 2.0m	Compressed air
2	Compressor	1	400psi	Diesel Drive

3	Excavator with Bucket and Rock Breaker	1	300 HP	Diesel Drive
4	Tippers	2	30 Tonnes	Diesel Drive
5	Water Sprinkler	1	6000 ltrs	Diesel Drive

Source: Approved Mining Plan

TABLE 2.9B: PROPOSED MACHINERY DEPLOYMENT-P3

S.NO.	TYPE	NOS	SIZE/CAPACITY	MOTIVE POWER
1	Hand Jack hammer	7	1.2m to 2.0m	Compressed air
2	Compressor	2	400psi	Diesel Drive
3	Excavator with Bucket and Rock Breaker	1	300 HP	Diesel Drive
4	Tippers	2	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	SH Road	1.3km NE	State Highway
TS-2	Keeranur-Nalroad Panchayat Road	1.8km NW	Panchayat 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	60	180	60	60	300	150	390
TS2	20	60	30	30	100	50	140

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	27	81

FIGURE.2.12: MINERAL TRANSPORTATION ROUTE MAP

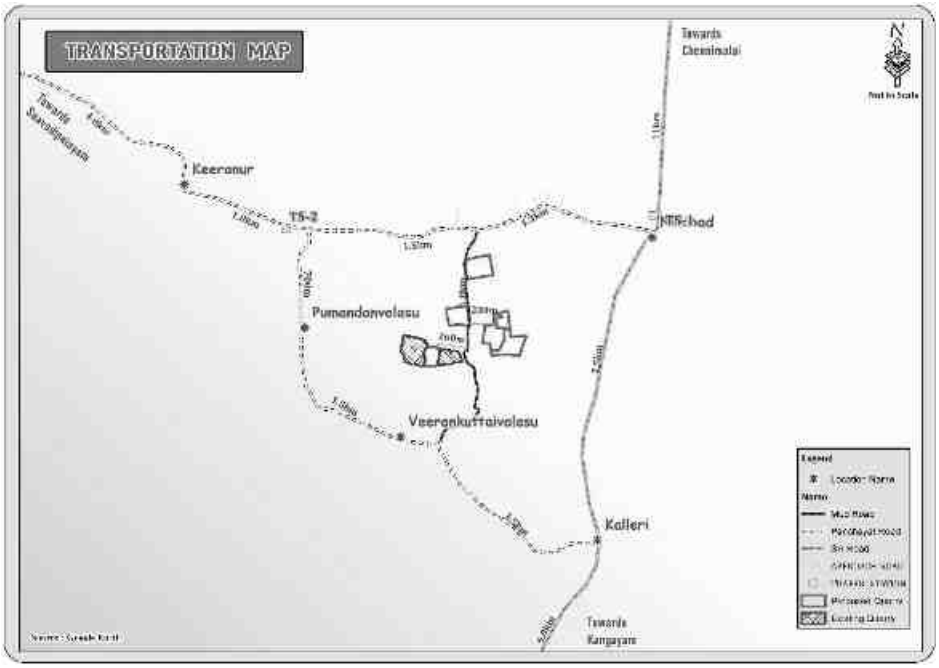


TABLE 2.13: SUMMARY OF TRAFFIC VOLUME

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	390	81	471	1500
TS2	140	81	221	1200

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-P1

Purpose	Quantity	Source
Dust Suppression	0.6KLD	From the existing pit or from the water vendors
Green Belt	0.7KLD	From the existing pit or from the water vendors
Sanitation & Drinking	0.5KLD	From the existing pit or from the water vendors.
Total	**1.8KLD**	

Source: Prefeasibility report

TABLE 2.14A: WATER REQUIREMENT FOR THE PROJECT-P2

Purpose	Quantity	Source
Dust Suppression	0.6KLD	From the existing pit or from the water vendors
Green Belt	1.0KLD	From the existing pit or from the water vendors
Sanitation & Drinking	0.4KLD	From the existing pit or from the water vendors.
Total	**2.0KLD**	

Source: Prefeasibility report

TABLE 2.14B: WATER REQUIREMENT FOR THE PROJECT-P3

Purpose	Quantity	Source
Dust Suppression	2.0 KLD	From the existing pit or from the water vendors
Green Belt	1.7 KLD	From the existing pit or from the water vendors
Sanitation & Drinking	1.3 KLD	From the existing pit or from the water vendors.
Total	**5.0 KLD**	

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-

Gravel – P1

Per hour Excavator will consume = 10 liters / hour
Per hour Excavator will excavate = 60m^3 of Gravel
Gravel quantity = 11,830/60 = 197hours
Diesel consume = 197hours' x 10 liters
Total diesel consumption = 1970 Liters of HSD will be utilized for Gravel

Rough stone: - P1

Per hour Excavator will consume = 16 liters / hour
Per hour Excavator will excavate = 20$m^3$of Rough stone
Rough stone quantity = 72,250/20 = 3613hours
Diesel consume = 3613hours x 16 liters
Total diesel consumption = **57,800** Liters of HSD will be utilized for Rough stone
Total diesel consumption = **59,770** Liters of HSD will be utilized for entire project life.

Gravel – P2

Per hour Excavator will consume = 10 liters / hour
Per hour Excavator will excavate = 60m^3 of Gravel
Gravel quantity = 36,652/60 = 610 hours
Diesel consume = 610hours' x 10 liters
Total diesel consumption = 6100 Liters of HSD will be utilized for Gravel

Rough stone: - P2

Per hour Excavator will consume = 16 liters / hour
Per hour Excavator will excavate = 20$m^3$of Rough stone
Rough stone quantity = 1,08,350/20 = 5417hours
Diesel consume = 5417hours x 16 liters
Total diesel consumption = **86,672** Liters of HSD will be utilized for Rough stone
Total diesel consumption = **92,772** Liters of HSD will be utilized for entire project life.

Gravel – P3

Per hour Excavator will consume = 10 liters / hour
Per hour Excavator will excavate = 60m^3 of Gravel
Gravel quantity = 35,564/60 = 592 hours

Diesel consume = 592hours' x 10 liters

Total diesel consumption = 5,920 Liters of HSD will be utilized for Gravel

Rough stone: - P3

Per hour Excavator will consume = 16 liters / hour

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

Rough stone quantity = 2,42,962/20 = 12,148 hours

Diesel consume = 12,148hours x 16 liters

Total diesel consumption = **1,94,368** Liters of HSD will be utilized for Rough stone

Total diesel consumption = **2,00,288** 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 Given Below

Code	Project Cost
P1	Rs.73,81,000
P2	Rs.1,38,28,000
P3	Rs.98,78,000

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-P1

Designation	No of persons
a) Supervisory Category	
Mines Manager	1
Geologist	1
b) Skilled Labour	
Mines Foreman	1
Mate/Blaster	1
Excavator Operator	3
Tipper driver	2
Water sprinkler Driver	1
Jack hammer operator	4
c) Unskilled labour	
Security	1
Labour & Helper	3
Cleaner & Co-operator	4
Total	**20**

Source: Approved Mining Plan & Pre-Feasibility report.

TABLE 2.15A: PROPOSED MANPOWER DEPLOYMENT-P2

Designation	No of persons
a) Supervisory Category	
Mines Manager	1
Geologist	1
b) Skilled Labour	
Mines Foreman	1
Mate/Blaster	1
Excavator Operator	3
Tipper driver	2
Water sprinkler Driver	1
Jack hammer operator	8
c) Unskilled labour	
Security	1
Labour & Helper	3
Cleaner & Co-operator	4
Total	**24**

Source: Approved Mining Plan & Pre-Feasibility report.

TABLE 2.15B: PROPOSED MANPOWER DEPLOYMENT-P3

Designation	No of persons
a) Supervisory Category	
Mines Manager	1
Geologist	1
b) Skilled Labour	
Mines Foreman	1
Mate/Blaster	1
Excavator Operator	1
Tipper driver	2
Water sprinkler Driver	1
Jack hammer operator	14
c) Unskilled labour	
Security	1
Labour & Helper	2
Cleaner & Co-operator	4
Total	**29**

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

This chapter presents a regional background to the baseline data at the very onset, which will help in better appreciation of micro-level field data, generated on several environmental and ecological attributes of the study area. The baseline status of the project environment is described section wise for better understanding of the broad-spectrum conditions. 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 **December 2025 – February 2026** with CPCB guidelines. Environmental data has been collected with reference to cluster quarries by CHENNAI METTEX LAB PRIVATE LIMITED – Approved by AAI, AGMARK, APEDA, BIS, [IC, FSSAI, GAFTA, IOPEPC, MOEF Et TEA BOARD for the below attributes.

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

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., **December 2025 – February 2026**

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 (1 surface water & 5 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 (Dec 2025 – Feb 2026)	7 (2 core & 5 buffer)	IS 5182 Part 1-23 National Ambient Air Quality Standards, CPCB
*Noise Levels	Ambient Noise	Hourly observation for 24 Hours per location	7(2 core & 5 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 CHENNAI METTEX LAB PRIVATE LIMITED 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

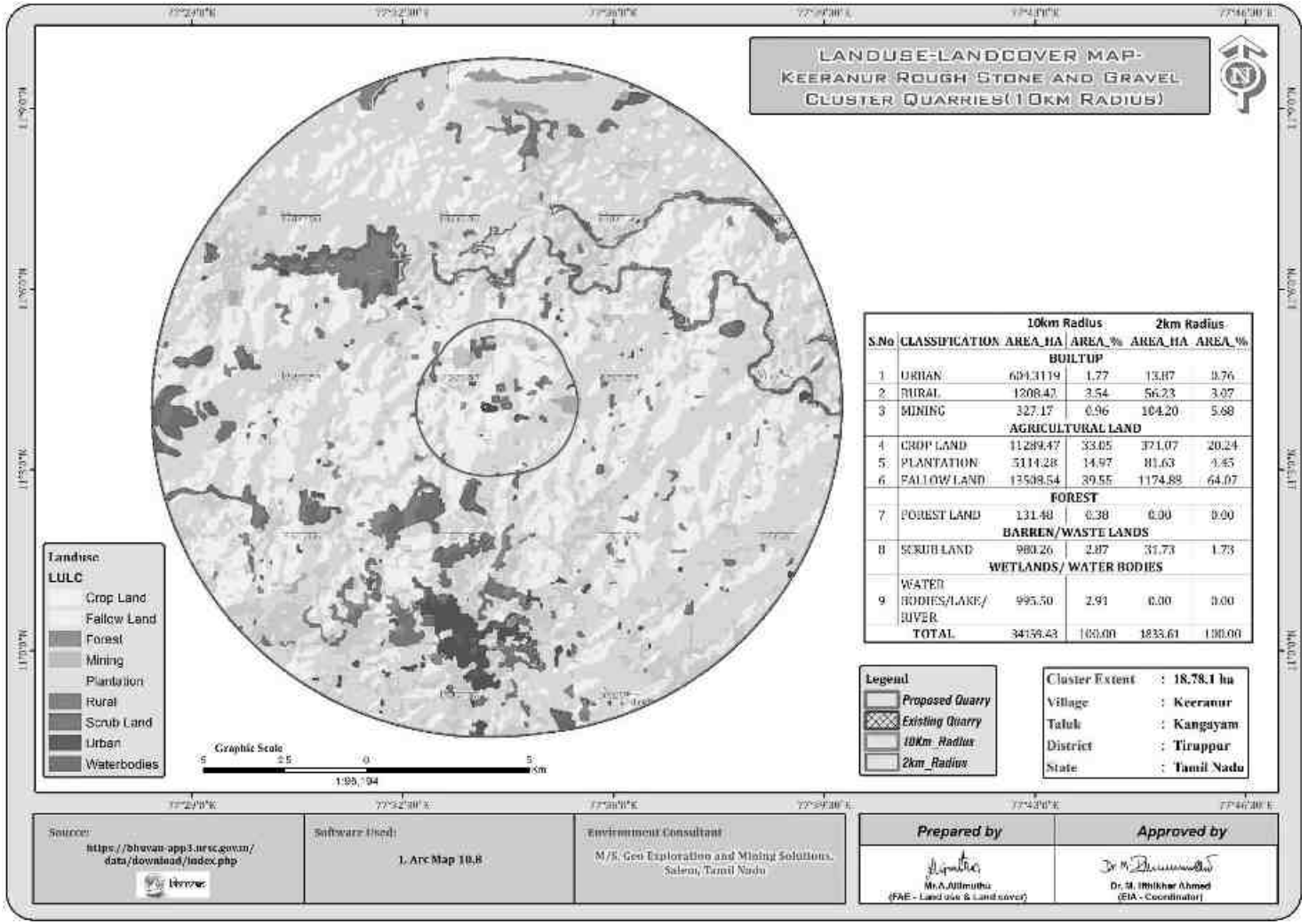
A visual interpretation technique has been adopted for land use classification based on the keys suggested in the chapter – V of the guidelines issued by NNRMS Bangalore & Level III classification with 1:50,000 scale for the preparation of land use mapping. Land use pattern of the area was studied through 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	URBAN	604.3119	1.77	13.87	0.76
2	RURAL	1208.42	3.54	56.23	3.07
3	MINING	327.17	0.96	104.20	5.68
	AGRICULTURAL LAND				
4	CROP LAND	11289.47	33.05	371.07	20.24
5	PLANTATION	5114.28	14.97	81.63	4.45
6	FALLOW LAND	13508.54	39.55	1174.88	64.07
	FOREST				
7	FOREST LAND	131.48	0.38	0.00	0.00
	BARREN/WASTE LANDS				
8	SCRUB LAND	980.26	2.87	31.73	1.73
	WETLANDS/ WATER BODIES				
9	WATER BODIES/LAKE/ RIVER	995.50	2.91	0.00	0.00
TOTAL		34159.43	100.00	1833.61	100.00

Source: Survey of India Toposheet and Landsat Satellite Imagery

FIGURE 3.1: 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	URBAN	604.3119	1.77	13.87	0.76
2	RURAL	1208.42	3.54	56.23	3.07
3	MINING	327.17	0.96	104.20	5.68
	AGRICULTURAL LAND				
4	CROP LAND	11289.47	33.05	371.07	20.24
5	PLANTATION	5114.28	14.97	81.63	4.45
6	FALLOW LAND	13508.54	39.55	1174.88	64.07
	FOREST				
7	FOREST LAND	131.48	0.38	0.00	0.00
	BARREN/WASTE LANDS				
8	SCRUB LAND	980.26	2.87	31.73	1.73
	WETLANDS/ WATER BODIES				
9	WATER BODIES/LAKE/ RIVER	995.50	2.91	0.00	0.00
	TOTAL	34156.43	100.00	1833.61	100.00

FIGURE 3.2: PHYSIOGRAPHIC MAP 10KM RADIUS

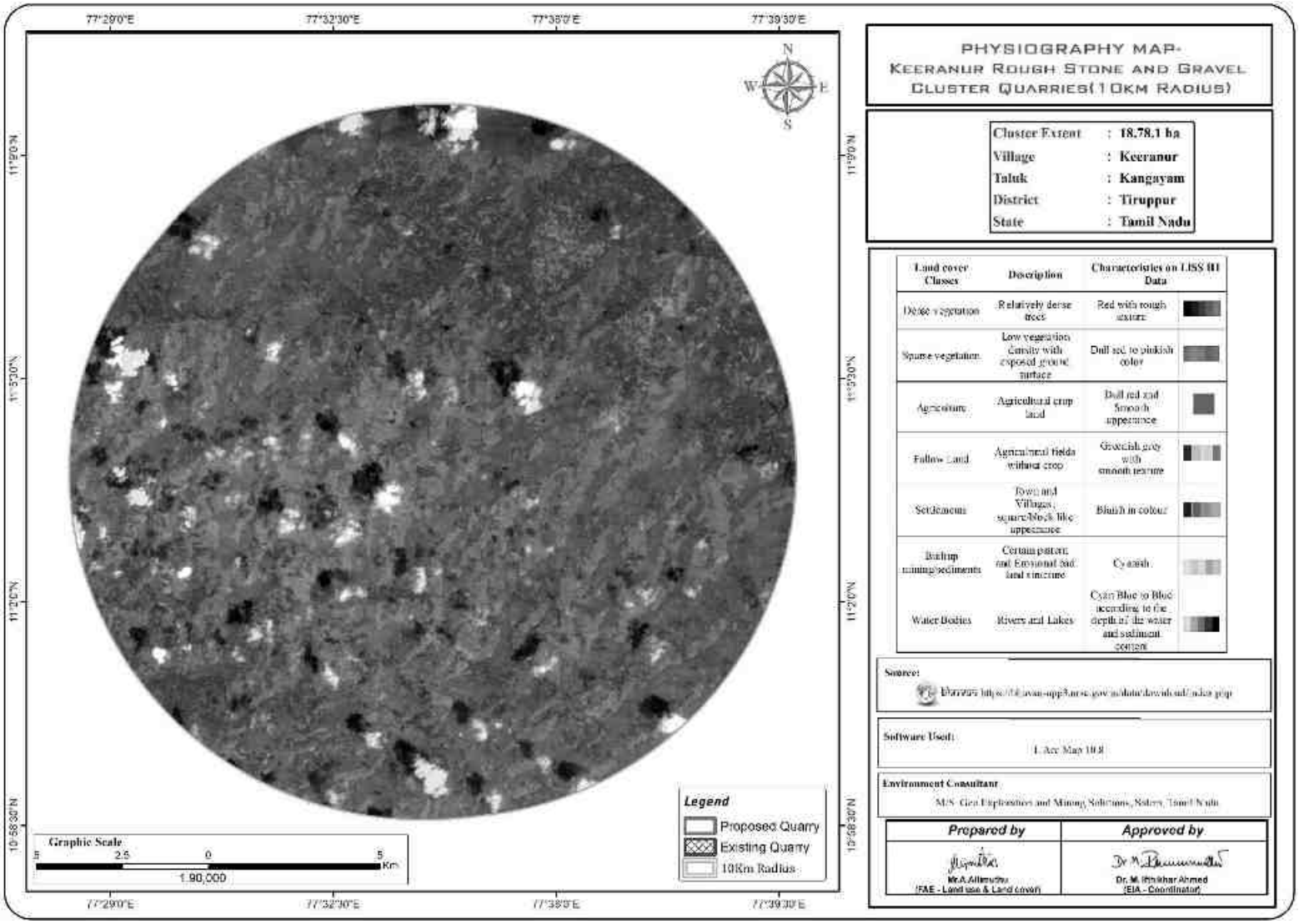
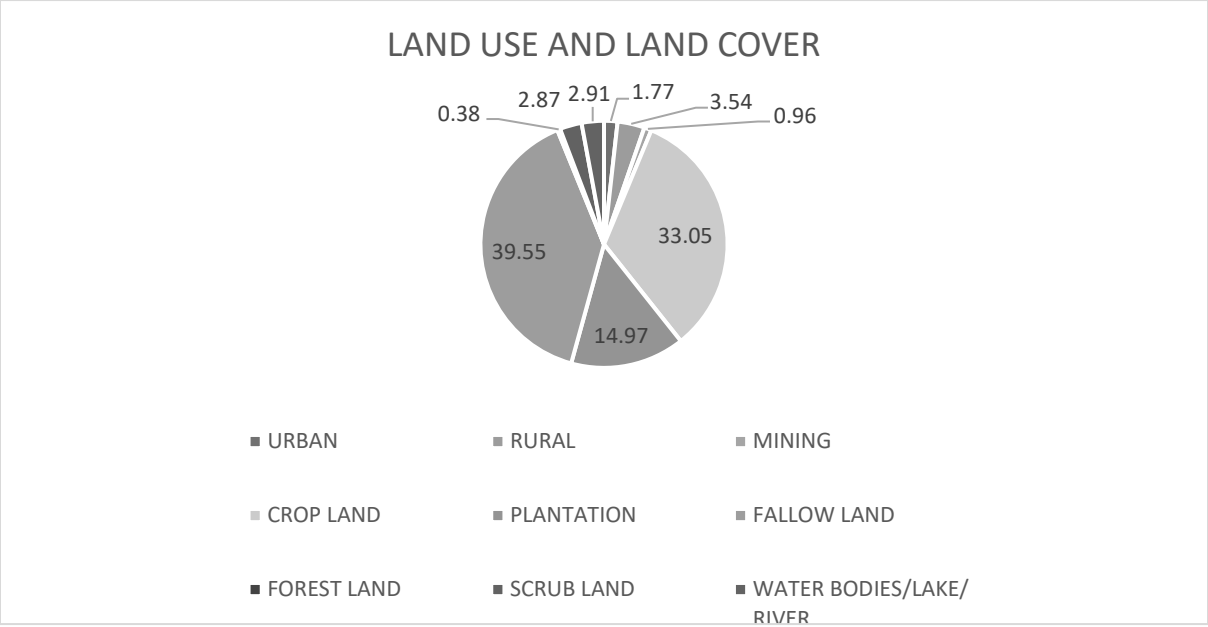


FIGURE 3.3: PIE DIAGRAM OF LAND USE AND LAND COVER - 10KM RADIUS IN AREA_%



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 – 33.05%, plantation – 14.97% and Fallow land – 39.55%) range is 87.57% & in Build Up Land, mining area occupied 6.27%.

The total mining area within the study area is 327.17 ha i.e., 0.96%. The cluster area of 18.78.1 ha contributes about 5.75% 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	Nanjarayan Lake Birds Sanctuary – Vellode Birds Sanctuary	20.5 km – NW 21.4 km – North East
2	Reserved Forest	Chennimalai R.F.	8.9 km – North East
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
P1		
1	Vaikkal	270m South
2	Lower Bhavani Main Canal	3.5km North
3	Noyyal River	4.6km NW
4	Orathupalayam Dam	5.2km NW
P2		
1	Vaikkal	110m NE
2	Lower Bhavani Main Canal	3.8km North
3	Noyyal River	4.7km NW
4	Orathupalayam Dam	5.3km NW
P3		
1	Vaikkal	110m NE
2	Lower Bhavani Main Canal	3.8km North
3	Noyyal River	4.7km NW
4	Orathupalayam Dam	5.3km NW

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	Project Area	Core Zone	11° 4'9.41"N 77°34'14.06"E
2	S-2	Project Area	Core Zone	11° 3'59.54"N 77°33'54.97"E
3	S-3	Near Project Area (Agriculture Land)	430m NE	11° 4'21.49"N 77°34'22.09"E
4	S-4	Keeranur (Residential Land)	2.2km NW	11° 4'50.02"N 77°32'56.24"E
5	S-5	Paranjervali (Barren Land)	3.0km NE	11° 4'29.04"N 77°35'45.36"E

6	S-6	Sivanmalai (Barren Land)	4.5km SW	11° 2'23.41"N 77°31'54.52"E

Source: On-site monitoring/sampling by CHENNAI METTEX LAB PRIVATE LIMITED 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 CHENNAI METTEX LAB PRIVATE LIMITED 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

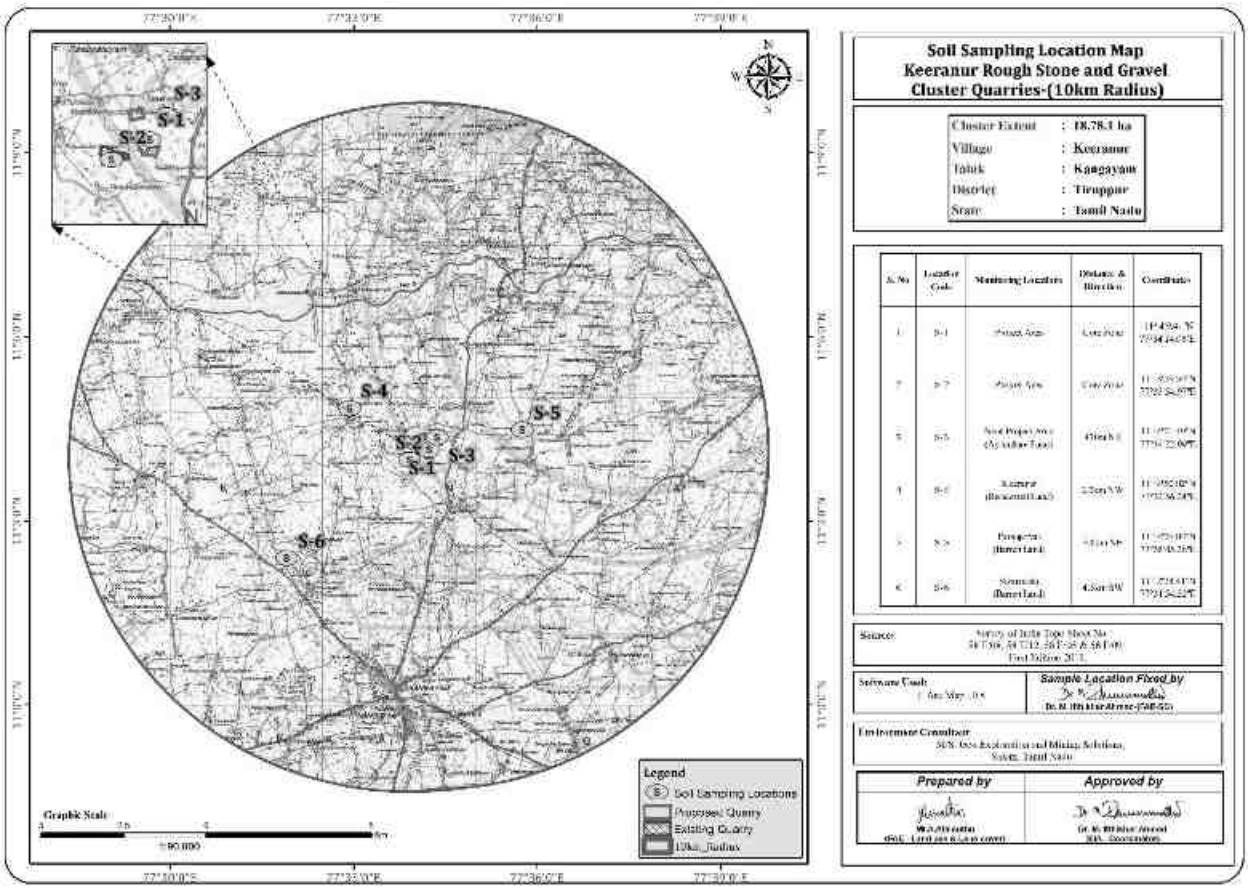


FIGURE 3.5: SOIL MAP

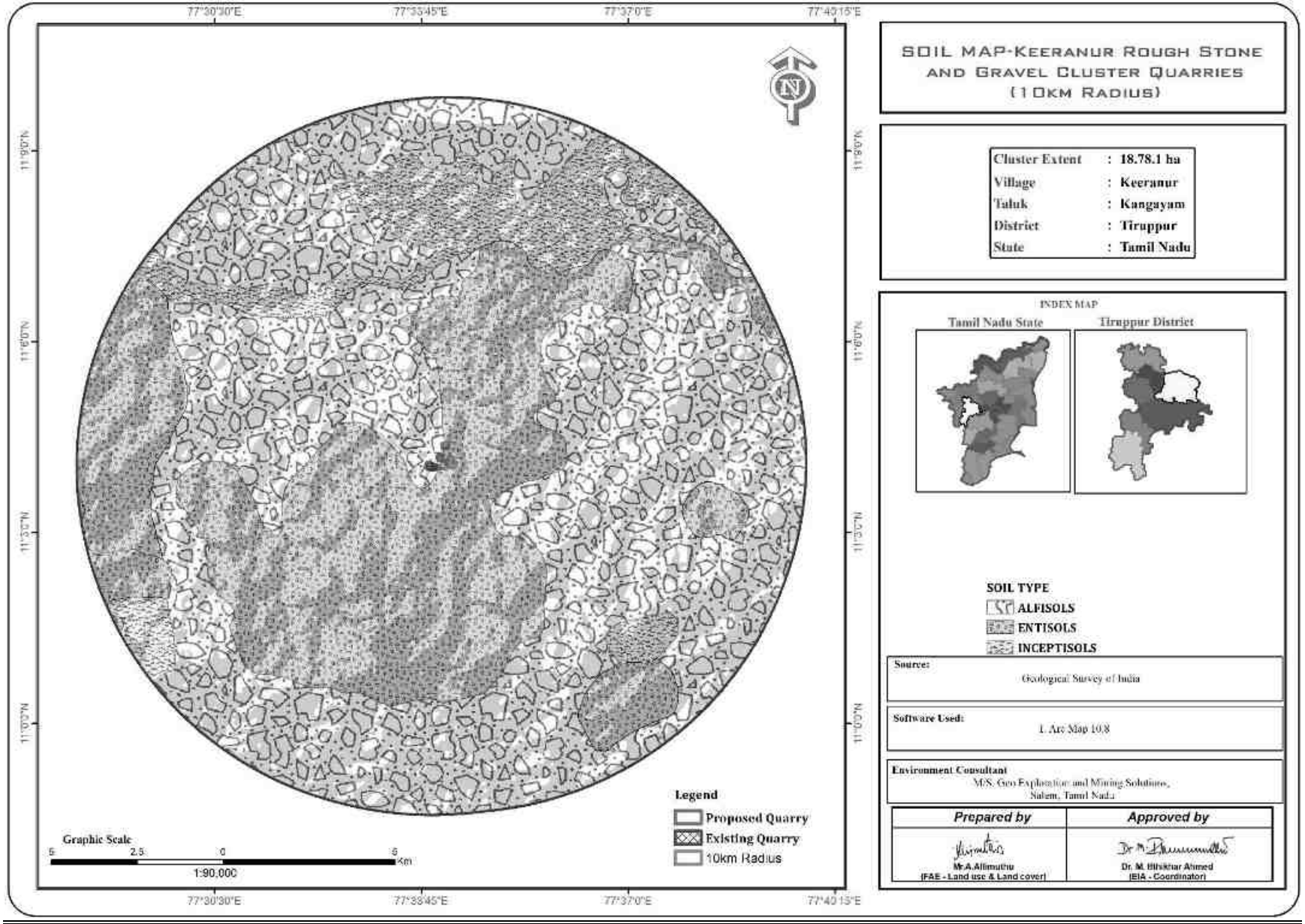


TABLE 3.7: SOIL QUALITY OF THE STUDY AREA

S. No	Test Parameters	Protocols	S1	S2	S3	S4	S5	S6
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	5.69	5.96	4.56	4.12	4.31	4.22
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	221.0 µmhos/cm	322.4 µmhos/cm	286 µmhos/cm	266.5 µmhos/cm	314.4 µmhos/cm	302.5 µmhos/cm
03	**Texture :**							
	Clay	Gravimetric Method	29.2 %	28.8 %	29.5 %	29.4 %	28.0 %	27.7 %
	Sand		37.6 %	37.6 %	37.9 %	33.8 %	41.2 %	30.6 %
	Silt		33.2 %	33.6 %	32.6 %	36.8 %	30.8%	41.7 %
04	Water Holding Capacity	By Gravimetric Method	41.3 %	37.3%	36.3 %	39.8 %	38.6 %	41.9 %
05	Bulk Density	By Cylindrical Method	1.10 g/cm^3	0.96 g/cm^3	1.03 g/cm^3	1.08 g/cm^3	1.03 g/cm^3	1.01 g/cm^3
06	Porosity	By Gravimetric Method	36.3 %	35.9 %	31.8 %	35.3 %	35.2 %	31.8 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	50.5 mg/kg	61.5 mg/kg	59.5 mg/kg	65.5 mg/kg	51.9 mg/kg	67.6 mg/kg
08	Magnesium as Mg		22.4 mg/kg	29.4 mg/kg	21.3 mg/kg	27.6 mg/kg	23.6 mg/kg	22.8 mg/kg
09	Manganese as Mn		26.6 mg/kg	23.5 mg/kg	24.6 mg/kg	25.7 mg/kg	26.8 mg/kg	18.3 mg/kg
10	Zinc as Zn		2.47 mg/kg	4.11 mg/kg	4.02 mg/kg	5.98 mg/kg	2.18 mg/kg	3.25 mg/kg
11	Boron as B		1.18 mg/kg	2.91 mg/kg	1.19 mg/kg	1.02 mg/kg	2.30 mg/kg	2.21 mg/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	71.5 mg/kg	56.5 mg/kg	58.7 mg/kg	68.1 mg/kg	63.6 mg/kg	63.5 mg/kg
13	Total Soluble Sulphate as SO_4	IS 2720 Part 27 : 1977 (Reaff:2015)	0.022 %	0.022%	0.021 %	0.017 %	0.017 %	0.017 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	22.1 mg/kg	19.8 mg/kg	29.8 mg/kg	23.3 mg/kg	28.7 mg/kg	25.6 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Reaff: 2019)	3.31mg/kg	2.18 mg/kg	5.79 mg/kg	2.14 mg/kg	3.18 mg/kg	3.05 mg/kg

16	Total Nitrogen as N	IS 14684 : 1999 (Reaff:2019)	286.0 mg/kg	284.8 mg/kg	334.5 mg/kg	306.8 mg/kg	233.5 mg/kg	298.5 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)	BDL (DL : 1.0 mg/kg)
20	Lead as Pb		1.66 mg/kg	1.11 mg/kg	1.96 mg/kg	1.19 mg/kg	2.98 mg/kg	1.31 mg/kg
21	Iron as Fe		2.34 mg/kg	3.98 mg/kg	3.29 mg/kg	1.01 mg/kg	3.01 mg/kg	2.13 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972 (Reaff: 2015)	2.25 %	3.10 %	1.94 %	1.74 %	2.06 %	1.77 %
23	Organic Carbon	IS : 2720 Part 22: 1972 (Reaff: 2015)	1.31%	1.8 %	1.13 %	1.01 %	1.20 %	1.03 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	25 meq/100g of soil	26.8 meq/100g of soil	25.6 meq/100g of soil	22.9 meq/100g of soil	33.1 meq/100g of soil	29.1 meq/100g of soil

Source: Sampling Results by CHENNAI METTEX LAB PRIVATE LIMITED 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 27.7 – 29.5 %, Sand varied between 30.6 – 41.2 % and Silt varied between 30.8 – 41.7 and Bulk Density of Soils in the study area varied between 0.96 – 1.10g/cm^3. The Water Holding Capacity of the soil samples is found to be medium i.e., ranging from 36.3 – 41.9 %.

Chemical Characteristics

- The nature of soil is slightly alkaline to strongly alkaline with pH range 4.12 – 5.96
- The available Nitrogen content range between 233.5 – 334.5 mg/kg
- The available Phosphorus content range between 2.14 – 5.79 mg /kg
- The available Potassium range between 19.8 – 29.8 mg/kg

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:

Noyyal 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

One (1) surface water and Five(5) 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	Noyyal River	4.2km NW	11° 6'34.07"N 77°33'27.04"E
GROUND WATER				
2	OW-1	Near Project Area	190m SW	11° 3'56.48"N 77°33'49.15"E
3	OW-2	Paranjervali	3.0km NE	11° 4'34.92"N 77°35'45.35"E
4	OW-3	Sivanmalai	5.0km SW	11° 2'23.25"N 77°31'40.09"E
5	BW-1	Near Project Area	180m West	11° 4'8.51"N 77°34'5.63"E
6	BW-2	Varathappampalayam	5km SE	11° 1'54.15"N 77°35'56.72"E

Source: On-site monitoring/sampling by CHENNAI METTEX LAB PRIVATE LIMITED in association with GEMS

FIGURE 3.6: WATER SAMPLING LOCATIONS AROUND 10 KM RADIUS

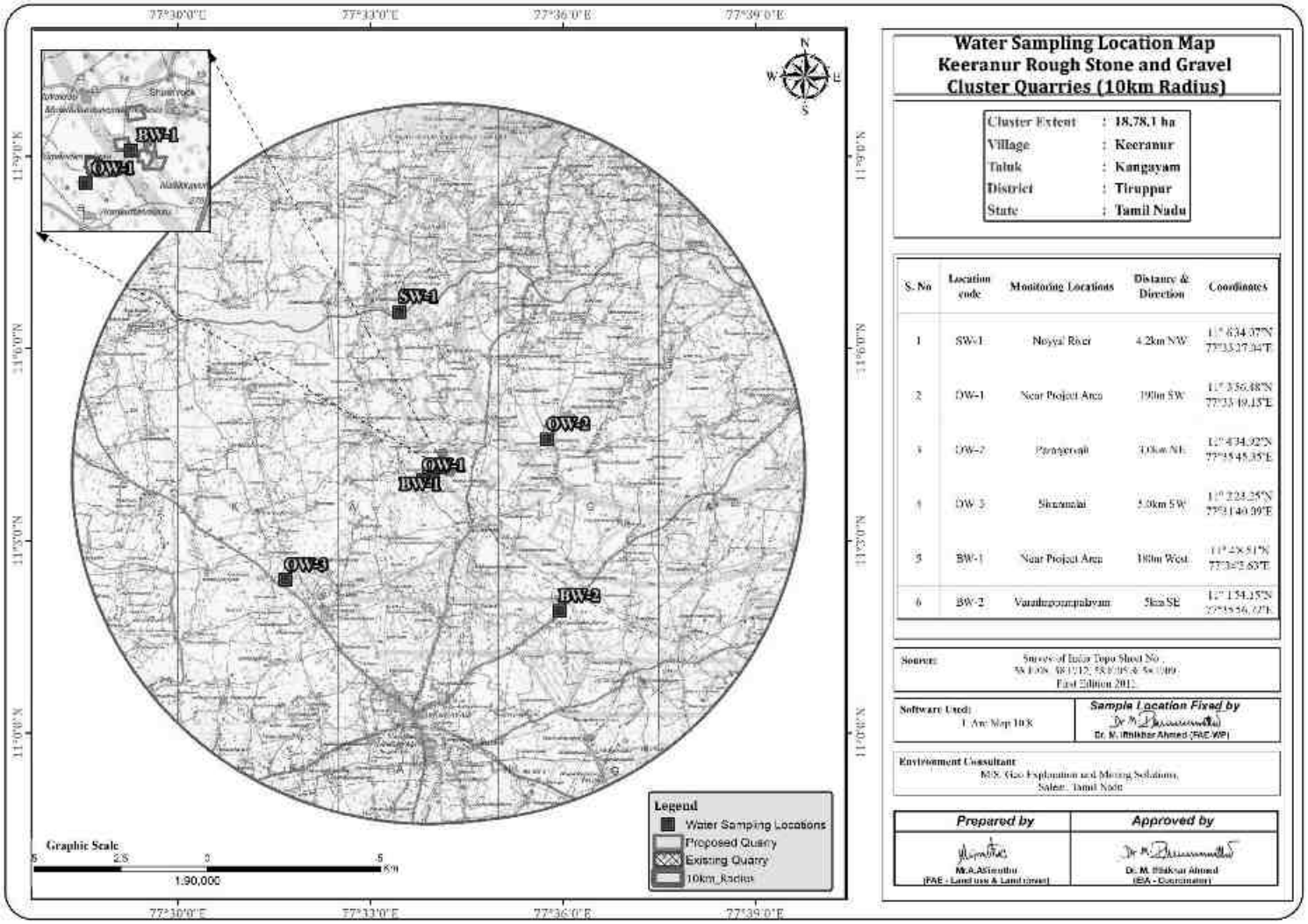


TABLE 3.9: SURFACE WATER SAMPLING RESULTS

TEST	TEST METHOD	UNIT	SW1-
Colour	IS 3025 Part 4:1983 (Reaff:2017)	Hazen	1 Hazen
Odour	IS 3025 Part 5:2018	-	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff:2017)	-	7.98
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff:2019)	µmhos/cm	1280 µmhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff:2017)	NTU	3 NTU
Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff:2017)	mg/l	742.0 mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (Reaff:2019)	mg/l	224.0 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff:2019)	mg/l	52.9 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff:2019)	mg/l	22.3 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:1986 (Reaff:2019)	mg/l	211.2 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff:2019)	mg/l	254.2 mg/l
Sulphate as SO_4	IS 3025 Part 24:1986 (Reaff:2019)	mg/l	46.2 mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff:2019)	mg/l	0.41 mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff:2019)	mg/l	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23rd Edn. 2017:4500 F, D	mg/l	0.43 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Reaff:2019)	mg/l	11.3 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	mg/l	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.005 mg/l)
Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL(DL : 0.02 mg/l)

Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	mg/l	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43-1992(Reaff: 2019)	mg/l	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	mg/l	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	mg/l	BDL (DL:0.01 mg/l)
BOD @ 27°C for 3 days	IS 3025 Part 44:1993 (Reaff:2019)	mg/l	12.4 mg/l
Chemical Oxygen Demand	IS 3025 Part 58:2006 (Reaff:2017)	mg/l	30.5 mg/l
Dissolved Oxygen	IS 3025 Part 38:1989 (Reaff:2019)	mg/l	6.2 mg/l
Barium as Ba	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Reaff. 2019)	mg/l	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 29-1986 (Reaff: 2019)	mg/l	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -1984 (Reaff:2017)	mg/l	10.9 mg/l
Total Coliform	APHA 23rd Edn. 2017:9221F	MPN/100ml	1233 MPN/100ml
Escherichia coli	APHA 23rd Edn. 2017:9221F	MPN/100ml	213 MPN/100ml

Source: On-site monitoring/sampling by CHENNAI METTEX LAB PRIVATE LIMITED in association with GEMS

TABLE 3.10: GROUND WATER SAMPLING RESULTS

TEST	PROTOCOL	Unit	OW1	OW2	OW3	BW1	BW2
Discipline: Chemical							
Colour	IS 3025 Part 4:1983 (Reaff:2017)	-	1	1 Hazen	1 Hazen	5 Hazen	5 Hazen
Odour	IS 3025 Part 5:2018	-	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
pH at 25°C	IS 3025 Part 11:1983 (Reaff:2017)	-	7.56	7.21	7.21	7.22	7.15
Conductivity @ 25°C	IS 3025 Part 14:2013 (Reaff:2019)	µmhos/cm	1156.0 µmhos/cm	1054 µmhos/cm	1054 µmhos/cm	938.0 µmhos/cm	913.0 µmhos/cm
Turbidity	IS 3025 Part 10:1984 (Reaff:2017)	NTU	1 NTU	1 NTU	1 NTU	1 NTU	1 NTU
Total Dissolved Solids	IS 3025 Part 16:1984 (Reaff:2017)	mg/l	678.0mg/l	611.0 mg/l	611.0 mg/l	543.0 mg/l	529.0 mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (Reaff:2019)	mg/l	204 mg/l	184 mg/l	184 mg/l	156.0 mg/l	140 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (Reaff:2019)	mg/l	51.3 mg/l	46.4 mg/l	46.4 mg/l	35.2 mg/l	32.0 mg/l
Magnesium as Mg	IS 3025 Part 46:1994 (Reaff:2019)	mg/l	18.4 mg/l	16.5 mg/l	16.5 mg/l	16.5 mg/l	14.5 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:1986 (Reaff:2019)	mg/l	186.0 mg/l	163.6 mg/l	163.6 mg/l	126.2 mg/l	136.7 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Reaff:2019)	mg/l	223.3 mg/l	202.8 mg/l	202.8 mg/l	189.1 mg/l	172.2 mg/l

Sulphate as SO_4	IS 3025 Part 24:1986 (Reaff:2019)	mg/l	40.9 mg/l	37.7 mg/l	37.7 mg/l	32.6 mg/l	29.8 mg/l
Iron as Fe	IS 3025 Part 53:2003 (Reaff:2019)	mg/l	0.49 mg/l	0.35 mg/l	0.35 mg/l	0.33 mg/l	0.28mg/l
Residual Free Chlorine	IS 3025 Part 26:1986 (Reaff:2019)	mg/l	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 23rd Edn. 2017:4500 F,D	mg/l	0.38 mg/l	0.32 mg/l	0.32 mg/l	0.27 mg/l	0.26 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Reaff:2019)	mg/l	2.6 mg/l	3.5 mg/l	3.5 mg/l	2.9 mg/l	2.1 mg/l
Copper as Cu	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)
Mercury as Hg	USEPA 200.8	mg/l	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
Aluminium as Al	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)	BDL(DL : 0.02 mg/l)

Boron as B	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-1991 (Reaff. 2019)	mg/l	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43-1992(Reaff: 2019)	mg/l	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 13428 – 2005 (Reaff:2019) (Annex K)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27-1986 (Reaff. 2019)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 44:1993 (Reaff:2019)	mg/l	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 58:2006 (Reaff:2017)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 38:1989 (Reaff:2019)	mg/l	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2014 (Reaff:2019)	mg/l	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 34-1988 (Reaff. 2019)	mg/l	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 29-1986 (Reaff: 2019)	mg/l	BDL (DL:1.0 mg/l)	BDL (DL:1.0 mg/l)	BDL (DL:1.0 mg/l)	BDL (DL:1.0 mg/l)	BDL (DL:1.0 mg/l)
Discipline: Biological							
Total Coliform	APHA 23rd Edn. 2017:9221B	MPN/100ml	166 MPN/100ml	157.0 MPN/100ml	157.0 MPN/100ml	149 MPN/100ml	123 MPN/100ml
Escherichia coli	APHA 23rd Edn. 2017:9221F	MPN/100ml	< 1.8 MPN/100ml	< 1.8 MPN/100ml	< 1.8 MPN/100ml	< 1.8 MPN/100ml	< 1.8 MPN/100ml

Source: On-site monitoring/sampling by CHENNAI METTEX LAB PRIVATE LIMITED in association with GEMS

3.2.4 Interpretation& Conclusion

Surface Water

The pH varied from 7.98 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 742.0 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 254.2 mg/l, Nitrates content is 11.3 mg/l and Sulphates varied from 46.2 mg/l.

Ground Water

The pH of the water samples collected ranged from 7.15 – 7.56 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 529 - 678 mg/l in all samples. Total hardness varied between 140 - 204 mg/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 58-63m. The maximum depth proposed out of proposed projects is 42m 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

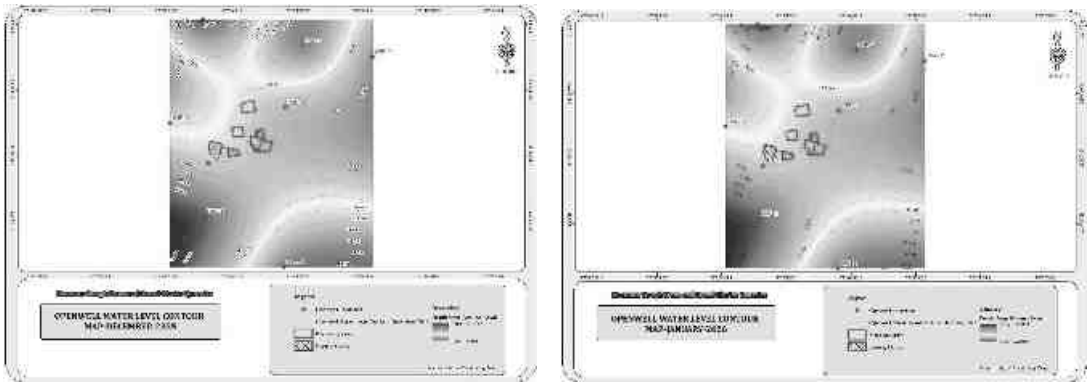
The water level in the area is above 58m-63m hence there is no possibilities of water table intersection during the entire mine life period besides it is also inferred topographically that there are no major water bodies intersecting the project area.

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

S.NO	LABEL	LONGITUDE	LATITUDE	DEC 25	JAN-26	FEB 26
1	OW-1	77° 33' 49.2078" E	11° 03' 56.5124" N	14.8	15.4	16
2	OW-2	77° 33' 47.4154" E	11° 03' 32.1642" N	15.3	15.9	16.5
3	OW-3	77° 33' 31.7810" E	11° 04' 14.7133" N	14.6	15.2	15.8
4	OW-4	77° 33' 46.6825" E	11° 05' 02.0125" N	15.4	16	16.6
5	OW-5	77° 34' 32.4203" E	11° 04' 50.1406" N	14.2	14.8	15.4
6	OW-6	77° 34' 24.4368" E	11° 04' 22.1699" N	14.9	15.5	16.1
7	OW-7	77° 35' 04.2867" E	11° 04' 45.0864" N	15.1	15.7	16.3
8	OW-8	77° 34' 23.8643" E	11° 03' 09.0526" N	14.2	14.8	15.4

Source: Onsite monitoring data

FIGURE 3.7: OPEN WELL CONTOUR MAP DEC 2025 – FEB 2026



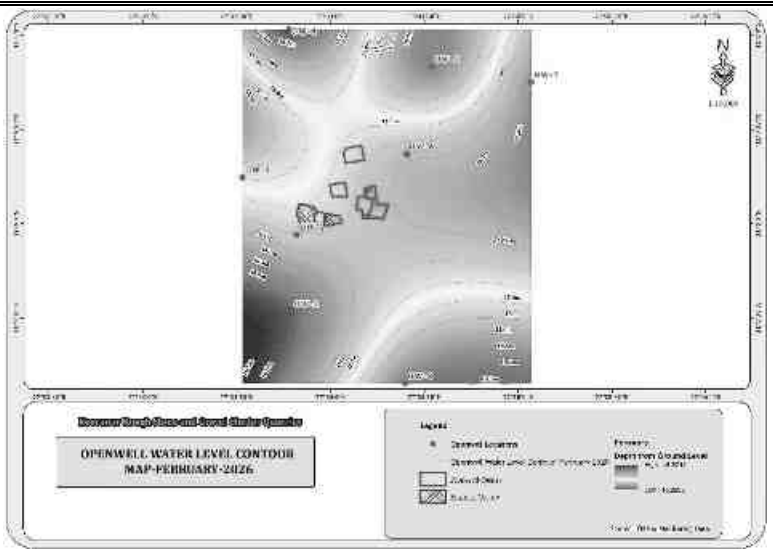
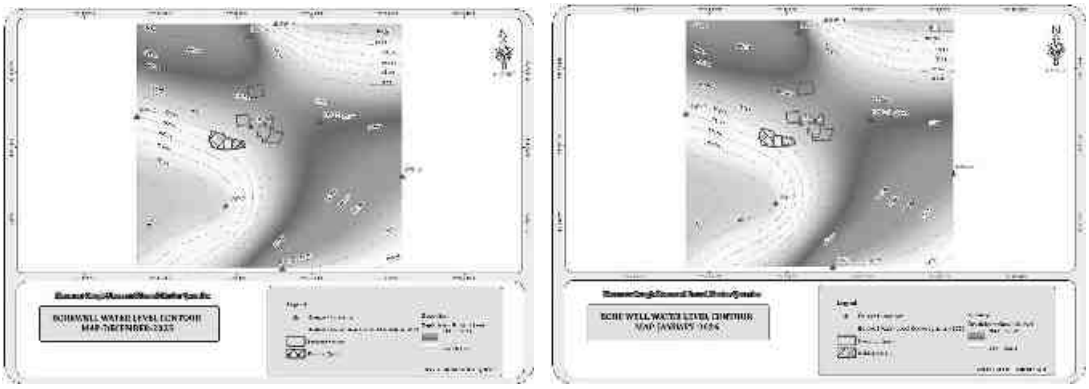


TABLE 3.12: PRE-MONSOON SEASON WATER LEVEL OF BOREWELLS 1 KM RADIUS

S.No	Name	LONGITUDE	LATITUDE	**DEC 25**	**JAN-26**	**FEB 26**
1	BW1	77° 34' 05.6778" E	11° 04' 08.4078" N	109.1	109.7	110.3
2	BW2	77° 33' 20.6297" E	11° 04' 12.3356" N	108.8	109.4	110
3	BW3	77° 34' 04.5714" E	11° 04' 43.9050" N	109.5	110.1	110.7
4	BW4	77° 34' 15.5477" E	11° 04' 48.8208" N	108.6	109.2	109.8
5	BW5	77° 34' 32.9608" E	11° 04' 10.2897" N	109.3	109.9	110.5
6	BW6	77° 35' 05.5054" E	11° 03' 48.8362" N	109.8	110.4	111
7	BW7	77° 33' 55.8233" E	11° 03' 37.1998" N	108.5	109.1	109.7
8	BW8	77° 34' 18.2628" E	11° 03' 12.4180" N	109.9	110.5	111.1

Source: Onsite monitoring data

FIGURE 3.8: BOREWELL CONTOUR DEC 2025 – FEB 2026



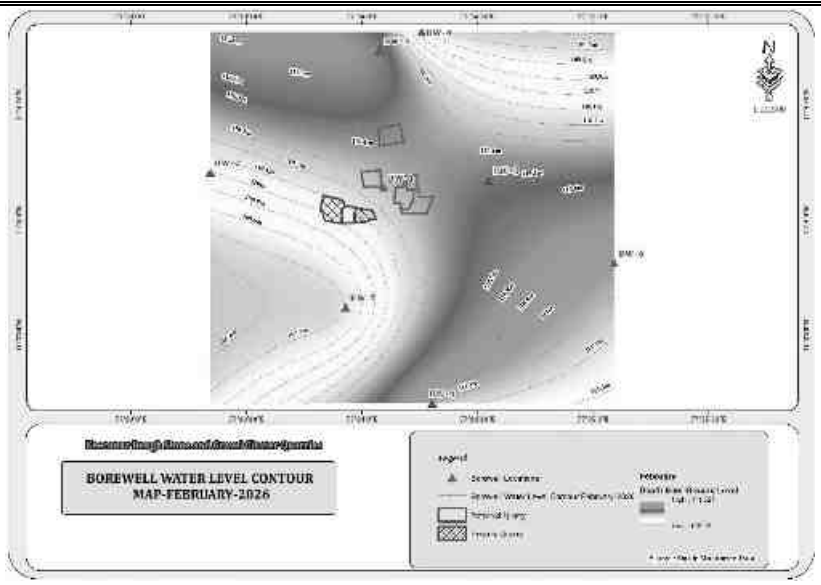
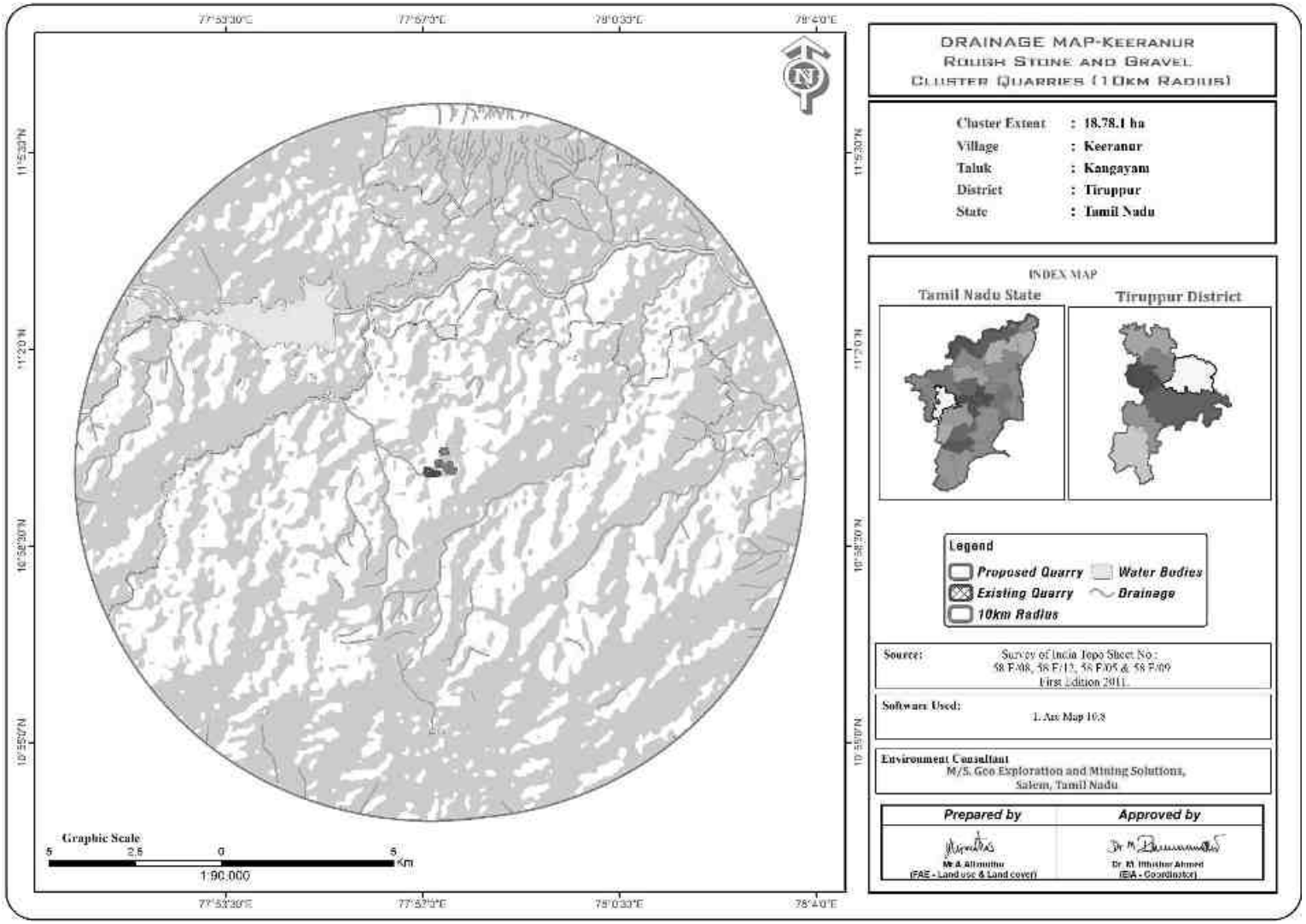

BOREWELL WATER LEVEL CONTOUR
MAP-FEBRUARY-2026

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



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

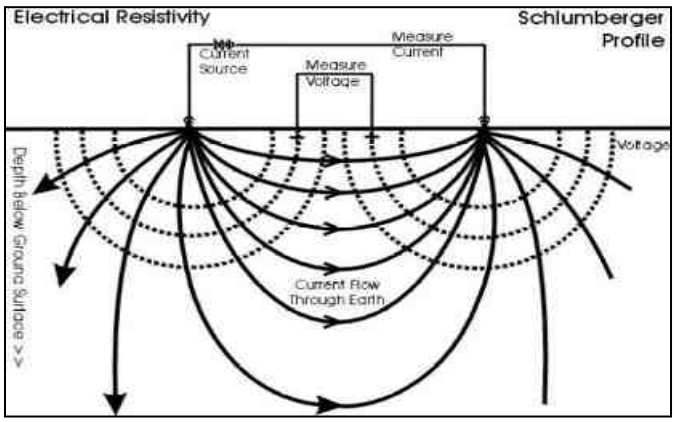
Ø = Fractional pore volume

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 atmospheric conditions prevailing in this region are of a tropical nature. In Tiruppur, the precipitation during summers is significantly higher in comparison to winters. This location is classified as Aw by Köppen and Geiger. In Tiruppur, the average annual temperature is 26.4 °C | 79.6 °F. Approximately 943 mm | 37.1 inch of rainfall occurs on a yearly basis.
- Due to its proximity to the equator, it is quite challenging to precisely delineate summers in Tiruppur. The best time to visit is January, February, March, June, July, August, September, October, November, December.
- The month with the least amount of precipitation is January exhibiting a mere 13 mm | 0.5 inch rainfall. The maximum quantity of rainfall is observed during the month of October, exhibiting an average value of 209 mm | 8.2 inch.
- The month of April boasts the highest average temperature, with a recorded maximum of 30.0 °C | 86.0 °F. During the month of December, there is a notable drop in temperature, with an average low of approximately 23.7 °C | 74.7 °F.

https://en.climate-data.org/asia/india/tamil-nadu/tiruppur-2789/

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)	
488.1	968.1	845.1	830.4	570.8	397.5	619

https://www.twadboard.tn.gov.in/content/tiruppur

TABLE 3.14: METEOROLOGICAL DATA RECORDED AT SITE

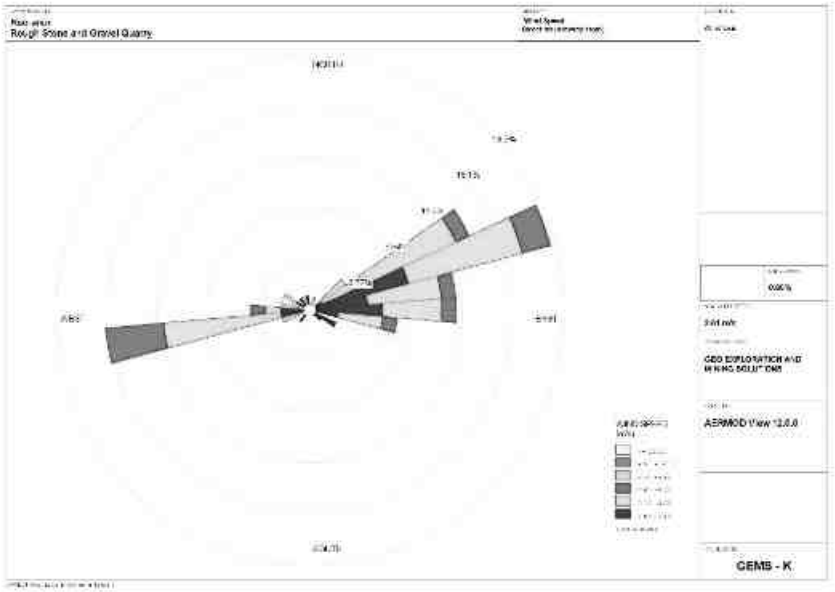
S.No	Parameters		Dec-2025	Jan-2026	Feb-2025
1	Temperature (^{0}C)	Max	28.36	27.88	24.48
		Min	24.72	22.53	19.8
		Avg	26.54	25.20	22.14
2	Relative Humidity (%)	Avg	79.23	78.79	84.69
3	Wind Speed (m/s)	Max	4.66	4.07	4.08
		Min	1.57	1.45	1.24
		Avg	3.11	2.76	2.66
4	Cloud Cover (OKTAS)		0-8	0-8	0-8
5	Wind Direction		W,E	ENE,E	ENE,E

Correlation between Secondary and Primary Data

The average rainfall over the period of five years 773m. The meteorological data collected at the site is almost similar to that of secondary data collected from TWAD Board – Tiruppur

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 & SE

FIGURE 3.10: 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 NE,SW, SE
2. Wind speed readings were recorded between 3.60 to 5.70m/s
3. Temperature readings ranging from 22.14 to 26.54°C
4. Relative humidity ranging from 78.79 to 84.69%
5. The monitoring was carried out continuously for three months.

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 CHENNAI METTEX LAB PRIVATE LIMITED & 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.* 24 hours**	50.0 80.0	20.0 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 Dec 2025 – Feb 2026. 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	Project Area	Core Zone	11° 4'8.01"N 77°34'13.27"E
2	AAQ-2	Project Area	Core Zone	11° 4'3.38"N 77°33'56.21"E
3	AAQ-3	Near Project Area	430m NE	11° 4'21.49"N 77°34'24.65"E
4	AAQ-4	Keeranur (Residential)	2.2km NW	11° 4'49.11"N 77°32'55.23"E
5	AAQ-5	Paranjervali (School)	3.0km NE	11° 4'29.48"N 77°35'53.09"E
6	AAQ-6	Varathappampalayam (Residential)	5km SE	11° 1'48.58"N 77°35'53.63"E
7	AAQ-7	Sivanmalai (Residential)	4.5km SW	11° 2'22.57"N 77°31'55.73"E

Source: On-site monitoring/sampling by CHENNAI METTEX LAB PRIVATE LIMITED in association with GEMS.

FIGURE 3.11: AMBIENT AIR QUALITY LOCATIONS AROUND 10 KM RADIUS

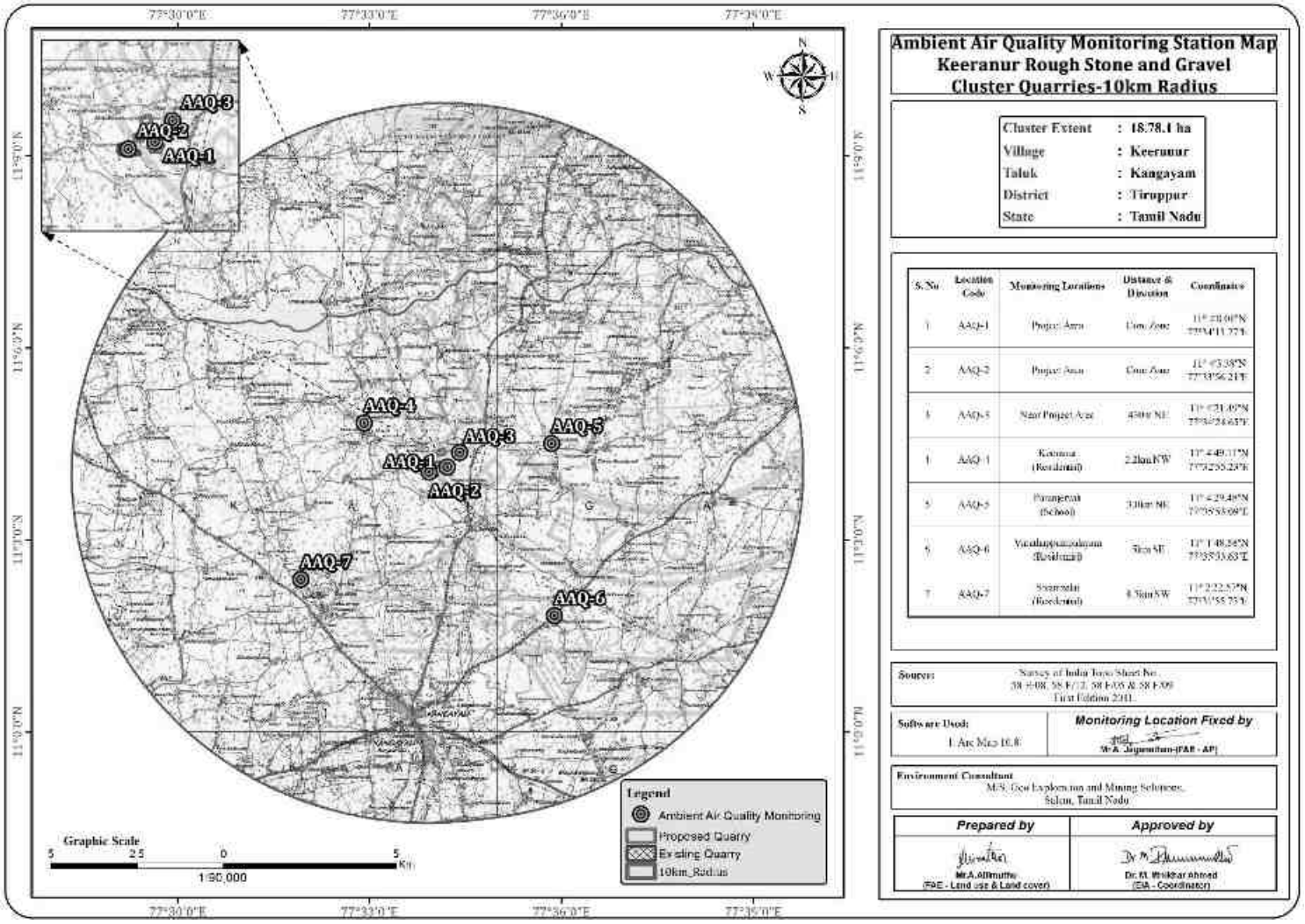


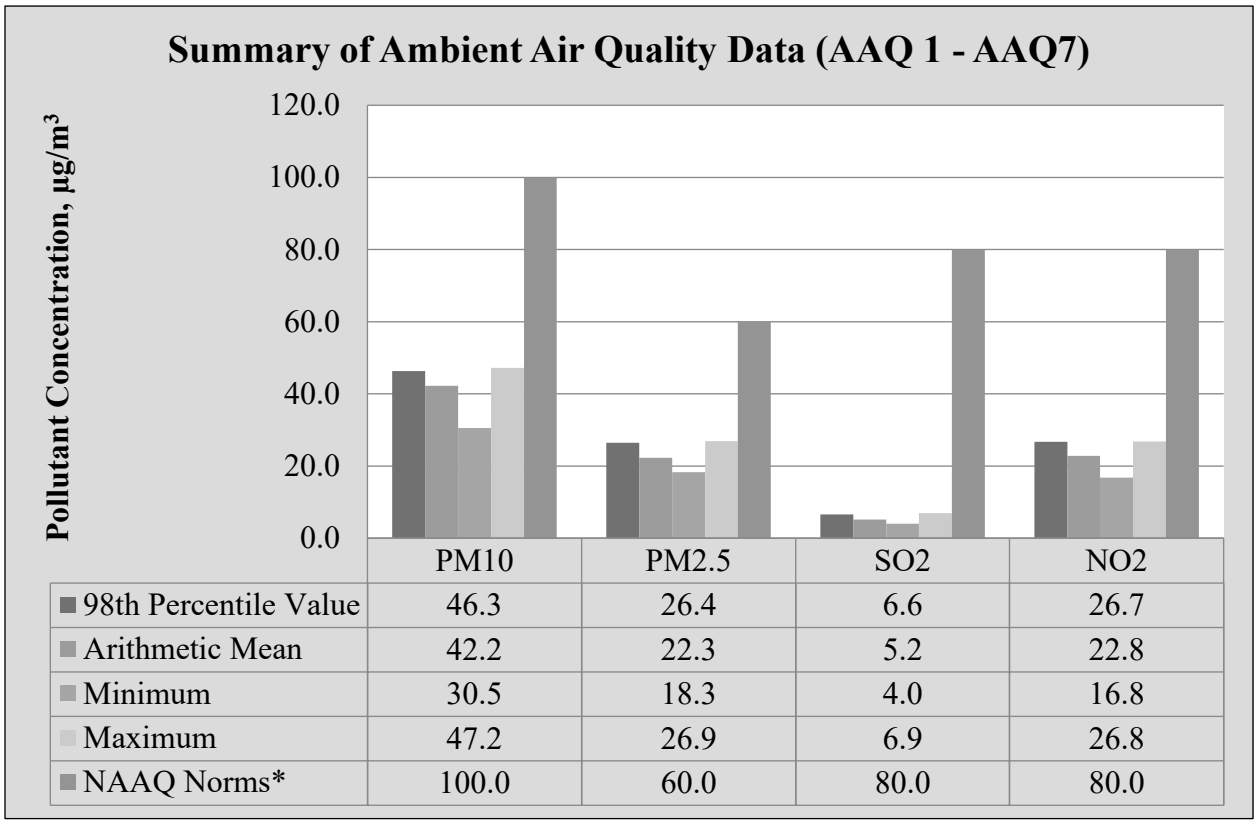
TABLE 3.18: SUMMARY OF AAQ 1 to AAQ 7

PM10	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	42.3	41.2	42.7	42.6	42.9	41.9	42.3
Minimum	31.2	30.5	41.3	40.1	40.3	40.1	36.8
Maximum	46.7	46.5	43.9	44.7	47.2	43.9	44.3
NAAQ Norms	100.0	100.0	100.0	100.0	100.0	100.0	100.0
PM2.5	**AAQ1**	**AAQ2**	**AAQ3**	**AAQ4**	**AAQ5**	**AAQ6**	**AAQ7**
Arithmetic Mean	23.7	22.9	21.6	22.6	21.9	21.6	21.8
Minimum	18.3	21.1	18.3	21.4	18.7	20.3	20.2
Maximum	26.9	24.4	23.6	24.8	24.7	23.9	23.7
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	5.2	5.2	5.1	5.2	5.0	5.3	5.2
Minimum	4.2	4.0	4.2	4.2	4.1	4.1	4.1
Maximum	6.4	6.9	6.5	6.6	5.6	6.8	6.6
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	24.8	23.6	22.8	20.7	22.6	22.4	23.0
Minimum	21.6	20.2	20.5	16.8	20.1	19.7	21.5
Maximum	26.7	26.8	24.4	23.4	26.7	23.9	25.5
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

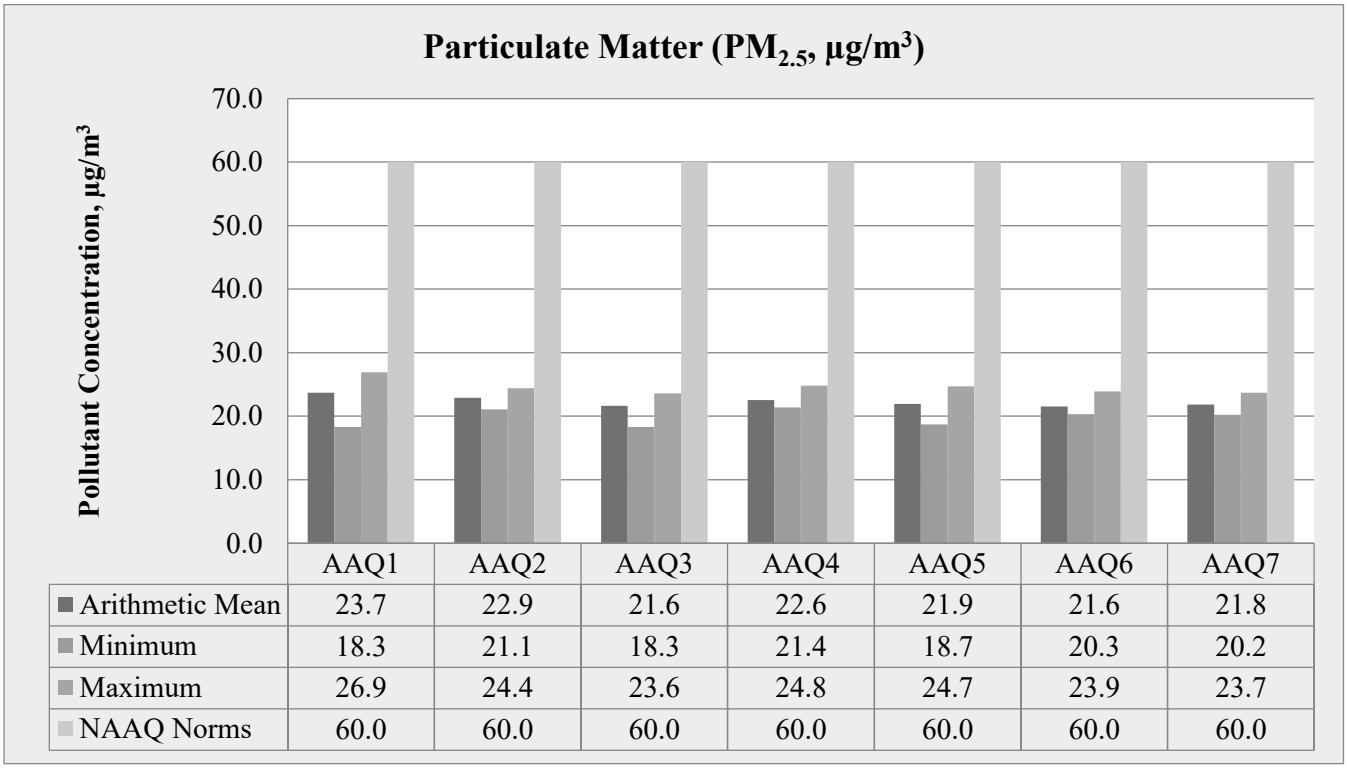
	Parameter	PM10	PM2.5	SO_2	NO_2
	No. of Observations	182	182	182	182
1	10^{th} Percentile Value	40.6	20.4	4.3	20.5
2	20^{th} Percentile Value	41.6	21.3	4.5	21.5
3	30^{th} Percentile Value	42.2	21.5	4.7	21.8
4	40^{th} Percentile Value	42.5	21.8	5.0	22.4
5	50^{th} Percentile Value	42.6	22.1	5.2	22.7
6	60^{th} Percentile Value	42.8	22.6	5.4	23.4
7	70^{th} Percentile Value	43.4	22.9	5.5	23.7
8	80^{th} Percentile Value	43.7	23.6	5.7	24.0
9	90^{th} Percentile Value	44.2	23.9	5.9	25.5
10	95^{th} Percentile Value	45.3	25.4	6.4	25.8
11	98^{th} Percentile Value	46.3	26.4	6.6	26.7
12	Arithmetic Mean	42.2	22.3	5.2	22.8
13	Geometric Mean	42.2	22.2	5.1	22.7
14	Standard Deviation	2.7	1.6	0.6	1.8
15	Minimum	30.5	18.3	4.0	16.8
16	Maximum	47.2	26.9	6.9	26.8
	NAAQ Norms*	**100.0**	**60.0**	**80.0**	**80.0**
	% Values exceeding Norms*	0.0	0.0	0.0	0.0

FIGURE 3.12: BAR DIAGRAM OF SUMMARY OF AAQ 1 – AAQ7



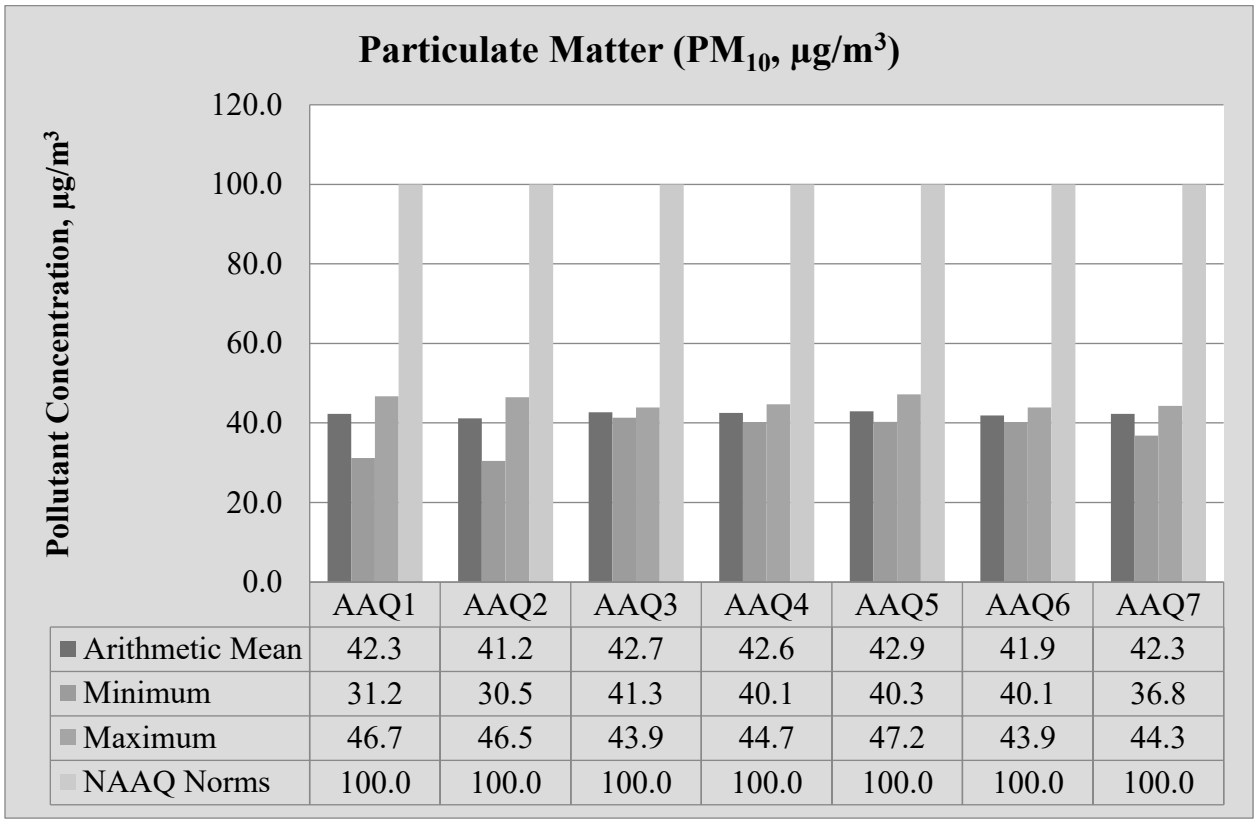
	PM10	PM2.5	SO2	NO2
98th Percentile Value	46.3	26.4	6.6	26.7
Arithmetic Mean	42.2	22.3	5.2	22.8
Minimum	30.5	18.3	4.0	16.8
Maximum	47.2	26.9	6.9	26.8
NAAQ Norms*	100.0	60.0	80.0	80.0

FIGURE 3.13: BAR DIAGRAM OF PARTICULATE MATTER $PM_{2.5}$



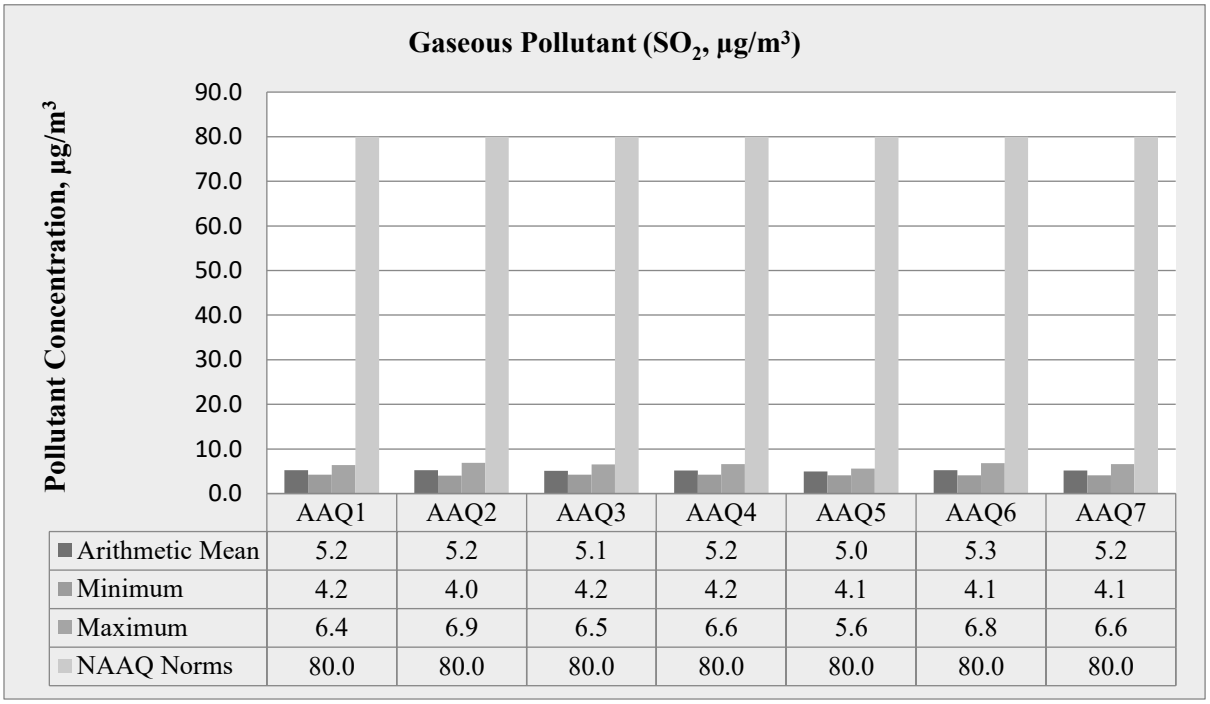
	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	23.7	22.9	21.6	22.6	21.9	21.6	21.8
Minimum	18.3	21.1	18.3	21.4	18.7	20.3	20.2
Maximum	26.9	24.4	23.6	24.8	24.7	23.9	23.7
NAAQ Norms	60.0	60.0	60.0	60.0	60.0	60.0	60.0

FIGURE 3.14: BAR DIAGRAM OF PARTICULATE MATTER PM_{10}



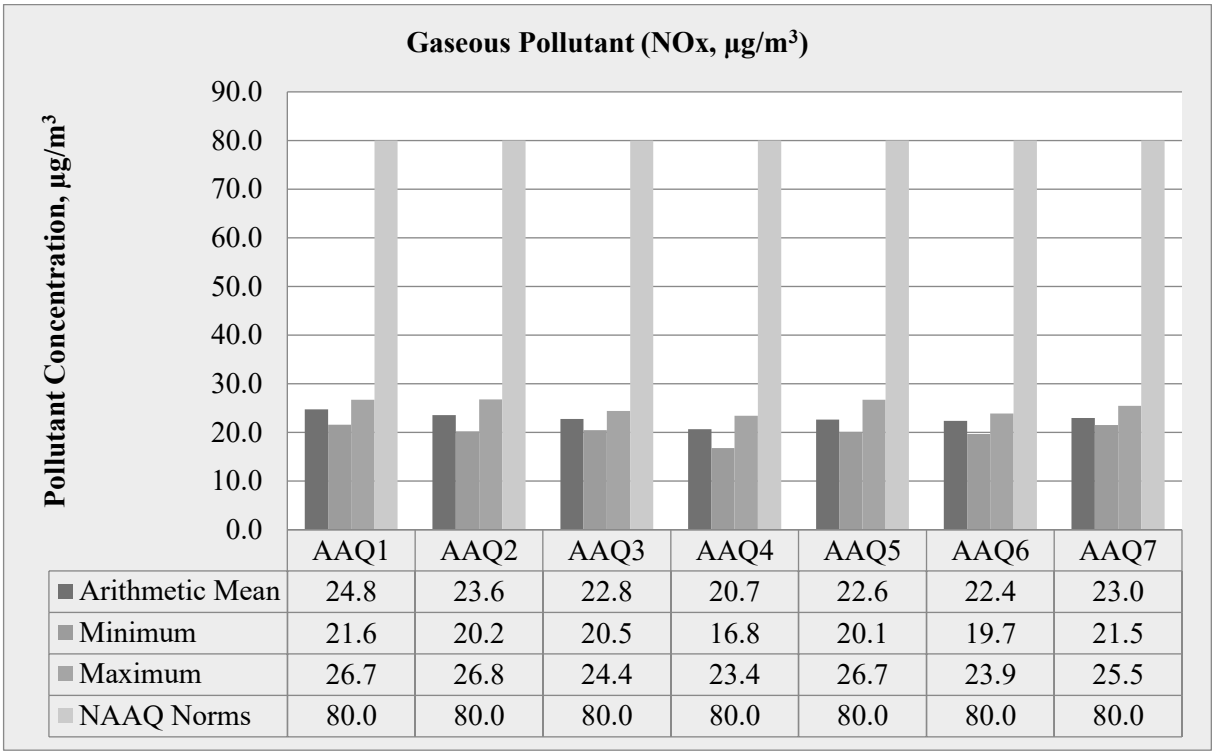
	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	42.3	41.2	42.7	42.6	42.9	41.9	42.3
Minimum	31.2	30.5	41.3	40.1	40.3	40.1	36.8
Maximum	46.7	46.5	43.9	44.7	47.2	43.9	44.3
NAAQ Norms	100.0	100.0	100.0	100.0	100.0	100.0	100.0

FIGURE 3.15: BAR DIAGRAM OF GASEOUS POLLUTANT SO_2



	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	5.2	5.2	5.1	5.2	5.0	5.3	5.2
Minimum	4.2	4.0	4.2	4.2	4.1	4.1	4.1
Maximum	6.4	6.9	6.5	6.6	5.6	6.8	6.6
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0

FIGURE 3.16: BAR DIAGRAM OF GASEOUS POLLUTANT NO_x



	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Arithmetic Mean	24.8	23.6	22.8	20.7	22.6	22.4	23.0
Minimum	21.6	20.2	20.5	16.8	20.1	19.7	21.5
Maximum	26.7	26.8	24.4	23.4	26.7	23.9	25.5
NAAQ Norms	80.0	80.0	80.0	80.0	80.0	80.0	80.0

3.3.7 Fugitive Dust Emission –

Fugitive dust was recorded at 7AAQ monitoring stations for 30 days average during the study period.

TABLE 3.20: AVERAGE FUGITIVE DUST SAMPLE VALUES

AAQ Locations	Avg SPM (µg/m^3)
AAQ 1	62.40
AAQ 2	63.53
AAQ 3	62.99
AAQ 4	62.44
AAQ 5	63.14
AAQ 6	62.94
AAQ7	61.58

FIGURE 3.17: LINE DIAGRAM OF AVERAGE SPM VALUES

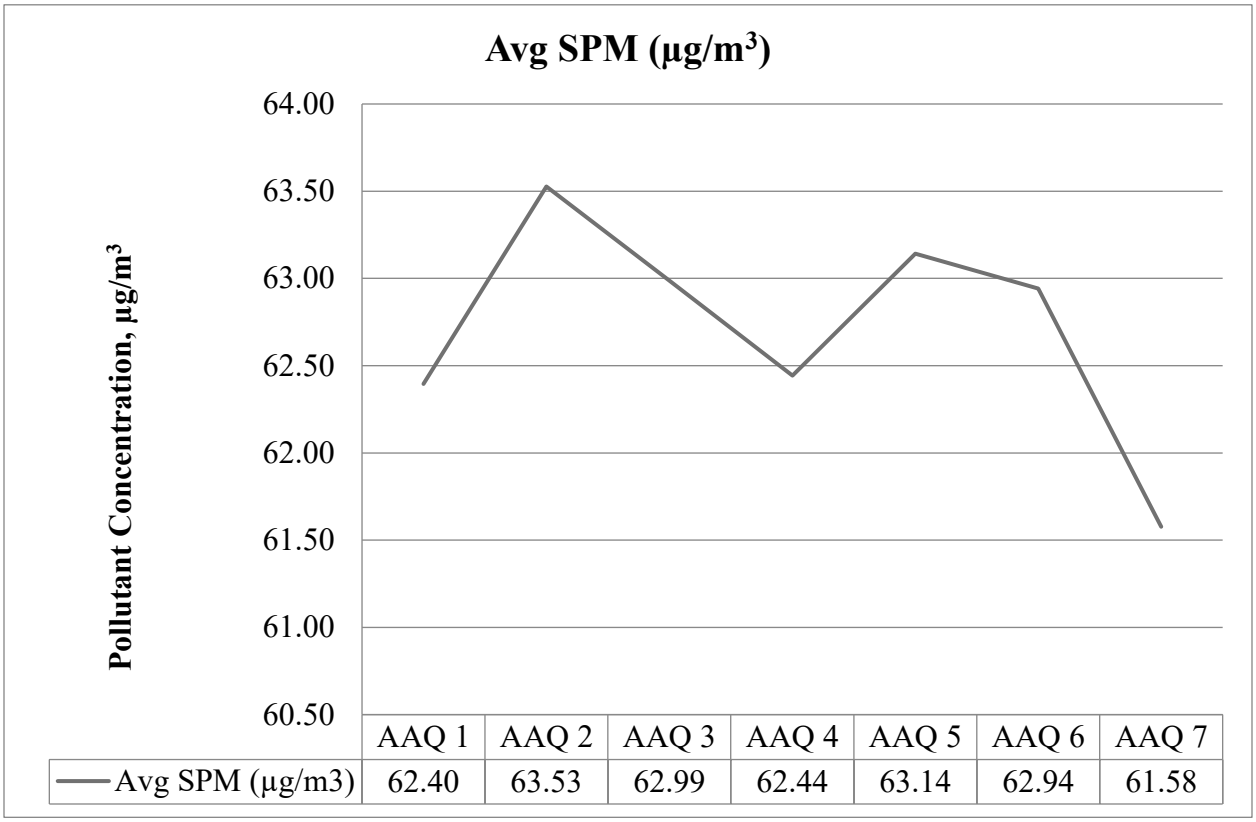
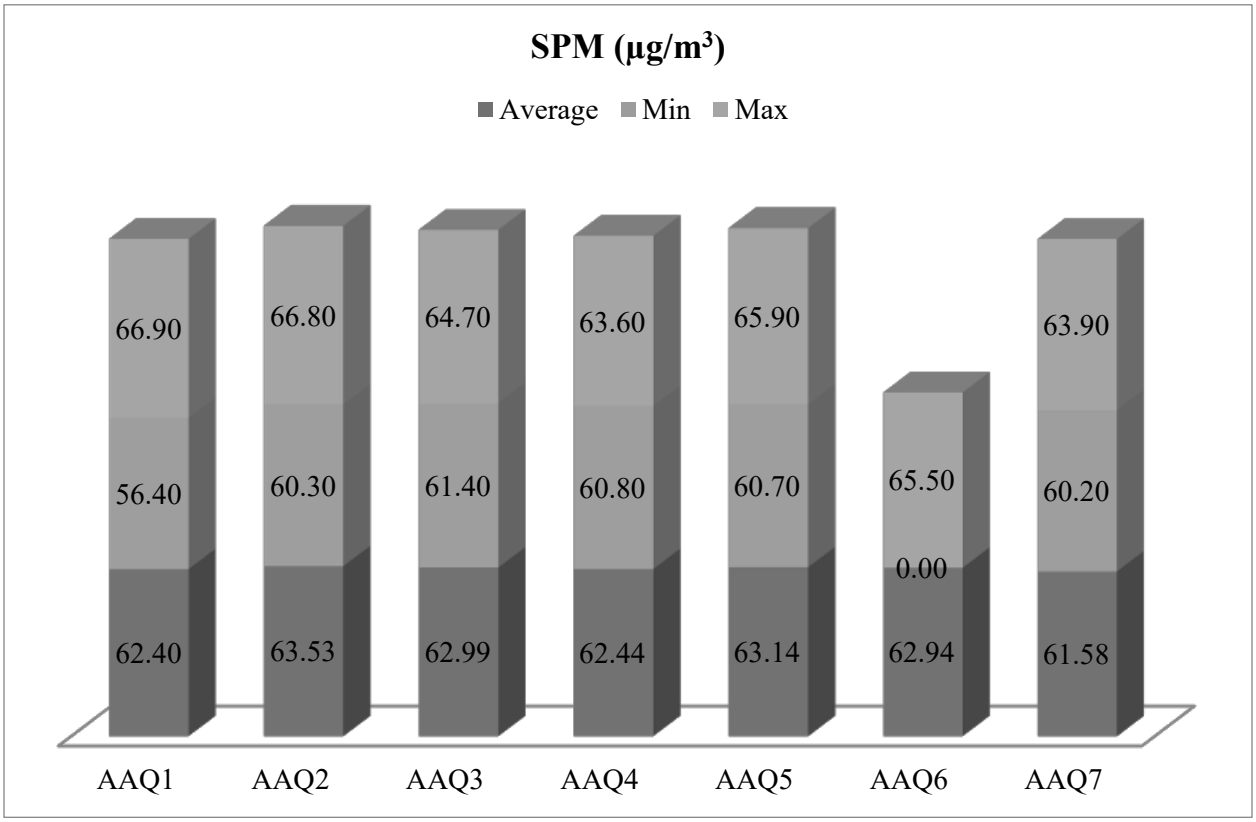


TABLE 3.21: FUGITIVE DUST SAMPLE VALUES IN µg/m³

SPM (µg/m³)	AAQ1	AAQ2	AAQ3	AAQ4	AAQ5	AAQ6	AAQ7
Average	62.40	63.53	62.99	62.44	63.14	62.94	61.58
Min	56.40	60.30	61.40	60.80	60.70	0.00	60.20
Max	66.90	66.80	64.70	63.60	65.90	65.50	63.90

Source: Calculations from Lab Analysis Reports

FIGURE 3.18: BAR DIAGRAM OF SPM VALUES



3.3.6 Interpretations & Conclusion

As per monitoring data, PM_{10} ranges from 30.5 to 47.2 µg/m^3, $PM_{2.5}$ data ranges from 18.3 to 26.9 µg/m^3, SO_2 ranges from 4.0 – 6.9 µg/m^3 and NO_2 data ranges from 16.8 – 26.8 µg/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	Project Area	Core Zone	11° 4'10.52"N 77°34'11.80"E
2	N-2	Project Area	Core Zone	11° 3'59.95"N 77°33'57.56"E
3	N-3	Near Project Area	430m NE	11° 4'21.29"N 77°34'24.25"E
4	N-4	Keeranur (Residential)	2.2km NW	11° 4'49.12"N 77°32'55.65"E
5	N-5	Paranjervali (School)	3.0km NE	11° 4'29.48"N 77°35'51.53"E
6	N-6	Varathappampalayam (Residential)	5km SE	11° 1'49.43"N 77°35'52.75"E
7	N-7	Sivanmalai (Residential)	4.5km SW	11° 2'22.93"N 77°31'55.87"E

Source: On-site monitoring/sampling by CHENNAI METTEX LAB PRIVATE LIMITED 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,

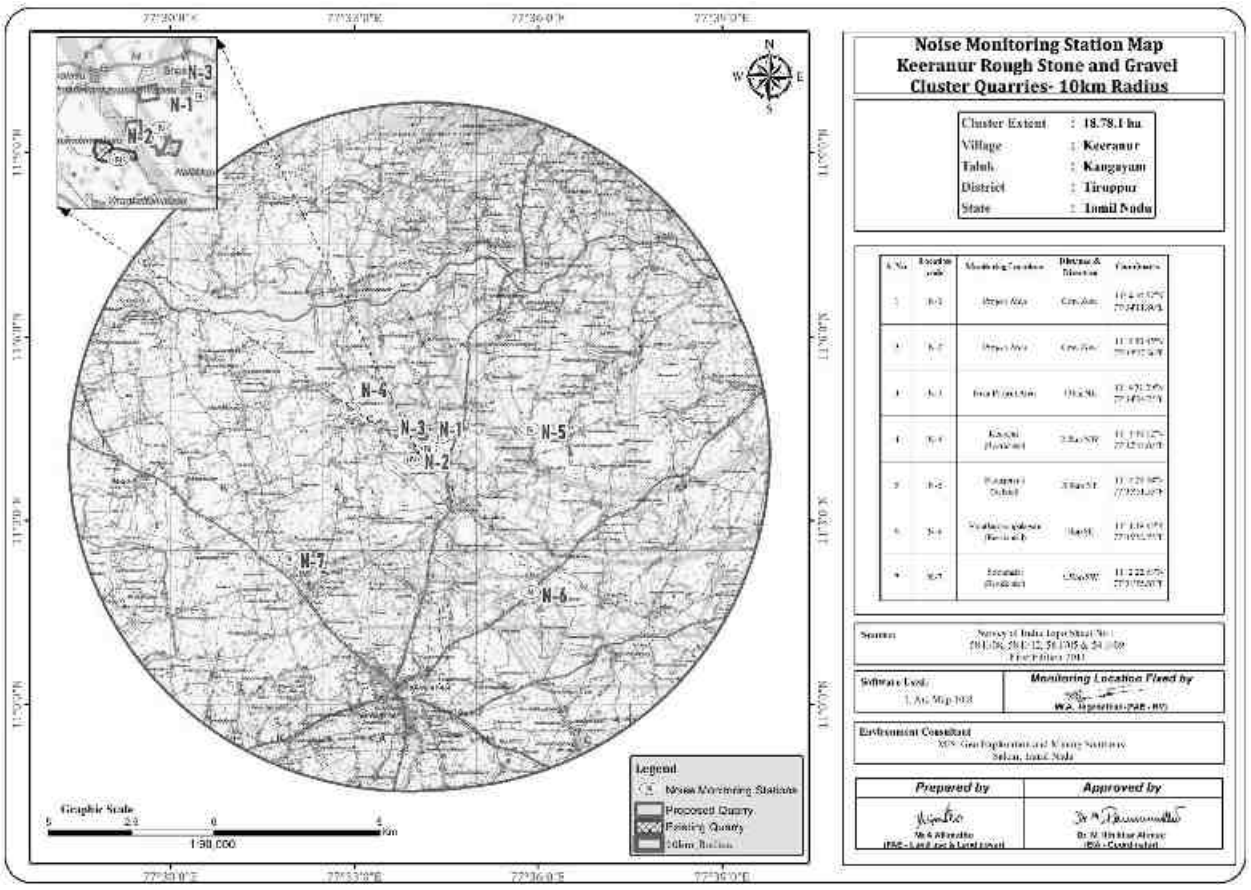
Leq = 10 Log L / T∑ (10Ln/10)

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 3.19: 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	Project Area	44.2	39.6	**Industrial** **Day Time- 75 dB (A)** **Night Time- 70 dB (A)**
2	Project Area	45.8	40.9	
3	Near Project Area	45.7	41.4	**Residential** **Day Time– 55 dB (A)** **Night Time- 45 dB (A)**
4	Keeranur (Residential)	46.4	44.1	
5	Paranjervali (School)	45.5	41.9	

6	Varathappampalayam (Residential)	44.0	35.7	
7	Sivanmalai (Residential)	44.9	38.9	

Source: On-site monitoring/sampling by CHENNAI METTEX LAB PRIVATE LIMITED in association with GEMS.

FIGURE 3.20: DAY TIME NOISE LEVELS IN CORE AND BUFFER ZONE

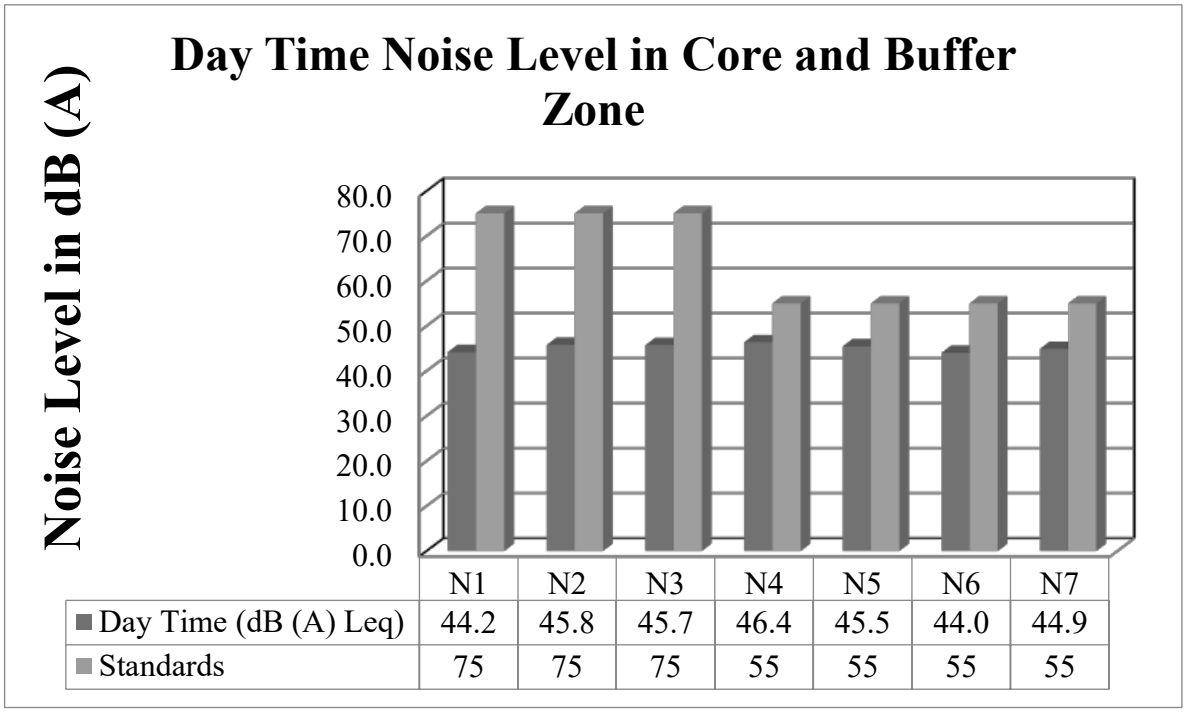
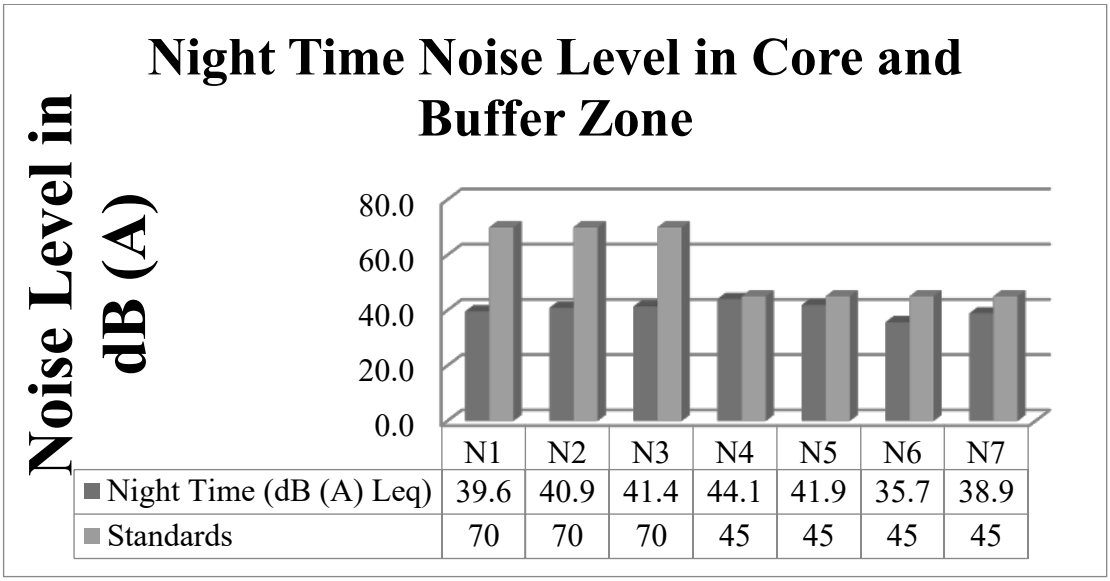


FIGURE 3.21: NIGHT TIME NOISE LEVELS IN CORE AND BUFFER ZONE



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 44.2 – 45.8 dB (A) Leq and during night time were from 39.6-40.9 dB (A) Leq. Noise levels recorded in buffer zone during day time were from 44.0 – 46.4 dB (A) Leq and during night time were from 35.7 – 44.1

dB (A)Leq. Thus, the noise level for Industrial and Residential area meets the requirements of CPCB.

3.5 BIOLOGICAL ENVIRONMENT

3.5.5.1. General Ecological Assessment

The observations and assessment of the overall ecological scenario presented in this chapter include details of flora, fauna, natural habitats, and Wildlife in the study area. Such information provides better understanding of the situation and overall ecological importance of the area. This information viewed against project activities helps in predicting their impacts on the wildlife and their habitats in the region.

3.5.5.2. 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.

Thus, no forest land is involved in any manner. There are no impacts due to this mining activity. 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.

3.5.5.3. Ecological Sensitive Areas and Ecosystems in the study area

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.

3.5.5.4 Floral diversity

The study is carried out to assess the existing and future scenarios of mining projects; specifically in terrestrial and aquatic areas. After surveying the core and the buffer areas, a detailed floral inventory has been compiled. A list of all plants from the study area was prepared and their habitats were recorded.

3.5.5.5. Terrestrial Vegetation

According to the Primary Field Survey, the flora is highly varied with includes vegetation of the species of Herbs, Shrubs, Climbers, Trees, and Major agricultural crops, were documented during this baseline survey. The dominant plant species growing in this area were Prosopis juliflora, Azadirachta indica, Calotropis gigantea, Cissus quadrangularis, Vachellia leucophloea etc.

3.5.5.6 Quadrat Sampling Method

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 of trees, shrubs, and herbs respectively.

TABLE 3.24: INVENTORY OF FLORAL DIVERSITY IN THE CORE ZONE

SI.No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	Velvet mesquite	Velikatthaan	*Prosopis juliflora*	Fabaceae
2.	Neem or Indian lilac	Vembu maram	*Azadirachta indica*	Meliaceae
3.	White Bark Acacia	Vela maram	*Vachellia leucophloea*	Fabaceae
4.	Madras thorn	Kudukapuli	*Pithecellobium dulce*	Fabaceae
5.	River tamarind	Savundal maram	*Leucaena leucocephala*	Fabaceae
6.	Jamun Fruit Plant	Naval maram	*Syzygium cumini*	Myrtaceae
7.	Jujube Trees	Elantha Pazham	*Ziziphus Mauritiana*	Rhamnaceae
8.	Millettia Pinnata	Pongam oiltree	*Pongamia pinnata*	Fabaceae
9.	Wild Date Palm	Icham	*Phoenix sylvestris*	Arecaceae
10.	Peepal	Asoka maram	*Ficus religiosa*	Legume

11.	Mango	Manga	*Mangifera indica*	Anacardiaceous
12.	Indian mulberry	Nuna maram	*Morinda tinctoria*	Rubiaceae
13.	Malayan Cherry	Ten Pazham	*Muntingia calabura*	Muntingiaceae
Shrubs				
14.	West Indian Lantana	Unni chedi	*Lantana camara*	Verbenaceae
15.	Avaram	Avarai	*Senna auriculata*	Fabaceae
16.	Indian mallow	Thuthi	*Abutilon indicum*	Meliaceae
17.	Jackal jujube	Surai Ilantai	*Ziziphus oenoplia*	Rhamnaceae
18.	Devil's trumpet	Umathai	*Datura metel*	Solanaceae
19.	Tanner's cassia	Avaram	*Senna auriculata*	Fabaceae
20.	Triangular spruge	Chaturakalli	*Euphorbia antiquorum*	Euphorbiaceae
21.	Malabar catmint	Pei veratti	*Anisomeles malabarica*	Lamiaceae
22.	Milk Weed	Erukku	*Calotropis gigantea*	Apocynaceae
23.	Indian Oleander	Arali	*Nerium indicum*	Apocynaceae
24.	Black-Honey Shrub	Ink pazham	*Phyllanthus reticulatus*	Phyllanthaceae
25.	Castor bean	Amanakku	*Ricinus communis*	Euphorbiaceae
26.	Triangular spruge	Chaturakalli	*Euphorbia antiquorum*	Euphorbiaceae
27.	Puriging nut	Kattamanakku	*Jatropha curcas*	Euphorbiaceae
Herbs				
28.	Indian nettle	Nayuruvi	*Achyranthes aspera*	Amaranthaceae
29.	Cleome viscosa	Nai kadugu	*Celome viscosa*	Capparidaceae
30.	Mountain knotgrass	Sirukan Peelai	*Aerva lanata*	Amaranthaceae
31.	Common leucas	Thumbai	*Leucas aspera*	Lamiaceae
32.	Dwarf morning-glory	Vishnukranti	*Evolvulus alsinoides*	Convolvulaceae
33.	Coat buttons	Thatha poo	*Tridax procumbens*	Asteraceae
34.	Holy basil	Thulasi	*Ocimum tenuiflorum*	Lamiaceae
35.	Indian doab	Arugampul	*Cynodon dactylon*	Poaceae
36.	Fish poison	Kolinchi	*Tephrosia purpurea*	Fabaceae
Climber				
37.	Stemmed vine	Perandai	*Cissus quadrangularis*	Vitaceae
38.	Stinking passionflower	Poonai puduku chedi	*Passiflora foetida*	Passifloraceae
39.	Ivy gourd	Kovai	*Coccinia grandis*	Cucurbitaceae
40.	Cucumis maderaspatanus	Musumusukkai	*Mukia maderaspatana*	Cucurbitaceae
41.	Wild bitter	Pavarkai	*Momordica charantia*	Cucurbitaceae
42.	Rosary Pea	Gundumani	*Abrus precatorius*	Fabaceae
Grasses				
43.	Narrow leaf cattail	Sambu	*Typha angustifolia*	Typhaceae
44.	Giant reed	Elephant grass	*Arundo donax*	Poaceae
45.	Windmill grass	Chevvarakupul	*Chloris barbata*	Amaranthaceae
46.	Eragrostis	Pullu	*Eragrostis ferruginea*	Poaceae
Cactus				
47.	Prickly pear	Nagathali	*Opuntia dillenii*	Cactaceae

3.5.5.7. Invader or exotic species:

Our study showed that Prosopis juliflora is one of the most dominant weed terrestrial species and is widespread in the buffer areas of the project site. Our observation during the field visit suggests Mesosphaerum suaveolens, Lantana camara, and Ipomoea carnea & Mesosphaerum suaveolensare fast growing in the area.

3.5.5.8. Endangered/Threatened/Protected Species

Our field survey in the project area suggests that there are no Endangered, Endemic, and Rare Plants species present in the study area.

3.5.5.9 Inventory List of floral diversity

After surveying the core and the buffer areas, a detailed floral inventory has been compiled. A list of all plants from the study area was prepared and their habitats were recorded.

The species of Herbs, Shrubs, Climbers, Trees, and Major agricultural crops, were documented during this base line survey. The dominant plant species growing in this area were Morinda tinctoria, Tectona grandis, Cassia siamea, Ziziphus mauritiana, etc.

3.5.6. Analysis of Flora (Core Zone)

The species of Herbs, Shrubs, Climbers, and Trees were documented during this baseline survey. The core zone was fully dominated by species like Prosopis juliflora, Azadirachta indica, Abutilon indicum and

Calotropis gigantea. In the core zone total of 13 tree species with 9 families followed by 14 Shrub species with 10 families, 9 Herb Species with 8 families, 6 Climber species with 4 families, 4 grasses with 3 families and 1 Cactus with 1 family. According to the survey, no endemic, endangered and rare species of flora recorded in study area. (Table No-3.35).

3.5.7 Analysis of Flora (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 buffer zone was fully dominated by species like Prosopis juliflora, Azadirachta indica, Jatropha curcas, Pongamia pinnata, Calotropis gigantea, and Morinda tinctoria, etc. The buffer zone study area contains a total of 179 species that have been recorded from the buffer zone. The floral (179) varieties among them Trees 53, Herbs 57, Shrubs 46, Climbers/ Creepers 11, Grasses 11, and Cactus 1 were identified. The result of the buffer zone of flora studies shows that Fabaceae and Solanaceae, Euphorbiaceae is the main dominating species in the study area mentioned in Table No.3.34. 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.

TABLE 3.25: NUMBER OF FLORAL LIFE FORMS IN THE STUDY AREA

S. NO	PLANT LIFE FORM	NUMBER OF SPECIES
1	Trees	53
2	Shrubs	46
3	Herbs	57
4	Climber	11
6	Grass	11
7	Cactus	1
	Total No. of Species	**179**

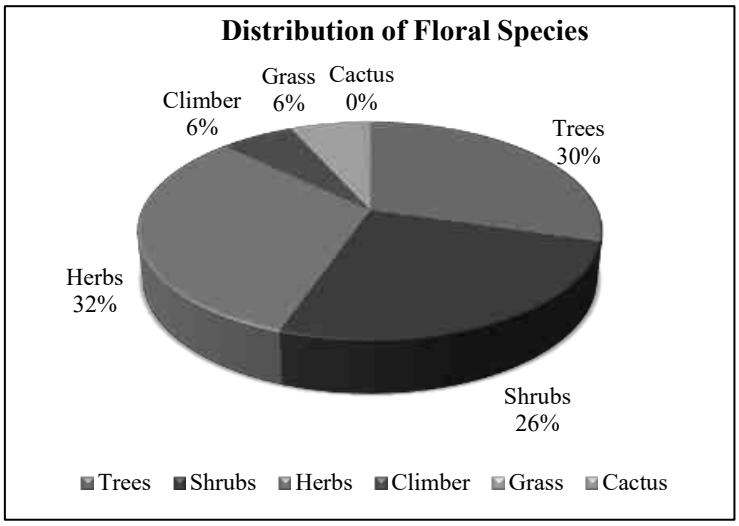


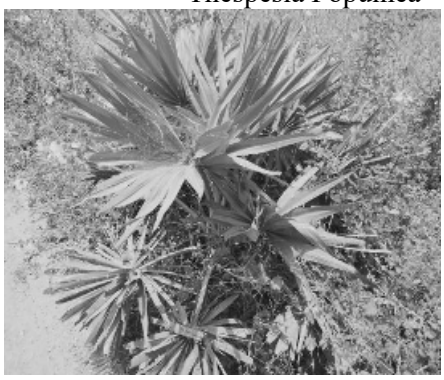
FIGURE 3.22: GRAPH SHOWING % DISTRIBUTION OF FLORAL LIFE FORMS

Azadirachta indica

Thespesia Populnea

Clitoria ternatea

Jatropagossypifolia


Borassus flabellifer

Lantana camara

Heliotropium indicum

Calotropis gigante

Morinda tinctoria

Abrus precatorius

Celome viscosa

Abutilon indicum

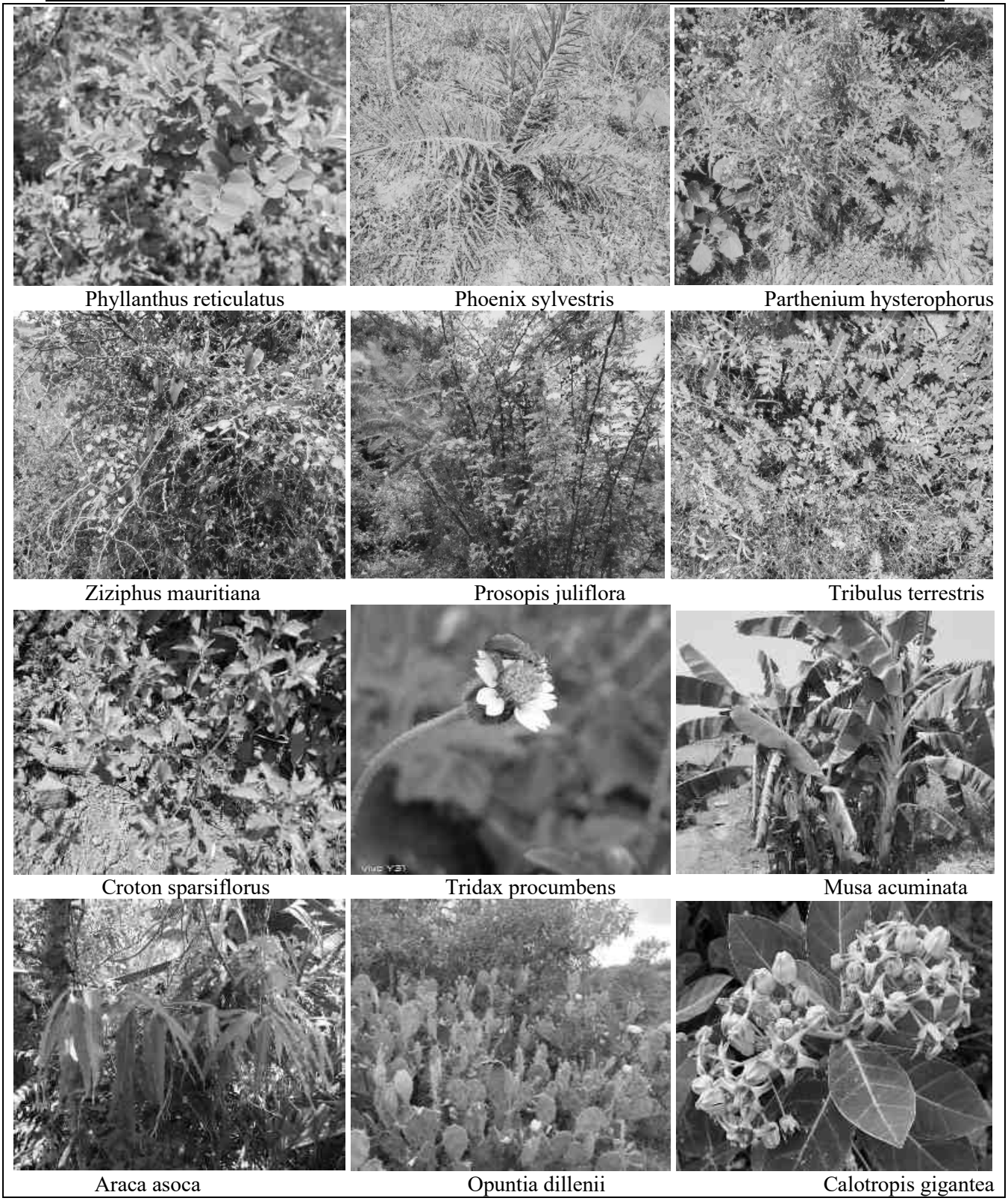


FIGURE 3.23: FLORA SPECIES OBSERVATION IN THE CORE ZONE AREA

TABLE 3.26: INVENTORY OF FLORAL DIVERSITY IN THE BUFFER ZONE

SI.No	English Name	Vernacular Name	Scientific Name	Family Name
Trees				
1.	Phoenix sylvestris	Pereatchai	*Phoenix sylvestris*	Arecaceae
2.	Velvet mesquite	Velikatthaan	*Prosopis juliflora*	Fabaceae
3.	Coconut	Thennai maram	*Cocos nucifera*	Arecaceae
4.	Neem or Indian lilac	Vembu	*Azadirachta indica*	Meliaceae
5.	Indian mulberry	Nuna maram	*Morinda tinctoria*	Rubiaceae
6.	Indian plum	Elanthai maram	*Ziziphus mauritiana*	Rhamnaceae
7.	Pongamia pinnata	Pongam	*Millettia pinnata*	Fabaceae
8.	Oil cake tree	Wunja	*Albizia amara*	Fabaceae
9.	Eucalyptus	Thailam maram	*Eucalyptus tereticornis*	Myrtaceae
10.	Asian Palmyra palm	Panai maram	*Borassus flabellifer*	Arecaceae
11.	River tamarind	Savunda	*Leucaenaleucocephala*	Fabaceae
12.	Indian rosewood	Shisham	*Dalbergia sissoo*	Fabaceae
13.	Sacred Tree	Flame of Forest	*Butea monosperma*	Fabaceae
14.	Madras thorn	Kudukapuli	*Pithecellobium dulce*	Fabaceae
15.	Portia tree	Poovarasan	*Thespesia Populnea*	Malvaceae
16.	Royal poinciana	Cemmayir Konra	*Delonix regia*	Fabaceae
17.	Lemon	Ezhumuchaipalam	*Citrus lemon*	Rutaceae
18.	Jamun Fruit Plant	Naval maram	*Syzygium cumini*	Myrtaceae
19.	Gum arabic tree	Karuvelam	*Acacia nilotica*	Fabaceae
20.	Kassod Tree	Manjal Konrai	*Cassia siamea*	Fabaceae
21.	Butterfly Tree	Mandarai	*Bauhinia purpurea*	Fabaceae
22.	Common guava	Koyya	*Psidium guajava*	Myrtaceae
23.	Ava olive tree	Kuthiraipidukkan	*Sterculiafoetida*	Malvaceae
24.	Monkey pod tree	Kondraimaram	*Samaneasaman*	Fabaceae
25.	Senna siamea	Manjal Konnai	*Sennasiamea*	Fabaceae
26.	Indian cork tree	Maramalli	*Millingtoniahortensis*	Bignoniaceae
27.	Frywood	Vaagai	*Albizia lebbeck*	Mimosaceae
28.	Bamboo	Moongil	*Bambusoideae*	Poaceae
29.	Indian-almond	Vadamaram	*Terminaliacatappa*	Fabaceae
30.	Teak	Thekku	*Tectona grandis*	Verbenaceae
31.	The umbrella thorn	Kodaivelam	*Acacia planiforns*	Mimosoideae
32.	Singapore Cherry	Ten pazham	*Muntingia calabura*	Malvaceae
33.	Curry tree	Karuveppilai	*Murraya koenigii*	Rutaceae
34.	Sudu	Kalli	*Euphorbia antiquorum*	Euphorbiaceae
35.	Otaheite Gooseberry	Nellai	*Phyllanthus acidus*	Phyllanthaceae
36.	Yellow Flame	Iyalvagai	*Peltophorumpterocarpum*	Fabaceae
37.	Common fig	Athi Maram	*Ficus Carica*	Anacardiaceae
38.	Mango	Manga	*Mangifera indica*	Anacardiaceae

39.	Banyan	Alamaram	*Ficus benghalensis*	Moraceae
40.	Moringa	Murungai Maram	*Moringa oleifera*	Moringaceae
41.	Horsetail She-oak	Savukku maram	*Casuarina equisetifolia*	Casuarinaceae
42.	Creamy peacock flower	Perungondrai	*Delonix elata*	Fabaceae
43.	Sapodilla	Sappotta	*Manilkarazapota*	Sapotaceae
44.	Indian bael	Vilvam	*Aegle marmelos*	Rutaceae
45.	Indian gooseberry	Nelli	*Phyllanthus emblica*	Phyllanthaceae
46.	Guava	Koyya	*Psidium guajava*	Myrtaceae
47.	Kapok tree	Ilavamaram	*Ceibapentandra*	Malvaceae
48.	Sugar apple	Sitapalam	*Annona squamosal*	Annonaceae
49.	White-bark acacia	Velvelam	*Acacia leucophloea*	Mimosaceae
50.	Papaya	Pappali maram	*Carica papaya*	Caricaceae
51.	Banana tree	Vazhaimaram	*Musa acuminata*	Musaceae
52.	Jack fruit	Palamaram	*Artocarpus heterophyllus*	Moraceae
53.	Tamarind	Puliyamaram	*Tamarindus indica*	Legumes
Shrubs				
1.	Avaram	Avarai	*Senna auriculata*	Fabaceae
2.	Common Wireweed	Arivalmanai poondu	*Sida acuta*	Malvaceae
3.	Bush Morning Glory	Neiveli Kattamani	*Ipomoea carnea*	Convolvulaceae
4.	Roundleaf Burr-Bush	Adayoti	*Triumfetta rotundifolia*	Malvaceae
5.	Chinese chastetree	Nochi	*Vitex negundo*	Lamiaceae
6.	Bellyache bush	Kaatamanaku	*Jatropagossypifolia*	Euphorbiaceae
7.	Malabar nut	Adhatoda	*Justicia adhatoda*	Acanthaceae
8.	Fish poison	Kolinchi	*Tephrosia purpurea*	Fabaceae
9.	Jackal jujube	Surai Ilantai	*Ziziphus oenoplia*	Rhamnaceae
10.	Milk Weed	Erukku	*Calotropis gigantea*	Apocynaceae
11.	Peacock Flower	Mayil Kontai	*Caesalpinia pulcherrima*	Fabaceae
12.	Solanum pubescens	Malaisundai	*Solanum pubescens Willd*	Solanaceae
13.	Coffee Senna	Nattam Takarai	*Cassia occidentalis*	Fabaceae
14.	Henna Tree	Maruthani	*Lawsonia inermis*	Lythraceae
15.	Sicklepod	Oosithagarai	*Cassia tora*	Fabaceae
16.	Night shade plan	Sundaika	*Solanum torvum*	Solanaceae
17.	Mesquite	Seemai karuvelam	*Prosopis juliflora*	Fabaceae
18.	Triangular spruge	Chaturakalli	*Euphorbia antiquorum*	Euphorbiaceae
19.	Yellow elder	Manjarali Sonnapatti	*Tecoma stans*	Bignoniaceae
20.	Pinwheelflower	Nandiar vattai	*Tabernaemontana coronaria*	Apocynaceae
21.	Rough cocklebur	Ottarchedi	*Xanthium indicum*	Asteraceae
22.	Martynia annua	Thael kodukkukaai	*Martynia annua*	Martyniaceae
23.	Great bougainvillea	Kaakithapoo	*Bougainvillea spectabilis*	Nyctaginaceae
24.	Scarlet jungle flame	Sinduram	*Ixora coccinea*	Rubiaceae
25.	Devil's trumpet	Umathai	*Datura metel*	Solanaceae

26.	Jhahrberi	Narielandai	*Ziziphus nummularia*	Rhamnaceae
27.	Castor bean	Amanakku	*Ricinus communis*	Euphorbiaceae
28.	Tabasco pepper	Mulaga	*Capsicum frutescense*	Solanaceae
29.	Shoe flower	Chemparuthi	*Hibiscu rosa-sinensis*	Malvaceae
30.	Nalta jute	Perattikkirai	*Corcorus olitorius*	Tiliaceae
31.	Firecracker Flower	kanak Ambaram	*Crossandra infundibuliformis*	Acanthaceae
32.	Plumeria alba	Malaiarali	*Plumeria alba*	Appocynaceae
33.	Blue snakeweed	Seemai nayaroovi	*Stachytarpheta indica*	Verbenaceae
34.	Touch-me-not	Thottalchinungi	*Mimosa pudica*	Mimosaceae
35.	Rough cocklebur	Marul-umattai	*Xanthium strumarium*	Asteraceae
36.	Indian mallow	Thuthi	*Abutilon indicum*	Meliaceae
37.	Tomato	Thakkali	*Lycopersicon esculentum*	Solanaceae
38.	Apple of sodom	Vellerukku	*Calotropis procera*	Asclepiadaceae
39.	Indian shot	Kalvalai	*Canna indica*	Cannaceae
40.	Pignut	Wild thulasi	*Hyptis suaveolens*	Lamiacea
41.	Wild jujube	Nari-y-ilantai	*Zizyphus nummularia*	Rhamnaceae
42.	Wild caper bush	Kattukkathir	*Capparis sepiaria*	Capparaceae
43.	Indian Oleander	Arali	*Nerium indicum*	Apocynaceae
44.	Pencil cactus	Thirukalli	*Euphorbia tirucalli*	Euphorbiaceae
45.	West Indian Lantana	Unni chedi	*Lantana camara*	Verbenaceae
46.	Kapok Bush	Seiyanavruvi	*Aerva javanica*	Amaranthaceae
Herbs				
1.	Tickweed	Nai kadugu	*Celome viscosa*	Capparidaceae
2.	Indian Mercury	Kuppamani	*Acalypha indica*	Euphorbiaceae
3.	Purple pitcher plant	Kavali	*Tephrosia purpurea*	Fabaceae
4.	Septicweed	Kattuttakarai	*Senna occidentalis*	Fabaceae
5.	Red Pea Eggplant	Vellai tuduvalai	*Solanum trilobatum*	Solanaceae
6.	Bladder Cherry	Kupanti	*Physalis minima*	Solanaceae
7.	Shaggy Button Weed	Nattai-churi	*Borreria hispida*	Rubiaceae
8.	Chamber bitter	Malai Kizhanelli	*Phyllanthus urinaria L.*	Euphorbiaceae
9.	Carrot grass	Vishapoondu	*Parthenium hysterophorus*	Asteraceae
10.	Porcupine flower	Kundan	*Barleria prionitis*	Acanthaceae
11.	Egyptian senna	Mayurkondrai	*Cassia tora*	Caesalpiniacea
12.	Billygoat weed	Pumpillu	*Ageratum conyzoides*	Asteraceae
13.	Green amaranth	Kuppaikeerai	*Amaranthus viridis*	Amaranthaceae
14.	Aloe barbadensis	Katrazhai	*Aloe vera*	Asphodelaceae
15.	Billygoat weed	Aappakkoti	*Ageratum conyzoides*	Asteraceae
16.	False daisy	Karisalankanni	*Eclipta prostrata*	Asteraceae
17.	Arrowleaf sida	Jelly Leaf	*Sida rhombifolia*	Malvaceae
18.	Monarch redstem	Kal-l-uruvi	*Ammania buccifera*	Lythraceae
19.	Indian doab	Arugampul	*Cynodon dactylon*	Poaceae

20.	Rough cocklebur	Marul-umattai	*Xanthium strumarium*	Asteraceae
21.	Bell Weed	Pottakanchi	*Dipterocanthus prostratus*	Acanthaceae
22.	Monarch redstem	Kalluruvi	*Ammannia baccifera*	Lythraceae
23.	Riceweeds	Seruppadai	*Coldenia procumbens*	Boraginaceae
24.	Goatweed	Kallurukki	*Scoparia dulcis*	Plantaginaceae
25.	Cracker plant	Kiranti nayan	*Ruellia tuberosa*	Acanthaceae
26.	East Indian globe thistle	kottai-k-karantai	*Sphaeranthus indicus*	Asteraceae
27.	Benghal dayflower	Kanavachai	*Commelina benghalensis*	Commelinacea
28.	Mexican prickly poppy	Kudiyotti	*Argemone mexicana*	Papaveraceae
29.	Mountain knotgrass	Sirupulai	*Aerva lanata*	Amaranthaceae
30.	Indian Turnsole	Thel kodukku	*Heliotropium indicum*	Boraginaceae
31.	Frog fruit	Poduthalai	*Phyla nodiflora*	Poduthalai
32.	Common leucas	Thumbai	*Leucas aspera*	Lamiaceae
33.	Fish poison	Kollukkai Vela	*Tephrosia purpurea*	Fabaceae
34.	Painted euphorbia	Pal perukki	*Euphorbia heterophyla*	Euphorbiaceae
35.	Pig weed	Mukkarattai Keerai	*Boerheavia diffusa*	Nyctaginaceae
36.	Asthma-plant	Amman pacharisi	*Euphorbia hirta*	Euphorbiaceae
37.	Rushfoil	Reilpoondu	*Croton sparsiflorus*	Euphorbiaceae
38.	Poor land lasted	Kunnakora	*Cyperus compressus*	Cyperaceae
39.	Marsh Barbel	Neermulli	*Hygrophila auriculata*	Acanthaceae
40.	Bhringaraj	Karisalankanni	*Eclipta alba*	Asteraceae
41.	Slender dwarf morning-glory	Vishnukranthi	*Evolvulus alsinoides*	Convolvulaceae
42.	Spiny amaranth	Mullukkirai	*Amaranthus spinosus*	Amaranthaceae
43.	Lady's Fingers	Vendaka	*Abelmoschus esculentus*	Malvaceae
44.	Holy basil	Thulasi	*Ocimum tenuiflorum*	Lamiaceae
45.	Woolly-Winged Milkwort	Paruppu chedi	*Polygala erioptera*	Polygalaceae
46.	Tridax daisy	Thatha poo	*Tridax procumbens*	Asteraceae
47.	Indian Turnsole	Tetkotukki	*Indian heliotrope*	Boraginaceae
48.	Cleome gynandra	Kattu Kadugu	*Cleome gynandra*	Cleomaceae
49.	Globe Amaranth	Vaadamalli	*Gomphrena globosa*	Amaranthaceae
50.	Dwarf morning-glory	Vishnukranti	*Evolvulus alsinoides*	Convolvulaceae
51.	Indian nettle	Nayuruvi	*Achyranthes aspera*	Amaranthaceae
52.	Negro Coffee	Payaverai	*Cassia occidentalis*	Caesalpiniacea
53.	Gale of the wind	Keelaneeli	*Phyllanthus niruri*	Phyllanthaceae
54.	Red Morning Glory	Kanavalikkodi	*Ipomea hederfolia*	Convolvulaceae
55.	Obscure Morning Glory	Chirutali	*Ipomea obscura*	Convolvulaceae
56.	Threelobe False Mallow	Pinnaku keerai	*Malvastrum coromandelianum*	Malvaceae
57.	Indian Whitehead	Vella ragu	*Enicostema axillare*	Gentianaceae
Climber				
1.	Madras Pea Pumpkin	Musumuskkai	*Mukia mederaspatna*	Cucurbitaceae
2.	Rosary pea	Kundumani	*abrus precatorius*	Fabaceae

3.	Bitter apple	Peikkumatti	*Citrullus colocynthis*	Cucurbitaceae
4.	Wild water lemon	Poonai puduku chedi	*Passiflora foetida*	Passifloraceae
5.	Stemmed vine	Perandai	*Cissus quadrangularis*	Vitaceae
6.	Bottle gourd	Churakka	*Lagenaria siceraria*	Cucurbitaceae
7.	Butterfly pea	Sangu poo	*Clitoria ternatea*	Fabaceae
8.	Bitter melon	Paagarkaai	*Momordica charantia*	Cucurbitaceae
9.	Balloon vine	Mudakathan	*Cardiospermum halicacabum*	Sapindaceae
10.	Stinking passionflower	Poonai puduku chedi	*Passiflora foetida L*	Passifloraceae
11.	Ivy gourd	Kovai	*Coccinia grandis*	Cucurbitaceae
Grass				
1.	Great brome	Thodappam	*Bromus diandrus*	Poaceae
2.	Umbrella-sedge	Vattakorai	*Cyperus difformis*	Cyperaceae
3.	Finger grass	Kuruthupillu	*Chloris dolichostachya*	Poaceae
4.	Windmill grass	Chevvarakupul	*Chloris barbata*	Amaranthaceae
5.	Purple love grass	Bunchgrass	*Eragrostis spectabilis*	Poaceae
6.	Narrowleaf cattail	Sambu	*Typha angustifolia*	Typhaceae
7.	Watergrass	Mukkutikorei	*Bulbostylis barbatta*	Cyperaceae
8.	Eragrostis	Pullu	*Eragrostis ferruginea*	Poaceae
9.	Marvel grass	Marvel grass	*Dichanthium annulatum*	Poaceae
10.	Tropical crabgrass	Crab grass	*Digetaria adscendens*	Poaceae
11.	Common needle grass	-	*Aristida adscensionis*	Poaceae
Cactus				
1.	Prickly pear	Nagathali	*Opuntia*	Cactaceae

Source:

- Nair.N.C and A.N. Henry, Flora of Tamil Nadu 1983, Series 1, Botanical Survey of India, Southern Circle.
- Species observation in the field study and secondary data.

3.5.8 Flora Composition in the Buffer Zone

3.5.8.1 Calculation of species diversity by Shannon – wiener Index, Evenness and richness

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

3.5.8.2 Species Diversity

Shannon Diversity Index has been used for estimating the diversity among the eight sampling sites to highlight the most diverse site, and calculate the Shannon Wiener diversity index of each site using the formula:

$$H = - \sum Pi. \ln Pi.$$

Where, H' = Shannon index of diversity

$$Pi = \frac{S = \text{Number of individuals of one species}}{N = \text{Total number of all individuals in the sample}}$$

TABLE 3.27: TREES

H (Shannon Diversity Index) =3.34

Vernacular Name	Scientific Name	No of Species	Pi	In Pi	Pi x In (Pi)
Pereatchai	*Phoenix sylvestris*	16	0.036951501	-1.432367914	-0.052928145
Velikatthaan	*Prosopis juliflora*	51	0.11778291	-0.92891772	-0.109410632
Thennai maram	*Cocos nucifera*	10	0.023094688	-1.636487896	-0.037794178
Vembu	*Azadirachta indica*	15	0.034642032	-1.460396637	-0.050591108
Nuna maram	*Morinda tinctoria*	35	0.080831409	-1.092419852	-0.088301836
Elanthai maram	*Ziziphus mauritiana*	9	0.020785219	-1.682245387	-0.034965839
Pongam	*Millettia pinnata*	13	0.030023095	-1.522544544	-0.045711499
Wunja	*Albizia amara*	5	0.011547344	-1.937517892	-0.022373186
Thailam maram	*Eucalyptus tereticornis*	14	0.032332564	-1.490359861	-0.048187155
Panai maram	*Borassus flabellifer*	12	0.027713626	-1.55730665	-0.043158614
Savunda	*Leucaenaleucocephala*	8	0.018475751	-1.733397909	-0.032025827
Shisham	*Dalbergia sissoo*	2	0.004618938	-2.335457901	-0.010787334
Flame of Forest	*Butea monosperma*	9	0.020785219	-1.682245387	-0.034965839
Kudukapuli	*Pithecellobium dulce*	10	0.023094688	-1.636487896	-0.037794178
Poovarasan	*Thespesia Populnea*	6	0.013856813	-1.858336646	-0.025750623
Cemmayir Konra	*Delonix regia*	3	0.006928406	-2.159366642	-0.01496097
Ezhumuchaipalam	*Citrus lemon*	2	0.004618938	-2.335457901	-0.010787334
Naval maram	*Syzygium cumini*	11	0.025404157	-1.595095211	-0.040522049
Karuvelam	*Acacia nilotica*	26	0.060046189	-1.221514548	-0.073347294
Manjal Konrai	*Cassia siamea*	8	0.018475751	-1.733397909	-0.032025827
Mandarai	*Bauhinia purpurea*	5	0.011547344	-1.937517892	-0.022373186
Koyya	*Psidium guajava*	5	0.011547344	-1.937517892	-0.022373186
Kuthiraipidukkan	*Sterculiafoetida*	2	0.004618938	-2.335457901	-0.010787334
Kondraimaram	*Samaneasaman*	5	0.011547344	-1.937517892	-0.022373186
Manjal Konnai	*Sennasiamea*	10	0.023094688	-1.636487896	-0.037794178
Maramalli	*Millingtoniahortensis*	2	0.004618938	-2.335457901	-0.010787334
Vaagai	*Albizia lebbeck*	4	0.009237875	-2.034427905	-0.018793791

Moongil	*Bambusoideae*	9	0.020785219	-1.682245387	-0.034965839
Vadamaram	*Terminaliacatappa*	4	0.009237875	-2.034427905	-0.018793791
Thekku	*Tectona grandis*	14	0.032332564	-1.490359861	-0.048187155
Kodaivelam	*Acacia planiforns*	8	0.018475751	-1.733397909	-0.032025827
Ten pazham	*Muntingia calabura*	6	0.013856813	-1.858336646	-0.025750623
Karuveppilai	*Murraya koenigii*	1	0.002309469	-2.636487896	-0.006088887
Kalli	*Euphorbia antiquorum*	5	0.011547344	-1.937517892	-0.022373186
Nellai	*Phyllanthus acidus*	2	0.004618938	-2.335457901	-0.010787334
Iyalvagai	*Peltophorumpterocarpum*	2	0.004618938	-2.335457901	-0.010787334
Athi Maram	*Ficus Carica*	12	0.027713626	-1.55730665	-0.043158614
Manga	*Mangifera indica*	8	0.018475751	-1.733397909	-0.032025827
Alamaram	*Ficus benghalensis*	7	0.016166282	-1.791389856	-0.028960113
Murungai Maram	*Moringa oleifera*	2	0.004618938	-2.335457901	-0.010787334
Savukku maram	*Casuarina equisetifolia*	3	0.006928406	-2.159366642	-0.01496097
Perungondrai	*Delonix elata*	4	0.009237875	-2.034427905	-0.018793791
Sappotta	*Manilkarazapota*	4	0.009237875	-2.034427905	-0.018793791
Vilvam	*Aegle marmelos*	6	0.013856813	-1.858336646	-0.025750623
Nelli	*Phyllanthus emblica*	3	0.006928406	-2.159366642	-0.01496097
Koyya	*Psidium guajava*	3	0.006928406	-2.159366642	-0.01496097
Ilavamaram	*Ceibapentandra*	4	0.009237875	-2.034427905	-0.018793791
Sitapalam	*Annona squamosal*	2	0.004618938	-2.335457901	-0.010787334
Velvelam	*Acacia leucophloea*	3	0.006928406	-2.159366642	-0.01496097
Pappali maram	*Carica papaya*	5	0.011547344	-1.937517892	-0.022373186
Vazhaimaram	*Musa acuminata*	7	0.016166282	-1.791389856	-0.028960113
Palamaram	*Artocarpus heterophyllus*	3	0.006928406	-2.159366642	-0.01496097
Puliyamaram	*Tamarindus indica*	8	0.018475751	-1.733397909	-0.032025827
	Total	**433**			**-1.567446836**

TABLE 3.28: SHRUBS

H (Shannon Diversity Index) =3.26

Vernacular Name	Scientific Name	No of Species	Pi	In Pi	Pi x In (Pi)
Avarai	*Senna auriculata*	7	0.014373717	-1.842430921	-0.02648258
Arivalmanai poondu	*Sida acuta*	37	0.075975359	-1.119327237	-0.085041289
Neiveli Kattamani	*Ipomoea carnea*	17	0.034907598	-1.45708004	-0.050863164
Adayoti	*Triumfetta rotundifolia*	6	0.012320329	-1.909377711	-0.023524161
Nochi	*Vitex negundo*	6	0.012320329	-1.909377711	-0.023524161
Kaatamanaku	*Jatropagossypifolia*	24	0.049281314	-1.30731772	-0.064426335
Adhatoda	*Justicia adhatoda*	2	0.004106776	-2.386498966	-0.009800817
Kolinchi	*Tephrosia purpurea*	30	0.061601643	-1.210407706	-0.074563103
Surai Ilantai	*Ziziphus oenoplia*	10	0.020533881	-1.687528961	-0.034651519
Erukku	*Calotropis gigantea*	34	0.069815195	-1.156050044	-0.080709859
Mayil Kontai	*Caesalpinia pulcherrima*	3	0.006160164	-2.210407706	-0.013616475
Malaisundai	*Solanum pubescens Willd*	2	0.004106776	-2.386498966	-0.009800817
Nattam Takarai	*Cassia occidentalis*	11	0.022587269	-1.646136276	-0.037181723
Maruthani	*Lawsonia inermis*	1	0.002053388	-2.687528961	-0.00551854
Oosithagarai	*Cassia tora*	11	0.022587269	-1.646136276	-0.037181723
Sundaika	*Solanum torvum*	6	0.012320329	-1.909377711	-0.023524161
Seemai karuvelam	*Prosopis juliflora*	11	0.022587269	-1.646136276	-0.037181723
Chaturakalli	*Euphorbia antiquorum*	6	0.012320329	-1.909377711	-0.023524161
Manjarali Sonnapatti	*Tecoma stans*	2	0.004106776	-2.386498966	-0.009800817
Nandiar vattai	*Tabernaemontana coronaria*	2	0.004106776	-2.386498966	-0.009800817
Ottarchedi	*Xanthium indicum*	11	0.022587269	-1.646136276	-0.037181723
Thael kodukkukaai	*Martynia annua*	15	0.030800821	-1.511437702	-0.046553523
Kaakithapoo	*Bougainvillea spectabilis*	4	0.008213552	-2.08546897	-0.017129109
Sinduram	*Ixora coccinea*	1	0.002053388	-2.687528961	-0.00551854

Umathai	*Datura metel*	9	0.018480493	-1.733286452	-0.032031988
Narielandai	*Ziziphus nummularia*	7	0.014373717	-1.842430921	-0.02648258
Amanakku	*Ricinus communis*	8	0.016427105	-1.784438974	-0.029313166
Mulaga	*Capsicum frutescense*	5	0.01026694	-1.988558957	-0.020416416
Chemparuthi	*Hibiscu rosa-sinensis*	4	0.008213552	-2.08546897	-0.017129109
Perattikkirai	*Corcorus olitorius*	28	0.057494867	-1.24037093	-0.071314961
kanakAmbaram	*Crossandra infundibuliformis*	1	0.002053388	-2.687528961	-0.00551854
Malaiarali	*Plumeria alba*	2	0.004106776	-2.386498966	-0.009800817
Seemai nayaroovi	*Stachytarpheta indica*	15	0.030800821	-1.511437702	-0.046553523
Thottalchinungi	*Mimosa pudica*	9	0.018480493	-1.733286452	-0.032031988
Marul-umattai	*Xanthium strumarium*	5	0.01026694	-1.988558957	-0.020416416
Thuthi	*Abutilon indicum*	33	0.067761807	-1.169015021	-0.07921457
Thakkali	*Lycopersicon esculentum*	2	0.004106776	-2.386498966	-0.009800817
Vellerukku	*Calotropis procera*	6	0.012320329	-1.909377711	-0.023524161
Kalvalai	*Canna indica*	2	0.004106776	-2.386498966	-0.009800817
Wild thulasi	*Hyptis suaveolens*	40	0.082135524	-1.08546897	-0.089155562
Nari-y-ilantai	*Zizyphus nummularia*	8	0.016427105	-1.784438974	-0.029313166
Kattukkathir	*Capparis sepiaria*	2	0.004106776	-2.386498966	-0.009800817
Arali	*Nerium indicum*	3	0.006160164	-2.210407706	-0.013616475
Thirukalli	*Euphorbia tirucalli*	2	0.004106776	-2.386498966	-0.009800817
Unni chedi	*Lantana camara*	10	0.020533881	-1.687528961	-0.034651519
seiyanavruvi	*Aerva javanica*	27	0.055441478	-1.256165197	-0.069643656
Total		**487**			**-1.476432718**

TABLE 3.29: HERBS

H (Shannon Diversity Index) =3.4

Vernacular Name	Scientific Name	No of Species	Pi	In Pi	Pi x In (Pi)
Nai kadugu	*Celome viscosa*	18	0.030201342	-1.519973755	-0.045905248
Kuppamani	*Acalypha indica*	24	0.040268456	-1.395035018	-0.056175907
Kavali	*Tephrosia purpurea*	18	0.030201342	-1.519973755	-0.045905248
Kattuttakarai	*Senna occidentalis*	8	0.013422819	-1.872156273	-0.025129614
Vellai tuduvalai	*Solanum trilobatum*	6	0.010067114	-1.997095009	-0.020104983
Kupanti	*Physalis minima*	8	0.013422819	-1.872156273	-0.025129614
Nattai-churi	*Borreria hispida*	24	0.026845638	-1.571126277	-0.042177887
Malai Kizhanelli	*Phyllanthus urinaria*	16	0.026845638	-1.571126277	-0.042177887
Vishapoondu	*Parthenium hysterophorus*	42	0.070469799	-1.151996969	-0.081180994
Kundan	*Barleria prionitis*	7	0.011744966	-1.93014822	-0.022669526
Mayurkondrai	*Cassia tora*	6	0.010067114	-1.997095009	-0.020104983
Pumpillu	*Ageratum conyzoides*	5	0.008389262	-2.076276255	-0.017418425
Kuppaikeerai	*Amaranthus viridis*	27	0.045302013	-1.343882496	-0.060880583
Katrazhai	*Aloe vera*	3	0.005033557	-2.298125005	-0.011567743
Aappakkoti	*Ageratum conyzoides*	5	0.008389262	-2.076276255	-0.017418425
Karisalankanni	*Eclipta prostrata*	32	0.013422819	-1.872156273	-0.025129614
Jelly Leaf	*Sida rhombifolia*	8	0.013422819	-1.872156273	-0.025129614
Kal-l-uruvi	*Ammania buccifera*	9	0.015100671	-1.82100375	-0.027498379
Arugampul	*Cynodon dactylon*	32	0.053691275	-1.270096281	-0.068193089
Marul-umattai	*Xanthium strumarium*	12	0.020134228	-1.696065014	-0.03414896
Pottakanchi	*Dipterocanthus prostratus*	5	0.008389262	-2.076276255	-0.017418425
Kalluruvi	*Ammannia baccifera*	8	0.013422819	-1.872156273	-0.025129614
Seruppadai	*Coldenia procumbens*	12	0.020134228	-1.696065014	-0.03414896
Kallurukki	*Scoparia dulcis*	10	0.016778523	-1.77524626	-0.029786011
Kiranti nayan	*Ruellia tuberosa*	12	0.020134228	-1.696065014	-0.03414896
kottai-k-karantai	*Sphaeranthus indicus*	3	0.005033557	-2.298125005	-0.011567743
Kanavachai	*Commelina benghalensis*	2	0.003355705	-2.474216264	-0.008302739
Kudiyotti	*Argemone mexicana*	3	0.005033557	-2.298125005	-0.011567743

Sirupulai	*Aerva lanata*	8	0.013422819	-1.872156273	-0.025129614
Thel kodukku	*Heliotropium indicum*	16	0.026845638	-1.571126277	-0.042177887
Poduthalai	*Phyla nodiflora*	5	0.008389262	-2.076276255	-0.017418425
Thumbai	*Leucas aspera*	24	0.040268456	-1.395035018	-0.056175907
Kollukkai Vela	*Tephrosia purpurea*	18	0.030201342	-1.519973755	-0.045905248
Pal perukki	*Euphorbia heterophyla*	2	0.030201342	-1.519973755	-0.045905248
Mukkarattai Keerai	*Boerheavia diffusa*	3	0.005033557	-2.298125005	-0.011567743
Amman pacharisi	*Euphorbia hirta*	8	0.013422819	-1.872156273	-0.025129614
Reilpoondu	*Croton sparsiflorus*	24	0.040268456	-1.395035018	-0.056175907
Kunnakora	*Cyperus compressus*	4	0.006711409	-2.173186268	-0.014585143
Neermulli	*Hygrophila auriculata*	2	0.003355705	-2.474216264	-0.008302739
Karisalankanni	*Eclipta alba*	5	0.008389262	-2.076276255	-0.017418425
Vishnukranthi	*Evolvulus alsinoides*	3	0.005033557	-2.298125005	-0.011567743
Mullukkirai	*Amaranthus spinosus*	8	0.013422819	-1.872156273	-0.025129614
Vendaka	*Abelmoschus esculentus*	3	0.005033557	-2.298125005	-0.011567743
Thulasi	*Ocimum tenuiflorum*	20	0.033557047	-1.474216264	-0.049470344
Paruppu chedi	*Polygala erioptera*	7	0.011744966	-1.93014822	-0.022669526
Thatha poo	*Tridax procumbens*	23	0.038590604	-1.413518424	-0.05454853
Tetkotukki	*Indian heliotrope*	5	0.008389262	-2.076276255	-0.017418425
Kattu Kadugu	*Cleome gynandra*	3	0.005033557	-2.298125005	-0.011567743
Vaadamalli	*Gomphrena globosa*	2	0.003355705	-2.474216264	-0.008302739
Vishnukranti	*Evolvulus alsinoides*	5	0.008389262	-2.076276255	-0.017418425
Nayuruvi	*Achyranthes aspera*	7	0.011744966	-1.93014822	-0.022669526
Payaverai	*Cassia occidentalis*	5	0.008389262	-2.076276255	-0.017418425
Keelaneeli	*Phyllanthus niruri*	6	0.010067114	-1.997095009	-0.020104983
Kanavalikkodi	*Ipomea hederfolia*	4	0.006711409	-2.173186268	-0.014585143
Chirutali	*Ipomea obscura*	5	0.008389262	-2.076276255	-0.017418425
Pinnaku keerai	*Malvastrum coromandelianum*	4	0.006711409	-2.173186268	-0.014585143
Vella ragu	*Enicostema axillare*	2	0.003355705	-2.474216264	-0.008302739
	Total	**596**			**-1.596754037**

3.5.9. Interpretation

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

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 a primary survey (site observations) and discussion with local people (Secondary data).

TABLE 3.30: OVERALL SHANNON'S DIVERSITY INDEX

Details	Shannon diversity index	Evenness	Average population size
Trees	3.34	0.904	9.45
Shrubs	3.26	0.885	10.9
Herbs	3.4	0.921	12.1

3.5.10 Rare and endangered floral species

According to the Botanical Survey of India No endemic, Rare, Endangered and Threatened (RET) species of flora were found in the study area.

3.5.11. Economically important Flora of the study area

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

Reference: District Agriculture Plan – Tiruppur District

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

3.5.12 Faunal Study

- Ground survey for fauna has been carried out by trekking and Line Transect method for identification of animals. Patch sampling was used for Amphibians, visual encountered methods were used for reptiles, and Aerial net was used for butterflies.
- For Avifauna, the Visual Encounter Survey (VES) technique was used in the Morning (05:30 to 09:30 hrs.) and Evening (16:30 to 19:00 hrs.) for the study of diversity.
- For Mammals, Reptiles, Amphibians, etc., species have been recorded by calls, droppings, burrows, pug marks, indirect species-specific evidence, inquiring from local people, and actual sightings.
- The survey was conducted just before dusk time to 10:30 hours for Nocturnal Animals. The light trap method was used to determine the insect diversity.
- Data on fishery were obtained from secondary sources in the study area visit to the local Fish market to conduct 'Basket Survey' to understand Ichthyofaunal diversity.

3.5.13. Part I Field Sampling Techniques

3.5.13.1 Transect walk – Birds

Six no 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 the data. Counts were conducted while there is no heavy rain, mist or strong wind.

3.5.13.2 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.

3.5.13.3 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).

3.5.13.4 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.

3.5.14 Fauna Composition in the 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 of Insects 10, Reptiles 5, Mammals 3, and Avian 14. The core site has avifauna species like crow, Black drongo, White-breasted kingfisher, Koel, etc. None of these species are threatened or endemic in the study area and surroundings. There is no Schedule I species and 20 species are under Schedule IV according to the Indian Wildlife Act 1972. There are no critically endangered, endangered, vulnerable, and endemic species were observed.

TABLE 3.31: INVENTORY OF FAUNAL DIVERSITY IN THE CORE ZONE

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.	Indian domino cockroach	*Therea petiveriana*	-
8.	Blue bug	*Chrysocoris purpureus*	-
9.	Grey pansy	*Junonia atlites*	LC
10.	Common Tiger	*Danaus genutia*	LC
Reptiles			
1.	Oriental garden lizard	*Calotes versicolor*	NL
2.	Indian forest skink	*Sphenomorphus indicus*	NL
3.	House lizards	*Hemidactylus flaviviridis*	Schedule IV
4.	Common Green Whip Snake	*Ahaetulla nasuta*	Schedule IV
5.	Mabuya carinata	*Brahminy skink*	-
Mammals			
1.	Indian Field Mouse	*Mus booduga*	Schedule IV
2.	Asian Small Mongoose	*Herpestes javanicus*	Schedule (Part II)
3.	Squirrel	*Funambulus palmarum*	Schedule IV
Aves			
1.	Rose-ringed parkeet	*Psittacula krameri*	Schedule IV
2.	Black drongo	*Dicrurus macrocercus*	Schedule IV
3.	Common myna	*Acridotheres tristis*	Schedule IV
4.	Blue-rock pigeon	*Colombalivia*	Schedule IV
5.	Small-blue kingfisher	*Alcedoatthis*	Schedule IV
6.	Pond heron	*Ardeolagrayii*	Schedule IV
7.	Common quail	*Coturnix coturnix*	Schedule IV
8.	Asian koel	*Eudynamysscolopacea*	Schedule IV
9.	Shikra	*Accipiter badius*	Schedule IV
10.	Koel	*Eudynamys*	Schedule IV
11.	Cattle egret	*Bubulcus ibis*	Schedule IV
12.	House crow	*Corvussplendens*	Schedule IV
13.	White-breasted kingfisher	*Halcyon smyrnensis*	Schedule IV
14.	Black-rumped flameback	*Dinopium benghalense*	Schedule IV

*NL- Not listed, LC- Least Concern

(Sources: Species observation in the field study)

3.5.14 Inventory of Faunal Diversity 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 are 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.3.43. The list of bird species recorded during the field survey and literature from the study area are given in Table 3.44. The list of reptilian species recorded during the field survey and literature from the study area is given in Table 3.45. The list of insect species recorded during the field survey and literature from the study area are given in Table 3.46. The list of Butterflies species recorded during the field survey and literature from the study area are given in Table 3.47. 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 103 species recorded were from the buffer zone area. Based on habitat classification the majority of species were birds 40, followed by Butterflies 20, Reptiles 16, Insects 16, Mammals 8, and Amphibians 4. There are five Schedule II species, one species is under the schedule III and seventy-one species are under Schedule IV according to the Indian Wildlife Act 1972. A total of 40 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, Euphlyctis hexadactylus, 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 3.32: LIST OF FAUNA & THEIR CONSERVATION STATUS, MAMMALS: (*DIRECTLY SIGHTED ANIMALS & SECONDARY DATA)

S.No	Scientific name	Common name	Family	IUCN/WPA Schedule
1.	*Rattus rattus*	House rat	Murids	LC – IV
2.	*Funambulus palmarum*	Indian Palm squirrel	Squirrel	LC – IV
3.	*Herpertes edwardrii*	Indian grey mongoose	Mongoose	LC – IV
4.	*Lepus nigricollis*	Hare	Leporids	LC – IV
5.	*Rattus norvegicus*	Field mouse	Murids	LC – IV
6.	*Sorex caerulescens*	Common mush shrew	Soricidae	LC – IV
7.	*Sus scrofa*	Wild boar	Suidae	LC – III
8.	*Indian fox*	Vulpus benfhalensis	Canidae	LC – II

Status assigned by the IUCN, where – CR – Critically Endangered; EN – Endangered; LC – Least Concern; NT – Near Threatened; VU – Vulnerable, DA – Data Deficient, NE – Not Evaluated

TABLE 3.33: LISTED BIRDS

SI. No	Scientific Name	Common Name	Family	Schedule list WLP 1972
1.	*Psittaculakrameria*	Rose-ringed Parakeet	Psittaculidae	Schedule IV
2.	*Tachybaptusruficollis*	Little grebe	Podicipedidae	Schedule IV
3.	*Pycnonotus cafer*	Red-vented Bulbul	Pycnonotidae	Schedule IV

4.	*Alcedo atthis*	Small blue Kingfisher	Alcedinidae	Schedule IV
5.	*Leptocoma zeylonica*	Purple Sunbird	Nectariniidae	Schedule IV
6.	*Leptocoma zeylonica*	Purple-rumped Sunbird	Nectariniidae	Schedule IV
7.	*Dicrurus macrocercus*	Two-tailed Sparrow	Dicruridae	Schedule IV
8.	*Ardeacineria*	Grey heron	Ardeidae	Schedule IV
9.	*Bubulcus ibis*	Cattle egret	Ardeidae	Schedule IV
10.	*Acridotheres tristis*	Common myna	Sturnidae	Schedule IV
11.	*Coracias benghalensis*	Indian roller	Coraciidae	Schedule IV
12.	*Nycticorax nycticorax*	Night heron	Ardeidae	Schedule IV
13.	*Centropus sinensis*	Greater Coucal	Cuculidae	Schedule IV
14.	*Anthus rufulus*	Paddyfield Pipit	Motacillidae	Schedule IV
15.	*Pycnonotus jocosus*	Red-whiskered Bulbul	Pycnonotidae	Schedule IV
16.	*Egretta garzetta*	Little Egret	Ardeidae	Schedule IV
17.	*Merops orientalis*	Green Bee-eater	Meropidae	Schedule IV
18.	*Francolinus pondicerianus*	Grey Francolin	Phasianidae	Schedule IV
19.	*Tringa ochropus*	Green Sandpiper	Scolopacidae	Schedule IV
20.	*Motacilla cinerea*	Grey Wagtail	Motacillidae	Schedule IV
21.	*Aegithina tiphia*	Common Iora	Aegithinidae	Schedule IV
22.	*Motacilla flava*	Yellow wagtail	Motacillidae	Schedule IV
23.	*Athene brama*	Spotted owlet	Strigidae	Schedule IV
24.	*Passer domesticus*	House Sparrow	Passeridae	Schedule IV
25.	*Butastur teesa*	White-eyed Buzzard	Accipitridae	Schedule IV
26.	*Dicrurus macrocercus*	Black Drongo	Dicruridae	Schedule IV
27.	*Lanius cristatus*	Brown Shrike	Laniidae	Schedule IV
28.	*Prinia inornata*	Plain Prinia	Cisticolidae	Schedule IV
29.	*Streptopeliachinensis*	Spotted dove	Columbidae	Schedule IV
30.	*Accipiter badius*	Shikra	Accipitridae	Schedule IV
31.	*Lanius vittatus*	Bay-backed Shrike	Laniidae	Schedule IV
32.	*Eudynamysscolopacea*	Asian koel	Cuculidae	Schedule IV
33.	*Halcyon smyrnensis*	White-breasted kingfisher	Alcedinidae	Schedule IV
34.	*Dicrurus leucophaeus*	Ashy Drongo	Dicruridae	Schedule IV
35.	*Dinopium benghalense*	Black-rumped flameback	Picidae	Schedule IV
36.	*Corvussplendens*	House crow	Corvidae	Schedule IV
37.	*Corvusmacrorhynchos*	Jungle crow	Corvidae	Schedule IV
38.	*Copsychussaularis*	Robin	Muscicapidae	Schedule IV
39.	*Ardeolagrayii*	Pond heron	Ardeidae	Schedule IV
40.	*Coturnix coturnix*	Common quail	Phasianidae	Schedule IV

TABLE 3.34: LIST OF REPTILES EITHER SPOTTED OR REPORTED FROM THE STUDY AREA

SI. No	Scientific Name	Common Name	Family	Schedule list WLP 1972
1.	*Calotes versicolor*	Common Garden lizard	Agamid lizards	LC – IV
2.	*Bangarus caeruleus*	Common krait	Elapidae	LC – II
3.	*Gongylophis conicus*	Rough tailed Sand boa	Boidae	LC – IV
4.	*Hemidactylus flaviviridis*	House gecko	Geckos	LC – IV
5.	*Ahaetulla nasuta*	Common Green Whip Snake	Colubridae	LC – IV
6.	*Boiga spp*	Cat snake	Colubridae	---
7.	*Chameleon zeylanicus*	Indian chamaeleon	Chameleons	LC – II
8.	*Daboia russelii*	Russels viper	Viperidae	LC – III
9.	*Lissemys punctata*	Indian mud turtle	Softshell turtles	LC – IV
10.	*Naja naja*	Indian Cobra	Elapid snakes	LC – II
11.	*Basiliscus vittatus*	Brown basilisk	Corytophanidae	-
12.	*Opheodrys vernalis*	Smooth green snake	Colubridae	LC – IV
13.	*Ptyas mucosus*	Common rat snake	Colubrid Snakes	LC – IV
14.	*Dendrelaphis*	Common Bronzeback	Colubrid Snakes	LC – IV
15.	*Brahminy skink*	Mabuya carinata	Scincidae	LC – II

16.	*Varanus benegaiensis*	Udumbu	Varanidae	LC – IV

TABLE 3.35: LIST OF INSECTS EITHER SPOTTED OR REPORTED FROM THE STUDY AREA

SI. No	Scientific Name	Common Name	Family	Schedule list WLP 1972
1.	*Agrion sp & Petalura sp*	Dragon fly	Anisoptera	LC - IV
2.	*Apis indica*	Honey bee	Apidae	LC - IV
3.	*Aranea sp*	Spider	Crambidae	LC - IV
4.	*Carausius sp*	Stick insect	Lonchodinae	LC - IV
5.	*Coccinella septenpunctata*	Lady bird beetle	Coccinellidae	LC - IV
6.	*Coccinella septempunctat*	Seven-spot ladybird	Coccinellidae	LC - IV
7.	*Therea petiveriana*	Indian domino cockroach	Corydiidae	-
8.	*Hamitermes silvestri*	Termite	----	LC – IV
9.	*Hieroglyphus sp*	Grasshopper	Acrididae	LC – IV
10.	*Praying mantis*	Mantis religiosa	Mantids	LC – IV
11.	*Chrysocoris purpureus*	Blue bug	Scutelleridae	LC – IV
12.	*Scorpion*	Palamnaeus swammerdam	Scorpionoidea	LC – IV
13.	*Centipede*	Scolopendra	House Centipedes	LC – IV
14.	*Cicada sp*	Cicade	Cicadidae	LC – IV
15.	*Coenagrion sp & ischnura*	Damsel fly	Coenagrionidae	LC – IV

TABLE 3.36: LIST OF BUTTERFLIES IDENTIFIED FROM THE PROJECT SITE AND THEIR CONSERVATION STATUS

SI. No	Scientific Name	Common Name	IUCN Conservation Status
1.	*Junonia iphita*	Chocolate pansy	LC
2.	*Junonia orythia*	Blue pansy	LC
3.	*Phalantaphalantha*	Common Leopard	LC
4.	*Acraea terpsicore*	Tawny Coster	LC
5.	*Papiliopolytespolytes*	Common Mormon	LC
6.	*Papiliopolytesromulus*	Common Mormon	LC
7.	*Junonia lemonias*	Lime pansy	LC
8.	*Hypolimnasmisippus*	Danaid Egg fly	LC
9.	*Junoniahierta*	Yellow Pansy	LC
10.	*Junonialemonias*	Lemon Pansy	LC
11.	*Euchrysops pandava*	Plain cupid	LC
12.	*Papiliodemoleusdemoleus*	Lime Butterfly	LC
13.	*Eurema hecabe*	Common grass yellow	LC
14.	*Danaus genutia*	Striped Tiger	LC
15.	*Evereslacturnus*	Indian Cupid	LC
16.	*Euploea core*	Common Crow	LC
17.	*Melanitisledaleda*	Common Evening Brown	LC
18.	*Jamidescelenoceleno*	Common Cerulean	LC
19.	*Danaus chrysippuschrysippus*	Plain Tiger	LC
20.	*Pachlioptaaristolochiae*	Common Rose	LC

(Sources: Species observation in the field study)

Phalanta phalantha

Junonia lemonias

Danaus chrysippus

Junonia iphita

Euploea core

Catopsilia pomona

Hypolimnas misippus

Eurema hecabe

Calotes versicolor

Therea petiveriana

Acridotheres tristis

Alcedo atthis

Basiliscus vittatus

Ceratogomphus pictus

(Sources: Species observation in the field study)

FIGURE 3.24: FAUNA SPECIES OBSERVATION IN THE BUFFER ZONE AREA

3.5.15 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.

3.5.15.1. Objectives of Aquatic Studies

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

3.5.15.2. Macrophytes

The macrophytes observed within the study area are tabulated below.

TABLE 3.37: DESCRIPTION OF MACROPHYTES

Sl. No	Scientific name	Common Name	Vernacular Name (Tamil)	IUCN Red List of Threatened Species
1.	*Eichornia crassipe*	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.	*Carex cruciata*	Cross Grass	Koraipullu	NA
6.	*Cyperus exaltatus*	Tall Flat Sedge	Koraikizhangu	LC

Sources: Species observation in the field study

a. Cross Grass *b. Sambu*

c. Blue water lily *d. Water hyacinth*

(Sources: Species observation in the field study)

FIGURE 3.25: LIST OF AQUATIC PLANTS IN THE STUDY AREA

3.5.16. 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 3.38: AMPHIBIANS OBSERVED/RECORDED FROM THE STUDY AREA

SI. No	Common Name/English Name	Family Name	Scientific Name	Schedule list WLPA 1972	IUCN Red List data
1.	Indian Burrowing frog	Dicroglossidae	*Sphaerotheca breviceps*	Schedule IV	LC
2.	Green pond frog	Dicroglossidae	*Euphlyctis hexadactylus*	Schedule IV	LC
3.	Indian Toad	Bufonidae	*Bufomelanostictus*	Schedule IV	LC
4.	Skipper	Dicroglossidae	*Euphlyctiscynophlyctis*	Schedule IV	LC

*Status assigned by the IUCN, where – CR – Critically Endangered; EN – Endangered; LC – Least Concern; NT – Near Threatened; VU – Vulnerable, DA – Data Deficient, NE – Not Evaluated

3.5.17 Other Aquatic Fauna

3.5.17.1 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, Snakehead murrel, etc.

TABLE 3.39: BASED ON ACTUAL SIGHTING, BASED ON INPUTS FROM LOCALS AND PERUSED FROM SECONDARY DATA

S.No	Common name	Scientific name	Family
1.	Ponthia	*Puntius sophore*	Cyprinidae
2.	Catla	*Catla Catla*	Cyprinidae
3.	Silver scabbardfish	*Lepidopus caudatus*	Trichiuridae
4.	-	*Cyprinus carpio*	Cyprinidae
5.	Catfish	*Siluriformes*	-

6.	Rohu	*Labeo rohita*	Cyprinidae
7.	Eel fish	*Electrophorus electricus*	Gymnotidae
8.	Snakehead murrel	*Channa striata*	-

3.5.18 Conclusion

The observations and assessment of the overall ecological scenario involve details such as classification of Biogeographic zone, eco-region, habitat types, and 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 a better understanding of the situation and overall ecological importance of the area. This baseline information viewed against proposed project activities helps 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, wildlife species etc., and consulted and discussed with local people, from the villages, and farmers who inhabit close to the proposed project area.

3.6 SOCIO ECONOMIC ENVIRONMENT

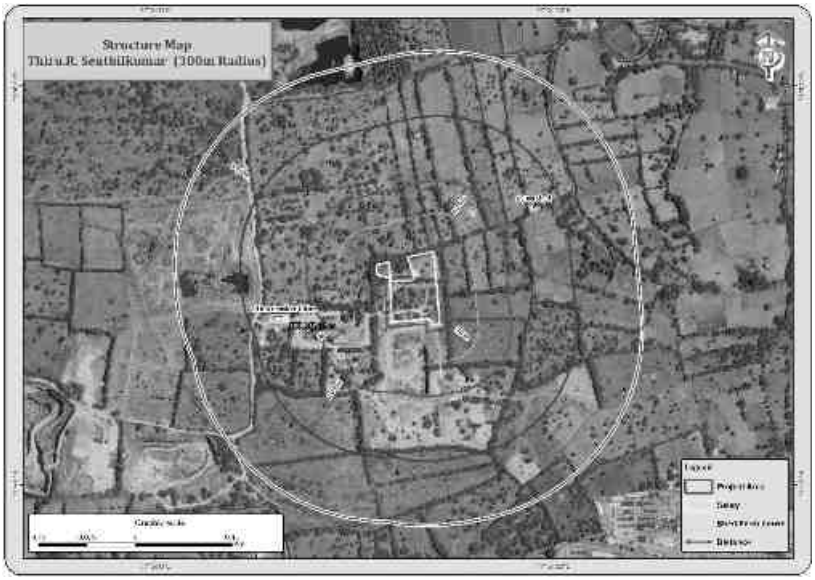
Socio-economic study is an essential part of environmental study. It includes demographic structure of the area, provision of basic amenities viz., housing, education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern as well 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

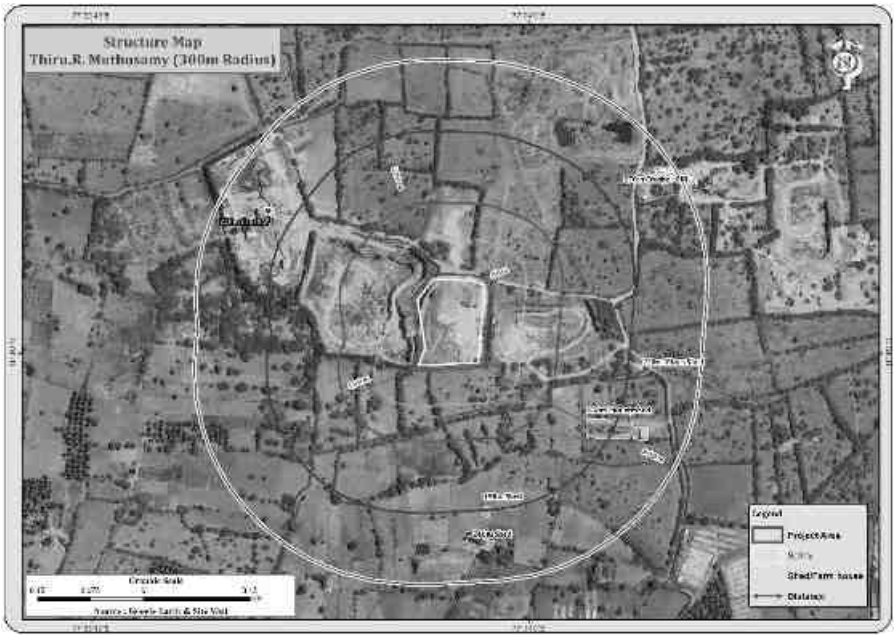
There are few structures within the radius of 500m from the project site, the details of the structures are given below:

FIGURE 3.26: STRUCTURE MAP

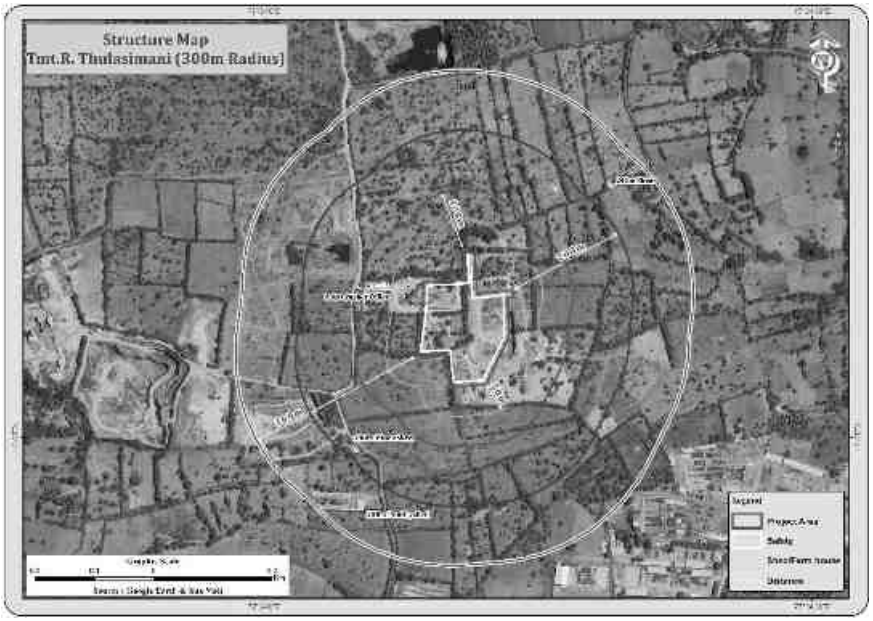
P1



P2


Structure Map
Thiru.R. Muthusamy (300m Radius)

P3


Structure Map
Tmt.R. Thulasimani (300m Radius)

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

Tiruppur District is one of the 38 districts of the Indian state of Tamil Nadu, formed in 22 February 2009. Dharapuram was the largest taluk by area in the district. The district is well-developed and industrialized. The Tiruppur banian industry, the cotton market, Kangeyam bull and Uthukkuli butter, among other things, provide for a vibrant economy.[1] The city of Tiruppur is the administrative headquarters for the district. As of 2011, the district had a population of 2,479,052 with a sex-ratio of 989 females for every 1,000 males.

The district has an area of 5187 sq.km. The southern and south western parts of the district (Dharapuram and Udumalpet) maximum rainfall, due to the surrounding of western ghats. The rest of the district lies in the rain shadow region of the Western Ghats and experiences salubrious climate most parts of the year, except the extreme east part of the district.

Study Area

Detailed socio-economic survey was conducted in the study area (Core and buffer zone) within 10 km radius of the Roughstone and gravel quarry at village: Keeranur Taluk: Kangeyam District: Tiruppur, Tamil Nadu. In order to determine the impact of the proposed project on nature and inhabitant. To get an overview of the villagers and their perspectives about this proposed activity, different demographic parameters and social aspects such population density, sex ratio, literacy rate, worker ratio etc. has been identified, analyzed, studied together.

TABLE 3.40: Shows the socio-economic profile of the study area as compared to district, state and national level socio-economic profile

Particular	India	Tamil Nadu	Tiruppur District	Study Area (10km Radius)
Area (in sq. km.)	3,287,263	130058	5187	318
Population Density/ sq. Km.	368	554	478	300
No. of Households	249454252	13357027	712210	28934

Particular	India	Tamil Nadu	Tiruppur District	Study Area (10km Radius)
Population	1210569573	72147030	2479052	95480
Male	623121843	36137975	1246159	47957
Female	587447730	36009055	1232893	47523
Scheduled Tribes	104281034	794697	5458	44
Scheduled Castes	201378086	14438445	395876	16499
Literacy Rate in %	**73%**	**80%**	**71%**	**75%**
Sex Ratio (Females per 1000 Males)	**943**	**996**	**989**	991

Rough Stone and gravel quarries is located in the Tiruppur district of the State of Tamil Nadu. The total no. of villages observed within the 10 km radius from the project area is 16. Two districts Erode district in Perundurai taluk and Tiruppur district in Kangeyam Taluk falls within the 10 km buffer area. The population as per 2011 Census records is 95,480 (for 10 km radius) and there is total 28,934 households residing within the studied area. Average household size is 3 which is the standard family size in India. Sex ratio of the study area is 991 (females per 1000 males). Total SC and ST population distribution is 16,499 and 44 respectively. The literacy rate in the Study area is observed to be 75.16% The village - wise demographic features of the study area as per area classification

TABLE 3.41: Zone wise Demographic Profile of Study Area

Zone	No. of Villages	Total Household	Total Population	Male Population	%	Female Population	%
Primary Zone (0 - 3 Km)	2	1683	5375	2728	50.75	**2647**	49.25
Secondary Zone (3 - 7 Km)	3	4699	15361	7708	50.18	**7653**	49.82
Tertiary Zone (7 - 10 km)	11	22552	74744	37521	50.20	**37223**	49.80
Study Area (0-10 km)	**16**	**28934**	**95480**	**47957**	**50.23**	**47523**	**49.77**

TABLE 3.42: POPULATIN DATA AROUND 5KM RADIUS

Sno	Name	TRU	No_HH	TOT_P	TOT_M	TOT_F	P_06	M_06	F_06	P_SC	M_SC	F_SC	P_ST	M_ST	F_ST	P_LIT	M_LIT	F_LIT	TOT_WORK_P	MAINWORK_P	MARGWORK_P	NON_WORK_P
0-3km																						
1	Naalroad	Rural	810	2695	1364	1331	212	120	92	765	395	370	5	3	2	1543	872	671	1700	1447	253	995
2	Keeranur	Rural	873	2680	1364	1316	198	103	95	647	331	316	0	0	0	1571	939	632	1732	1677	55	948
			1683	**5375**	**2728**	**2647**	**410**	**223**	**187**	**1412**	**726**	**686**	**5**	**3**	**2**	**3114**	**1811**	**1303**	**3432**	**3124**	**308**	**1943**
3-7km																						
1	Alambadi	Rural	816	2714	1376	1338	198	114	84	731	370	361	1	0	1	1726	980	746	1663	1365	298	1051
2	Sivanmalai	Rural	2377	7927	3972	3955	646	350	296	2010	994	1016	7	4	3	5078	2852	2226	4681	4211	470	3246
3	Ekkattampalayam	Rural	1506	4720	2360	2360	346	184	162	1268	647	621	0	0	0	2818	1606	1212	2984	2936	48	1736
			4699	**15361**	**7708**	**7653**	**1190**	**648**	**542**	**4009**	**2011**	**1998**	**8**	**4**	**4**	**9622**	**5438**	**4184**	**9328**	**8512**	**816**	**6033**
7-10km																						
1	Padiyur	Rural	759	2628	1315	1313	236	126	110	855	432	423	0	0	0	1750	952	798	1436	1234	202	1192
2	Kurukkapalayam	Rural	400	1216	639	577	82	45	37	346	182	164	0	0	0	729	440	289	804	492	312	412
3	Kangeyam (TP)	Urban	9449	32147	16181	15966	2811	1485	1326	3000	1518	1482	23	11	12	24977	13405	11572	15720	14108	1612	16427
4	Karattupalayam	Rural	2419	7835	3935	3900	660	330	330	2314	1142	1172	0	0	0	4362	2507	1855	4891	4691	200	2944
5	Ingur	Rural	1850	5986	3005	2981	512	262	250	1039	529	510	3	1	2	3970	2272	1698	3174	3110	64	2812
6	Kuthampalayam	Rural	414	1364	692	672	118	65	53	702	359	343	0	0	0	698	403	295	789	675	114	575
7	Chennimalai	Rural	820	2604	1298	1306	201	104	97	415	216	199	0	0	0	1636	946	690	1494	1471	23	1110
8	Nanjai Palatholuvu	Rural	74	179	86	93	9	5	4	94	41	53	0	0	0	102	60	42	123	122	1	56
9	Punjai Palatholuvu	Rural	604	1879	944	935	134	76	58	555	289	266	0	0	0	1098	663	435	1176	1174	2	703

10	Basuvapatti	Rural	1081	3406	1715	1691	282	142	140	1255	630	625	0	0	0	2037	1186	851	2090	2052	38	1316
11	Chennimalai (TP)	Urban	4682	15500	7711	7789	1275	663	612	503	255	248	5	4	1	11716	6321	5395	7791	7366	425	7709
		Total	**22552**	**74744**	**37521**	**37223**	**6320**	**3303**	**3017**	**11078**	**5593**	**5485**	**31**	**16**	**15**	**53075**	**29155**	**23920**	**39488**	**29129**	**2993**	**35256**
		G.Total	**28934**	**95480**	**47957**	**47523**	**7920**	**4174**	**3746**	**16499**	**8330**	**8169**	**44**	**23**	**21**	**65811**	**36404**	**29407**	**52248**	**40765**	**4117**	**43232**

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 Tiruppur.

3.6.6 Recommendation and Suggestion

- The main activities in the area are agriculture, quarry operation and Crushing units.
- Due to the project about 38 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

- Cluster Extent 18.78.1 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 Cluster Extent 18.78.1 Ha 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 2500 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
- 2.4 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

P1			
Activity	**Source type**	**Value**	**Unit**
Drilling	Point Source	0.126959640	g/s
Blasting	Point Source	0.007978897	g/s
Mineral Loading	Point Source	0.047815127	g/s
Haul Road	Line Source	0.002514831	g/s/m
Overall Mine	Area Source	0.043174434	g/s
So2	Area Source	0.001988702	g/s
Nox	Area Source	0.000051802	g/s
P2			
Activity	**Source type**	**Value**	**Unit**
Drilling	Point Source	0.105843176	g/s
Blasting	Point Source	0.003213134	g/s
Mineral Loading	Point Source	0.046065287	g/s
Haul Road	Line Source	0.002504663	g/s/m
Overall Mine	Area Source	0.046022211	g/s
So2	Area Source	0.001386264	g/s
Nox	Area Source	0.000044395	g/s
P3			
Activity	**Source type**	**Value**	**Unit**
Drilling	Point Source	0.134857684	g/s
Blasting	Point Source	0.010789292	g/s
Mineral Loading	Point Source	0.049172576	g/s
Haul Road	Line Source	0.002525386	g/s/m
Overall Mine	Area Source	0.061207147	g/s
So2	Area Source	0.002740689	g/s
Nox	Area Source	0.000148320	g/s

FIGURE 4.1: AERMOD TERRAIN MAP

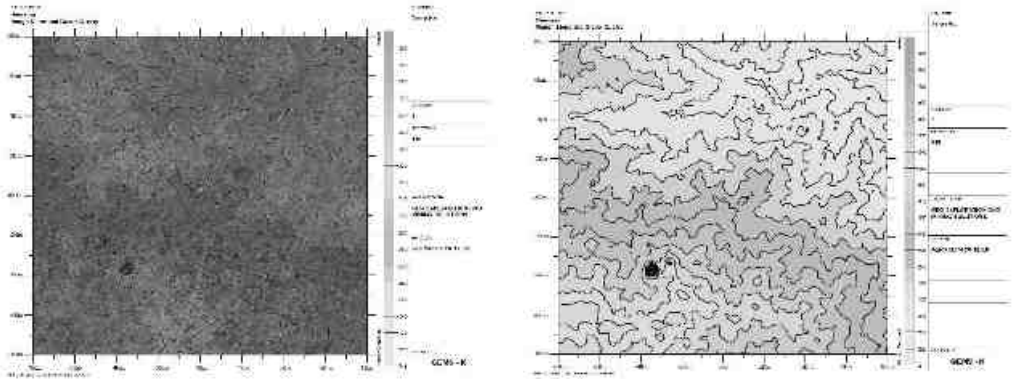


FIGURE 4.2: PREDICTED INCREMENTAL CONCENTRATION OF PM_{10}

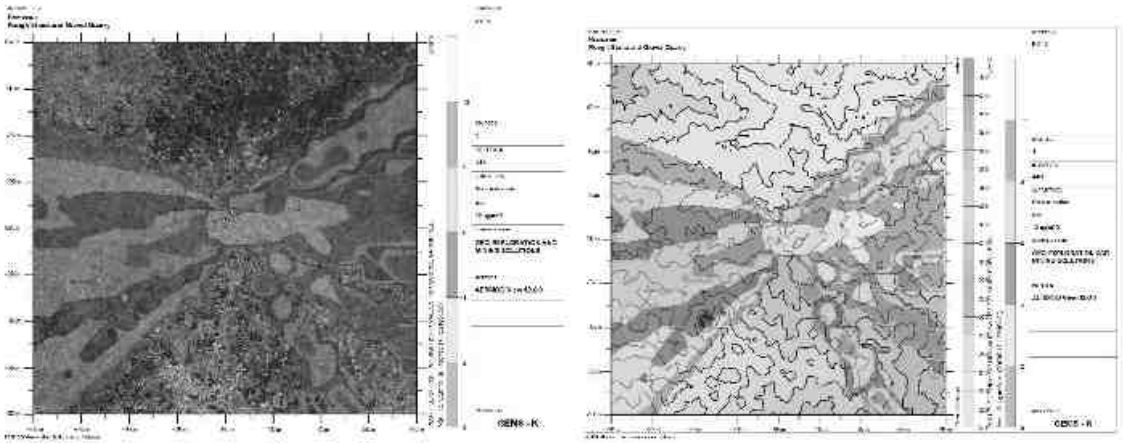


FIGURE 4.3: PREDICTED INCREMENTAL CONCENTRATION OF PM_{25}

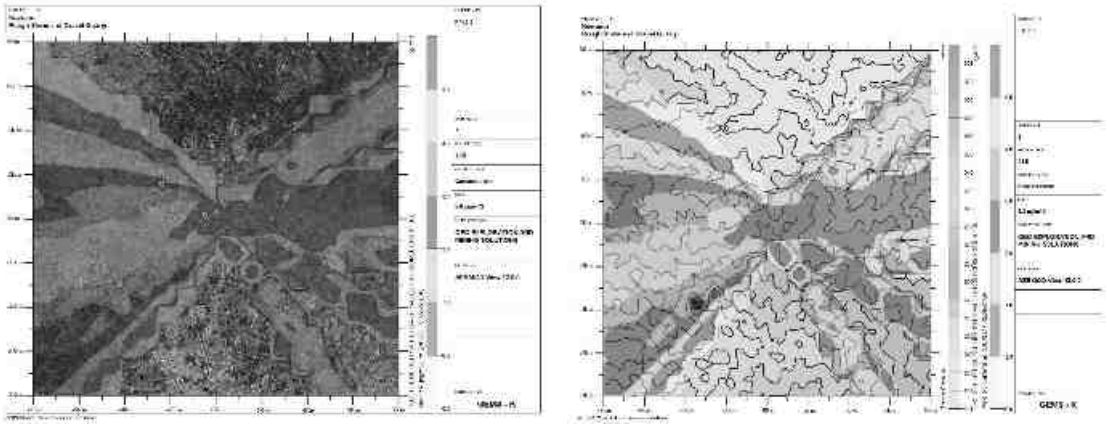


FIGURE 4.4: PREDICTED INCREMENTAL CONCENTRATION OF NO_X

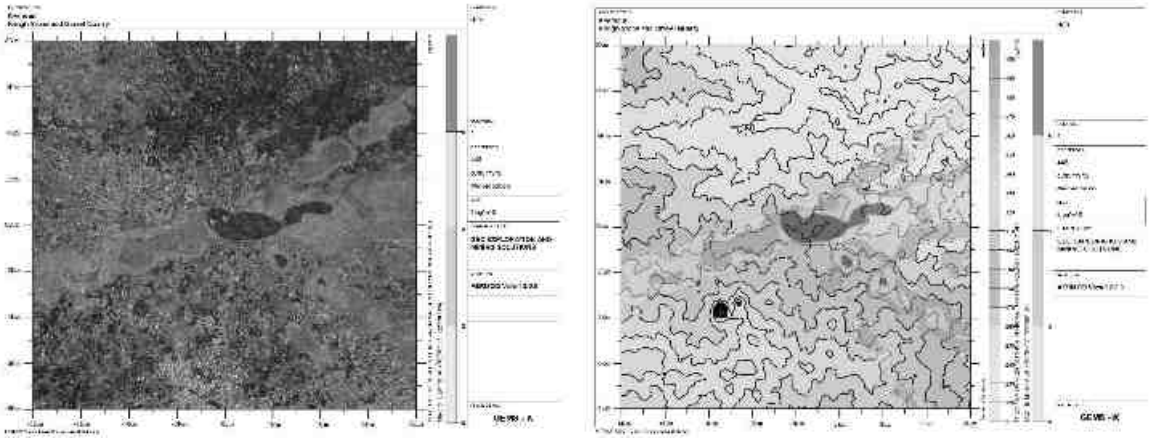


FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF SO2

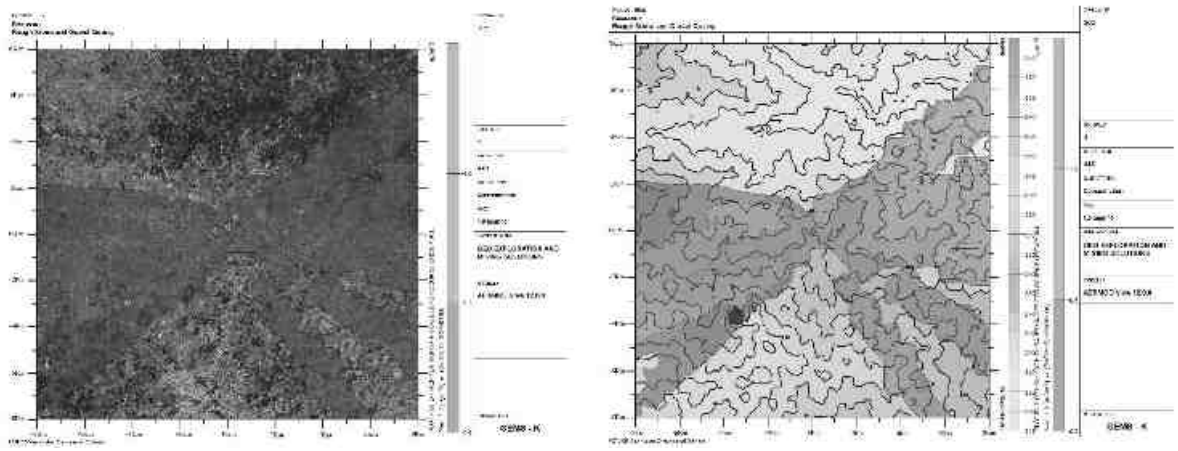
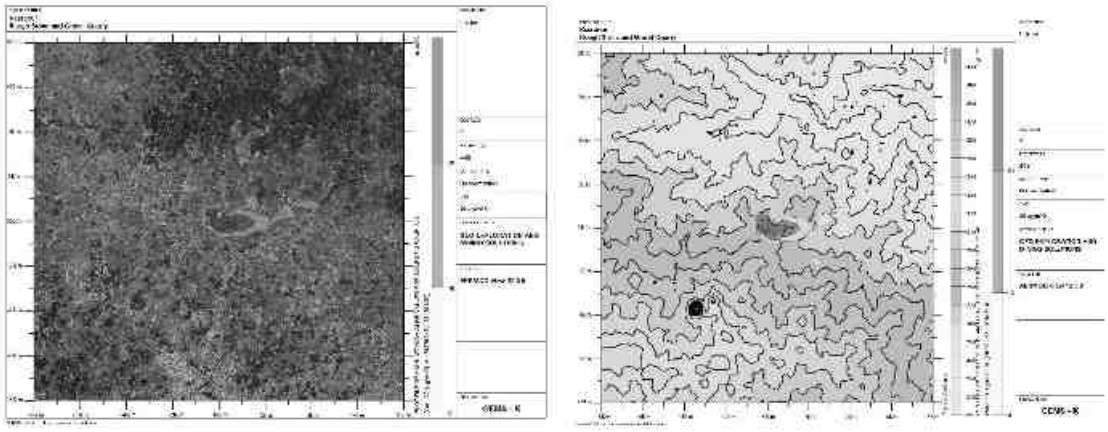


FIGURE 4.5: PREDICTED INCREMENTAL CONCENTRATION OF FUGITIVE



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)	AverageBaselinePM$_{10}$ (µg/m^3)	Incremental value ofPM$_{10}$ due to mining(µg/m^3)	Total PM$_{10}$ (µg/m^3)
AAQ1	11° 4'8.01"N 77°34'13.27"E	15	-48	42.3	12.87	55.17
AAQ2	11° 4'3.38"N 77°33'56.21"E	-504	-186	41.2	12.39	53.59
AAQ3	11° 4'21.49"N 77°34'24.65"E	367	371	42.7	12.20	54.9
AAQ4	11° 4'49.11"N 77°32'55.23"E	-2377	1234	42.6	5.61	48.21
AAQ5	11° 4'29.48"N 77°35'53.09"E	3071	625	42.9	12.70	55.6
AAQ6	11° 1'48.58"N 77°35'53.63"E	3094	-4369	41.9	10.00	51.9
AAQ7	11° 2'22.57"N 77°31'55.73"E	-4201	-3315	42.3	4.80	47.1

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

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline PM$_{2.5}$(µg/m^3)	Incremental value of PM$_{2.5}$ due to mining (µg/m^3)	Total PM$_{2.5}$ (µg/m^3)
AAQ1	11° 4'8.01"N 77°34'13.27"E	15	-48	23.7	5.91	29.61
AAQ2	11° 4'3.38"N 77°33'56.21"E	-504	-186	22.9	5.43	28.33
AAQ3	11° 4'21.49"N 77°34'24.65"E	367	371	21.6	5.21	26.81
AAQ4	11° 4'49.11"N 77°32'55.23"E	-2377	1234	22.6	3.74	26.34
AAQ5	11° 4'29.48"N 77°35'53.09"E	3071	625	21.9	5.65	27.55
AAQ6	11° 1'48.58"N 77°35'53.63"E	3094	-4369	21.6	4.50	26.1
AAQ7	11° 2'22.57"N 77°31'55.73"E	-4201	-3315	21.8	3.27	25.07

TABLE 4.4: INCREMENTAL & RESULTANT GLC OF SO2

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline SO_2 (µg/m^3)	Incremental value due to mining (µg/m^3)	Total SO_2 (µg/m^3)
AAQ1	11° 4'8.01"N 77°34'13.27"E	15	-48	5.2	1.09	6.29
AAQ2	11° 4'3.38"N 77°33'56.21"E	-504	-186	5.2	1.05	6.25
AAQ3	11° 4'21.49"N 77°34'24.65"E	367	371	5.1	1.03	6.13
AAQ4	11° 4'49.11"N 77°32'55.23"E	-2377	1234	5.2	0.39	5.59
AAQ5	11° 4'29.48"N 77°35'53.09"E	3071	625	5.0	1.07	6.07
AAQ6	11° 1'48.58"N 77°35'53.63"E	3094	-4369	5.3	1.00	6.3
AAQ7	11° 2'22.57"N 77°31'55.73"E	-4201	-3315	5.2	0.24	5.44

TABLE 4.5: INCREMENTAL & RESULTANT GLC OF NOX

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline NOx (µg/m^3)	Incremental value due to mining(µg/m^3)	Total NOx (µg/m^3)
AAQ1	11° 4'8.01"N 77°34'13.27"E	15	-48	24.8	6.85	31.65
AAQ2	11° 4'3.38"N 77°33'56.21"E	-504	-186	23.6	6.30	29.9
AAQ3	11° 4'21.49"N 77°34'24.65"E	367	371	22.8	5.79	28.59

AAQ4	11° 4'49.11"N 77°32'55.23"E	-2377	1234	20.7	0	20.7
AAQ5	11° 4'29.48"N 77°35'53.09"E	3071	625	22.6	6.55	29.15
AAQ6	11° 1'48.58"N 77°35'53.63"E	3094	-4369	22.4	3.40	25.8
AAQ7	11° 2'22.57"N 77°31'55.73"E	-4201	-3315	23.0	0	23

TABLE 4.6: INCREMENTAL & RESULTANT GLC OF FUGITIVE

Station Code	Location	X Coordinate (m)	Y Coordinate (m)	Average Baseline NOx ($\mu g/m^3$)	Incremental value due to mining($\mu g/m^3$)	Total NOx ($\mu g/m^3$)
AAQ1	11° 4'8.01"N 77°34'13.27"E	15	-48	62.40	20.00	82.4
AAQ2	11° 4'3.38"N 77°33'56.21"E	-504	-186	63.53	0	63.53
AAQ3	11° 4'21.49"N 77°34'24.65"E	367	371	62.99	0	62.99
AAQ4	11° 4'49.11"N 77°32'55.23"E	-2377	1234	62.44	0	62.44
AAQ5	11° 4'29.48"N 77°35'53.09"E	3071	625	63.14	3.00	66.14
AAQ6	11° 1'48.58"N 77°35'53.63"E	3094	-4369	62.94	0	62.94
AAQ7	11° 2'22.57"N 77°31'55.73"E	-4201	-3315	61.58	0	61.58

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 –

- 2500 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.

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

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.

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

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 48.4dB (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)

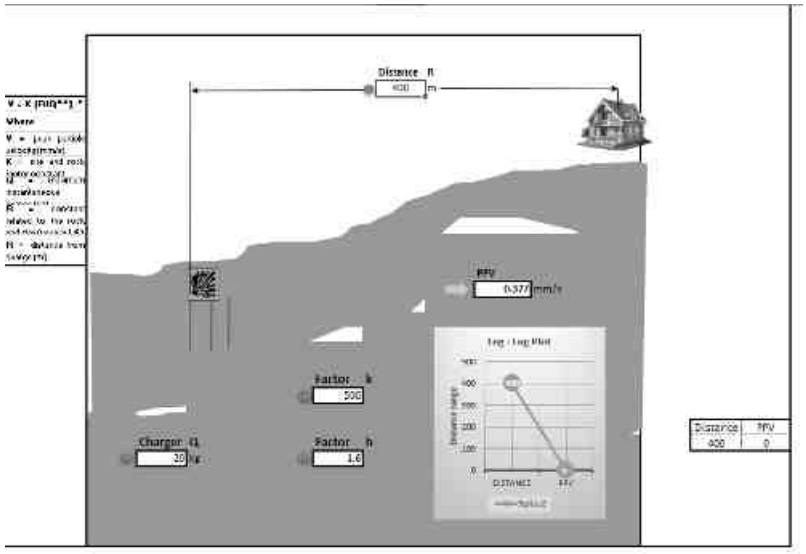
R = distance from charge (m)

TABLE 4.9: PREDICTED PPV VALUES DUE TO BLASTING

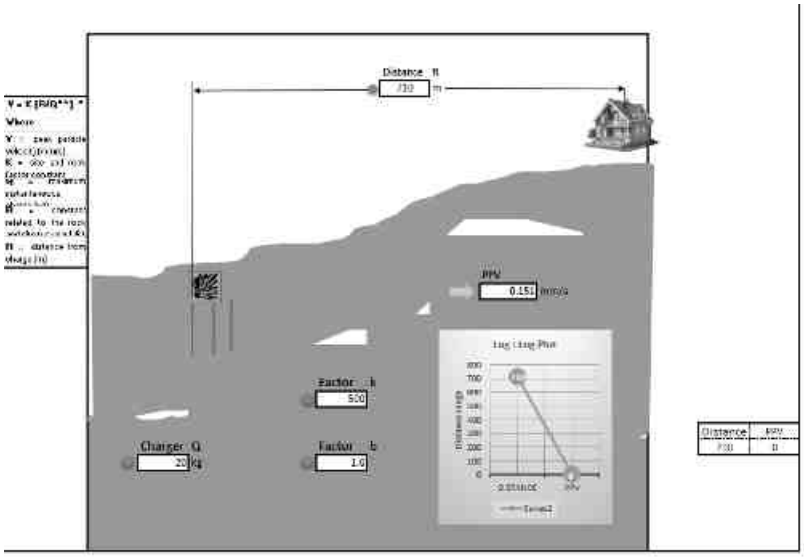
Location ID	Maximum Charge in kgs	Nearest Habitation in m	PPV in mm/s
P1	20	400	0.377
P2	20	710	0.151
P3	20	490	0.273

FIGURE 4.6: GROUND VIBRATION PREDICTION

P1



P2



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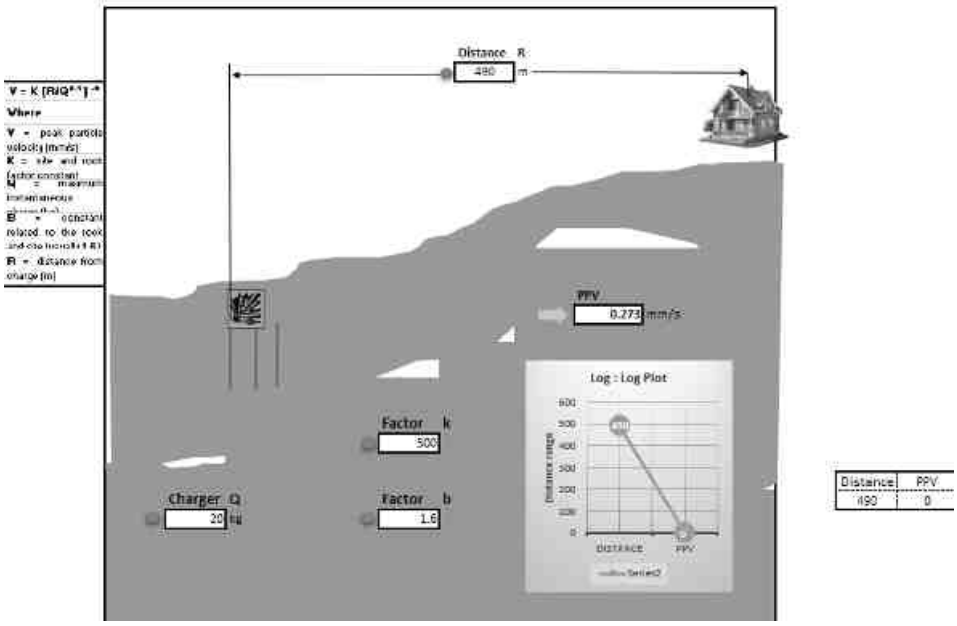


From the above graph, the charge per blast of 20 kg is well below the Peak Particle Velocity of 8 mm/s as per Directorate General of Mines Safety for safe level criteria through Circular No. 7 dated 29/8/1997. But the all the project proponent ensures that the charge per blast shall be carry out blasting 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 20kg 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 2200 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.

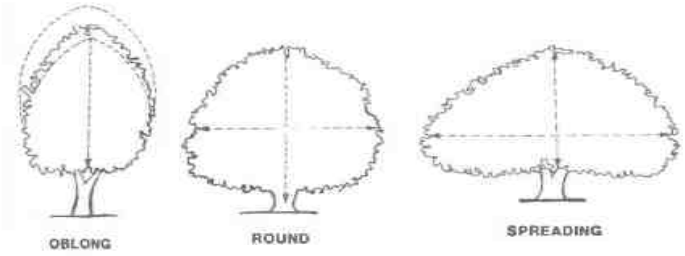
A greenbelt is a set of rows of trees planted in such a fashion, to create an effective barrier between the project and its surroundings. The greenbelt helps to capture fugitive emissions, attenuate the noise levels in the existing project, and simultaneously improve aesthetics of the surroundings.

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 and the life of the mine, 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 , 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)

5.1 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.

- This area denotes the indicative of flow pattern of the rock mass in $N35^0E$ to $S35^0W$ with dipping $SE60^0$.
- Transportation facility for materials & manpower.
- Overall impact on environment and mitigation feasibility.
- Socio – economic background.

Enough infrastructure exists and lesser resources are required to be deployed. Since, any major construction for infrastructure is not required and hence does not affect the environment considerably

5.2 FACTORS BEHIND THE SELECTION OF PROJECT SITE

Keeranur Rough Stone & Gravel Quarries Projects at Keeranur Village is a mining project for excavation of Rough Stone and gravel, 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

5.3 ANALYSIS OF ALTERNATIVE SITE

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

5.4 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.

5.5 ANALYSIS OF ALTERNATIVE TECHNOLOGY

Open cast mechanized method has been selected for this project. This technology is having least gestation period, economically viable, safest and less labour intensive. The method has in built flexibility for increasing or decreasing the production as per market condition. The proposed technology (open cast mining with mechanized excavation and modern dust/noise control measures) represents the most viable and sustainable option for this project.

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.

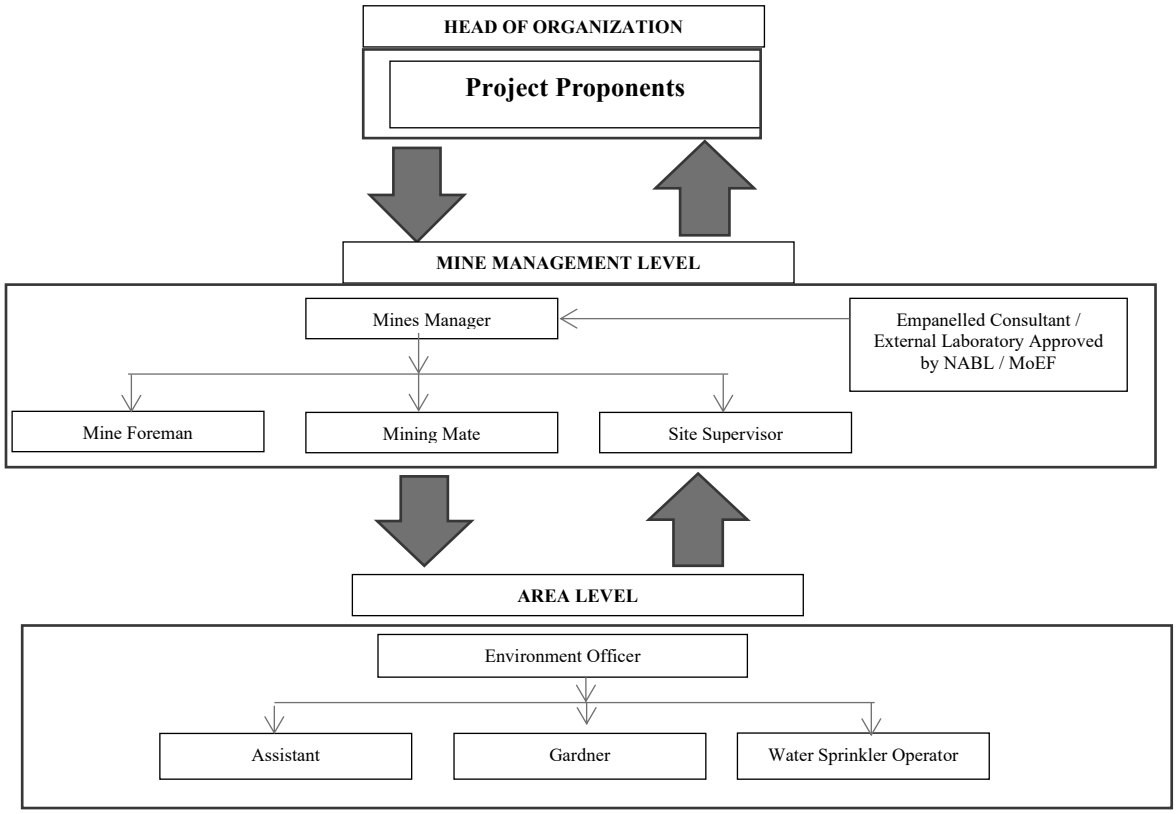
The responsibilities of this cell will be:

- 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 FOR P1 & P2

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

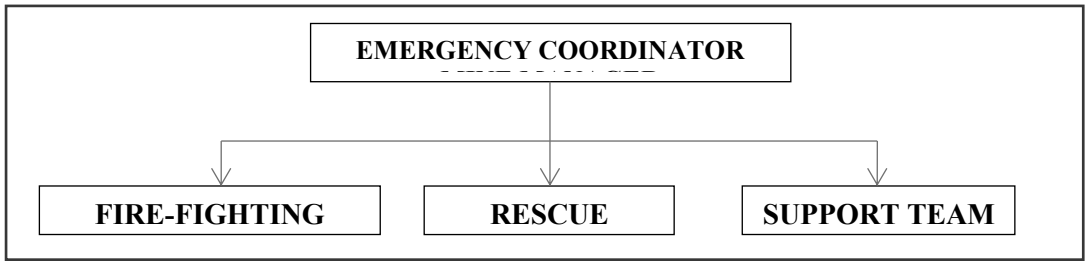
The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities.

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. R.Senthil Kumar**, S/o. Ramasamy No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641663	Keeranur	. 16/2(P) & 16/3 (P)	1.01.10Ha	File No: 12929 ToR Identification No: TO25B0108TN5494983N Dated: 01.12.2025
P2	**Thiru.R.Muthusamy, S**/o. Rangasami Gounder, No. 77, South Street, Morattupalayam, Tiruppur District, Tamil Nadu State – 638 752	Keeranur	71/A	1.31.00	File No: 13011 ToR Identification No: TO25B0108TN5994383N Dated: 06.01.2026
P3	**Tmt.R.Thulasimani,** W/o. P.Ramasamy, No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641663	Keeranur	16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part),	2.22.00	File No: 13527 ToR Identification No: TO26B0108TN5645147N Dated: 15.04.2026
P4	P.Ramasamy	Keeranur	15,16/3	4.30.00	Applied for lease
P5	M.Manoharan	Keeranur	24/C2	2.27.50	Applied for lease
P6	M/s.Empire Mines Pvt Ltd	Keeranur	50(P)	3.16.50	Applied for lease
	TOTAL EXTENT			**14.28.1**	
EXISTING QUARRY					
E-1	K.Thangavelu	Keeranur	70/A2, 70/B2, 70/C2 (P)	1.43.0Ha	11.05.2022 – 10.05.2027
E-2	R.Muthusamy		66/1, 66/2	3.07.0 Ha	10.11.2022-09.11.2027
	TOTAL EXTENT			**4.50.0 Ha**	
EXPIRED QUARRY					
EX-1	P.Ramasamy	Keeranur	15(P),16/3(P)	1.21.00 Ha	28.08.2020 to 27.08.2025
	TOTAL CLUSTER EXTENT			**18.78.1 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. R.Senthil Kumar Rough stone and Gravel quarry		
S.F. No.	16/2(P) & 16/3 (P)		
Extent	1.01.10 Ha		
Village Taluk and District	Keeranur Village, Kangeyam Taluk, Tiruppur District		
Land Type	It is a Patta land – Punjai, jointly registered in the name of (Thiru . R.Senthil Kumar and Tmt.Thulasimani) vide patta no.184 and Thiru. Ramasamy Vide patta No.3387. The applicant has obtained consent from the pattadars		
Toposheet No	58 – E/12		
Latitude between	11° 04'07.6645"N to 11° 04' 12.0097‘’N		
Longitude between	77° 34' 10.8364"E to 77° 34' 14.5777"E		
Elevation of the area	297m AMSL		
Mining Plan period	10 Years		
Proposed Depth of Mining	28m bgl		
	Rough Stone in m^3	**Weathered Rock in m^3**	**Gravel in m^3**
Geological Resources	2,52,750	10,110	20,220
Mineable Reserves	72,250	5,915	11,830
Year wise Production	72,250	5,915	11,830
Peak Production	13,650	2,465	4,930
Ultimate Pit Dimension	XY-AB : 17 (m) x 16 (W) x 8m BGL (D) XY-CD : 30 (m) x 34 (W) x 13m BGL (D) X1Y1-EF : 67 (m) x 69(W) x 28m BGL (D)		
Water Level in the region	110m 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 plain topography. The area has gentle sloping towards North side and altitude of the area is 297m (max) above Mean Sea level. The area is covered by 2m thickness of Gravel and 2m thickness of weathered rock. Massive Charnockite is found after 4m (Gravel + Weathered Rock) which is clearly inferred from the existing quarry pit.		
Machinery proposed	Hand Jack Hammer	2 Nos	
	Compressor	1 No	
	Excavator with Bucket and Rock Breaker	1Nos	
	Tippers	2 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	20 Nos		
Project Cost	Rs. 73,81,000/-		
CER Cost	Rs. 3,00,000/-		
Nearby Water Bodies	Vaikkal	270m South	

	Lower Bhavani Main Canal	3.5km North
	Noyyal River	4.6km NW
	Orathupalayam Dam	5.2km NW
Greenbelt Development Plan	Proposed to plant 500 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	1.8 KLD	
Nearest Habitation	400m – North East	
Nearest Reserve Forest	Chennimalai R.F. – 8.9km – North	
Nearest Wild Life Sanctuary	Nanjarayan Lake Birds Sanctuary – 20.50km – NW	

TABLE 7.5A: SALIENT FEATURES OF PROPOSAL "P2"

Name of the Project	Thiru. R.Muthusamy Rough stone and Gravel quarry	
S.F. No.	71/A	
Extent	1.31.0 Ha	
Village Taluk and District	Keeranur Village, Kangeyam Taluk, Tiruppur District	
Land Type	It is a Patta land – registered in the name of applicant Thiru.R.Muthusamy Vide Patta no.417	
Toposheet No	58 – E/12	
Latitude between	11° 03'58.99"N to 11° 04' 03.61‘’N	
Longitude between	77° 33' 54.51"E to 77° 33' 58.17"E	
Elevation of the area	280m AMSL	
Mining Plan period	10 Years	
Proposed Depth of Mining	34m bgl	
	Rough Stone in m^3	**Gravel in m^3**
Geological Resources	6,55,000	52,400
Mineable Reserves	1,08,351	36,652
Year wise Production	1,08,351	36,652
Peak Production	31,051	18,172
Ultimate Pit Dimension	119m (L) x 77m(W) x 34m(D) BGL	
Water Level in the region	110m 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 situated in flat terrain. The area has gentle sloping towards Southern side and altitude of the area is 280m (max) above Mean Sea level. The area is covered by 4m thickness of Gravel. Massive Charnockite is found which is clearly inferred from the existing quarry pit.	
Machinery proposed	Hand Jack Hammer	4 Nos
	Compressor	1 No
	Excavator with Bucket and Rock Breaker	1Nos
	Tippers	2 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	24 Nos	
Project Cost	Rs. 1,38,28,000/-	
CER Cost	Rs. 3,00,000/-	
Nearby Water Bodies	Vaikkal	110m NE
	Lower Bhavani Main Canal	3.8km North
	Noyyal River	4.7km NW
	Orathupalayam Dam	5.3km NW
Greenbelt Development Plan	Proposed to plant 700 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	710m – West	
Nearest Reserve Forest	Chennimalai R.F. – 9.2km – North	
Nearest Wild Life Sanctuary	Vellode Birds Sanctuary – 21.7km – North East	

TABLE 7.5B: SALIENT FEATURES OF PROPOSAL "P3"

Name of the Project	Tmt. R. Thulasimani Rough stone and Gravel quarry	
S.F. No.	16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part),	
Extent	2.22.0 Ha	
Village Taluk and District	Keeranur Village, Kangeyam Taluk, Tiruppur District	
Land Type	It is a Patta land – Consent has been obtained from the respective Pattadars	
Toposheet No	58 – E/12	
Latitude between	11°04'02.68"N to 11°04'10.27"N	
Longitude between	77°34'08.29"E to 77°34'13.60"E	
Elevation of the area	297m AMSL	
Mining Plan period	5 Years	
Proposed Depth of Mining	49m bgl	
	Rough Stone in m^3	**Gravel in m^3**
Geological Resources	8,54,636	51,236
Mineable Reserves	2,42,962	35,564
Year wise Production	2,42,962	35,564
Peak Production	56,600	15,128
Ultimate Pit Dimension	XY-AB: 107m (L) X 61m (W) X 49m (D) X1Y1-AB: 100m (L) X 76m (W) X 49m (D) X1Y1-CD: 37m (L) X 62m (W) X 24m (D)	
Water Level in the region	110m 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 situated in flat terrain. The area has gentle sloping towards Southern side and altitude of the area is 280m (max) above Mean Sea level. The area is covered by 4m thickness of Gravel. Massive Charnockite is found which is clearly inferred from the existing quarry pit.	
Machinery proposed	Hand Jack Hammer	7 Nos
	Compressor	2 No
	Excavator with Bucket and Rock Breaker	1Nos
	Tippers	2 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	29 Nos	
Project Cost	Rs. 98,78,000/-	
CER Cost	Rs. 3,00,000/-	
Nearby Water Bodies	Vaikkal	110m NE
	Lower Bhavani Main Canal	3.8km North
	Noyyal River	4.7km NW
	Orathupalayam Dam	5.3km NW
Greenbelt Development Plan	Proposed to plant 1200 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	5.0 KLD	
Nearest Habitation	490m – NE	
Nearest Reserve Forest	Chennimalai R.F. – 8.9 km – North East	
Nearest Wild Life Sanctuary	Nanjarayan Lake Birds Sanctuary – 20.5 km – NW Vellode Birds Sanctuary – 21.4 km – North East	

TABLE 7.6: SALIENT FEATURES OF PROPOSAL "E1"

Name of the Quarry	Thiru.K.Thangavelu Rough stone and Gravel Quarry	
S.F.No	70/A2, 70/B2, 70/C2 (P)	
Extent	1.43.0 Ha	
Toposheet No	58-E/12	
Latitude between	11°03'59.27"N to 11°04'03.16"N	
Longitude between	77°33'57.87"E to 77°34'03.54"E	
Proposed Depth of Mining	42m BGL	
Mineable Reserves	Rough Stone in m^3	Gravel m^3
	1,17,756	9,646
Year wise production details	Rough Stone in m^3	Gravel m^3
	1,17,756	9,646
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	19 Nos	
Project Cost	Rs. 45.95 lakhs	
CER Cost	Rs. 5,00,000/-	
Greenbelt Development Plan	715 trees in the 7.5 m Safety Zone and approach road	
Proposed Water Requirement	2.0 KLD	

Source: Approved Mining Plan

TABLE 7.7: SALIENT FEATURES OF PROPOSAL "E2"

Name of the Quarry	Thiru.R.Muthusamy Rough stone and Gravel Quarry	
S.F.No	66/1 & 66/2	
Extent	3.07.0 Ha	
Toposheet No	58 E/12	
Latitude between	11°03'59.04"N to 11°04'06.38"N	
Longitude between	77°33'49.11"E to 77°33'55.55"E	
Proposed Depth of Mining	27m BGL	
Mineable Reserves	Rough Stone in m^3	Gravel m^3
	2,23,825	37,886
Proposed production for five years plan period	Rough Stone in m^3	Gravel m^3
	2,23,825	37,886
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	30 Nos	
Project Cost (excluding EMP cost)	Rs.14,81,000/-	
CER Cost	Rs.5,80,000/-	
Greenbelt Development Plan	1535 trees in the 7.5 m Safety Zone and approach road	
Proposed Water Requirement	2.5 KLD	

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	Per Year Production in m^3	Per Day Production in m^3	Number of Lorry Load Per Day
P1(Ten Years)	72,250	7225	24	2
P2(Ten Years)	1,08,350	10,835	36	3
P3(Five Years)	2,42,962	48,592	161	13
P4	-	-	-	-
P5				
Total	**4,23,562**	**66,652**	**221**	**18**
E1(Five Years)	1,17,756	23551	79	7
E2(Five Years)	2,23,825	44765	149	12
Total	**3,41,581**	**68,316**	**228**	**19**
Grand Total	**7,65,143**	**1,34,968**	**449**	**37**

TABLE 7.8A: CUMULATIVE PRODUCTION LOAD OF WEATHERED ROCK

Quarry	Year wise production	Per Year Production in m^3	Per Day Production in m^3	Number of Lorry Load Per Day
P1(Three Years)	5,915	1,972	7	1
P2	-	-	-	-
P3	-	-	-	-
P4	-	-	-	-
Total	**5,915**	**1,972**	**7**	**1**
E1	-	-	-	-
E2	-	-	-	-
Total	-	-	-	-
Grand Total	**5,915**	**1,972**	**7**	**1**

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(Three Years)	11,830	3,943	13	1
P2(Three Years)	36,652	12,217	40	3
P3	35,564	11,854	39	3
P4	-	-	-	-
P5	-	-	-	-
Total	**84,046**	**28,014**	**92**	**7**
E1(Three Years)	9,646	3215	10	1
E2(Three Years)	37,886	12628	42	4
Total	**47,532**	**15,843**	**52**	**6**
Grand Total	**1,31,578**	**43,857**	**144**	**13**

On a cumulative basis considering the proposed quarries, it can be seen that the overall production of Rough Stone is 449 m^3 per day with a capacity of 37 trips of Rough Stone per day and Gravel/Topsoil is 144m^3 per day with a capacity of 13 trips 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

P1			
Activity	**Source type**	**Value**	**Unit**
Drilling	Point Source	0.126959640	g/s
Blasting	Point Source	0.007978897	g/s
Mineral Loading	Point Source	0.047815127	g/s
Haul Road	Line Source	0.002514831	g/s/m
Overall Mine	Area Source	0.043174434	g/s
So2	Area Source	0.001988702	g/s
Nox	Area Source	0.000051802	g/s
P2			
Activity	**Source type**	**Value**	**Unit**
Drilling	Point Source	0.105843176	g/s
Blasting	Point Source	0.003213134	g/s
Mineral Loading	Point Source	0.046065287	g/s
Haul Road	Line Source	0.002504663	g/s/m
Overall Mine	Area Source	0.046022211	g/s
So2	Area Source	0.001386264	g/s
Nox	Area Source	0.000044395	g/s
P3			
Activity	**Source type**	**Value**	**Unit**
Drilling	Point Source	0.134857684	g/s
Blasting	Point Source	0.010789292	g/s
Mineral Loading	Point Source	0.049172576	g/s
Haul Road	Line Source	0.002525386	g/s/m
Overall Mine	Area Source	0.061207147	g/s
So2	Area Source	0.002740689	g/s
Nox	Area Source	0.000148320	g/s

Source: Emission Calculation

TABLE 7.11: INCREMENTAL & RESULTANT GLC WITHIN CLUSTER

PM_{10} in µg/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.

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

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.

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

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	46.1	37.8	46.7	
P3	48.6	43.2	49.7	
E1	47.5	43.8	49.1	
E2	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	400m NE
P2	710m W
P3	490m NE

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	400	0.377
P2	20	710	0.151
P3	20	490	0.273

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. 73,81,000/-	Rs. 3,00,000/-
P2	Rs. 1,38,28,000	Rs. 3,00,000/-
P3	Rs. 98,78,000/-	Rs. 3,00,000/-
Total	**Rs. 3,10,87,000/-**	**Rs. 9,00,000/-**

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	20
P2	24
P3	29
Total	**73**

A total of 73 people will get employment due to 3 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	500	The safety zone along the boundary barrier has been identified to be utilized for Greenbelt development	Neem, Pongamia pinnata, Casuarina, etc.,
P2	700		
P3	1200		
Total	**2,400**		
E1	715		
E2	1535		
Total	**2,250**		
G. Total	**4,650**		

For the proposed mining plan 2,400 Nos of trees will be planted around lease area and approach road and 2,250 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 5 Proposed quarries and 2 Existing quarries total extent of the cluster is 18.78.1 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. R.Senthil Kumar**, S/o. Ramasamy No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641663	Keeranur	. 16/2(P) & 16/3 (P)	1.01.10Ha	File No: 12929 ToR Identification No: TO25B0108TN5494983N Dated: 01.12.2025
P2	**Thiru.R.Muthusamy, S**/o. Rangasami Gounder, No. 77, South Street, Morattupalayam, Tiruppur District, Tamil Nadu State – 638 752	Keeranur	71/A	1.31.00	File No: 13011 ToR Identification No: TO25B0108TN5994383N Dated: 06.01.2026
P3	**Tmt.R.Thulasimani,** W/o. P.Ramasamy, No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641663	Keeranur	16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part),	2.22.00	File No: 13527 ToR Identification No: TO26B0108TN5645147N Dated: 15.04.2026
P4	P.Ramasamy	Keeranur	15,16/3	4.30.00	Applied for lease
P5	M.Manoharan	Keeranur	24/C2	2.27.50	Applied for lease
P6	M/s.Empire Mines Pvt Ltd	Keeranur	50(P)	3.16.50	Applied for lease
	TOTAL EXTENT			**14.28.1**	
EXISTING QUARRY					
E-1	K.Thangavelu	Keeranur	70/A2, 70/B2, 70/C2 (P)	1.43.0Ha	11.05.2022 – 10.05.2027
E-2	R.Muthusamy		66/1, 66/2	3.07.0 Ha	10.11.2022-09.11.2027
	TOTAL EXTENT			**4.50.0 Ha**	
EXPIRED QUARRY					
EX-1	P.Ramasamy	Keeranur	15(P),16/3(P)	1.21.00 Ha	28.08.2020 to 27.08.2025
	TOTAL CLUSTER EXTENT			**18.78.1 Ha**	

STANDARD OPERATING PROCEDURE FOR KEERANUR 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 Projects for Quarrying Rough Stone and Gravel at Keeranur Village aims to produce (72,250m^3 Rough Stone-P1) (1,08,350m^3 Rough Stone-P2) (2,42,962 m^3 Rough Stone – P3)over a period of 10/5 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 73 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 quarries are located in Keeranur Village, Kangeyam Taluk, Tiruppur 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 Keeranur 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 quarries 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.

Proponents 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 FOR P1 – P3

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. R.Senthil Kumar

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. R.Senthil Kumar 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

10.3 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 28m BGL, the water table in the area is 110m 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 500nos. 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		0	5000

		Lump sum fund allocation Manual Monitoring through Security guard		
	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 / Compentent 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 Scheme period (150 Saplings)	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 check up for workers will be provisioned	IME & PME Health check up 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
	Control Dust and Fly rocks to the nearby structures	Erection of GI Sheet fencing on o the project site	150000	10000
CER	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Lumpsum fund allocation	300000	0
TOTAL			**7,10,000**	**3,12,000**

Year Wise Break Up	
I Year	₹ 10,22,000/-
II Year	₹ 3,27,600/-
III Year	₹ 3,43,980/-
IV Year	₹ 3,61,179/-
V Year	₹ 3,79,238/-
VI Year	₹ 3,98,200/-
VII Year	₹ 4,18,110/-
VIII Year	₹ 4,39,015/-
IX Year	₹ 4,60,966/-
X Year	₹ 4,84,014/-
Total	**₹ 46 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.

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10.ENVIRONMENTAL MANAGEMENT PLAN – Thiru. R.Muthusamy

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. R.Muthusamy 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

10.3 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

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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 34m BGL, the water table in the area is 110m 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
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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
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- 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.

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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 / Compentent 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 Scheme period (150 Saplings)	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 check up for workers will be provisioned	IME & PME Health check up 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
	Control Dust and Fly rocks to the nearby structures	Erection of GI Sheet fencing on the side of the project site	150000	10000

	Slope stability action plan	Slope stability action plan in the end of fourth year plan period	200000	0
CER	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Lumpsum fund allocation	300000	0
TOTAL			**9,10,000**	**3,12,000**

Year Wise Break Up	
I Year	₹ 12,22,000
II Year	₹ 3,27,600
III Year	₹ 3,43,980
IV Year	₹ 3,61,179
V Year	₹ 3,79,238
VI Year	₹ 3,98,200
VII Year	₹ 4,18,110
VIII Year	₹ 4,39,015
IX Year	₹ 4,60,966
X Year	₹ 4,84,014
Total	**₹ 48 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.

10.ENVIRONMENTAL MANAGEMENT PLAN – Tmt. R. Thulasimani

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 Tmt. R. Thulasimani 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

10.3 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 49m BGL, the water table in the area is 110m 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 1200nos. 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
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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.
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- 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.

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	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 / Compentent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
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Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	5000	20000
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	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
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	Appointment of Competent person for ensuring the safety operation	Provision made in operational cost	0	0
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CER	As per MoEF &CC OM 22-65/2017-IA.III Dated 25.02.2021	Lumpsum fund allocation	300000	0
TOTAL			**9,10,000**	**3,12,000**

Year Wise Break Up	
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Total	**₹ 26 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 Keeranur Rough Stone and Gravel Quarries project located in Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu State, The Project falls in the Cluster category consist of 5 Proposed & 2 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 December 2025 – February 2026 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 73 people directly in the proposed projects and indirectly around 150 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 Keeranur Rough Stone and Gravel Cluster Quarries (Cluster Extent 18.78.1 ha).

12. DISCLOSURE OF CONSULTANT

The Project Proponent's

- Thiru.R.Senthil Kumar
- Thiru.R.Muthusamy
- Tmt.R.Thulasimani

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:

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	**Dr. M. Ifthikhar Ahmed**	**In-house**	**1** **38**	**A** **B**	WP GEO SC	A A A
2	Dr. P. Thangaraju	In-house	**1**	**A**	HG GEO	A A
3	Mr. N. Senthilkumar	Empanelled	**31** **38**	**A** **B**	AQ WP RH	A B A
4	Mr. J. R. Vikram Krishna	Empanelled	**1** **38**	**A** **B**	SHW RH NV	A A A
5	Mr. A. Jagannathan	In-house	**-**	**-**	AP NV SHW	A A B
6	Mrs. Jisha parameswaran	In-house	-	**-**	SW	B
7	Mr. Govindasamy	In-house	-	**-**	WP	B
8	Mr. Panneer Selvam	In-house	-	**-**	EB	B
9	Mr. A. Allimuthu	In-house	-	**-**	LU	B
10	Dr. T. Sasikala	Empanelled	-	**-**	SE	B

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

DECLARATION BY EXPERTS CONTRIBUTING TO THE EIA/EMP

Declaration by experts contributing to the EIA/EMP for Keeranur Rough Stone & Gravel Quarries over an Cluster Extent of **18.78.1 ha** in Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu State. 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**:** **Dr. M. Ifthikhar Ahmed**

Designation**:** **EIA Coordinator**

Date & Signature:

Period of Involvement: **August 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. A. Jagannathan	
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.	Dr. M. Ifthikhar Ahmed	
3	HG	▪ Interpretation of ground water table and predict impact and propose mitigation measures. ▪ Analysis and description of aquifer Characteristics	Dr. P. Thangaraju	
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.	Dr. P. Thangaraju	
5	SE	▪ Revision in secondary data as per Census of India, 2011. ▪ Impact Assessment & Preventive Management Plan ▪ Corporate Environment Responsibility.	Dr. T. Sasikala	
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. 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	Mr. A. Allimuthu	

		▪ Suggesting post closure sustainable land use and mitigative measures.		
9	NV	▪ Identify impacts due to noise and vibrations ▪ Suggesting appropriate mitigation measures for EMP.	Mr. A. Jagannathan	
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	Dr. M. Ifthikhar Ahmed	
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	

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 above-mentioned Functional Area Experts and Team Members prepared this EIA/EMP for Keeranur Rough Stone & Gravel Quarries Project over an Cluster Extent of 18.78.1 ha in Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State. 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/RA 0424 Dated: 25-08-2025**

Validity: **Valid till 06.08.2028**

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ANNEXURE

KEERANUR CLUSTER QUARRIES ROUGH STONE AND GRAVEL

P1	P2	P3
Thiru.R. Senthil Kumar, S/o. Ramasamy No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641663	Thiru.R.Muthusamy S/o. Rangasami Gounder, No. 77, South Street, Morattupalayam, Tiruppur District, Tamil Nadu State – 638 752.	Tmt. R. Thulasimani, W/o. P. Ramasamy, No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641 663.
S.F. No. 16/2(P) & 16/3 (P) Extent :1.01.10 ha	S.F.No. 71/A Extent: 1.31.0 ha	S.F.No. 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part), Extent: 2.22.0 ha
Keeranur Village, Kangeyam Taluk, Tiruppur District		

ToR obtained vide

File No.12929 TOR Identification No. TO25B0108TN5494983N Dated: 01.12.2025-P1
File No.13011 TOR Identification No. TO25B0108TN5994383N Dated: 06.01.2026-P2
File No.13527 TOR Identification No. TO26B0108TN5465147N Dated: 15.04.2026-P3

LIST OF ANNEXURES

ANNEXURES	DESCRIPTION	PAGE NOS
P1- R. Senthilkumar	COPY OF TERMS OF REFERENCE	1A-22A
	COPY OF 500M RADIUS QUARRIES DETAILS LETTER	23A-24A
	COPY OF MINING PLAN APPROVED LETTER	25A-26A
	COPY OF APPROVED MINING PLAN WITH PLATES	27A-102A
	COPY OF 300m LETTER	103A-104A
P2- R. Muthusamy	COPY OF TERMS OF REFERENCE	105A-125A
	COPY OF 500M RADIUS QUARRIES DETAILS LETTER	126A-127A
	COPY OF MINING PLAN APPROVED LETTER	128A-131A
	COPY OF APPROVED MINING PLAN WITH PLATES	132A-209A
P3- Thulasimani	COPY OF TERMS OF REFERENCE	210A-229A
	COPY OF 500M RADIUS QUARRIES DETAILS LETTER	230A-232A
	COPY OF MINING PLAN APPROVED LETTER	233A-234A
	COPY OF APPROVED MINING PLAN WITH PLATES	235A-310A
E1- R. Muthusamy	COPY OF ENVIRONMENTAL CLEARANCE	311A-337A
E2-K. Thangavelu	COPY OF ENVIRONMENTAL CLEARANCE	338A-360A
	COPY OF INSPECTION REPORT	361A-579A
	COPY OD BASELINE MONITORING REPORT	580A-608A
	COPY OF CONSULTANT ACCREDITATION CERTIFICATE	609A

File No: 12929
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)
***

Dated: **01/12/2025**

To,

Thiru.R. Senthilkumar
No. 3/111, Palladam Road, Mangalam, Tiruppur District, TAMIL NADU- 641663
2685rsk@gmail.com

Subject: Grant of Terms of Reference along with Public Hearing (ToR) under the provision of the EIA Notification 2006-regarding.

Sir/Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference along with Public Hearing (ToR) for the Proposed Rough Stone and Gravel Quarry over an extent of 1.01.10 Ha at S.F. No. 16/2 (P) & 16/3(P) of Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu by Thiru. R. Senthilkumar – "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/556339/2025, Dated: 30/10/2025.
2. Minutes of the 642nd Meeting of SEAC held on 13.11.2025.
3. Minutes of the 924th Meeting of Authority held on 27.11.2025.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO25B0108TN5494983N
(ii) File No.	12929
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Rough Stone and Gravel Quarry Project Belongs to R. Senthilkumar
(viii) Name of Company/Organization	R SENTHILKUMAR
(ix) Location of Project (District, State)	TIRUPPUR, 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 **27.11.2025** The minutes of the meeting and all the Application and documents submitted [(viz. Form-1 Part A, Part B,] are available on PARIVESH portal which can be accessed by scanning the QR Code above.

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

4.The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal of **Thiru. R. Senthilkumar** 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 Additional Chief Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Natural Resources Department, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1st& 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai – 34.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chair Person, TNPC Board,76, Mount Salai, Guindy, Chennai-32.
7. The District Collector, Tiruppur District.
8. The Commissioner of Geology and Mines, Guindy, Chennai-32.
9. Assistant Director, Department of Geology & Mining, Tiruppur District.
10. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
11. File Copy.

Annexure 1

Specific Terms of Reference s for (Mining Of Minerals)

1. Seac Conditions - Site Specific

S. No	Terms of Reference
1.1	**Major Condition:** 1. The Project Proponent shall remove the waste dump at the site which was observed from the KML and furnish photographic/videographic evidence of the same, along with the EIA report. 2. The Project Proponent has furnished consent obtained from the land owners for 5 years, whereas the actual lease period of the project is 10 years. Therefore, the Project Proponent shall furnish a consent land document, valid for the entire lease period of the project.

S. No	Terms of Reference
	Other Site-Specific Condition: 1. A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal: **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. 2. The Boundary pillars to be erected as per the mine rules and the evidence should be submitted along with the EIA report. 3. The details of enumeration of structures including schools, colleges, primary health centers should be submitted along with the EIA report. 4. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300 m & up to 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations. 5. The proponent shall furnish photographs of adequate fencing; garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan. 6. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report. 7. 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. 8. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures. 9. The PP shall prepare a conceptual action plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall. 10. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.

2. Seac Standard Conditions

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

S. No	Terms of Reference
	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 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).

S. No	Terms of Reference
	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 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

S. No	Terms of Reference
	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 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.

3. Seiaa Specific Conditions :

S. No	Terms of Reference
3.1	After detailed discussions, the Authority accepts the recommendation of SEAC-II and decided to **grant Terms of Reference (ToR) along with Public Hearing for the quantity of 72,250m^3 of Rough Stone & 11,830m^3 of Gravel up to the depth of 28m BGL and the annual peak production is 18,300m^3 of Rough Stone & 4,930m^3 of gravel** as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC-II

S. No	Terms of Reference
	& normal conditions & the SEIAA Standard conditions.

4. Seiaa Standard Conditions:

S. No	Terms of Reference
4.1	**Cluster Management Committee** 1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry. 2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc., 3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines. 4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network. 5. The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan. 6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report. 7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. 8. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity. **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**

S. No	Terms of Reference
	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. 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

S. No	Terms of Reference
	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 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-

S. No	Terms of Reference
	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 claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees
1.13	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished
1.14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated
1.15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given
1.16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted
1.17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ 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

S. No	Terms of Reference
	and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost
1.19	Proximity to Areas declared as Critically Polluted or the Project areas likely to come under the Aravali Range, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities could be considered
1.20	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)
1.21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report
1.22	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)]primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given
1.23	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map
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

S. No	Terms of Reference
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 Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished
1.29	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out
1.30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same
1.31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given.The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution
1.32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines
1.33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report
1.34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report
1.35	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical 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

S. No	Terms of Reference
1.37	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation
1.38	Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project
1.39	Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project
1.40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given
1.41	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out
1.42	A Disaster management Plan shall be prepared and included in the EIA/EMP Report
1.43	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc
1.44	Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated. c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project. d) Where the documents provided are in a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable. i) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area

A. STANDARD TERMS OF REFERENCE

1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
4) All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.

9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.

10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.

12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

13) Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.

14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.

15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects

due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.

18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.

20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season); December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented

date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.

25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.

26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.

27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.

28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.

29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.

30) Information on site elevation, working depth, groundwater table etc. Should be provided

both in AMSL and Bgl. A schematic diagram may also be provided for the same.

31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.

35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

37) Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural

and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.

39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.

40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

44) Besides the above, the below mentioned general points are also to be followed: -

a) Executive Summary of the EIA/EMP Report

b) All documents to be properly referenced with index and continuous page numbering.

c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.

e) Where the documents provided are in a language other than English, an English translation should be provided.

f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.

g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA. II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and

content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

i) As per the circular no. J-11011/618/2010-IA. II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be 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 OMNo.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: 01/12/2025

From

Thiru.M.Prasad, M.Sc.,
Assistant Director
Geology and Mining,
Tiruppur.

To

Thiru.R.Senthilkumar,
S/o.Ramasamy,
No.3/111, Palladam Raod,
Mangalam,
Tiruppur District

R.c. No. 319/Mines/2025, Dated: 15.10.2025.

Sir,

Sub: Mines and Minerals – Minor Mineral – Rough Stone and Gravel quarry lease – Tiruppur District – Kangeyam Taluk –Keeranur Village – S.F. Nos.16/2 (P) (0.40.00), 16/3 (P) (0.61.10) – 1.01.10 Hectares – Quarry lease application preferred by Thiru.R.Senthilkumar - Precise area communicated for the proposed grant of quarry lease - requested to furnish the details of quarries located in 500 mts radius from the lease area – regarding.

Ref:
1. Application preferred Thiru.R.Senthilkumar dated: 14.02.2025.
2. G.O. Ms. No. 79 / Industries (MMC 1) Department dated 06.04.2015.
3. The Assistant Director, Geology and Mining, Tiruppur letter R.C.No.319/Mines/2025, dated: 23.09.2025
4. Application preferred Thiru.R.Senthilkumar dated: 26.09.2025.
5. This office letter even no. dated: 15.10.2025 (Mining Plan approved)

****

In the reference 4th cited above, the applicant Thiru.R.Senthilkumar has requested to furnish details of other quarry leases of expired, existing and proposed within 500mtr radius from the proposed rough stone and gravel lease over an extent of 1.01.10 Hectares of Patta land in S.F. Nos.16/2 (P) (0.40.00), 16/3 (P) (0.61.10)in Keernur Village, Kangeyam Taluk, Tiruppur District

2. 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

S. No	Name of the lessee	Village	S.F. No	Extent Hect.	Lease period
1.	K.Thangavelu	Keeranur	70/A2, 70/B2, 70/C2(P)	1.43.0	11.05.2022-10.05.2027
2.	R.Muthusamy	Keenanur	66/1, 66/2	3.07.0	10.11.2022-09.11.2027

2. Present proposed quarries

S. No	Name of the lessee	Village	S.F. No	Extent Hect.	Lease period
1	R.Senthilkumar	Keeranur	16/2(P), 16/3 (P)	1.01.10	Proposed quarry
2.	P.Ramasamy	Keeranur	15, 16/3	4.30.00	Applied for quarry lease
3.	R.Muthusamy	Keeranur	71/A	1.31.00	Applied for quarry lease
4.	M.Manoharan	Keeranur	24/C2	2.27.50	Applied for quarry lease

3.Abandoned / expired quarries

S. No	Name of the lessee	Village	S.F. No	Extent Hect.	Lease period
-- Nil --					

15/10/25

Assistant Director,
Geology and Mining,
Tiruppur.

Copy to : State Level Environment Impact Assessment Authority-Tamil Nadu,3rd Floor, Panagal Maaligai,No.1 Jeenis Road, Saidapet.Chennai-15

15/10/25

From

Thiru.M.Prasad, M.Sc.,
Assistant Director
Geology and Mining,
Tiruppur.

To

Thiru.R.Senthilkumar,
S/o.Ramasamy,
No.3/111, Palladam Raod,
Mangalam,
Tiruppur District.

Sir,

R.c. No. 319/Mines/2025, Dated: 15.10.2025.

Sub: Mines and Minerals – Minor Mineral – Rough Stone and Gravel quarry lease – Tiruppur District – Kangeyam Taluk –Keeranur Village – S.F. Nos.16/2 (P) (0.40.00), 16/3 (P) (0.61.10) – 1.01.10 Hectares – Quarry lease application preferred by Thiru.R.Senthilkumar - Precise area communicated for the proposed grant of quarry lease - Mining Plan Submitted for approval - Approved - regarding.

Ref:
1. Application preferred Thiru.R.Senthilkumar dated: 14.02.2025
2. G.O. Ms. No. 79 / Industries (MMC 1) Department dated 06.04.2015.
3. The Assistant Director, Geology and Mining, Tiruppur letter R.C.No. 319/Mines/2025, dated: 23.09.2025
4. Thiru.R.Senthilkumar letter dated: 26.09.2025.

****

Thiru.R.Senthilkumar has preferred an application for the grant of Rough Stone and Gravel quarry lease over an extent of 1.01.10 hectares of patta land in S.F. Nos.16/2 (P) (0.40.00), 16/3 (P) (0.61.10) of Keernur Village, Kangeyam Taluk, Tiruppur District vide reference 1st cited and the precise area was communicated to the applicant vide reference 3rd cited with a direction to submit the approved mining plan and Environmental Clearance.

As directed, the applicant has submitted three copies of the mining plan for approval, vide reference 4th cited. The mining plan has been verified in detail and found that the mining plan has 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:

(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.

Encl.: Approved Mining Plan.

15/10/25

Assistant Director
Geology and Mining,
Tiruppur.

15/10/25 15/10/25

MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR KEERANUR ROUGH STONE AND GRAVEL QUARRY

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED UNDER TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959)

Patta Land / Lease Period = Ten Years

IN

LOCATION OF THE QUARRY LEASE APPLIED AREA

EXTENT	: 1.01.10 Ha
S.F.NOs.	: 16/2 (P) AND 16/3 (P)
VILLAGE	: KEERANUR
TALUK	: KANGAYAM
DISTRICT	: TIRUPPUR
STATE	: TAMIL NADU

FOR

APPLICANT

THIRU. R. SENTHILKUMAR,
S/o. Ramasamy
No. 3/111, Palladam Road,
Mangalam,
Tiruppur District,
Tamil Nadu State – 641 663

PREPARED BY

B. VENGADAGIRI, M.Sc.,
No.105, 5th Cross,Alagapuram,
Salem District,
Tamil Nadu – 636 010
Mobile No.: +91 86953 32233
E-mail ID: vengatb6@gmail.com

ASSISTANT DIRECTOR * GEOLOGY AND MINING * TIRUPPUR

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.
- PPV - Peak Particle Velocity.
- QP - Qualified Person.
- MSL - Mean Sea Level
- AGL - Above Ground Level
- BGL - Below Ground Level
- MT - Metric Tonnes
- WR - Weathered Rock
- RS - Rough Stone

R. Senthilkumar,
S/o. Ramasamy
No. 3/111, Palladam Road,
Mangalam,
Tiruppur District,
Tamil Nadu State – 641 663.

ASSISTANT DIRECTOR * GEOLOGY AND MINING * TIRUPPUR

CONSENT LETTER FROM THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Keeranur Rough Stone and Gravel Quarry over an extent 1.01.10 Hectares of patta lands in S.F.Nos. 16/2 (P) and 16/3 (P) of Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared by

B. VENGADAGIRI, M.Sc.,

Qualified Person

I have entrusted the works to prepare the Mining plan based upon the production requirements to me as per the Mines Acts, Rules, Regulations and Amendments as on date. I request to the Assistant Director, Department of Geology and Mining, Tiruppur District, Tamil Nadu State to make further correspondence regarding the modification of the Mining plan with the said Qualified Person at his following address.

B. Vengadagiri, M.Sc.,

No.105, 5th Cross,

Alagapuram,

Salem District – 636 010.

Mobile No.: +91 86953 32233.

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

(R. Senthilkumar)

Place: Tiruppur

Date: 23.09.2025

R. Senthilkumar,
S/o. Ramasamy
No. 3/111, Palladam Road,
Mangalam,
Tiruppur District,
Tamil Nadu State – 641 663.

ASSISTANT DIRECTOR * GEOLOGY AND MINING * TIRUPPUR

DECLARATION OF THE APPLICANT

The Mining plan and Progressive Quarry Closure Plan in Respect of Keeranur Rough Stone and Gravel Quarry over an extent 1.01.10 Hectares of patta lands in S.F.Nos. 16/2 (P) and 16/3 (P) of Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared in full consultation with me by.

B. VENGADAGIRI, M.Sc.,
Qualified Person

I have understood its contents and agree to implement the same in accordance with Laws applicable to Mines and I will take all the responsibility for working the quarry in a manure under Rule 23 of Tamil Nadu Minor Mineral Concession Rules, 1959.

Signature of the Applicant

(R. Senthilkumar)

Place: Tiruppur
Date: 25.09.2025

CERTIFICATE

Certified that I am, **B. Vengadagiri, M.Sc.,** residing at No.105, 5th Cross, Alagapuram, Salem District - 636 010, holding a Post Graduate Degree in Geology (M.Sc. Applied Geology) from Annamalai 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 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 Keeranur Rough Stone and Gravel Quarry over an extent 1.01.10 Hectares of patta lands in S.F.Nos. 16/2 (P) and 16/3 (P) of Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State for **Thiru. R. Senthilkumar**, S/o. Ramasamy residing at No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641 663. 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: 25.09.2025

B. Vengadagiri, M.Sc.,
No.105, 5th Cross,
Alagapuram,
Salem District – 636 010.
Mobile No.: +91 86953 32233.
E-mail ID: vengatb6@gmail.com

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 Keeranur Rough Stone and Gravel Quarry over an extent 1.01.10 Hectares of patta lands in S.F.Nos. 16/2 (P) and 16/3 (P) of Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared for

R. Senthilkumar,
S/o. Ramasamy
No. 3/111, Palladam Road,
Mangalam,
Tiruppur District,
Tamil Nadu State – 641 663.

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, Tiruppur District, Tamil Nadu 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: 25.09.2025

B. Vengadagiri, M.Sc.,
No.105, 5th Cross,
Alagapuram,
Salem District – 636 010.
Mobile No.: +91 86953 32233.
E-mail ID: vengatb6@gmail.com

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 Keeranur Rough Stone and Gravel Quarry over an extent 1.01.10 Hectares of patta lands in S.F.Nos. 16/2 (P) and 16/3 (P) of Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared for

R. Senthilkumar,
S/o. Ramasamy
No. 3/111, Palladam Road,
Mangalam,
Tiruppur District,
Tamil Nadu State – 641 663.

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 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: 25.09.2025

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MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR KEERANUR ROUGH STONE AND GRAVEL QUARRY

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959)

INTRODUCTION AND EXECUTIVE SUMMARY:

The applicant **Thiru. R. Senthilkumar**, S/o. Ramasamy residing at No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641 663 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 has applied for quarrying Rough stone and Gravel over an extent 1.01.10 Hectares of patta lands in S.F.Nos. 16/2 (P) and 16/3 (P) of Keeranur Village, Kangayam Taluk, Tiruppur District for the period of Ten years under rule 19 (1) and 20 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, Tiruppur District and passed a precise area communication letter vide **R.C.No.319/Mines/2025, Dated: 23.09.2025** under rule 19 and 20 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 Environment Impact Assessment Authority, Tamil Nadu to quarrying Rough stone for the period of **Ten years** with following conditions (Refer Annexure No. I):

General Condition:

1. A safety distance of 7.5 meters should be provided to the adjacent patta lands under Tamil Nadu Minor Mineral Concession Rules, 1959 while quarrying operation.
2. Quarrying should be carried out using controlled blasting methods using mild explosives.
3. The applicant should submit the DGPS survey report for the area applied for quarry lease.
4. The applicant should carry out the blasting with mild explosive by an authorized explosive agency and no hindrance shall be caused to the adjacent pattadars/ patta and government lands while quarrying operation.

This Mining Plan along with Progressive quarry closure Plan is prepared in full consent with **Thiru. R. Senthilkumar**, S/o. Ramasamy residing at No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641 663 for his proposed Rough stone and Gravel quarry over an extent 1.01.10 Hectares of patta lands in S.F.Nos. 16/2 (P) and 16/3 (P) of Keeranur Village, Kangayam Taluk, Tiruppur 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.

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 without any geological exploration. 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.12.13.2011 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 24.09.2025.

Short Notes of Mining plan:

a. Village Panchayat - Keeranur

b. Panchayat Union - Kangayam

c. Total extent of the lease applied area is 1.01.10Ha.

d. Topography of the area - Flat topography.

e. The Estimated Reserves and Resources are given table below:

Table – 1

Description	Rough stone (MT)	Weathered Rock (MT)	Gravel (MT)
Estimated Geological Resources	6,95,063	20,220	40,440
Tentative Mineable Reserves	1,98,688	11,830	23,660
Proposed production for 1st Five Years	169153	11830	23,660
Proposed production for 2nd Five Years	29,535	-	-
Annual Peak Production	50,325	4,930	9,860

f. Proposed Depth of mining = 28m – BGL (R.L. 297m – R.L. 269m)

g. Lease Period = Ten Years

h. Mining Plan period = Five Years

i. It is a fresh lease applied area, at present the area is virgin. Hence, no existing pit.

j. Method of mining / level of mechanization.

Opencast mechanized method, the quarry operation involves Hand Jack hammer is proposed to drilling and slurry blasting with NONEL initiation,

k. Type of machineries proposed in the quarrying operation is given below.

Excavators attached with 0.90m³ Bucket and rock breaker.

Jack hammer, Compressor (Diesel drive) (4 Jack hammer capacity)

Tippers.

l. No trees will be uprooted due to this quarry operation.

m. 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.

n. There is No Export of this Rough stone and Gravel.

o. 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.

p. The lease applied area is about bounded by twelve corners; the corners are designated as 1 – 12 clock-wise from the Southwestern corner and Co-ordinates for all the corners are clearly marked in the Quarry Lease Plan and Surface Plan enclosed as Plate No. II.

q. 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 III-A.

r. General conditions will not applicable for the proposed area. The area applied for lease is 10Km away from the,

i) Interstate Boundary,

ii) Protected area under wild life protection ACT 1972,

iii) Critically polluted areas as identified by CPCB,

iv) Notified Eco sensitive areas.

s. There is no waste anticipated during entire quarry operation. Hence, waste dump is not proposed in the lease applied area.

t. Around 20 employees are proposed to deploying the quarrying operation.

u. Total Cost of the project is about **Rs. 73,81,000/-**.

1.0 GENERAL INFORMATION

1.1 Name of the Applicant with Address:

Name	:	**Thiru. R. Senthilkumar,** S/o. Ramasamy
Address	:	No. 3/111, Palladam Road, Mangalam, Tiruppur District
State with PIN Code	:	Tamil Nadu State – 641 663.
Mobile No.	:	+91 94432 62685
Aadhaar No.	:	4242 2179 7931 (Refer Annexure No. VIII)

1.2 Status of the Applicant (Individual / Company / Firm):

The applicant is an 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:

Ten 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
Address	:	No.105, 5th Cross, Alagapuram, Salem District,
State with PIN Code	:	Tamil Nadu – 636 010.
Mobile No.	:	+91 86953 32233
Email	:	vengatb6@gmail.com

(Refer Annexure Nos. IX and IX-A).

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 and the Rough stone is clearly inferred from the nearby existing quarry 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, Tiruppur District vide **R.C.No.319/Mines/2025, Dated: 23.09.2025** (Refer Annexure No. I) and was given to us for the preparation of mining plan to meet out the applicant's production schedule.

2.0 LOCATION AND ACCESSIBILITY:

2.1. Details of the area with location map:

The lease area is located about 25.3km Southeastern side of Tiruppur town, 7.0km Northeastern side of Kangeyam Town and 2.4km Southeastern side of Keeranur hamlets.

	26.6km		8.0km		2.4km	
Tiruppur	⟶	Kangeyam	⟶	Keeranur	⟶	Lease applied area
	Southeast		Northwest		Southeast	

Location Map of the Lease Applied area

Table – 2

District	Taluk	Village	S.F. Nos.	Area (Ha.)	Patta Nos.
Tiruppur	Kangayam	Keeranur	16/2 (P)	0.40.00	184
			16/3 (P)	0.61.10	3387
			Total	**1.01.10**	-

Source: As per the FMB and 'A' register record furnished by the applicant.

2.2. Classification of the area (Ryotwari/ Poramboke / others):

It is a patta land, classified as punsei (Refer Annexure No. IV to VI).

2.3. Ownership / Occupancy of the applied area (surface right):

It is patta land, jointly registered in the name of (Thiru. R. Senthilkumar and Tmt. Thulasimani) vide patta No. 184 and (Thiru. Ramasamy) Vide Patta No. 3387 (Refer Annexure No. IV to VI). The applicant has obtained consent from the pattadars (Refer Annexure No. VII).

2.4. Existence of public road / Railway line, if any nearby and approximate distance:

The approach road is situated on the Western side, which is connects to the Village Road situated at 200m on the Western 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 will be constructed and the same has been utilized for haulage and maintained during the entire lease period.

The Nearest Railway line is Tiruppur - Erode which is located at 15km on the Northwestern side of the area as per the GSI Toposheet and Google Map.

2.5. Toposheet No. with latitude and longitude:

The lease applied area falls in the Toposheet No: **58E/12** Latitude between: **11° 04'07.6645"N to 11° 04' 12.0097"N** and Longitude between: **77° 34' 10.8364"E to 77° 34' 14.5777"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 North side and altitude of the area is 297m above from Mean Sea Level. The area is covered by gravel having an average thickness of 2m, 1m Weathered rock and followed by Massive Charnockite which is clearly inferred from the nearby existing quarry pit.

The Water level in the surrounding area is 110m below from general ground. Average annual rainfall is about 619mm.

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 N40°E – S40°W with dipping towards SE60°.

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 Tiruppur District. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area. The Rough stone is clearly inferred from the nearby existing quarry 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 five sections have been drawn, two section drawn along strike direction as (X-Y & X1-Y1) Width wise and other three cross sections drawn perpendicular to strike (A-B, C-D & E-F) Length wise to cover the maximum area considered for lease upto 28m depth below from the ground profile.

The Topographical, Geological plan and sections demarcated the commercial marketable Rough stone and Gravel deposit has been prepared in the scale of 1:1000 (please refer the Geological plan and sections Plate No. III). As the sale of Rough stone and Gravel are in terms of Metric Tonnes and the estimated bulk density of Rough stone is 2.75 and 2 for Gravel. 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 28m [2m Gravel + 1m Weathered Rock + 25m Rough stone] below from the ground level. The Geological resources are estimated by area method and total estimated geological resources are given table below (Plate No. III):

TABLE – 3

GEOLOGICAL RESOURCES								
Area in Sq.m	**Depth (m)**	**Rough Stone (m^3)**	**Weathered Rock (m^3)**	**Gravel (m^3)**	**Bulk Density**	**Rough Stone (MT)**	**Weathered Rock (MT)**	**Gravel (MT)**
10110	2	-		20220	2	-	-	40440
10110	1	-	10110		2	-	20220	-
10110	25	252750		-	2.75	695063	-	-
Total		**252750**	**10110**	**20220**	**-**	**695063**	**20220**	**40440**

Estimated Geological Resources of Rough Stone : **6,95,063MT**

Estimated Weathered rock : **20,220MT**

Estimated Gravel : **40,440 MT**

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 and Bench loss.

TABLE – 4

MINABLE RESERVES											
Section	**Bench**	**Length (m)**	**Width (m)**	**Depth (m)**	**Rough Stone (m^3)**	**Weathered Rock (m^3)**	**Gravel (m^3)**	**Bulk Density**	**Rough Stone (MT)**	**Weathered Rock (MT)**	**Gravel (MT)**
XY-AB	i	17	16	2	-	-	544	2	-	-	1088
	i	17	16	1	-	272	-	2	-	544	-
	ii	14	13	5	910	-	-	2.75	2503	-	-
Total					**910**	**272**	**544**		**2503**	**544**	**1088**
X1Y1-CD	i	30	34	2	-	-	2040	2	-	-	4080
	i	30	34	1		1020	-	2	-	2040	-
	ii	28	31	5	4340	-	-	2.75	11935	-	-
	iii	23	20	5	2300	-	-	2.75	6325	-	-
Total					**6640**	**1020**	**2040**		**18260**	**2040**	**4080**
X1Y1-EF	i	67	69	2	-	-	9246	2	-	-	18492
	i	67	69	1	-	4623	-	2	-	9246	-
	ii	66	66	5	21780	-	-	2.75	59895	-	-
	iii	61	56	5	17080	-	-	2.75	46970	-	-
	iv	56	46	5	12880	-	-	2.75	35420	-	-
	v	46	36	5	8280	-	-	2.75	22770	-	-
	vi	36	26	5	4680	-	-	2.75	12870	-	-
Total					**64700**	**4623**	**9246**	-	**177925**	**9246**	**18492**
Grand Total					**72250**	**5915**	**11830**	-	**198688**	**11830**	**23660**

Tentative Mineable Reserves of Rough Stone : **1,98,688 MT**

Estimated Weathered rock : **11,830MT**

Estimated Gravel : **23,660 MT**

The Tentative mineable reserves have been estimated as **1,98,688 MT** of Rough stone, **11,830MT** of Weathered rock and **23,660MT** of Gravel at the rate of 100% recovery upto a depth of 28m below from the ground profile.

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4.0 MINING:

4.1 Method of mining (opencast / underground):

Open cast Mechanized Mining is being carried out with 5.0 meters 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 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 Drilling, Blasting, Rock breaking, 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 by considerable volume from the parent rock mass by drilling with Hand Jack Hammer and blasting, the liberated Rough stone will be loaded into the Tipper by hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers.

Hydraulic excavators are attached with rock breakers for fragmentation of large boulders to avoid secondary blasting and easy handling of material. 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, Greenbelt development are shown in Plate No. III and III-A.

Year wise Development and Production

TABLE – 5

YEARWISE DEVELOPMENT AND PRODUCTION FOR FIRST FIVE YEARS

Year	Section	Bench	Length (m)	Width (m)	Depth (m)	Rough stone (m^3)	Weathered Rock (m^3)	Gravel (m^3)	Bulk Density	Rough stone (MT)	Weathered Rock (MT)	Gravel (MT)
I	XY-AB	i	17	16	2	-	-	544	2	-	-	1088
		i	17	16	1		272	-	2	-	544	-
		ii	14	13	5	910	-	-	2.75	2503	-	-
	X1Y1-CD	i	30	34	2	-	-	2040	2	-	-	4080
		i	30	34	1		1020	-	2	-	2040	-
		ii	28	31	5	4340	-	-	2.75	11935	-	-
	X1Y1-EF	i	17	69	2	-	-	2346	2	-	-	4692
		i	17	69	1		1173	-	2	-	2346	
		ii	15	66	5	4950	-	-	2.75	13612	-	-
		Total				**10200**	**2465**	**4930**		**28050**	**4930**	**9860**
II	X1Y1-EF	i	21	69	2	-	-	2898	2	-	-	5796
		i	21	69	1		1449	-	2	-	2898	-
		ii	21	66	5	6930	-	-	2.75	19058	-	-
		iii	24	56	5	6720	-	-	2.75	18480	-	-
		Total				**13650**	**1449**	**2898**		**37538**	**2898**	**5796**
III	X1Y1-EF	i	29	69	2	-	-	4002	2	-	-	8004
		i	29	69	1		2001	-	2	-	4002	-
		ii	30	66	5	9900	-	-	2.75	27225	-	-
		iii	30	56	5	8400	-	-	2.75	23100	-	-
		Total				**18300**	**2001**	**4002**		**50325**	**4002**	**8004**
IV	X1Y1-EF	iv	44	46	5	10120	-	-	2.75	27830	-	-
		Total				**10120**	-	-	-	**27830**	-	-
V	X1Y1-EF	v	34	36	5	6120	-	-	2.75	16830	-	-
		vi	24	26	5	3120	-	-	2.75	8580	-	-
		Total				**9240**	-	-	-	**25410**	-	-
Grand Total						**61510**	**5915**	**11830**	-	**169153**	**11830**	**23660**

The Recoverable reserves have been estimated as **1,69,153 MT** of Rough stone, **11,830MT** of Weathered rock and **23,660 MT** of Gravel at 100% recovery upto a depth of 28m below from the ground profile for first five years (Refer Plate No. III).

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TABLE – 5A

YEARWISE DEVELOPMENT AND PRODUCTION FOR SECOND FIVE YEARS

Year	Section	Bench	Length (m)	Width (m)	Depth (m)	Rough stone @ 100% Recovery (m^3)	Bulk Density	Rough stone @ 100% Recovery (MT)
vi	X1Y1-CD	iii	23	20	5	2300	2.75	6325
		Total				**2300**	-	**6325**
vii	X1Y1-EF	iii	7	56	5	1960	2.75	5390
		Total				**1960**	-	**5390**
viii	X1Y1-EF	iv	12	46	5	2760	2.75	7590
		Total				**2760**	-	**7590**
ix	X1Y1-EF	v	12	36	5	2160	2.75	5940
		Total				**2160**	-	**5940**
x	X1Y1-EF	vi	12	26	5	1560	2.75	4290
		Total				**1560**	-	**4290**
Grand Total						**10740**	-	**29535**

The Recoverable reserves have been estimated as **29,535 MT** of Rough stone at 100% recovery for **remaining five years of the lease period** (Refer Plate No. III-A). Total excavation will be proposed **1,98,688 MT** of Rough stone, **11,830 MT** of Weathered rock and **23,660 MT** of Gravel for the period of ten years.

The peak production capacity in the quarry is **50,325 MT of Rough stone, 4,930 of Weathered rock** and **9,860 MT of Gravel** and the proposed production schedule is arrived as per applicant's requirement and the **EIA & EMP will be prepared an annual peak production.**

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	=	30 MT (approximate)
Total Number of Working days	=	300 days per year
Total Rough stone to be removed during entire lease period	=	1,98,688 MT
Annual Peak production capacity	=	50,325 MT
Hence total Lorry loads per day	=	50,325 /30 MT
	=	1,678 Lorry loads
	=	1,678 /300 days
Rough Stone (Maximum)	=	**6 Lorry loads per day**

Weathered rock Peak production	=	4,930 MT
Hence total Lorry loads per day	=	4,930 /30 MT
	=	164 Lorry loads
	=	164/300 days
Weathered rock (Maximum)	=	**1 Lorry loads per day**
Gravel Peak production	=	9,860 MT
Hence total Lorry loads per day	=	9,860 /30 MT
	=	329 Lorry loads
	=	329/300 days
Gravel (Maximum)	=	**1 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 for the development and production work at this quarry.

TABLE – 6

I. DRILLING MACHINE:

S. No.	Type	Nos.	Dia Hole mm	Size Capacity	Motive power
1	Hand Jackhammer	2	32	1.2m to 2.0m	Air Compression
2	Compressor	1	-	400 psi	Diesel Drive

II. EXCAVATION & LOADING EQUIPMENT:

S. No.	Type	Nos.	Capacity	Motive Power
1	Excavator with Bucket and Rock Breaker	1	300	Diesel Drive

III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT:

S. No.	Type	Nos.	Capacity	Motive Power
1	Tippers	2	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 Ten years, the ultimate pit limit (dimension) at the end of this lease period is given below:

TABLE – 7

Section	Length (m)	Width (m)	Depth (m) (Max.)
XY-AB	17	16	8m
X1Y1-CD	30	34	13m
X1Y1-EF	67	69	28m

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 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 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 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).

5.0 BLASTING:

5.1 Blasting pattern:

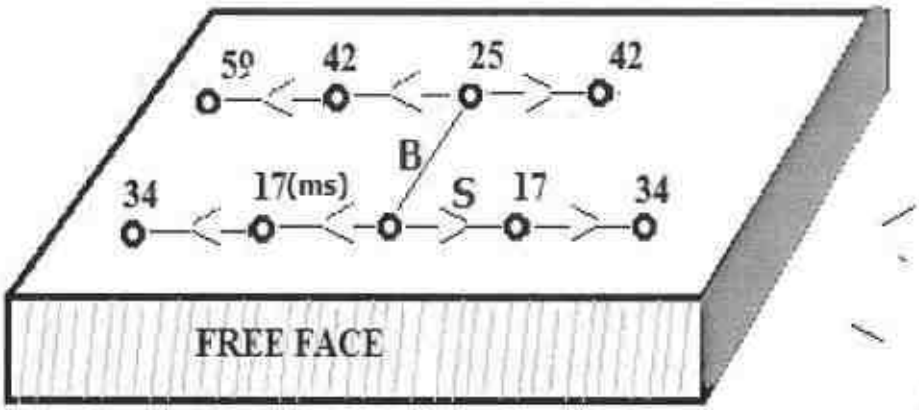
Selection of drilling pattern for blasting varies with the type and size of the drills used, depth of hole, kind of rock, quantity, rapidity of the explosives and amount of steaming. The quarrying operation is proposed to carried out by Jack hammer drilling and blasting of shattering effect for loosen the Rough Stone with NONEL initiation. Hand Jackhammer drilling will be proposed for drilling and blasting for splitting the boulders from parent rock mass followed by rock breaker attached with excavator for secondary fragmentation of large size boulders to avoid secondary blasting. 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 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	:	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)	=	**56 Holes**

5.2 Type of explosives to be used:

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.

Hand jackhammer drilling with 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	= 50,325 Tons
No of Holes	= 56 Holes
Yield	= 168 Tons
Powder factor	= 6 Tons/ Kg of explosives
Maximum explosive required	= 28 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)

PREDICTED PPV VALUES DUE TO BLASTING

Table – 8

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)
28	1	28	56	56	1 (2 Holes)	400	0.494

From the above table, the charge per blast of 28kg 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. Anyhow, the applicant ensures that carry out the blasting 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 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 Environment Protection 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 applicant has engaged an authorized external agency to carried out the detailed investigation to ascertain the actual depth of water table. The agency has stated that the lease applied area is located in hard batholithic formation and depth of water table found in the area is 110m below from the ground level. It is an oral statement; the applicant has waiting to obtain authenticated report from the agency. After obtained the detailed report the same will be submitted to the competent authority. Based on that statement working expected to above the water table and the quarry operation does not intersect the water table. Hence, the Ground Water problem will not arise. If water is encountered at pit due to rain water and seepage, the same will be drained out by 10HP motor pumps and the drained out water will be utilized for Green belt. Anyhow, Garland drain will be constructed along the boundary to prevent surface run-off water entering into the quarry.

TABLE – 9

Type	Distance & Direction	Location
Bore Well	40m Western side	11° 04'08.49"N 77°34'10.36"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 Greenbelt development areas. Besides, the water will also be used for dust suppression on haul roads during Haulage of machineries.

7.0 STACKING OF MINERAL WASTE AND DISPOSAL OF WASTE:

There is no waste anticipated during entire life of the quarry hence, disposal/stacking 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 quarried out Gravel and Weathered rock 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 – 10

S.No.	Description - Nearest	Particulars	Aerial Distance & Direction
1	National Highway	(NH-81) Karur – Palladam	7.4 km – SW
2	State Highways	(SH-96) Erode – Kangayam	690m – East
3	Railway station	Vijayamangalam Railway station	15 km – NW
4	Airport	Coimbatore	58 km – SW
5	Town	Kangayam	7 km – SW
6	Government School	Neickkaranpalayam - Govt. School	4 km – SW
7	Government Hospital	Kangayam	7 km – SW
8	Habitation	400m – NE	
9	Reserved Forest	Chennimalai R.F. – 8.9 km – North	
10	Water Bodies	Odai – 310m – SW.	
11	Defence Installation/ Historical Monuments/ Archaeological	Nil within 500m radius.	
12	Interstate Boundary	Around 78km – NW (Karnataka State border)	
13	Critically Polluted areas identified by the CPCB	Nil within 500m radius	
14	Protected areas Notified under wildlife (Protection) Act, 1972.	21.3 km – NE (Vellode Birds Sanctuary) Eco sensitive zone – 20.8km – NE	
15	Applicability of CRZ, Notification 2011 as amended.	Not Applicable	
16	Applicability of Hill Area Conservation Authority (HACA) Clearance.	Not Applicable	
17	Housing area, EB line (HT & LT Line)	None of the above situated within 50m radius.	
18	Boundaries of the permitted area.	The boundaries of the permitted areas are as follows (Refer Plate No. II): North - S.F.No. 17 East - S.F.No. 16/4 & 16/7 South - S.F.No. 16/3 (P) West - S.F.Nos. 16/3 (P) & 18	
19	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

TABLE – 11

STRUCTURE WITHIN 100m Number of Structures - Nil.					
Numbers of Structure	**Type of Structure**	**Usage Purpose**	**Commercial / industry/ residential/ farm house/ Govt. building**	**Occupants of Building/ Structure**	**Remarks**
Nil					
STRUCTURE WITHIN 100 -200m Number of Structures – 3					
Structure Numbers	**Type of Structure**	**Usage Purpose**	**Commercial / industry / residential / farm house / Govt. building**	**Occupants of Building/ Structure**	**Remarks**
1	Shed	Labour shed and office	Non residential	No resident	Nil
1	Crusher Plant	Stone crusher	Industry	No resident	Nil
1	Shed	Storage of Agriculture goods	Farm House	No resident	-
STRUCTURE WITHIN 200 -300m Number of Structures – Nil					
Structure Numbers	**Type of Structure**	**Usage Purpose**	**Commercial / industry / residential / farm house / Govt. building**	**Occupants of Building/ Structure**	**Remarks**
Nil					

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
Mine Foreman	-	1	1
Blaster/Mate	-	1	1
b) Skilled labour			
Excavator – Operator	-	1	1
Tipper Driver	-	2	2
Water sprinkler Driver	-	1	1
Jack-Hammer Drillers	-	4	4
c) Unskilled			
Security	-	1	1
Labour & Helper	-	3	3
Co-operator and Cleaner	-	4	4
Total	-	**20**	**20**

The proposed output per man shift:

TABLE – 13

Annual Peak Production of Rough stone		50,325 MT
No. of days likely to be worked		300 days
Average production per day		168 MT
OMS =	Average Production per day / Average employment per day	168 / 20 = 8.4 MT

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 quarry lease period.

9.3 Welfare Measures:

a) Drinking Water:

Packaged drinking water is available from the nearby water vendors in Keeranur village which is located about 2.4km on the Northwestern side of the lease applied area.

b) Sanitary Facilities:

Hygienic modern Sanitary Facilities will be constructed as semi-permanent structure within the applied area 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 Pudukkottai located at 9.6km on the South 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's own cost.

e) Precautionary safety measures to the labourers:

- Helmets,
- Reflector Jackets
- Dust mask
- Mine Goggles,
- Ear plugs,
- Ear muffs
- Safety Shoes

All personnel protective equipment as per the DGMS standard 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 of mitigation measure for topographical changes, but no waste will be anticipated during entire life of this Rough stone and Gravel quarry. 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 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. Greenbelt will be developed in the safety zone with thick long 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.

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	c) Propagation of foreign material like polythene bag or undecomposed 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 foreign material like polythene bag, Plastic water containers or 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 course will be contaminated due to dust propagation and vehicle emission.	i. Garland drain with check dam will be constructed all along the boundary barrier to prevent surface run off rain water entering into the pit. ii. The pit water due to rain and seepage will be utilized for water sprinkling on haul Roads and plantations. iii. Greenbelt will be developed in the safety zone with thick long leaves plants and water sprinkling on dust prone area to arrest the fugitive dust and vehicular emissions. iv. Further mining will be completely stopped during monsoon for free flow of surface run off and allowing natural recharge of groundwater.

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		v. No wastewater will be generated from the quarry activity. Proper drainage will be Maintained to eliminate inundation of working pit during rain from run-off water. vi. Septic tanks and soak pits will be provided for the disposal of domestic/ washroom effluents, the same will be disposed in proper manner.
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. Greenbelt 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.

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		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.
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. Greenbelt will be developed in the safety zone which will act as acoustic barrier to minimize the 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.

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		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.
Biological Environment	The area having main floras are Neem, Prosopis juliflora, Bushes 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. Natural habitats of the existing faunas will change due to the noise and vibration during blasting and quarry operation. iii. Diversity of living insects and faunas due to vibration. iv. The mining activities can also disrupt the poultry farm and ecological diversity due to noise by drilling, blasting and operation. 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. Fruit bearing trees will be planted to survive the existing birds and faunas. iv. No clearance of vegetation will be done during the entire mining operations. v. Green belt development as acoustic barrier, Low noise equipment and machineries for drilling and operation and Controlled blasting by Nonel is reduce the noise within permissible limit to sustain the Poultry farms and existing ecology. vi. Regular Water sprinkling on haul roads would be reduces the dust propagation, thus avoiding damage to the crops and plants.

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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 20 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.	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.

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11.1 Environmental impact assessment statement describing impact of mining on the next Ten years:

In the mining plan proposed for a small 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 28m 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 distance along the boundary barrier to be proposed for greenbelt development by planting 1,100 tree saplings (Area 3,446m^2) also 200 saplings on haul road and maintain at least 1,040 plants at the end of the lease period at a survival rate of 80%. Manuring and tree guards will be provided by the applicant to safeguard and maintain the plants. The plantation will be carried out based on the output Environmental Clearance and the recommended species will be planted in a phased manner as described below (Refer Plate No. III to V).

Table – 14

Year	No. of tress proposed to be planted	Area to be covered (m^2).	Survival (%)	Name of the species	No. of trees expected to be grown
I	220	690	80%	Neem, Pongamia Pinnata, Cordia dichotoma, Mango, Senkondrai, Mookusali maram, Mantharai, etc.,	176
II	220	689	80%		176
III	220	689	80%		176
IV	220	689	80%		176
V	220	689	80%		176

11.5 Proposed financial estimate / budget for the project:

Budget Provision for the Mining Plan period:

TABLE – 15

A. Operational Cost / Project Cost / Investment:		**Cost (Rs.)**
i) Land cost	The Land value as per the Government Guideline land cost is calculated as follows, Area (Ha) | Cost / Ha. | Total/Rs. **1.01.10** | 4,94,500 | **4,99,940** Total Land Cost (Round off) = Rs. 4,99,940/- (source : https://tnreginet.gov.in/portal/)	5,00,000
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).	40,00,000
iii) Labourers shed	Labour shed will be constructed as semi-permanent structure. The cost is around	4,00,000
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.	2,25,000
vi) Sanitary arrangement	The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around.	3,00,000
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.	50,000
viii) CCTV arrangements.	Installation of CCTV cameras in the quarry area.	50,000
Total Cost		**56,25,000/-**

	B. EMP Cost:		Cost (Rs.)
1.	Environmental Monitoring Program (Air Quality, Water Quality Sampling, Noise and Ground vibration test) Rs. 50,000/ year.		5,00,000
2.	Water will be sprinkled in the haul roads by own water sprinklers for dust suppression (1 No.). The cost would be around.		6,00,000
3.	Fencing constructed around the lease area to prevent the inadvertent entry of public and cattle cost would be around (Total Peripheral length 520m x Rs. 300/meter).		1,56,000
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 467m x Rs. 300/meter).		1,40,000
5.	First aid room & accessories		50,000
6.	Dust extractor unit for Jackhammer (2 Nos.)		50,000
7.	Greenbelt development for dust suppression & Noise control measures	Greenbelt development will be carried out along the safety barrier; the cost would be around (1100 saplings x Rs. 200/sapling).	2,20,000
		Greenbelt development will be carried out on haul road; the cost would be around (200 saplings x Rs. 200/sapling).	40,000
		Total EMP Cost (B)	**17,56,000/-**

Description	Cost (Rs.)
A. Operational Cost	**56,25,000/-**
B. EMP Cost	**17,56,000/-**
Total Project Cost (A+ B)	**73,81,000/-**

The total cost would be around seventy three lakhs and eighty one thousand only.

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 Ten 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 – 16

Description	Present area (Ha)	Area required during first five years (Ha)	Area at the end of the lease period (Ha)
Area Under Quarrying	Nil	0.63.64	0.63.64
Infrastructure	Nil	0.01.00	0.01.00
Roads	Nil	0.02.00	0.02.00
Green Belt	Nil	0.34.46	0.34.46
Unutilized Area	1.01.10	Nil	Nil
Grand Total	**1.01.10**	**1.01.10**	**1.01.10**

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 (As per 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	:	vengatb6@gmail.com

The applicant will himself implement the closure plan; no outside agency will be involved.

(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 5.0m for ease of operations and provide sufficient room for the movement of machineries and vehicles.
- Personnel Protective equipment like dust masks, ear-plugs/ muffs and other equipment shall be provided for use by the working personnel.
- 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 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

Part of the Machineries will be engaged on rental basis and remaining purchased fresh, the same has been maintained in good condition during entire life of quarry, if required the machineries will be replaced or repaired. After completion of quarry operation all machineries will be engaged at another quarry area/ purchased machinery will be selling to the second hand. 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.

(v) Economic Repercussion of Closure of Quarry and manpower Retrenchments:

The quarry lease is granted for a period of Ten 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 – 17

ACTIVITY		YEARS										RATE	COST (Rs.)
		I	II	III	IV	V	VI	VII	VIII	IX	X		
Plantation under safety zone	Nos	220	220	220	220	220	-	-	-	-	-		2,20,000
	Cost	44000	44000	44000	44000	44000	-	-	-	-	-		
Plantation in Haul road	Area	Haul Road											
	Nos	100	100	-	-	-	-	-	-	-	-	Rs.200 Per sapling	40,000
	Cost	20000	20000	-	-	-	-	-	-	-	-		
Barbed Wire Fencing (520 Mtrs)		156000	-	-	-	-	-	-	-	-	-	Rs300 Per Meter	1,56,000
Garland Drain (467 Mtrs)		140000	-	-	-	-	-	-	-	-	-	Rs300 Per Meter	1,40,000
Total													**5,56,000**

13.0 STATUTORY COMPLIANCE TO BE FOLLOWED DURING THE COURSE & CLOSURE OF QUARRY LEASE:

The Applicant after execution of lease deed should ensure to carry out that the quarry operation in accordance to the Approved Mining plan and as per TNMMCR, 1959, Mines Act 1952 & 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 periodic 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 centre 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.

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: 25.09.2025

This Mining Plan is approved as per the Powers conferred under rule 41(2) of Tamil Nadu Minor Mineral Concession Rules, 1959

This Mining Plan is approved subject to the Conditions Indicated in the Mining Plan approved Letter No. 319/Mines/2025 Dated 15.10.2025

15/10/25

ASSISTANT DIRECTOR
Geology and Mining
TIRUPPUR

15/10/25

PHOTOGRAPHS OF THE KEERANUR ROUGH STONE AND GRAVEL QUARRY LEASE APPLIED AREA

ANNEXURE I

ந.க.எண்.319/கனிமம்/ 2025

புவியியல் மற்றும் சுரங்கத்துறை
மாவட்ட ஆட்சியர் அலுவலகம்,
திருப்பூர்.

நாள்: 23.09.2025

குறிப்பாணை

பொருள் : கனிமங்களும் சுரங்கங்களும் - சிறு கனிமம் - திருப்பூர் மாவட்டம் - காங்கயம் வட்டம் - கீரனூர் கிராமம் - பட்டா புல எண்கள்: 16/2 (Part) (0.40.00) மற்றும் 16/3 (P) (0.61.10) ல் மொத்தம் 1.01.10 ஹெக்டர் - சாதாரண கற்கள் மற்றும் கிராவல் மண் குவாரி குத்தகை உரிமம் கோரி திரு.R.செந்தில்குமார் என்பவர் விண்ணப்பம் அளித்தது - புலத்தணிக்கை அறிக்கை சமர்பிக்கப்பட்டது - தகுதியான நிலப்பரப்பாக கருதி ஏற்பளிக்கப்பட்ட சுரங்க திட்டம் மற்றும் சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய இசைவிணை பெற்று சமர்பிக்கக் கோருதல் - தொடர்பாக.

பார்வை :
1. திரு.P.செந்தில்குமார் த/பெ. ராமசாமி, 3/111, பல்லடம் ரோடு, மங்கலம், திருப்பூர் என்பவர் மனு நாள்: 14.02.2025
2. இவ்வலுவலக கடிதம் ந.க.எண். 319/கனிமம்/2024 நாள்:14.02.2025.
3. வட்டாட்சியர், காங்கயம் கடிதம் ந.க. 1763/2025/அ10 நாள்:20.05.2025
4. வருவாய் கோட்டாட்சியர், தாராபுரம் கடிதம் ந.க.எண்.1685/2024/இ நாள்.05.06.2024.
5. வட்டார வளர்ச்சி அலுவலர், காங்கயம் கடிதம் ந.க.எண்.2344/2025/ஆ3 நாள்.11.08.2025.
6. உதவி புவியியலாளர் (கனிமம்), திருப்பூர் புலத்தணிக்கை அறிக்கை நாள்: 20.08.2025.
7. மற்றும் உரிய ஆவணங்கள்

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண்கள்: 16/2 (Part) (0.40.00) மற்றும் 16/3 (P) (0.61.10) ல் மொத்தம் 1.01.10 ஹெக்டர் பட்டா நிலப்பரப்பில் சாதாரண கற்கள் / கிராவல் மண் வெட்டி எடுக்க 10 வருடங்களுக்கு குத்தகை உரிமம் கோரி திரு.R.செந்தில்குமார் என்பவர் பார்வை 1-ல் கண்டுள்ளவாறு உரிய ஆவணங்களுடன் விண்ணப்பம் அளித்துள்ளார்.

2. மேற்படி விண்ணப்பங்கள் தொடர்பாக, வட்டார வளர்ச்சி அலுவலர், காங்கயம், வட்டாட்சியர், காங்கயம், வருவாய் கோட்டாட்சியர் தாராபுரம் மற்றும் உதவி புவியியலாளர் (கனிமம்), திருப்பூர் ஆகியோர் புலத்தணிக்கை மேற்கொண்டு திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண்கள்: 16/2 (Part) (0.40.00) மற்றும் 16/3 (P) (0.61.10) ல் மொத்தம் 1.01.10 ஹெக்டேர் பரப்பில் திரு.R.செந்தில்குமார் என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் மண் குவாரி உரிமம் வழங்க சில நிபந்தனைகளுக்குட்பட்டு அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளனர்.

3. மேலும் புல. எண். 16/2 ல் 0.41.00 ஹெக்டேர் பரப்பளவுள்ள பட்டா நிலம் காங்கயம் கிராம கணக்கு பட்டா எண். 184 ன்படி திருமதி.துளசிமணி மற்றும் திரு.R.செந்தில்குமார் ஆகியோருக்கு கூட்டாக பாத்தியப்பட்டுள்ளது. மேலும், புல. எண். 16/3 ல் 1.55.00 ஹெக்டேர் பரப்பளவுள்ள பட்டா நிலம் காங்கயம் கிராம கணக்கு பட்டா எண். 3387 ன்படி திரு.ராமசாமி என்பவருக்கு தனியாக பாத்தியப்பட்டுள்ளது. திருமதி.துளசிமணி மற்றும் திரு.ராமசாமி ஆகியோர் மேற்கண்ட புலத்தில் பத்து ஆண்டுகளுக்கு குவாரி பணி மேற்கொள்ள திரு.R.செந்தில்குமார் என்பவருக்கு உறுதி மொழி ஆவணம் அளித்துள்ளனர். எனவே, விண்ணப்பதாரர் திரு.R.செந்தில்குமார் என்பவருக்கு மேற்படி புலத்தில் குவாரி குத்தகை உரிமம் பெற ஸ்தல பாத்தியதை உள்ளது.

4. எனவே, வட்டார வளர்ச்சி அலுவலர், காங்கயம், வட்டாட்சியர், காங்கயம், வருவாய் கோட்டாட்சியர் தாராபுரம் மற்றும் உதவி புவியியலாளர் (கனிமம்), திருப்பூர் ஆகியோரின் பரிந்துரை மற்றும் நிபந்தனைகளின் அடிப்படையில், புல எண்கள்: 16/2 (Part) (0.40.00) மற்றும் 16/3 (P) (0.61.10) ல் மொத்தம் 1.01.10 ஹெக்டேர் பரப்பில் மட்டும் 1959ம் வருட தமிழ்நாடு சிறுகனிம விதிகள், விதி எண்.19(1), 20 மற்றும் 33-ன் ன் படி கீழ்கண்ட நிபந்தனைகளுக்குட்பட்டு 10 (பத்து) ஆண்டுகளுக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுக்க கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு குவாரி குத்தகை வழங்குவதற்குரிய நிலப்பரப்பாக (Precise Area Communication) கருதப்படுகிறது.

நிபந்தனைகள்:

- தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959-ன் விதியின்படி,புலத்தை சுற்றி அமைந்துள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணிபுரிய வேண்டும்.
- லேசான வெடிபொருட்களைப் பயன்படுத்தி, கட்டுப்படுத்தப்பட்ட வெடிப்பு (Controlled Blasting) முறையில் குவாரிப்பணி மேற்கொள்ளப்பட வேண்டும்.
- குத்தகை உரிமம் கோரும் புலத்திற்கு DGPS முறையில் அளவீடு செய்து அதற்கான சான்றினை சமர்ப்பிக்க வேண்டும்.
- அனுபவம் வாய்ந்த வெடிபொருள் பயன்படுத்துவோர் மூலம் குறைந்த அளவு சக்தி கொண்ட வெடிபொருட்களை பயன்படுத்தி அருகிலுள்ள பட்டாதாரர்களுக்கு எவ்வித இடையூறுமின்றி / அருகிலுள்ள பட்டா மற்றும் அரசு புலங்களில் எவ்வித ஆக்கிரமிப்பும் இன்றி குவாரிப்பணி மேற்கொள்ள வேண்டும்.

மேலும், தமிழ்நாடு சிறு கனிம சலுகை விதிகள்-1959 விதி எண். 41-ன்படி குவாரிப்பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்க திட்டத்தினை 90 தினங்களுக்குள் சமர்ப்பிக்குமாறு மனுதாரரைக் கேட்டுக்கொள்ளப்படுகிறது. மேலும் ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தின் தொடர்ச்சியாக 1959 ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், விதி எண்.42-ன் படி

சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும் என இதன் மூலம் தெரிவிக்கப்படுகிறது.

ASSISTANT DIRECTOR

உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
திருப்பூர்.

பெறுநர்:

திரு.K செந்தில்குமார்,
க/பெ.ராமசாமி,
3/111, பல்லடம் ரோடு,
மங்கலம்,
திருப்பூர் - 641663

ANNEXURE II

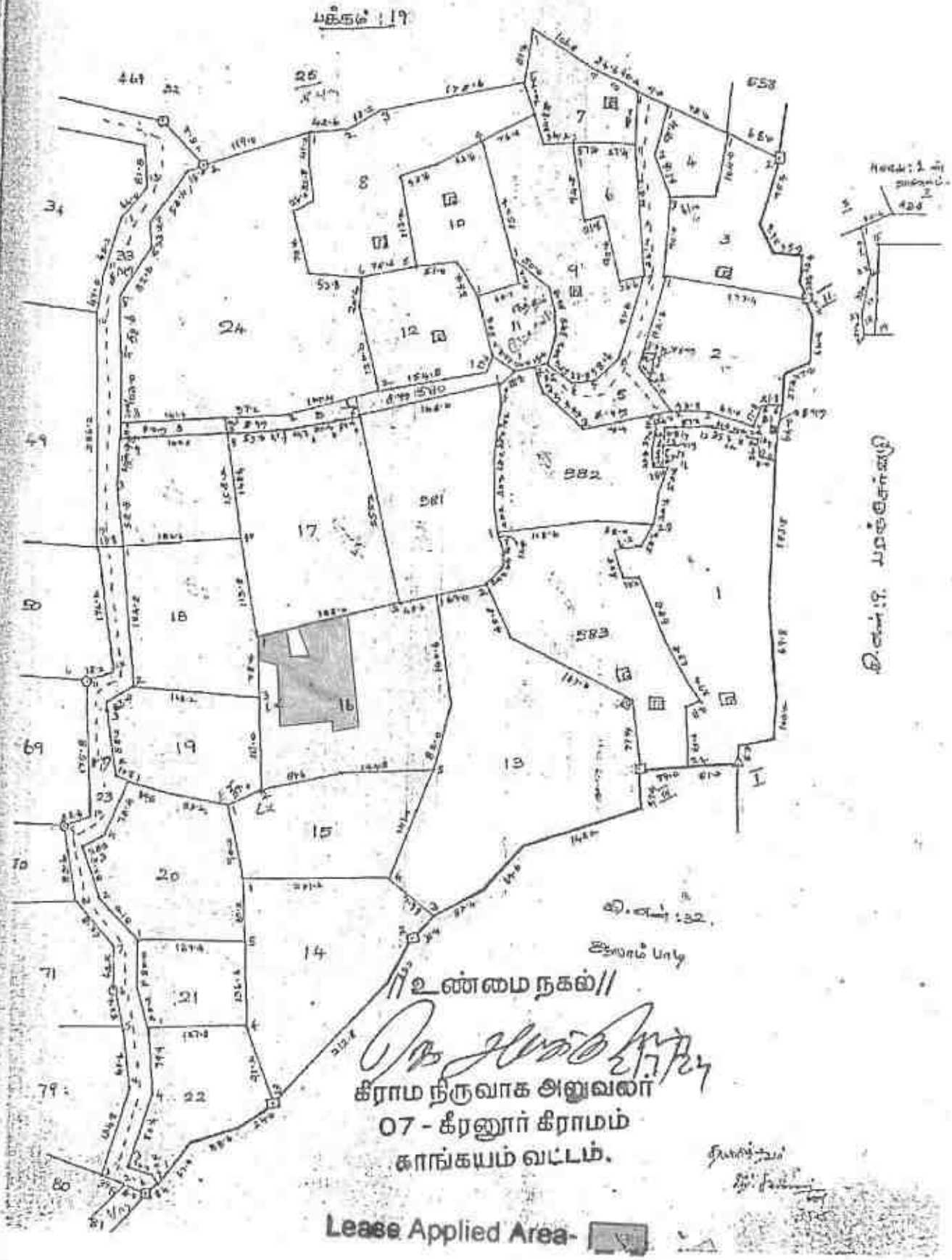
77 A

ANNEXURE II

மாவட்டம் : திருப்பூர்
கிராமம் : 07- கீரனூர்

கூட்டுவரைபடம் தாள் -1

வட்டம் : காங்கயம்



ANNEXURE IV

தமிழ்நாடு அரசு

வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை

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

மாவட்டம்: திருப்பூர் வட்டம்: காங்கயம்

வருவாய் கிராமம்: கீரனூர் பட்டா எண்: 184

உரிமையாளர்கள் பெயர்

4 ராமசாமி கவுண்டர் மனைவி துளசிமணி

5 P ராமசாமி கவுண்டர் மகன் R. செந்தில்குமார்

வ.எண்	புல எண்ணும் உட்பிரிவும்	நன்செய்				புன்செய்				மற்றவை				குறிப்பு
		பரப்பு		தீர்வை		பரப்பு		தீர்வை		பரப்பு		தீர்வை		
		ஹெ.	ஏர்	ரூ	பை	ஹெ.	ஏர்	ரூ	பை	ஹெ.	ஏர்	ரூ	பை	
1	16 - 2					0	41.00	00	57					2023/0103/32/534942 06-11-2023
	மொத்தம் -	0		0		0	41.00	0	57	0		0		

மின்கையெப்பம் / Digital Signature : **06-11-2023** அன்று **07:05:57 PM** நேரத்தில் இடப்பட்டது

பெயர்/Name : **Thiru. K.Gopal**

பதவி/ Designation: **Zonal Deputy Tahsildar**

இடம்/Place : காங்கயம் **(05)** வட்டம், திருப்பூர்**(32)** மாவட்டம்

குறிப்பு	
1	மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை.இவற்றை தாங்கள் https://eservices.tn.gov.in என்ற இணைய தளத்தில் 2023/0103/32/534942 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2	இத்தகவல்கள் 29-08-2025 அன்று 10:37:35 AM நேரத்தில் அச்சடிக்கப்பட்டது.
3	கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் இத்தகவல்களை இணையத்தளத்தில் சரிபார்க்கவும்.

தமிழ்நாடு அரசு

வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை

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

மாவட்டம்: திருப்பூர் வட்டம்: காங்கயம்

வருவாய் கிராமம்: கீரனூர் பட்டா எண்: **3387**

உரிமையாளர்கள் பெயர்

2 பழனிசாமிகவுண்டர் மகன் ராமசாமி

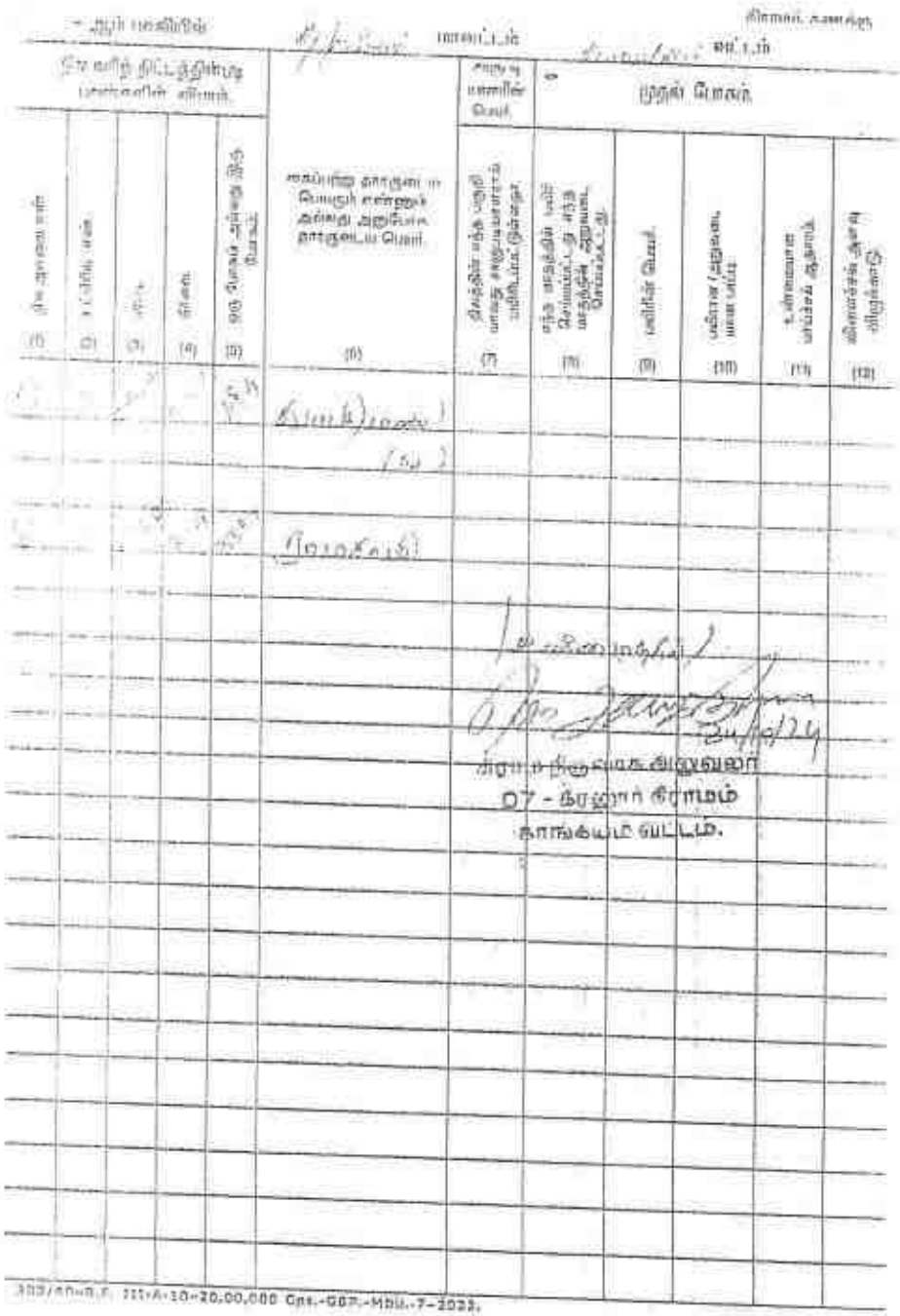
வ.எண்	புல எண்ணும் உட்பிரிவும்	நன்செய்				புன்செய்				மற்றவை				குறிப்பு
		பரப்பு		தீர்வை		பரப்பு		தீர்வை		பரப்பு		தீர்வை		
		ஹெ.	ஏர்	ரூ	பை	ஹெ	ஏர்	ரூ	பை	ஹெ.	ஏர்	ரூ	பை	
1	16 - 3					1	55.00	02	14					2018/0103/32/116135 24-05-2018
	மொத்தம் -	0		0		1	55.00	2	14	0		0		

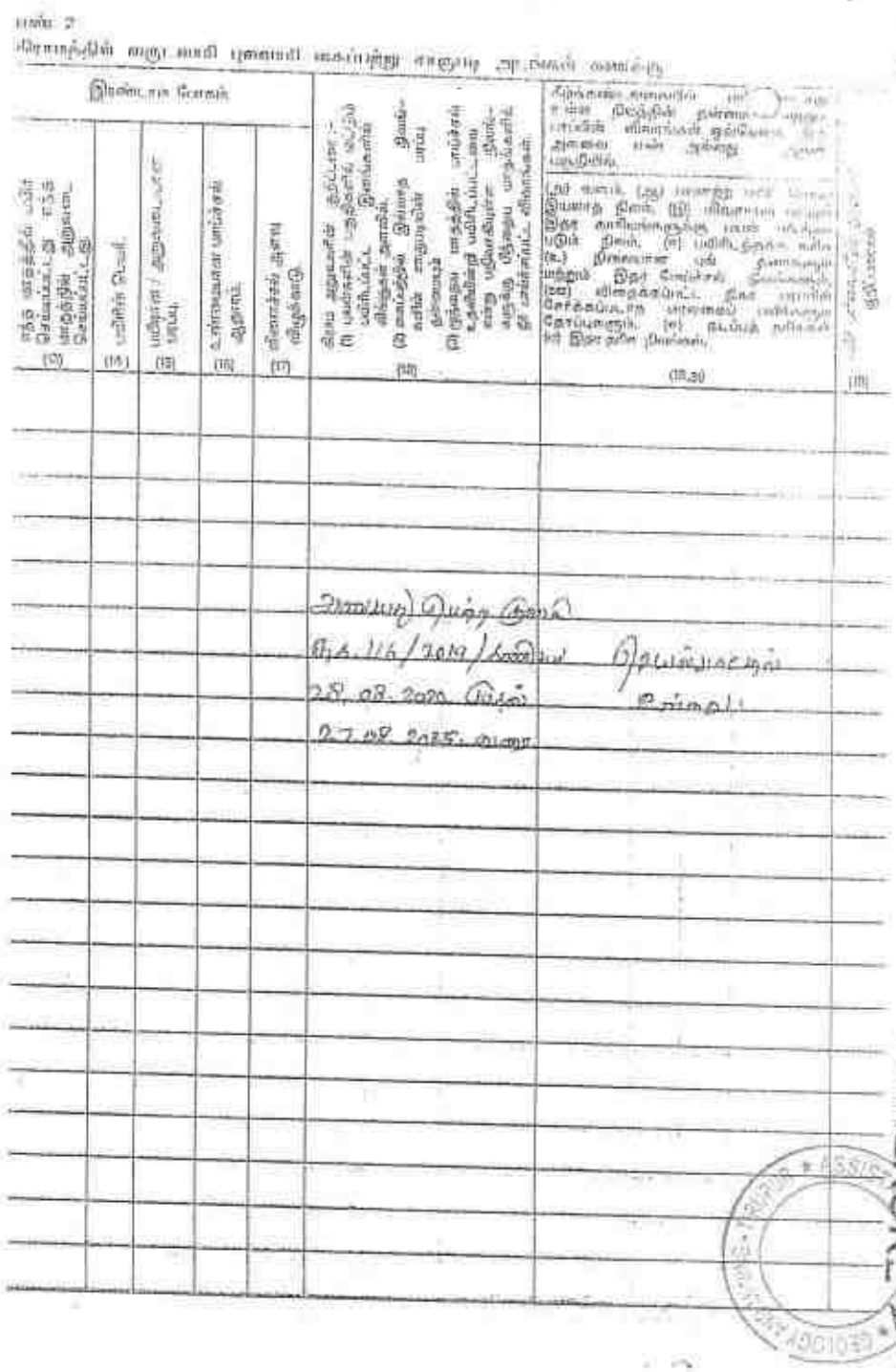
மின்கையெப்பம் / Digital Signature : **24-05-2018** அன்று **06:29:58 PM** நேரத்தில் இடப்பட்டது

பெயர்/Name : **Kannamani V**
பதவி/ Designation: **Zonal Deputy Tahsildar**

இடம்/Place : காங்கயம் **(05)** வட்டம்,
திருப்பூர்**(32)** மாவட்டம்

குறிப்பு	
1	மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை.இவற்றை தாங்கள் https://eservices.tn.gov.in என்ற இணைய தளத்தில் 2018/0103/32/116135 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2	இத்தகவல்கள் 29-08-2025 அன்று 10:25:17 AM நேரத்தில் அச்சடிக்கப்பட்டது.
3	கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் இத்தகவல்களை இணையத்தளத்தில் சரிபார்க்கவும்.





ANNEXURE-IV

81 A

ANNEXURE

வட்டாட்சியர் அலுவலக இணைய சேவை - அ-பதிவேடு விவரங்களை ப...

அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : திருப்பூர்

வட்டம் : காங்கயம்

கிராமம் : கீரனூர்

1. புல எண்	16	9. மண் வயனும் ரகமும்	8 - 4
2. உட்பிரிவு எண்	2	10. மண் தரம்	6
3. பழைய புல உட்பிரிவு எண்	16	11. தீர்வை (ரூ - வை)	1.38
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஏர்)	0 - 41.00
5. அரசு / ரயத்துவாரி	ரயத்துவாரி	13. மொத்த தீர்வை (ரூ - பை)	0.57
6. நிலத்தின் வகை	புஞ்சை	14. பட்டா எண்	184
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	-	16. பெயர்	1.தனசிமணி 2.R. செந்தில்குமார்

குறிப்பு:

மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டில் இருந்து பெறப்பட்டவை. இவற்றை தாங்கள் https://eservices.tn.gov.in என்ற இணைய தளத்தில் 32/05/007/16/2/30793 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து கொள்ளவும்.

அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : திருப்பூர்

வட்டம் : காங்கயம்

கிராமம் : கீரனூர்

1. புல எண்	16	9. மண் வயனமும் ரகமும்	8 - 4
2. உட்பிரிவு எண்	3	10. மண் தரம்	6
3. பழைய புல உட்பிரிவு எண்	16	11. தீர்வை (ரூ - பை)	1.38
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஏர்)	1 - 55.00
5. அரசு / ரயத்துவாரி	ரயத்துவாரி	13. மொத்த தீர்வை (ரூ - பை)	2.14
6. நிலத்தின் வகை	புஞ்சை	14. பட்டா எண்	3387
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இரு போகமா	-	16. பெயர்	1.ராமசாமி

குறிப்பு:

மேற்கண்ட தகவல் / சான்றிதழ் தகவல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் https://eservices.tn.gov.in என்ற இணைய தளத்தில் 32/05/007/16/3/30721 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

1	2	3	4	5	6	7	8	9	10	11	12
							ரு. அப.	ரிஜை. எச்.எப்	ரு. அப.		
5	14-பக	ர	ப	...	8-4	6	1 38	0 95·0	1 31	34 மு. கருப்பையா கவுண்டர்.	
								3 89.0	5 36		
...	15	ர	ப	...	8-4	6	1 38	2 75.0	3 80	684 பி. தருமசாமி	
1	16-பக	ர	ப	...	8-4	6	1 38	0 04·5	0 06	1032 தா. பொன்னுசாமிகவுண்டர் மற்றும் மூன்று பேர்கள். *	
2	-பக	ர	ப	...	8-4	6	1 38	0 41·0	0 57	184 ர. ஈஸ்வரமூர்த்தி.	
3	-பக	ர	ப	...	8-4	6	1 38	1 55·0	2 14	494 தா. பெரியசாமி தாயி கவுண்டர்.	
4	-பக	ர	ப	...	8-4	6	1 38	0 28·5	0 39	685 ப. பெரியண்ணன் தாயி கவுண்டர் (1), ப. பெரியசாமி தாயி கவுண்டர் (2).	
5	-பக	ர	ப	...	8-4	6	1 38	0 30·0	0 41	409 சே. பழனிசாமி கவுண்டர்.	
6	-பக	ர	ப	...	8-4	6	1 38	0 58·0	0 80	543 கே. முத்துராமி (எ) தங்கச்சி முத்து (1), க. கிளாஸ்மித்தன் (2).	
7	-பக	ர	ப	...	8-4	6	1 38	1 36·0	1 88	34 மு. கருப்பையா கவுண்டர்.	
								4 53.0	6 25		
A1	17-Aபக	ர	ப	...	8-4	6	1 38	1 81·0	2 50	687 ஜி. ராஜன் பாண்டி (1), ஜி. சின்னையா தாயி (2).	தி-கிளை ஜூ-1.
A2	-Aபக	ர	ப	...	8-4	6	1 38	0 58·5	0 80	542 கே. முத்துராமி கவுண்டர்.	தி-கிளை ஜூ-1.
A3	-Aபக	ர	ப	...	8-4	6	1 38	0 66·0	0 91	686 கே. பழனிசாமி கவுண்டர் (1), கே. முத்துராமி (2) தங்கச்சி முத்து (2), க. கிளாஸ்மித்தன் (3).	தி-கிளை ஜூ-1.
A4	-Aபக	ர	ப	...	8-4	6	1 38	1 25·0	1 85	1285 தா. பெரியண்ணன் தாயி கவுண்டர் (1), [illegible] தாயி கவுண்டர் (2).	தி-கிளை ஜூ-1.

ANNEXURE VM

EL 241125

தமிழ்நாடு தமிலநாடு TAMILNADU ₹100/-

நாள் : 14.11.2024 R. துளசிமணி
தூத்துக்குடி

K. சௌந்தரராஜன்
முத்திரைத்தாள் விற்பனையாளர்
உரிமம் எண் : 21/2004.
மங்கலம் ரோடு, பல்லடம்-641664.

சம்மதக் கடிதம்

திருப்பூர் மாவட்டம், திருப்பூர் வட்டம், திருப்பூர் டவுன், மங்கலம், 3/111, பல்லடம் ரோடு என்ற முகவரியில் வசிக்கும் திரு. ராமசாமி என்பவர் மனைவி ஆர். துளசிமணி (1) ஆகிய நான் திருப்பூர் மாவட்டம், திருப்பூர் வட்டம், திருப்பூர் டவுன், மங்கலம், 3/111, பல்லடம் ரோடு என்ற முகவரியில் வசிக்கும் திரு. ராமசாமி என்பவர் மகன் ஆர். செந்தில்குமார் (2) ஆகிய உங்களுக்கு எழுதிக் கொடுக்கும் உறுதிமொழி ஆவணம் என்னவென்றால்,

R துளசிமணி

R துளசிமணி

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண். 16/2-ல் 0.41.0 ஹெக்டர் பூமியானது பட்டா எண். 184-ன்படி நம்மில் (1) மற்றும் (2) இலக்கமிட்டவர்களான துளசிமணி மற்றும் செந்தில்குமார் ஆகியோர் பெயரில் கூட்டுப்பட்டாவாக தாக்கலாகியுள்ளது.

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண். 16/2-ல் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க ஐந்தாண்டுகளுக்கு குவாரிக் குத்தகை உரிமம் கோரி நம்மில் (2) இலக்கமிட்டவரான திரு. செந்தில்குமார் என்பவர் பெயரில் விண்ணப்பம் செய்துள்ளார். மேற்படி பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க ஐந்தாண்டுகளுக்கு (2) இலக்கமிட்டவர் பெயரில் குவாரிக் குத்தகை உரிமம் வழங்க நம்மில் (1) இலக்கமிட்ட துளசிமணி ஆகிய எனக்கு எவ்வித ஆட்சேணையும் இல்லை. பின்னிட்டு எவ்வித பிரச்சனையும் செய்யமாட்டேன். முழு மனதுடன் சம்மதம் தெரிவிக்கிறேன் என இதன் உறுதி கூறுகிறேன்.

R துளசிமணி

R Senthilkumar

NOTARIAL NOTARIAL NOTARIAL NOTARIAL

S.M. MUGA GANESH M.A.,
Advocate / Notary Public
Near Police Station, Trichy Road, Sulur
Coimbatore - 641402, Tamil Nadu.
Cell: 94437 [illegible]

86 A

भारतीय गैर न्यायिक

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सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

தமிழ்நாடு தமிழ்நாடு TAMILNADU ரூ.100/- EL 241126

14.11.2024 P. நாகராஜி

K. செளந்தரராஜன்

முத்திரைத்தாள் விற்பனையாளர்

உரிமம் எண் : 21/2004,

மங்கலம் ரோடு, பல்லடம்-641664.

சம்மதக் கடிதம்

திருப்பூர் மாவட்டம், திருப்பூர் வட்டம், திருப்பூர் டவுன், மங்கலம், 3/111, பல்லடம் ரோடு என்ற முகவரியில் வசிக்கும் திரு. பழனிச்சாமி கவுண்டர் மகன் திரு. ராமசாமி (1) ஆகிய நான் திருப்பூர் மாவட்டம், திருப்பூர் வட்டம், திருப்பூர் டவுன், மங்கலம், 3/111, பல்லடம் ரோடு என்ற முகவரியில் வசிக்கும் திரு. ராமசாமி என்பவர் மகன் ஆர். செந்தில்குமார் (2) ஆகிய உங்களுக்கு எழுதிக் கொடுக்கும் உறுதிமொழி ஆவணம் என்னவென்றால்,

NOTARY

A.SHANMUGA

GANESI

9355

EXPIRY DATE

23.12.2026

GOVT OF INDIA

P Nagaraji

R Senthilkumar

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண். 16/3-ல் 1.55.0 ஹெக்டர் பூமியானது பட்டா எண். 3387-ன்படி நம்மில் (1) இலக்கமிட்டவர்களான ராமசாமி என்பவர் பெயரில் தனிப்பட்டாவாக தாக்கலாகியுள்ளது.

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண். 16/3-ல் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க ஐந்தாண்டுகளுக்கு குவாரிக் குத்தகை உரிமம் கோரி நம்மில் (2) இலக்கமிட்டவரான திரு. செந்தில்குமார் என்பவர் பெயரில் விண்ணப்பம் செய்துள்ளார். மேற்படி பூமியில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க ஐந்தாண்டுகளுக்கு (2) இலக்கமிட்டவர் பெயரில் குவாரிக் குத்தகை உரிமம் வழங்க நம்மில் (1) இலக்கமிட்ட ராமசாமி ஆகிய எனக்கு எவ்வித ஆட்சேணையும் இல்லை. பின்னிட்டு எவ்வித பிரச்சனையும் செய்யமாட்டேன். முழு மனதுடன் சம்மதம் தெரிவிக்கிறேன் என இதன் உறுதி கூறுகிறேன்.

NOTARIAL

NOTARIAL

NOTARIAL

NOTARIAL

ANNEXURE

ASSISTANT DIRECTOR GEOLOGY

भारत सरकार
GOVERNMENT OF INDIA

செந்தில்குமார்
Senthilkumar
பிறந்த தேதி/ DOB: 19/10/1981
ஆண் / MALE

4242 2179 7931

எனது ஆதார், எனது அடை...

भारतीय विशिष्ट पहचान प्राधिकरण
UNIQUE IDENTIFICATION AUTHORITY OF INDIA

AADHAAR

முகவரி:
தந்தை / தாய் பெயர்:
ராமசாமி, 3/111, பல்லடம்
ரோடு, மங்கலம், திருப்பூர்,
தமிழ் நாடு - 641663

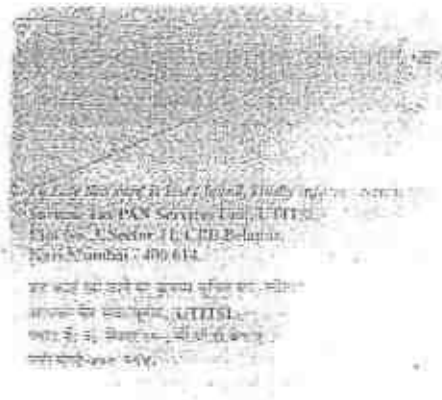
Address:
S/O Ramasamy, 3/111
palladam road, Mangalam,
Tirupur
Tamil Nadu - 641663

4242 2179 7931

MERA AADHAAR MERI PEHACHAN

89 A

आयकर विभाग
INCOME TAX DEPARTMENT
भारत सरकार
GOVT. OF INDIA
R SENTHILKUMAR
RAMASAMY
19/10/1981
BDVPS3659L



ASSISTANT DIRECTOR
INCOME TAX OFFICER

ANNEXURE IX

அண்ணாமலைப் பல்கலைக்கழகம்

ANNAMALAI UNIVERSITY

Reg. No. : 090895

அறிவியற்புலம்

FACULTY OF SCIENCE

மே, 2011 இல் பயன்பாட்டு நிலத்தியல் பிரிவில் நடத்திய தேர்வுகளில் வெங்கடகிரி பா/ ஊதல் மதிப்பெண்புள்ளிகள் 10.00 க்கு சராசரியாக 6.03 பெற்று இரண்டாம் வகுப்பில் தேர்ச்சியடைந்து முறையாக அமைக்கப்பெற்ற தேர்வுக்குழுவினர் சான்றளித்தபடி அறிவியல் நிறைஞர் பட்டம் பெறுவதற்கு உரியவர் ஆவார் 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 (கல்விசாராத்)
Dy. Controller of Examinations (Non-Teaching)

Dr.M.Rathinasabapathi
பதிவாளர்

Dr.M.Ramanathan
துணை வேந்தர்

91A

ANNEXURE 10

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. 16.8

(Signature with date and official seal)

(Mines Manager's class)

MANAGER (MINES) I class
MULTICOLOUR GRANITE MINE
K. PITCHAMPATTI,
KARUR - TALUK & DIST.

(Signature of Candidate)

State the name of the mineral works: Multi Colour Granite

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

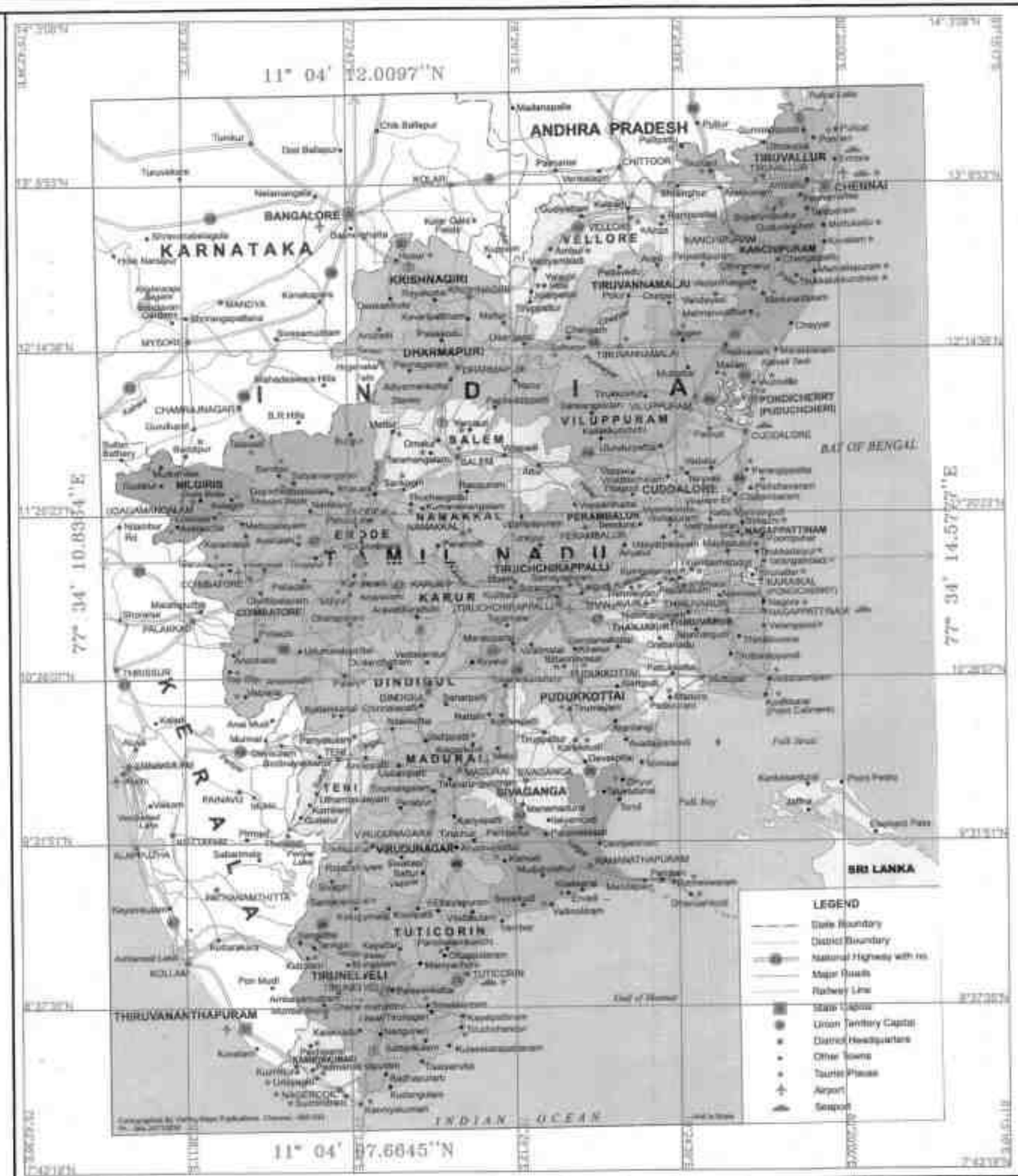
Note: The average employment is less because this is mechanized mines having deep hole drilling, blasting and Heavy Earth Moving Machineries operation.

(Signature of Candidate)

(Signature with date and official seal)

(Mines Manager 1st class)

MANAGER (MINES)
MULTICOLOUR GRANITE MINE
K. PITCHAMPATTI,
KARUR - TALUK & DIST.



N

PLATE NO:I

DATE OF SURVEY : 24.09.2025

APPLICANT :

THIRU.R.SENTHILKUMAR,
S/O.RAMASAMY,
3/111,PALLADAM ROAD,
MANGALAM,TIRUPPUR-641 663.

LOCATION OF Q.L AREA:

S.F.NO	: 16/2(P) & 16/3(P).
EXTENT	: 1.01.10 Ha.
VILLAGE	: KEERANUR,
TALUK	: KANGEYAM.
DISTRICT	: TIRUPPUR.
STATE	: TAMIL NADU.

INDEX

Q. L. AREA :

TOPO SHEET NO. : 58 E/12

LATITUDE : 11° 04' 07.6645"N to 11° 04' 12.0097"N

LONGITUDE : 77° 34' 10.8364"E to 77° 34' 14.5777"E

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.

QUALIFIED PERSON
Under Rule 15(1)(a)(b)(c) of MCR,2018

PLATE NO:I-A

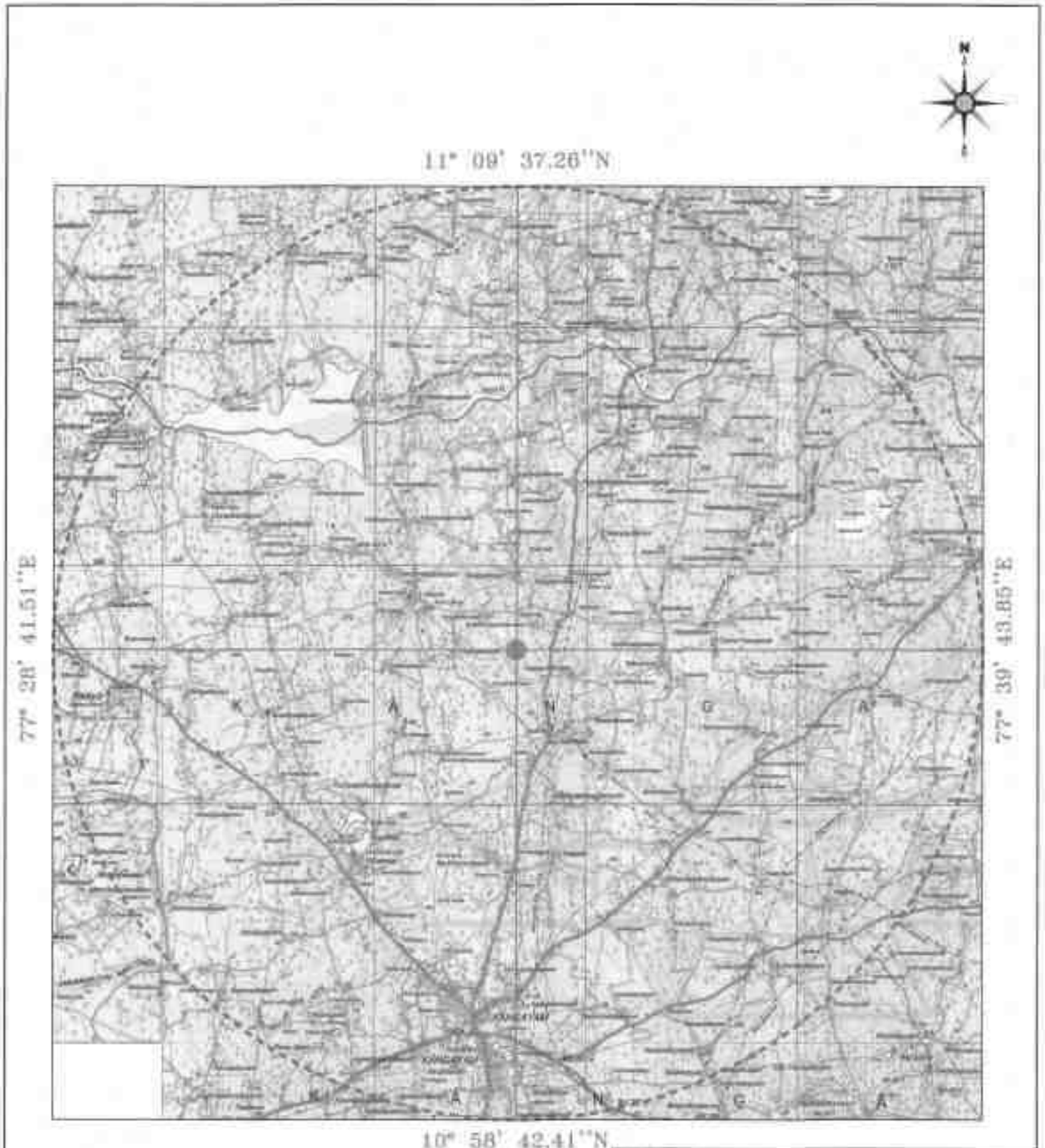
DATE OF SURVEY : 24.09.2025

APPLICANT :

THIRU.R.SENTHILKUMAR,
S/O.RAMASAMY,
3/111,PALLADAM ROAD,
MANGALAM,TIRUPPUR-641 663.

LOCATION OF Q.L AREA:

S.F.NO	: 16/2(P) & 16/3(P)
EXTENT	: 1.01.10 Ha.
VILLAGE	: KEERANUR,
TALUK	: KANGEYAM,
DISTRICT	: TIRUPPUR,
STATE	: TAMIL NADU.



TOPO SHEET NO. : 58 E/12

LATITUDE : 11° 04' 07.6645"N to 11° 04' 12.0097"N

LONGITUDE : 77° 34' 10.8364"E to 77° 34' 14.5777"E

10KM RADIUS :

Q.LEASE AREA :

INDEX

CONVENTIONAL SYMBOLS

TOPO SKETCH OF QUARRY LEASE APPLIED AREA FOR 10Km RADIUS

SCALE– 1:100000

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

R.MANJULADEVI, M.Sc.,
COMPETENT PERSON
Under Rule 15(3)(b)and(c)of MCR,2018

LANDUSE PATTERN	
DESCRIPTION	PERCENTAGE
ROADS	(15%)
HABITATION \INFRA	(10%)
TREES	(15%)
AGRICULTURAL LAND	(55%)
QUARRY PIT\CRUSHER	(05%)

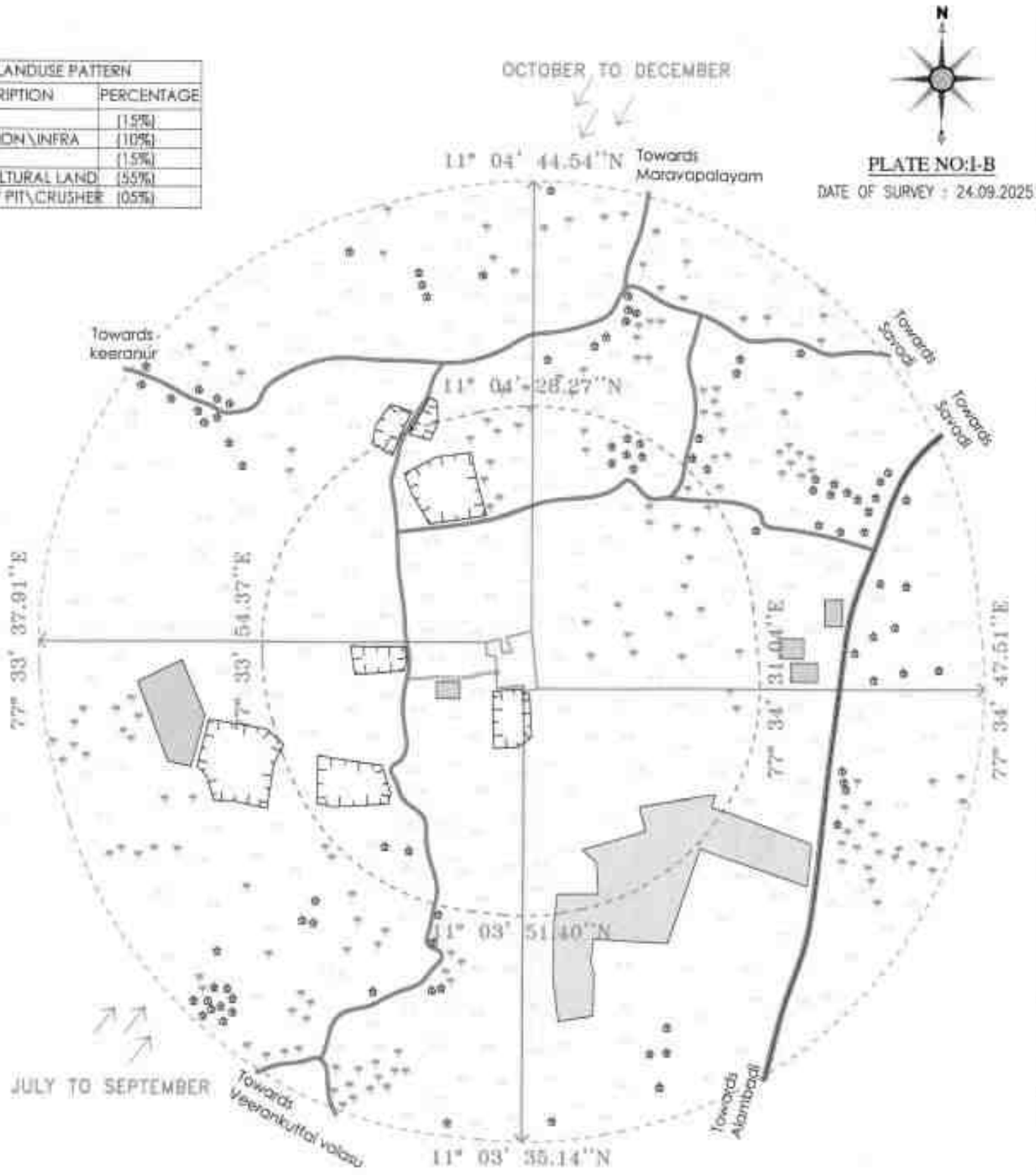


PLATE NO:1-B

DATE OF SURVEY : 24.09.2025

1Km Radius :

500m Radius :

Q.LEASE Area :

TOPO SHEET NO.: 58 E/12

LATITUDE : 11° 04' 02.4645"N to 11° 04' 12.0097"N

LONGITUDE : 77° 34' 10.8364"E to 77° 34' 14.5777"E

APPLICANT :

THIRU R.SENTHILKUMAR,
S/O.RAMASAMY,
3/111,PALLADAM ROAD,
MANGALAM,TIRUPPUR-641 663.

LOCATION OF Q.L AREA:

S.F.NO	: 16/2(P) & 16/3(P),
EXTENT	: 1.01.10 Ha.
VILLAGE	: KEERANUR,
TALUK	: KANGEYAM,
DISTRICT	: TIRUPPUR,
STATE	: TAMIL NADU.

INDEX

- APPROACH ROAD
- MAJOR ROAD
- HABITATION
- TREES
- AGRICULTURAL LAND
- QUARRY PIT
- WIND DIRECTION
- INFRASTRUCTURE
- CRUSHER PLANT
- SH ROAD

ENVIRONMENTAL AND LANDUSE PLAN FOR 1Km RADIUS

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.SENTHILKUMAR, M.Sc.,
QUALIFIED PERSON
Under Rule 15(1)(a)and(3) of EIA 2016

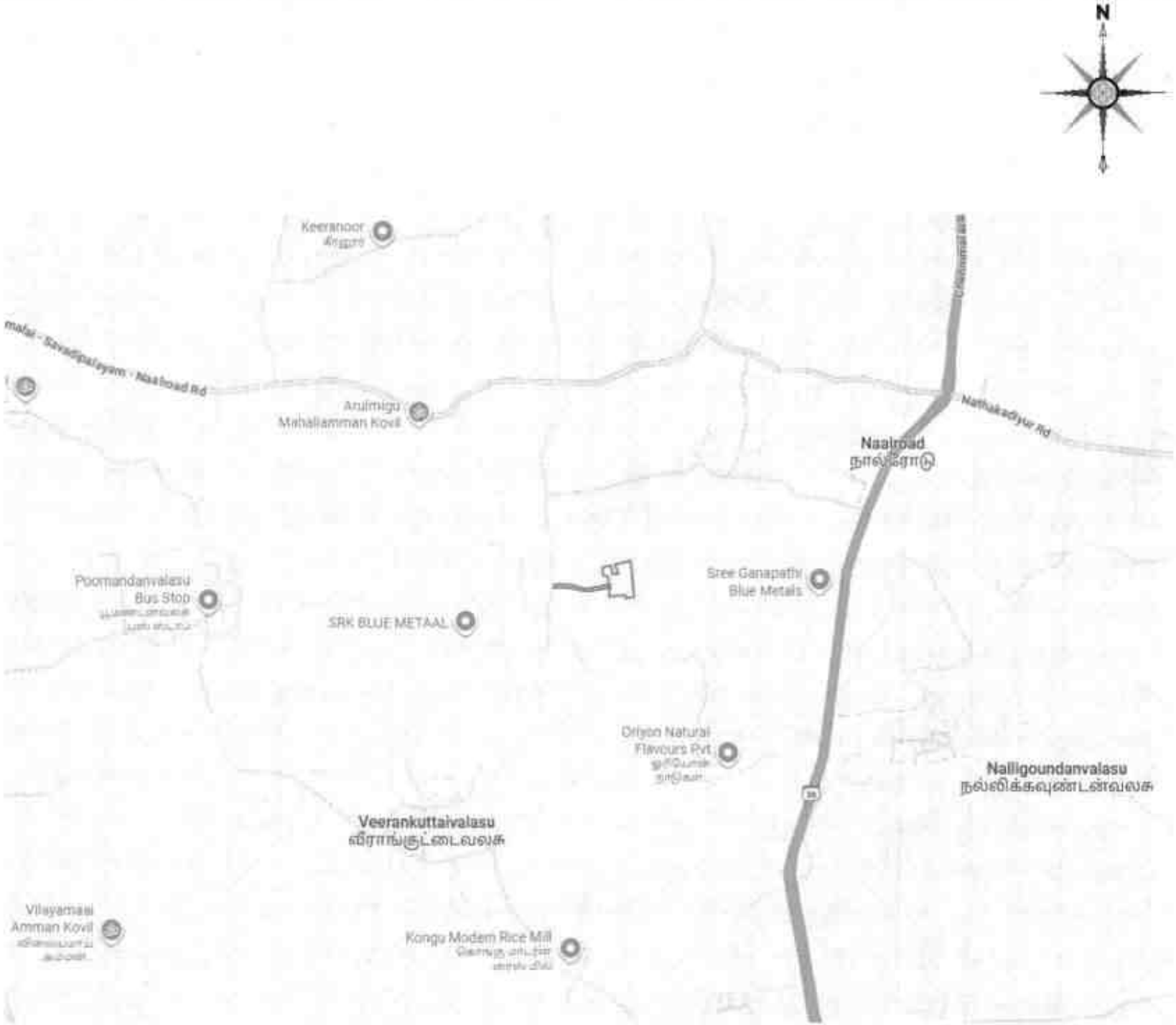


PLATE NO:I-C

DATE OF SURVEY : 24.09.2025

APPLICANT :

THIRU.R.SENTHILKUMAR,
S/O.RAMASAMY,
3/111,PALLADAM ROAD,
MANGALAM,TIRUPPUR-641 663.

LOCATION OF Q.L AREA:

S.F.NO	: 16/2(P) & 16/3(P).
EXTENT	: 1.01.10 Ha.
VILLAGE	: KEERANUR,
TALUK	: KANGEYAM,
DISTRICT	: TIRUPPUR,
STATE	: TAMIL NADU.

INDEX

Q.LEASE AREA

MAJOR ROAD

VILLAGE ROAD

APPROACH ROAD

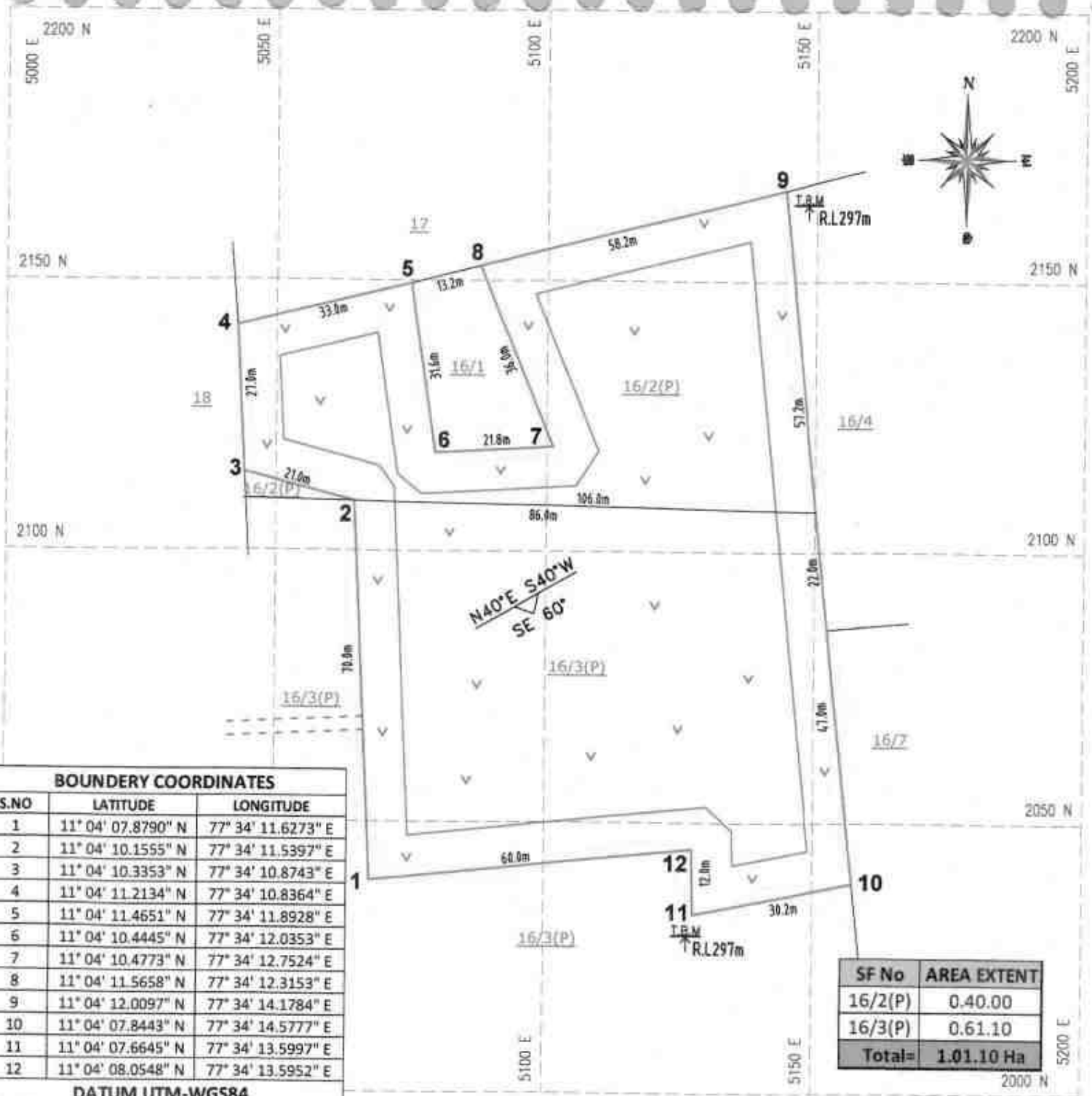
ROUTE MAP

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.VENKATAGIRI, M.Sc.,
QUALIFIED PERSON
Under Rule 15(1)(a)and(b)of MCR,2016



BOUNDERY COORDINATES		
S.NO	LATITUDE	LONGITUDE
1	11° 04' 07.8790" N	77° 34' 11.6273" E
2	11° 04' 10.1555" N	77° 34' 11.5397" E
3	11° 04' 10.3353" N	77° 34' 10.8743" E
4	11° 04' 11.2134" N	77° 34' 10.8364" E
5	11° 04' 11.4651" N	77° 34' 11.8928" E
6	11° 04' 10.4445" N	77° 34' 12.0353" E
7	11° 04' 10.4773" N	77° 34' 12.7524" E
8	11° 04' 11.5658" N	77° 34' 12.3153" E
9	11° 04' 12.0097" N	77° 34' 14.1784" E
10	11° 04' 07.8443" N	77° 34' 14.5777" E
11	11° 04' 07.6645" N	77° 34' 13.5997" E
12	11° 04' 08.0548" N	77° 34' 13.5952" E
DATUM UTM-WGS84		

SF No	AREA EXTENT
16/2(P)	0.40.00
16/3(P)	0.61.10
Total=	1.01.10 Ha

PLATE NO - II

Date of Survey :24.09.2025

APPLICANT :

THIRU.R.SENTHILKUMAR,
S/O.RAMASAMY,
3/111,PALLADAM ROAD,
MANGALAM,TIRUPPUR-641 663.

LOCATION OF Q.L AREA:

S.F.NO	: 16/2(P) & 16/3(P).
EXTENT	: 1.01.10 Ha.
VILLAGE	: KEERANUR,
TALUK	: KANGEYAM,
DISTRICT	: TIRUPPUR,
STATE	: TAMIL NADU.

INDEX

- Q.L.APPLIED AREA BOUNDARY
- 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK (T.B.M)
- GRAVEL
- APPROACH ROAD
- STRIKE AND DIP

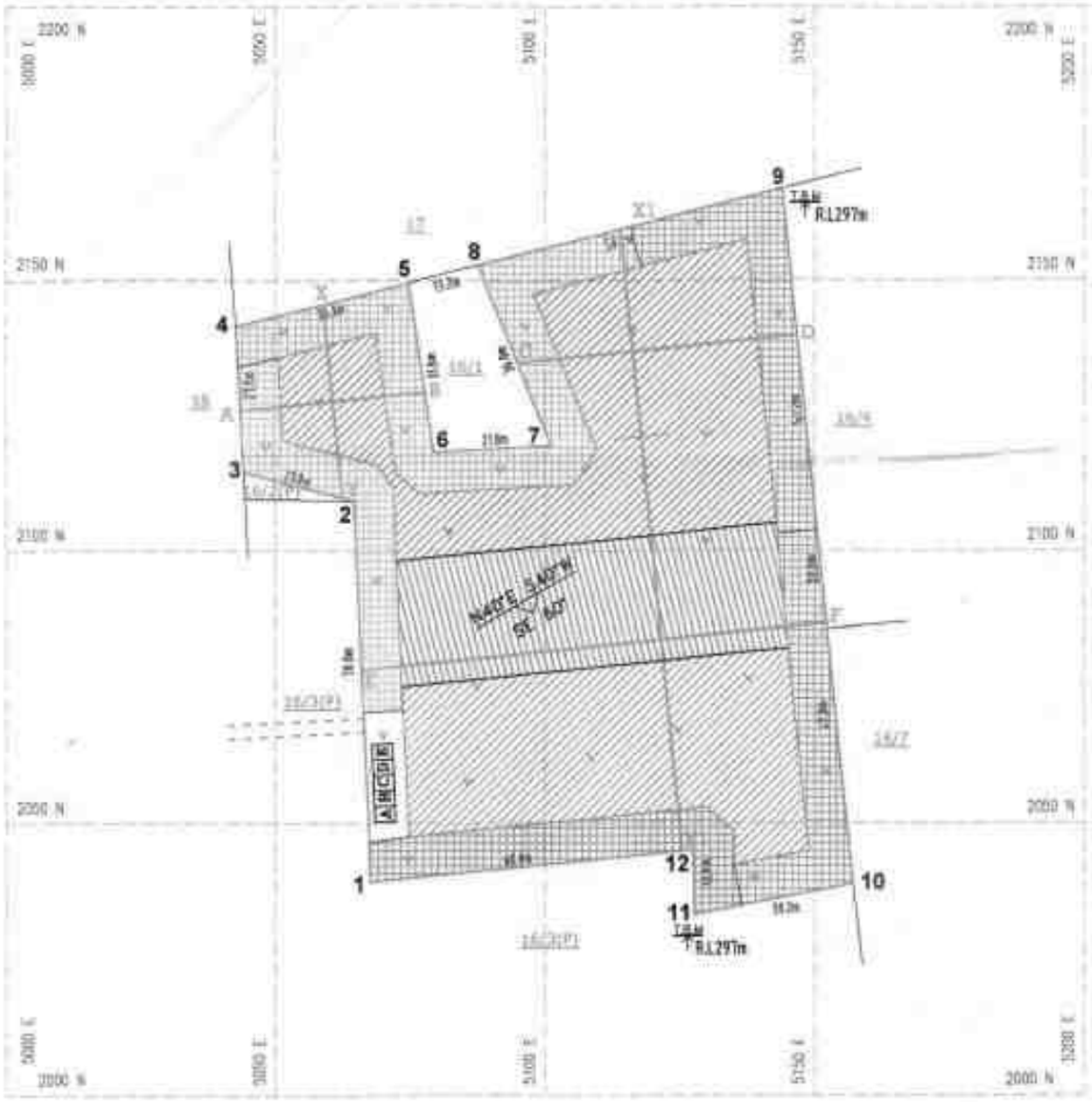
QUARRY LEASE & SURFACE PLAN

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

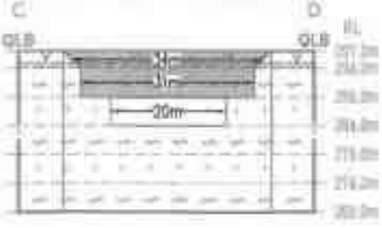
B.VENGADAGIRI,M.Sc.,
QUALIFIED PERSON
Under Rule 15(1)(a)and(2)of MCR,2015



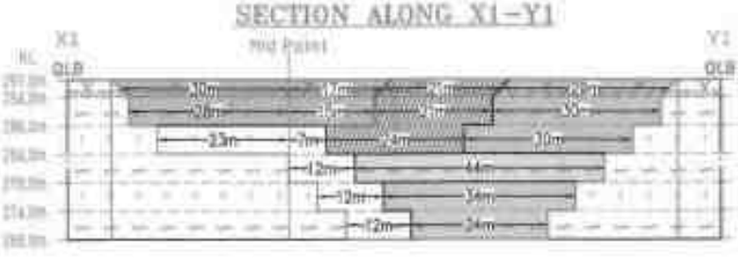
SECTION ALONG X-Y

SECTION ALONG A-B

SECTION ALONG C-D



SECTION ALONG X1-Y1



I - yr Proposed area to be Quarried

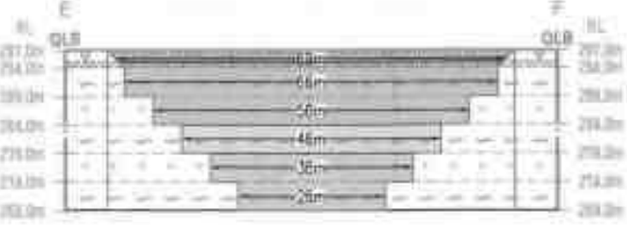
II - yr Proposed area to be Quarried

III - yr Proposed area to be Quarried

IV - yr Proposed area to be Quarried

V - yr Proposed area to be Quarried

SECTION ALONG E-F



SITE SERVICES
(Proposed)

A - OFFICE
B - STORE ROOM
C - FIRST AID ROOM
D - REST SHELTER
E - TOILET

I - yr Proposed area to be Planted

II - yr Proposed area to be Planted

III - yr Proposed area to be Planted

IV - yr Proposed area to be Planted

V - yr Proposed area to be Planted

PLATE NO - III

Date of Survey :24.09.2025

APPLICANT :

THIRU.R.SENTHILKUMAR,
S/O.RAMASAMY,
3/111,PALLADAM ROAD,
MANGALAM,TIRUPPUR-641 663.

LOCATION OF Q.L AREA:

S.F.NO	: 16/2(P) & 16/3(P).
EXTENT	: 1.01.10 Ha.
VILLAGE	: KEERANUR.
TALUK	: KANGEYAM.
DISTRICT	: TIRUPPUR.
STATE	: TAMIL NADU.

INDEX

- Q.L.APPLIED AREA BOUNDARY
- 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- APPROACH ROAD
- STRIKE AND DIP
- WEATHERED ROCK
- ROUGH STONE

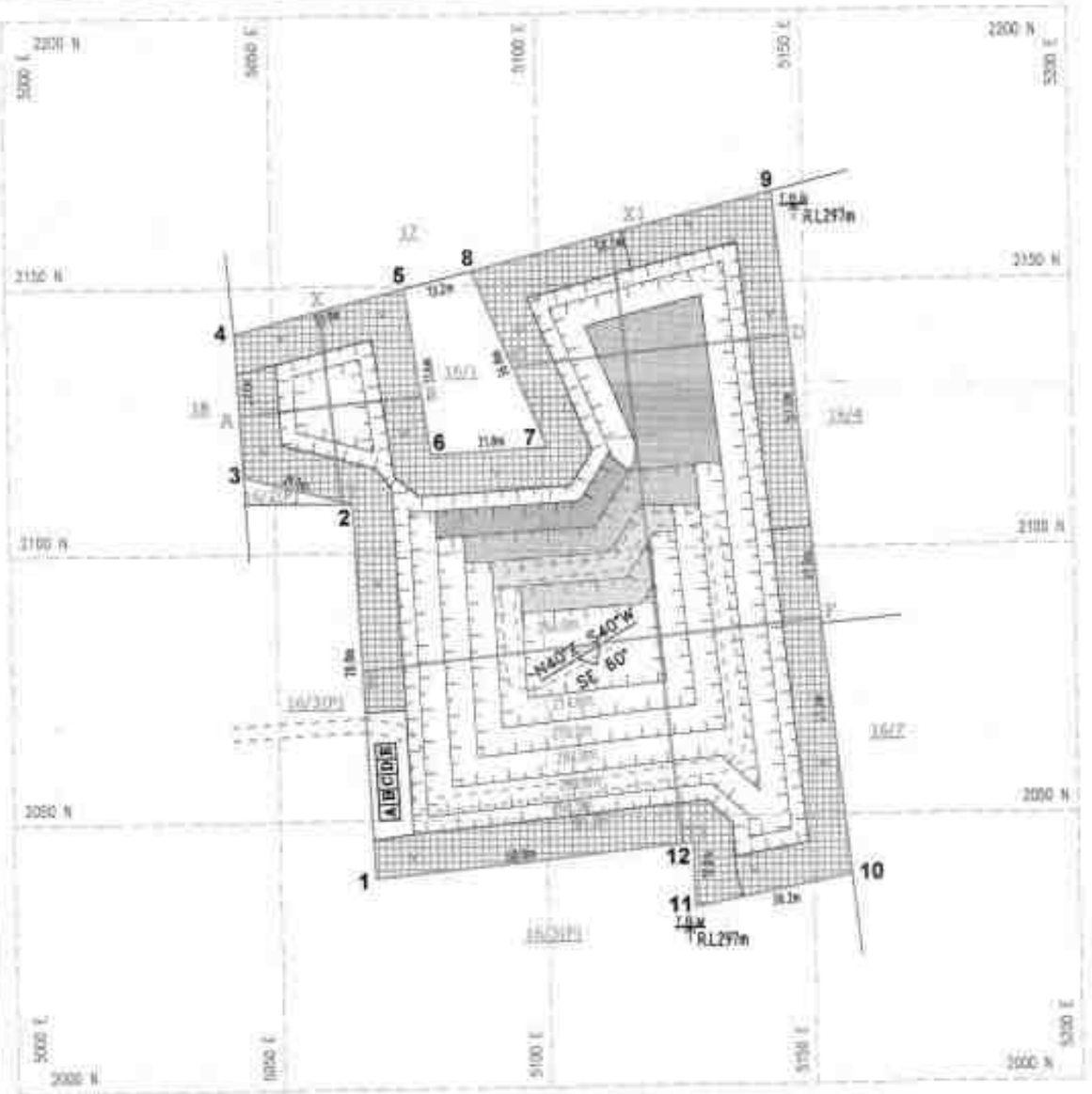
TOPOGRAPHY,GEOLOGICAL , YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS FIRST 'V' YEAR

SCALE 1 : 1000

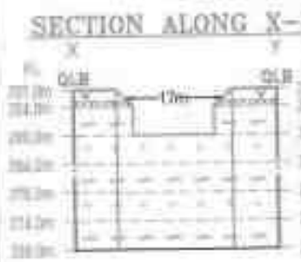
PREPARED BY :

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.

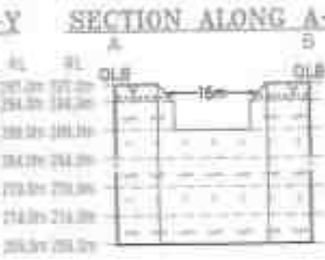
K.VENKADASUBRAMANIAN M.Sc.,
QUALIFIED PERSON
Under Rule 15(1)(a) of TNMCR,2018



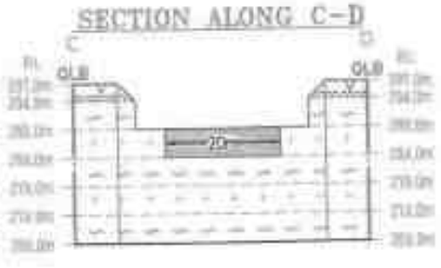
SECTION ALONG X-Y



SECTION ALONG A-B



SECTION ALONG C-D



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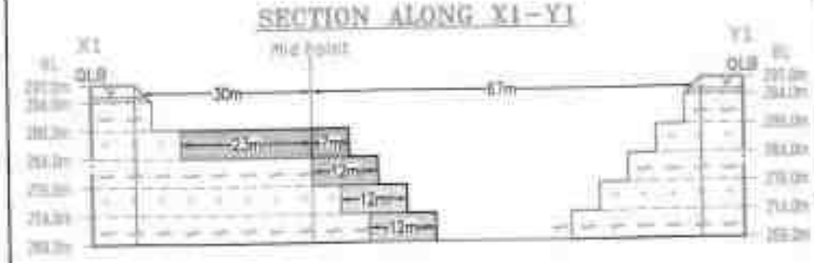
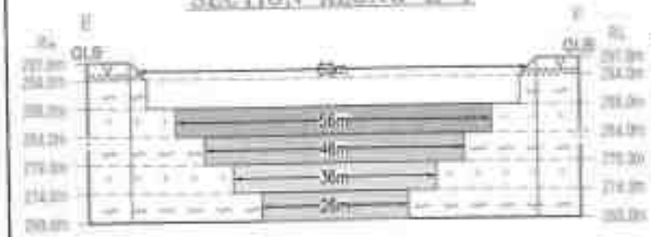


VI - yr Proposed area to be Quarried	
VII - yr Proposed area to be Quarried	
VIII - yr Proposed area to be Quarried	
IX - yr Proposed area to be Quarried	
X - yr Proposed area to be Quarried	

SECTION ALONG E-F



SITE SERVICES

A - OFFICE
B - STORE ROOM
C - FIRST AID ROOM
D - REST SHELTER
E - TOILET

1st V Yr Proposed Pit Dimension
XY-AB 17mX16mX8m(d)
X1Y1-CD 30mX34mX8m(d)
X1Y1-EF 67mX69mX28m(d)

I - V yr Proposed area to be Planted

PLATE NO - III-A

Date of Survey :24.09.2025

APPLICANT :

THIRU.R.SENTHILKUMAR,
S/O RAMASAMY,
3/111,PALLADAM ROAD,
MANGALAM,TIRUPPUR-641 663.

LOCATION OF Q.L AREA:

S.F.NO	: 16/2(P) & 16/3(P).
EXTENT	: 1.01.10 Ha.
VILLAGE	: KEERANUR,
TALUK	: KANGEYAM,
DISTRICT	: TIRUPPUR,
STATE	: TAMIL NADU.

INDEX

- Q.L APPLIED AREA BOUNDARY
- 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK (T.B.M)
- GRAVEL
- APPROACH ROAD
- STRIKE AND DIP
- WEATHERED ROCK
- ROUGH STONE
- QUARRY PIT
- QUARRY ROAD

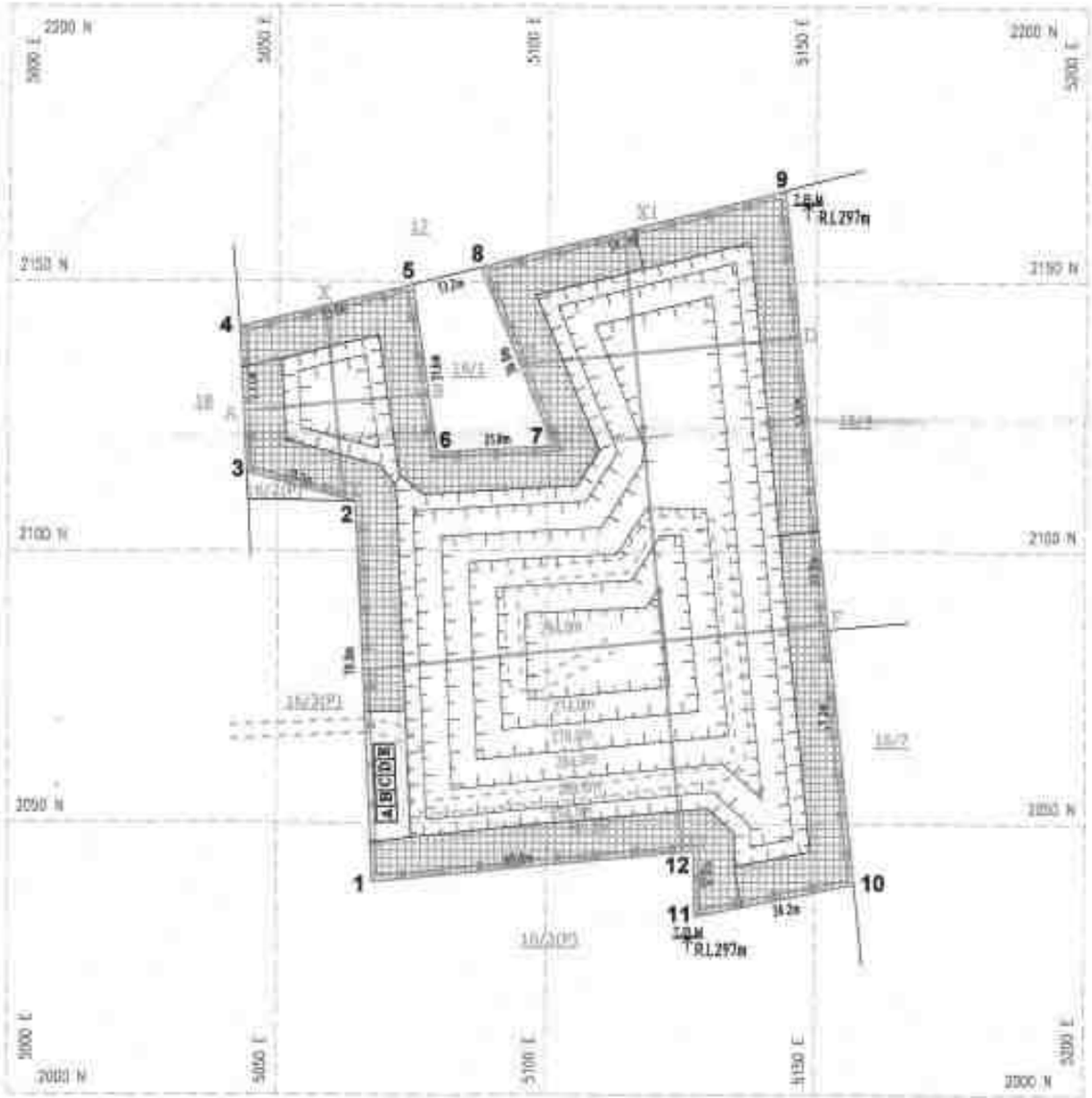
TOPOGRAPHY,GEOLOGICAL , YEAR WISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS SECOND 'V' YEAR

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.

S.PONNAGIRIAPPAN,
QUALIFIED PERSON
Under Rule 19(1)(a) of MCR,2018



LAND USE PATTERN

DESCRIPTION	PRESENT AREA IN (Ha)	AREA AT THE END OF LEASE PERIOD (Ha)
QUARRYING PIT	Nil	0.63.64
INFRASTRUCTURE	Nil	0.01.0
ROADS	Nil	0.02.0
GREEN BELT	Nil	0.34.46
UN-UTILIZED AREA	1.01.10	Nil
TOTAL	1.01.10	1.01.10

PLATE NO - IV

Date of Survey :24.09.2025

APPLICANT :

THIRU.R.SENTHILKUMAR,
S/O.RAMASAMY,
3/111,PALLADAM ROAD,
MANGALAM,TIRUPPUR-641 663.

LOCATION OF Q.L AREA:

S.F.NO	: 16/2(P) & 16/3(P),
EXTENT	: 1.01.10 Ha.
VILLAGE	: KEERANUR,
TALUK	: KANGEYAM,
DISTRICT	: TIRUPPUR,
STATE	: TAMIL NADU.

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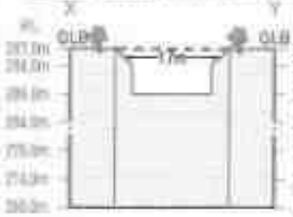
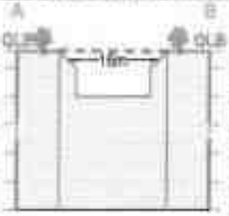
- APPROACH ROAD
- QUARRY PIT
- QUARRY ROAD
- EXISTING LANDFORM
- OLD SURFACE LEVEL
- FINISHED SURFACE LEVEL
- TREES
- FENCING
- PROPOSED GARLAND DRAIN

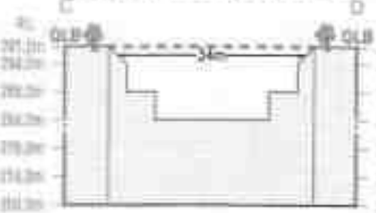
SECTION ALONG X-Y



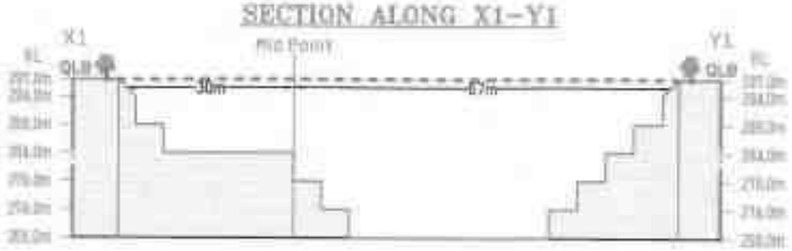
SECTION ALONG A-B



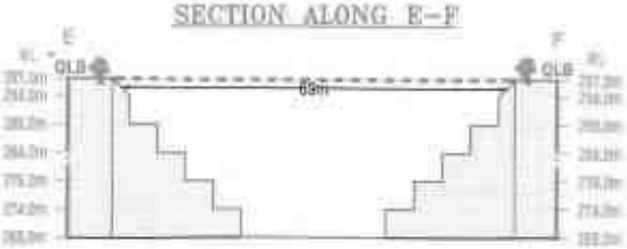
SECTION ALONG C-D



SECTION ALONG X1-Y1



SECTION ALONG E-F



SITE SERVICES

A - OFFICE
B - STORE ROOM
C - FIRST AID ROOM
D - REST SHELTER
E - TOILET

Proposed Pit Dimension

XY-AB 17mX16mX8m(d)
X1Y1-CD 30mX34mX13m(d)
X1Y1-EF 67mX69mX28m(d)

I - V yr Proposed area to be Planted

PROGRESSIVE QUARRY CLOSURE PLAN & SECTIONS

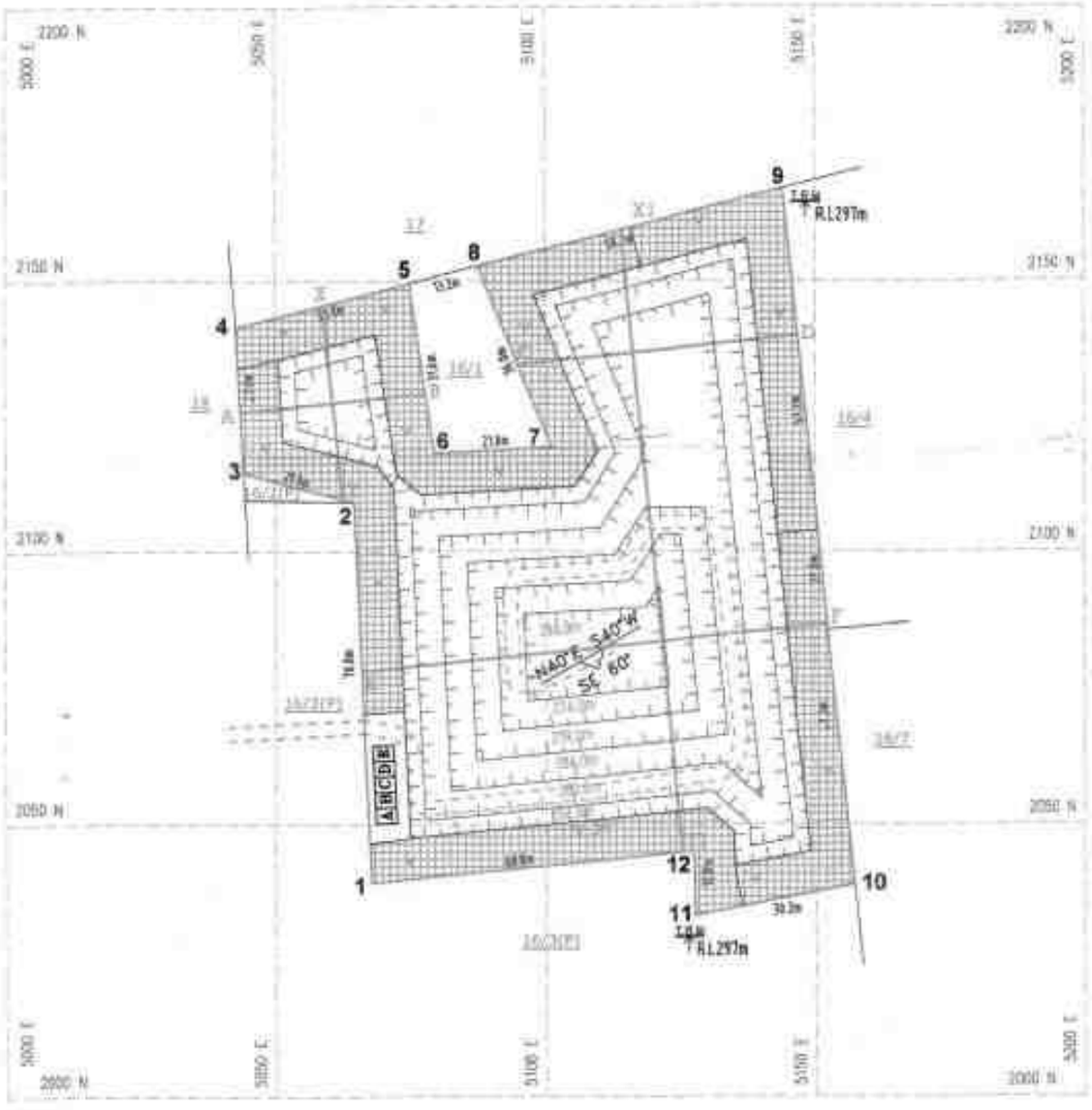
SCALE 1 : 1000

PREPARED BY :

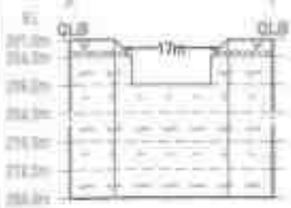
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

QUALIFIED PERSON
Under Rule 15(1)(a)and(b)of MCR,2018

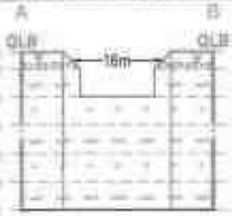
Under Rule 15(1)(a)and(b)of MCR,2018



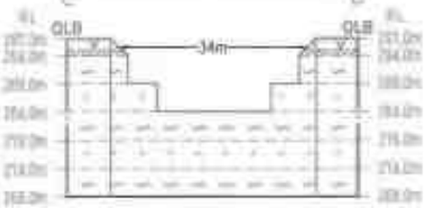
SECTION ALONG X-Y



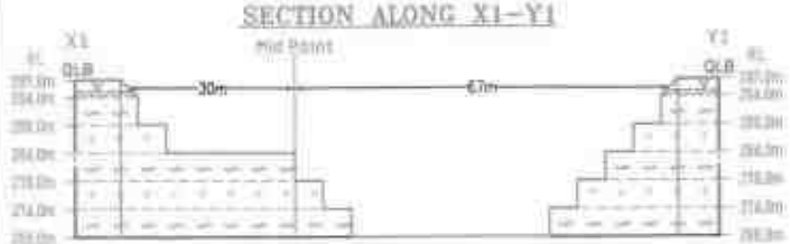
SECTION ALONG A-B



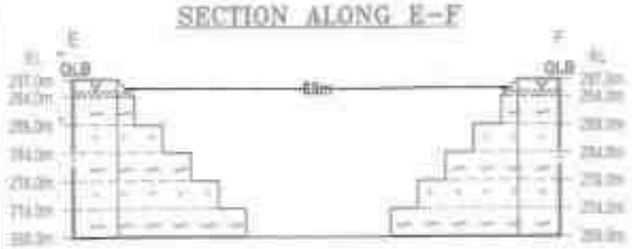
SECTION ALONG C-D



SECTION ALONG X1-Y1



SECTION ALONG E-F



SITE SERVICES

A - OFFICE
B - STORE ROOM
C - FIRST AID ROOM
D - REST SHELTER
E - TOILET

Ultimate Pit Dimension

XY-AB 17mX16mX8m(d)
X1Y1-CD 30mX34mX13m(d)
X1Y1-EF 67mX68mX28m(d)

1 - V yr Proposed area to be Planted

PLATE NO - V

Date of Survey :24.09.2025

APPLICANT :

THIRU.R.SENTHILKUMAR,
S/O.RAMASAMY,
3/111,PALLADAM ROAD,
MANGALAM,TIRUPPUR-641 663.

LOCATION OF Q.L AREA:

S.F.NO	: 16/2(P) & 16/3(P).
EXTENT	: 1.01.10 Ha.
VILLAGE	: KEERANUR,
TALUK	: KANGEYAM,
DISTRICT	: TIRUPPUR,
STATE	: TAMIL NADU.

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- QUARRY PIT
- QUARRY ROAD

CONCEPTUAL PLAN & SECTIONS

SCALE 1 : 1000

PREPARED BY :

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K.VENKATACHALAM,M.Sc.,
QUALIFIED PERSON
Under Rule 15(1)(a)and(b)of MCR,2018.

TOPOGRAPHICAL VIEW OF KEERANUR
ROUGH STONE AND GRAVEL QUARRY LEASE APPLIED AREA

Name of the Applicant	:	**Thiru. R. Senthilkumar,** S/o. Ramasamy,
Address	:	No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641 663

Location:

S.F.Nos.	:	16/2 (P) and 16/3 (P)
Extent	:	1.01.10 Ha.
Village	:	Keeranur
Taluk	:	Kangayam
District	:	Tiruppur

Signature of the applicant

(R. Senthilkumar)

கிராம நிருவாக அலுவலர்
07 - கீரனூர் கிராமம்
(Village Administrative Officer)
காங்கேயம் வட்டம்,

Attestation

சான்று

திருப்பூர் மாவட்டம் காங்கயம் வட்டம் 07- கீரனூர் கிராமத்தில் புல எண்- 16/2 ஆ.மு.மைக் 0-41-00 ஏர்ஸ் நிலம் பட்டா எண்- 184 -ல் தாசினை, ஆதித்திராவர் ஆகியோர் பெயரிலும், புல எண்- 16/3 ஆ.மு.மைக் 1.55.00 ஏர்ஸ் நிலம் பட்டா எண்- 3387-ல் நாகராஜ என்பவர் பெயரிலும் உள்ளது எனவும் மேற்படி புல எண் 16/2, 16/3 நிலத்தை அடுத்து 300 மீட்டர் தூரத்தில் கோவில்கள், பள்ளிக்கூடம் மற்றும் அங்கீகரிக்கப்பட்ட வீடு மனைகள் ஏதுமில்லை என புலத்தணிக்கையில் தெரிய வருகிறது.

கிராம நிருவாக அலுவலர்
07 - கீரனூர் கிராமம்
காங்கயம் வட்டம்.

File No: 13011
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)
***

Dated: **06/01/2026**

To,

Muthusamy R
No.77, South Street, Morattupalayam Village, Uthukuli Taluk, TIRUPPUR 638752 ,TAMIL NADU.
karthi.m2194@gmail.com

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

Sir/Madam,

Sub: SEIAA, Tamil Nadu – Proposed Rough Stone and Gravel Quarry over an extent of 1.31.0Ha in S.F.Nos. 71/A of Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu by Thiru. R. Muthusamy - under project category – "B1" and Schedule S.No. 1(a) – "Mining of Minerals"– **ToR issued along with Public Hearing**- preparation of EIA report – Regarding.

Ref:
1.Online proposal No. SIA/TN/MIN/558170/2025, Dated 14/11/2025.
2.Minutes of the 651st Meeting of SEAC-II held on 11.12.2025.
3.Minutes of the 937th meeting of SEIAA held on 23.12.2025.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO25B0108TN5994383N
(ii) File No.	13011
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vii) Name of Project	Rough Stone and Gravel Quarry Project Belongs to R. Muthusamy
(viii) Name of Company/Organization	RANGASAMY MUTHUSAMY
(ix) Location of Project (District, State)	TIRUPPUR, 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 23.12.2025. The minutes of the meeting and all the Application and documents submitted [viz. Form-1 Part A, Part B] are available on PARIVESH portal which can be accessed by scanning the QR Code above.

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

4.The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal of **Thiru. R. Muthusamy** 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 Additional Chief Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Natural Resources Department, Tamil Nadu.
4. The 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, Tiruppur District
7. The Commissioner of Geology and Mines, Guindy, Chennai-32
8. The Assistant Director, Department of Geology & Mining, Tiruppur 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 s for (Mining Of Minerals)

1. Seiaa Specific Conditions :

S. No	Terms of Reference
1.1	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 of 1,08,350 m^3 of Rough Stone & 36,652m^3 of Gravel and annual peak production shall not exceed 31,050m^3 of Rough Stone & 18,172m^3 of Gravel, for a depth of mining 34m 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 &

S. No	Terms of Reference
	normal conditions & the SEIAA Standard conditions.

2. Seiaa Standard Conditions :

S. No	Terms of Reference
2.1	**Cluster Management Committee** 1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry. 2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc., 3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines. 4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network. 5. The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan. 6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report. 7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. 8. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity. **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**

S. No	Terms of Reference
	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. 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

S. No	Terms of Reference
	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.

SEAC CONDITIONS - SITE SPECIFIC

Major Conditions:

1. During the meeting, the waste dump was observed in KML of the proposed area. Hence, the Project Proponent shall remove the same and furnish photographic/videographic evidence, along with the EIA report.
2. From the KML, it was observed that a significant presence of trees at the proposed site. The project proponent shall furnish detailed information on the existing trees, including the total count and species, along with a details for re-plantation, **along with the EIA report.**

General Conditions:

1. **A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal:**
   - **(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.**
2. The Geo referenced Boundary pillars to be erected on the field as per the mine rules and the evidence should be submitted along with the EIA report.
3. The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.
4. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300m & upto 1km shall be enumerated with details such as dwelling houses with number of occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations.

5. The proponent shall furnish photographs of adequate fencing, garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
6. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.
7. 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.
8. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.
9. The PP shall prepare a conceptual working plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall.
10. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.

SEAC STANDARD CONDITIONS

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 water bodies like lake, water tanks, etc are located within 1 km of the proposed 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 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 t he 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 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 detail ed.

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.

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 willtake further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
- The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
- The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Signature Not Verified

Digitally Signed by : A R Rahul Nadh IAS
Member Secretary, SEIAA

Date: 06/01/2026

(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) All the conditions mentioned in the precise area communicated to the applicant shall be followed during quarry operation as per Act & Rules.

Special Condition:

Only after obtaining appropriate permission for common boundary from the Directorate General of Mines Safety under Regulation 111(3) of the Metalliferous Mines Regulations,1961, the lessee shall work in the areas of common boundary between the proposed rough stone quarry in S.F.Nos. 71/A and Rough stone quarry in S.F.Nos.66/1 and 66/2 of Keeranur Village. No quarry works shall be extended into the common boundary unless permission for the effect is obtained from the Directorate General of Mines Safety and submitted the same to the Assistant Director, Department of Geology and Mining, Tiruppur.

Encl.: Approved Mining Plan.

Assistant Director,
Dept. of Geology and Mining,
Tiruppur.

2. 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. Proposed quarries

S. No	Name of the lessee	Village	S.F. No	Extent Hect.	Lease period
1.	R.Muthusamy	Keeranur	71/A	1.31.00	Subject Area
2.	R.Senthil Kumar	Keeranur	16/2(P), 16/3(P)	1.01.10	Applied

2. Present existing quarries

S. No	Name of the lessee	Village	S.F. No	Extent Hect.	Lease period
1	R.Muthusamy (TPR 061)	Keeranur	66/1, 66/2	3.07.00	10-11-2022 to 09-11-2027
2.	K.Thangavel (TPR 013)	Keeranur	70/A2, 70/B2, 70/C2(P)	1.43.00	11-05-2022 to 10-05-2027

3. Expired quarries

S. No	Name of the lesee	Village	S.F. No	Extent Hect.	Lease period
1.	P. Ramasamy (TPR 129)	Keeranur	15(P), 16/3(P)	1.21.00	28-08-2020 to 27-08-2025

Assistant Director,
Dept. of Geology and Mining,
Tirupput.

Copy to : State Level Environment Impact Assessment Authority-Tamil Nadu,3rd Floor, Panagal Maaligai,No.1 Jeenis Road, Saidapet,Chennai-15.

GEOLOGY AND MINING • TIRUPUR • ASSISTANT DIRECTOR

MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR KEERANUR ROUGH STONE AND GRAVEL QUARRY

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED UNDER TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959)

Patta Land / Lease Period = Ten Years

IN

LOCATION OF THE QUARRY LEASE APPLIED AREA

EXTENT	: 1.31.0 Ha
S.F.Nos.	: 71/A
VILLAGE	: KEERANUR
TALUK	: KANGAYAM
DISTRICT	: TIRUPPUR
STATE	: TAMIL NADU

FOR

APPLICANT

THIRU. R. MUTHUSAMY,
S/o. Rangasami Gounder,
No 77, South Street, Morattupalayam,
Tiruppur District,
Tamil Nadu State – 638 752
Mobile No.: +91 98659 58538.

PREPARED BY

B. VENGADAGIRI, M.Sc.,
No.105, 5th Cross,
Alagapuram,
Salem District,
Tamil Nadu – 636 010
Mobile No.: +91 86953 32233
E-mail ID: vengatb6@gmail.com

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.
- PPV - Peak Particle Velocity.
- QP - Qualified Person.
- MSL - Mean Sea Level
- AGL - Above Ground Level
- BGL - Below Ground Level
- MT - Metric Tonnes
- RS - Rough Stone

R. Muthusamy,
S/o. Rangasami Gounder,
No 77, South Street, Morattupalayam,
Tiruppur District,
Tamil Nadu State – 638 752
Mobile No.: +91 98659 58538.

GEOLOGY AND MINING • TIRUPUR • ASSISTANT DIRECTOR

CONSENT LETTER FROM THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Keeranur Rough Stone and Gravel Quarry over an extent 1.31.0 Hectares of patta lands in S.F.No. 71/A of Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared by

B. VENGADAGIRI, M.Sc.,

Qualified Person

I have entrusted the works to prepare the Mining plan based upon the production requirements to me as per the Mines Acts, Rules, Regulations and Amendments as on date. I request to the Assistant Director, Department of Geology and Mining, Tiruppur District, Tamil Nadu State to make further correspondence regarding the modification of the Mining plan with the said Qualified Person at his following address.

B. Vengadagiri, M.Sc.,

No.105, 5th Cross,

Alagapuram,

Salem District – 636 010.

Mobile No.: +91 86953 32233.

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

(R. Muthusamy)

Place: Tiruppur

Date: 22.10.2025

R. Muthusamy,
S/o. Rangasami Gounder,
No 77, Southstreet, Morattupalayam,
Tiruppur District,
Tamil Nadu State – 638 752
Mobile No.: +91 98659 58538.

GEOLOGY AND MINING • TIRUPUR • ASSISTANT DIRECTOR

DECLARATION OF THE APPLICANT

The Mining plan and Progressive Quarry Closure Plan in Respect of Keeranur Rough Stone and Gravel Quarry over an extent 1.31.0 Hectares of patta lands in S.F.No. 71/A of Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared in full consultation with me by.

B. VENGADAGIRI, M.Sc.,
Qualified Person

I have understood its contents and agree to implement the same in accordance with Laws applicable to Mines and I will take all the responsibility for working the quarry in a manure under Rule 23 of Tamil Nadu Minor Mineral Concession Rules, 1959.

Signature of the Applicant

(R. Muthusamy)

Place: Tiruppur
Date: 23.10.2025

ASSISTANT DIRECTOR * GEOLOGY AND MINING * TIRUPUR

CERTIFICATE

Certified that I am, **B. Vengadagiri, M.Sc.,** residing at No.105, 5th Cross, Alagapuram, Salem District - 636 010, holding a Post Graduate Degree in Geology (M.Sc. Applied Geology) from Annamalai 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 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 Keeranur Rough Stone and Gravel Quarry over an extent 1.31.0 Hectares of patta lands in S.F.No. 71/A of Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State for **Thiru. R. Muthusamy**, S/o. Rangasami Gounder, residing at No 77, Southstreet, Morattupalayam, Tiruppur District, Tamil Nadu State – 638 752. 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: 23.10.2025

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 • GEOLOGY AND MINING • TIRUPUR

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 Keeranur Rough Stone and Gravel Quarry over an extent 1.31.0 Hectares of patta lands in S.F.No. 71/A of Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared for

Thiru. R. Muthusamy,
S/o. Rangasami Gounder,
No 77, Southstreet, Morattupalayam,
Tiruppur District,
Tamil Nadu State – 638 752
Mobile No.: +91 98659 58538.

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, Tiruppur District, Tamil Nadu 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: 23.10.2025

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 • GEOLOGY AND MINING • TIRUPUR •

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 Keeranur Rough Stone and Gravel Quarry over an extent 1.31.0 Hectares of patta lands in S.F.No. 71/A of Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu State has been prepared for

Thiru. R. Muthusamy,
S/o. Rangasami Gounder,
No 77, Southstreet, Morattupalayam,
Tiruppur District,
Tamil Nadu State – 638 752
Mobile No.: +91 98659 58538.

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 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: 23.10.2025

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ASSISTANT DIRECTOR GEOLOGY AND MINING TIRUPPUR

MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR KEERANUR ROUGH STONE AND GRAVEL QUARRY

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959)

INTRODUCTION AND EXECUTIVE SUMMARY:

The applicant **Thiru. R. Muthusamy**, S/o. Rangasami Gounder residing at No. 77, South Street, Morattupalayam, Tiruppur District, Tamil Nadu State – 638 752 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 has applied for quarrying Rough stone and Gravel over an extent 1.31.0 Hectares of patta lands in S.F.No. 71/A of Keeranur Village, Kangayam Taluk, Tiruppur District for the period of Ten years under rule 19 (1) 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, Tiruppur District and passed a precise area communication letter vide **R.C.No.845/Mines/2025, Dated: 22.09.2025** under rule 19 and 20 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 Environment Impact Assessment Authority, Tamil Nadu to quarrying Rough stone for the period of **Ten years** with following conditions (Refer Annexure No. I):

General Condition:

1. A safety distance of 7.5 meters should be provided to the adjacent patta lands under Tamil Nadu Minor Mineral Concession Rules, 1959 while quarrying operation.
2. The quarry operation should be done by using mild explosives with certified blaster.
3. The applicant should submit the DGPS survey report for the area applied for quarry lease.
4. The applicant should submit the approved mining plan within the time stipulated in Precise area communication letter.
5. The applicant should be obtained Environmental clearance before grant of lease.
6. The applicant should carry out the blasting with mild explosive by an authorized explosive agency and no hindrance shall be caused to the adjacent pattadars/ patta and government lands while quarrying operation.

7. The applicant should submit the approved mining plan within the stipulated time as per Rules.
8. The quarry lease shall be granted only after submission of Environmental clearance from the Environment Impact Assessment Authority for the area applied for quarry lease.

This Mining Plan along with Progressive quarry closure Plan is prepared in full consent with **Thiru. R. Muthusamy**, S/o. Rangasami Gounder residing at No. 77, South Street, Morattupalayam, Tiruppur District, Tamil Nadu State – 638 752 for his proposed Rough stone and Gravel quarry over an extent 1.31.0 Hectares of patta lands in S.F.No. 71/A of Keeranur Village, Kangayam Taluk, Tiruppur 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.

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 without any geological exploration. 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.12.13.2011 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 22.10.2025.

Short Notes of Mining plan:

a. Village Panchayat - Keeranur

b. Panchayat Union - Kangeyam

c. Total extent of the lease applied area is 1.31.0Ha.

d. Topography of the area - Flat topography.

e. The Estimated Reserves and Resources are given table below:

The applicant intends to apply and obtain permission from Director of Mines Safety, Chennai Under Regulation 111(3) of Metalliferous Mines Regulations, 1961 for amalgamating the mine boundary with adjacent existing quarry lease held by Thiru. R. Muthusamy, over an extent of 3.07.0 Ha of Patta land in S.F.Nos. 66/1 and 66/2 of Keeranur Village situated on the Western side. This relaxation for working Common mine boundary will be applied only after grant of this lease by the provisions under Regulation 111(3) of Metalliferous Mines Regulations, 1961 (Refer Plate No. III to III-A) The mineral reserves locked up under safety distance and benches will be removed only after obtained permission and approval from the competent authority.

Hence, the reserves are estimated with two categories, one is proposed common mine boundary on the Western side as requested by the applicant (Refer Plate No. III and III-A) and another category is leaving the safety distance and Benches on all sides (Refer Plate No. III-B and III-C). The Estimated Reserves and Resources are given table below

Table – 1

Description			Rough stone (MT)	Gravel (MT)
Estimated Geological Resources			18,01,250	1,04,800
Tentative Mineable Reserves	As per proposed Common mine Boundary		5,54,813	81,872
	After leaving safety distance and Benches		2,97,964	73,304
Proposed production for Ten years lease period	As per Common mine Boundary	Proposal for 1st Five years	3,38,250	81,872
		Proposal for 2nd Five years	2,16,563	-
		Peak Production	89513	33,712
	After leaving safety distance and Benches	Proposal for 1st Five years	2,69,089	73,304
		Proposal for 2nd Five years	28,875	-
		Peak Production	85,389	36,344

f. Proposed Depth of mining = 54m [Gravel 4m + Rough stone 50m]- As per proposed Common mine boundary / 34 m after leaving safety and benches.

g. Lease Period = Ten Years

h. Mining Plan period = Five Years

i. It is a fresh lease applied area, at present the area is virgin. Hence, no existing pit.

j. Method of mining / level of mechanization.

Opencast mechanized method, the quarry operation involves Hand Jack hammer is proposed to drilling and slurry blasting with NONEL initiation,

k. Type of machineries proposed in the quarrying operation is given below.

Excavators attached with 0.90m³ Bucket and rock breaker.

Jack hammer, Compressor (Diesel drive) (4 Jack hammer capacity)

Tippers.

l. No trees will be uprooted due to this quarry operation.

m. 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.

n. There is No Export of this Rough stone and Gravel.

o. 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.

p. The lease applied area is about bounded by eight corners; the corners are designated as 1 – 8 clock-wise from the Southwestern corner and Co-ordinates for all the corners are clearly marked in the Quarry Lease Plan and Surface Plan enclosed as Plate No. II & II-A.

q. 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, to III-C.

r. General conditions will not applicable for the proposed area. The area applied for lease is 10Km away from the,

i) Interstate Boundary,

ii) Protected area under wild life protection ACT 1972,

iii) Critically polluted areas as identified by CPCB,

iv) Notified Eco sensitive areas.

s. There is no waste anticipated during entire quarry operation. Hence, waste dump is not proposed in the lease applied area.

t. Around 24 employees are proposed to deploying the quarrying operation.

u. Total Cost of the project is about **Rs. 1,38,28,000/-**.

ASSISTANT DIRECTOR GEOLOGY AND MINING TIRUPUR

1.0 GENERAL INFORMATION

1.1 Name of the Applicant with Address:

Name	:	**Thiru. R. Muthusamy,** S/o. Rangasami Gounder
Address	:	No. 77, South Street, Morattupalayam, Tiruppur District
State with PIN Code	:	Tamil Nadu State – 638 752.
Mobile No.	:	+91 98659 58538
Aadhaar No.	:	6023 3250 5565 (Refer Annexure No. VII)

1.2 Status of the Applicant (Individual / Company / Firm):

The applicant is an 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:

Ten 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
Address	:	No.105, 5th Cross, Alagapuram, Salem District,
State with PIN Code	:	Tamil Nadu – 636 010.
Mobile No.	:	+91 86953 32233
Email	:	vengatb6@gmail.com

(Refer Annexure Nos. VIII and IX).

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 and the Rough stone is clearly inferred from the adjacent existing quarry 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, Tiruppur District vide **R.C.No.845/Mines/2025, Dated: 22.09.2025** (Refer Annexure No. I) and was given to us for the preparation of mining plan to meet out the applicant's production schedule.

2.0 LOCATION AND ACCESSIBILITY:

2.1. Details of the area with location map:

The lease area is located about 25.8km eastern side of Tiruppur town, 6.8km Northwestern side of Kangeyam Town and 2km Southeastern side of Keeranur hamlets.

	26.6km		8.0km		2km	
Tiruppur	→	Kangeyam	→	Keeranur	→	Lease applied area
	Southeast		Northwest		Southeast	

Location Map of the Lease Applied area

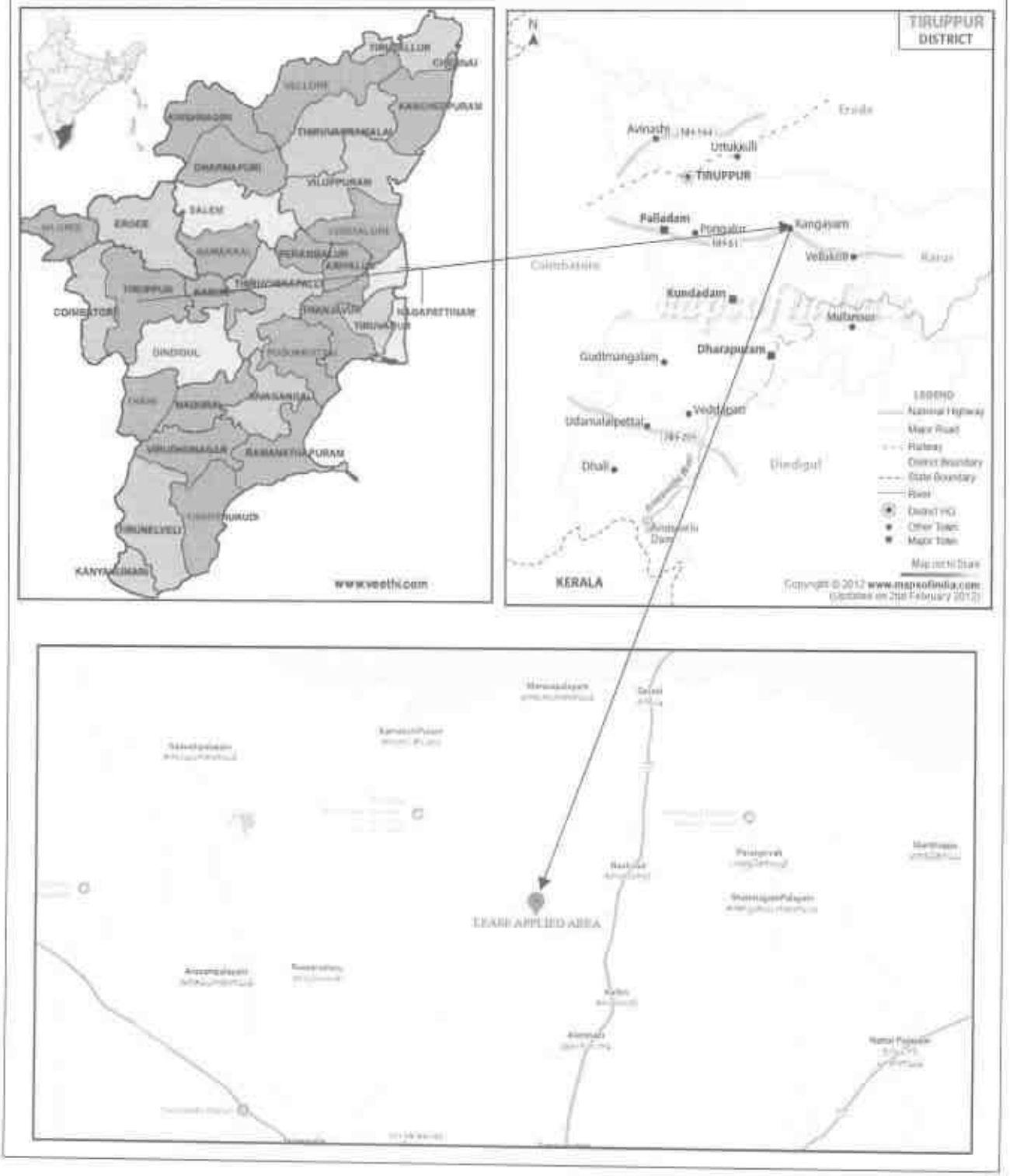

Table – 2

District	Taluk	Village	S.F. Nos.	Area (Ha.)	Patta no.
Tiruppur	Kangayam	Keeranur	71/A	1.31.0	417

Source: As per the FMB and 'A' register record furnished by the applicant.

2.2. Classification of the area (Ryotwari/ Poramboke / others):

It is a patta land, classified as punsei (Refer Annexure No. IV to VI).

2.3. Ownership / Occupancy of the applied area (surface right):

It is patta land, registered in the name of applicant (Thiru. R. Muthusamy) vide patta No. 417 (Refer Annexure No. IV to VI).

2.4. Existence of public road / Railway line, if any nearby and approximate distance:

The approach road is situated on the Northern side, which is connects to the cart track situated at adjacent to 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 existence and the same has been utilized for haulage and maintained during the entire lease period.

The Nearest Railway line is Tiruppur – Erode which is located about 15km on the Northwestern side of the area as per the GSI Toposheet and Google Map.

2.5. Toposheet No. with latitude and longitude:

The lease applied area falls in the Toposheet No: **58-E/12** Latitude between: **11° 03'58.99"N to 11° 04' 03.61"N** and Longitude between: **77° 33' 54.51"E to 77° 33' 58.17"E** on WGS datum-1984 as per the GSI Toposheet (Refer Plate Nos. I to IIA).

ASSISTANT DIRECTOR GEOLOGY AND MINING TIRUPPUR

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 4m and followed by Massive Charnockite which is clearly inferred from the adjacent existing quarry pit.

The Water level in the surrounding area is 110m below from general ground. Average annual rainfall is about 619mm.

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 N30°E – S30°W with dipping towards SE60°.

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 Tiruppur District. Besides, the Qualified Person and his team members made a detailed geological study of the proposed area. The Rough stone is clearly inferred from the adjacent existing quarry 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 two sections have been drawn, one section drawn along strike direction as (X-Y) Width wise and another one cross sections drawn perpendicular to strike (A-B) Length wise to cover the maximum area considered for lease upto 54m depth below from the ground profile.

The Topographical, Geological plan and sections demarcated the commercial marketable Rough stone and Gravel deposit has been prepared in the scale of 1:1000 (please refer the Geological plan and sections Plate No. III to III-C). As the sale of Rough stone and Gravel are in terms of Metric Tonnes and the estimated bulk density of Rough stone is 2.75 and 2 for Gravel. 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 54m [4m Gravel + 50m Rough stone] below from the ground level. The Geological resources are estimated by area method and total estimated geological resources are given table below.

TABLE – 3

GEOLOGICAL RESOURCES						
Area in Sq.m	**Depth (m)**	**Rough Stone (m^3)**	**Gravel (m^3)**	**Bulk Density**	**Rough Stone (MT)**	**Gravel (MT)**
13100	4	-	52400	2	-	104800
13100	50	655000	-	2.75	1801250	-
Total		**542940**	**36196**	-	**1801250**	**104800**

Estimated Geological Resources of Rough Stone : **18,01,250 MT**

Estimated Gravel : **1,04,800 MT**

Geological Resources has been estimated based on the physical investigation and filed survey data.

Tentative Mineable Reserves:

The applicant intends to apply and obtain permission from Director of Mines Safety, Chennai Under Regulation 111(3) of Metalliferous Mines Regulations, 1961 for amalgamating the mine boundary with adjacent existing quarry lease held by Thiru. R. Muthusamy, over an extent of 3.07.0 Ha of Patta land in S.F.Nos. 66/1 and 66/2 of Keeranur Village situated on the Western side of the lease area. This relaxation for working Common mine boundaries will be applied only after grant of this lease by the provisions under Regulation 111(3) of Metalliferous Mines Regulations, 1961 (Refer Plate No. III and III-A). The mineral reserves locked up under safety distance and benches will be removed only after obtained permission and approval from the competent authority.

Hence, the mineral reserves are estimated with two categories, one is proposed Common mine boundary on the Western side as requested by the applicant upto a depth of 54m (Refer Plate No. III and III-A) and another category is leaving the safety distance and Benches on all sides upto a depth of 34m (Refer Plate No. III-B and III-C). The depth variation bound to occur in the mineable reserves due to the benches are closed at a depth of 34m without common mine boundary working. Since the reserves are estimated upto a depth of 34m only after leaving safety distance and benches on all sides of boundary.

TABLE – 4

TENTATIVE MINEABLE RESERVE – AFTER LEAVING SAFETY DISTANCE AND BENCHES								
Section	**Bench**	**Length (m)**	**Width (m)**	**Depth (m)**	**Volume (m^3)**	**Bulk Density**	**Rough Stone (MT)**	**Gravel (MT)**
XY-AB	i	119	77	4	36652	2	-	73304
	ii	108	65	5	35100	2.75	96525	-
	iii	98	55	5	26950	2.75	74113	-
	iv	88	45	5	19800	2.75	54450	-
	v	78	35	5	13650	2.75	37538	-
	vi	68	25	5	8500	2.75	23375	-
	vii	58	15	5	4350	2.75	11963	-
Total					**145002**	-	**297964**	**73304**

TABLE – 4A

TENTATIVE MINEABLE RESERVE AS PER PROPOSED COMMON MINE BOUNDARY ON THE WESTERN SIDE								
Section	**Bench**	**Length (m)**	**Width (m)**	**Depth (m)**	**Volume (m^3)**	**Bulk Density**	**Rough Stone (MT)**	**Gravel (MT)**
XY-AB	i	119	86	4	40936	2	-	81872
	ii	108	80	5	43200	2.75	118800	-
	iii	98	75	5	36750	2.75	101063	-
	iv	88	70	5	30800	2.75	84700	-
	v	78	65	5	25350	2.75	69712	-
	vi	68	60	5	20400	2.75	56100	-
	vii	58	55	5	15950	2.75	43863	-
	viii	48	50	5	12000	2.75	33000	-
	ix	38	45	5	8550	2.75	23512	-
	x	28	40	5	5600	2.75	15400	-
	xi	18	35	5	3150	2.75	8663	-
Total					**201750**	-	**554813**	**81872**

Tentative Mineable Reserves of Rough Stone : **5,54,813 MT**

Estimated Gravel : **81,872 MT**

The Tentative mineable reserves have been estimated as **5,54,813 MT** of Rough stone and **81,872MT** of Gravel at the rate of 100% recovery upto a depth of 54m below from the ground profile.

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4.0 MINING:

4.1 Method of mining (opencast / underground):

Open cast Mechanized Mining is being carried out with 5.0 meters 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 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 Drilling, Blasting, Rock breaking, 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 by considerable volume from the parent rock mass by drilling with Hand Jack Hammer and blasting, the liberated Rough stone will be loaded into the Tipper by hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers.

Hydraulic excavators are attached with rock breakers for fragmentation of large boulders to avoid secondary blasting and easy handling of material. 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.

The applicant intends to apply and obtain permission from Director of Mines Safety, Chennai for working common mine boundary with adjacent existing quarry lease under Regulation 111(3) 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 plan will be submitted to the concerned authority for necessary relaxation, clearance and permission. As per 106 2(b) and 111(3) 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 year wise proposed production schedule is arrived with two categories based on the applicant's requirement, one is proposed common mine boundary on the Western side as requested by the applicant (Refer Plate No. III and III-A) and another category is leaving the safety distance and Benches on all along boundary of the applied area (Refer Plate No. III-B and III-C).

The overburden in the form of gravel, the Gravel will be directly loaded into the Tipper for filling and levelling of low-lying areas, this will be done only after obtaining permission and paying necessary seigniorage fees to the Government. The excavated Rough stone will be directly loaded into Truck to the needy customers. The Composite year wise Development and production plan and sections indicating the pit lay out and green belt development are shown in given table below.

Year wise Development and Production

TABLE – 5

YEAR WISE DEVELOPMENT AND PRODUCTION FOR 1st FIVE YEARS – AFTER LEAVING SAFETY AND BENCHES ON ALL SIDES

Year	Section	Bench	Length (m)	Width (m)	Depth (m)	Volume (m^3)	Bulk Density	Rough stone (MT)	Gravel (MT)
I	XY-AB	i	59	77	4	18172	2	-	36344
		ii	48	65	5	15600	2.75	42900	-
		iii	38	55	5	10450	2.75	28737	-
	Total					**26050**	-	**71637**	**36344**
II	XY-AB	i	30	77	4	9240	2	-	18480
		ii	30	65	5	9750	2.75	26813	-
		iii	30	55	5	8250	2.75	22688	-
		iv	58	45	5	13050	2.75	35888	-
	Total					**31050**	-	**85389**	**18480**
III	XY-AB	i	30	77	4	9240	2	-	18480
		ii	30	65	5	9750	2.75	26813	-
		iii	30	55	5	8250	2.75	22687	-

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		iv	30	45	5	6750	2.75	18563	-
	Total					**24750**	-	**68063**	**18480**
IV	XY-AB	v	50	35	5	8750	2.75	24063	-
	Total					**8750**	-	**24063**	-
V	XY-AB	vi	40	25	5	5000	2.75	13750	-
		vii	30	15	5	2250	2.75	6187	-
	Total					**7250**	-	**19937**	-
Grand Total						**97850**	-	**269089**	**73304**

TABLE – 5A

YEARWISE DEVELOPMENT AND PRODUCTION FOR 2nd FIVE YEARS - AFTER LEAVING SAFETY AND BENCHES ON ALL SIDES

Year	Section	Bench	Length (m)	Width (m)	Depth (m)	Volume (m^3)	Bulk Density	Rough stone (MT)
VI	XY-AB	v	14	35	5	2450	2.75	6738
	Total					**2450**	-	**6738**
VII	XY-AB	v	14	35	5	2450	2.75	6738
	Total					**2450**	-	**6738**
VIII	XY-AB	vi	14	25	5	1750	2.75	4812
	Total					**1750**	-	**4812**
IX	XY-AB	vi	14	25	5	1750	2.75	4812
	Total					**1750**	-	**4812**
X	XY-AB	vii	28	15	5	2100	2.75	5775
	Total					**2100**	-	**5775**
	Grand Total					**10500**	-	**28875**

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TABLE – 5B

YEAR WISE DEVELOPMENT AND PRODUCTION FOR 1st FIVE YEARS – AS PER PROPOSED COMMON MINE BOUNDARY									
Year	**Section**	**Bench**	**Length (m)**	**Width (m)**	**Depth (m)**	**Volume (m^3)**	**Bulk Density**	**Rough Stone (MT)**	**Gravel (MT)**
I	XY-AB	i	49	86	4		2	-	33712
		ii	38	80	5	15200	2.75	41800	-
		iii	28	75	5	10500	2.75	28875	-
	Total					**25700**	-	**70675**	**33712**
II	XY-AB	i	42	86	4		2	-	28896
		ii	42	80	5	16800	2.75	46200	-
		iii	42	75	5	15750	2.75	43313	-
	Total					**32550**	-	**89513**	**28896**
III	XY-AB	i	28	86	4		2	-	19264
		iv	40	70	5	14000	2.75	38500	-
		v	30	65	5	9750	2.75	26813	-
	Total					**23750**	-	**65313**	**19264**
IV	XY-AB	iv	20	70	5	7000	2.75	19250	-
		v	20	65	5	6500	2.75	17875	-
		vi	25	60	5	7500	2.75	20625	-
	Total					**21000**	-	**57750**	-
V	XY-AB	vi	15	60	5	4500	2.75	12375	-
		vii	30	55	5	8250	2.75	22688	-
		viii	20	50	5	5000	2.75	13750	-
		ix	10	45	5	2250	2.75	6188	-
	Total					**20000**	-	**55000**	-
	Grand Total					**123000**	-	**338250**	**81872**

The Recoverable reserves have been estimated as **3,38,250 MT** of Rough stone and **81,872MT** of Gravel at 100% **recovery** to a depth of 44m below from the ground profile for first five years.

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TABLE – 5C

YEAR WISE DEVELOPMENT AND PRODUCTION FOR 2nd FIVE YEARS – AS PER PROPOSED COMMON MINE BOUNDARY								
Year	**Section**	**Bench**	**Length (m)**	**Width (m)**	**Depth (m)**	**Volume (m^3)**	**Bulk Density**	**Rough Stone (MT)**
VI	XY-AB	ii	28	80	5	11200	2.75	30800
		iii	13	75	5	4875	2.75	13406
	Total					**16075**	-	**44206**
VII	XY-AB	iii	15	75	5	5625	2.75	15469
		iv	28	70	5	9800	2.75	26950
	Total					**15425**	-	**42419**
VIII	XY-AB	v	28	65	5	9100	2.75	25025
		vi	28	60	5	8400	2.75	23100
	Total					**17500**	-	**48125**
IX	XY-AB	vii	28	55	5	7700	2.75	21175
		viii	28	50	5	7000	2.75	19250
	Total					**14700**	-	**40425**
X	XY-AB	ix	28	45	5	6300	2.75	17325
		x	28	40	5	5600	2.75	15400
		xi	18	35	5	3150	2.75	8663
	Total					**15050**	-	**41388**
Grand Total						**78750**	-	**216563**

The Recoverable reserves have been estimated as **2,16,563 MT** of Rough stone at 100% recovery for **remaining five years of the lease period** (Refer Plate No. III-A). Total excavation will be proposed **5,54,813 MT** of Rough stone and **81,872 MT** of Gravel for the period of ten years.

The peak production capacity in the quarry is **89,513 MT of Rough stone** and **33,712 MT of Gravel** and the proposed production schedule is arrived as per applicant's requirement and the **EIA & EMP will be prepared an annual peak production.**

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.

ASSISTANT DIRECTOR GEOLOGY AND MINING TRICHY

One lorry load	=	30 MT (approximate)
Total Number of Working days	=	300 days per year
Total Rough stone to be removed during entire lease period	=	5,54,813 MT
Annual Peak production capacity	=	89,513 MT
Hence total Lorry loads per day	=	89,513 /30 MT
	=	2,984 Lorry loads
	=	2,984 /300 days
Rough Stone (Maximum)	=	**10 Lorry loads per day**
Gravel Peak production	=	33,712 MT
Hence total Lorry loads per day	=	33,712 /30 MT
	=	1,124 Lorry loads
	=	1,124/300 days
Gravel (Maximum)	=	**4 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 for the development and production work at this quarry.

TABLE – 6

I. DRILLING MACHINE:

S. No.	Type	Nos.	Dia Hole mm	Size Capacity	Motive power
1	Hand Jackhammer	4	32	1.2m to 2.0m	Air Compression
2	Compressor	1	-	400 psi	Diesel Drive

II. EXCAVATION & LOADING EQUIPMENT:

S. No.	Type	Nos.	Capacity	Motive Power
1	Excavator with Bucket and Rock Breaker	1	300	Diesel Drive

III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT:

S. No.	Type	Nos.	Capacity	Motive Power
1	Tippers	2	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 Ten years, the ultimate pit limit (dimension) at the end of this lease period is given below:

TABLE – 7

Proposal	Length (m)	Width (m)	Depth (m) (Max.)
As per proposed Amalgamation	119	86	54m - BGL
Leaving safety and Benches	119	77	34m - BGL

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 to III-C, V and V-A. 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 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 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).

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 by Jack hammer drilling and blasting of shattering effect for loosen the Rough Stone with NONEL initiation. Hand Jackhammer drilling will be proposed for drilling and blasting for splitting the boulders from parent rock mass followed by rock breaker attached with excavator for secondary fragmentation of large size boulders to avoid secondary blasting. 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 hence it optimizes the cost of blasting.

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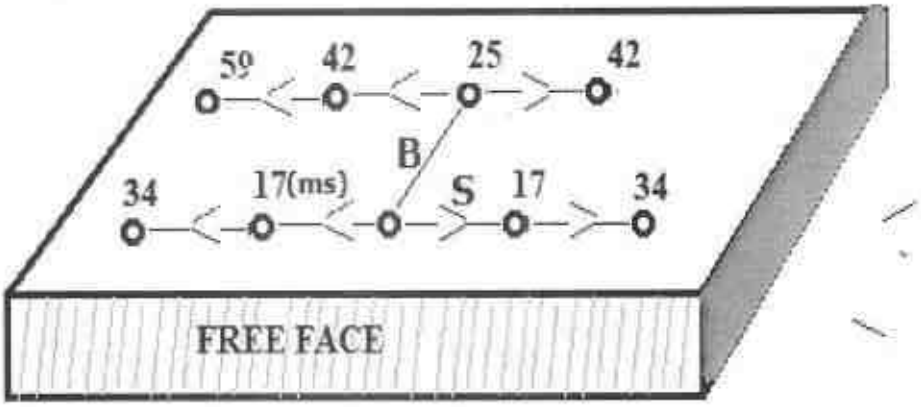
Drilling and blasting parameters are as follows:

Depth of Each hole	:	1.5m
Spacing between holes	:	1.0m
Burden for hole	:	0.75m
Diameter of hole	:	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)	=	**100 Holes**

5.2 Type of explosives to be used:

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.

Hand jackhammer drilling with 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	= 89,513 Tons
No of Holes	= 100 Holes
Yield	= 300 Tons
Powder factor	= 6 Tons/ Kg of explosives
Maximum explosive required	= 50 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)

PREDICTED PPV VALUES DUE TO BLASTING

Table – 8

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)
50	1	50	100	100	1 (2 Holes)	710	0.313

From the above table, the charge per blast of 50kg 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. Anyhow, the applicant ensures that carry out the blasting 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 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 Environment Protection 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 applicant has engaged an authorized external agency to carried out the detailed investigation to ascertain the actual depth of water table. The agency has stated that the lease applied area is located in hard batholithic formation and depth of water table found in the area is 110m below from the ground level. It is an oral statement; the applicant has waiting to obtain authenticated report from the agency. After obtained the detailed report the same will be submitted to the competent authority. Based on that statement working expected to above the water table and the quarry operation does not intersect the water table. Hence, the Ground Water problem will not arise. If water is encountered at pit due to rain water and seepage, the same will be drained out by 10HP motor pumps and the drained out water will be utilized for Green belt. Anyhow, Garland drain will be constructed along the boundary to prevent surface run-off water entering into the quarry.

TABLE – 9

Type	Distance & Direction	Location
Bore Well	240m Southeastern side	11° 3'56.66"N 77°34'5.30"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 Greenbelt development areas. Besides, the water will also be used for dust suppression on haul roads during Haulage of machineries.

7.0 STACKING OF MINERAL WASTE AND DISPOSAL OF WASTE:

There is no waste anticipated during entire life of the quarry hence, disposal/stacking 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 quarried out gravel 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 – 10

S.No.	Description - Nearest	Particulars	Aerial Distance & Direction
1	National Highway	(NH-81) Karur – Palladam	7.0 km – SE
2	State Highways	(SH-96) Erode – Kangayam	1 km – NE
3	Railway station	Vijayamangalam Railway station	15 km – NW
4	Airport	Coimbatore	57.6 km – SW
5	Town	Kangayam	6.7 km – SE
6	Government School	Keeranur - Govt. School	2.2 km – NW
7	Government Hospital	Kangayam	6.7 km – South
8	Habitation	710m – West	
9	Reserved Forest	Chennimalai R.F. – 9.3 km – North	
10	Water Bodies	Odai – 120m – NE.	
11	Defence Installation/ Historical Monuments/ Archaeological	Nil within 500m radius.	
12	Interstate Boundary	Around 78km – SW (Kerala State border)	
13	Critically Polluted areas identified by the CPCB	Around 65.6 km – SW (Kurichi SIDCO, Coimbatore)	
14	Protected areas Notified under wildlife (Protection) Act, 1972.	21.7 km – NE (Vellode Birds Sanctuary) Eco sensitive zone – 21.3km – NE	
15	Applicability of CRZ, Notification 2011 as amended.	Not Applicable	
16	Applicability of Hill Area Conservation Authority (HACA) Clearance.	Not Applicable	
17	Housing area, EB line (HT & LT Line)	None of the above situated within 50m radius.	
18	Boundaries of the permitted area.	The boundaries of the permitted areas are as follows (Refer Plate No. II): North - S.F.No. 68 and 69 East - S.F.No. 70 South - S.F.No. 72, 71/B1 and 71/B3 West - S.F.Nos. 66	
19	Adjacent Patta lands / Govt. Land	Direction / Classification / Safety Distance: North – Patta land – 7.5m East – Patta land – 7.5m South – Patta land – 7.5m West – Patta land – Common Boundary (Refer Plate No. II):	

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TABLE – 11

STRUCTURE WITHIN **100m** Number of Structures - Nil.					
Numbers of Structure	**Type of Structure**	**Usage Purpose**	**Commercial / industry/ residential/ farm house/ Govt. building**	**Occupants of Building/ Structure**	**Remarks**
Nil					
STRUCTURE WITHIN **100 -200m** Number of Structures – 3					
Structure Numbers	**Type of Structure**	**Usage Purpose**	**Commercial / industry / residential / farm house / Govt. building**	**Occupants of Building/ Structure**	**Remarks**
1	Shed	Labour shed and office	Non residential	No resident	Nil
STRUCTURE WITHIN **200 -300m** Number of Structures – 8					
Structure Numbers	**Type of Structure**	**Usage Purpose**	**Commercial / industry / residential / farm house / Govt. building**	**Occupants of Building/ Structure**	**Remarks**
2	Shed	Labour shed and office	Non residential	No resident	Nil
1	Crusher Plant	Stone crusher	Industry	No resident	Nil
5	Shed	Storage of Agriculture goods	Farm House	No resident	-

9.2 Employment potential (skilled, semi-skilled, un skilled):

TABLE – 11

Designation	**Present Employment position**	**Employees Requirement**	**Total**
a) Supervisory category			
Mine Manager	-	1	1
Geologist	-	1	1
Mine Foreman	-	1	1
Blaster/Mate	-	1	1
b) Skilled labour			
Excavator – Operator	-	1	1
Tipper Driver	-	2	2
Water sprinkler Driver	-	1	1
Jack-Hammer Drillers	-	8	8
c) Unskilled			
Security	-	1	1
Labour & Helper	-	3	3
Co-operator and Cleaner	-	4	4
Total	-	**24**	**24**

The proposed output per man shift:

TABLE – 12

Annual Peak Production of Rough stone		89,513 MT
No. of days likely to be worked		300 days
Average production per day		298 MT
OMS =	Average Production per day / Average employment per day	298 / 24 = 12.4 MT

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 quarry lease period.

9.3 Welfare Measures:

a) Drinking Water:

Packaged drinking water is available from the nearby water vendors in Alambadi village which is located about 2km on the Southeastern side of the lease applied area.

b) Sanitary Facilities:

Hygienic modern Sanitary Facilities will be constructed as semi-permanent structure within the applied area 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 Kangayam located at 6.7km on the South 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's own cost.

e) **Precautionary safety measures to the labourers:**

- Helmets,
- Reflector Jackets
- Dust mask
- Mine Goggles,
- Ear plugs,
- Ear muffs
- Safety Shoes

All personnel protective equipment as per the DGMS standard 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 of mitigation measure for topographical changes, but no waste will be anticipated during entire life of this Rough stone and Gravel quarry. 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 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. Greenbelt will be developed in the safety zone with thick long 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.

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	c) Propagation of foreign material like polythene bag or undecomposed 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 foreign material like polythene bag, Plastic water containers or 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 course will be contaminated due to dust propagation and vehicle emission.	i. Garland drain with check dam will be constructed all along the boundary barrier to prevent surface run off rain water entering into the pit. ii. The pit water due to rain and seepage will be utilized for water sprinkling on haul Roads and plantations. iii. Greenbelt will be developed in the safety zone with thick long leaves plants and water sprinkling on dust prone area to arrest the fugitive dust and vehicular emissions. iv. Further mining will be completely stopped during monsoon for free flow of surface run off and allowing natural recharge of groundwater.

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		v. No wastewater will be generated from the quarry activity. Proper drainage will be Maintained to eliminate inundation of working pit during rain from run-off water. vi. Septic tanks and soak pits will be provided for the disposal of domestic/ washroom effluents, the same will be disposed in proper manner.
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. Greenbelt 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.

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		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.
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. Greenbelt will be developed in the safety zone which will act as acoustic barrier to minimize the 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.

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		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.
Biological Environment	The area having main floras are Neem, Prosopis juliflora, Bushes 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. Natural habitats of the existing faunas will change due to the noise and vibration during blasting and quarry operation. iii. Diversity of living insects and faunas due to vibration. iv. The mining activities can also disrupt the poultry farm and ecological diversity due to noise by drilling, blasting and operation. 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. Fruit bearing trees will be planted to survive the existing birds and faunas. iv. No clearance of vegetation will be done during the entire mining operations. v. Green belt development as acoustic barrier, Low noise equipment and machineries for drilling and operation and Controlled blasting by Nonel is reduce the noise within permissible limit to sustain the Poultry farms and existing ecology. vi. Regular Water sprinkling on haul roads would be reduces the dust propagation, thus avoiding damage to the crops and plants.

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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 24 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.	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.

11.1 Environmental impact assessment statement describing impact of mining on the next Ten years:

In the mining plan proposed for a small 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 54m 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 distance along the boundary barrier to be proposed for greenbelt development by planting 600 tree saplings (Area 1,800m^2) also the applicant proposed to plant 500 tree saplings in the quarried out top benches and 200 saplings on haul road and maintain at least 1,040 plants at the end of the lease period at a survival rate of 80%. Manuring and tree guards will be provided by the applicant to safeguard and maintain the plants. The plantation will be carried out based on the output Environmental Clearance and the recommended species will be planted in a phased manner as described below (Refer Plate No. III to V).

Table – 13

Year	No. of tress proposed to be planted	Area to be covered (m^2).	Survival (%)	Name of the species	No. of trees expected to be grown
I	120	360	80%	Neem, Pongamia Pinnata, Cordia dichotoma, Mango, Senkondrai, Mookusali maram, Mantharai, etc.,	96
II	120	360	80%		96
III	120	360	80%		96
IV	120	360	80%		96
V	120	360	80%		96

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 calculated as follows, S.F.No. 71/A – Area (Ha) 1.31.0 – Cost / Ha. 741500 – Cost of the area (Rs.) 9,71,365 Total Land Cost (Round off) = Rs. 9,71,365/- (source : https://tnreginet.gov.in/portal/)	9,71,000
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).	1,00,00,000
iii) Labourers shed	Labour shed will be constructed as semi-permanent structure. The cost is around	4,00,000
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.	2,70,000
vi) Sanitary arrangement	The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around.	3,00,000
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.	50,000
viii) CCTV arrangements.	Installation of CCTV cameras in the quarry area.	50,000
Total Cost		**1,21,41,000/-**

B. EMP Cost:		Cost (Rs.)
1.	Environmental Monitoring Program (Air Quality, Water Quality Sampling, Noise and Ground vibration test) Rs. 50,000/ year.	5,00,000
2.	Water will be sprinkled in the haul roads by own water sprinklers for dust suppression (1 No.). The cost would be around.	6,00,000
3.	Fencing constructed around the lease area to prevent the inadvertent entry of public and cattle cost would be around (Total Peripheral length 306m x Rs. 300/meter).	92,000
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 284m x Rs. 300/meter).	85,000
5.	First aid room & accessories	50,000
6.	Dust extractor unit for Jackhammer (4 Nos.)	1,00,000
7. Greenbelt development for dust suppression & Noise control measures	Greenbelt development will be carried out along the safety barrier; the cost would be around (600 saplings x Rs. 200/sapling).	1,20,000
	Greenbelt development will be carried out along the quarried out top benches; the cost would be around (500 saplings x Rs. 200/sapling).	1,00,000
	Greenbelt development will be carried out on haul road; the cost would be around (200 saplings x Rs. 200/sapling).	40,000
	Total EMP Cost (B)	**16,87,000/-**

Description	Cost (Rs.)
A. Operational Cost	**1,21,41,000/-**
B. EMP Cost	**16,87,000/-**
Total Project Cost (A+ B)	**1,38,28,000/-**

The total cost would be around one crore thirty eight lakhs and twenty eight thousand only.

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 Ten 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)	Proposed Amalgamation		Leaving safety and Benches	
		Area required during the first five years (Ha)	Area at the end of lease period (Ha)	Area required during the first five years (Ha)	Area at the end of lease period (Ha)
Area Under Quarry	Nil	1.02.3	1.02.3	0.91.6	0.91.6
Site Services	Nil	0.01.0	0.01.0	0.01.0	0.01.0
Roads	Nil	0.02.0	0.02.0	0.02.0	0.02.0
Green Belt	Nil	0.11.0	0.11.0	0.18.0	0.18.0
Unutilized Area	1.31.0	0.14.7	0.14.7	0.18.4	0.18.4
Grand Total	**1.31.0**	**1.31.0**	**1.31.0**	**1.31.0**	**1.31.0**

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 (As per 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	:	vengatb6@gmail.com

The applicant will himself implement the closure plan; no outside agency will be involved.

(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 5.0m for ease of operations and provide sufficient room for the movement of machineries and vehicles.
- Personnel Protective equipment like dust masks, ear-plugs/ muffs and other equipment shall be provided for use by the working personnel.
- 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 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

Part of the Machineries will be engaged on rental basis and remaining purchased fresh, the same has been maintained in good condition during entire life of quarry, if required the machineries will be replaced or repaired. After completion of quarry operation all machineries will be engaged at another quarry area/ purchased machinery will be selling to the second hand. 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.

(v) Economic Repercussion of Closure of Quarry and manpower Retrenchments:

The quarry lease is granted for a period of Ten 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		YEARS										RATE	COST (Rs.)
		I	II	III	IV	V	VI	VII	VIII	IX	X		
Plantation under safety zone	Nos	120	120	120	120	120	-	-	-	-	-	Rs.200 Per sapling	1,20,000
	Cost	24000	24000	24000	24000	24000	-	-	-	-	-		
Plantation in quarried out top bench and Haul road	Area	Haul Road			Quarried out top bench								1,40,000
	Nos	100	100	200	200	100	-	-	-	-	-		
	Cost	20000	20000	40000	40000	20000	-	-	-	-	-		
Barbed Wire Fencing (306 Mtrs)		92000	-	-	-	-	-	-	-	-	-	Rs300 Per Meter	92,000
Garland Drain (284 Mtrs)		85000	-	-	-	-	-	-	-	-	-	Rs300 Per Meter	85,000
Total													**4,37,000**

13.0 STATUTORY COMPLIANCE TO BE FOLLOWED DURING THE COURSE & CLOSURE OF QUARRY LEASE:

The Applicant after execution of lease deed should ensure to carry out that the quarry operation in accordance to the Approved Mining plan and as per TNMMCR, 1959, Mines Act 1952 & 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 periodic 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 centre 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.

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: 23.10.2025

This Mining Plan is approved as per the Powers conferred under rule 41(2) of Tamil Nadu Minor Mineral Concession Rules, 1959

This Mining Plan is approved subject to the Conditions Indicated in the Mining Plan approved Letter No.: RC. NO. 845/MINES/2025 Dated 30.10.2025

30/10/25

ASSISTANT DIRECTOR
Geology and Mining
TIRUPPUR

30/10/25

PHOTOGRAPHS OF THE KEERANUR ROUGH STONE AND GRAVEL QUARRY LEASE APPLIED AREA

ANNEXURE

ந.க.எண்.845/கனிமம்/ 2025

புவியியல் மற்றும் சுரங்கத்துறை
மாவட்ட ஆட்சியர் அலுவலகம்,
திருப்பூர்.

நாள்: .09.2025

குறிப்பாணை

பொருள் : கனிமங்களும் சுரங்கங்களும் - சிறு கனிமம் - திருப்பூர் மாவட்டம் - காங்கயம் வட்டம் - கீரனூர் கிராமம் - புல எண். 71/A – ல் 1.31.00 ஹெக்டேர் பட்டா நிலப்பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் குவாரி குத்தகை உரிமம் கோரி திரு.R.முத்துசாமி என்பவர் விண்ணப்பம் அளித்தது - புலத்தணிக்கை அறிக்கை சமர்பிக்கப்பட்டது - தகுதியான நிலப்பரப்பாக கருதி ஏற்பளிக்கப்பட்ட சுரங்க திட்டம் மற்றும் சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய இசைவிணை பெற்று சமர்பிக்கக் கோருதல் - தொடர்பாக.

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பார்வை :
1. திரு.R.முத்துசாமி த/பெ.ரங்கசாமி, 77, தெற்குவீதி, மொரட்டுப்பாளையம், திருப்பூர் - 638752 என்பவரின் மனு நாள்: 03.05.2025
2. இவ்வலுவலக கடிதம் ந.க.எண்.845/கனிமம்/2025 நாள்: 13.05.2025
3. வட்டாட்சியர், காங்கயம் கடிதம் ந.க.1764/2025/அ10 நாள்: 17.06.2025
4. வருவாய் கோட்டாட்சியர், தாராபுரம் கடிதம் ந.க.எண்.1980/2024/இ நாள். 02.07.2025.
5. உதவி புவியியலாளர் (கனிமம்), திருப்பூர் புலத்தணிக்கை அறிக்கை நாள்: 23.07.2025
6. மற்றும் உரிய ஆவணங்கள்

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண்.71/A-ல் 01.31.00 ஹெக்டேர் பட்டா நிலப்பரப்பில் சாதாரண கற்கள் / கிராவல் மண் வெட்டி எடுக்க 10 வருடங்களுக்கு குத்தகை உரிமம் கோரி திரு.R.முத்துசாமி த/பெ.ரங்கசாமி என்பவர் பார்வை 1-ல் கண்டுள்ளவாறு உரிய ஆவணங்களுடன் விண்ணப்பம் அளித்துள்ளார்.

2. மேற்படி விண்ணப்பங்கள் தொடர்பாக, வட்டாட்சியர் காங்கயம், வருவாய் கோட்டாட்சியர் தாராபுரம் மற்றும் உதவி புவியியலாளர் (கனிமம்), திருப்பூர் ஆகியோர் புலத்தணிக்கை மேற்கொண்டு திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண். 71/A-ல் 01.31.00 ஹெக்டேர் பரப்பில் திரு.R.முத்துசாமி, த/பெ.ரங்கசாமி என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் மண் குவாரி உரிமம் வழங்க சில நிபந்தனைகளுக்குட்பட்டு அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளனர்.

3. மேலும் அனுமதி கோரும் புல எண். 71/A ஆனது பட்டா எண்.417-ன் படி திரு.R.முத்துசாமி, என்பவரது பெயரில் தனி பட்டாவாக தாக்கலாகியுள்ளது. எனவே மேற்படி

பூமியில் திரு.R.முத்துசாமி என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் மண் குவாரி உரிமம் வழங்குவதற்குரிய தகுதியான நிலப்பரப்பாக கருதப்படுகிறது.

4. எனவே, காங்கயம் வட்டாட்சியர், வருவாய் கோட்டாட்சியர் தாராபுரம் மற்றும் உதவி புவியியலாளர் (கனிமம்), திருப்பூர் ஆகியோரின் பரிந்துரை மற்றும் நிபந்தனைகளின் அடிப்படையில், திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண் 71/A-ல் 1.31.00 ஹெக்டேர் பரப்பில் மட்டும் 1959ம் வருட தமிழ்நாடு சிறுகனிம விதிகள், விதி எண்.19(1)-ன் படி கீழ்கண்ட நிபந்தனைகளுக்குட்பட்டு 10 (பத்து) ஆண்டுகளுக்கு சாதாரண கற்கள் மற்றும் கிராவல் வெட்டியெடுக்க கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு குவாரி குத்தகை வழங்குவதற்குரிய நிலப்பரப்பாக (Precise Area Communication) கருதப்படுகிறது.

நிபந்தனைகள்:

- தமிழ்நாடு சிறுகனிம சலுகை விதிகள் 1959-ன் விதியின்படி,புலத்தை சுற்றி அமைந்துள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர் பாதுகாப்பு இடைவெளி விட்டு குவாரி பணிபுரிய வேண்டும்.
- தகுதிவாய்ந்த பிளாஸ்டருடன் கூடிய லேசான வெடிபொருட்களைப் பயன்படுத்தி குவாரி நடவடிக்கை மேற்கொள்ளப்பட வேண்டும்.
- குத்தகை உரிமம் கோரும் புலத்திற்கு DGPS முறையில் அளவீடு செய்து அதற்கான சான்றினை சமர்ப்பிக்க வேண்டும்.
- விண்ணப்பதாரருக்கு வழங்கப்பட வேண்டிய துல்லியமான பகுதி தகவல் தொடர்புகளில் குறிப்பிடப்பட்டுள்ள காலக்கெடுவுக்குள் விண்ணப்பதாரர் அங்கீகரிக்கப்பட்ட சுரங்கத் திட்டத்தை சமர்ப்பிக்க வேண்டும்.
- குவாரி குத்தகைக்கு வழங்குவதற்கு முன்பு விண்ணப்பதாரரால் சுற்றுச்சூழல் அனுமதி பெறப்பட வேண்டும்.
- அனுபவம் வாய்ந்த வெடிபொருள் பயன்படுத்துவோர் மூலம் குறைந்த அளவு சக்தி கொண்ட வெடிபொருட்களை பயன்படுத்தி அருகிலுள்ள பட்டாதாரர்களுக்கு எவ்வித இடையூறுமின்றி / அருகிலுள்ள பட்டா மற்றும் அரசு புலங்களில் எவ்வித ஆக்கிரமிப்பும் இன்றி குவாரிப்பணி மேற்கொள்ள வேண்டும்.
- விதிகளின் படி ஏற்பளிக்கப்பட்ட சுரங்கத்திட்டத்தினை உரிய காலத்திற்குள் சமர்பிக்க வேண்டும்.
- குவாரி உரிமம் வழங்க உள்ள பகுதிக்கு சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் முன் அனுமதி பெற்று சமர்பிக்கும் பட்சத்தில் மட்டுமே குவாரி உரிமம் வழங்கப்படும்.

மேலும், தமிழ்நாடு சிறு கனிம சலுகை விதிகள்-1959 விதி எண். 41-ன்படி குவாரிப்பணி மேற்கொள்வது தொடர்பாக வரைவு சுரங்க திட்டத்தினை 90 தினங்களுக்குள் சமர்ப்பிக்குமாறு மனுதாரரைக் கேட்டுக்கொள்ளப்படுகிறது. மேலும் ஏற்பளிக்கப்பட்ட

ANNEXURE V

மாவட்டம். பெரியார்

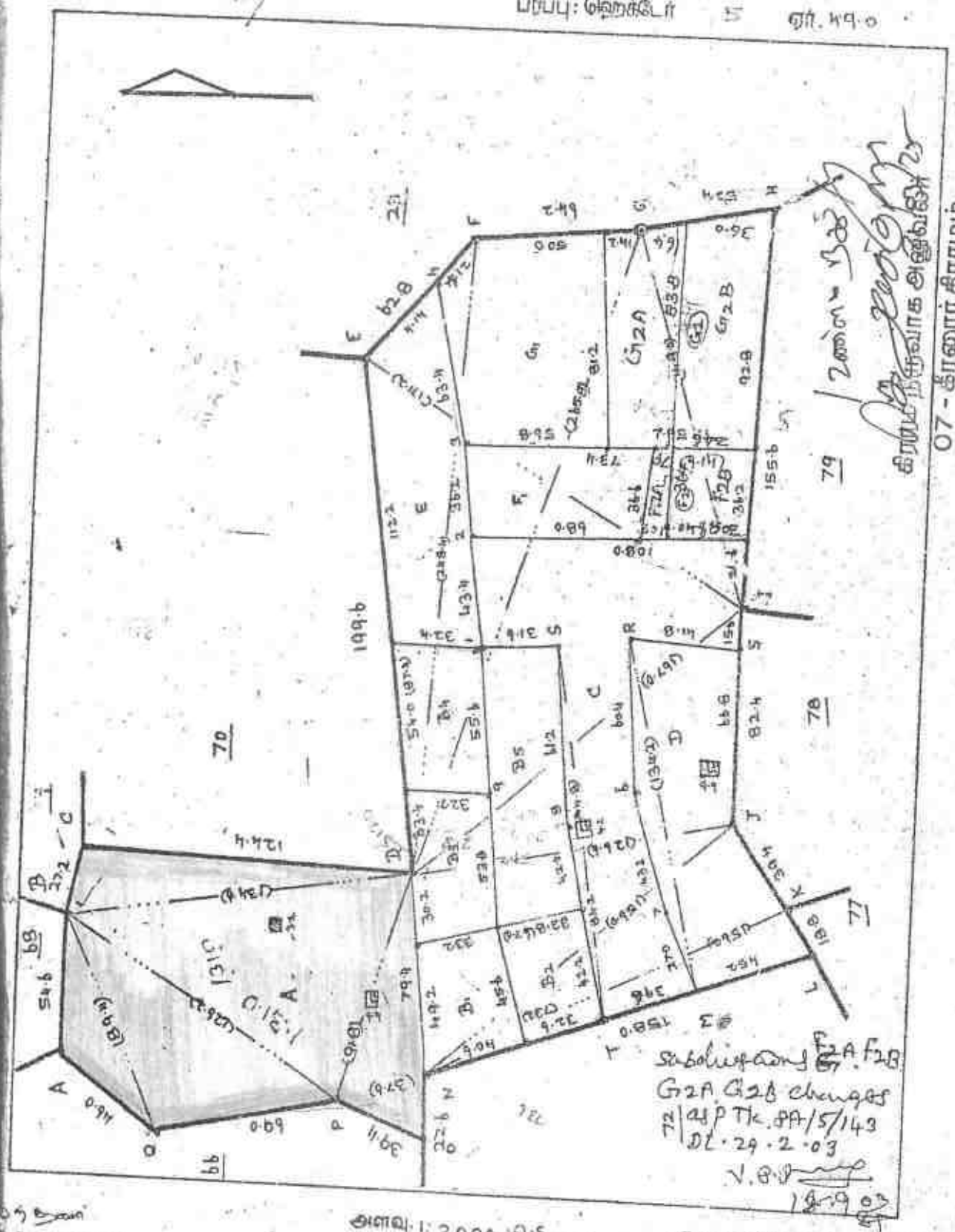
வட்டம். தொண்டியம்

புல எண். 71

எண். 7

கிராமம்

பரப்பு: ஹெக்டேர் 5 ஏர். 49.0



அளவு 1: 2000 மீற்ற

LEASE APPLIED AREA

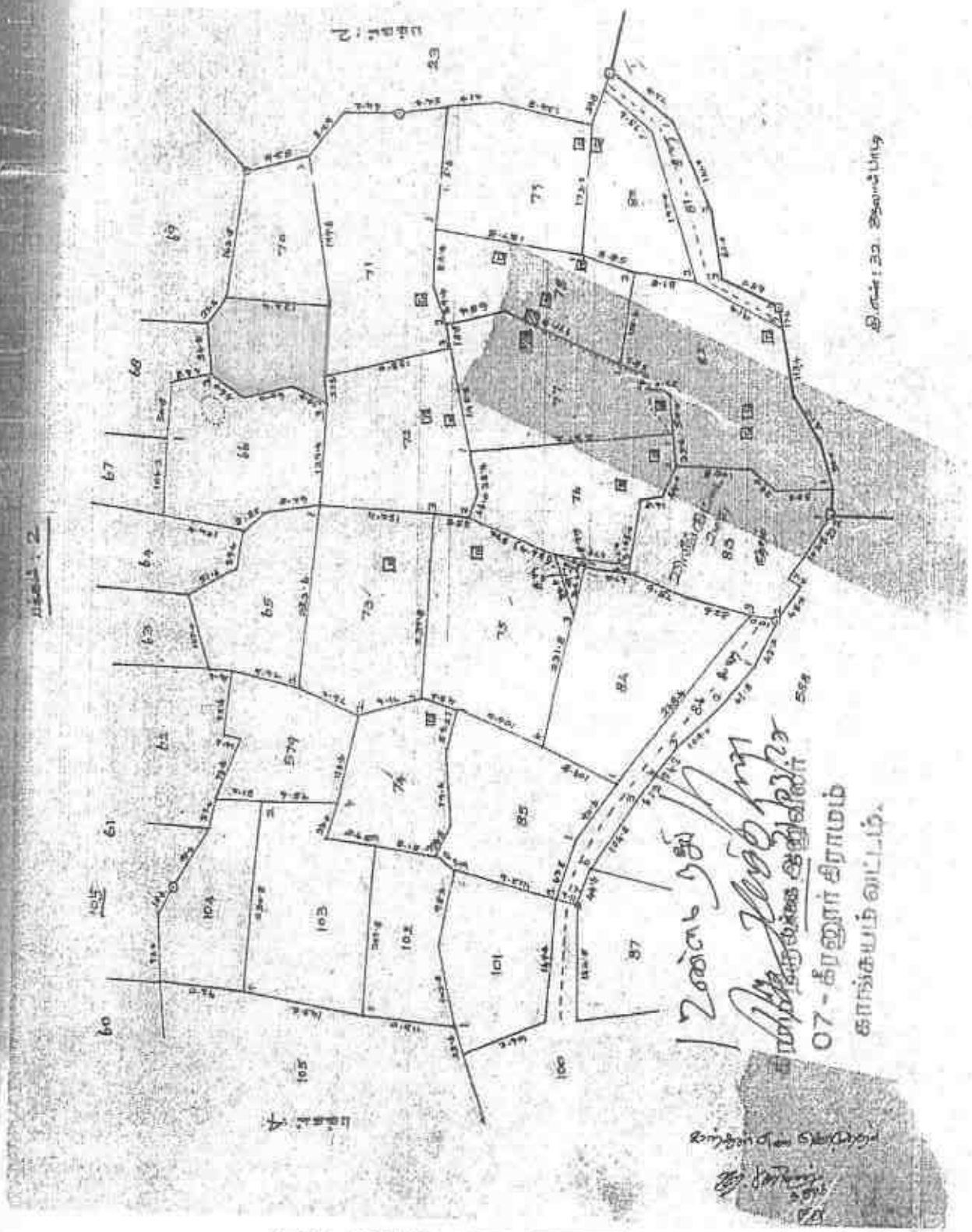
185 A

ANNEXURE 14

: திருப்பூர்
: 07- கீரனூர்

கூட்டுவரைபடம் தாள் -3

வட்டம் : காங்கேயம்



LEASE APPLIED AREA

ANNEXURE 12

தமிழ்நாடு அரசு

வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை

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

மாவட்டம் : திருப்பூர் வட்டம் : காங்கயம்

வருவாய் கிராமம் : சேனூர் பட்டா எண் : 417

உரிமையாளர்கள் பெயர்

1. (லேட்)ரங்கசாமி கவுண்டர் மகன் ஆர்.முத்துசாமி

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	
71	A	1 - 31.00	1.81	--	--	--	--	2021/0103/32/325393-- ------ Digitally signed:Thiru Mylsamy Zonal Deputy Tahsildar 22/07/2021 06:23:46:PM
		1 - 31.00	1.81					

குறிப்பு :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **32/05/007/00417/60722** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 21-03-2025 அன்று 08:52:42 AM நேரத்தில் அச்சடிக்கப்பட்டது.
3. கைப்பேசி கேமராவின்2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்

1434 - ஆம் பசலியில் திருப்பூர் மாவட்டம் தாலுக்கா வட்டம் 07-தேவனூர்

கிராமக் கணக்கு

நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.					கைப்பற்று தாருடைய பெயரும் சார்ந்தும் அல்லது அநுபோக தாருடைய பெயர்.	சாகுபடி பருவமின் பெயர்.	முழு போகம்.				
நில அளவை எண்.	உட்பிரிவு எண்.	மாஸ்.	நீர்வை.	வரி போகம் அல்லது நில போகம்.		நிலத்தின் வரி பற்றி வாதி சாகுபடியாளர்கள் பதிவிடப்பட்டுள்ளார்.	சாகுபடி செய்யப்பட்டு வரும் மாதத்தில் அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிரான / அறுவடை யான பரப்பு.	உற்பத்தியான பயிர்கள் ஆதாரம்.	விவசாயிகள் குறைவு விபரங்கள்.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
71	A	1.310	1.81	புஞ	அர்-முத்துசாமி						

/உண்மை நகல்/

ராம திருவாச எழுத்தர்
07 - தேவனூர் கிராமம்
காங்கயம் வட்டம்.

380/40=R.F. III-A-10-20,00,000 Cms.-GBP.-Mdu.-7-2022.

188 A

படிவ 2

கிராமத்தில் வருடவாரி புலவாரி வகைப்பற்று சாகுபடி அடங்கல் கணக்கு

இனவிடம் போகம்.									
சந்த மாதத்தில் பயிர் செய்யப்பட்டு மாதத்தில் அறுவடை செய்யப்பட்டது.	பயிரின் பெயர்.	பயிரான / அறுவடையான பரப்பு.	உற்பத்தியான பயிர்கள் ஆதாரம்.	விவசாயிகள் குறைவு விபரங்கள்.	இதை அதனால் ஏற்படுவது :- (i) பயன்களில் பதிவிடப்பட்டு விபரங்கள் அறியும். (ii) வகைப்பட்டு நிலைக் கணக்கில் பயன்களை மாற்றும் பயன்கள் உருவாக்கப்பட்டு பயன்களை மாற்றும் பயன்கள் உருவாக்கப்பட்டு நிலை அதனால் ஏற்படுவது.	கிழ்க்கண்ட வகையில் பயிரிடப்படாத உரிய நிலத்தில் தன்மை மற்றும் பயனில் விவரங்கள் ஒவ்வொரு நில அளவு எண் அல்லது அதன் பகுதியில். (அ) வளர் (ஆ) பயனற்ற பயிர் செய்ய இயலாத நிலம், (இ) விவசாயம் மற்றும் பிற காரியங்களுக்கு பயன் படுத்தப் படும் நிலம், (ஈ) பயிரிடுதல் தரிய (உ) மேலுள்ள (ஊ) குளங்களும் மற்றும் நிற்க வேய்ச்சல் நிலங்களும், (ஊ) விலக்கப்பட்ட நிலம் பயனில் சேர்க்கப்படாத மானவை பயிருகளும் தோப்புகளும். (எ) கட்டிய நிலங்கள் (ஏ) நிலை நில வேய்கள்.	பயிர் பார்வையிட்ட அலுவலர் குறிப்புகள்.
(13)	(14)	(15)	(16)	(17)	(18)	(18அ)	(19)

ANNEXURE V

GEOLOGY AND MINING - TIRUPUR
ASSISTANT DIRECTOR

ANNEXURE 07

அ-பதிவேடு விவரங்கள் - ஊரகம்

மாவட்டம் : திருப்பூர்

வட்டம் : காங்கயம்

கிராமம் : கீரனூர்

1. புல எண்	71	9. மண் வயனமும் ரகமும்	8 - 4
2. உட்பிரிவு எண்	A	10. மண் தரம்	6
3. பழைய புல உட்பிரிவு எண்	71-A	11. நீர்வை (ரு - ஹெ)	1.38
4. பகுதி	P	12. பரப்பு (ஹெக்டேர் - ஏர்)	1 - 31.00
5. அரசு / ரயத்துவாரி	ரயத்துவாரி	13. மொத்த நீர்வை (ரு - பை)	1.81
6. நிலத்தின் வகை	புஞ்சை	14. பட்டா எண்	417
7. பாசன ஆதாரம்	-	15. குறிப்பு	-
8. இறை மோகமா	-	16. பெயர்	1.ஆர்.முத்துசாமி

குறிப்பு:

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் **https://eservices.tn.gov.in** என்ற இணைய தளத்தில் **32/05/007/71/A/90722** என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

ANNEXURE VII

आयकर विभाग
INCOME TAX DEPARTMENT
भारत सरकार
GOVT. OF INDIA
MUTHUSAMY R
RANGASAMY
24/05/1960
Permanent Account Number
BPOPM4655K
Signature

ANNEXURE ๑๗๗

அண்ணாமலைப் பல்கலைக்கழகம்
ANNAMALAI UNIVERSITY

Reg. No. : 090895

அறிவியற்புலம்
FACULTY OF SCIENCE

மே, 2011 இல் பயன்பாட்டு நிலத்தியல் பிரிவில் நடத்திய தேர்வுகளில் வெங்கடகிரி பா/ கூறுதல் மதிப்பீட்டுப்புள்ளிகள் 10.00 க்கு சராசரியாக 6.03 பெற்று இரண்டாம் வகுப்பில் தேர்ச்சியடைந்து முறையாக அமைக்கப்பெற்ற தேர்வுக்குழுவினரால் சான்றளிக்கப்பட்ட அறிவியல் நிறைஞர் பட்டம் பெறுவதற்கு உரியவர் ஆகின்றார் என அண்ணாமலைப் பல்கலைக்கழக ஆளுகை 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 பொறிக்கப்பட்டது
Given under the seal of the University

அண்ணாமலைநகர்
Annamalainagar

நாள்:
Dated: 09/11/2011

துணைத் தேர்வாணையர் (கல்வியாளர்)
Dy. Controller of Examinations (Academic)

Dr.M.Rathinasabapathi
பதிவாளர்
Registrar

Dr.M.Ramanathan
துணை வேந்தர்
Vice-Chancellor

ANNEXURE

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. E.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. Pavel

(Signature with date and official seal)

(Mines Manager(MMS) class)
MANAGER (MINES)
MULTICOLOUR GRANITE MINE
K. PITCHAMPATTI,
KARUR - TALUK & DIST.

(Signature of Candidate)

State the name of the mineral works: Multi Colour Granite

S. No.	Particulars of Practical experience (a)	Place of Experience (b) Opencast	Period of Practical experience (c)		Total Experience (d)		
			From	To	Yrs.	Months	Days
1.	As a trainee in drilling operation	Open cast	10.07.2012	24.10.2013	01	03	15
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 250m^3	250m^3
Nil	Average daily employment 25Nos	25Nos

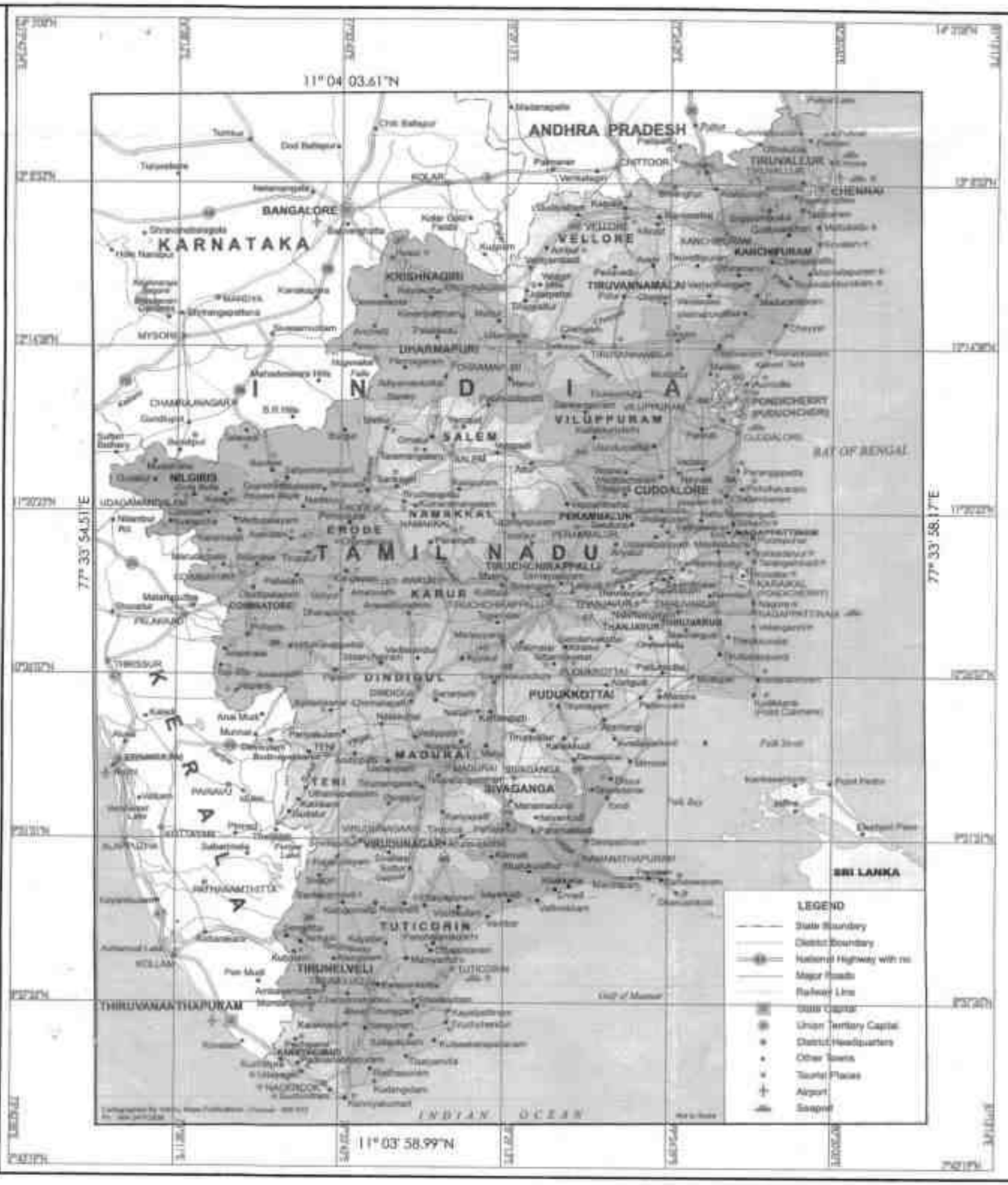
Note: The average employment is less because this is mechanized mines having deep hole drilling, blasting and Heavy Earth Moving Machineries operation.

(Signature of Candidate)

(Signature with date and official seal)

(Mines Manager 1st class)

MANAGER (MINES)
MULTICOLOUR GRANITE MINE
K. PITCHAMPATTI,
KARUR - TALUK & DIST.



INDEX

Q.L.A. AREA :

TOPO SHEET NO. : 58 E/12

LATITUDE : 11° 03' 58.99"N to 11° 04' 03.61"N
LONGITUDE : 77° 33' 54.51"E to 77° 33' 58.17"E

APPLICANT :

Thiru.R.MUTHUSAMY,
S/o.RANGASAMI GOUNDER,
No.77,SOUTH STREET,
MORATTUPALAYAM,
TIRUPPUR DISTRICT,
TAMIL NADU -638 752.

LOCATION OF Q.L.A. AREA:

SF.NOS. : 71/A,
EXTENT : 1.31.0 HA.
VILLAGE : KEERANUR,
TALUK : KANGAYAM,
DISTRICT : TIRUPPUR,
STATE : TAMILNADU.

PLATE NO - 1

DATE OF SURVEY : 22.10.2025

LOCATION PLAN

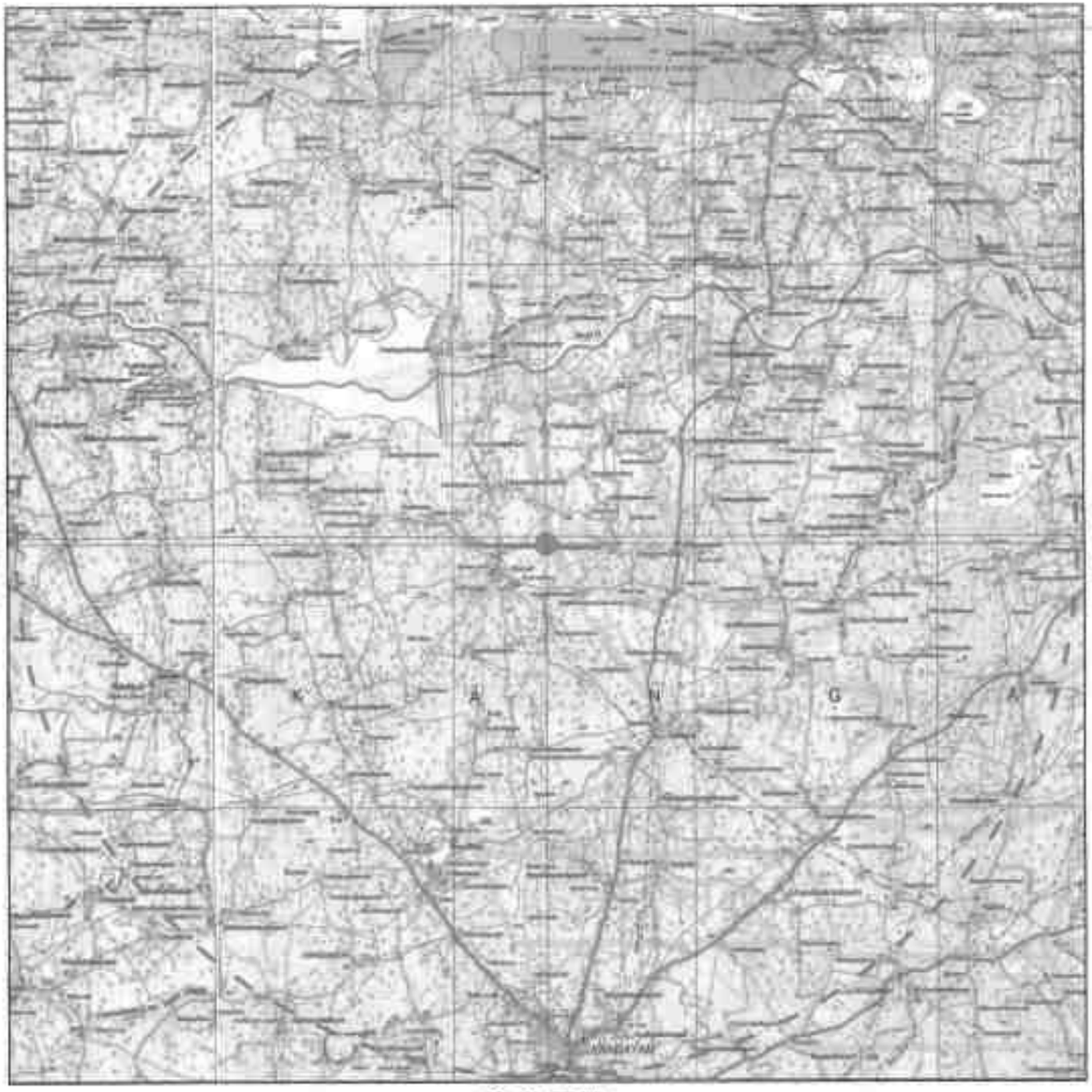
SCALE. 1:24,00,000

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

R.VINOTHKUMAR, M.Sc.,
QUALIFIED PERSON
Under Rule 15(1)(a)and(b)of MCR,2016

11° 09' 28.86"N



77° 28' 25.26"E

77° 35' 27.44"E

10° 58' 33.73"N

TOPO SHEET NO. : 58 E/12

LATITUDE : 11° 03' 58.99"N to 11° 04' 03.61"N
LONGITUDE : 77° 33' 54.51"E to 77° 33' 58.17"E

10km RADIUS :

Q.L.A. 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 pillars: 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

APPLICANT :

Thiru.R.MUTHUSAMY,
S/o.RANGASAMI GOUNDER,
No.77,SOUTH STREET,MORATTUPALAYAM,
TIRUPPUR DISTRICT,
TAMIL NADU -638 752.

LOCATION OF Q.L.A. AREA:

SF.NOS : 71/A,
EXTENT : 1.31.0 HA.
VILLAGE : KEERANUR,
TALUK : KANGAYAM.
DISTRICT : TIRUPPUR.
STATE : TAMILNADU.

PLATE NO - I-A

DATE OF SURVEY : 22.10.2025

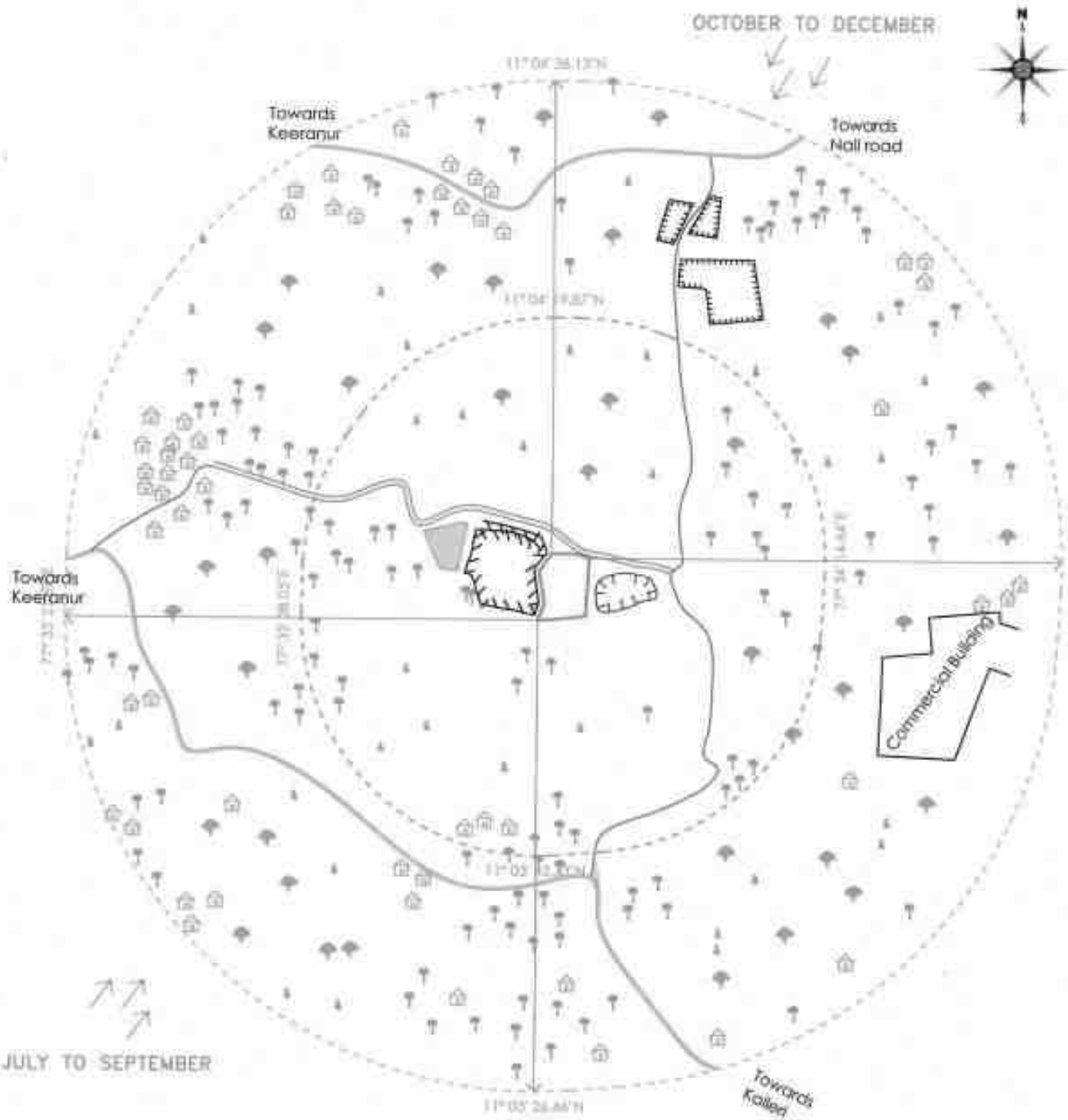
TOPO SKETCH OF QUARRY LEASE APPLIED AREA FOR 10Km RADIUS

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

A.VENKATASUBRAMANIAN, M.Sc.,
DEPUTY DIRECTOR
Under Rule 15(3)(a)and(b)of MCR 2018



LANDUSE PATTERN		
DESCRIPTION	PERCENTAGE	INDEX
ROADS\CRUSHER	(15%)	
HABITATION	(10%)	
TREES	(18%)	
AGRICULTURAL LAND	(52%)	
PIT	(05%)	

1Km Radius :

500m Radius :

Q.L.Applied Area :

TOPO SHEET NO. : 58 E/12

LATITUDE : 11° 03' 58.99"N to 11° 04' 03.61"N
LONGITUDE : 77° 33' 54.51"E to 77° 33' 58.17"E

APPLICANT :

Thiru.R.MUTHUSAMY,
S/o.RANGASAMI GOUNDER,
No.77,SOUTH STREET,MORATUPALAYAM,
TIRUPPUR DISTRICT,
TAMIL NADU -638 752.

LOCATION OF Q.L.A AREA:

SF.NOS : 71/A,
EXTENT : 1.31.0 HA,
VILLAGE : KEERANUR,
TALUK : KANGAYAM,
DISTRICT : TIRUPPUR,
STATE : TAMILNADU.

INDEX

- CART TRACK
- VILLAGE ROAD
- HABITATION
- TREES
- AGRICULTURAL LAND
- PIT
- WIND DIRECTION
- APPROACH ROAD
- CRUSHER UNIT

PLATE NO - I-B

DATE OF SURVEY : 22.10.2025

ENVIRONMENTAL & LAND USE PLAN

SCALE. 1:10,000

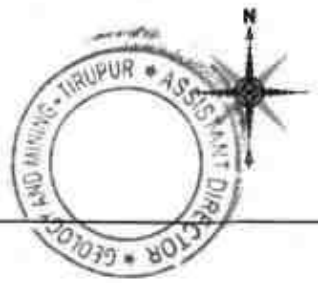
PREPARED BY :

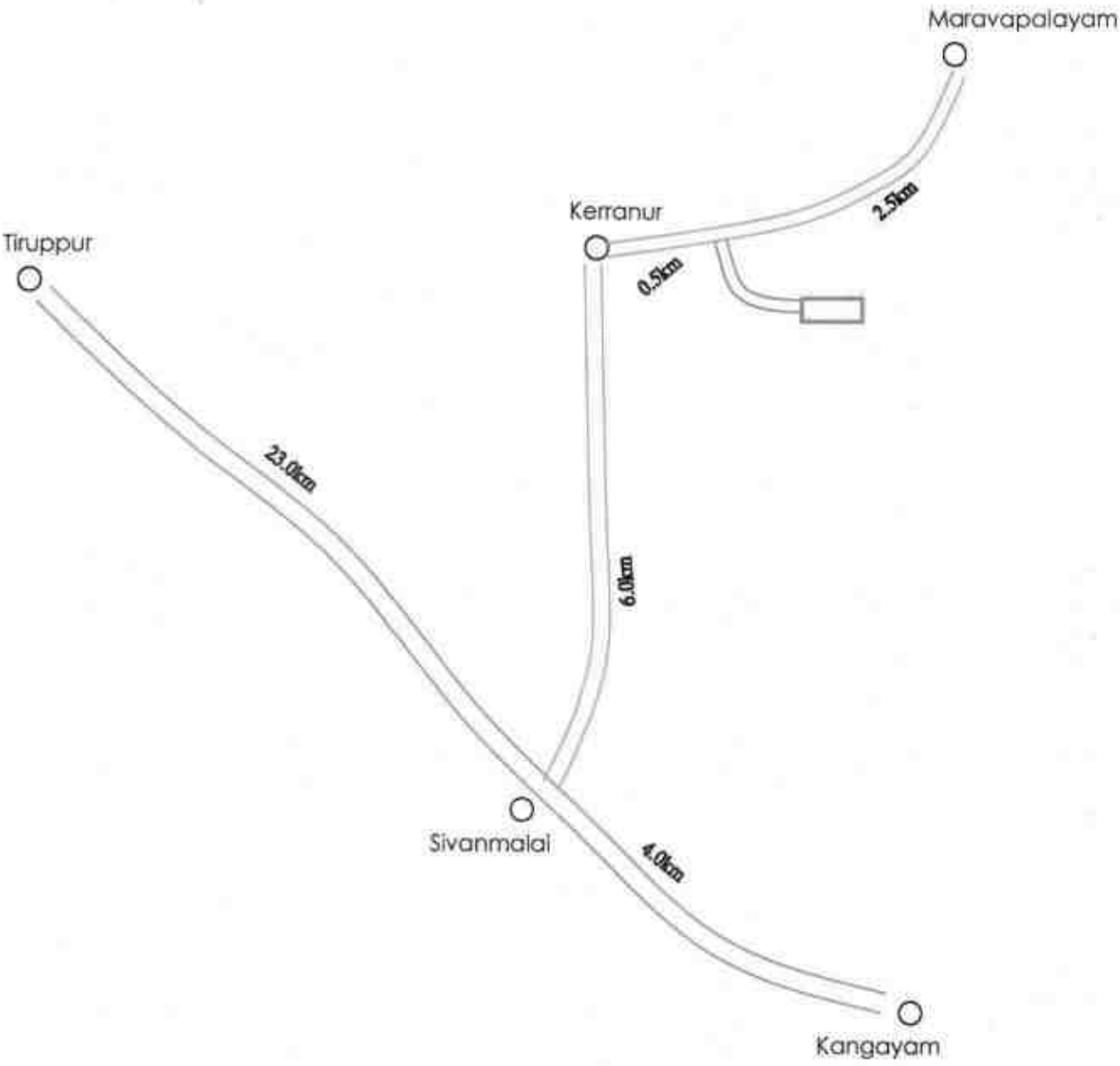
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

DESIGNATED PERSON
Under Rule 15(1) of EIA Notification MOEF, 2006

PLATE NO : I-C

ROUTE MAP





INDEX

Q.L.A. AREA

SH - ROAD

PANCHAYAT ROAD

APPROACH ROAD

APPLICANT :

Thiru.R.MUTHUSAMY,
S/o.RANGASAMI GOUNDER,
No.77,SOUTH STREET,
MORATTUPALAYAM,
TIRUPPUR DISTRICT,
TAMIL NADU -638 752.

LOCATION OF Q.L.A AREA:

SF.NOS : 71/A,
EXTENT : 1.31.0 HA,
VILLAGE : KEERANUR,
TALUK : KANGAYAM,
DISTRICT : TIRUPPUR,
STATE : TAMILNADU.

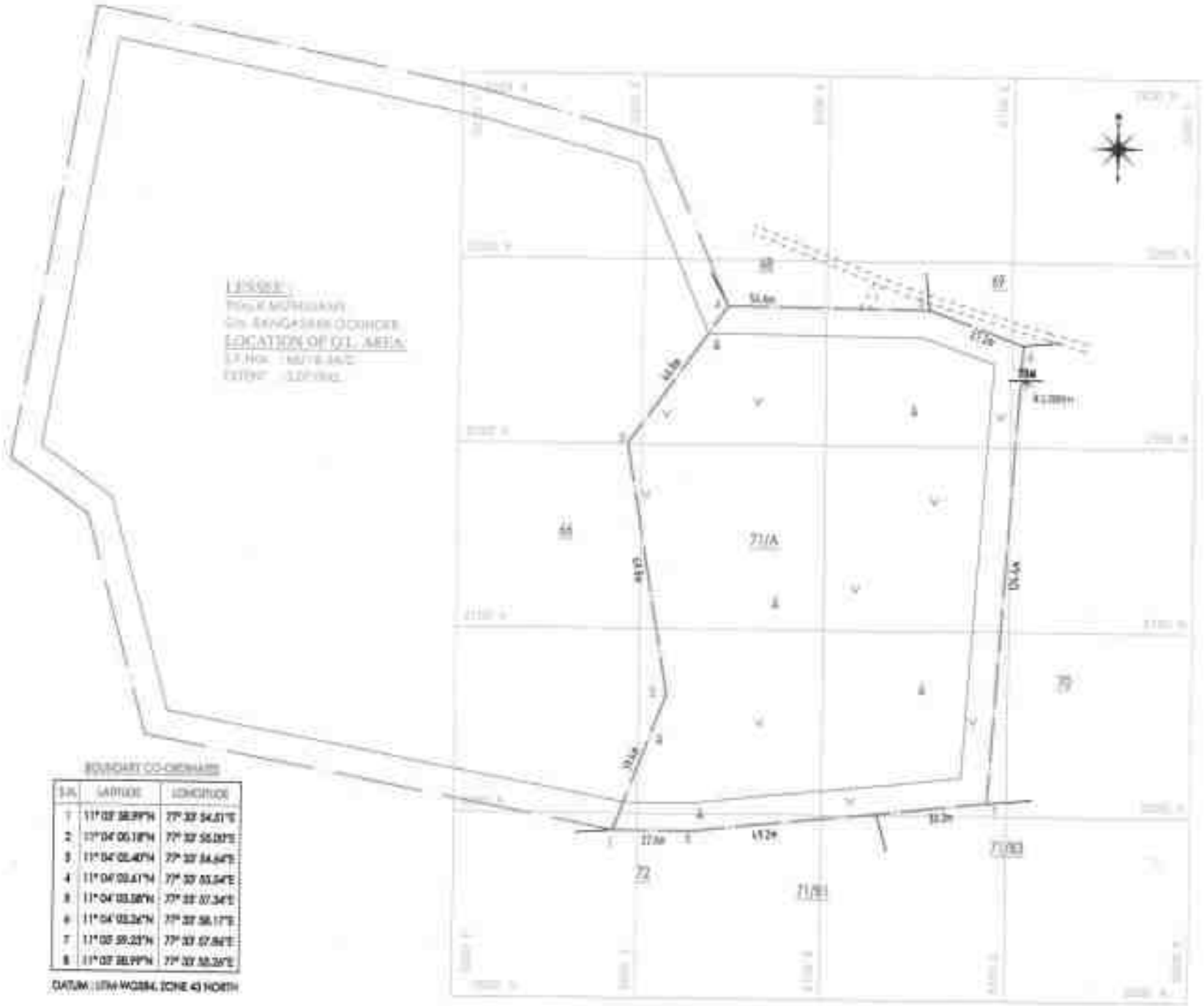
SCALE :

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.VEERAMANI M.Sc.,
QUALIFIED PERSON
Under Rule 15(1)(a) and(b) of MCR,2016



BOUNDARY CO-ORDINATES

S.NO.	LATITUDE	LONGITUDE
1	11°03'58.99"N	77°33'54.61"E
2	11°04'00.18"N	77°33'55.05"E
3	11°04'02.40"N	77°33'54.64"E
4	11°04'03.61"N	77°33'53.04"E
5	11°04'03.08"N	77°33'51.34"E
6	11°04'02.26"N	77°33'50.17"E
7	11°03'59.23"N	77°33'51.82"E
8	11°03'58.99"N	77°33'53.26"E

DATUM : UTM WGS84, ZONE 43 NORTH

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- Q.L. APPLIED AREA BOUNDARY
- 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- SHRUBS
- APPROACH ROAD

APPLICANT :

Thiru.R.MUTHUSAMY,
S/o.RANGASAMI GOUNDER,
No.77,SOUTH STREET,
MORATTUPALAYAM,
TIRUPPUR DISTRICT,
TAMILNADU 638 752.

LOCATION OF Q.L.A. AREA:

SF.NOS : 71/A,
EXTENT : 1.31.0 HA,
VILLAGE : KEERANUR,
TALUK : KANGAYAM,
DISTRICT : TIRUPPUR,
STATE : TAMILNADU

PLATE NO - II

DATE OF SURVEY : 22.10.2025

QUARRY LEASE PLAN & SURFACE PLAN

SCALE 1:1000

PREPARED BY :

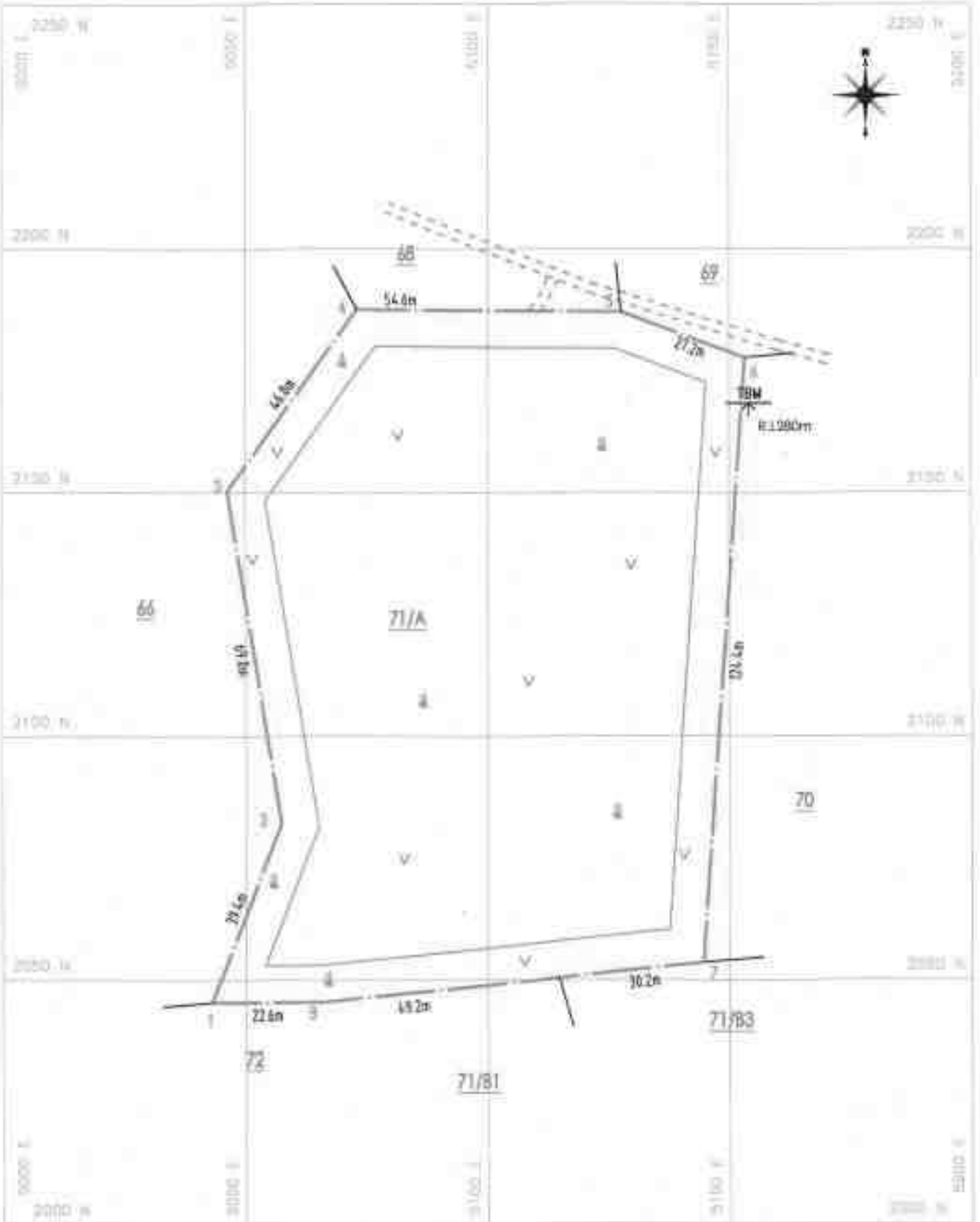
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLAN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT.

200 A

BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	11° 03' 58.99"N	77° 33' 54.51"E
2	11° 04' 00.18"N	77° 33' 55.00"E
3	11° 04' 02.40"N	77° 33' 54.64"E
4	11° 04' 03.61"N	77° 33' 55.54"E
5	11° 04' 03.56"N	77° 33' 57.34"E
6	11° 04' 03.26"N	77° 33' 58.17"E
7	11° 03' 59.23"N	77° 33' 57.86"E
8	11° 03' 58.99"N	77° 33' 55.26"E

DATUM : UTM-WGS84, ZONE 43 NORTH



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- Q.L. APPLIED AREA BOUNDARY
- 7.5m SAFETY DISTANCE
- TBM TEMPORARY BENCH MARK
- GRAVEL
- SHRUBS
- APPROACH ROAD

APPLICANT :

Thiru.R.MUTHUSAMY,
S/o.RANGASAMI GOUNDER,
No.77,SOUTH STREET,
MORATTUPALAYAM,
TIRUPPUR DISTRICT,
TAMIL NADU -638 752.

LOCATION OF Q.L.A. AREA:

SF.NOS : 71/A,
EXTENT : 1.31.0 HA.,
VILLAGE : KEERANUR,
TALUK : KANGAYAM,
DISTRICT : TIRUPPUR,
STATE : TAMILNADU.

PLATE NO - II-A

DATE OF SURVEY : 22.10.2025

QUARRY LEASE PLAN & SURFACE PLAN

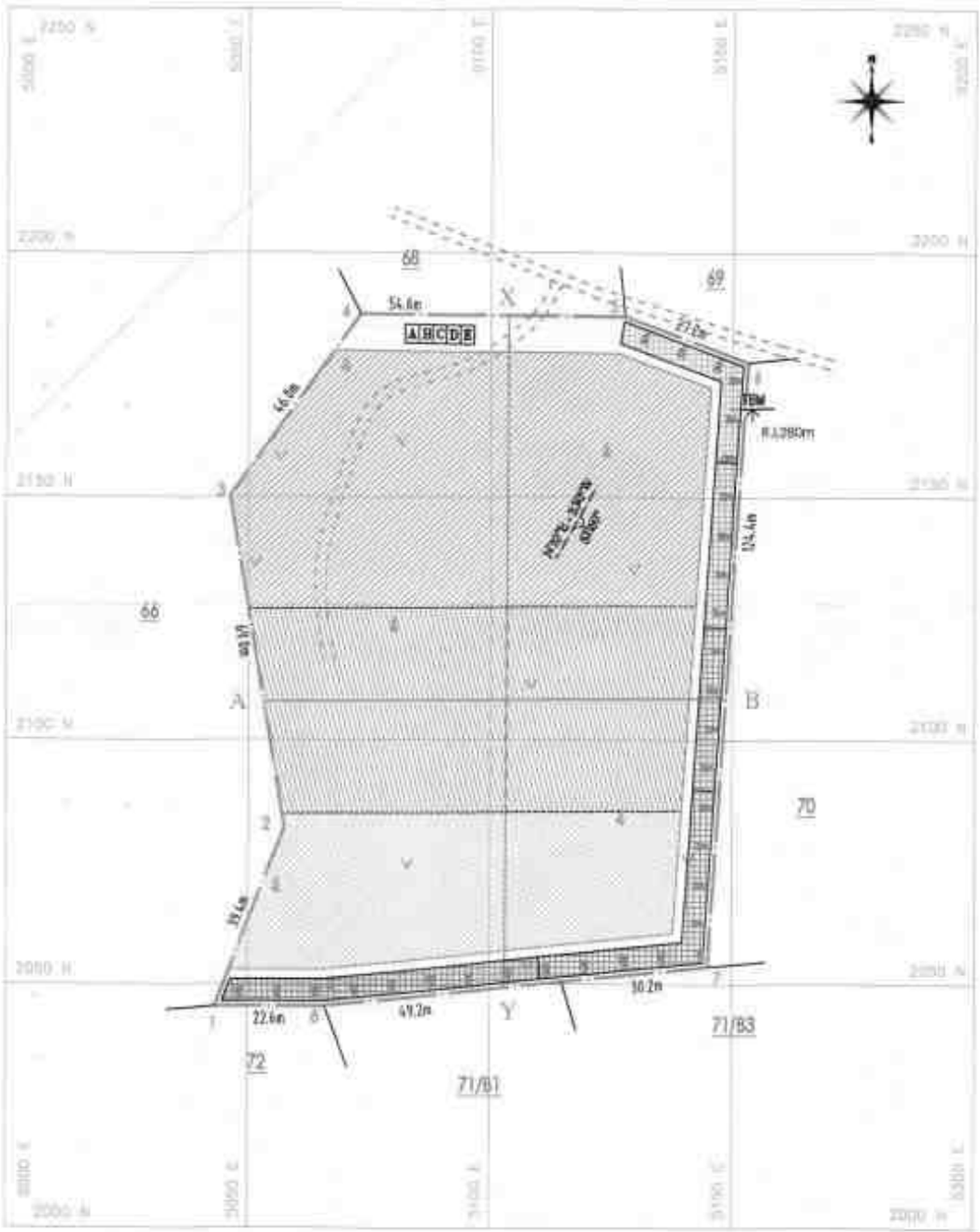
SCALE. 1:1000

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

M.[illegible], M.Sc.,
QUALIFIED PERSON
Under Rule 15(1)(a) of MCR,2015

201 A



I - yr Proposed area to be Planted

II - yr Proposed area to be Planted

III - yr Proposed area to be Planted

IV - yr Proposed area to be Planted

V - yr Proposed area to be Planted

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- Q.L. APPLIED AREA BOUNDARY
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- STRIKE & DIP
- SHRUBS
- QUARRY ROAD
- APPROACH ROAD
- D.O.E DEPTH OF ESTIMATION

APPLICANT :

Thiru.R.MUTHUSAMY,
S/o.RANGASAMI GOUNDER,
No.77,SOUTH STREET,
MORATTUPALAYAM,
TIRUPPUR DISTRICT,
TAMIL NADU -638 752.

LOCATION OF Q.L.A AREA:

SF.NOS : 71/A,
EXTENT : 1.31.0 HA,
VILLAGE : KEERANUR,
TALUK : KANGAYAM,
DISTRICT : TIRUPPUR,
STATE : TAMILNADU.

PLATE NO - III

DATE OF SURVEY : 22.10.2025

TOPOGRAPHY, GEOLOGICAL PLAN, FIRST FIVE YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS

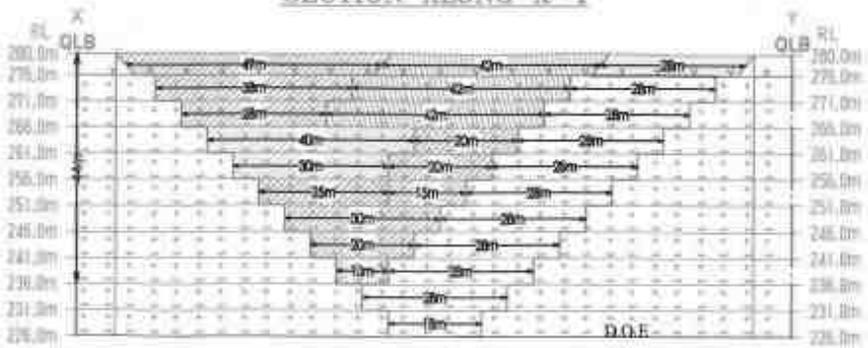
SCALE. 1:1000

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

M.Sc.,
Under Rule [illegible] MCR,2016

SECTION ALONG X–Y



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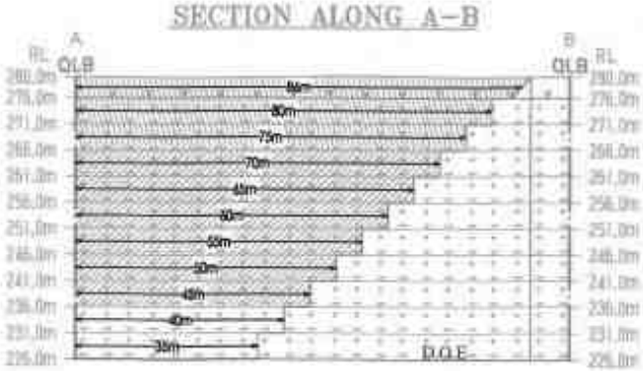


Proposed Pit Dimension (max)
= 119mX86mX44m(d)

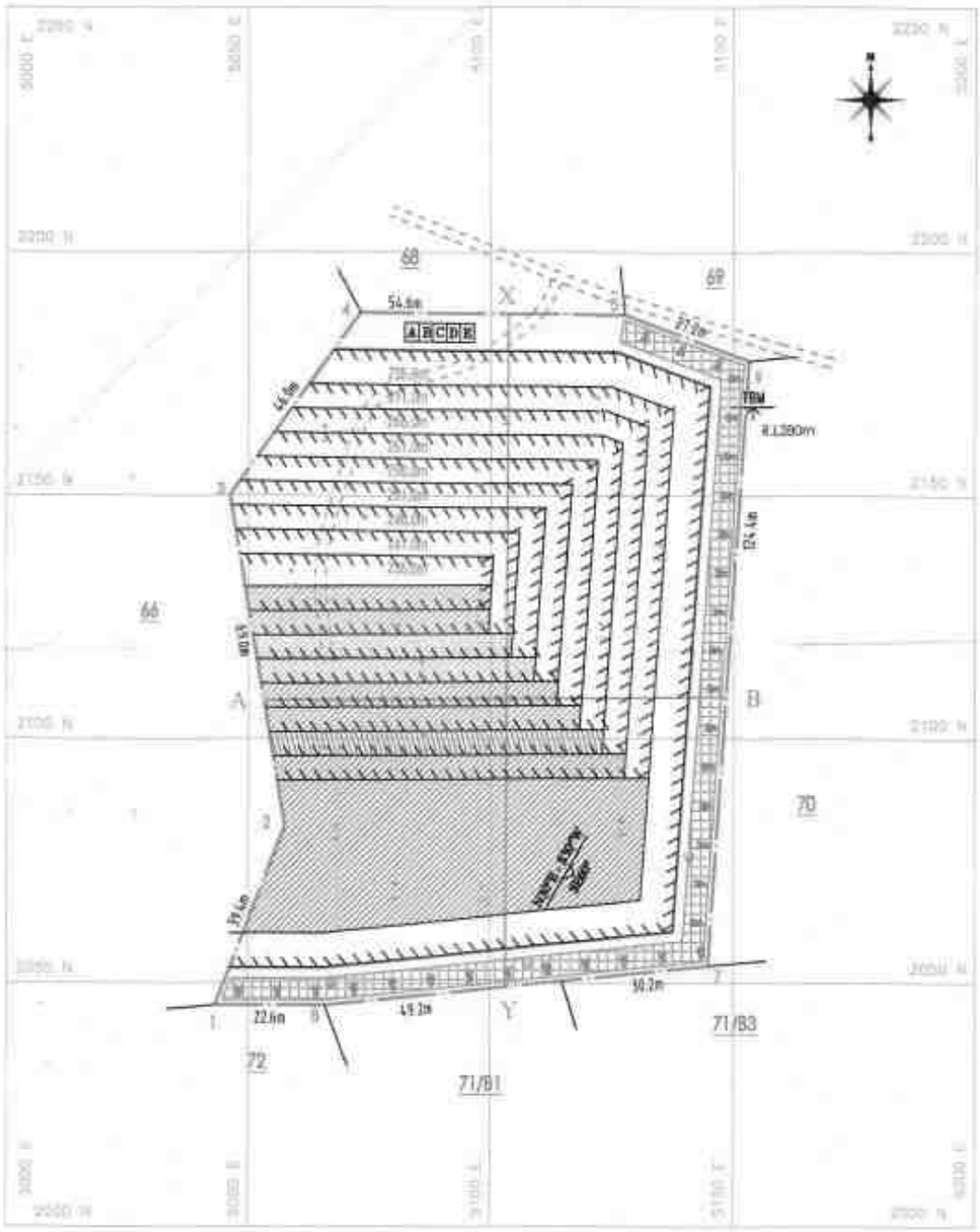
I - yr Proposed area to be Quarried

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



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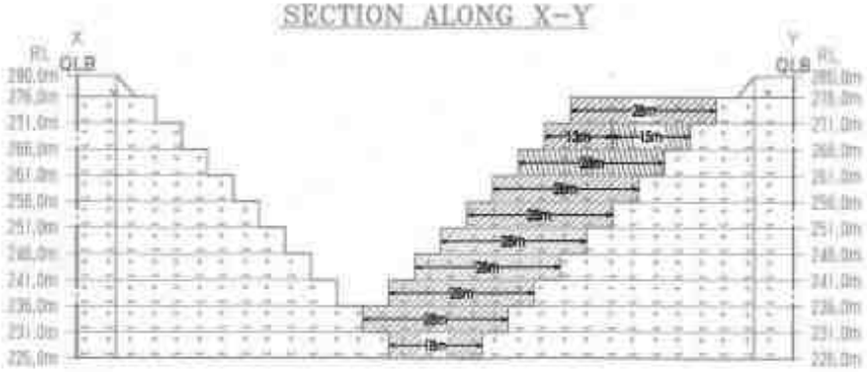

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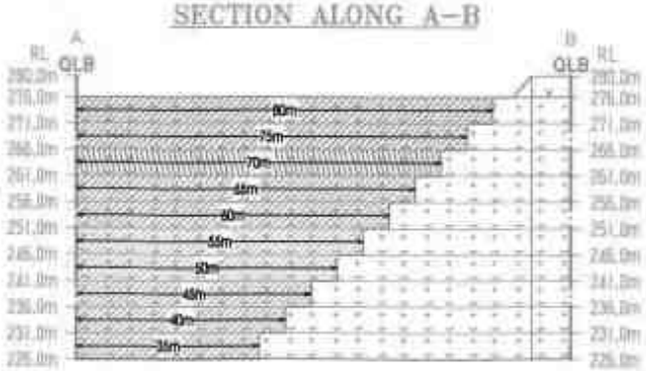

Proposed Pit Dimension (max)
= (19mX86mX54m(d)

VI - yr Proposed area to be Quarried
VII - yr Proposed area to be Quarried
VIII - yr Proposed area to be Quarried
IX - yr Proposed area to be Quarried
X - yr Proposed area to be Quarried

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- GRAVEL
- STRIKE & DIP
- SHRUBS
- QUARRY ROAD
- APPROACH ROAD
- QUARRY PIT
- GREEN BELT

APPLICANT :

Thiru.R.MUTHUSAMY,
S/o.RANGASAMI GOUNDER,
No.77,SOUTH STREET,
MORATTUPALAYAM,
TIRUPPUR DISTRICT,
TAMIL NADU -638 752.

LOCATION OF Q.L.A. AREA:

SF.NOS : 71/A,
EXTENT : 1.31.0 HA.
VILLAGE : KEERANUR,
TALUK : KANGAYAM,
DISTRICT : TIRUPPUR,
STATE : TAMILNADU.

PLATE NO - III-A

DATE OF SURVEY : 22.10.2025

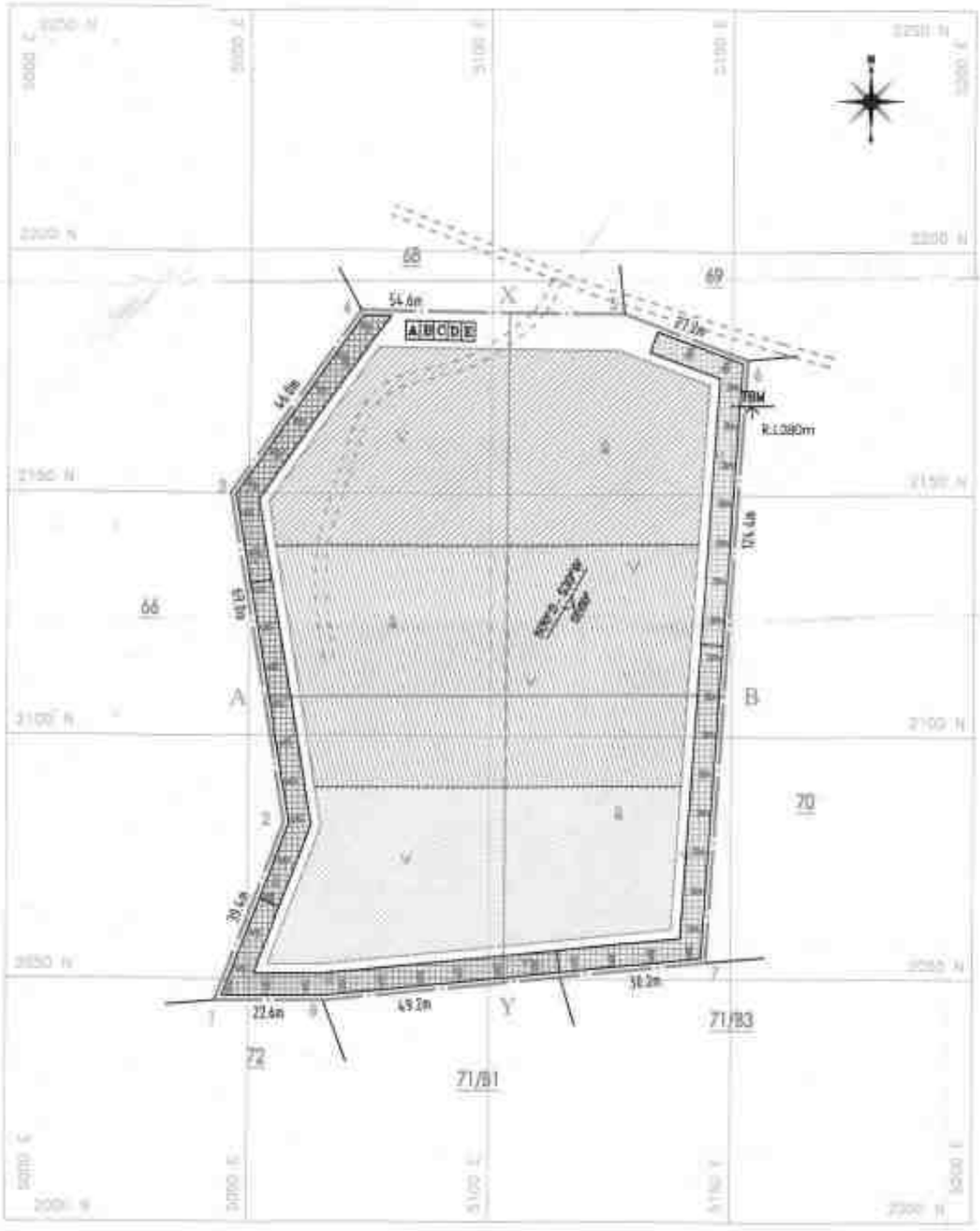
TOPOGRAPHY, GEOLOGICAL PLAN, SECOND FIVE YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS

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

B.[illegible] M.Sc.,
[illegible]
Under Rule [illegible](b) of MCR,2018



I - yr Proposed area to be Planted
II - yr Proposed area to be Planted
III - yr Proposed area to be Planted
IV - yr Proposed area to be Planted
V - yr Proposed area to be Planted

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- STRIKE & DIP
- SHRUBS
- QUARRY ROAD
- APPROACH ROAD
- D.O.E DEPTH OF ESTIMATION

APPUCANT :

Thiru.R.MUTHUSAMY,
S/o.RANGASAMI GOUNDER,
No.77,SOUTH STREET,
MORATTUPALAYAM,
TIRUPPUR DISTRICT,
TAMIL NADU -638 752.

LOCATION OF Q.L.A AREA:

SF.NOS : 71/A,
EXTENT : 1.31.0 HA.,
VILLAGE : KEERANUR,
TALUK : KANGAYAM,
DISTRICT : TIRUPPUR,
STATE : TAMILNADU.

PLATE NO - III-B

DATE OF SURVEY : 22.10.2025

TOPOGRAPHY, GEOLOGICAL PLAN, FIRST FIVE YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS

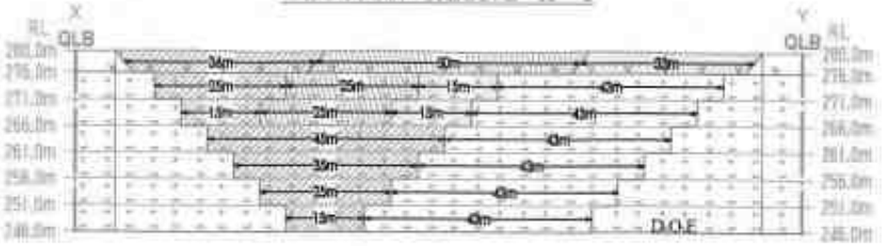
SCALE. 1:1000

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

RAMESH BABU M.Sc.,
QUALIFIED PERSON
Under Rule 17(1)(a) of MCR,2016

SECTION ALONG X-Y



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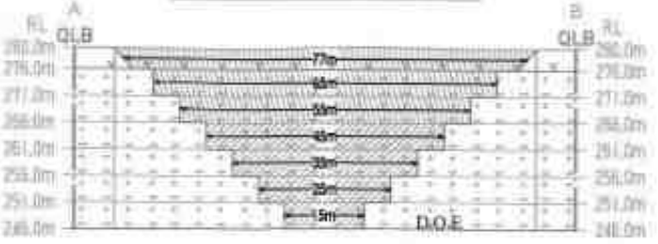
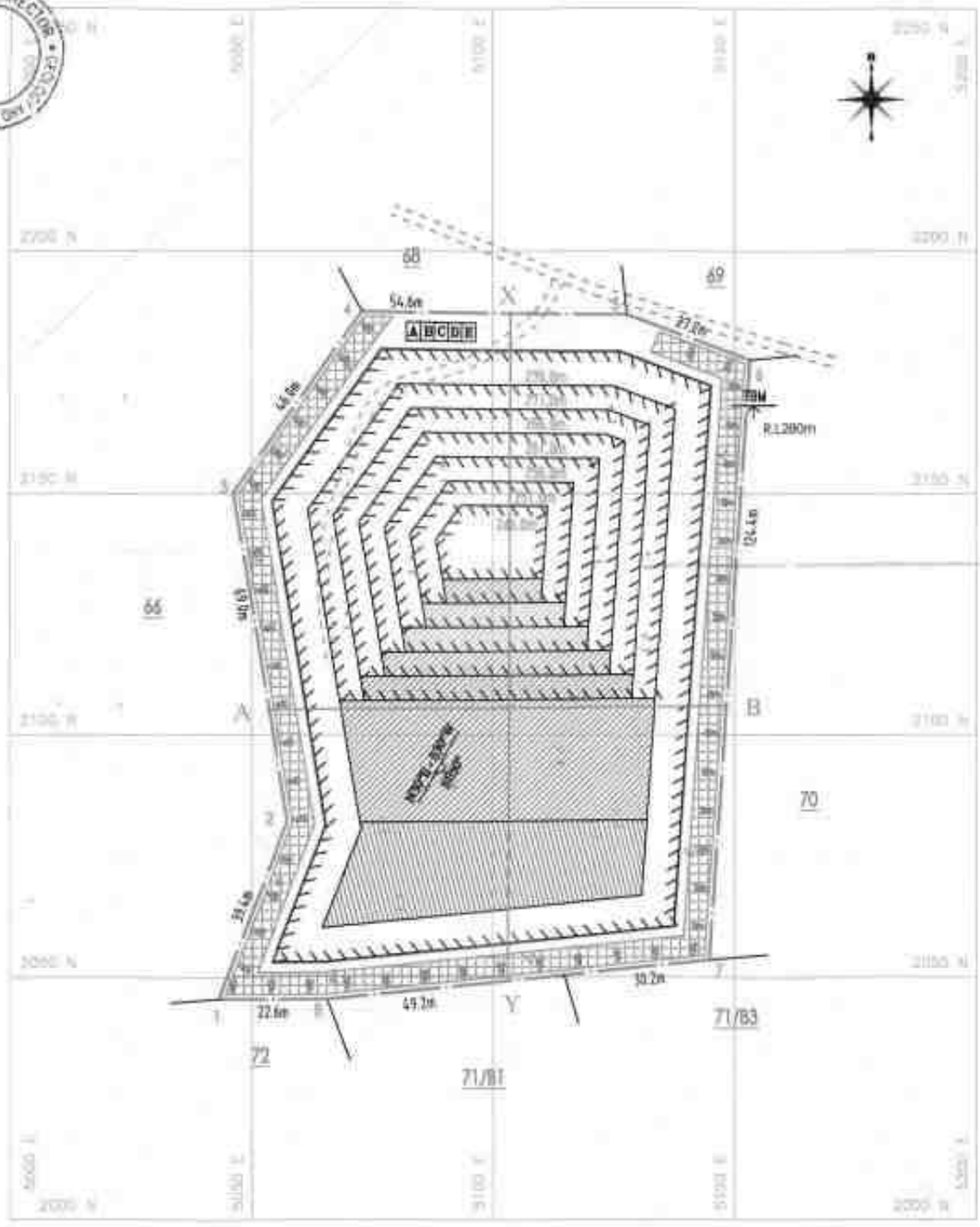


I - yr Proposed area to be Quarried
II - yr Proposed area to be Quarried
III - yr Proposed area to be Quarried
IV - yr Proposed area to be Quarried
V - yr Proposed area to be Quarried



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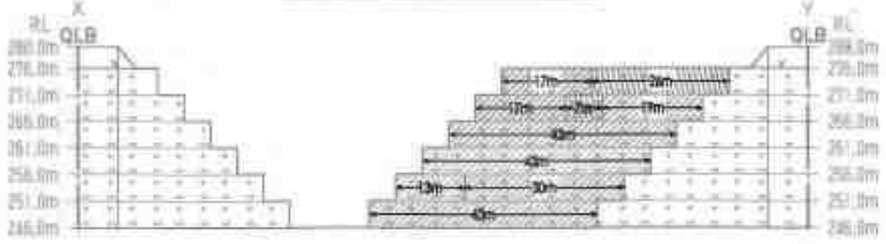

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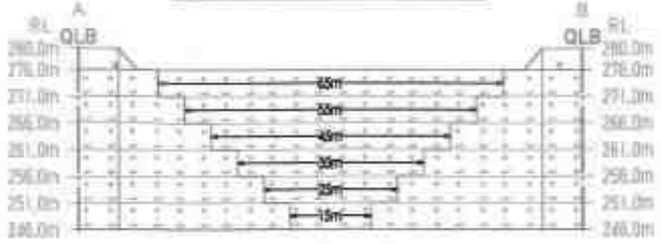

VI - yr Proposed area to be Quarried	
VII - yr Proposed area to be Quarried	
VIII - yr Proposed area to be Quarried	
IX - yr Proposed area to be Quarried	
X - yr Proposed area to be Quarried	

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- SHRUBS
- QUARRY ROAD
- APPROACH ROAD
- QUARRY PIT
- GREEN BELT

APPLICANT :

Thiru.R.MUTHUSAMY,
S/o.RANGASAMI GOUNDER,
No.77,SOUTH STREET,
MORATTUPALAYAM,
TIRUPPUR DISTRICT,
TAMIL NADU -638 752.

LOCATION OF Q.L.A AREA:

SF.NOS : 71/A,
EXTENT : 1.31.0 HA.
VILLAGE : KEERANUR,
TALUK : KANGAYAM,
DISTRICT : TIRUPPUR,
STATE : TAMILNADU.

PLATE NO - III-C

DATE OF SURVEY : 22.10.2025

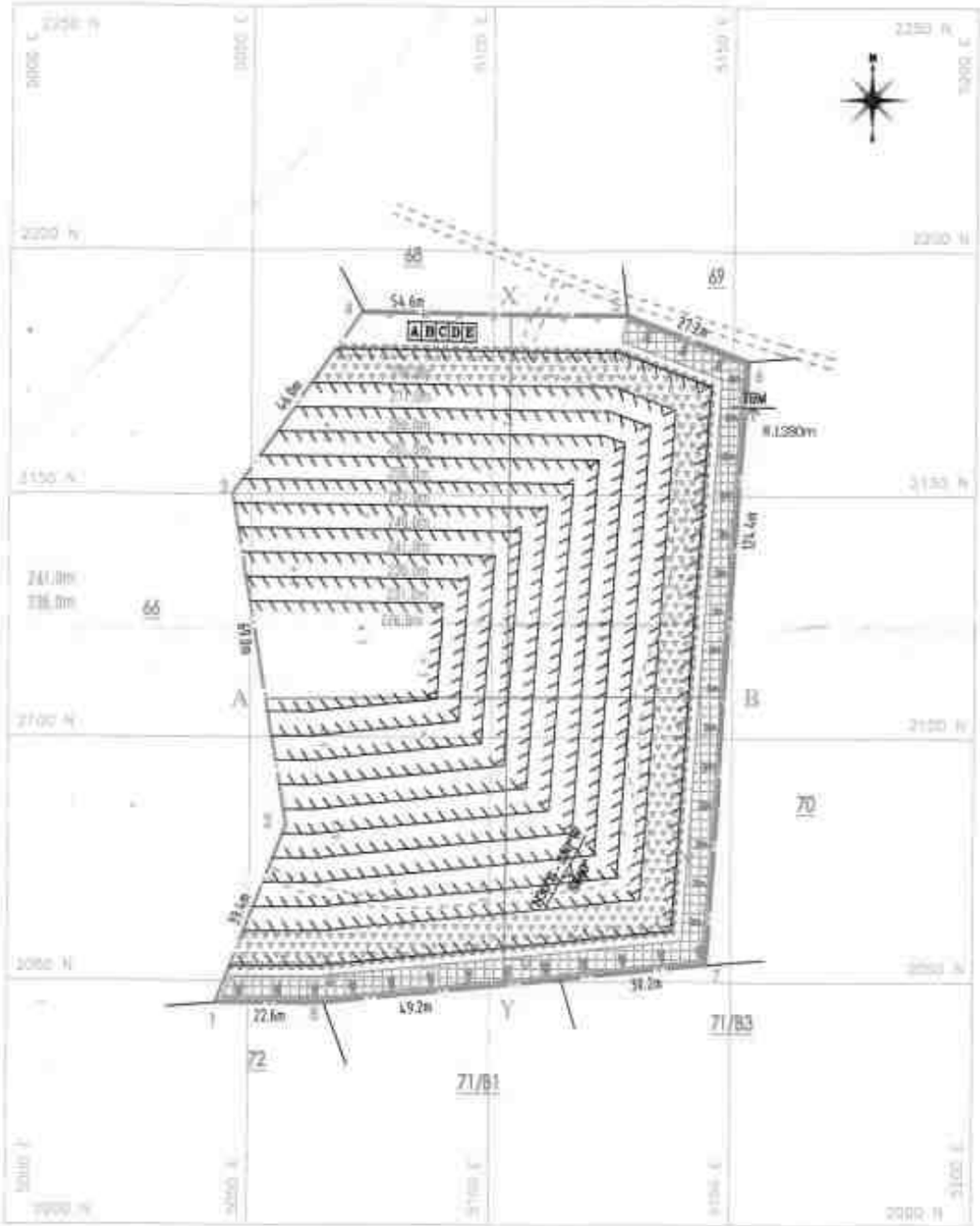
TOPOGRAPHY, GEOLOGICAL PLAN, SECOND FIVE YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS

SCALE. 1:1000

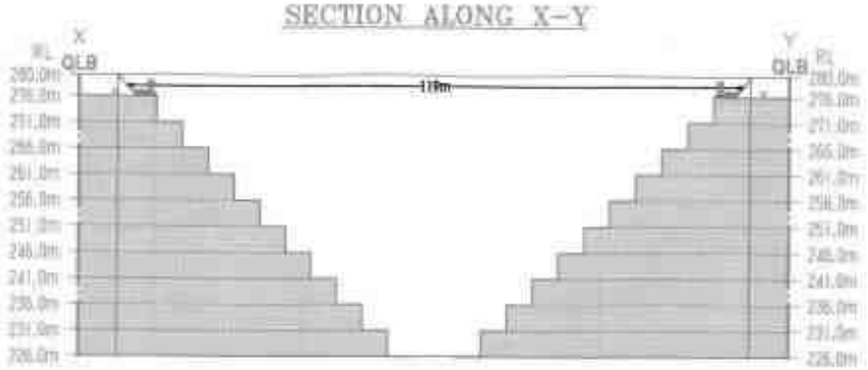
PREPARED BY :

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

R.VENKATACHALAM, M.Sc.,
RECOGNISED PERSON
Under Rule 17(1)(a)(ii) of MCR,2018



SECTION ALONG X–Y



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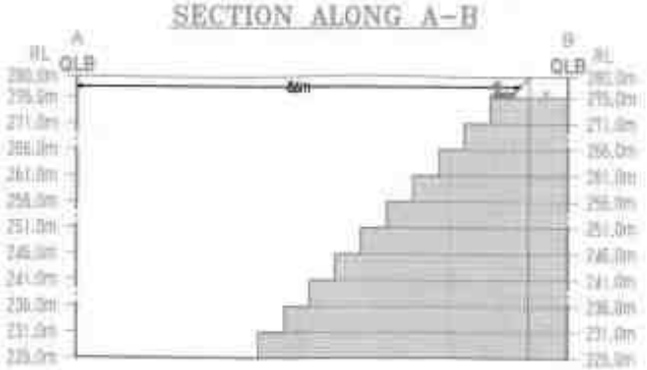

Proposed Pit Dimension (max)
= 119mX86mX54m(d)

LAND USE PATTERN

DESCRIPTION	PRESENT AREA IN (Ha)	AREA AT THE END OF LEASE PERIOD (Ha)
QUARRYING PIT	Nil	1.02.3
INFRASTRUCTURE	Nil	0.03.0
ROADS	Nil	0.02.0
GREEN BELT	Nil	0.11.0
UN-UTILIZED AREA	1.31.0	0.14.7
TOTAL	1.31.0	1.31.0

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- Q.L. APPLIED AREA BOUNDARY
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- SHRUBS
- QUARRY ROAD
- APPROACH ROAD
- QUARRY PIT
- GREEN BELT
- BARBED WIRE FENCING
- EXISTING LAND FORM
- SOIL LAYER
- REHABILITATED LAND FORM
- PROPOSED GARLAND DRAIN
- OLD SURFACE LEVEL
- FINISHED SURFACE LEVEL

APPLICANT :

Thiru.R.MUTHUSAMY,
S/o.RANGASAMI GOUNDER,
No.77,SOUTH STREET,
MORATTUPALAYAM,
TIRUPPUR DISTRICT,
TAMIL NADU -638 752.

LOCATION OF Q.L.A. AREA:

SF.NOS : 71/A,
EXTENT : 1.31.0 HA.
VILLAGE : KEERANUR,
TALUK : KANGAYAM,
DISTRICT : TIRUPPUR,
STATE : TAMILNADU.

PLATE NO - IV

DATE OF SURVEY : 22.10.2025

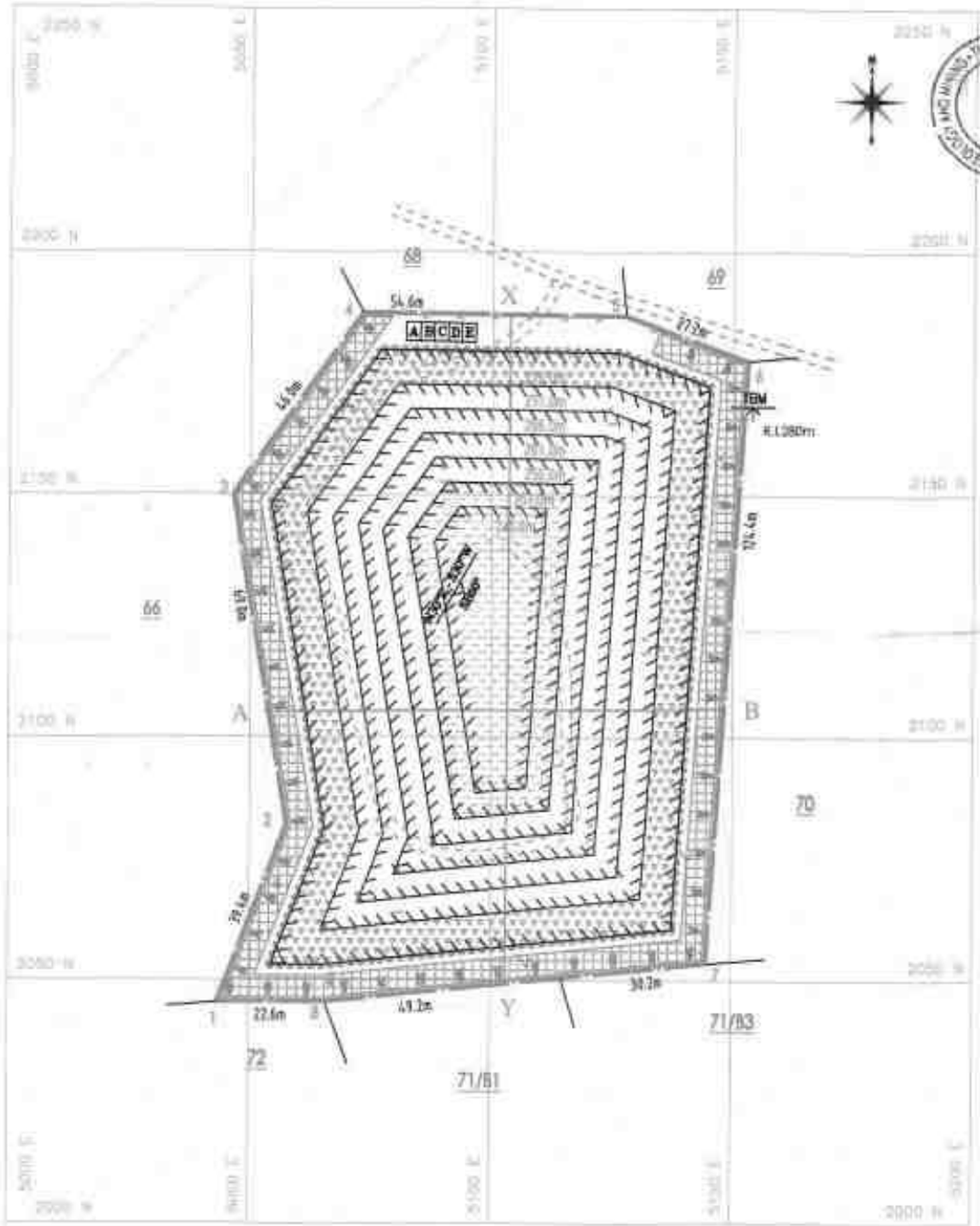
PROGRESSIVE QUARRY CLOSURE PLAN & SECTIONS

SCALE. 1:1000

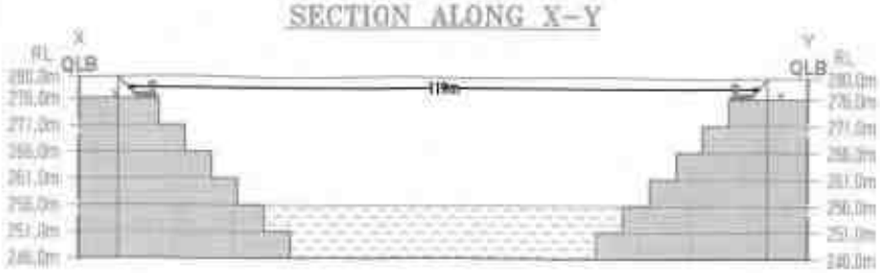
PREPARED BY :

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

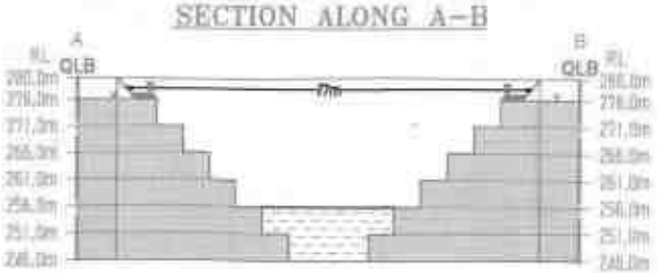
ENVIRONMENTALIST, M.Sc.,
QUARRY CONSULTANT
Under Rule [illegible] of MCR,2018



SECTION ALONG X–Y



SECTION ALONG A–B



LAND USE PATTERN

DESCRIPTION	PRESENT AREA IN (Ha)	AREA AT THE END OF LEASE PERIOD (Ha)
QUARRYING PIT	Nil	0.91.6
INFRASTRUCTURE	Nil	0.01.0
ROADS	Nil	0.02.0
GREEN BELT	Nil	0.18.0
UN-UTILIZED AREA	1.31.0	0.18.4
TOTAL	1.31.0	1.31.0

APPLICANT :

Thiru.R.MUTHUSAMY,
S/o.RANGASAMI GOUNDER,
No.77,SOUTH STREET,
MORATTUPALAYAM,
TIRUPPUR DISTRICT,
TAMIL NADU -638 752.

LOCATION OF Q.L.A. AREA:

SF.NOS : 71/A,
EXTENT : 1.31.0 HA,
VILLAGE : KEERANUR,
TALUK : KANGAYAM,
DISTRICT : TIRUPPUR,
STATE : TAMILNADU.

PLATE NO - IV-A

DATE OF SURVEY : 22.10.2025

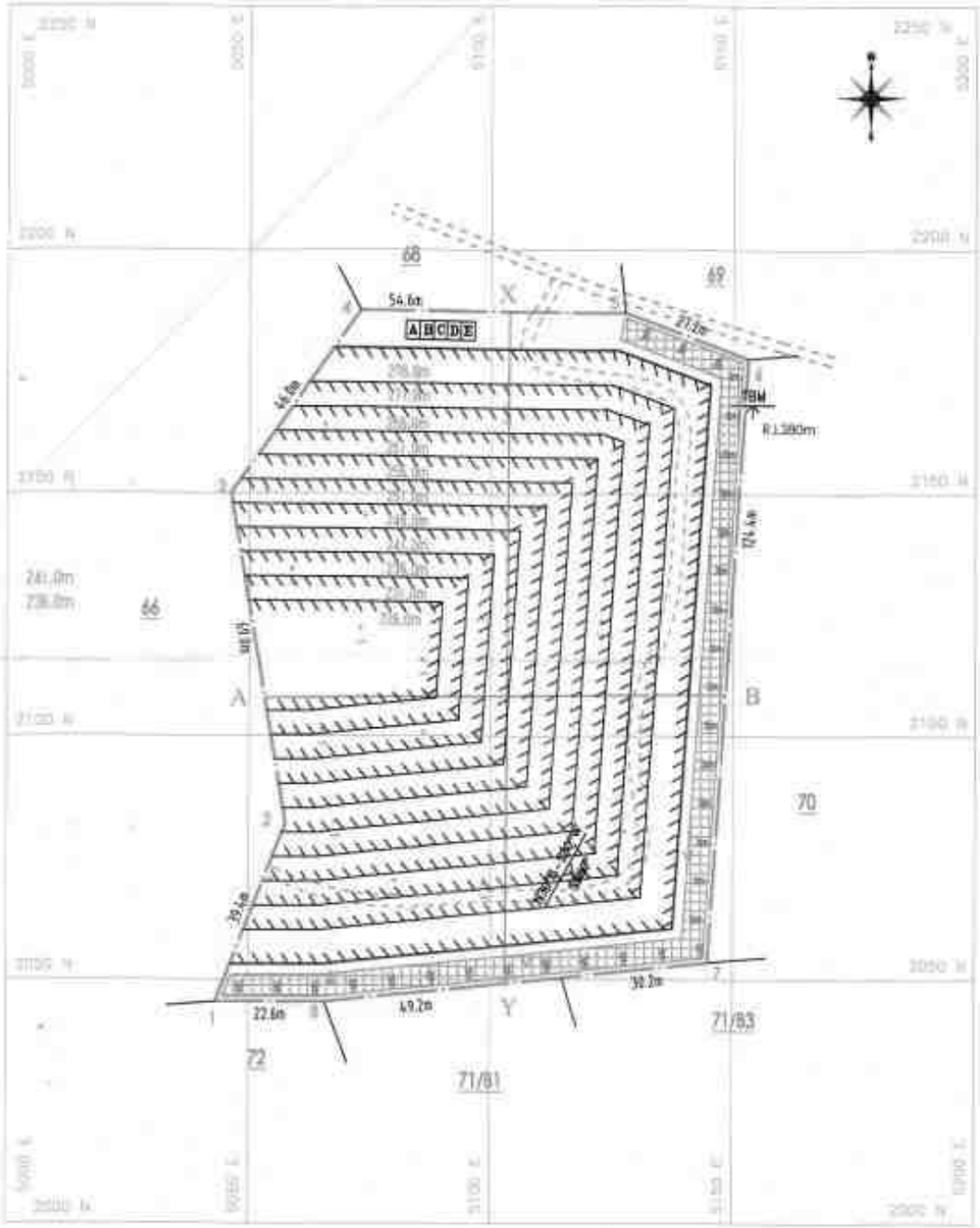
PROGRESSIVE QUARRY CLOSURE PLAN & SECTIONS

SCALE. 1:1000

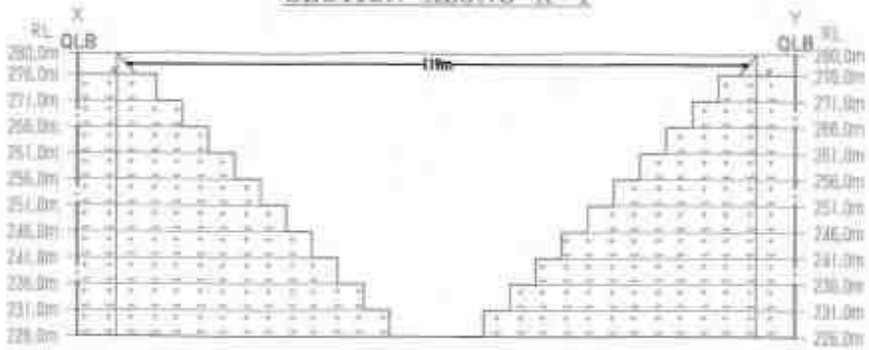
PREPARED BY :

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

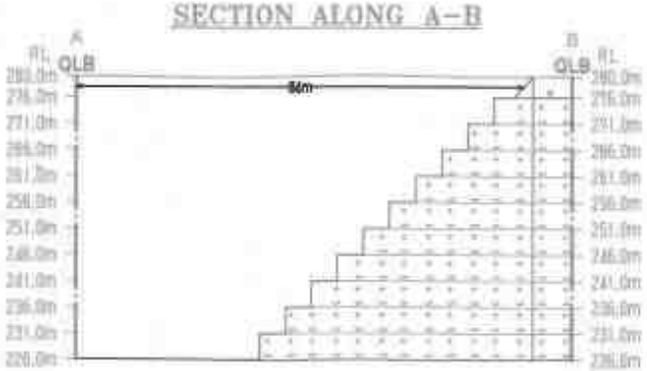
B. Prabhakaran, M.Sc.,
QUALIFIED PERSON
Under Rule 15(1)(a)and(b)of MCR,2016



SECTION ALONG X–Y



SECTION ALONG A–B



Ultimate Pit Dimension (max)
= 119mX86mX54m(d)

INDEX

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- 7.5m SAFETY DISTANCE
- TBM — TEMPORARY BENCH MARK
- GRAVEL
- STRIKE & DIP
- SHRUBS
- QUARRY ROAD
- APPROACH ROAD
- QUARRY PIT
- GREEN BELT

APPLICANT :

Thiru.R.MUTHUSAMY,
S/o.RANGASAMI GOUNDER,
No.77,SOUTH STREET,
MORATTUPALAYAM,
TIRUPPUR DISTRICT,
TAMIL NADU -638 752.

LOCATION OF Q.L.A. AREA:

SF.NOS : 71/A,
EXTENT : 1.31.0 HA,
VILLAGE : KEERANUR,
TALUK : KANGAYAM,
DISTRICT : TIRUPPUR,
STATE : TAMILNADU.

PLATE NO - V

DATE OF SURVEY : 22.10.2025

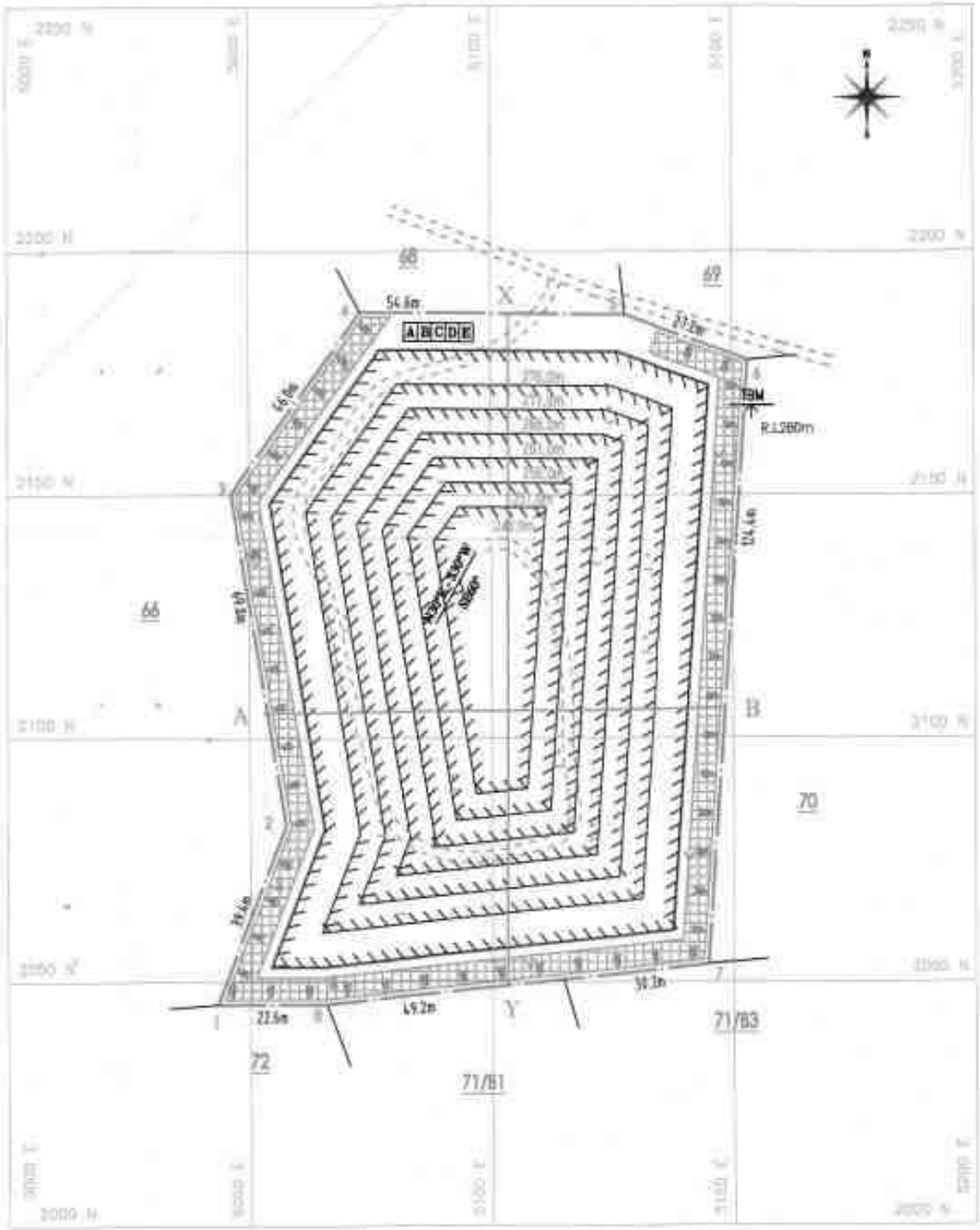
CONCEPTUAL PLAN & SAECTIONS

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

K.SIVAKADIRVEL M.Sc.,
QUALIFIED PERSON
Under Rule 8(1)(c)of MCR,2016



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- GREEN BELT

APPLICANT :

Thiru.R.MUTHUSAMY,
S/o.RANGASAMI GOUNDER,
No.77,SOUTH STREET,
MORATTUPALAYAM,
TIRUPPUR DISTRICT,
TAMIL NADU -638 752.

LOCATION OF Q.L.A AREA:

SF.NOS : 71/A,
EXTENT : 1.31.0 HA,
VILLAGE : KEERANUR,
TALUK : KANGAYAM,
DISTRICT : TIRUPPUR,
STATE : TAMILNADU.

PLATE NO - V-A

DATE OF SURVEY : 22.10.2025

CONCEPTUAL PLAN & SAECTIONS

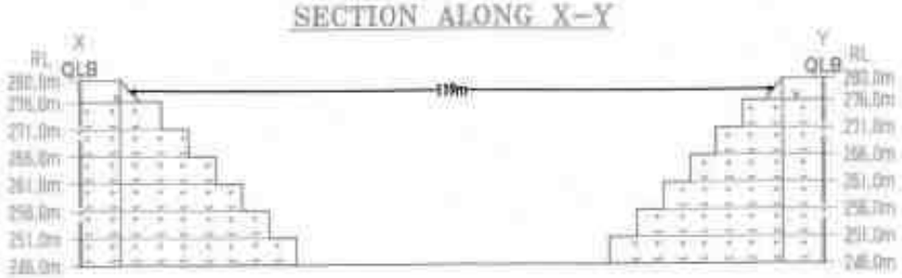
SCALE. 1:1000

PREPARED BY :

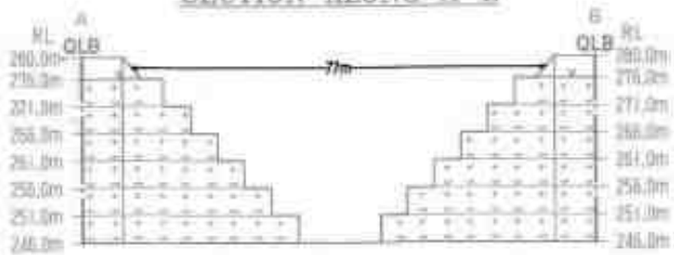
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

R.SENGANGUNI M.Sc.,
STATE LEVEL PERSON
Under Rule 41(3)(b) of MCR,2018

SECTION ALONG X–Y



SECTION ALONG A–B



Ultimate Pit Dimension (max)
= 119mX77mX34m(d)

File No: 13527
Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), TAMIL NADU)
***

Dated: **15/04/2026**

To,

Tmt. R. THULASIMANI
No. 3/111, Palladam Road, Mangalam, Tiruppur District - 641663. TAMIL NADU.
5854rsk@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 & Gravel Quarry over an Extent of 2.22.0 Ha at S.F.No. 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu by Tmt. R. Thulasimani – "B1" of Item 1(a) "Mining of Minerals" of the Schedule to the EIA Notification, 2006 as amended – ToR issued along with Public Hearing- preparation of EIA report – Regarding.

Ref: 1. Earlier, EC was issued vide Lr. No. SEIAA-TN/F.No.7284/1(a)EC. No:4237/2020 Dated:17.06.2020.
2. Online proposal No. SIA/TN/MIN/572165/2026, Dated: 13.03.2026.
3. Minutes of the 697th Meeting of SEAC held on 26.03.2026.
4. Minutes of the 990th Meeting of Authority held on 07.04.2026.

2. The particulars of the proposal are as below:

(i) TOR Identification No.	TO26B0108TN5645147N
(ii) File No.	13527
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	1(a) Mining of minerals
(vi) Name of Project	Rough Stone and Gravel Quarry Belongs to Tmt. R. Thulasimani
(vii) Name of Company/Organization	R THULASIMANI
(viii) Location of Project (District, State)	TIRUPPUR, TAMIL NADU
(ix) Issuing Authority	SEIAA
(x) Applicability of General Conditions	no
(xi) 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 07.04.2026. The minutes of the meeting and all the Application and documents submitted [viz. Form-1 Part A, Part B] are available on PARIVESH portal which can be accessed by scanning the QR Code above.
3.The State Expert Appraisal Committee (SEAC), based on the information & clarifications provided by the project proponent and after detailed deliberations on all technical aspects recommended the proposal for grant of Terms of Reference with public hearing under the provision of EIA Notification, 2006 and as amended thereof subject to the stipulation of specific and general conditions as detailed in Annexure (2).
4.The SEIAA has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the SEAC hereby decided to issue the following Terms of Reference with public hearing for instant proposal of **Tmt. R. Thulasimani** 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.

Annexure 1

Specific Terms of Reference s for (Mining Of Minerals)

1. Seiaa Specific Conditions :

S. No	Terms of Reference
1.1	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 of 6,68,148MT of Rough Stone & 71,128MT of Gravel upto the depth of 49m BGL and the annual peak production shall not exceed 1,55,650 MT of Rough Stone & 30,256 MT of Gravel** as per the approved mining plan, under cluster for undertaking the combined Environment Impact Assessment Study and preparation of separate Environment Management Plan subject to the conditions as recommended by SEAC & normal conditions & SEIAA Specific & Standard conditions.

2. Seiaa Standard Conditions :

S. No	Terms of Reference
2.1	**<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

S. No	Terms of Reference
	in the form of route map and network. 5. The committee shall deliberate on risk & emergency management plan, fire safety & evacuation plan and sustainable development goals pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan. 6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the Environmental policy devised shall be given in detail in the EIA Report. 7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner. 8. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public in the vicinity. **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.

S. No	Terms of Reference
	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. 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.

SEAC conditions - Site specific

Major Conditions:

1. **The Project Proponent shall furnish the Certified Compliance Report obtained from the RO, MoEF&CC, for the EC previously issued, during the EIA appraisal.**
2. **The PP shall furnish the Past Production details/ Year wise bulk transport permit (as per appendix XII – TNMMCR, 1959) for the quarry operated obtained from the Director/ Asst. Director, Department of Geology and Mining during the EIA appraisal.**
3. **The Project Proponent (PP) shall ensure that the crusher area is strictly excluded from the boundaries of the proposed mining area.**
4. **The Project Proponent (PP) shall submit and upload the consent documents duly obtained from the respective Pattadhars as part of the Environmental Impact Assessment (EIA) appraisal process.**

General Conditions:

1. **A Cluster Management Committee (CMC) shall be constituted including all the mines in the cluster as Committee Members for the effective management of the mining operation in the cluster through systematic & scientific approach with appointment of statutory personnel, appropriate environmental monitoring, good maintenance of haul roads and village/panchayat roads, authorized blasting operation etc. The PP shall submit the following details in the form of an Affidavit during the EIA appraisal:**
    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.**
2. The Geo referenced Boundary pillars to be erected on the field as per the mine rules and the evidence should be submitted along with the EIA report.
3. The details of enumeration of structures including schools, colleges, primary health centres should be submitted along with the EIA report.
4. The structures within the radius of (i) 50 m, (ii) 100 m, (iii) 200 m and (iv) 300m & up to 1km shall be enumerated with details such as dwelling houses with number of

occupants, whether it belongs to the owner (or) not, places of worship, industries, factories, sheds, etc. and spell out the mitigation measures to be proposed for the protection of the above structures, if any during the quarrying operations.

5. The proponent shall furnish photographs of adequate fencing; garland drainage built with siltation tank & green belt along the periphery including replantation of existing trees; maintaining the safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
6. The Proponent shall carry out Bio diversity study as a part of EIA study and the same shall be included in the Report.
7. 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.
8. The PP shall carry out the comprehensive studies on the cumulative environmental impacts of the existing & proposed quarries which included drilling & blasting, loading & hauling on the surrounding village and structures.
9. The PP shall prepare a conceptual working plan accommodating the inclusion of haul road accessibility keeping the benches intact, by ensuring the slope stability of the working benches to be constructed and existing quarry wall.
10. The PP shall install the CCTV camera for the continuous surveillance of mining activity & furnish the photographic/videographic evidence along with the EIA report.

SEAC Standard conditions

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 water bodies like lake, water tanks, etc are located within 1 km of the proposed 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 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 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 detail ed.

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.

STANDARD TERMS OF REFERENCE

1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the

lessee.

4) All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).

5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.

6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.

7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.

8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.

9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.

10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.

11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.

12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.

13) Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.

14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.

15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.

16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.

17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.

18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the

project cost.

19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.

20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL. HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).

21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need-based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season); December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.

23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown

on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.

25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.

26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.

27) Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.

28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.

29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.

30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and BGL. A schematic diagram may also be provided for the same.

31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.

32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.

34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.

35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.

36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.

37) Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.

38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.

39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.

40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.

43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

44) Besides the above, the below mentioned general points are also to be followed: -

a) Executive Summary of the EIA/EMP Report

b) All documents to be properly referenced with index and continuous page numbering.

c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.

d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.

e) Where the documents provided are in a language other than English, an English translation should be provided.

f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.

g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA. II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.

h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.

i) As per the circular no. J-11011/618/2010-IA. II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.

j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly

showing the land features of the adjoining area.

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

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

1. Project name and location (Village, District, State, Industrial Estate (if applicable).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.
5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be 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 OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.

Signed by
Rahul Nadh A R
Date: 15-04-2026 18:09:30
Reason: Verified and signed

From

Thiru.M.Prasad, M.Sc.,
Assistant Director,
Dept. of Geology and Mining,
Tiruppur.

To

Tmt.R.Thulasimani,
No.3/111,Palladam road,
Mangalam,
Tiruppur District – 641663.

Sir,

R.c. No.2240/Mines/2025, Dated: 02.03.2026.

Sub: Mines and Minerals – Minor Mineral – Rough Stone and Gravel quarry lease – Tiruppur District – Kangeyam Taluk – Keeranur Village – S.F.Nos.16/2(P) (0.01.00), 16/3(P) (0.71.20), 19/1(P) (0.40.50), 19/4A(P) (0.44.55), 19/4B (0.05.95) and 15(P) (0.58.80) totally over an extent of 2.22.00 Hectares – Quarry lease application preferred by Tmt.R.Thulasimani - Precise area communicated for the proposed grant of quarry lease - Mining Plan Submitted for approval - Approved - regarding.

Ref:
1. Application for grant of Rough Stone and Gravel quarry lease preferred by Tmt.R.Thulasimani No.3/111,Palladam road, Mangalam, Tiruppur District – 641663 application dated: 26.04.2025
2. G.O. Ms. No. 79 / Industries (MMC 1) Department dated 06.04.2015.
3. The Assistant Director, Geology and Mining, Tiruppur letter R.C.No. 2240/Mines/2025, dated: 20.02.2026.
4. Tmt.R.Thulasimani letter dated: 24.02.2026.

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Tmt.R.Thulasimani has preferred an application for the grant of Rough Stone and Gravel quarry lease over an extent of 2.22.00 hectares of patta land in S.F.Nos.16/2(P) (0.01.00), 16/3(P) (0.71.20), 19/1(P) (0.40.50), 19/4A(P) (0.44.55), 19/4B (0.05.95) and 15(P) (0.58.80) of Keeranur Village, Kangeyam Taluk, Tiruppur District vide reference 1st cited and the precise area was communicated to the applicant vide reference 3rd cited with a direction to submit the approved mining plan and Environmental Clearance.

As directed, the applicant has submitted three copies of the mining plan for approval, vide reference 4th cited. The mining plan has been verified in detail and found that the mining plan has 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:

(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.

Encl.: Approved Mining Plan.

7/3/26.

Assistant Director,
Dept. of Geology and Mining,
Tiruppur.

2/3/26

From
Thiru.M.Prasad, M.Sc.,
Assistant Director,
Geology and Mining,
Tiruppur.

To
Tmt.R.Thulasimani,
No.3/111,Palladam road,
Mangalam,
Tiruppur District – 641663.

R.c. No. 2240/Mines/2025, Dated: .02.2026.

Sir,

Sub: Mines and Minerals – Minor Mineral – Rough Stone and Gravel quarry lease – Tiruppur District – Kangeyam Taluk – Keeranur Village – S.F.Nos.16/2(P) (0.01.00), 16/3(P) (0.71.20), 19/1(P) (0.40.50), 19/4A(P) (0.44.55), 19/4B (0.05.95) and 15(P) (0.58.80) totally over an extent of 2.22.00 Hectares – Quarry lease application preferred by Tmt.R.Thulasimani - Precise area communicated for the proposed grant of quarry lease - Mining Plan Approved - requested to furnish the details of quarries located within 500 mts radius and existing pit details called for – details furnished – regarding.

Ref:
1. Application for grant of Rough Stone and Gravel quarry lease preferred by Tmt.R.Thulasimani No.3/111,Palladam road, Mangalam, Tiruppur District – 641663 application dated: 26.04.2025
2. G.O. Ms. No. 79 / Industries (MMC 1) Department dated 06.04.2015.
3. The Assistant Director, Geology and Mining, Tiruppur letter R.C.No. 2240/Mines/2025, dated: 20.02.2026. (Precise letter)
4. The Assistant Director, Geology and Mining, Tiruppur letter R.C.No. 2240/Mines/2025, dated: 02.03.2026 (Mining plan approved)
5. Tmt.R.Thulasimani request letter dated: 02.03.2026.

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In the reference 5th cited above, the applicant Tmt.R.Thulasimani has requested to furnish details of other quarry leases of expired, existing and proposed within 500mtr radius and existing pit details from the proposed rough stone and gravel lease over an extent of 2.22.00 Hectares of Patta land in S.F.Nos.16/2(P) (0.01.00), 16/3(P) (0.71.20), 19/1(P) (0.40.50), 19/4A(P) (0.44.55), 19/4B (0.05.95) and 15(P) (0.58.80) in Keeranur Village, Kangeyam Taluk, Tiruppur District.

2.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

S. No	Name of the lessee	Village	S.F. No	Extent Hect.	Lease period
1.	R.Muthusamy	Keeranur, Kangeyam	66/1, 66/2	3.07.0	10.11.2022 – 10.11.2027
2.	K.Thangavelu	Keeranur, Kangeyam	70/A2, 70/B2, 70/C2(p)	1.43.00	11.05.2022 – 10.05.2027

2. Present proposed quarries

S. No	Name of the lessee	Village	S.F. No	Extent Hect.	Lease period
1	Tmt. R.Thulasimani	Keeranur, Kangeyam	16/2(P),16/3 (P), 19/1(P), 19/4A(P), 19/4B and 15(P)	2.22.0	Proposed quarry
2	Thiru.Manoharan	Keeranur, Kangeyam	24/C2	2.27.5	Proposed quarry
3	Thiru.Muthusamy	Keeranur, Kangeyam	71/A	1.31.0	Proposed quarry
4	Thiru.R.Senthilkumar	Keeranur, Kangeyam	16/2(P) & 16/3(P)	1.01.10	Proposed quarry
5	M/S. Empire Mines Pvt Ltd	Keeranur, Kangeyam	50(P)	3.16.50	Proposed quarry

3.Abandoned / expired quarries

S. No	Name of the lessee	Village	S.F. No	Extent Hect.	Lease period
- Nil-					

In this regard, as per the approved Mining Plan, the dimension of the existing pit for which previously lease was granted to P.Ramasamy for a period of 5 years over an extent of 1.21.00 in S.F. Nos. 15(P), 16/3(P) vide Deputy Director, Department of Geology and Mining, Tiruppur proceedings R.C. 116/2019/Mines dated 28.08.2020 for the period from 28.08.2020 to 27.08.2025 is given below:-

Pit	Length in (m) (Max)	Width in (m) (Max)	Depth in (m) (Max)
I	105	65	15

3/3/26

Assistant Director,
Dept of Geology and Mining,
Tiruppur.

Copy to:

3/3/26

State Level Environment Impact Assessment Authority-Tamil Nadu,
3rd Floor, Panagal Maaligai,No.1 Jeenis Road, Saidapet.Chennai-15

MINING PLAN ALONG WITH PROGRESSIVE QUARRYCLOSURE PLAN FOR KEERANUR ROUGH STONE AND GRAVEL QUARRY

(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	:	2.22.0 Ha
S.F.NOS.	:	16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B AND 15(Part)
VILLAGE	:	KEERANUR
TALUK	:	KANGEYAM
DISTRICT	:	TIRUPPUR
STATE	:	TAMIL NADU

FOR

APPLICANT

Tmt. R. Thulasimani,
W/o. P. Ramasamy,
No. 3/111, Palladam Road,
Mangalam,
Tiruppur District,
Tamil Nadu State – 641 663.

PREPARED BY

M. Santhoshkumar, M.Sc.,
Qualified Person
(As per Rule 15(1)(a) and (1)(b) of MCR, 2016)
Plot No.3, Kattuvattam,
Kothukara Samathi Via, Kannakurichi,
Salem District – 636 008.
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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.
- QP - Qualified Person.
- MSL - Mean Sea Level
- BGL - Below Ground Level
- MT - Metric Tonnes

R.Thulasimani,
W/o. P. Ramasamy,
No. 3/111, Palladam Road,
Mangalam,
Tiruppur District - 641 663,
Tamil Nadu State.

CONSENT LETTER FROM THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Keeranur Rough Stone and Gravel Quarry over an extent 2.22.00 Hectares of Patta land in S.F.Nos. 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part) of Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu State has been prepared by

M. Santhoshkumar, 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, Tiruppur District, Tamil Nadu State to make further correspondence regarding the corrections of the Mining Plan with the said Qualified Person at his following address.

M. Santhoshkumar, M.Sc.,
Plot No.3, Kattuvattam,
Kothukara Samathi Via, Kannakurichi,
Salem District – 636 008.
Mobile No.: +91 97914 41745.

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

R.Thulasimani

Place: Tiruppur
Date: 20.02.2026

R.Thulasimani,
W/o. P. Ramasamy,
No. 3/111, Palladam Road,
Mangalam,
Tiruppur District - 641 663,
Tamil Nadu State.

DECLARATION OF THE APPLICANT

The Mining Plan and Progressive Quarry Closure Plan in Respect of Keeranur Rough Stone and Gravel Quarry over an extent 2.22.0 Hectares of Patta land in S.F.Nos. 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part) of Keeranur Village, Kangeyam Taluk, Tiruppur 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

R.Thulasimani

Place: Tiruppur
Date: 21.02.2026

CERTIFICATE

Certified that I am, **M. Santhoshkumar, M.Sc.,** residing at Plot No.3, Kattuvattam, Kothukara Samathi Via, Kannakurichi, Salem District – 636 008, holding a Master Degree in Geology (M.Sc. Applied Geology) from Annamalai 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 Keeranur Rough Stone and Gravel Quarry over an extent 2.22.0 Hectares of Patta land in S.F.Nos. 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part) of Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu for **Tmt. R. Thulasimani,** W/o. P. Ramasamy, No. 3/111, Palladam Road, Mangalam, Tiruppur District - 641 663, Tamil Nadu State. 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

M. Santhoshkumar, M.Sc.,

Place: Salem
Date: 21.02.2026

M. Santhoshkumar, M.Sc.,
Plot No.3, Kattuvattam,
Kothukara Samathi Via, Kannakurichi,
Salem District – 636 008,
Mobile No.: +91 97914 41745.

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 Keeranur Rough Stone and Gravel Quarry over an extent 2.22.0 Hectares of Patta land in S.F.Nos. 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part) of Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu State has been prepared for

Tmt. R. Thulasimani,
W/o. P. Ramasamy,
No. 3/111, Palladam Road,
Mangalam,
Tiruppur District - 641 663,
Tamil Nadu State.

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, Tiruppur 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

M. Santhoshkumar, M.Sc.,

Place: Salem
Date: 21.02.2026

M. Santhoshkumar, M.Sc.,
Plot No.3, Katturvattam,
Kothukara Samathi Via, Kannakurichi,
Salem District – 636 008.
Mobile No.: +91 97914 41745.

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 Keeranur Rough Stone and Gravel Quarry over an extent 2.22.0 Hectares of Patta land in S.F.Nos. 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part) of Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu State has been prepared for

Tmt. R. Thulasimani,
W/o. P. Ramasamy,
No. 3/111, Palladam Road,
Mangalam,
Tiruppur District - 641 663,
Tamil Nadu State.

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

M. Santhoshkumar, M.Sc.,

Place: Salem
Date: 21.02.2026

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MINING PLAN ALONG WITH PROGRESSIVE QUARRY CLOSURE PLAN FOR KEERANUR ROUGH STONE AND GRAVEL QUARRY.

(PREPARED UNDER RULES 41 & 42 AS PER THE AMENDED TAMIL NADU MINOR MINERAL CONCESSION RULES, 1959)

INTRODUCTION AND EXECUTIVE SUMMARY

The applicant **Tmt. R. Thulasimani,** W/o. P. Ramasamy, residing at No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641 663 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 (Tmt. R. Thulasimani) has applied for Rough stone and Gravel quarry lease for over an extent 2.22.0 Hectares of patta land in S.F.Nos. 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part) of Keeranur Village, Kangeyam Taluk, Tiruppur 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, Tiruppur District and passed a precise area communication letter vide **Rc.No.2240/Mines/2025, Dated: 20.02.2026** under rule 19 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 (Refer Annexure No. I).

This Mining Plan along with Progressive quarry closure Plan is prepared in full consent with **Tmt. R. Thulasimani,** W/o. P. Ramasamy, residing at No. 3/111, Palladam Road, Mangalam, Tiruppur District, Tamil Nadu State – 641 663 for his proposed Rough stone and Gravel quarry over an extent 2.22.0 Hectares of Patta land in S.F.Nos. 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B and 15(Part) of Keeranur Village, Kangeyam Taluk, Tiruppur 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.

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.

Table – 2A

Length (m)(max)	Width (m) (max)	Depth (m) (max)
105	65	15

j. Method of mining / level of mechanization.

Opencast mechanized method, the quarry operation involves shallow jack hammer drilling, slurry blasting with NONEL initiation.

k. Type of machineries proposed in the quarrying operation is given below.

Excavators attached with 0.90m³ Bucket and rock breaker.

Jack hammer, Compressor (Diesel drive) (7 Jack hammer capacity)

Tippers.

l. No trees will be uprooted due to this quarry operation.

m. 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.

n. There is No Export of this Rough stone and Gravel.

o. 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.

p. The lease applied area is about bounded by Fifteen corners; the corners are designated as 1 – 15 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.

q. 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.

r. 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.

s. There is no waste anticipated during this quarry operation. Hence, waste dump is not proposed in the lease applied area.

t. Around 29 employees are proposed to deploying the quarrying operation.

u. Total Cost of the project is about **Rs. 98,78,000/-.**

1.0 GENERAL INFORMATION

1.1 Name of the Applicant with Address:

Name	:	**Tmt. R. Thulasimani,**
		W/o. P. Ramasamy,
Address	:	No. 3/111, Palladam Road,
		Mangalam,
		Tiruppur District
State with PIN Code	:	Tamil Nadu – 641 663.
Mobile No	:	+91 94432 62685
Aadhaar No	:	9998 0355 8550
E-mail	:	rsk5854@gmail.com

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	:	**M. Santhoshkumar, M.Sc.,**
		Qualified Person (Under Rule 15(1)(a) and (1)(b) of MCR, 2016)
Address	:	Plot No.3, Kattuvattam, Kothukara Samathi Via,
		Kumakurichi,
		Salem District,
State with PIN Code	:	Tamil Nadu – 636 008.
Mobile	:	+91 97914 41745
Email	:	santoshgeo2004@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 nearby 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, Tiruppur District vide **Re.No.2240/Mines/2025, Dated: 20.02.2026** (Refer Annexure No. I) and was given to us for the preparation of mining plan to meet out the applicant's production schedule.

2.0 LOCATION AND ACCESSIBILITY:

a) Details of the area with location map:

The lease applied area is located about 25.5km Southeastern side of Tiruppur town, 7.0km Northeastern side of Kangeyam town and 2.4km Southeastern side of Keeranur hamlets.

	26.6km		8.0km		2.4 km	
Tiruppur	⟶	Kangeyam	⟶	Keeranur	⟶	Lease applied area
	Southeast		Northwest		Southeast	

Location Map of the Lease Applied area

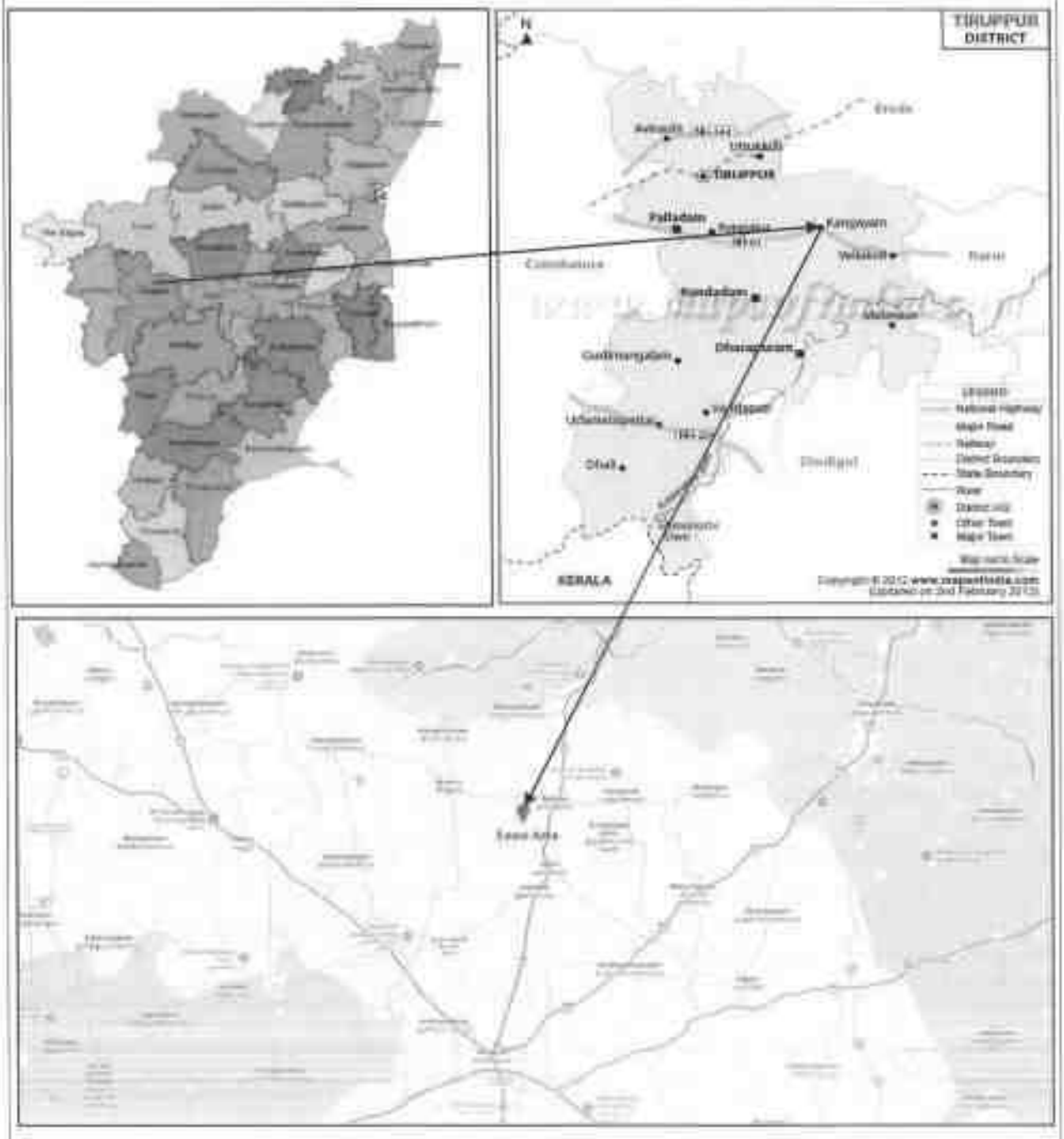


Table – 3

District	Taluk	Village	S.F. Nos.	Area (Ha.)	Patta no.
Tiruppur	Kangeyam	Keeranur	16/2(Part)	0.01.00	184
			16/3(Part)	0.71.20	3387
			19/1(Part)	0.40.50	3385
			19/4A	0.44.55	3572
			19/4B	0.05.95	4160
			15(Part)	0.58.80	684
			Total	**2.22.00**	-

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 patta land, jointly registered in the name of (Thiru. R. Senthilkumar and Thiru. P. Ramasamy) vide patta No. 684, (Thiru. R. Senthilkumar and Tmt. R. Thulasimani) vide patta No. 184, (Thiru. P. Ramasamy) Vide Patta No. 3387, (Thiru. P. Ramasamy) Vide Patta No. 3385, (Thiru. R. Senthilkumar) Vide Patta No. 3572 and (Thiru. P. Ramasamy, Tmt. R. Thulasimani and R. Senthilkumar) Vide Patta No. 4160 (Refer Annexure No. IV to VI). The applicant has obtained consent from the pattadars (Refer Annexure No. VII).

d) Existence of public road / Railway line, if any nearby and approximate distance:

The approach road is situated on the Western side, which is connects to the Village Road situated at 120m on the Western 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 existence and the same has been utilized for haulage and maintained during the entire lease period.

The Nearest Railway line is Tiruppur – Erode which is located at 14.9km 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: **58-E/12** Latitude between: **11°04'02.68"N to 11°04'10.27"N** and Longitude between: **77°34'08.29"E to 77°34'13.60"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 plain topography. The gradient of the area towards Southwestern side and altitude of the area is 297m above from Mean Sea Level, The area is covered by gravel having an average thickness of 4m and followed by Massive Charnockite which is clearly inferred from the nearby existing quarry pit.

The Water level in the surrounding area is 110m below from general ground profile which is observed from the nearby bore wells. Average annual rainfall is about 619mm.

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 N40°E – S40°W with dipping towards SE60°.

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 nearby existing quarry 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 Four sections have been drawn, Two sections drawn along Length wise as (X-Y and X1-Y1) and another two cross section drawn width wise (A-B and C-D) to cover the maximum area considered for lease upto 49m depth below from the ground.

The Topographical, Geological plan and sections demarcated the commercial marketable Rough stone and Gravel deposit has been prepared in the scale of 1:1000 (please refer the Geological plan and sections Plate Nos. III). As the sale of Rough stone is in terms of Metric Tonnes and the bulk density of the Rough stone has been estimated as 2.75 and Gravel has been estimated as 2. 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 49m [4m Gravel + 45m Rough stone] below from the ground profile. **The total Geological resources are estimated after depleting the existing quarry pit.** The total estimated geological resources are given below (Plate No. III):

TABLE – 4

GEOLOGICAL RESOURCES								
Section	**Bench**	**Length (m)**	**Width (m)**	**Depth (m)**	**Volume (m^3)**	**Bulk Density**	**Rough stone (MT)**	**Gravel (MT)**
XY-AB	I	126	70	4	35280	2	-	70560
	II	126	70	5	44100	2.75	121275	-
	III	126	70	5	44100	2.75	121275	-
	IV	126	70	5	44100	2.75	121275	-
	V	126	70	5	44100	2.75	121275	-
	VI	126	70	5	44100	2.75	121275	-
	VII	126	70	5	44100	2.75	121275	-
	VIII	126	70	5	44100	2.75	121275	-
	IX	126	70	5	44100	2.75	121275	-
	X	126	70	5	44100	2.75	121275	-
	Total				**396900**		**1091475**	**70560**
XIY1-AB	I	13	14	4	728	2	-	1456
	II	16	23	5	1840	2.75	5060	-
	III	35	25	5	4375	2.75	12031	-
	IV	42	27	1	1134	2.75	3119	-
		108	76	4	32832	2.75	90288	-
	V	108	76	5	41040	2.75	112860	-
	VI	108	76	5	41040	2.75	112860	-
	VII	108	76	5	41040	2.75	112860	-
	VIII	108	76	5	41040	2.75	112860	-
	IX	108	76	5	41040	2.75	112860	-

250 A

	X	108	76	5	41040	2.75	112860	-
	Total				**286421**		**787658**	**1456**
X1Y1-CD	I	47	81	4	15228	2	-	30456
	II	47	81	5	19035	2.75	52347	-
	III	47	81	5	19035	2.75	52347	-
	IV	47	81	5	19035	2.75	52346	-
	V	47	81	5	19035	2.75	52346	-
	VI	47	81	5	19035	2.75	52346	-
	VII	47	81	5	19035	2.75	52346	-
	VIII	47	81	5	19035	2.75	52346	-
	IX	47	81	5	19035	2.75	52346	-
	X	47	81	5	19035	2.75	52346	-
	Total				**76140**		**471116**	**30456**
Grand Total					**759461**		**2350249**	**102472**

The Geological Resources of Rough Stone : **23,50,249 MT**

The Geological Resources of Gravel : **1,02,472 MT**

Geological Resources has been estimated based on the physical investigation and filed survey data.

Tentative Mineable Reserves:

The tentative Mineable reserves are estimated after leaving the safety distance, bench loss and existing pit to a maximum depth of 49m below from the ground level:

TABLE – 5

MINEABLE RESERVES								
Section	**Bench**	**Length in (m)**	**Width in (m)**	**Depth in (m)**	**Volume (m³)**	**Bulk Density**	**Rough stone in (MT) 100%**	**Gravel (MT)**
XY-AB	I	107	61	4	26108	2	-	52216
	II	95	55	5	26125	2.75	71844	-
	III	85	50	5	21250	2.75	58438	-
	IV	75	45	5	16875	2.75	46406	-

	V	65	40	5	13000	2.75	35750	-
	VI	55	35	5	9625	2.75	26469	-
	VII	45	30	5	6750	2.75	18562	-
	VIII	35	25	5	4375	2.75	12031	-
	IX	26	20	5	2600	2.75	7150	-
	X	18	15	5	1350	2.75	3713	-
	Total				**101950**		**280363**	**52216**
XIY1-AB	I	5	14	4	280	2	-	560
	II	8	23	5	920	2.75	2530	-
	III	27	25	5	3375	2.75	9281	-
	IV	34	27	1	918	2.75	2525	-
		95	63	4	23940	2.75	65835	-
	V	90	58	5	26100	2.75	71775	-
	VI	85	53	5	22525	2.75	61944	-
	VII	74	48	5	17760	2.75	48840	-
	VIII	63	43	5	13545	2.75	37248	-
	IX	53	38	5	10070	2.75	27693	-
	X	39	33	5	6435	2.75	17696	-
	Total				**125588**		**345367**	**560**
XIY1-CD	I	37	62	4	9176	2	-	18352
	II	31	49	5	7595	2.75	20886	-
	III	26	38	5	4940	2.75	13585	-
	IV	17	28	5	2380	2.75	6545	-
	V	6	17	5	510	2.75	1402	-
	Total				**15425**		**42418**	**18352**
Grand Total					**242963**		**668148**	**71128**

Tentative mineable reserves of Rough stone : **6,68,148 MT**

Estimated Gravel : **71,128 MT**

The tentative mineable reserves have been estimated as **6,68,148 MT** of Rough stone at the rate of 100% recovery, **71,128 MT** of Gravel up to a depth of 49m (4m Gravel + 45m Rough stone) below from the ground level.

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 of Mines Safety. If the 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. In such a scenario if there is any drastic change in the Resources and Reserves a modified plan will be submitted to the concerned authority for necessary relaxation, clearance and permission. The relaxation will be applied and obtained after the execution of lease deed / commencement of quarry operation.

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 DEVELOPMENT AND PRODUCTION

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume (m^3)	Bulk Density	Rough stone in (MT) 100%	Gravel (MT)
I	X1Y1-CD	I	37	62	4	9176	2	-	18352
		II	31	49	5	7595	2.75	20886	-
		III	26	38	5	4940	2.75	13585	-
		IV	17	28	5	2380	2.75	6545	-
		V	6	17	5	510	2.75	1402	-
	X1Y1-AB	I	5	14	4	280	2	-	560
		II	8	23	5	920	2.75	2530	-
		III	27	25	5	3375	2.75	9281	-
		IV	34	27	1	918	2.75	2524	-
			95	63	4	23940	2.75	65835	-
		Total				**54034**		**122588**	**18912**
II	X1Y1-AB	V	90	58	5	26100	2.75	71775	-
	XY-AB	I	62	61	4	15128	2	-	30256
		II	50	55	5	13750	2.75	37813	-
		III	40	50	5	10000	2.75	27500	-
		IV	30	45	5	6750	2.75	18562	-
		Total				**71728**		**155650**	**30256**
III	XY-AB	I	45	61	4	10980	2	-	21960
		II	45	55	5	12375	2.75	34031	-
		III	45	50	5	11250	2.75	30938	-
		IV	45	45	5	10125	2.75	27844	-
		V	65	40	5	13000	2.75	35750	-
		Total				**57730**		**128563**	**21960**
IV	XY-AB	VI	55	35	5	9625	2.75	26469	-
	X1Y1-AB	VI	85	53	5	22525	2.75	61944	-
		VII	74	48	5	17760	2.75	48840	-

		Total				**49910**		**137253**	
V	XY-AB	VII	45	30	5	6750	2.75	18563	-
		VIII	35	25	5	4375	2.75	12031	-
		IX	26	20	5	2600	2.75	7150	-
		X	18	15	5	1350	2.75	3713	-
	X1Y1-AB	VIII	63	43	5	13545	2.75	37249	-
		IX	53	38	5	10070	2.75	27692	-
		X	39	33	5	6435	2.75	17696	-
		Total				**45125**		**124094**	
Grand Total						**278527**	-	**668148**	**71128**

The Recoverable reserves have been estimated as **6,68,148MT** of Rough stone at 100% recovery for five years and **71,128 MT** of Gravel for first year upto a depth of 49m below from the ground level (Refer Plate No. III).

The peak production capacity in the quarry is 1,55,650MT of Rough stone and 30,256MT of Gravel and the proposed production schedule is arrived as per applicant's requirement and the EIA & EMP will be prepared an annual peak production

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	=	30 MT (approximate)
Total Number of Working days	=	300 days per year
Total Rough stone to be removed during the lease period	=	6,68,148MT
Peak production capacity	=	1,55,650MT
Hence total Lorry loads per day	=	1,55,650MT / 30 MT
	=	5,188 Lorry loads
	=	5,188 /300 days
Rough Stone (Maximum)	=	**17 Lorry loads per day**

Gravel Peak production	=	30,256MT
Hence total Lorry loads per day	=	30,256MT /30MT
	=	1009 Lorry loads
	=	1009/300 days
Gravel (Maximum)	=	**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	7	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	1	300	Diesel Drive

III. HAULAGE WITHIN THE MINE & TRANSPORT EQUIPMENT:

S. No.	Type	Nos.	Capacity	Motive Power
1	Tippers	2	30 tonnes	Diesel Drive
2	Water Sprinkling Tanker	1	4,000 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

Section	Length (m)	Width (m)	Depth (m) (Max.)
XY-AB	107	61	49
X1Y1-AB	100	76	49
X1Y1-CD	37	62	24

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 will be fenced with barbed wire fencing also safety bund will be constructed around the quarry to prevent inadvertent entry of public and cattle (Refer Plate No. IV and V).

5.0 BLASTING:

5.1 Blasting pattern:

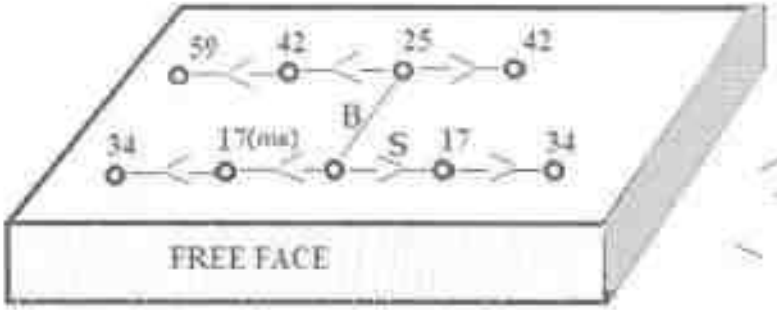
Selection of drilling pattern for blasting varies with the type and size of the drills used, depth of hole, kind of rock, quantity, rapidity of the explosives and amount of steaming. The quarrying operation is proposed to carried out with conventional method of mining using shallow Jack hammer drilling 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)	=	**172 Holes**

5.2 Type of explosives to be used:

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.

Hand 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	= 1,55,650 MT
No of Holes	= 172 Holes
Yield	= 516 Tons
Powder factor	= 6 Tons/ Kg of explosives
Maximum explosive required	= 86 Kg-Slurry explosives
Charge/ hole	= 0.5 Kg
Blasting at day time only	= 12.00 – 12.30 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)

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)
86	1	86	172	172	1 (2 Holes)	508	0.826

From the above table, the charge per blast of 86kg 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. Anyhow, the applicant ensures that carry out the blasting 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 110m 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	100m Northeastern side	11°04'08.50"N 77°34'10.35"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.

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 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-81) Coimbatore – Karur	7.35km – SW
2	State Highways	(SH-96) Perundurai – Kangeyam	748m – East
3	Railway station	Vijayamangalam Railway station	16.2km – NW
4	Airport	Coimbatore	38km – SW
5	Nearest Town	Kangeyam	7km – SE
6	Government School	Keeranur Govt High School	2.5km – NW
7	Government Hospital	Kangeyam	6.9km – SW
8	Habitation	508m – NE	
9	Reserved Forest	Chennimalai R.F. – 9.04km – N	
10	Water Bodies	Nil within 50m radius.	
11	Defence Installation/ Historical Monuments/ Archaeological	Nil within 500m radius.	
12	Interstate Boundary	Around 84km – NW (Kerala state border)	
13	Critically Polluted areas identified by the CPCB	Around 66.1km – SW (Kurichi – SIDCO, Coimbatore)	

14	Protected areas Notified under wildlife (Protection) Act, 1972.	21.4 km – NE (Vellode Birds Sanctuary)
15	Applicability of CRZ, Notification 2011 as amended.	Not Applicable
16	Applicability of Hill Area Conservation Authority (HACA) Clearance.	Not Applicable
17	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.
18	Boundaries of the permitted area.	The boundaries of the permitted areas are as follows (Refer Plate No. II): North - S.F.No. 16/2(Part), 16/3(Part) East - S.F.Nos. 15(Part) South - S.F.No. 15(Part), 20 West - S.F.Nos. 19/3, 19/1(Part), 18
19	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	-	1	1
Tipper Driver	-	2	2
Water sprinkler Driver	-	1	1
Jack-Hammer Drillers	-	14	14
c) Unskilled			
Security	-	1	1
Labour & Helper	-	2	2
Co-operator and Cleaner	-	4	4
Total	-	**29**	**29**

The proposed output per man shift:

TABLE – 13

Annual Peak Production of Rough stone		1,55,650MT
No. of days likely to be worked		300 days
Average production per day		519 MT
OMS =	Average Production per day / Average employment per day	519 Ts / 29 = 17.89MT

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 Keeranur which is located about 2.40km on the Northwestern 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 Kangeyam located at 6.9km on the Southwestern 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.

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 operation

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	i. Regular water sprinkling on dust prone area like haul road and other active area to arrest the dust generation. ii. The applicant is carried out the greenbelt along the safety zone, the same will be maintain also additional greenbelt will be developed with thick long 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.

	and spillage of oil and grease. 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.

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.
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 mainterance 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.
Biological Environment	The area having main floras are Neem, Prosopis juliflora, Cocos nucifera, Albizia amara, Pongamia pinnata, Palm, Calotropis, Bushes, 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.

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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 29 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.

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 49m below from the ground level 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 will be formed 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 distance all along the boundary barrier to be proposed for greenbelt development by planting 1200 tree saplings also the applicant proposed to plant 200 tree saplings in the quarried out top benches and 300 saplings on haul road and maintain at least 1700 plants at the end of the lease period at a survival rate of 80%. Manuring and tree guards will be provided by the applicant to safeguard and maintain the plants. The plantation will be carried out as recommended by the SEIAA based on the output Environmental Clearance and the recommended species will be planted in a phased manner as described below (Refer Plate No. III).

Table – 14

Year	No. of tress proposed to be planted	Area to be covered (m^2).	Survival (%)	Name of the species	No. of trees expected to be grown
I	240	500	80%	Neem, Pongamia Pinnata, Cordia dichotoma, Semkondrai, Mookusali maram, Manthurai, etc.,	192
II	240	500	80%		192
III	240	500	80%		192
IV	240	500	80%		192
V	240	500	80%		192

11.5 Proposed financial estimate / budget for the project:

Budget Provision for the Mining Plan period:

TABLE – 15

A. Operational Cost / Project Cost / Investment:		Cost (Rs.)
i) Land cost	The Land value as per the Government Guideline land cost is calculated as follows. SF. Nos / Area (Ha.) / Cost/Ha (Rs.) / Cost of the area (Rs.) 16/2(Part) / 0.01.00 / 7,41,500 / 7,415 16/3(Part) / 0.71.20 / 7,41,500 / 5,27,948 19/1(Part) / 0.40.50 / 24,71,000 / 10,00,755 19/4A / 0.44.55 / 24,71,000 / 11,00,831 19/4B / 0.05.95 / 24,71,000 / 1,47,025 15(Part) / 0.58.80 / 7,41,500 / 4,36,002 2.22.0 / 32,19,976 Round of Rs. 32,20,000/- (Source: https://tnreginet.gov.in/portal/)	32,20,000
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).	40,00,000
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.	80,000
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.	2,27,000
vi) Sanitary arrangement	The latrine and urinal will keep clean and sanitary condition. The maintenance cost would be around.	1,50,000
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		**83,07,000**

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.	4,00,000
3.	Fencing constructed around the lease area to prevent the inadvertent entry of public and cattle. The cost is around (Total Peripheral length 630m x Rs. 300/meter).	1,89,000
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 556m x Rs. 300/meter).	1,67,000
5.	First aid room & accessories	50,000
6.	Dust extractor unit for Jackhammer (7 Nos.)	1,75,000
7. Greenbelt development for dust suppression & Noise control measures	Greenbelt development will be carried out along the safety barrier; the cost would be around (1200 saplings x Rs. 200/sapling).	2,40,000
	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 (300 saplings x Rs. 200/sapling).	60,000
	Total EMP Cost	**15,71,000/-**

Description	Cost (Rs.)
A. Operational Cost	**83,07,000/-**
B. EMP Cost	**15,71,000/-**
Total Project Cost (A+ B)	**98,78,000/-**

The total cost would be around Ninety eighty lakhs and Seventy eight thousand only.

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 five 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 – 16

Description	Present Area (Ha)	Area at the end of lease period (Ha)
Area Under Quarry	0.58.40	1.64.20
Site Services	Nil	0.01.00
Roads	0.02.00	0.02.00
Green Belt	Nil	0.25.00
Unutilized Area	1.61.60	0.29.80
Grand Total	**2.22.00**	**2.22.00**

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	:	**M. Santhoshkumar, M.Sc.,** Qualified Person (Under Rule 15(l)(a) and (l)(b) of MCR, 2016)
Address	:	Plot No.3, Kamavattam, Kothukara Samathi Via, Kannakurichi, Salem District,
State with PIN Code	:	Tamil Nadu – 636 008.
Mobile	:	+91 97914 41745
Email	:	santoshgeo2004@gmail.com

The applicant will himself implement the closure plan; no outside agency will be involved.

(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. If 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.

(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 – 17

ACTIVITY		YEAR					RATE	COST (Rs.)
		I	II	III	IV	V		
Plantation on safety zone	No. of sapling	240	240	240	240	240	Rs.200 Per sapling	2,40,000
	Cost	20,000	20,000	20,000	20,000	20,000		
Plantation in quarried out top bench and Haul road	No. of sapling	Haul Road			Quarried out top bench			1,00,000
		100	100	100	100	100		
	Cost	20,000	20,000	20,000	20,000	20,000		
Barbed Wire Fencing for 630m length		1,89,000	-	-	-	-	Rs.300 Per Meter	1,89,000
Garland Drain (556 Mtrs)		1,67,000	-	-	-	-	Rs300 Per Meter	1,67,000
Total								**6,96,000**

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.

This Mining plan for Rough stone (Charnockite) and Gravel is under Rules 41(2), 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

M. Santhoshkumar, M.Sc.,
Qualified Person

Place: Salem
Date: 21.02.2026

This Mining Plan is approved as per the Powers conferred under rule 41(2) of Tamil Nadu Minor Mineral Concession Rules, 1959.

This Mining Plan is approved subject to the Conditions indicated in the Mining Plan approved Letter No. RC. NO. 2240/MINES/2025 Dated: 02.03.2026

ASSISTANT DIRECTOR
Geology and Mining
TIRUPPUR

21/3/26

PHOTOGRAPHS OF THE KEERANUR

ROUGH STONE AND GRAVEL QUARRY LEASE APPLIED AREA

ANNEXURE-(1)

ந.க.எண்.2240/கனிமம்/ 2025

புள்ளியல் மற்றும் வணிகத்துறை
மாவட்ட அலுவலகம்
திருப்பூர்.

நாள்: 04/12/2025

குறிப்பாணை

பொருள் : கனிமம் மற்றும் சுரங்கம் - சிறுகனிமம் – திருப்பூர் மாவட்டம் காங்கயம் வட்டம்- சிறுநூர் கிராமம்- புல எண்கள்: 16/2(P) (0.01.00), 16/3(P) (0.71.20), 19/1(P) (0.40.50), 19/4A (P) (0.44.55), 19/4B (0.05.95) and 15(P) (0.58.80)-ல் மொத்தம் 02.22.00 ஹெக்டேர் பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 5 (ஐந்து) வருடங்களுக்கு குவாரி குத்தகை உரிமம் வழங்க கோரி திருமதி.R.துளசிமணி என்பவர் விண்ணப்பம் அளித்தது - புலத்தணிக்கை அறிக்கை சமர்பிக்கப்பட்டது - தகுதியான நிலப்பரப்பாக கருதி ஏற்பளிக்கப்பட்டு, சுரங்க திட்டம் மற்றும் சுற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணைய இசைவினை பெற்று சமர்பிக்கக் கோருதல் - தொடர்பாக.

பார்வை : 1. திருமதி.R.துளசிமணி, 3/111, பல்லடம் ரோடு, முங்கலூர், திருப்பூர் மாவட்டம் - 641653 என்பவரின் மனு நாள்: 02.12.2025

2. இவ்வலுவலக கடிதம் ந.க.எண்.2240/கனிமம்/2025-இ நாள்: 04.12.2025

3. வருவாய் கோட்டாட்சியர், தாராபுரம் கடிதம் ந.க.எண்.5329/2025/இ நாள்: 13.01.2026

4. உதவி புவியியலாளர் (கனிமம்), திருப்பூர் புலத்தணிக்கை அறிக்கை நாள்: 09.02.2026

5. வட்டார வளர்ச்சி அலுவலர் (வடக), காங்கயம், கடிதம் ந.க. 154/2026/அ3, நாள்:16.02.2026

6. மற்றும் உரிய ஆவணங்கள்

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், சிறுநூர் கிராமம், புல எண்கள். 16/2(P) (0.01.00), 16/3(P) (0.71.20), 19/1(P) (0.40.50), 19/4A (P) (0.44.55), 19/4B (0.05.95) and 15(P) (0.58.80)-ல் மொத்தம் 02.22.00 ஹெக்டேர் பட்டா நிலப்பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 5 (ஐந்து) வருடங்களுக்கு குவாரி குத்தகை உரிமம் கோரி திருமதி.R.துளசிமணி என்பவர் பார்வை 1-ல் காண்பிள்ளவாறு உரிய ஆவணங்களுடன் விண்ணப்பித்துள்ளார்.

2. மேற்படி விண்ணப்பம் தொடர்பாக, வட்டாட்சியர், காங்கயம், வருவாய் கோட்டாட்சியர், தாராபுரம், வட்டார வளர்ச்சி அலுவலர், காங்கயம் மற்றும் உதவி புவியியலாளர் (கனிமம்), திருப்பூர் ஆகியோர் புலத்தணிக்கை மேற்கொண்டு திருப்பூர் மாவட்டம், காங்கயம் வட்டம், சிறுநூர் கிராமம், புல எண்கள். 16/2(P) (0.01.00), 16/3(P) (0.71.20), 19/1(P) (0.40.50), 19/4A (P) (0.44.55), 19/4B (0.05.95) and 15(P) (0.58.80)-ல் மொத்தம் 02.22.00 ஹெக்டேர் பரப்பில் திருமதி.R.துளசிமணி என்பவருக்கு சாதாரண கற்கள் மற்றும் கிராவல் மண் குவாரி உரிமம் வழங்க சில நிபந்தனைகளுக்குட்பட்டு அனுமதி வழங்கலாம் என பரிந்துரை செய்துள்ளனர்.

3. திருப்பூர் மாவட்டம், காங்கயம் வட்டம், சிறுநூர் கிராமம், புல.எண்கள். 16/2(P) (0.01.00), 16/3(P) (0.71.20), 19/1(P) (0.40.50), 19/4A (P) (0.44.55), 19/4B (0.05.95) and 15(P) (0.58.80)-ல் மொத்தம் 02.22.00 ஹெக்டேர் பரப்பளவுள்ள பட்டா நிலம் வட்டா எண்.

4160-ன் படி விண்ணப்பதாரருக்கு கூட்டுப்பட்டாவகையும் 19/4A புலத்தில் 0.44.55 ஏர்ஸ் நுழியாகவும், பட்டா எண் 3572-ன் படி விண்ணப்பதாரர் மகன் திரு. செந்தில் குமார் என்பவரின் பெயரில் தனிப்பட்டாவாக தரக்கணக்கிலுள்ளது. மேலும் விண்ணப்பதாரர் திருமதி.R.துளசியம்மாள் என்பவருக்கு கூட்டுப்பட்டாதாரர் திரு.செந்தில்குமார் என்பவர் முபாரி முத்தலக உரிமை பெற சம்மதக்கடிதம் அளித்துள்ளார். எனவே, விண்ணப்பதாரர் திருமதி.R.துளசியம்மாள் என்பவருக்கு மேற்படி புலத்தில் முபாரி முத்தலக உரிமம் பெற எற்றல் பரிந்துரைக்கிறது.

4. எனவே, கட்டட்டரியர், காங்கயம், வருவாய் கோட்டாட்சியர், தாராபுரம், வட்டார வளர்ச்சி அலுவலர், காங்கயம் மற்றும் உதவி புவியியலாளர் (களிமண்), திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண்கள். 16/2(P) (0.01.00), 16/3(P) (0.71.20), 19/1(P) (0.40.50), 19/4A (P) (0.44.55), 19/4B (0.05.95) மற்றும் 15(P) (0.58.80)-ல் மொத்தம் 02.22.00 ஹெக்டர் பரப்பில் மட்டும் 1959ம் வருட தமிழ்நாடு சிறுகனிம விதிகள், விதி எண்.19(1) 20 மற்றும் 33-ன் படி மேற்கண்ட நிபந்தனைகளுக்குட்பட்டு 5 (ஐந்து) ஆண்டுகளுக்கு சாதாரண களிமண் மற்றும் கிராவல் வெட்டியெடுக்க கீழ்க்கண்ட நிபந்தனைகளுக்குட்பட்டு முபாரி முத்தலக வழங்குவதற்கு நியமன்டாக (Precise Area Communication) கருதப்படுகிறது.

நிபந்தனைகள்:

i. 1959ம் வருடத்திய தமிழ்நாடு சிறு கனிம சலுகை விதிகள், அட்டவணை IVல் வரையறுக்கப்படி முபாரி செய்யப்படும் களிமண்ணுக்குரிய சீனியரேஜ் தொகை அவ்வப்போது செலுத்தி களிமண் கொண்டு செல்லப்பட வேண்டும்.

ii. புலத்தை சுற்றி அமைந்துள்ள பட்டா நிலங்களுக்கு 7.5 மீட்டர்-பாதுகாப்பு இடைவெளி விட்டு முபாரி பணியிடம் வேண்டும்.

iii. முத்தலக உரிமம் கோரும் புலத்திற்கு DGPS முறையில் அளவிடு செய்து அதற்கான சான்றினை சமர்ப்பிக்க வேண்டும்.

iv. அனுமதி வாய்ந்த வெடிபொருள் பயன்படுத்துவோர் மூலம் குறைந்த அளவு சக்தி கொண்ட வெடிபொருட்களை பயன்படுத்தி அருகிலுள்ள பட்டதாரர்களுக்கு எவ்வித இடையூறுமின்றி / அருகிலுள்ள பட்டா மற்றும் அரசு புலங்களில் எவ்வித ஆக்கிரமிப்பும் இன்றி முபாரிப்பணி மேற்கொள்ள வேண்டும்.

மேலும், தமிழ்நாடு சிறு கனிம சலுகை விதிகள்-1959 விதி எண். 41-ன்படி முபாரிப்பணி மேற்கொள்வது தொடர்பாக மனுவு வரும் திட்டத்தினை 90 தினங்களுக்குள் சமர்ப்பிக்குமாறு பணிவுரையாக் கேட்டுக்கொள்ளப்படுகிறது. மேலும் வழங்கப்பட்ட சான்றுக்கிட்டத்தின் தொடர்ச்சியாக 1959 ம் வருடத்திய தமிழ்நாடு சிறுகனிம சலுகை விதிகள், விதி எண்.42-ன் படி கற்றுச்சூழல் தாக்க மதிப்பீட்டு ஆணையத்தின் இசைவினைப் பெற்று சமர்ப்பிக்கும் பட்சத்தில் மட்டுமே முபாரி உரிமம் வழங்கப்படும் என இதன் மூலம் தெரிவிக்கப்படுகிறது.

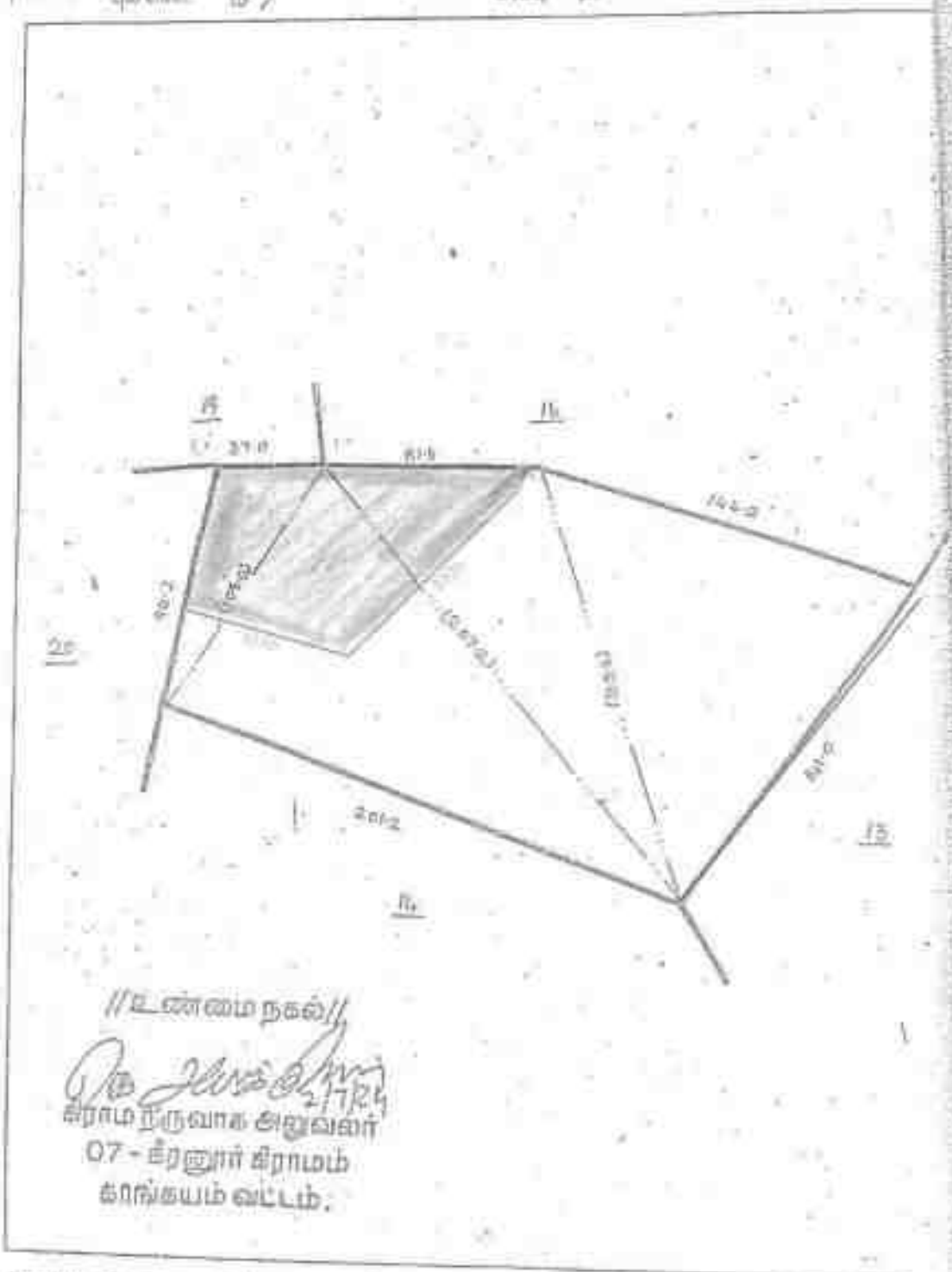
உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
திருப்பூர்.

பெறுநர்:

திருமதி.R.துளசியம்மாள்,
3/111, பல்லடம் ரோடு,
மண்ணரை,
திருப்பூர் மாவட்டம் - 641653.

280 A

ANNEXURE


B1
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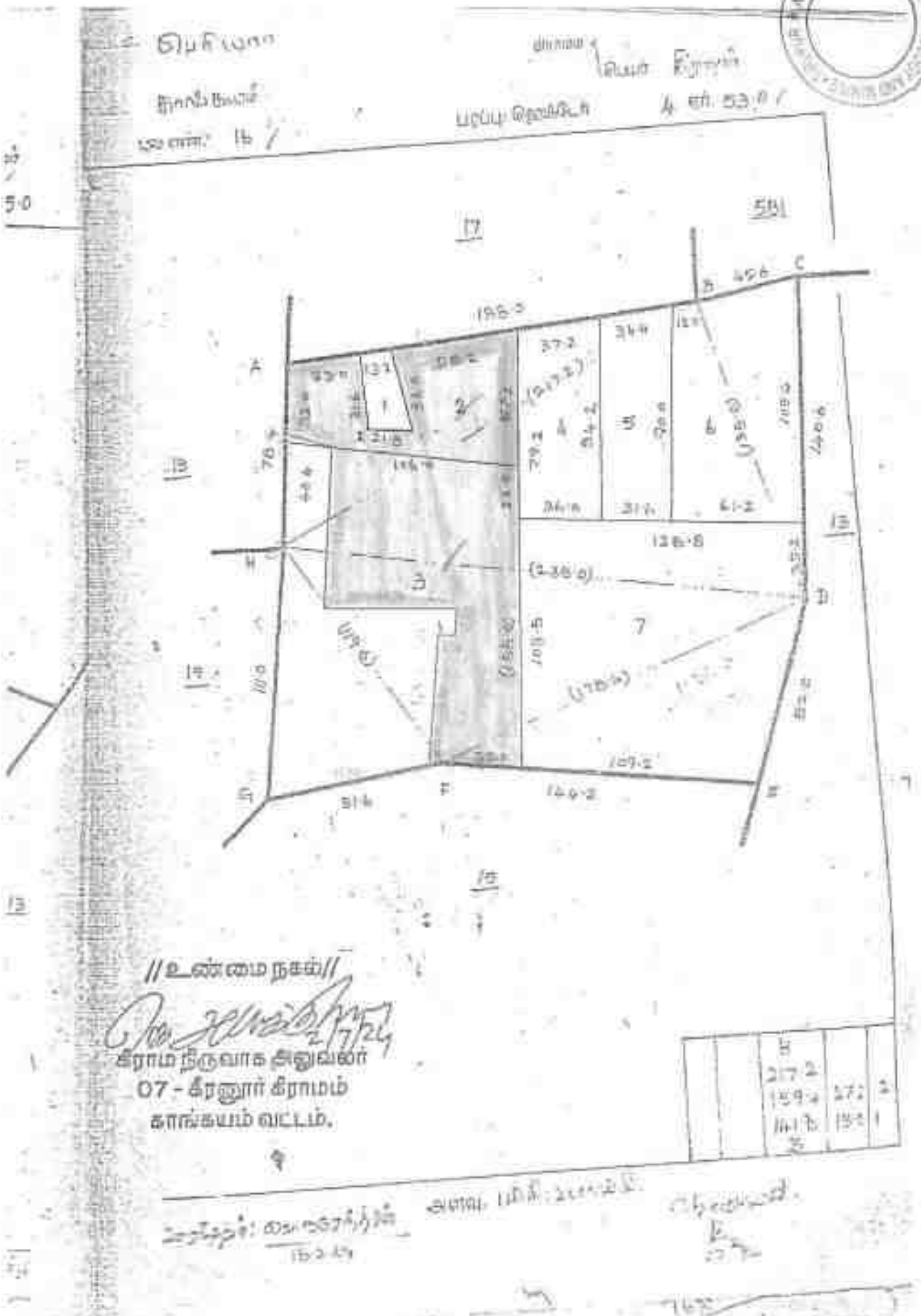
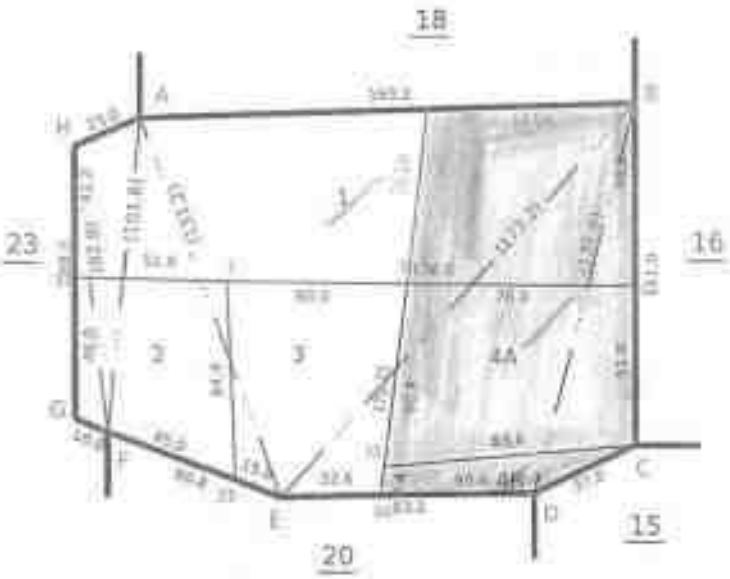

//உண்மை நகல்//
கிராம நிருவாக அலுவலர்
07 - கீரனூர் கிராமம்
காங்கயம் வட்டம்.
Lease Applied Area-



Lease Applied Area-

Signed By Tahsildar
Name of approver : mttp
Date of Approval : 31-01-2021

Date of Issue: 01-11-2025 13:01:36

Survey and Settlement Department, Government of TamilNadu

ANNEXURE

Lease Applied Area-

ANNEXURE V

தமிழ்நாடு அரசு

வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை

திடீர் உரிமை விடுப்புகள் : இ சலன் 10(1) விதி

மாவட்டம்: திருப்பூர்

வட்டம்: காங்கேயம்

வருவாய் கிராமம்: சிவபுரி

பட்டா எண்: 884

உரிமைமாறுதல் பெயர்

4 முகாமி மகன் மேற்படியவர்

5 பழனிசாமி வயதில் மகன் முகாமி

வ.எண்	நில எண்ணும் உட்பிரிவும்	நன்செய்				புன்செய்				மற்றவை				குறிப்பு
		பரப்பு			தீர்வை	பரப்பு		தீர்வை		பரப்பு		தீர்வை		
		ஹெ	ஏ	சா	மை	ஹெ	ஏ	சா	மை	ஹெ	ஏ	சா	மை	
1	15 - -					2	75.00	00	80					2018/0103/32/116135 24-05-2018
	மொத்தம் :	0		0		2	75.00	00	80	0		0		

மின்னணுமுறையில் / Digital Signature : **24-05-2018** அன்று **06:29:58 PM** நேரத்தில் இடப்பட்டது

பெயர்/Name : **Kannamani V**

பதவி/ Designation: **Zonal Deputy Tshsildar**

இடம்/Place : காங்கேயம் **(05)** வட்டம்,
திருப்பூர்**(32)** மாவட்டம்

குறிப்பு	
1	மேற்கண்ட தகவல் / சான்றிது தகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை இவற்றை நாங்கள் https://eservices.tn.gov.in என்ற இணைய முகவரியில் 2018/0103/32/116135 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2	இத்தகவல்கள் 29-05-2025 அன்று 10:24:15 AM நேரத்தில் அச்சுக்கப்பட்டது
3	அலுவலரின் கையொப்பம் 2D barcode படிப்பான் மூலம் இத்தகவல்களை இணையத்தளத்தில் சரிபார்க்கவும்.

தமிழ்நாடு அரசு

வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை

நில உரிமை விடுங்கள் : ஐ எண் 10(1) பிரிவு

மாவட்டம்: திருப்பூர்

வட்டம்: காங்கேயம்

வருவாய் கிராமம்: சிவபுரி

பட்டா எண்: 184

உரிமையாளர்கள் பெயர்

4 ராமசாமி கவுண்டர்

5 P ராமசாமி கவுண்டர்

மகன்

மகன்

துளசிமணி

R. செந்தில்குமார்

வ.எண்	நில எண்ணும் உட்பிரிவும்	நன்செய்				புன்செய்				மற்றவை				குறிப்பு
		பரப்பு				பரப்பு				பரப்பு				
		ஹெ	ஏ	சா	வி	ஹெ	ஏ	சா	வி	ஹெ	ஏ	சா	வி	
1	16 - 2					0	41.00	00	57					2023/0103/32/534942 06-11-2023
	மொத்தம் :	0		0		0	41.00	0	57	0		0		

மின்னணுகையொப்பம் / Digital Signature : 06-11-2023 அன்று 07:05:57 PM நேரத்தில் இடப்பட்டது

பெயர்/Name : Thiru. K.Gopal
பதவி/ Designation: Zonal Deputy Tahasildar

இடம்/Place : காங்கேயம் (05) வட்டம்,
திருப்பூர்(32) மாவட்டம்

குறிப்பு	
1	மேற்கண்ட தகவல் / சான்றிதழ் தகவல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை இவ்வாறு தங்கள் https://eservices.tn.gov.in என்ற இணைய தளத்தில் 2023/0103/32/534942 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உரிமை சரிபார்க்கலாம்.
2	இத்தகவல்கள் 20-11-2023 அன்று 04:35:12 PM நேரத்தில் அளிக்கப்பட்டது.
3	கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் இத்தகவல்களை இணையத்தளத்தில் சரிபார்க்கலாம்.

தமிழ்நாடு அரசு

வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை

நில உரிமை விடுங்கள் : பிரிவு 10(1) பிரிவு

மாவட்டம்: திருப்பூர் வட்டம்: காங்கயம்

வருவாய் கிராமம்: சிவபுரி பட்டா எண்: 3387

உரிமைமாறுதல் பெயர்

2 பழனிசாமி/கவுண்டர் மகன் ராமசாமி

வ.எண்	புல எண்களும் உட்பிரிவும்	நன்செய்				புன்செய்				மற்றவை				குறிப்பு
		பரப்பு		தீர்வை		பரப்பு		தீர்வை		பரப்பு		தீர்வை		
		ஹெ	ஏ	ரூ	பை	ஹெக்டர்	ரூ	பை		ஹெ	ஏ	ரூ	பை	
1	19 - 3					1	55.00	02	14					2018/0103/32/116135 24-05-2019
	மொத்தம் :	0		0		1	55.00	2	14	0		0		

மின்னணுகையொப்பம் / Digital Signature : 24-05-2018 அன்று 06:29:58 PM தொகுதி இடைமுகம்

பெயர்/Name : Kannamani V
பதவி/ Designation: Zonal Deputy Tahsildar

இடம்/Place : எண்ணம் (05) வட்டம், திருப்பூர்(32) மாவட்டம்

குறிப்பு

1 மேற்கண்ட தகவல் / சான்றிதழ் தவறு விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை இவற்றை தாங்கள் https://eservices.tn.gov.in என்ற இணைய தளத்தில் 2018/0103/32/116135 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.

2 இச்சான்றானது 29-08-2025 அன்று 10:25:17 AM தொகுதி அடிப்படையிலானது.

3 கைப்பேசி செயலியின் 2D barcode படம் மூலம் இச்சான்றானது இணையத்தளத்தில் சரிபார்க்கவும்.

தமிழ்நாடு அரசு

வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை

நில உரிமை விடுவிப்பு : ஐ சாசன 10(1) பிரிவு

மாவட்டம்: திருவேடு

வட்டம்: காஞ்சிபுரம்

வருவாய் கிராமம்: கீழ்குளா

பட்டா எண்: 3385

உரிமையாளர்கள் பெயர்

2 பழனிசாமி மகன் ராமசாமி

ஆ சாசன	நில வகைப்பாடு மற்றும் உட்பிரிவுகள்	நன்செய்				புன்செய்				மற்றவை				குறிப்பு
		பரப்பு		தீர்வை		பரப்பு		தீர்வை		பரப்பு		தீர்வை		
		ஹெ	ஏ	ரூ	பை	ஹெக்டர்		ரூ	பை	ஹெ	ஏ	ரூ	பை	
1	19 - 1					0	99.00	01	37					2018/0103/32/116135 24-05-2018
	மொத்தம் -	0		0		0	99.00	1	37	0		0		

டிஜிட்டல்கையொப்பம் / Digital Signature : **24-05-2018** அன்று **06:29:58 PM** மொத்தில் இடப்பட்டது

பெயர்/Name : **Kannamani V**
பதவி/ Designation: **Zonal Deputy Tahsildar**

இடம்/Place : காஞ்சிபுரம் **(05)** மாவட்டம்
திருப்பூர் **(32)** மாவட்டம்

குறிப்பு	
1	மேற்கண்ட தகவல் / சான்றிதழ் தங்கள் விண்ணப்பம் மீது பதிவேடுகளிலிருந்து பெறப்பட்டவை இவற்றை காண்க https://eservices.tn.gov.in என்ற இணையம் தளத்தில் 2018/0103/32/116135 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உங்கள் கோரிக்கையை.
2	இச்சான்றிதழ் 20-11-2025 அன்று 04:07:01 PM மொத்தில் அச்சுக்கப்பட்டது.
3	அலுவலர் கையொப்பம் 2D barcode பயன்பாடு மூலம் இச்சான்றிதழ் இணையத்தளத்தில் சரிபார்க்கலாம்.

288 A

தமிழ்நாடு அரசு

வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை

நில உரிமை விபரங்கள் : இ சட்ட 10(1) பிரிவு

மாவட்டம்: திருப்பூர்

வட்டம்: காங்கயம்

வருவாய் கிராமம்: சிவபுரி

பட்டா எண்: 3572

உரிமையாளர்கள் பெயர்

1 ராமசாமி மகன் ஒன்றிருவராம்

வ.எண்	புல எண்ணும் உட்பிரிவும்	தன்மை				பயன்பாடு				மற்றவை				குறிப்பு
		பாதம்		நீர்வகை		பாதம்		நீர்வகை		பாதம்		நீர்வகை		
		ஏறுபாதி	வரி	புஞ்செ		ஏறுபாதி		புஞ்செ		ஏறுபாதி	வரி	புஞ்செ		
1	19 - 4A					0	44.5500	62						2019/0105/32/070296 11-10-2019
	மொத்தம் -	0		0		0	44.5500	62		0		0		

மின்னணுகையொப்பம் / Digital Signature : 11-10-2019 அன்று 09:40:07 PM தொழில் இடப்பட்டது

பெயர்/Name : Tmt A PUNITHAVATHI
பதவி/ Designation: Tahsildar

இடம்/Place : காங்கயம் (05) வட்டம், திருப்பூர்(32) மாவட்டம்

குறிப்பு	
1	மேற்கண்ட தகவல் / சான்றிதழ் தங்கள் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை இவ்வாறு காண்க: https://eservices.tn.gov.in என்ற இணைய தளத்தில் 2019/0105/32/070296 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உரிமை சரிபார்க்கவும்.
2	இச்சான்றானது 20-11-2025 அன்று 04:06:39 PM தொழில் அளிக்கப்பட்டது.
3	அடுத்துள்ள கோரையில் 2D barcode படத்தில் முகம் இச்சான்றானது இணையத்தளத்தில் சரிபார்க்கவும்.

தமிழ்நாடு அரசு

வருவாய் மற்றும் பேரிடர் மேலாண்மைத் துறை

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

மாவட்டம் : திருப்பூர் வட்டம் : காங்கேயம்

வருவாய் கிராமம் : சிறுவர் பட்டா எண் : 4160

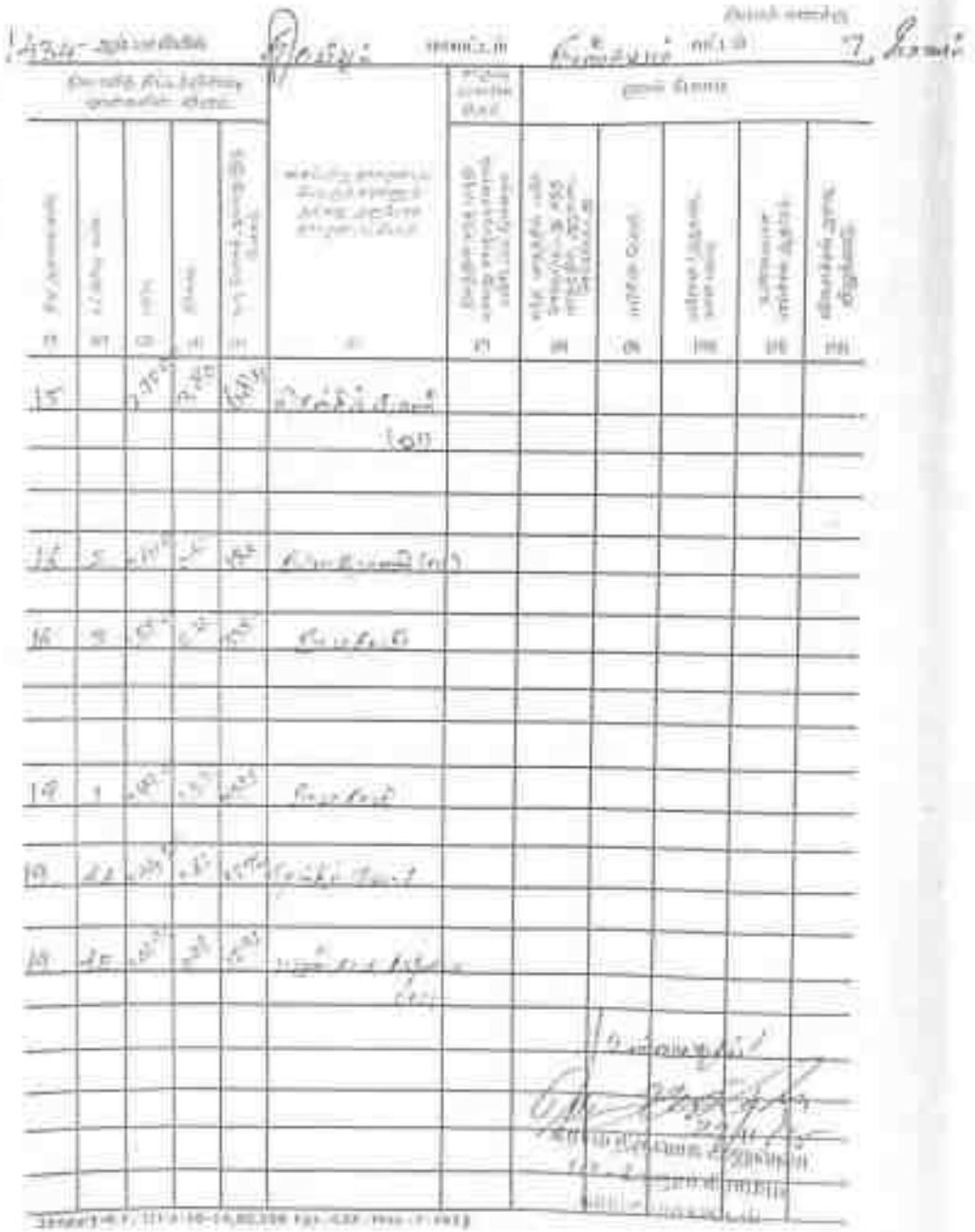
உரிமையாளர்கள் பெயர்

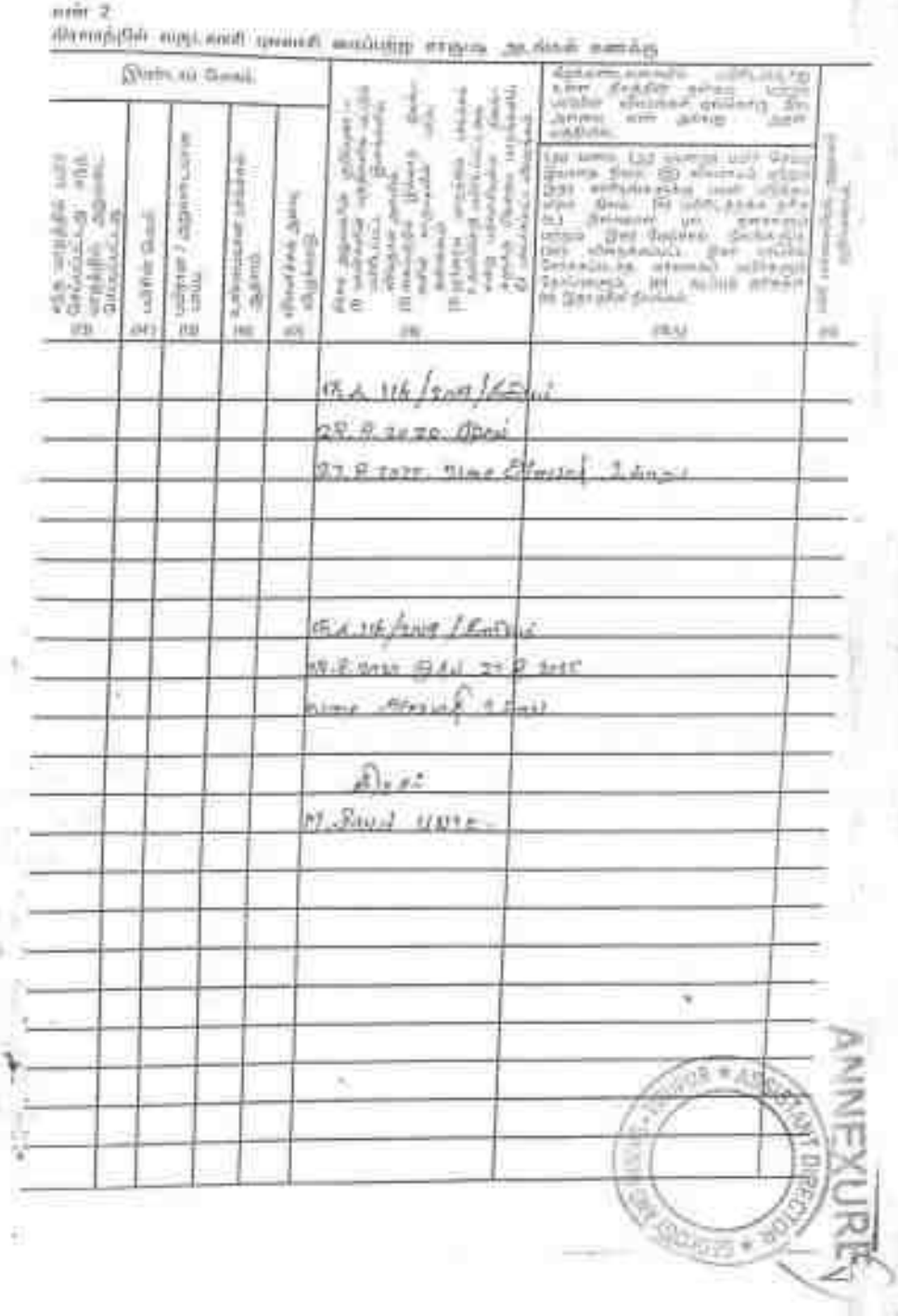
1.	பழனியப்பன்	மகன்	Ramasamy	
2.	வேட ராமசாமி	மனைவி	தனலெட்சுமி	
3.	வேட ராமசாமி	மகன்	செந்தில்குமார்	

புல எண்	உட்பிரிவு	பரப்பு		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏ	ரூ - பை	ஹெக் - ஏ	ரூ - பை	ஹெக் - ஏ	ரூ - பை	
19	4B	0 - 5.95	0.08	--	--	--	--	2025/0103/32/719233-2019/32/05/00003150 ------ Digitally signed:Tmt T Vanitha Zonal Deputy Tahsildar 23/12/2025 12:11:47 PM
		0 - 5.95	0.08					

குறிப்பு :

1. மேற்கண்ட தகவல் / சான்றிதழ் நில விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இச்சான்று தாங்கள் https://eservices.tn.gov.in என்ற இணைய தளத்தில் 5/32/05/007/04160/60751 என்ற குறியீட்டு எண்ணை உள்ளீடு செய்தும் உறுதி செய்துகொள்ளவும்.
2. இது கணினியால் 20-02-2026 அன்று 02:24:35 PM நேரத்தில் அச்சுக்கு எடுக்கப்பட்டது.
3. கைபேசி வேலாளி=2D barcode படப்பொறி மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்





ANNEXURE V

ANNEXURE V

1	2	3	4	5	6	7	8	9	10	11
5	14-வர	1	ந	...	S-4	6	1 38	0 95.0	1 31	54 மு. வருவாய்
								3 89.0	5 36	
...	15	1	ந	...	S-4	6	1 38	2 75.0	3 89	684 மு.
1	16-வர	1	ந	...	S-4	6	1 38	0 04.5	0 06	1032 தச. பொன்று கலிகளுடன் மற்றும் மூன்று பெயர்களும்.
2	-வர	1	ந	...	S-4	6	1 38	0 41.0	0 57	184 தச. கல்லை கலிகட.
3	-வர	1	ந	...	S-4	6	1 38	1 55.0	2 14	494 தச. பொன்று கலி கலிகட.
4	-வர	1	ந	...	S-4	6	1 38	0 28.5	0 39	883 மு. பொன்று கலி கலிகட (1), தச. பொன்று கலி கலிகட (2).
5	-வர	1	ந	...	S-4	6	1 38	0 30.0	0 41	409 இது. பழனிகலி கலிகட.
6	-வர	1	ந	...	S-4	6	1 38	0 28.0	0 39	543 இது. முத்துகலி (எ) நாகலி முத்து(1). ஆ. இகல் இந்த பகலி(2).
7	-வர	1	ந	...	S-4	6	1 38	1 36.0	1 88	34 மு. கருப்பை கலிகட.
								4 53.0	6 25	
A1	17-Aug	1	ந	...	S-4	6	1 38	1 51.0	2 50	687 இது. ராஜா கலி(1), இது. கலிகல கலி(2).
// உள்ளபடி //					S-4	6	1 38	0 38.0	0 80	542 இது. முத்துகலி கலிகட.
A2	-Aug	1	ந	...	S-4	6	1 38	0 86.0	0 92	686 இது. பழனிகலி கலிகட (1), இது. முத்துகலி (எ) நாகலி முத்து(2), ஆ. இகல் இந்த பகலி (3).
					S-4	6	1 38	1 41.0	1 95	1285 தச. பொன்று கலி கலிகட (1), மு. பொன்று கலி கலிகட (2).

07 - [illegible] நிறைவும்
தாசில்தார் அலுவலர்

292 A

2	3	4	5	6	7	8	9	10	11
1	0	17-0	,,	,,	...	...	...	0 14.0	
								2 60.0	2 46
19	...	19	,,	,,	...	8-4	6	1 38	3 03.5	4 22
19	1	19-00	,,	,,	...	8-4	6	1 38	0 69.0	1 37
	2	-00	,,	,,	...	8-4	6	1 38	0 27.0	0 37
	3	-00	,,	,,	...	8-4	6	1 38	0 35.5	0 49
	(4)	-00	,,	,,	...	8-4	6	1 38	0 50.5	0 70
									2 72.0	2 93
20	1	20-00	,,	,,	...	8-4	6	1 38	1 32.0	2 37
	2	-00	,,	,,	...	8-4	6	1 38	1 09.0	1 50
									2 81.0	3 87
21	1	21-00	,,	,,	...	8-4	6	1 38	0 61.0	0 84
	2	-00	,,	,,	...	8-4	6	1 38	0 96.5	1 30
	(3)	-00	,,	,,	...	8-4	6	1 38	0 24.5	0 34
									1 82.0	2 48
22	1	22-00	,,	,,	...	8-4	6	1 38	1 51.5	2 09
	//	மேலை நகல் //			...	8-4	6	1 38	0 46.0	0 63
									2 97.5	2 72

1	2	3	4	5	6	7	8	9	10	11	12
	19	4A	1920	3	4	...	8.4	6	1.38.0.44.55.0.62	3572	
		4B	1920	3	4	...	8.4	6	1.38.0.05.95.0.08	1290.	
									0.50.50.0.70		

TP.BA/185/1429 dt: 14.10.2019 ...
19/4A.4B ...

...

...

ANNEXURE VII

भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

₹. 100

ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

15-10-07

தமிழ்நாடு தமிழ்நாடு TAMILNADU

FA 692634

3/11/2025

Ramasamy

Tirupur

உரிமம் எண்: 4/2000

சம்மதக் கடிதம்

திருப்பூர் மாவட்டம், திருப்பூர் வட்டம், திருப்பூர் டவுன், மங்கலம், பல்லடம் சாலை, கதவு எண். 3/111 என்ற முகவரியில் வசிக்கும் திரு. பழனிச்சாமி கவுண்டர் மகன் பி. ராமசாமி (1) மற்றும் திருப்பூர் மாவட்டம், திருப்பூர் வட்டம், திருப்பூர் டவுன், மங்கலம், பல்லடம் சாலை, கதவு எண். 3/111 என்ற முகவரியில் வசிக்கும் திரு. ராமசாமி என்பவர் மகன் ஆர். செந்தில்குமார் (2) ஆகிய நாங்கள் திருப்பூர் மாவட்டம், திருப்பூர் வட்டம், திருப்பூர் டவுன், மங்கலம், பல்லடம் சாலை, கதவு எண். 3/111 என்ற முகவரியில் வசிக்கும் திரு. ராமசாமி என்பவர் மனைவி ஆர். துளசியம்மாள் (3) ஆகிய உங்களுக்கு எழுதிக் கொடுக்கும் சம்மதக் கடிதம் என்னவென்றால்,

R. Ramasamy

திருப்பூர் மாவட்டம், காங்கேயம் வட்டம், கீரனூர் கிராமம், பட்டா புல எண். 16/3-ல் 1.55.0 ஹெக்டர் பரப்பு நிலமானது பட்டா எண். 3397-லும், பட்டா புல எண். 19/1-ல் 0.93.0 ஹெக்டர் பரப்பு நிலமானது பட்டா எண். 3385-லும் நான்கில் (1) இலக்குமிட்டவர் பெயரில் தனிப்பட்டாவாக தாக்கலாகியுள்ளது.

திருப்பூர் மாவட்டம், காங்கேயம் வட்டம், கீரனூர் கிராமம், பட்டா புல எண். 15-ல் 2.75.0 ஹெக்டர் பரப்பு நிலமானது பட்டா எண். 664-லும், புல எண். 19/4A-ல் 0.05.95 ஹெக்டர் பரப்பு நிலமானது பட்டா எண். 1290-லும் நான்கில் (1) மற்றும் (2) இலக்குமிட்டவர்கள் பெயரில் கூட்டுப்பட்டாவாக தாக்கலாகியுள்ளது.

மேற்படி நிலங்களில் திருமதி. ஆர். தனலெட்சுமி என்பவர் பெயரில் சாதாரண அற்கள் மற்றும் கிராவல் மண் வெட்டியெடுக்க பத்து ஆண்டுகளுக்கு குவாரிக் குத்தகை உரிமம் கோரி உதவி இயக்குநர் (கனிமம்) அவர்களிடம் அனுமதி கோரி விண்ணப்பம் செய்துள்ளார். மேற்படி மனுவில் உதவி இயக்குநர் / [illegible] இவர்களிடம் அனுமதி வழங்கும் நாளிலிருந்து பத்து வருட காலத்திற்கு குவாரிக் குத்தகை உரிமம் வழங்க (1) மற்றும் (2) இலக்குமிட்ட நபர்களாகிய மற்றும் சேர்ந்திருப்பவர் ஆகிய எவருக்கும் பட்டாதாரர் மற்றும் கூட்டுப்பட்டாதாரர் என்ற முறையில் எவ்விதமான ஆட்சேபனையும் இல்லை. மேலும்டு எனது விருப்பத்தையும் தெரிவித்தோம், முழுமனதுடன் சம்மதம் அளிக்கிறோம் என உறுதி கூறுகிறோம்.

(1)
(2)
(3)

NOTARY
A.ARUNKUMAR
NOTARIAL

A.ARUNKUMAR M.Com.,B.L.,
ADVOCATE & NOTARY
(Government of India)
Reg.No : 2207/2020
No.12,Arun Complex, KBT Road,
Karuvampalayam, Tirupur - 641 604.
Cell : 9[illegible]

ASSISTANT DIRECTOR
TIRUPPUR

296 A

भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

रु. 100

ONE HUNDRED RUPEES

भारत INDIA

INDIA NON JUDICIAL

15-1001-

தமிழ்நாடு தமிழ்நாடு TAMILNADU

22/11/2025

துணை தொழிலாளர் ஆணையர்

திருப்பூர்

FA 569934

S.பழனிக்குமார்

முத்திரைத்தாள் விற்பனையாளர்

உரிமம் எண் : 15 / 2004

திருப்பூர் தமிழ்நாடு

சம்மதக் கடிதம்

திருப்பூர் மாவட்டம், திருப்பூர் வட்டம், திருப்பூர் டவுன், மங்கலம், பல்லடம் சாலை, கதவு எண். 2/111 என்ற முகவரியில் வசிக்கும் திரு. ராமசாமி என்பவர் மகன் ஆர். செந்தில்குமார் (1) ஆகிய நாங்கள் திருப்பூர் மாவட்டம், திருப்பூர் வட்டம், திருப்பூர் டவுன், மங்கலம், பல்லடம் சாலை, கதவு எண். 2/111 என்ற முகவரியில் வசிக்கும் திரு. ராமசாமி என்பவர் மனைவி ஆர். தனலட்சுமி (2) ஆகிய உங்களுக்கு எழுதிக் கொடுக்கும் சம்மதக் கடிதம் என்னவெனில்,

(2) R. தனலட்சுமி

GOVT. OF INDIA

-2-

திருப்பூர் மாவட்டம், வாவிபாளையம் கிராமம், பட்டா புல எண். 15/4B-ல் 0.60.55 ஹெக்டர் பரப்பு முயிலாளரது பட்டா எண். 3572-யிலுள்ள நன்செய் (1) இலக்கமிட்டவை பெயரில் கணிக்கப்பட்டவாக தாக்கலாகியுள்ளது.

திருப்பூர் மாவட்டம், வாவிபாளையம் கிராமம், பட்டா புல எண். 15/2-ல் 0.41.0 ஹெக்டர் பரப்பு முயிலாளரது பட்டா எண். 186-யிலுள்ள நன்செய் (1) மற்றும் (2) இலக்கமிட்டவர்கள் பெயரில் கூட்டுப்பட்டாவாக தாக்கலாகியுள்ளது.

மேற்படி முயிலாளரில் திருமதி. ஆர். துளசிமணி என்பவர் பெயரில் சாதாரண கற்கள் மற்றும் சிறுவல் மண் வெட்டியெடுக்க பத்து ஆண்டுகளுக்கு குவாரிக் குத்தகை உரிமம் கோரி உதவி இயக்குநர் (கனிமம்) அவர்களிடம் அனுமதி கோரி விண்ணப்பம் செய்துள்ளார். மேற்படி மனுதில் உதவி இயக்குநர் / துணை இயக்குநர் அனுமதி வழங்கும் நாளிலிருந்து பத்து வருட காலத்திற்கு குவாரிக் குத்தகை உரிமம் வழங்க (1) இலக்கமிட்ட கெற்றிலாளர் ஆகிய எனக்கு பட்டாதாரர் மற்றும் கூட்டுப்பட்டாதாரர் என்ற முறையில் எவ்விதமான ஆட்சேபனையும் இல்லை. மேலும் மனுதாரருக்கு கொடுப்பட்டுள்ள முழுமனதுடன் சம்மதம் அளிக்கிறோம் என உறுதி கூறுகிறோம்.

1) R துளசி

2) R துளசிமணி

ASSISTANT DIRECTOR

A. ANNADURAI B.Com.,B.L.,
ADVOCATE & NOTARY
(Government of India)
Regd No: 2727/2004
No.12 Arun Complex, KPT Road,
Kangeyanpalayam, Tirupur - 641 604.
Cell: 98940 20202

298 A

ANNEXURE

இந்திய அரசாங்கம்
Government of India
DOB: 01/01/1962
9998 0355 8550
எனது அடையாளம்

Unique Identification Authority of India
Address:
3/111,
Mangalore,
9998 0355 8550

आयकर विभाग

INCOME TAX DEPARTMENT

भारत सरकार

GOVT. OF INDIA

R THULASIMANI

SUBBAIAN

06/05/1963

Permanent Account Number

AEOPT9242F

R. துளசிமணி

Signature

300 A

ANNEXURE

ANNAMALAI UNIVERSITY

அறிவியற்புலம்
FACULTY OF SCIENCE

மே, 2010 இல் பல்கலைக்கழகத்தில் பயின்ற
சந்தோஷ்குமார் M/ எடுத்த
பதிப்புபுள்ளிகள் 10.00 க்கு சராசரியாக 7.04 பெற்று முதல் வகுப்பில்
தேர்ச்சியடைந்து முழுமை அமைக்கப்பெற்ற தேர்வுக்குழுவினர் சான்றளித்ததால்,
அறிவியல் இளைஞர் பட்ட பெயரிற்க கரிசல் குறிப்பு
என அண்ணாமலைப் பல்கலைக்கழக ஆளைய இதனை அளிக்கிறது

The Senate of the ANNAMALAI UNIVERSITY hereby makes known that SANTHOSHKUMAR M/ has been admitted to the Degree of MASTER OF SCIENCE in APPLIED GEOLOGY/ he/she having secured OGPA of 7.04/ out of 10.00 been certified by duly appointed Examiners at the Examination held in MAY,2010/ to be qualified to receive the same and that he/she was placed in FIRST CLASS/

Annamalai நகரில் கொடுக்கப்பட்டது
Given under the seal of the University

துணைவேந்தர்
Vice-Chancellor

Dr.S.Subramanian
பதிவாளர்
Registrar

Dr.S.Thiyagarajan
தேர்வுக் கட்டுப்பாட்டாளர்
Dy.Controller of Examinations (Academic)

தேதி
Dated 06/10/2010

ANNEXURE - 8

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 Multicolor Granite Mine belong to M/s. Anupkumar Lohia do hereby certify that Thiru. M.santhoshkumar son of Thiru. R.Mathiyazhagan (whose signature is appended) worked in the above mine from 10.07.2013 to 31.07.2018. 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. Pavel

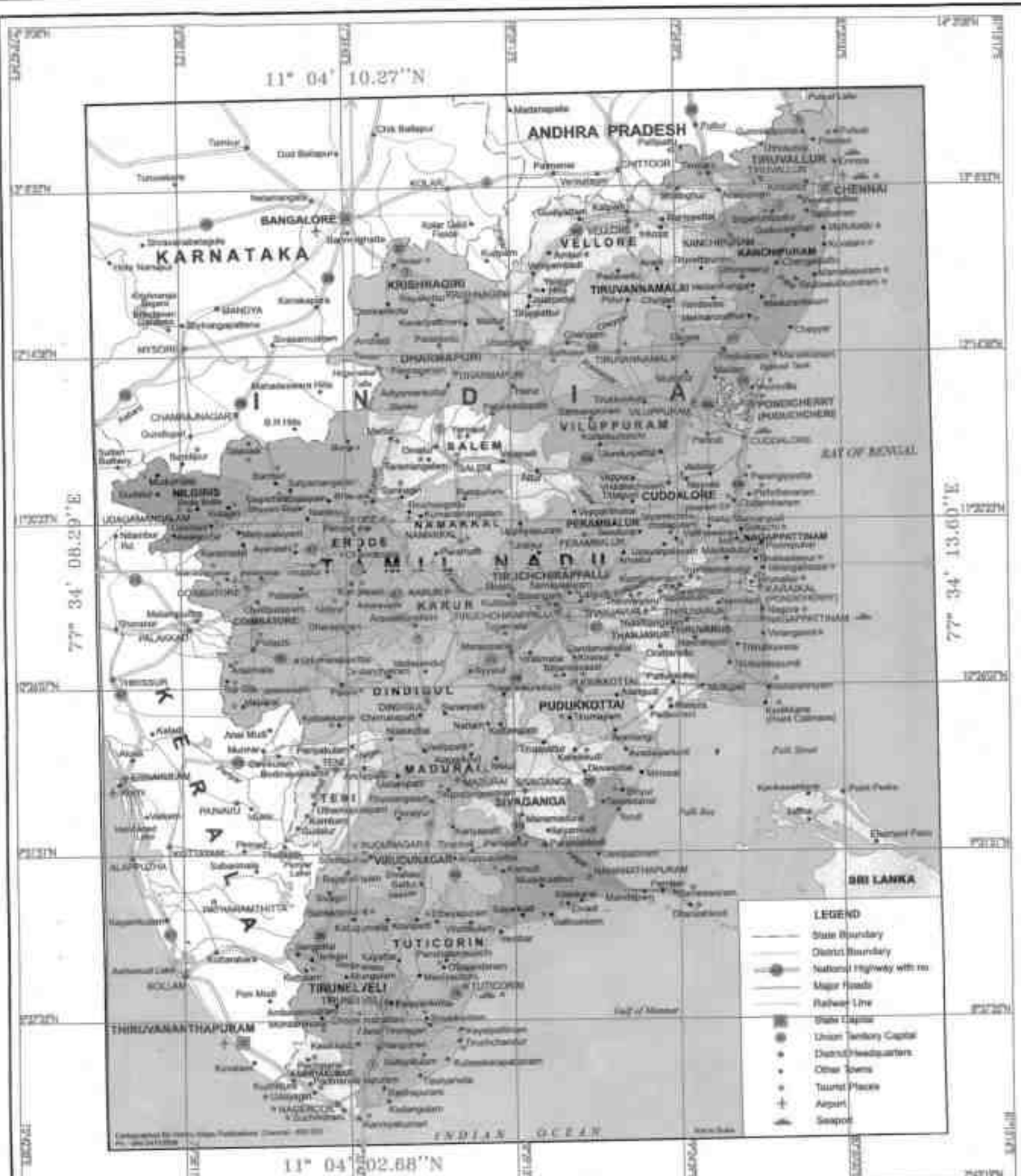
(Signature with date and official seal)

(Mines Manager 1st class)
MANAGER (M.I/C&E)
M/S.MULTICOLOUR GRANITE MINE
K. PITCHAMPATTI,
KARUR - TALUK & DIST.

M. Santhosh kumar

(Signature of Candidate)

State the name of the mineral worked: Multi Colour Granite



ASSISTANT DIRECTOR (GEOLOGY AND MINING) TIRUPUR

N

PLATE NO:I

DATE OF SURVEY : 20.02.2026

APPLICANT :

Tmt.R.THULASIMANI,
No.3/111, PALLADAM ROAD,
MANGALAM,
TIRUPPUR DISTRICT - 641 663.

LOCATION OF Q.L.A AREA:

S.F.NO'S : 16/2(P),3(P),15 (P), 19/1(P) & 19/4A,4B.
EXTENT : 2.22.0 Ha.
VILLAGE : KEERANUR.
TALUK : KANGEYAM.
DISTRICT : TIRUPPUR.
STATE : TAMIL NADU.

INDEX

Q. L. AREA :

TOPO SHEET NO. : 58 E/12

LATITUDE : 11° 04' 02.68"N to 11° 04' 10.27"N
LONGITUDE : 77° 34' 08.29"E to 77° 34' 13.60"E

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

M. Santhosh

M.SANTHOSHKUMAR,M.Sc.,
GOVT. APPROVED PERSON
Under Rule [illegible] MCR,2018

PLATE NO:I-A

DATE OF SURVEY : 20.02.2026

APPLICANT :

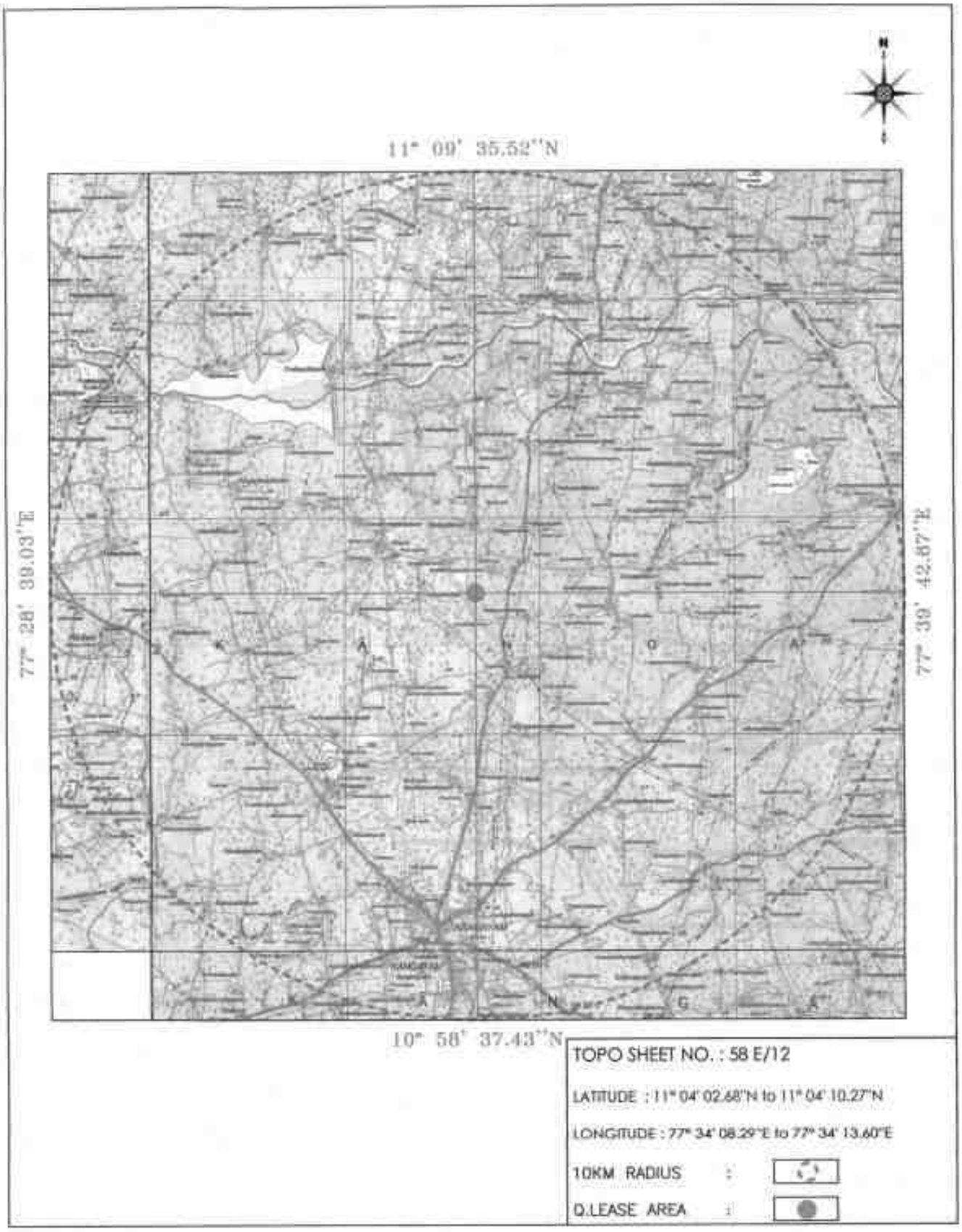
Tmt.R.THULASIMANI,
No.3/111, PALLADAM ROAD,
MANGALAM,
TIRUPPUR DISTRICT - 641 663.

ASSISTANT DIRECTOR (GEOLOGY AND MINING) TIRUPPUR

LOCATION OF Q.L.A AREA:

S.F.NO'S : 16/2(P),3(P),15 (P),
19/1(P) & 19/4A,4B.
EXTENT : 2.22.0 Ha.
VILLAGE : KEERANUR.
TALUK : KANGEYAM.
DISTRICT :TIRUPPUR.
STATE : TAMIL NADU.

INDEX



TOPO SHEET NO. : 58 E/12

LATITUDE : 11° 04' 02.68"N to 11° 04' 10.27"N

LONGITUDE : 77° 34' 08.29"E to 77° 34' 13.60"E

10KM RADIUS :

Q.LEASE AREA :

TOPO SKETCH OF QUARRY LEASE APPLIED AREA FOR 10Km RADIUS

SCALE– 1:100000

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. SANTHOSH KUMAR, M.Sc.,
QUALIFIED PERSON
Under Rule 15(1)(e)and(3)(e) MCR,2018

LANDUSE PATTERN	
DESCRIPTION	PERCENTAGE
ROADS	(15%)
HABITATION \INFRA	(10%)
TREES	(15%)
AGRICULTURAL LAND	(55%)
QUARRY PIT\CRUSHER	(05%)

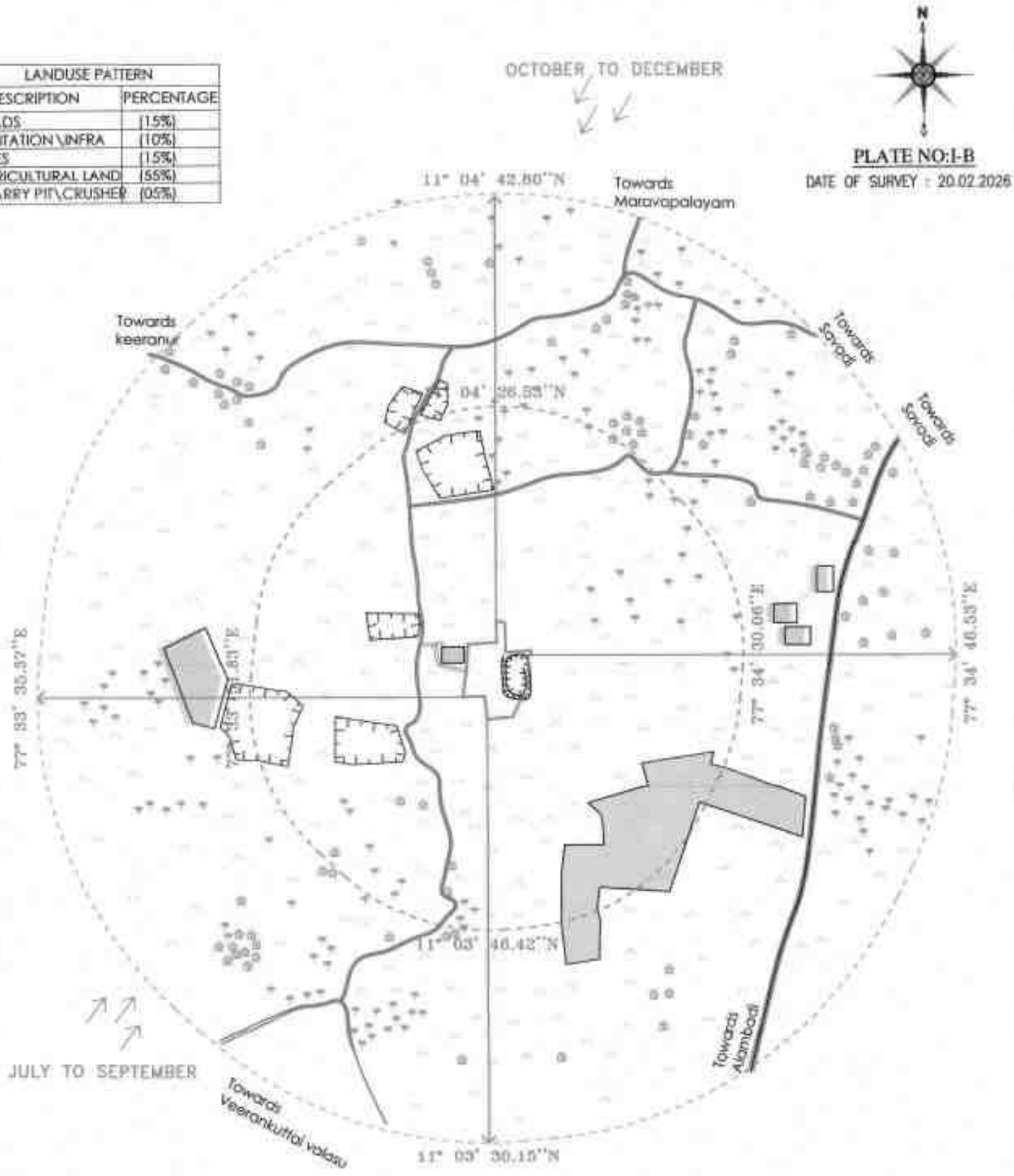


PLATE NO:I-B

DATE OF SURVEY : 20.02.2026

1Km Radius :

500m Radius :

Q.LEASE Area :

TOPO SHEET NO. : 58 E/12

LATITUDE : 11° 04' 02.68"N to 11° 04' 10.27"N
LONGITUDE : 77° 34' 08.29"E to 77° 34' 13.60"E

ASSISTANT DIRECTOR • GEOLOGY AND MINING • TIRUPUR

APPLICANT :

Tmt.R.THULASIMANI,
No.3/111, PALLADAM ROAD,
MANGALAM,
TIRUPPUR DISTRICT - 641 663.

LOCATION OF Q.L.A AREA:

S.F.NO'S : 16/2(P),3(P),15 (P),
19/1(P) & 19/4A,4B.
EXTENT : 2.22.0 Ha.
VILLAGE : KEERANUR,
TALUK : KANGEYAM,
DISTRICT :TIRUPPUR,
STATE : TAMIL NADU.

INDEX

- APPROACH ROAD
- MAJOR ROAD
- HABITATION
- TREES
- AGRICULTURAL LAND
- QUARRY PIT
- WIND DIRECTION
- INFRASTRUCTURE
- CRUSHER PLANT
- SH ROAD

ENVIRONMENTAL AND
LANDUSE PLAN FOR 1Km RADIUS

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

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
Under Rule 15(1)(a) of EIA NOT,2016

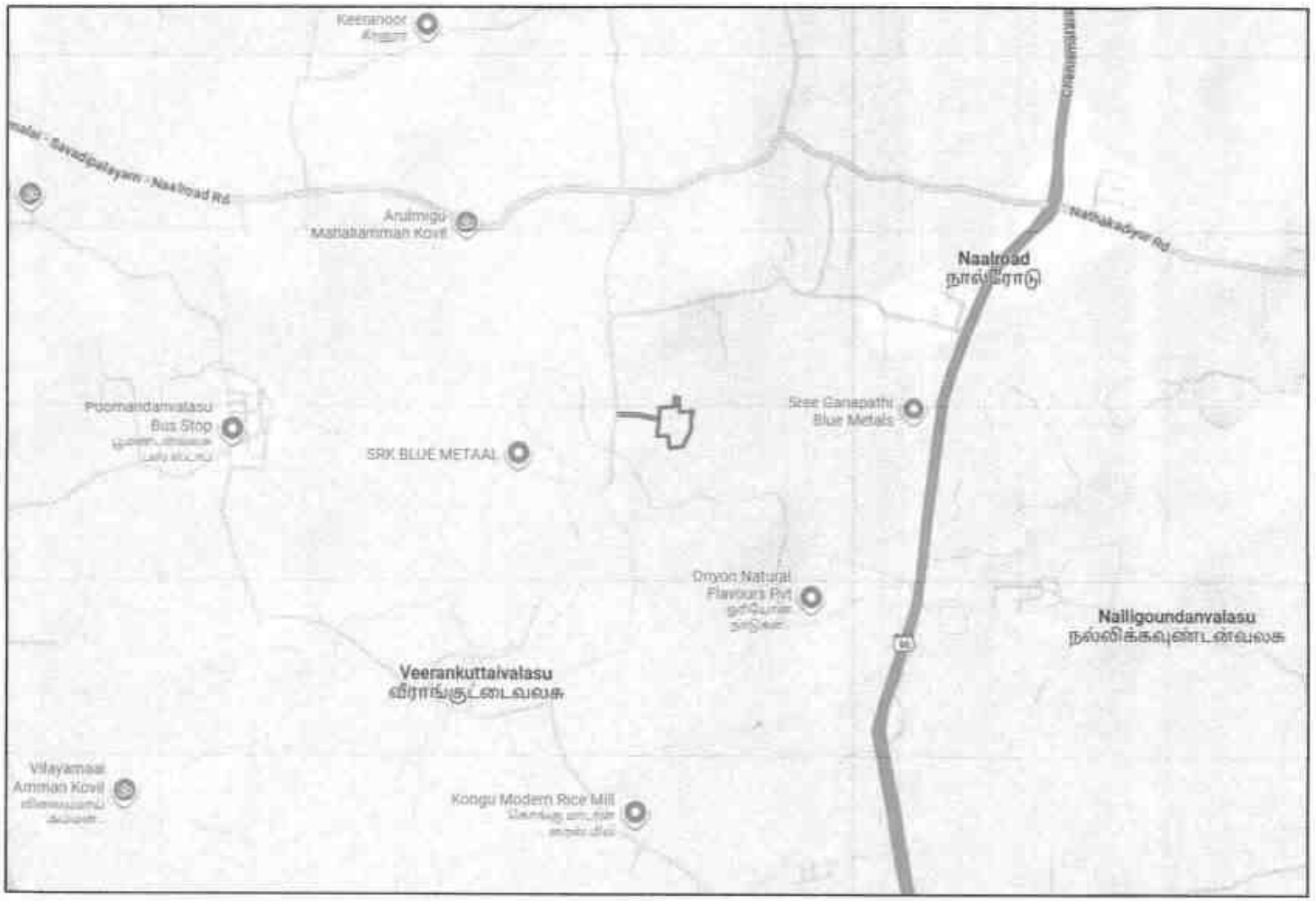


PLATE NO:I-C

DATE OF SURVEY : 20.02.2026

ASSISTANT DIRECTOR * TIRUPUR * GEOLOGY AND MINING

APPLICANT :

Tmt.R.THULASIMANI,
No.3/111, PALLADAM ROAD,
MANGALAM,
TIRUPPUR DISTRICT - 641 663.

LOCATION OF Q.L.A AREA:

S.F.NO'S : 16/2(P),3(P),15 (P),
19/1(P) & 19/4A,4B,
EXTENT : 2.22.0 Ha.
VILLAGE : KEERANUR,
TALUK : KANGEYAM.
DISTRICT :TIRUPPUR,
STATE : TAMIL NADU.

INDEX

Q.LEASE AREA

MAJOR ROAD

STATE HIGHWAY

APPROACH ROAD

ROUTE MAP

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

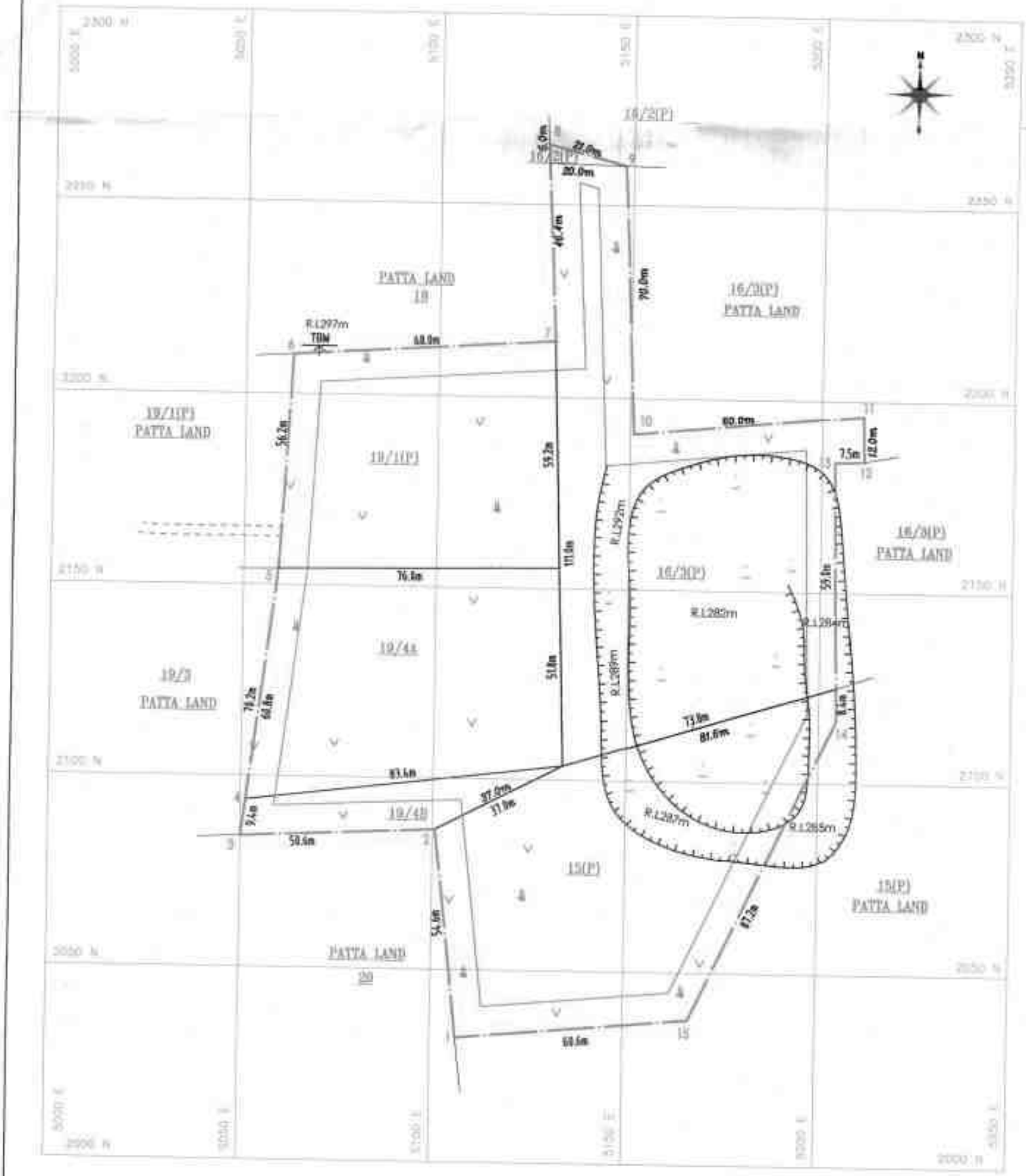
M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
Under Rule 15(1)(a) of MCR,2016

Existing Pit Dimension (max)
= 105mX65mX15m(d)

BOUNDARY CO-ORDINATES

S.N.	LATITUDE	LONGITUDE
1	11° 04' 02.68"N	77° 34' 10.15"E
2	11° 04' 04.45"N	77° 34' 09.96"E
3	11° 04' 04.38"N	77° 34' 08.29"E
4	11° 04' 04.68"N	77° 34' 08.33"E
5	11° 04' 06.64"N	77° 34' 08.60"E
6	11° 04' 08.47"N	77° 34' 08.71"E
7	11° 04' 08.60"N	77° 34' 10.95"E
8	11° 04' 10.27"N	77° 34' 10.87"E
9	11° 04' 10.09"N	77° 34' 11.54"E
10	11° 04' 07.81"N	77° 34' 11.63"E
11	11° 04' 07.99"N	77° 34' 13.60"E
12	11° 04' 07.60"N	77° 34' 13.60"E
13	11° 04' 07.59"N	77° 34' 13.55"E
14	11° 04' 05.40"N	77° 34' 13.38"E
15	11° 04' 02.85"N	77° 34' 12.14"E

DATUM : UTM-WGS84, ZONE 43 NORTH



INDEX

- G.L. APPLIED AREA BOUNDARY
- 7.5m SAFETY DISTANCE
- TBM — TEMPORARY BENCH MARK
- V V — GRAVEL
- EXISTING PIT
- ROUGHSTONE
- SHRUBS
- QUARRY HAUL ROAD
- APPROACH ROAD

APPLICANT :

Tmt.R.THULASIMANI,
No.3/111, PALLADAM ROAD,
MANGALAM,
TIRUPPUR DISTRICT - 641 663.

LOCATION OF Q.L.A AREA:

S.F.NO'S : 16/2(P),3(P),15 (P),
19/1(P) & 19/4A,4B,
EXTENT : 2.22.0 Ha.
VILLAGE : KEERANUR,
TALUK : KANGEYAM,
DISTRICT : TIRUPPUR.
STATE : TAMIL NADU.

PLATE NO - II

DATE OF SURVEY : 20.02.2026

QUARRY LEASE PLAN & SURFACE PLAN

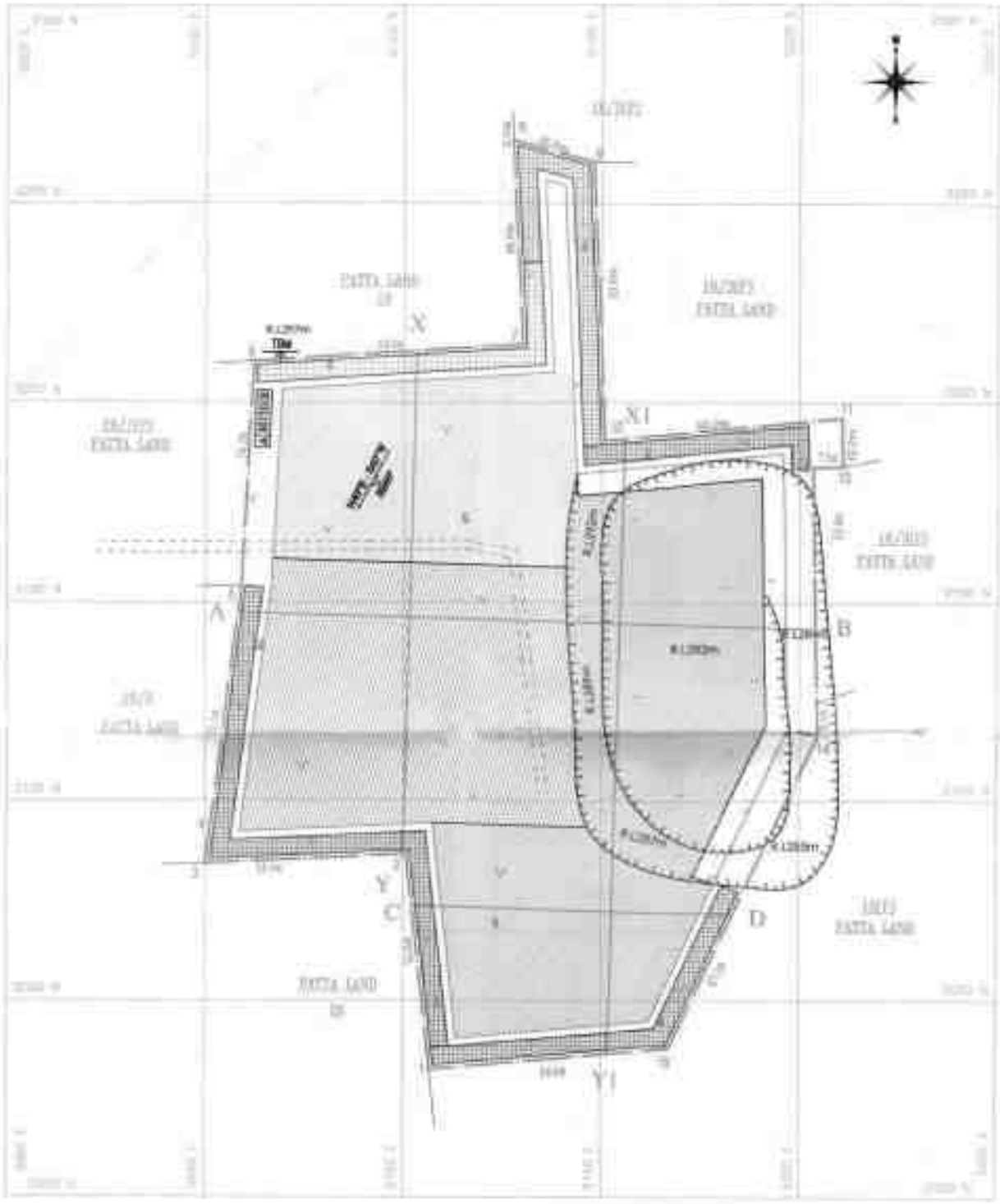
SCALE. 1:1000

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.

M. Santhosh

M.SANTHOSHKUMAR,M.Sc.,
QUALIFIED PERSON
Under Rule 15(1)(a) of MCR,2016.



Existing Pit Dimension(max.)
= 105m(NS)x(EW)x15m(H)

SITE SERVICES

I - yr Proposed area to be Planted
II - yr Proposed area to be Planted
III - yr Proposed area to be Planted
IV - yr Proposed area to be Planted
V - yr Proposed area to be Planted

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

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- Q.L. APPLIED AREA BOUNDARY
- 7.5m SAFETY DISTANCE
- TBM TEMPORARY BENCH MARK
- V V GRAVEL
- ROUGHSTONE
- STRIKE & DIP
- EXISTING PIT
- S S SHRUBS
- QUARRY HAUL ROAD
- APPROACH ROAD
- D.G.E DEPTH OF EXTRACTION

APPLICANT :

Imt.R.THULASIMANI,
No.3/111, PALLADAM ROAD,
MANGALAM,
TIRUPPUR DISTRICT - 641 663.

LOCATION OF Q.L.A. AREA:

S.F.NO'S : 16/2(P),3(P),15 (P),
19/1(P) & 19/4A,4B.
EXTENT : 2.22.0 Hts
VILLAGE : KEERANUR,
TALUK : KANGEYAM,
DISTRICT :TIRUPPUR,
STATE : TAMIL NADU.

PLATE NO - III

DATE OF SURVEY : 20.02.2026

TOPOGRAPHY, GEOLOGICAL PLAN, YEARWISE DEVELOPMENT & PRODUCTION PLAN & SECTIONS

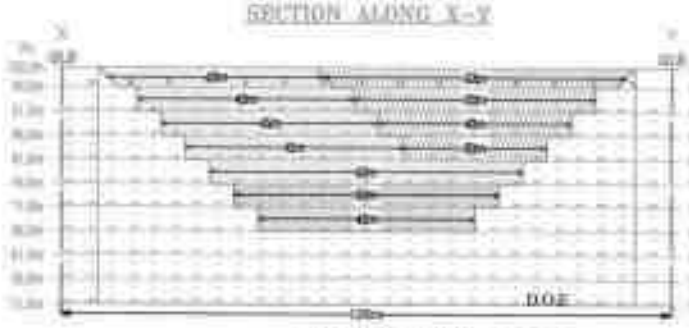
SCALE. 1:1000

PREPARED BY :

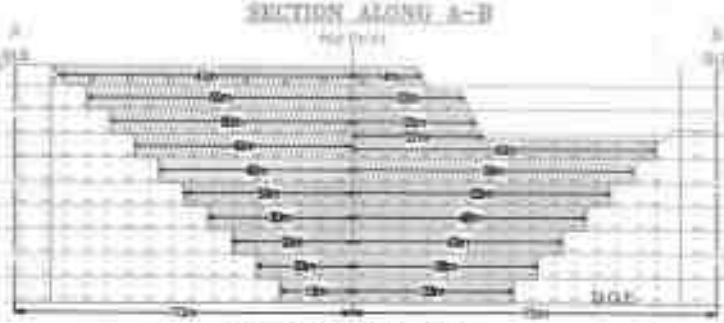
THIS IS TO CERTIFY THAT THE INFORMATION IN THIS PLANS IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

QUALIFIED PERSON

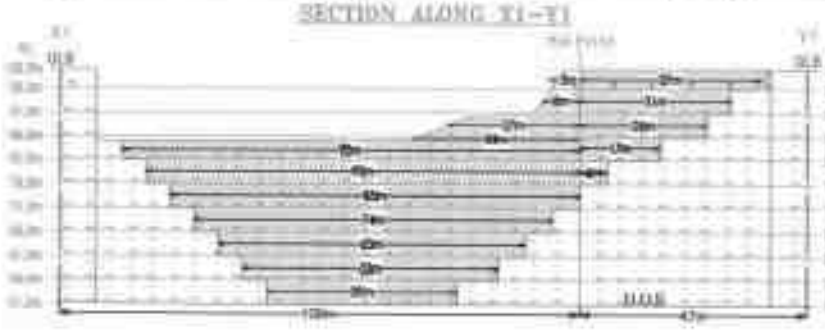
SECTION ALONG X-Y



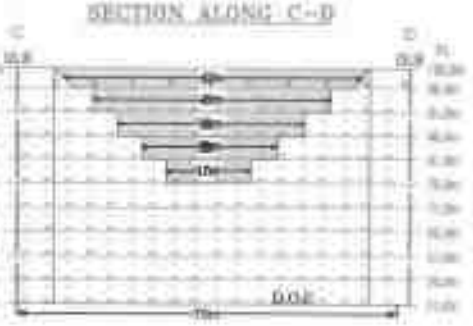
SECTION ALONG A-B

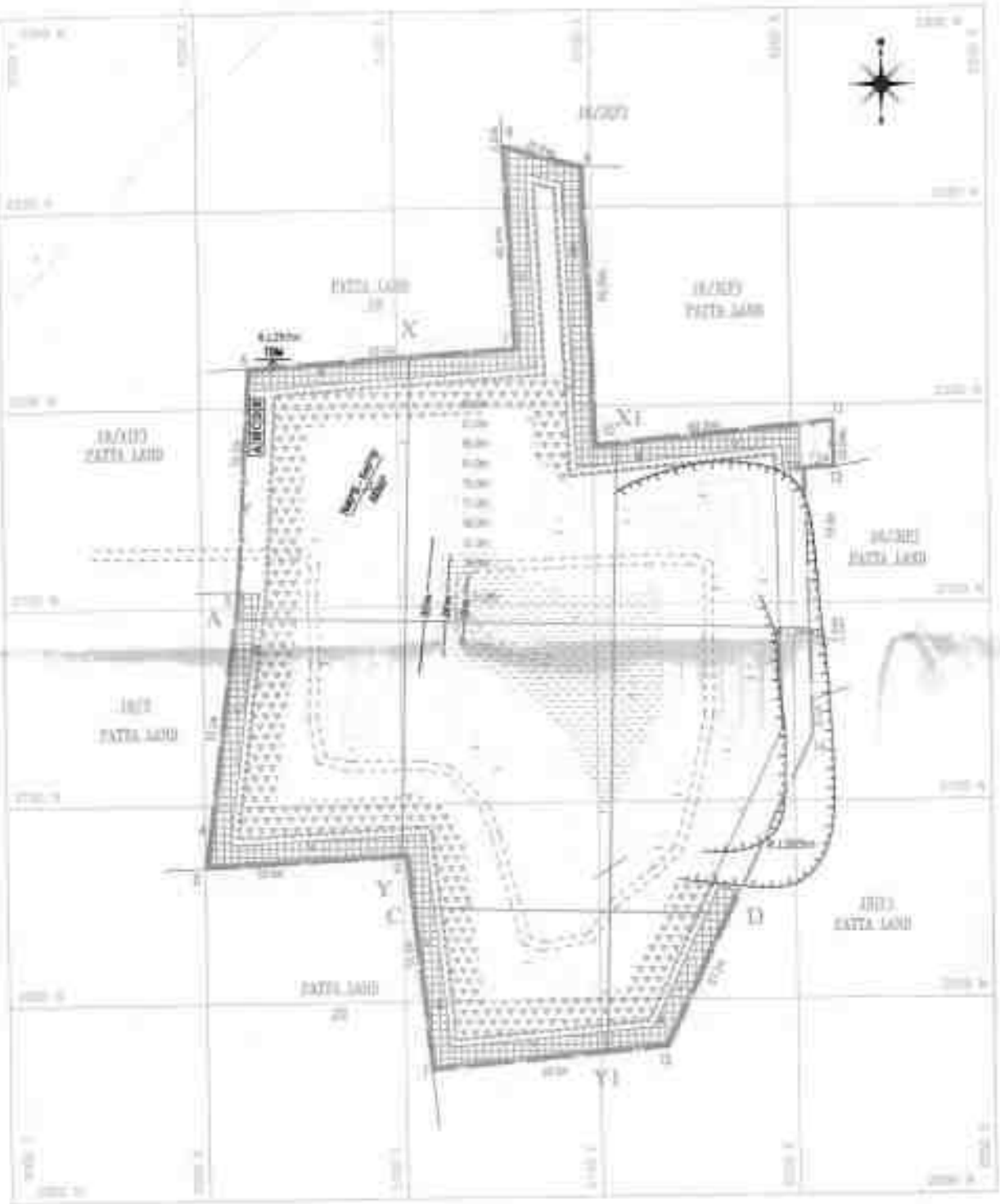


SECTION ALONG X1-Y1



SECTION ALONG C-D





LAND USE PATTERN

DESCRIPTION	PRESENT AREA IN (Ha)	AREA AT THE END OF THE QUARRY LIFE
QUARRYING PIT	0.70.0	1.65.0
INFRASTRUCTURE	Nil	0.01.0
ROADS	0.02.0	0.02.0
GREEN BELT	Nil	0.25.0
UNUTILIZED AREA	1.43.0	0.29.0
TOTAL	2.15.0	2.15.0

Proposed Pit Dimension (mts)
XY-AB = 102m(E)x1m(W)x89m(d)
X(Y)-AB = 100m(E)x76m(W)x89m(d)
X(Y)-CD = 37m(E)x0(W)x34m(d)

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- G.L. APPLIED AREA BOUNDARY
- 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- BOULDER/STONE
- STRIKE & DIP
- EXISTING PIT
- SHRUBS
- QUARRY HAUL ROAD
- APPROACH ROAD
- GREENBELT
- BARBED WIRE FENCING
- EXISTING LAND FORM
- SOIL LAYER
- REHABILITATED LAND FORM
- PROPOSED GARLAND DRAIN
- OLD SURFACE LEVEL
- FINISHED SURFACE LEVEL
- RAIN WATER STORAGE

APPLICANT :

Tmt.R.THULASIMANI,
No.3/111, PALLADAM ROAD,
MANGALAM,
TIRUPPUR DISTRICT - 641 663.

LOCATION OF G.L.A. AREA:

S.F.NO'S : 16/2(P),3(P),13 (P), 19/1(P) & 19/48,49,
EXTENT : 2.22.0 Hs.
VILLAGE : KEERANUR,
TALUK : KANGEYAM,
DISTRICT : TIRUPPUR,
STATE : TAMIL NADU.

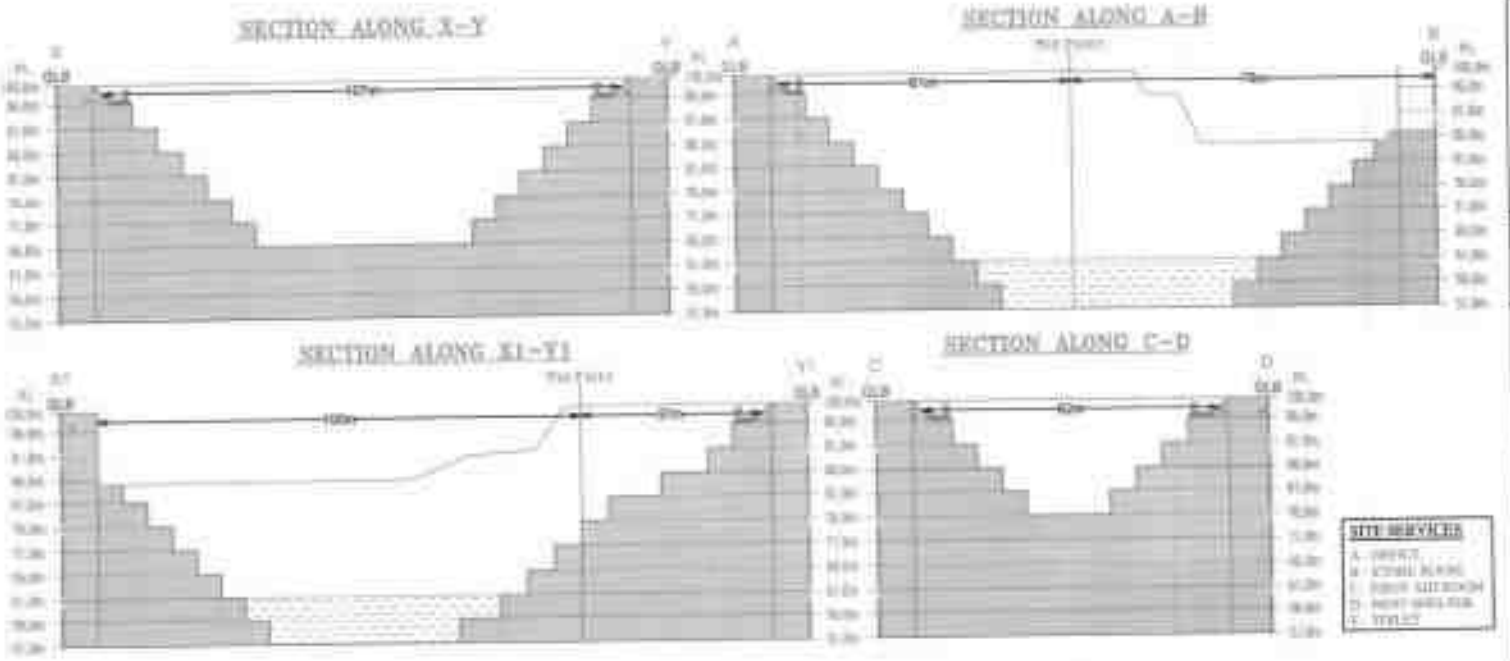
PLATE NO - IV

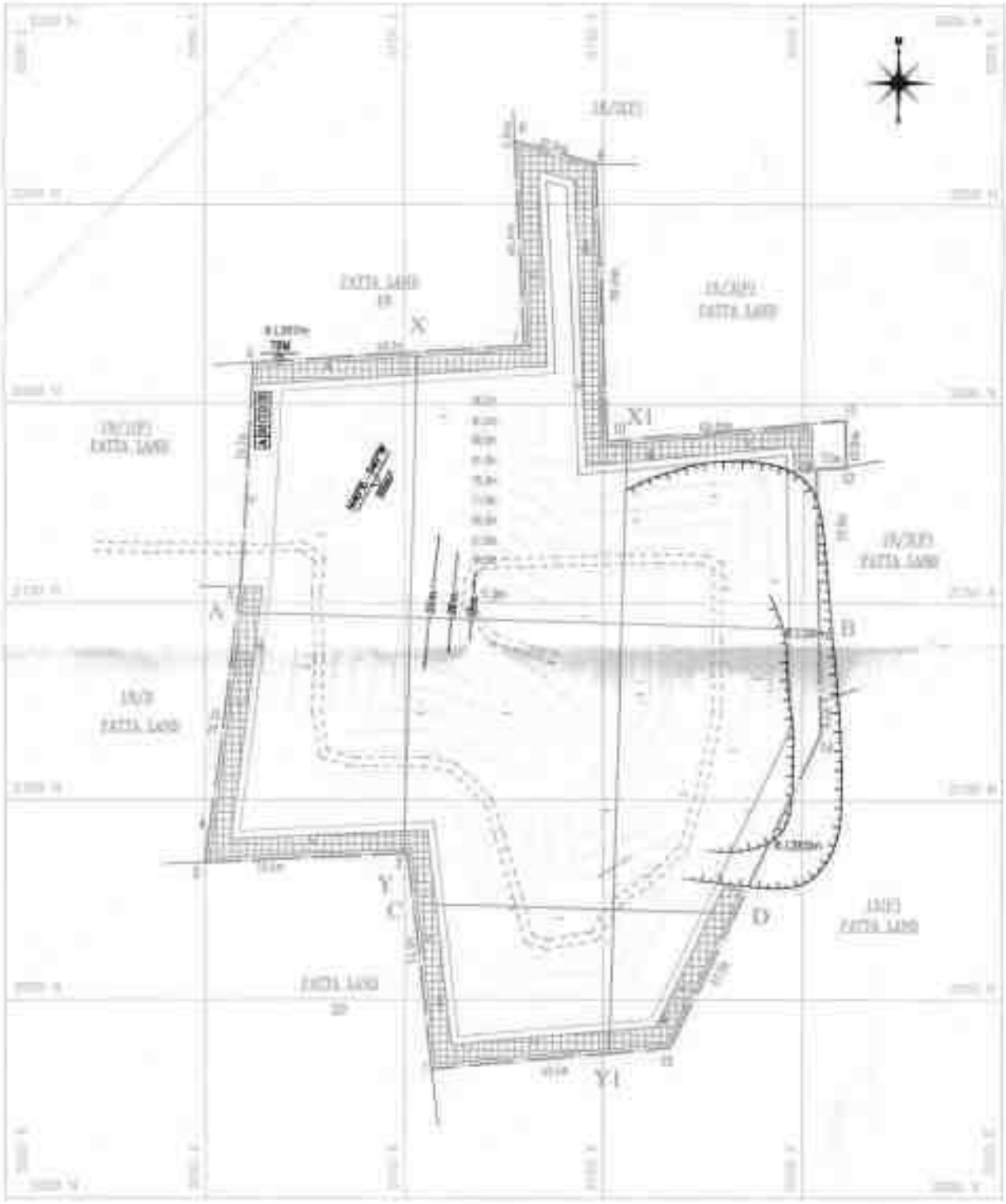
DATE OF SURVEY : 20.02.2024

PROGRESSIVE QUARRY CLOSURE PLAN & SECTIONS

SCALE : 1:1000

PREPARED BY :





SITE SERVICES

Ultimate Pit Dimension (max)
XY-AB = 107m(S)/m(E/W/m(I)
XY1-AB = 190m(S)/0m(E/W/m(I)
XY1-CD = 71m(S)/0m(E/W/m(I)

INDEX

- Q.L APPLIED AREA BOUNDARY
- 7.5m SAFETY DISTANCE
- TEMPORARY BENCH MARK
- GRAVEL
- ROUGHSTONE
- STRIKE & DIP
- EXISTING PIT
- SHRUBS
- QUARRY HAUL ROAD
- APPROACH ROAD
- CARTABELT

APPLICANT :

Tmt.R.THULASIMANI,
No.3/111, PALLADAM ROAD,
MANGALAM,
TIRUPPUR DISTRICT - 641 652.

LOCATION OF Q.L.A. AREA:

S.F.NO'S : 16/2(P),30(P),1/5 (P),
1971(P) & 19/4A,4B,
EXTENT : 2.22.0 Hq.
VILLAGE : KEERANUR,
TALUK : KANGEYAM,
DISTRICT :TIRUPPUR,
STATE : TAMIL NADU.

PLATE NO - V

DATE OF SURVEY : 30.12.2025

CONCEPTUAL PLAN & SECTIONS

SCALE 1:1000

PREPARED BY :

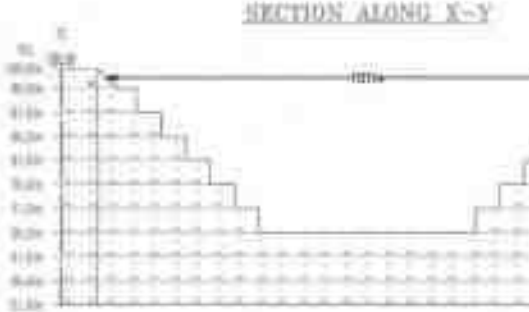
THAT IS TO CERTIFY THAT THE INFORMATION IN THIS PLATE IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE BASED UPON THE LEASE MAP AUTHENTICATED BY STATE GOVERNMENT

M. Sankar

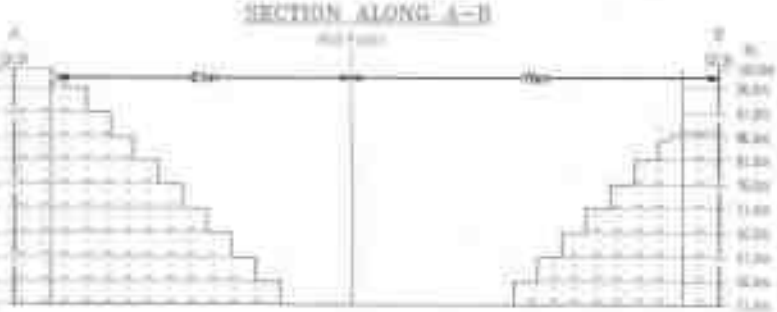
Signature

SURVEYOR'S PERSON

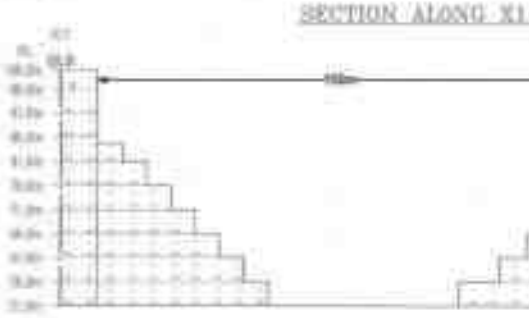
SECTION ALONG X-Y



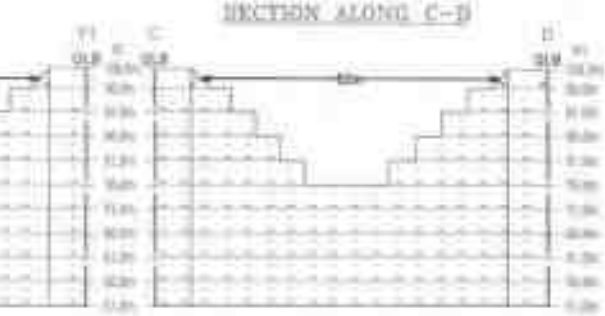
SECTION ALONG A-B



SECTION ALONG X1-Y1



SECTION ALONG C-D



ENVIRONMENTAL CLEARANCE

PARIVESH

(Pro-Active and Responsive Facilitation by Interactive, and Virtuous Environmental Single-Window Hub)

Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), Tamil Nadu)

To,

The Applicant
RANGASAMY MUTHUSAMY
No.77, South Street, Morattupalayam Village, Uthukuli Taluk, Tiruppur - 638752

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the SEIAA vide proposal number SIA/TN/MIN/273437/2022 dated 18 Aug 2022. The particulars of the environmental clearance granted to the project are as below.

1.	**EC Identification No.**	**EC22B001TN196232**
2.	**File No.**	9272
3.	**Project Type**	New
4.	**Category**	B2
5.	**Project/Activity including Schedule No.**	1(a) Mining of minerals
6.	**Name of Project**	R.Muthusamy Rough Stone and Gravel Quarry
7.	**Name of Company/Organization**	RANGASAMY MUTHUSAMY
8.	**Location of Project**	Tamil Nadu
9.	**TOR Date**	N/A

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 18/09/2022

(e-signed)
Thiru.Deepak S.Bilgi
Member Secretary
SEIAA - (Tamil Nadu)

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH.Please quote identification number in all future correspondence.

This is a computer generated cover page.

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

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

ENVIRONMENTAL CLEARANCE

Lr. No.SEIAA-TN/F.No.9272/EC.No:5268/2022, dated: 01.09.2022

Sir/Madam,

Sub: SEIAA-TN - Proposed Rough Stone and Gravel Quarry over an extent of 3.07.0 Ha located at S.F.No. 66/1 & 66/2 Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu by Thiru. R.Muthusamy–under Category "B2" of Item 1(a) "Mining of Minerals Projects" of the Schedule to the EIA Notification, 2006 issue of Environmental Clearance – Regarding.

Ref: 1. Online Proposal No. SIA/TN/MIN/273437/2021 dated: 20.05.2022.
2. Your Application for Environmental Clearance dated: 23.05.2022.
3. Minutes of the 303rd SEAC Meeting held on 18.08.2022.
4. Minutes of the 548th SEIAA Meeting held on 01.09.2022.

- - - - -

Details of Minor Mineral Activity: -

This has reference to your application 1st & 2nd cited. The proposal is for obtaining Environmental Clearance for mining / quarrying of minor minerals based on the particulars furnished in your application as shown below.

S.No	Particulars	Details furnished
1.	Name of the Owner/Firm	Thiru. R.Muthusamy S/o. Rangasamy No.77, South Street Morattupalayam

MEMBER SECRETARY
SEIAA-TN

		Uthukuli Tiruppur -638752
2.	Type of quarrying	Rough stone and Gravel
3.	S.F No. Of the quarry site with area break-up	66/1 & 66/2
4.	Village in which situated	Keeranur
5.	Taluk in which situated	Kangayam
6.	District in which situated	Tiruppur
7.	Extent of quarry (in ha.)	3.07.0 Ha
8.	Period of quarrying proposed	5years
9.	Type of mining	Opencast Mechanized mining
10.	Production (Quantity in m^3)	2,23,825 m^3 of rough stone & 37,886m^3 of gravel
11.	Depth of quarrying	XY-AB – 27m (17m – existing & 10m – proposed) and XY-CD 27m (2m – Gravel and 25m – Rough Stone)
12.	Latitude & Longitude of all corners of the quarry site	11°03'59.04"N to 11°04'06.38"N 77°33'49.11"N to 77°33'55.55" N
13.	Top Sheet No.	58 – E/12
14.	Man Power requirement	30 Nos.
15.	Precise area Assistant Director with date	Na.Ka.No. 1265/Kanimam/2021, dated: 01.04.2022
16.	Mining Plan approved by Deputy Director, Department of G&M Mines with date	R.c.No. 1265/ Mines/2021, dated: 11.04.2022
17.	Deputy Director, Department of G&M Mines with date 500m cluster letter	R.c.No. 1265/Mines/2021, dated: 11.04.2022
18.	Water requirement: 1. Drinking & Domestic Purpose 2. Dust suppression 3. Green Belt	2.5 KLD 0.5 KLD 1.2 KLD 0.8 KLD

MEMBER-SECRETARY
SEIAA-TN

19.	Power requirement a. Domestic Purpose b. Industrial Purpose	TNEB 2,29,190 Liters of HSD will be utilized for the entire project
20.	Depth of water table	70m in summer and 65m in rainy season
21.	Project Cost (Excluding EMP)	Rs. 66,38,000
22.	EMP cost	Capital Cost - Rs.14,81,000 Recurring Cost – Rs.21,81,000
23.	CER cost	Rs. 5,80,000
24.	VAO certificate regarding habitation within 300m radius	Letter dated: 18.04.2022
25.	**Validity:** **This Environmental Clearance is granted for the production in 2,23,825 m^3 of rough stone & 37,886m^3 of gravel for the period of 5 Years from the date of execution of the mining lease and ultimate depth of mining is restricted to XY-AB – 27m (17m – existing & 10m – proposed) and XY-CD 27m (2m – Gravel and 25m – Rough Stone).**	

The Proponent has furnished affidavit in stamp paper attested by the Notary stating that

I, **R.Muthusamy, S/o. Rangasamy Gounder, residing at No. 77, South Street, Morattupalayam Village, Uthukuli Taluk, Tiruppur District – 638 752**, solemnly declare and sincerely affirm that:

I have applied for getting Environment Clearance to State Level Environment Impact Assessment Authority, Tamil Nadu for quarrying of **Rough Stone and Gravel in the S.F.Nos. 66/1 & 66/2, over an extent of 3.07.0Hectares of patta lands at Keeranur Village, Kangayam Taluk, Tiruppur District, Tamil Nadu.**

1. I swear to state and confirm that within 10km area of the quarry site, I have applied for environment clearance; none of the following is situated

   a. Protected areas notified under the wild life (Protection) Act, 1972,

   b. Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and Control of Pollution) Act, 1974,

   c. Eco-Sensitive areas as notified,

MEMBER SECRETARY
SEIAA-TN

d. Interstate boundaries within 10km radius from the boundary of the proposed site.

2. I will spend the amount of Rs. 5 Lakhs towards Corporate Environment Responsibility (CER) for the following activities to the Government Higher Secondary school, Keeranur, Tiruppur District before commencement of quarrying operation.

CER Activity	CER Cost (Rs in Lakh)
Renovation of Existing Toilets	5.00
Plantation along the School Boundary 250 Nos	
Providing Environmental related books to School Library	
Providing Computers to the School	

3. The following quarries are located within the radius of 500m from the periphery of my quarry.

a. **Existing Quarries**

S. No.	Name of the lessee	Village	S.F.No	Extent Hect.	Collector's Proceedings No. & Date	Lease Period
----Nil-----						

b. **Abandoned / Expired Quarries**

S. No.	Name of the lessee	Village	S.F.No	Extent Hect.	Collector's Proceedings No. & Date	Lease Period
----Nil-----						

c. **Present Proposed Quarries**

S. No.	Name of the lessee	Village	S.F.No.	Extent Hect.	Collector's Proceedings No.&Date	Lease Period
1.	K.Thangavelu	Keeranur	70/A2, 70/B2 & 70/C2 (P)	1.43.0	---	Nearby applied area
2.	R.Muthusamy	Keeranur	66/1 & 66/2	3.07.0	---	Proposed

MEMBER SECRETARY
SEIAA-TN

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						Area

4. There will not be hindrance or disturbance to the people living during quarrying and transportation.
5. There is no approved habitation within 300m radius from the periphery of my quarry.
6. I swear that afforestation will be carried out during the course of quarrying operation and maintained.
7. The required insurance will be taken in the name of the laborers working in my quarry site.
8. The approach road from the main road to quarry is already constructed and same will be maintained in a good condition for the haulage of quarry materials and machineries.
9. I will not engage any child labor in my quarry site and I aware that engaging child labor is punishable under the law.
10. All types of safety/ protective equipment will be provided to all the laborers working in my quarry.
11. No permanent structures, temples etc., are located within 300m radius from the periphery of my quarry.

I ensure to do all the social and Environment commitment as mentioned in the Mining Plan to the best of my knowledge.

Details of 500M radius Proposed quarry:

The Project Proponent has submitted a copy of the letter obtained from Deputy Director, Geology and Mining, Tiruppur District in his letter R.c.No. 1265/Mines/2021, dated: 11.04.2022 has stated that the details of other quarries (Proposed / Existing / Abandoned Quarries) within a radius 500m from the boundary of the proposed quarry site as follows:

a. **Existing Quarries**

S. No.	Name of the lessee	Village	S.F.No	Extent Hect.	Collector's Proceedings No. & Date	Lease Period
----Nil-----						

MEMBER SECRETARY
SEIAA-TN

b. **Abandoned / Expired Quarries**

S. No.	Name of the lessee	Village	S.F.No	Extent Hect.	Collector's Proceedings No. & Date	Lease Period
----Nil-----						

c. **Present Proposed Quarries**

S. No.	Name of the lessee	Village	S.F.No.	Extent Hect.	Collector's Proceedings No. & Date	Lease Period
1.	K.Thangavelu	Keeranur	70/A2, 70/B2 & 70/C2 (P)	1.43.0	---	Nearby applied area
2.	R.Muthusamy	Keeranur	66/1 & 66/2	3.07.0	---	Proposed Area

Appraisal by SEAC: -

Proposed Rough Stone and Gravel Quarry lease over an extent of 3.07.0 Ha in S.F.Nos. 66/1 & 66/2 Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu by Thiru. R.Muthusamy - Environmental Clearance- Regarding.

The proposal was placed for appraisal in the 303rd meeting of SEAC held on 18.08.2022. The details of the project furnished by the proponent are given on the website (parivesh.nic.in).

The SEAC noted the following:

1. The project/activity is covered under Category "B2" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.

Based on the presentation made by the proponent, SEAC recommended to **grant of Environmental Clearance for the production quantity of 2,78,595 m^3 of Rough Stone and 37,886 m^3 of Gravel as per the miming plan with an ultimate depth of 37m**, subject to the standard conditions as per Annexure – I of this minutes & normal conditions stipulated by MOEF &CC, in addition to the following specific conditions:

1. The prior Environmental Clearance granted for this mining project shall be valid for

MEMBER SECRETARY
SEIAA-TN

the project life including production value as laid down in the mining plan approved and renewed by competent authority, from time to time, subject to a maximum of thirty years, whichever is earlier, vide MoEF&CC notification No. S.O. 1807(E) Dt12.4.2022.

2. The proponent must complete the fencing and also Green belt plantation along the boundary before the execution of lease deed.
3. The mine manager and other statutory competent persons such as blaster (or) mine mate shall be appointed before the commencement of mining operation as per the provisions of Mines Act 1952 and Metalliferous Mines Regulations, 1961.
4. **The PP shall carry out the shallow depth Jack hammer drilled holes (of 32-34 mm dia & 1.5 m depth) & NONEL initiation based controlled blasting operation involving line drilling and muffle blasting in the proposed quarry such that the blast-induced ground vibrations are controlled within the permissible limits as stipulated by the DGMS as well as no fly rock travel beyond 20 m from the blast site.**
5. In the case of proposed lease in an existing (or old) quarry where the benches are nonexistent (or) partially formed critical of the bench geometry approved in the Mining Plan, the Project Proponent (PP) shall prepare and submit an 'Action Plan' for carrying out the realignment of the 'highwall' benches to ensure slope stability in the proposed quarry, to the concerned Asst. Director of Geology and Mining before execution of the lease.
6. 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 adhere to the EMP as committed.
7. As accepted by the Project Proponent the CER cost is Rs. 5.8 lakhs and the amount shall be spent to the committed activities for Government Higher Secondary school, Keeranur, Tiruppur District before obtaining CTO from TNPCB.

ANNEXURE-I

1. The proponent shall mandatorily appoint the required number of statutory officials and the competent persons in relevant to the proposed quarry size as per the provisions of Mines Act 1952 and Metalliferous Mines Regulations, 1961.

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2. The proponent shall erect fencing all around the boundary of the proposed area with gates for entry/exit before the commencement of the operation and shall furnish the photographs/map showing the same before obtaining the CTO from TNPCB.
3. Perennial maintenance of haulage road/village / Panchayat Road shall be done by the project proponent as required in connection with the concerned Govt. Authority.
4. The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e., quantum of mineral, waste, over burden, inter burden and top soil etc. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form of Short Term Permit (STP), Query license or any other name.
5. The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
6. The proponent shall ensure that the slope of dumps is suitably vegetated in scientific manner with the native species to maintain the slope stability, prevent erosion and surface run off. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps.
7. Perennial sprinkling arrangement shall be in place on the haulage road for fugitive dust suppression. Fugitive emission measurements should be carried out during the mining operation at regular intervals and submit the consolidated report to TNPCB once in six months.
8. The Project Proponent shall carry out slope stability study by a reputed academic/research institution such as NIRM, IIT, Anna University for evaluating the safe slope angle if the proposed dump height is more than 30 meters. The slope stability

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report shall be submitted to concerned Regional office of MoEF&CC, Govt. of India, Chennai as well as SEIAA, Tamilnadu.

9. The Proponent shall ensure that the Noise level is monitored during mining operation at the project site for all the machineries deployed and adequate noise level reduction measures undertaken accordingly. The report on the periodic monitoring shall be submitted to TNPCB once in 6 months.
10. Proper barriers to reduce noise level and dust pollution should be established by providing greenbelt along the boundary of the quarrying site and suitable working methodology to be adopted by considering the wind direction.
11. 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 in consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
12. Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted in proper escapements 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.
13. **Noise and Vibration Related:** (i) The Proponent shall carry out only the Controlled Blasting operation using NONEL shock tube initiation system during daytime. Usage of other initiation systems such as detonating cord/fuse, safety fuse, ordinary detonators, cord relays, should be avoided in the blasting operation. The mitigation measures for control of ground vibrations and to arrest fly rocks should be implemented meticulously under the supervision of statutory competent persons possessing the I / II Class Mines Manager / Foreman / Blaster certificate issued by the DGMS under MMR 1961, appointed in the quarry. No secondary blasting of boulders shall be carried out in any occasions and only the Rock Breakers (or) other suitable non-explosive techniques shall be adopted if such secondary breakage is required. The Project Proponent shall provide required number of the security sentries for guarding the danger zone of 500 m radius

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from the site of blasting to ensure that no human/animal is present within this danger zone and also no person is allowed to enter into (or) stay in the danger zone during the blasting. (ii) Appropriate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs, (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone.

14. Ground water quality monitoring should be conducted once in every six months and the report should be submitted to TNPCB.
15. The operation of the quarry should not affect the agricultural activities & water bodies near the project site and a 50 m safety distance from water body should be maintained without carrying any activity. The proponent shall take appropriate measures for "Silt Management" and prepare a SOP for periodical de-siltation indicating the possible silt content and size in case of any agricultural land exists around the quarry.
16. The proponent shall provide sedimentation tank / settling tank with adequate capacity for runoff management.
17. The proponent shall ensure that the transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village Road and shall take adequate safety precautionary measures while the vehicles are passing through the schools / hospital. The Project Proponent shall ensure that the road may not be damaged due to transportation of the quarried rough stones; and transport of rough stones will be as per IRC Guidelines with respect to complying with traffic congestion and density.
18. To ensure safety measures along the boundary of the quarry site, security guards are to be posted during the entire period of the mining operation.
19. After mining operations are completed, the mine closure activities as indicated in the mine closure plan shall be strictly carried out by the Proponent fulfilling the necessary actions as assured in the Environmental Management Plan.
20. The Project proponent shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition that is fit for the growth of fodder, flora, fauna etc.

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21. The Project Proponent shall comply with the provisions of the Mines Act, 1952, MMR 1961 and Mines Rules 1955 for ensuring safety, health and welfare of the people working in the mines and the surrounding habitants.

22. The project proponent shall ensure that the provisions of the MMRD, 1956, the MCDR 2017 and Tamilnadu Minor Mineral Concession Rules 1959 are compiled by carrying out the quarrying operations in a skillful, scientific and systematic manner keeping in view proper safety of the labour, structure and the public and public works located in that vicinity of the quarrying area and in a manner to preserve the environment and ecology of the area.

23. The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be informed to the District AD/DD (Geology and Mining) District Environmental Engineer (TNPCB) and the Director of Mines Safety (DMS), Chennai Region by the proponent without fail.

24. The Project Proponent shall abide by the annual production scheduled specified in the approved mining plan and if any deviation is observed, it will render the Project Proponent liable for legal action in accordance with Environment and Mining Laws.

25. Prior clearance from Forestry & Wild Life including clearance from committee of the National Board for Wildlife as applicable shall be obtained before starting the quarrying operation, if the project site attracts the NBWL clearance, as per the existing law from time to time.

26. All the conditions imposed by the Assistant/Deputy Director, Geology & Mining, concerned District in the mining plan approval letter and the Precise area communication letter issued by concerned District Collector should be strictly followed.

27. The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.

28. The Project proponent shall install a Display Board at the entrance of the mining lease area/abutting the public Road, about the project information as shown in the **Appendix – II** of this minute.

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Appendix 4

List of Native Trees Suggested for Planting

No	Scientific Name	Tamil Name	Tamil Name
1	Acacia auriculiformis	Vilvam	[illegible]
2	Adenanthera pavonina	Mangadi	[illegible]
3	Albizia lebbeck	Vaagai	[illegible]
4	Albizia amara	Usil	[illegible]
5	Bauhinia purpurea	Manthaaru	[illegible]
6	Bauhinia racemosa	Aathi	[illegible]
7	Bauhinia tomentosa	Iruvatthi	[illegible]
8	Bauhinia vahlii	Kattuma	[illegible]
9	Bauhinia Rubiflra	Peela	[illegible]
10	Butea monosperma	Murukkamaram	[illegible]
11	Butea parva	Ravu, Seruvalavu	[illegible]
12	Calophyllum inophyllum	Punnai	[illegible]
13	Canna Fistula	Sarakondrai	[illegible]
14	Canna roxburghii	Senganthiru	[illegible]
15	Chloroxylon swietenia	Purusamaram	[illegible]
16	Cochlospermum religiosum	Kongu, Manjalilavu	[illegible]
17	Cordia dichotoma	Naruvili	[illegible]
18	Cassia absusus	Maralavigam	[illegible]
19	Cassia auriculata	Una, Usha	[illegible]
20	Cassia pendula	SeruUra, Seruvilai	[illegible]
21	Dalbergia sublimis	Karungali	[illegible]
22	Dalbergia latifolia	Vaagai	[illegible]
23	Ficus amplissima	Kalliyn	[illegible]
24	Hibiscus tiliaceus	Amrgiamaram	[illegible]
25	Hardwickia binata	Aacha	[illegible]
26	Holoptelia integrifolia	Aayil	[illegible]
27	Lannea coromandelica	Odhiam	[illegible]
28	Lagerstroemia speciosa	Pan Marudhu	[illegible]
29	Lagerstroemia microphylla	Neduttaravam	[illegible]
30	Limonia acidissima	Vila maram	[illegible]
31	Litsea glutinosa	Poongathai	[illegible]
32	Madhuca longifolia	Illupai	[illegible]
33	Manilkara hexandra	UdairaiPaalai	[illegible]
34	Mimusops elengi	Magizhamaram	[illegible]
35	Mitragyna parviflora	Kadambu	[illegible]
36	Morinda pubescens	Nuna	[illegible]
37	Morinda citrifolia	Vellai Nuna	[illegible]
38	Pterocarpus officinalis	Vachai	[illegible]
39	Pongamia pinnata	Pungam	[illegible]

40	Premna mollissima	Munnai	[illegible]
41	Premna serratifolia	Narumunnai	[illegible]
42	Premna tomentosa	Malaiyaruvana	[illegible]
43	Pongam pinnata	Varaa maram	[illegible]
44	Pterocarpus marsupium	Vengai	[illegible]
45	Pterospermum canescens	Vennangu, Tada	[illegible]
46	Pterospermum xylocarpum	Polavu	[illegible]
47	Pulicaria wallichii	Kampilu	[illegible]
48	Schrebera swietioides	Ugas Maram	[illegible]
49	Sapindus emarginatus	Manpungan, Soapnuts	[illegible] Soapnuts
50	Senna auriculata	Aavarai	[illegible]
51	Shorea roxburghii	Pacha maram	[illegible]
52	Shorea talura	Yatta	[illegible]
53	Shorea tumbuggaia	Thambagi Kottai	[illegible]
54	Syzygium cumini	Naval	[illegible]
55	Terminalia bellirica	Thandri	[illegible]
56	Terminalia arjuna	Vey maruthu	[illegible]
57	Terminalia chebula	Sandhana vembu	[illegible]
58	Thespesia populnea	Puvarasu	[illegible]
59	Tabebuia argentea	tabuia	[illegible]
60	Ulmoidal tectona	Vegvalai	[illegible]
61	Pithecellobium dulce	Kodukkapuli	[illegible]

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Appendix –II

Display Board

(Size 6' x5' with Green Background and White Letters)

Discussion by SEIAA and the Remarks: -

The proposal was placed in the 548th Authority meeting held on 01.09.2022. Authority noted that the subject was placed in the 303rd meeting of SEAC held on 18.08.2022. SEAC has furnished its recommendations to the Authority for **granting Environmental Clearance to the Project** subject to the conditions stated therein. **After detailed discussion, the Authority with reference to specific condition (I) of SEAC, SEIAA decided to grant Environmental Clearance as per the mine plan, for a period of 5 years approved by the Department of Geology & Mining subject to the conditions as recommended by SEAC in addition to the following conditions:**

1. **The depth is restricted to 27m (2m – Gravel and 25m – Rough Stone) to maintain uniform depth in both the sections namely XY-AB – 27m (17m – existing & 10m – proposed) and XY-CD, hence the quantity of Rough Stone recommended is 2,23,825 m^3 and Gravel is 37,886 m^3.**
2. The AD/DD, Dept. of Geology & Mining shall ensure operation of the proposed quarry after the submission slope stability study conducted through the reputed

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research & Academic Institutions such as NIRM, IITs, NITS Anna University, and any CSIR Laboratories etc.

3. The AD/DD, Dept. of Geology & Mining & Director General of Mine safety shall ensure strict compliance and implementation of bench wise recommendations/action plans as recommended in the scientific slope stability study of the reputed research & Academic Institutions as a safety precautionary measure to avoid untoward accidents during mining operation.
4. No trees in the area should be removed and all the trees numbered and protected. In case trees fall within the proposed quarry site the trees may be transplanted in the Greenbelt zone. The proponent shall ensure that the activities in no way result in disturbance to forest and trees in vicinity. The proponent shall ensure that the activity does not disturb the movement of grazing animals and free ranging wildlife. The proponent shall ensure that the activity does not disturb the biodiversity, the flora & fauna in the ecosystem. The proponent shall ensure that the activity does not result in invasion by invasive alien species. The proponent shall ensure that the activities do not disturb the resident and migratory birds. The proponent shall ensure that the activities do not disturb the vegetation and wildlife in the adjoing reserve forests and areas around.
5. The proponent shall ensure that the operations do not result in loss of soil biological properties and nutrients.
6. The activity should not result in CO_2 release and temperature rise and add to micro climate alternations.
7. The proponent shall ensure that the activity does not disturb the water bodies and natural flow of surface and ground water, nor cause any pollution, to water sources in the area.
8. The proponent shall ensure that the activities undertaken do not result in carbon emission, and temperature rise, in the area.
9. The proponent shall ensure that Monitoring is carried out with reference to the quantum of particulate matter during excavation; blasting; material transport and also from cutting waste dumps and haul roads.

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10. The proponent shall ensure that the activities do not disturb the agro biodiversity and agro farms. Actions to be taken to promote agro forestry, mixed plants to support biodiversity conservation in the mine restoration effort.
11. The proponent shall ensure that activity does not deplete the indigenous soil seed bank and disturb the mycorrizal fungi, soil organism, soil community nor result in eutrophication of soil and water.
12. The activities should not disturb the soil properties and seed and plant growth. Soil amendments as required to be carried out, to improve soil heath
13. Bio remediation using microorganisms should be carried out to restore the soil environment to enable carbon sequestration.
14. The proponent shall ensure that all mitigation measures listed in the EIA/EMP are taken to protect the biodiversity and natural resources in the area.
15. The proponent shall ensure that the activities do not impact the water bodies/wells in the neighboring open wells and bore wells. The proponent shall ensure that the activities do not in any way affect the water quantity and quality in the open wells and bore wells in the vicinity or impact the water table and levels. The proponent shall ensure that the activities do not disturb the river flow, nor affect the Odai, Water bodies, Dams in the vicinity.
16. The proponent shall ensure that in the green belt development more indigenous trees species (Appendix as per the SEAC Minutes) to be planted.
17. The proponent shall ensure the area is restored and rehabilitated with native trees as recommended in SEAC Minutes (in Appendix).
18. The proponent shall ensure that the mine restoration is done using mycorrizal VAM, vermin-composting, Biofertilizers to ensure soil health and biodiversity conservation.
19. The proponent shall ensure that the topsoil is protected and used in planting activities in the area.
20. The proponent should ensure that there is no disturbance to the agriculture plantations, social forestry plantations, waste lands, forests, sanctuary or national parks. There should be no impact on the land, water, soil and biological environment and other natural resources due to the mining activities.
21. The proponent shall ensure that topsoil to be utilized for site restoration and Green belt alone within the proposed area.

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22. The proponent shall ensure that the activities do not impact green lands/grazing fields of all types surrounding the mine lease area which are food source for the grazing cattle.

Directions for Reclamation of mine sites

1. The mining closure plan should strictly adhere to appropriate soil rehabilitation measures to ensure ecological stability of the area. Reclamation/Restoration of the mine site should ensure that the Geotechnical, physical, chemical properties are sustainable that the soil structure composition is buildup, during the process of restoration.
2. The proponent shall ensure that the mine closure plan is followed as per the mining plan and the mine restoration should be done with native species, and site restored to near original status. The proponent shall ensure that the area is ecologically restored to conserve the ecosystems and ensure flow of goods and services.
3. A crucial factor for success of reclamation site is to select sustainable species to enable develop a self-sustaining eco system. Species selected should easily establish, grow rapidly, and possess good crown and preferably be native species. Species to be planted in the boundary of project site should be un palatable for cattle's/ goats and should have proven capacity to add leaf-litter to soil and decompose. The species planted should be adaptable to the site conditions. Should be preferably pioneer species, deciduous in nature to allow maximum leaf-litter, have deep root system, fix atmospheric nitrogen and improve soil productivity. Species selected should have the ability to tolerate altered pit and toxicity of and site. They should be capable of meeting requirement of local people in regard to fuel fodder and should be able to attract bird, bees and butterflies. The species should be planted in mixed association.
4. For mining area reclamation plot culture experiments to be done to identify/ determine suitable species for the site.
5. Top soil with a mix of beneficial microbes (Bacteria/Fungi) to be used for reclamation of mine spoils. AM Fungi (Arbuscular mycorrhizal fungi), plant growth promoting Rhizo Bacteria and nitrogen fixing bacteria to be utilized.
6. Soil and moisture conservation and water harvesting structures to be used where ever possible for early amelioration and restoration of site.

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7. Top soil is most important for successful rehabilitation of mined sites. Topsoil contains majority of seeds and plant propagation, soil microorganism, Organic matter and plant nutrients. Wherever possible the topsoil should be immediately used in the area of the for land form reconstruction, to pre mining conditions.
8. Over burdens may be analyzed and tested for soil characteristics and used in the site for revegetation. Wherever possible seeds, rhizome, bulbs, etc of pioneering spices should be collected, preserved and used in restoring the site.
9. Native grasses seeds may be used as colonizers and soil binders, to prevent erosion and allow diverse self- sustaining plant communities to establish. Grasses may offer superior tolerance to drought, and climatic stresses.
10. Reclamation involves planned topographical reconstruction of site. Care to be taken to minimize erosion and runoff. Topsoils should have necessary physical, chemicals, ecological, properties and therefore should be stored with precautions and utilized for reclamation process. Stocked topsoil should be stabilized using grasses to protect from wind. Seeds of various indigenous and local species may be broad casted after topsoil and treated overburden are spread.
11. Alkaline soils, acidic soils, Saline soils should be suitably treated/amended using green manure, mulches, farmyard manure to increase organic carbon. The efforts should be taken to landscape and use the land post mining. The EMP and mine closure plan should provide adequate budget for reestablishing the site to pre-mining conditions. Effective steps should be taken for utilization of over burden. Mine waste to be used for backfilling, reclamation, restoration, and rehabilitation of the terrain without affecting the drainage and water regimes. The rate of rehabilitation should be similar to rate of mining. The land disturbed should be reshaped for long term use. Mining should be as far as possible be ecofriendly. Integration of rehabilitation strategies with mining plan will enable speedy restoration.
12. Efforts should to taken to aesthetically improve the mine site. Generally, there are two approaches to restoration i.e Ecological approach which allows tolerant species to establish following succession process allowing pioneer species to establish. The other approach i.e plantation approach is with selected native species are planted. A blend of both methods may be resorted to restore the site by adding soil humas and mycorrhiza.

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13. Action taken for restoration of the site should be specifically mentioned in the EC compliances.

Part-A: Conditions to be Complied before commencing mining operations: -

1. **The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that**
   - **I. The project has been accorded Environmental Clearance.**
   - **II. Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.**
   - **III. Environmental Clearance may also be seen on the website of the SEIAA.**
   - **IV. The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA.**
2. Mining activity should be reviewed by the District Collector after three years and decide for further extension.
3. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
4. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
5. **A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.**
6. Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
7. The proponent shall ensure that First Aid Box is available at site.
8. The excavation activity shall not alter the natural drainage pattern of the area.

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9. The excavated pit shall be restored by the project proponent for useful purposes.
10. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
11. The quarrying operation shall be restricted between 7AM and 5 PM.
12. The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
13. A minimum distance of 50mts. from any civil structure shall be kept from the periphery of any excavation area.
14. Depth of quarrying should be as per approved mining plan.
15. The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.
16. Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.
17. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
18. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
19. A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.
20. The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF & CC, GoI on 16.11.2009.
21. The following measures are to be implemented to reduce Air Pollution during transportation of mineral
    i. Roads shall be graded to mitigate the dust emission.
    ii. Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust.
22. The following measures are to be implemented to reduce Noise Pollution

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i. Proper and regular maintenance of vehicles and other equipment

ii. Limiting time exposure of workers to excessive noise.

iii. The workers employed shall be provided with protection equipment and earmuffs etc.

iv. Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.

v. All noise generating machinery the compressor, generator to be enclosed in acoustic enclosure so as to reduce noise in working area.

23. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010, dt: 11.01.2010 issued by the MoEF& CC, GoI to control noise to the prescribed levels.

24. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.

25. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.

26. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.

27. The following measures are to be adopted to control erosion of dumps: -

i. Retention/ toe walls shall be provided at the foot of the dumps.

ii. Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.

28. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous& other wastes (Management, and Trans Boundary Movement) Rules, 2016 and its amendments thereof to the recyclers authorized by TNPCB.

29. Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

30. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.

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31. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.
32. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.
33. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.
34. To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution.
35. It shall be ensured that the total extent of nearby quarries (existing, abandoned and proposed) located within 500-meter radius from the periphery of this quarry is not exceeding 5 hectares within the mining lease period of this application.
36. It shall be ensured that there is no habitation is located within 300-meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 300m radius from the periphery of the quarry site.
37. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.
38. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.
39. Bunds to be provided at the boundary of the project site.

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40. The project proponent shall undertake plantation/afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.
41. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
42. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
43. The Project Proponent shall provide solar lighting system to the nearby villages.
44. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
45. Safety equipments to be provided to all the employees.
46. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
47. The Assistant/Deputy Director, Department of Geology & mining shall ensure that the proponent has engaged the blaster with valid Blasting license/certificate obtained from the competent authority before execution of mining lease.
48. The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.
49. The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.
50. The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.
51. The proponent has to display the name board at the quarry site showing the details of Proponent, lease period, extent, etc., with respect to the existing activity before execution of mining.
52. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.
53. The Proponent shall ensure that the project activity including blasting, mining transportation etc should in no way have adverse impact to the other forests, such as

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reserve forests and social forests, tree plantation and bio diversity, surrounding water bodies etc.

54. The proponent shall provide Green Belt development at the rate of not less than 400 trees/Hectare. The tree saplings shall be not less than 3m height.
55. The fugitive emissions should be monitored during the mining activity and should be reported to TNPCB once in a month and the operation of the quarry should no way impact the agriculture activity & water bodies near the project site.
56. All the commitment made by the project proponent in the proposal shall be strictly followed.
57. The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.

Part B: General Conditions:

1. EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.
2. The Proponent shall obtain the Consent from the TNPC Board before commencing the activity.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.
4. No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
5. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6. Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.

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7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
8. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11. All Personnel shall be provided with protective respiratory devices including safety shoes, masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
13. Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.
14. The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
15. The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.
16. The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.

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17. This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance

18. The SEIAA, Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.

19. The SEIAA, Tamil Nadu may cancel the Environmental Clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this Environmental Clearance, if it is found or if it comes to the knowledge of this SEIAA, TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the Environmental Clearance.

20. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

21. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, along with their amendments, Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957,National Commission for protection of Child Right Rules,2006, Wildlife Protection Act, 1972, Forest Conservation Act, 1980, Biodiversity Conservation Act, 2016, the Biological Diversity Act,2002 and Biological diversity Rules, 2004 and Rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.

22. Any other conditions stipulated by other Statutory/Government authorities shall be complied.

23. Any appeal against this Environmental Clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

24. The Environmental Clearance is issued based on the documents furnished by the project proponent. In case any documents found to be incorrect/not in order at a later

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date the Environmental Clearance issued to the project will be deemed to be revoked/ cancelled.

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Copy to:

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Additional Chief Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Industries Department, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai – 34.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chairman, TNPC Board, 76, Mount Salai, Guindy, Chennai-32
7. The District Collector, Tiruppur District
8. The Commissioner of Geology and Mines, Guindy, Chennai-32
9. EI Division, Ministry of Environment & Forests, Paryavaran Bhawan, New Delhi.
10. File Copy

Signature Not Verified
Digitally signed by Thiru.Deepak S.Bilgi
Member Secretary
Date: 9/18/2022 12:10:08 PM

ENVIRONMENTAL CLEARANCE

PARIVESH

(Pro-Active and Responsive Facilitation by Interactive, and Virtuous Environmental Single-Window Hub)

Government of India
Ministry of Environment, Forest and Climate Change
(Issued by the State Environment Impact Assessment Authority(SEIAA), Tamil Nadu)

To,

The Proprietor
THANGAVELU K
Keeranur Kangayam -638701

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the SEIAA vide proposal number SIA/TN/MIN/223513/2021 dated 06 Aug 2021. The particulars of the environmental clearance granted to the project are as below.

1.	**EC Identification No.**	**EC22B001TN110170**
2.	**File No.**	8700/2021
3.	**Project Type**	New
4.	**Category**	B2
5.	**Project/Activity including Schedule No.**	1(a) Mining of minerals
6.	**Name of Project**	K.Thangavelu, Keeranur Rough Stone and Gravel Quarry Project over an Extent of 1.43.0Ha
7.	**Name of Company/Organization**	THANGAVELU K
8.	**Location of Project**	Tamil Nadu
9.	**TOR Date**	N/A

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 28/03/2022

(e-signed)
Tmt.P.RAJESWARI,IFS
Member Secretary
SEIAA - (Tamil Nadu)

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH.Please quote identification number in all future correspondence.

This is a computer generated cover page.

सत्यमेव जयते

TMT. P. RAJESWARI, I.F.S.,
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY – TAMIL NADU
3rd Floor, Panagal Maaligai,
No.1 Jeenis Road, Saidapet,
Chennai-15.
Phone No.044-24359973
Fax No. 044-24359975

ENVIRONMENTAL CLEARANCE

Lr. No.SEIAA-TN/F.No.8700/EC.No: 5020/2021 dated: 18.03.2022

Sir/Madam,

Sub: SEIAA-TN –Proposed Rough & Gravel quarry over an extent of 1.43.0 Ha located at S.F. No. 70/A2, 70/B2 & 70/C2(P) Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu by Thiru.T.Thangavelu – issue of Environmental Clearance – Regarding.

Ref: 1. Online Proposal No. SIA/TN/MIN/223513/2021, Dated: 06.08.2021.

2. Your Application for Environmental Clearance dated: 10.08.2021.

3. Minutes of the 249th meeting of SEAC held on 25.02.2022, minutes received on 11.03.2022.

4. Minutes of the 494th meeting of SEIAA held on 17.03.2022.

Details of Minor Mineral Activity:-

This has reference to your application second cited. The proposal is for obtaining Environmental Clearance for mining / quarrying of minor minerals based on the particulars furnished in your application as shown below.

S.N	Particulars	Details furnished
1	Name of the Owner/Firm	Thiru.T.Thangavelu S/o.Kittusamy Rasapalayam, Punjai Palatholuvu Erode District-638751
2	Type of quarrying (Savudu/Rough Stone/Sand/Granite)	Rough Stone and Gravel

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3	S.F No. Of the quarry site with area break-up	70/A2, 70/B2 & 70/C2(P)
4	Village in which situated	Keeranur
5	Taluk in which situated	Kangeyam
6	District in which situated	Tiruppur
7	Extent of quarry (in ha.)	1.43.0 ha Patta land
8	Period of quarrying proposed	5 years
9	Type of mining	Opencast Mechanized mining
10	Production (Quantity in m^3)	117756m^3 of Rough Stone and 9646 m^3 of Gravel
11	Latitude & Longitude of all corners of the quarry site	11°03'59.27"N to 11°04'03.16"N 77°33'57.87"E to 77°34'03.54"E
12	Top Sheet No.	58 E/12
13	Man Power requirement per day:	19 Nos.
14	Precise area communication approved by the Assistant Director, Department of Geology & Mining with date	Na.Ka.No. 88/Mines/2021 Dated 09.07.2021
15	Mining Plan approved by the Deputy Director, Department of Geology and mining with date	Rc.No. 88/2021/Mines Dated 19.07.2021.
16	Deputy Director, Department of Geology & Mining, 500m cluster letter	Rc.No. 88/2021/Mines Dated 19.07.2021
17	Water requirement: 1. Drinking & domestic purposes (in KLD) 2. Dust suppression , Green Belt (in KLD)	2.0 KLD 0.5 KLD 1.0KLD, 0.5KLD
18	Power requirement a. Domestic Purpose b. Industrial Purpose	 TNEB 95818 ltrs of HSD for entire life of mine
19	Depth of quarrying	42m below ground level
20	Depth of water table	62m-58m
21	Whether any habitation within 300m distance	No as per VAO letter dated 02.08.2021

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22	Project Cost	Rs.45.95 Lakhs
23	EMP cost	Rs. 15.77 Lakhs
24	CER cost	Rs.5.00,000 Lakhs as per SEAC minutes
25	**Validity:** **This Environmental Clearance is granted for the production in 117756m3 of Rough Stone and 9646 m3 of Gravel for the period of 5 Years from the date of execution of the mining lease.**	

The Proponent has furnished affidavit in Hundred Rupees stamp paper attested by the Notary stating that

I, Thiru.T.Thangavelu S/o.Kittusamy Rasapalayam, Punjai Palatholuvu Erode District-638751, solemnly declare and sincerely affirm that:

I have apply for getting prior Environmental Clearance to SEIAA, Tamil Nadu for quarry lease for quarrying of Proposed Rough & Gravel quarry over an extent of 1.43.0 Ha located at S.F. No. 70/A2, 70/B2 & 70/C2(P) Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu.

1. I swear to state and confirm that within 10km area of the quarry site, i have applied for environmental clearance, none of the following situated.

   There is no protected areas notified under the wild life (Protection) Act, 1972.

   a. Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and Control of Pollution) Act, 1974.
   b. Eco-Sensitive areas as notified,
   c. Interstate boundaries within 10km radius from the boundary of the proposed site.

2. I will complete the following Corporate Environment Responsibility (CER) activities before commencement of the quarrying activities.

CER Activity	Total Project Cost (Rs. In Lakh)	CER Cost 2.0% of project cost (Rs. In Lakh)
The applicant indents to involve CER activity like water purifier, medicine storage rack facilities to the nearby govt school at 2.0% from the total project cost.	45.95	0.92
Total Cost Allocation	**45.95**	**0.92**

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3. **The total area of following quarries within 500m radius from the periphery of the quarry site details as shown below.**

Sl.No	Name of the Lessee	Village	S.F.No	Extent Hects	Collector's Proceedings No &date	Lease period
a. Existing Quarry						
1	S.Manoharan	Keeranur	24/C2	2.27.5	877/Mines/2014 dated: 08.09.2017	08.09.2017 – 07.09.2022
2	P. Ramasamy	Keeranur	15(P), 16/3 (P)	1.21.0	116/2019/Mines dated: 28.08.2020	28.08.2020 – 27.08.2025
b. Abandoned / Expired Quarries						
-----Nil----						
c. Present Proposed Quarries						
1	K. Thangavel	Keeranur	70/A2, B2, C2(P)	1.43.0	-----	Proposed quarry

4. There will not be hindrance or disturbance to the people living no en-route nearby our quarry site while transporting the mineral our material and due to mining / quarrying activities.
5. There is no approved habitations within 500m radius from the periphery of my quarry.
6. I swear that afforestation will be carried out during the course of quarrying operation and maintained.
7. The required insurance will be taken in the name of the labourers working in my quarry site.
8. Approach road belongs to me only and no other private patta roads encountered.
9. I will not engage any child labour in our quarry site and I aware that engaging child labour is punishable under the law.
10. All types of safety / protective equipment will be provided to all the labourers working in my quarry.
11. No permanent structures, temples etc., are located within 500m radius from the periphery of my quarry.

I ensure to do all the social and Environmental commitment as mentioned in the mining plan to the best of my knowledge.

Details of 500M radius Proposed quarry:

The Project Proponent has submitted a copy of the letter obtained from the Deputy Director, Department of Geology & Mining, Tiruppur District in his letter Rc.No. 88/2021/Mines Dated

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19.07.2021 has stated that the details of other quarries (Proposed / Existing / Abandoned Quarries) within a radius 500m from the boundary of the proposed quarry site as follows:

Sl.No	Name of the Lessee	Village	S.F.No	Extent Hects	Collector's Proceedings No &date	Lease period
a. Existing Quarry						
1	S.Manoharan	Keeranur	24/C2	2.27.5	877/Mines/2014 dated: 08.09.2017	08.09.2017 07.09.2022
2	P. Ramasamy	Keeranur	15(P), 16/3 (P)	1.21.0	116/2019/Mines dated: 28.08.2020	28.08.2020 – 27.08.2025
b. Abandoned / Expired Quarries						
-----Nil----						
c. Present Proposed Quarries						
1	K. Thangavel	Keeranur	70/A2, B2, C2(P)	1.43.0	-----	Proposed quarry

Appraisal by SEAC:-

The proposal was placed in 249th SEAC meeting held on 25.02.2022. The project proponent has given a detailed presentation. The details of the project furnished by the proponent are given in the website (parivesh.nic.in).

The SEAC noted the following:

1. The Project Proponent Thiru.T.Thangavelu has applied for Environmental Clearance for the Proposed Rough & Gravel quarry over an extent of 1.43.0 Ha located at S.F. No. 70/A2, 70/B2 & 70/C2(P) Keeranur Village, Kangeyam Taluk, Tiruppur District, Tamil Nadu District,
2. The project/activity is covered under Category "B2" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. The Production for the five years states that total quantity should not exceed Rough stone – 1,17,756m3 & Gravel- 9,646m3. The ultimate depth of Mining is 42m (existing depth - 25m & proposed 17m) below ground level . EMP Budget- Rs. 15,77,000/- (inc Capital& Recurring cost)

Based on the presentation made by the proponent and the documents furnished, SEAC decided to **recommend the proposal for the grant of Environmental Clearance** for The production for the five years states that total quantity should not exceed Rough stone – 1,17,756m3 & Gravel- 9,646m3. The ultimate depth of Mining is 42m (existing depth -25m & proposed 17m) below ground level,

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subject to the standard conditions as per the **Annexure I** of this minutes & normal conditions stipulated by MOEF &CC, in addition to the following specific conditions.

1. 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 adhere EMP furnished.
2. As accepted by the PP the revised CER cost of Rs.5,00,000 shall be spent with activities, particularly (1)construction of Girls toilet with 24/7 water facility, (2)providing sanitary napkin along with Incinerator for the disposal (if applicable), (3) tree plantation(as per appendix) in consultation with concerned Government school HM located in Keeranur Village before obtaining CTO from TNPCB.

ANNEXURE-I

1. The proponent shall mandatorily appoint the required number of statutory officials and the competent persons in relevant to the proposed quarry size as per the provisions of Mines Act 1952 and Metalliferrous Mines Regulations, 1961.
2. The proponent shall erect fencing all around the boundary of the proposed area with gates for entry/exit before the commencement of the operation and shall furnish the photographs/map showing the same before obtaining the CTO from TNPCB.
3. Perennial maintenance of haulage road/village / Panchayat Road shall be done by the project proponent as required in connection with the concerned Govt. Authority.
4. The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total
   excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form of Short Term Permit (STP), Query license or any other name.
5. The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars

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issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.

6. The proponent shall ensure that the slope of dumps is suitably vegetated in scientific manner with the native species to maintain the slope stability, prevent erosion and surface run off. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps.
7. Perennial sprinkling arrangement shall be in place on the haulage road for fugitive dust suppression. Fugitive emission measurements should be carried out during the mining operation at regular intervals and submit the consolidated report to TNPCB once in six months.
8. The Project Proponent shall carry out slope stability study by a reputed academic/research institution such as NIRM, IIT, Anna University for evaluating the safe slope angle if the proposed dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC, Govt. of India, Chennai as well as SEIAA, Tamilnadu.
9. The Proponent shall ensure that the Noise level is monitored during mining operation at the project site for all the machineries deployed and adequate noise level reduction measures undertaken accordingly. The report on the periodic monitoring shall be submitted to TNPCB once in 6 months.
10. Proper barriers to reduce noise level and dust pollution should be established by providing greenbelt along the boundary of the quarrying site and suitable working methodology to be adopted by considering the wind direction.
11. 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 in consultation with the DFO, State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen **(as per appendix)**, Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
12. Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted in proper espacement as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall

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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

13. **Noise and Vibration Related:** (i) The Proponent shall carry out only the Controlled Blasting operation using NONEL shock tube initiation system during daytime. Usage of other initiation systems such as detonating cord/fuse, safety fuse, ordinary detonators, cord relays, should be avoided in the blasting operation. The mitigation measures for control of ground vibrations and to arrest fly rocks should be implemented meticulously under the supervision of statutory competent persons possessing the I / II Class Mines Manager / Foreman / Blaster certificate issued by the DGMS under MMR 1961, appointed in the quarry. No secondary blasting of boulders shall be carried out in any occasions and only the Rock Breakers (or) other suitable non-explosive techniques shall be adopted if such secondary breakage is required. The Project Proponent shall provide required number of the security sentries for guarding the danger zone of 500 m radius from the site of blasting to ensure that no human/animal is present within this danger zone and also no person is allowed to enter into (or) stay in the danger zone during the blasting. (ii) Appropriate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in operations of HEMM, etc. should be provided with ear plugs/muffs, (iii) Noise levels should be monitored regularly (on weekly basis) near the major sources of noise generation within the core zone.
14. Ground water quality monitoring should be conducted once in every six months and the report should be submitted to TNPCB.
15. The operation of the quarry should not affect the agricultural activities & water bodies near the project site and a 50 m safety distance from water body should be maintained without carrying any activity. The proponent shall take appropriate measures for "Silt Management" and prepare a SOP for periodical de-siltation indicating the possible silt content and size in case of any agricultural land exists around the quarry.
16. The proponent shall provide sedimentation tank / settling tank with adequate capacity for runoff management.
17. The proponent shall ensure that the transportation of the quarried materials shall not cause any hindrance to the Village people/Existing Village Road and shall take adequate safety precautionary measures while the vehicles are passing through the schools / hospital. The Project Proponent shall ensure that the road may not be damaged due to transportation of the

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quarried rough stones; and transport of rough stones will be as per IRC Guidelines with respect to complying with traffic congestion and density.

18. To ensure safety measures along the boundary of the quarry site, security guards are to be posted during the entire period of the mining operation.
19. After mining operations are completed, the mine closure activities as indicated in the mine closure plan shall be strictly carried out by the Proponent fulfilling the necessary actions as assured in the Environmental Management Plan.
20. The Project proponent shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition that is fit for the growth of fodder, flora, fauna etc.
21. The Project Proponent shall comply with the provisions of the Mines Act, 1952, MMR 1961 and Mines Rules 1955 for ensuring safety, health and welfare of the people working in the mines and the surrounding habitants.
22. The project proponent shall ensure that the provisions of the MMRD, 1956, the MCDR 2017 and Tamilnadu Minor Mineral Concession Rules 1959 are compiled by carrying out the quarrying operations in a skillful, scientific and systematic manner keeping in view proper safety of the labour, structure and the public and public works located in that vicinity of the quarrying area and in a manner to preserve the environment and ecology of the area.
23. The quarrying activity shall be stopped if the entire quantity indicated in the Mining plan is quarried even before the expiry of the quarry lease period and the same shall be informed to the District AD/DD (Geology and Mining) District Environmental Engineer (TNPCB)and the Director of Mines Safety (DMS), Chennai Region by the proponent without fail.
24. The Project Proponent shall abide by the annual production scheduled specified in the approved mining plan and if any deviation is observed, it will render the Project Proponent liable for legal action in accordance with Environment and Mining Laws.
25. Prior clearance from Forestry & Wild Life including clearance from committee of the National Board for Wildlife as applicable shall be obtained before starting the quarrying operation, if the project site attracts the NBWL clearance, as per the existing law from time to time.
26. All the conditions imposed by the Assistant/Deputy Director, Geology & Mining, concerned District in the mining plan approval letter and the Precise area communication letter issued by concerned District Collector should be strictly followed.

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27. The recommendation for the issue of environmental clearance is subject to the outcome of the Hon'ble NGT, Principal Bench, New Delhi in O.ANo.186 of 2016 (M.A.No.350/2016) and O.A.No.200/2016 and O.A.No.580/2016 (M.A.No.1182/2016) and O.A.No.102/2017 and O.A.No.404/2016 (M.A.No. 758/2016, M.A.No.920/2016, M.A.No.1122/2016, M.A.No.12/2017 & M.A.No.843/2017) and O.A.No.405/2016 and O.A.No.520 of 2016(M.A.No.981/2016, M.A.No.982/2016 & M.A.No.384/2017).

28. That the grant of this E.C. is issued from the environmental angle only, and does not absolve the project proponent from the other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility, to comply with the conditions laid down in all other laws for the time-being in force, rests with the project proponent.

ANNEXURE-II

List of Native Trees Suggested for Planting

1. ***Aegle marmelos*** – Vilvam
2. ***Adenaanthera pavonina*** - Manjadi
3. ***Albizia lebbeck*** – Vaagai
4. ***Albizia amara*** - Usil
5. ***Bauhinia purpurea*** - Mantharai
6. ***Bauhinia racemosa*** - Aathi
7. ***Bauhinia tomentosa*** Iruvathi
8. ***Buchanania aillaris*** - Kattuma
9. ***Borassus flabellifer*** - Panai
10. ***Butea monosperma*** - Murukka maram
11. ***Bobax ceiba*** - Ilavu, Sevvilavu
12. ***Calophyllum inophyllum*** - Punnai
13. ***Cassia fistula*** - Sarakondrai
14. ***Cassia roxburghii***- Sengondrai
15. ***Chloroxylon sweitenia*** - Purasa maram
16. ***Cochlospermum religiosum*** – Kongu, Manjal Ilavu
17. ***Cordia dichotoma*** – Mookuchali maram
18. ***Creteva adansonii*** – Mavalingum
19. ***Dillenia indica*** Uva, Uzha

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20. ***Dillenia pentagyna*** Siru Uva, Sitruzha
21. ***Diospyros ebenum*** - Karungali
22. ***Diospyros chloroxylon*** - Vaganai
23. ***Ficus amplissima*** Kal Itchi
24. ***Hibiscus tiliaceous*** – Aatru poovarasu
25. ***Hardwickia binata*** – Aacha
26. ***Holoptelia integrifolia*** - Aayili
27. ***Lannea coromandelica*** - Odhiam
28. ***Lagerstroemia speciosa*** - Poo Marudhu
29. ***Lepisanthus tetraphylla*** - Neikottai maram
30. ***Limonia acidissima*** - Vila maram
31. ***Litsea glutinosa*** - Pisin pattai
32. ***Madhuca longifolia*** - Illuppai
33. ***Manilkara hexandra*** – Ulakkai Paalai
34. ***Mimusops elengi*** - Magizha maram
35. ***Mitragyna parvifolia*** - Kadambu
36. ***Morinda pubescens*** – Nuna
37. ***Morinda citrifolia*** – Vellai Nuna
38. ***Phoenix sylvestre*** - Eachai
39. **Pongamia pinnata** – Pungam
40. **Premna mollissima** - Munnai
41. **Premna serratifolia** – Narumunnai
42. **Premna tomentosa** - Purangai Naari, Pudanga Naari
43. **Prosopis cinerea** - Vanni maram
44. **Pterocarpus marsupium** - Vengai
45. **Pterospermum canescens** – Vennangu, Tada
46. **Pterospermum xylocarpum** - Polavu
47. **Puthranjiva roxburghii** – Puthranjivi
48. **Salvadora persica** Ugaa Maram
49. **Sapindus emarginatus** - Manipungan, Soapu kai
50. **Saraca asoca** - Asoca
51. **Streblus asper** - Piraya maram

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52. **Strychnos nuxvomica** – Yetti

53. **Strychnos potatorum** - Therthang Kottai

54. **Syzygium cumini** - Naval

55. **Terminalia bellerica** - Thandri

56. **Terminalia arjuna** - Ven marudhu

57. **Toona ciliate** – Sandhana vembu

58. **Thespesia populnea** - Puvarasu

59. **Walsura trifoliata** – valsura

60. **Wrightia tinctoria** - Vep

Discussion by SEIAA and the Remarks:-

The proposal was placed in the 493rd Authority meeting held on 17.03.2022. After detailed discussion, the Authority accepts the recommendation of SEAC and decided to grant Environmental Clearance subject to the conditions as recommended by SEAC in addition to the following condition.

1. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 as accepted by the proponent the revised CER cost of Rs.5,00,000 shall be spent with activities, particularly (1)construction of Girls toilet with 24/7 water facility, (2) providing sanitary napkin along with Incinerator for the disposal (if applicable), (3) tree plantation(as per SEAC minutes in appendix) in consultation with concerned Government school HM located in Keeranur Village before obtaining CTO from TNPCB.
2. No trees in the area should be removed and all the trees numbered and protected. In case trees fall within the proposed come quarry site the trees may be transplanted in the Greenbelt zone.
3. The proponent shall ensure that the activities should in no way result in disturbance to forest and trees in vicinity.
4. The proponent shall ensure that the operations shall not result in loss of soil biological properties and nutrients.
5. The activity should not result in Co_2 release and temperature rise and add to micro climate alternations.
6. The mining closure plan should be strictly adhered with appropriate soil rehabitation measures to ensure ecological stability of the area.
7. Reclamation/Restoration of the mine site should ensure that the Geotechnical, physical, chemical properties are sustainable that the soil structure composition is buildup, during the process of restoration.

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8. The proponent shall ensure that the activity does not disturb the movement of grazing animals and free ranging wildlife.
9. The proponent shall ensure that the activity does not disturb the biodiversity, the flora & fauna in the ecosystem.
10. The proponent shall ensure that the activity does not disturb the water bodies and natural flow of surface and ground water, nor cause any pollution, to water sources in the area.
11. The proponent shall ensure that the activities undertaken should not result in carbon emission, and temperature rise, in the area.
12. The proponent shall ensure that the mine closure plan are followed as per mining plan and the mine restoration should be done with native species, and site restored to near original status.
13. The proponent shall ensure that Monitoring be carried out with reference to the quantum of particulate matter during excavation; blasting; material transport and also from cutting waste dumps and haul roads.
14. The proponent shall ensure that the area is ecologically restored to conserve the ecosystems and ensure flow of goods and services.
15. The proponent shall ensure that the activities shall not disturb the agro biodiversity and agro farms.
16. The proponent shall ensure that the activity shall not result in invasion by invasive alien species.
17. Actions to be taken to promote agro forestry, mixed plants to support biodiversity conservation in the mine restoration effort.
18. The proponent shall ensure that activity shall not deplete the indigenous soil seed bank and disturb the mycorrizal fungi, soil organism, soil community nor result in eutrophication of soils and water.
19. The activities should not disturb the soil properties and seed and plant growth. Soil amendments as required to be carried out, to improve soil heath
20. Bio remediation using an microorganisms should be carried out to restore the soil environment to enable carbon sequestration.
21. The proponent shall ensure that all mitigation measures listed in the EIA/EMP are taken to protect the biodiversity and natural resources in the area.
22. The proponent shall ensure that the activities should not impact the water bodies/wells in the neighbouring open wells and bore wells.

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23. The proponent shall ensure that the activities should not in any way affect the water quantity and quality in the open wells and bore wells in the vicinity, nor impact the water table and levels.
24. The proponent shall ensure that in the green belt development more indigenous trees species (Appendix as per the SEAC Minutes) to be planted.
25. The proponent shall ensure that the activities should not disturb the resident and migratory birds.
26. The proponent shall ensure the area should be restored and rehabilitated with native trees as recommended SEAC Minutes (in Appendix).
27. The proponent shall ensure that the mine restoration should be done using mycorrizal VAM, vermicasting, Biofertilizers to ensure soil health and, biodiversity conservation.
28. The proponent shall ensure that the topsoil should be protected and used in planting activities in the area.
29. The proponent shall ensure that the activities should not disturb the river flow, nor affect the Odai, Water bodies, Dams in the vicinity.
30. The proponent shall ensure that the activities should not disturb the vegetation and wildlife in the adjoin reserve forests and areas around.
31. The proponent should ensure that there is no disturbance to the agriculture plantations, social forestry plantations, waste lands, forests, sanctuary or national parks. There should be no impact on the land, water, soil and biological environment and other natural resources due to the mining activities.
32. The proponent shall ensure that topsoil to be utilized for site restoration and Green belt alone within the proposed area.

Part-A: Conditions to be Complied before commencing mining operations:-

1. **The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing the public that**
   - I. **The project has been accorded Environmental Clearance.**
   - II. **Copies of clearance letters are available with the Tamil Nadu Pollution Control Board.**
   - III. **Environmental Clearance may also be seen on the website of the SEIAA.**

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IV. **The advertisement should be made within 7 days from the date of receipt of the clearance letter and a copy of the same shall be forwarded to the SEIAA.**

2. Mining activity should be reviewed by the District Collector after three years and decide for further extension.
3. NOC from the Standing committee of the NBWL shall be obtained, if protected areas are located within 10 Km from the proposed project site.
4. The project proponent shall comply the conditions laid down in the Section V, Rule 36 of Tamil Nadu Minor Minerals Concession Rules 1959.
5. **A copy of the Environment Clearance letter shall be sent by the proponent to the concerned Panchayat, Town Panchayat / Panchayat union/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the proponent and also kept at the site, for the general public to see.**
6. Quarry lease area should be demarcated on the ground with wire fencing to show the boundary of the lease area on all sides with red flags on every pillar shall be erected before commencement of quarrying.
7. The proponent shall ensure that First Aid Box is available at site.
8. The excavation activity shall not alter the natural drainage pattern of the area.
9. The excavated pit shall be restored by the project proponent for useful purposes.
10. The proponent shall quarry and remove only in the permitted areas as per the approved Mining Plan details.
11. The quarrying operation shall be restricted between 7AM and 5 PM.
12. The proponent shall take necessary measures to ensure that there shall not be any adverse impacts due to quarrying operation on the nearby human habitations, by way of pollution to the environment.
13. A minimum distance of 50mts. from any civil structure shall be kept from the periphery of any excavation area.
14. Depth of quarrying should be as per approved mining plan.
15. The mined out pits should be backfilled where warranted and area should be suitably landscaped to prevent environmental degradation. The mine closure plan as furnished in the proposal shall be strictly followed with back filling and tree plantation.

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16. Wet drilling method is to be adopted to control dust emissions. Delay detonators and shock tube initiation system for blasting shall be used so as to reduce vibration and dust.
17. Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
18. Blasting shall be carried out after announcing to the public adequate through public address system to avoid any accident.
19. A study has to be conducted to assess the optimum blast parameters and blast design to keep the vibration limits less than prescribed levels and only such design and parameters should be implemented while blasting is done. Periodical monitoring of the vibration at specified location to be conducted and records kept for inspection.
20. The Proponent shall take appropriate measures to ensure that the GLC shall comply with the revised NAAQ norms notified by MoEF& CC, GoI on 16.11.2009.
21. The following measures are to be implemented to reduce Air Pollution during transportation of mineral
    i. Roads shall be graded to mitigate the dust emission.
    ii. Water shall be sprinkled at regular interval on the main road and other service roads to suppress dust
22. The following measures are to be implemented to reduce Noise Pollution
    i. Proper and regular maintenance of vehicles and other equipment
    ii. Limiting time exposure of workers to excessive noise.
    iii. The workers employed shall be provided with protection equipment and earmuffs etc.
    iv. Speed of trucks entering or leaving the mine is to be limited to moderate speed of 25 kmph to prevent undue noise from empty trucks.
    v. All noise generating machinery the compressor, generator to be enclosed in acoustic enclosure so as to reduce noise in working area.
23. Measures should be taken to comply with the provisions laid under Noise Pollution (Regulation and Control) (Amendment) Rules, 2010. dt: 11.01.2010 issued by the MoEF& CC, GoI to control noise to the prescribed levels.
24. Suitable conservation measures to augment groundwater resources in the area shall be planned and implemented in consultation with Regional Director, CGWB. Suitable measures should be taken for rainwater harvesting.

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25. Permission from the competent authority should be obtained for drawl of ground water, if any, required for this project.
26. Topsoil, if any, shall be stacked properly with proper slope with adequate measures and should be used for plantation purpose.
27. The following measures are to be adopted to control erosion of dumps:-
    i. Retention/ toe walls shall be provided at the foot of the dumps.
    ii. Worked out slopes are to be stabilized by planting appropriate shrub/ grass species on the slopes.
28. Waste oils, used oils generated from the EM machines, mining operations, if any, shall be disposed as per the Hazardous& other wastes (Management, and Trans Boundary Movement) Rules, 2016 and its amendments thereof to the recyclers authorized by TNPCB.
29. Concealing the factual data or failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
30. Rain water harvesting to collect and utilize the entire water falling in land area should be provided.
31. Rain water getting accumulated in the quarry floor shall not be discharged directly to the nearby stream or water body. If it is to be let into the nearby water body, it has to be discharged into a silt trap on the surface within the lease area and only the overflow after allowing settling of soil be let into the nearby waterways. The silt trap should be of sufficient dimensions to catch all the silt water being pumped out during one season. The silt trap should be cleaned of all the deposited silt at the end of the season and kept ready for taking care of the silt in the next season.
32. The lease holder shall undertake adequate safeguard measures during extraction of material and ensure that due to this activity, the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area during the mining operation. If at any stage, if it is observed that the groundwater table is getting depleted due to the mining activity; necessary corrective measures shall be carried out. District Collector/mining officer shall ensure this.
33. No tree-felling shall be done in the leased area, except only with the permission from competent Authority.

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34. To take up environmental monitoring of the proposed quarry site before, during and after the mining activities including vibration study data, water, air & flora/fauna environment, slurry water generated/disposed and method of disposal, involving a reputed academic Institution.
35. It shall be ensured that the total extent of nearby quarries(existing, abandoned and proposed) located within 500 meter radius from the periphery of this quarry is not exceeding 5 hectares within the mining lease period of this application.
36. It shall be ensured that there is no habitation is located within 300 meter radius from the periphery of the quarry site and also ensure that no hindrance will be caused to the people of the habitation located within 300m radius from the periphery of the quarry site.
37. Free Silica test should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.
38. Air sampling at intersection point should be conducted and reported to TNPCB, Department of Geology and Mining and Regional Director, MoEF& CC, GOI.
39. Bunds to be provided at the boundary of the project site.
40. The project proponent shall undertake plantation/afforestation work by planting the native species on all side of the lease area at the rate of 400/Ha. Suitable tall tree saplings should be planted on the bunds and other suitable areas in and around the work place.
41. Floor of excavated pit to be levelled and sides to be sloped with gentle slope (Except for granite quarries) in the mine closure phase.
42. The Project Proponent shall ensure a minimum of 2.5% of the annual turnover will be utilized for the CSR Activity
43. The Project Proponent shall provide solar lighting system to the nearby villages.
44. Earthen bunds and barbed wire fencing around the pits with green belt all along the boundary shall be developed and maintained.
45. Safety equipments to be provided to all the employees.
46. Safety distance of 50m has to be provided in case of railway, reservoir, canal/odai
47. The Assistant/Deputy Director, Department of Geology & mining shall ensure that the proponent has engaged the blaster with valid Blasting license/certificate obtained from the competent authority before execution of mining lease.
48. The proponent shall furnish the Baseline data covering the Air, Water, Noise and land environment quality for the proposed quarry site before execution of mining lease.

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49. The proponent shall erect the pillars in accordance with the Rules for depicting GPS details in the earmarked boundary of the quarry site to monitor electronically before execution of mining.
50. The proponent has to provide insurance protection to the workers in the case of existing mining or provide the affidavit in case of fresh lease before execution of mining lease.
51. The proponent has to display the name board at the quarry site showing the details of Proponent, lease period, extent, etc., with respect to the existing activity before execution of mining.
52. Heavy earth machinery equipments if utilized, after getting approval from the competent authority.
53. The Proponent shall ensure that the project activity including blasting, mining transportation etc should in no way have adverse impact to the other forests, such as reserve forests and social forests, tree plantation and bio diversity, surrounding water bodies etc.
54. The proponent shall provide Green Belt development at the rate of not less than 400 trees/Hectare. The tree saplings shall be not less than 3m height.
55. The fugitive emissions should be monitored during the mining activity and should be reported to TNPCB once in a month and the operation of the quarry should no way impact the agriculture activity & water bodies near the project site.
56. All the commitment made by the project proponent in the proposal shall be strictly followed.
57. The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
58. The Project proponent has to strictly comply the outcome/direction of the Hon'ble NGT, Principle Bench, New Delhi in the O.A No.186 of 2016 (M.A.No.350/2016), O.A. No.200/2016, O.A.No.580/2016 (M.A.No.1182/2016), O.A.No.102/2017, O.A.No.404/ 2016 (M.A.No. 758/2016, M.A. No. 920 /2016, M.A.No.1122/2016, M.A.No. 12/2017 & M.A.No.843/2017), O.A.No.405/2016 and O.A.No.520 of 2016 (M.A.No.981/2016, M.A.No.982/2016 & M.A.No.384/2017).

Part B:<u>General Conditions:</u>

1. EC is given only on the factual records, documents and the commitment furnished in non judicial stamp paper by the proponent.

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2. The Proponent shall obtain the Consent from the TNPC Board before commencing the activity.
3. No change in mining technology and scope of working should be made without prior approval of the SEIAA, Tamil Nadu.
4. No change in the calendar plan including excavation, quantum of mineral (minor mineral) should be made.
5. Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
6. Effective safeguards shall be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation of earth.
7. A berm shall be left from the boundary of adjoining field having a width equal to at least half the depth of proposed excavation.
8. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
9. Vehicular emissions shall be kept under control and be regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.
10. Access and haul roads to the quarrying area should be restored in a mutually agreeable manner where these are considered unnecessary after extraction has been completed.
11. All Personnel shall be provided with protective respiratory devices including safety shoes, masks, gloves etc. Supervisory people should be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.
12. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly. The workers shall be provided with personnel protective measures such as masks, gloves, boots etc.
13. Workers/labourers shall be provided with facilities for drinking water and sanitation facility for Female and Male separately.

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14. The project proponent shall ensure that child labour is not employed in the project as per the sworn affidavit furnished.
15. The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests and its Regional Office located at Chennai.
16. The Environmental Clearance does not absolve the applicant/proponent of his obligation/requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
17. This Environmental Clearance does not imply that the other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would be considering the project on merits and be taking decisions independently of the Environmental Clearance
18. The SEIAA, Tamil Nadu may alter/modify the above conditions or stipulate any further conditions in the interest of environment protection.
19. The SEIAA, Tamil Nadu may cancel the Environmental Clearance granted to this project under the provisions of EIA Notification, 2006, at any stage of the validity of this Environmental Clearance, if it is found or if it comes to the knowledge of this SEIAA, TN that the project proponent has deliberately concealed and/or submitted false or misleading information or inadequate data for obtaining the Environmental Clearance.
20. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.
21. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986. the Public Liability Insurance Act, 1991, along with their amendments, Minor Mineral Conservation & Development Rules, 2010 framed under MMDR Act 1957,National Commission for protection of Child Right Rules,2006, Wildlife Protection Act, 1972, Forest Conservation Act, 1980, Biodiversity Conservation Act, 2016, the Biological Diversity Act,2002 and Biological diversity Rules, 2004 and Rules made there under and also any other orders passed by the Hon'ble Supreme

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Court of India/Hon'ble High Court of Madras and any other Courts of Law relating to the subject matter.

22. Any other conditions stipulated by other Statutory/Government authorities shall be complied.
23. Any appeal against this Environmental Clearance shall lie with the Hon'ble National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
24. The Environmental Clearance is issued based on the documents furnished by the project proponent. In case any documents found to be incorrect/not in order at a later date the Environmental Clearance issued to the project will be deemed to be revoked/ cancelled.

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Copy to:

1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi.
2. The Additional Chief Secretary to Government, Environment and Forests Department, Tamil Nadu.
3. The Additional Chief Secretary to Government, Industries Department, Tamil Nadu.
4. The Additional Principal Chief Conservator of Forests, Regional Office (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai – 34.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
6. The Chairman, TNPC Board,76, Mount Salai,Guindy, Chennai-32
7. The District Collector, Tiruppur District
8. The Commissioner of Geology and Mines,Guindy,Chennai-32
9. EI Division, Ministry of Environment & Forests, ParyavaranBhawan, New Delhi Spare.
10. File Copy

Signature Not Verified
Digitally signed by Tmt.P.RAJESWARI,IFS
Member Secretary
Date: 3/28/2022 7:43:08 PM

360 A

400 A

கூட்டுவுகைப்படம்

மாவட்டம் : திருப்பூர்

வட்டம் : காங்கயம்

கிராமம் : எண் : 07

கூட்டுவுகைப்படம்

மாவட்டம் : திருப்பூர்

வட்டம் : காங்கயம்

கிராமம் : எண் : 07

மாவட்டம் : திருப்பூர்

வட்டம் : காங்கயம்

கிராமம் : எண் : 07

கூட்டுவுகாரப்படம்

மாவட்டம் : திருப்பூர்

வட்டம் : காங்கயம்

கிராமம் : எண் : 07

கூட்டுவுகாரப்படம்

அனுப்புநர்
ஆ. பெலிக்ஸ் ராஜா.,
வருவாய் கோட்டாட்சியர்,
தாராபுரம்.

பெறுநர் :-
உதவி இயக்குநர்,
புவியியல் மற்றும் சுரங்கத்துறை,
திருப்பூர்.

ந.க. 1980/ 2024 / இ

நாள் :02.07.2025.

ஐயா,

பொருள் **கனிமங்களும் சுரங்கங்களும் - சாதாரண கற்கள் - திருப்பூர் மாவட்டம் - காங்கயம் வட்டம் - கீரனூர் கிராமம் புல எண்கள்: 71/A-ல் பு.தெறக்:1.31.0 பட்டா நிலப்பரப்பில் சாதாரண கற்கள் / கிராவல் மண் வெட்டியெடுக்க 10 ஆண்டுகளுக்கு குவாரி குத்தகை உரிமம் கோரி திரு.முத்துசாமி மனு செய்தது - காங்கயம் வட்டாட்சியரின் அறிக்கை வரப்பெற்றது - அறிக்கை அனுப்புதல் தொடர்பாக.**

பார்வை
1. உதவி இயக்குநர் புவியியல் மற்றும் சுரங்கத்துறை திருப்பூர் அவர்களின் ந.க.845/கனிமம்/2025 நாள்:13.05.2025
2. இவ்வலுவலக குறிப்பாணை ந.க.1980/2025/இ, நாள்:19.05.2025.
3. காங்கயம் வட்டாட்சியரின் ந.க.1764/2025/அ10, நாள்:17.06.2025.

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திருப்பூர் மாவட்டம், ஊத்துக்குளி வட்டம், மொரட்டுப்பாளையம் கிராமம், தெற்கு வீதி க.எண்.77 என்ற முகவரியில் வசிக்கும் திரு.முத்துசாமி த/பெ.ரங்கசாமி என்பவர், திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண்.71/A தெ.காலையில் பு.தெறக்டேர் 1.31.0 பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கக்கோரி மனு செய்திருந்ததின் பேரில், பார்வை 3-ல் காணும் காங்கயம் வட்டாட்சியரின் அறிக்கையின்பேரில் புலத்தணிக்கை மற்றும் விசாரணை எனது அறிக்கையினை கீழ்க்கண்டவாறு சமர்ப்பித்துக் கொள்கிறேன்.

1.குத்தகை வழங்கக் கோரும் புலத்தில் எல்லைகள் வரையறுக்கப்பட்டு எல்லைகற்கள் நடப்பட்டுள்ளது.அதன் புகைப்பட நகல் இத்துடன் இணைக்கப்பட்டுள்ளது.

2.குத்தகை வழங்கக் கோரும் புலத்தில் மனுதாருக்கு குத்தகை வழங்குவது தொடர்பாக கீரனூர் கிராமத்தில் 26.05.2025 அன்று "அ1" விளம்பரம் செய்யப்பட்டுள்ளது. நாளதுவரை ஆட்சேபணை ஏதும் வரப்பெறவில்லை. மனுதாருக்கு குத்தகை உரிமம்வழங்குவது சம்மந்தமாக பொதுமக்களுக்கு எவ்வித ஆட்சேபணையும் இல்லை என வாக்குமூலம் பெறப்பட்டு இணைக்கப்பட்டுள்ளது.

3. மேற்படி கிராமத்தில், குத்தகை வழங்கக் கோரும் புலத்தில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க அனுமதி கோரும் புலத்திலிருந்து சுமார் 150 மீ தொலைவில்

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கொடுப்பனித்துறை வாய்க்கால் உள்ளது. சுமார் 220 மீ தொலைவில் புல எண்.
ஆகிய காலைகளில் திரு.லிங்குசாமி, திரு.கோவிந்தசாமி மற்றும் ஆட்சியம்மாள்
ஆகியோருக்கு பாத்தியப்பட்ட ஒட்டுவில்லை வீடுகள் மூன்றும்,புல எண். 78/A2B காலையில்
திரு.செல்லப்பகவுண்டர் என்பவருக்கு பாத்தியப்பட்ட ஒட்டுவில்லை வீடு ஒன்றும், உள்ளது.
சுமார் 170 மீ தொலைவில் புல எண்.71/F1, 71/F2A, 71/G2A ஆகிய காலைகளில்
திரு.செந்தில்குமார் என்பவருக்கு பாத்தியப்பட்ட கோழிப்பண்ணை மற்றும் சுமார் 250 மீ
தொலையில் திரு.செந்தில்குமார் என்பவருக்கு பாத்தியப்பட்ட தார்சு வீடு ஒன்றும்
அமைந்துள்ளது. மேற்படி புல எண்.71/A தெ.காலையில் திரு.முத்துசாமி என்பவர் குவாரி
அமைப்பதில் ஆட்சேபனை ஏதுமில்லை என மேற்கண்ட நபர்களிடம், "அ1" விளம்பரத்தில்
ஒப்புதல் பெற்று இத்துடன் இணைக்கப்பட்டுள்ளது. மேலும் மேற்படி புல எண்.71/A
புலத்திலிருந்து 300 மீ சுற்றளவில் வீர் நத்தம், அங்கீகரிக்கப்பட்ட குடியிருப்பு மனைகள்,
மயானம்,கோவில், புராதான சின்னங்கள் மற்றும் வனக்காடுகள், பள்ளி கட்டிடங்கள்
ஏதுமில்லை என உள்வட்ட நில அளவரின் வரைபட நகல், புலத்தணிக்கை மற்றும் கிராம்
ஆவணங்களின் படி தெரியவருகிறது.

4. மேற்படி கிராமத்தில், குத்தகை வழங்கக் கோரும் புலத்திலிருந்து 50 மீட்டர்
சுற்றளவில் உயர் மின்னழுத்த கம்பிகள் மற்றும் அரசு புறம்போக்கு நீர்நிலைகள் ஏதுமில்லை.

5. மேற்படி அனுமதி கோரும் புல எண்.71/A காலை அருகிலேயே கிழபுறம் 70/A2,
70/B2, 70/C2 ஆகிய காலைகளில் திரு.தங்கவேல் என்பவருக்கு பாத்தியப்பட்ட விநாயகா
குவாரியும், மேற்புறம் புல எண்.66/1 மற்றும் 66/2 ஆகிய காலையில் மேற்படி மனுதாரர்
திரு.முத்துசாமி என்பவருக்கு பாத்தியப்பட்ட முத்துசாமி குவாரியும், புல எண்.64/1, 64/2A,
64/2B ஆகிய காலைகளில் SRK புளு மெட்டல்ஸ் என்ற கிரசர் மற்றும் எம்.சாண்டு யூனிட்
ஆகியவை செயல்பட்டு வருகிறது.

5. திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம்,புல எண்.71/A
தெ.காலையில் மு.ஹெக்டேர் 1.31.0 மொத்தப்பரப்பளவில் மு.ஹெக்டேர் 1.31.0 பரப்பளவுள்ள
பூமியானது, சென்னிமலை சார்பதிவாளர் அலுவலக கிரைய பத்திர எண்.2266/2008
நாள்.01.09.2008-ன்படி மனுதாரர் திரு.முத்துசாமி மற்றும் அவரது சகோதரர்
திரு.நடராஜன் ஆகியோருக்கு கூட்டாக பாத்தியப்பட்டு, பின்பு சென்னிமலை சார்பதிவாளர்
அலுவலக பாக பாத்திய விடுதலைப்பத்திரம் ஆவணஎண்.2293/2021, நாள்.17.06.2021
மற்றும் ஆவணஎண்.2402/2021, நாள்.30.06.2021-ன்படி மனுதாரர் திரு.முத்துசாமி
என்பவருக்கு தனியாக பாத்தியப்பட்டு, மேற்படி பூமி மனுதாரரின் அனுபவத்தில் உள்ளது.

மேலும் கீரனூர் கிராமக் கணக்குகளின்படிபுல எண்.71/A தெ.காலையில் மு.ஹெக்டேர்
1.31.0 பூமியானது,பட்டா எண்.417-ன்படி திரு.ரங்கசாமி மகன் முத்துசாமி பெயரில்
தனிப்பட்டாவாக தாக்கலாகியுள்ளது.

01. மேற்குறிப்பிட்ட புலம் அரசு புறம்போக்கு நிலம் இல்லை.

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02. பிரஸ்தாப புலம் கையகப்படுத்தும் சட்டம் 1884 பிரிவு 4(1)-ன் கீழ் அறிவிப்பு ஏதும் செய்யப்படவில்லை. நிலத்திட்ட அட்டவணை ஏதும் நிலுவையில்லை.

03. நிலச்சீர்திருத்த சட்டம் 1961-ன் வரம்புபடவில்லை.

04 நகர்ப்புற உச்சவரம்பு சட்டம் 1978-ன் கீழ் உட்படவில்லை.

05. பிரஸ்தாப புலம் மழை மற்றும் வெள்ளப்பெருக்கில் பாதிக்கப்படாத பூமியாகும்.

06. பிரஸ்தாப புலத்தில் அரசு கட்டிடங்கள், கோவில், மசூதி, புராதன சின்னங்கள், சுடுகாடு மற்றும் இடுகாடு ஏதும் இல்லை.

07. பிரஸ்தாப புலத்தில் விமான ஓடுதளம், ரயில்பாதை, மனைப்பிரிவு ஏதும் இல்லை.

08. மேற்படி புலத்தில் விவசாயப்பணிகள் எதுவும் மேற்கொள்ளப்படாமல் இருந்துவருகிறது.

09. புலத்தில் எல்லைகள் வரையறை செய்யப்பட்டு, எல்லைகற்கள் நடப்பட்டு பராமரிக்கபட்டு வருகின்றன.

10. மேற்படி புலத்தின் உரிமை மற்றும் எல்லைகள் தொடர்பான தாவாக்கள் நீதிமன்ற வழக்குகள் எதுவும் நிலுவை இல்லை.

மேலும், மேற்படி பூமிக்கு நிலவரி, வருமான வரி, கனிம வரி போன்றவை எதுவும் இல்லை என்று 67607 உறுதிமொழி பத்திரம் கொடுத்துள்ளார் என்பதையும் தெரிவித்துக்கொள்கிறேன். சிறு கனிம சட்டம் 1959-ன்படி விதிகளுக்குட்பட்டு நடப்பதாக மனுதாரர் வாக்குமூலம் அளித்துள்ளார்.

எனவே, மனுதாரர் திரு-முத்துசாமி த/பெ.ரங்கசாமி என்பவருக்கு, காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண்.71/A நெ.காலையில் 0.தெருக்டேர் 1.31.0 பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்க பரிந்துரை செய்தும், மேலும், இத்துடன் காங்கயம் வட்டாட்சியரின் அறிக்கை, மனுதாரர் வாக்குமூலம், அ-1 விளம்பரம், பொதுமக்கள் வாக்குமூலம் மற்றும் தொடர்புடைய கிராம ஆவணங்கள் இணைக்கப்பட்டுள்ளது.

இணைப்பு:-மேற்கண்டவாறு.

வருவாய் கோட்டாட்சியர்
தாராபுரம்.

2.7.25

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தாராபுரம் வருவாய் கோட்டாட்சியரின் புலத்தணிக்கை குறிப்பு

வட்டம்	காங்கயம்
கிராமம்	கீரனூர்
புல எண்	ச.எ.71/A
தணிக்கை நாள்	25.06.2025

திருப்பூர் மாவட்டம், ஊத்துக்குளி வட்டம், மொரட்டுப்பாளையம் கிராமம், தெற்கு வீதி க.எண்.77 என்ற முகவரியில் வசிக்கும் திரு.முத்துசாமி த/பெ.ரங்கசாமி என்பவர், திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண்.71/A தெ.காலையில் 1.31.0 பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கக்கோரி மனு செய்திருந்ததின் பேரில், காங்கயம் வட்டாட்சியர் பரிந்துரை செய்து அறிக்கை அளித்ததன்பேரில் புலத்தணிக்கை இன்று (25.06.2025) மேற்கொள்ளப்பட்டது.

1.குத்தகை வழங்கக் கோரும் புலத்தில் எல்லைகள் வரையறுக்கப்பட்டு எல்லைகற்கள் நடப்பட்டுள்ளது.அதன் புகைப்பட நகல் இத்துடன் இணைக்கப்பட்டுள்ளது.

2.குத்தகை வழங்கக் கோரும் புலத்தில் மனுதாரருக்கு குத்தகை வழங்குவது தொடர்பாக கீரனூர் கிராமத்தில் 26.05.2025 அன்று "அ1" விளம்பரம் செய்யப்பட்டுள்ளது. நாளதுவரை ஆட்சேபனை ஏதும் வரப்பெறவில்லை. மனுதாரருக்கு குத்தகை உரிமம்வழங்குவது சம்மந்தமாக பொதுமக்களுக்கு எவ்வித ஆட்சேபனையும் இல்லை என வாக்குமூலம் பெறப்பட்டு இணைக்கப்பட்டுள்ளது.

3. மேற்படி கிராமத்தில், குத்தகை வழங்கக் கோரும் புலத்தில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க அனுமதி கோரும் புலத்திலிருந்து சுமார் 150 மீ தொலைவில் பொதுப்பணித்துறை வாய்க்கால் உள்ளது. சுமார் 220 மீ தொலைவில் புல எண். 77/B2,B3 ஆகிய காலைகளில் திரு.லிங்குசாமி, திரு.கோவிந்தசாமி மற்றும் ஆட்சியம்மாள் ஆகியோருக்கு பாத்தியப்பட்ட ஓட்டுவில்லை வீடுகள் மூன்றும்,புல எண். 78/A2B காலையில் திரு.செல்லப்பகவுண்டர் என்பவருக்கு பாத்தியப்பட்ட ஓட்டுவில்லை வீடு ஒன்றும், உள்ளது. சுமார் 170 மீ தொலைவில் புல எண்.71/F1, 71/F2A, 71/G2A ஆகிய காலைகளில் திரு.செந்தில்குமார் என்பவருக்கு பாத்தியப்பட்ட கோழிப்பண்ணை மற்றும் சுமார் 250 மீ தொலைவில் திரு.செந்தில்குமார் என்பவருக்கு பாத்தியப்பட்ட தார்சு வீடு ஒன்றும் அமைந்துள்ளது. மேற்படி புல எண்.71/A தெ.காலையில் திரு.முத்துசாமி என்பவர் குவாரி அமைப்பதில் ஆட்சேபனை ஏதுமில்லை என மேற்கண்ட நபர்களிடம், "அ1" விளம்பரத்தில்

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ஒப்புதல் பெற்று இத்துடன் இணைக்கப்பட்டுள்ளது. மேலும் மேற்படி புல எண்.71/A புலத்திலிருந்து 300 மீ சுற்றளவில் ஊர் நத்தம், அங்கீகரிக்கப்பட்ட குடியிருப்பு பகுதிகள், மயானம்,கோவில், புராதான சின்னங்கள் மற்றும் வனக்காடுகள், பள்ளி கட்டிடங்கள் ஏதுமில்லை என உள்வட்ட நில அளவரின் வரைபட நகல், புலத்தணிக்கை மற்றும் கிராம ஆவணங்களின் படி தெரியவருகிறது.

4. மேற்படி கிராமத்தில், குத்தகை வழங்கக் கோரும் புலத்திலிருந்து 50 மீட்டர் சுற்றளவில் உயர் மின்னழுத்த கம்பிகள் மற்றும் அரசு புறம்போக்கு நீர்நிலைகள் ஏதுமில்லை.

5. மேற்படி அனுமதி கோரும் புல எண்.71/A காலை அருகிலேயே கிழபுறம் 70/A2, 70/B2, 70/C2 ஆகிய காலைகளில் திரு.தங்கவேல் என்பவருக்கு பாத்தியப்பட்ட விநாயகா குவாரியும், மேற்புறம் புல எண்.66/1 மற்றும் 66/2 ஆகிய காலையில் மேற்படி மனுதாரர் திரு.முத்துசாமி என்பவருக்கு பாத்தியப்பட்ட முத்துசாமி குவாரியும், புல எண்.64/1, 64/2A, 64/2B ஆகிய காலைகளில் SRK புளூ மெட்டல்ஸ் என்ற கிரசர் மற்றும் எம்.சாண்டு யூனிட் ஆகியவை செயல்பட்டு வருகிறது.

5. திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம்,புல எண்.71/A நெ.காலையில் மு.ஹெக்டேர் 1.31.0 மொத்தப்பரப்பாவில் மு.ஹெக்டேர் 1.31.0 பரப்பளவுள்ள பூமியானது, சென்னிமலை சார்பதிவாளர் அலுவலக கிரைய பத்திர எண்.2266/2008 நாள்.01.09.2008-ன்படி மனுதாரர் திரு.முத்துசாமி மற்றும் அவரது சகோதரர் திரு.நடராஜன்,ஆகியோருக்கு கூட்டாக பாத்தியப்பட்டு, பின்பு சென்னிமலை சார்பதிவாளர் அலுவலக பாக பாத்திய விடுதலைப்பத்திரம் ஆவணஎண்.2293/2021, நாள்.17.06.2021 மற்றும் ஆவணஎண்.2402/2021, நாள்.30.06.2021-ன்படி மனுதாரர் திரு.முத்துசாமி என்பவருக்கு தனியாக பாத்தியப்பட்டு, மேற்படி பூமி மனுதாரரின் அனுபவத்தில் உள்ளது.

மேலும் கீரனூர் கிராமக் கணக்குகளின்படிபுல எண்.71/A நெ.காலையில் மு.ஹெக்டேர் 1.31.0 பூமியானது,பட்டா எண்.417-ன்படி திரு.ரங்கசாமி மகன் முத்துசாமி பெயரில் தனிப்பட்டாவாக தாக்கலாகியுள்ளது.

01. மேற்குறிப்பிட்ட புலம் அரசு புறம்போக்கு நிலம் இல்லை.

02. பிரஸ்தாப புலம் கையகப்படுத்தும் சட்டம் 1884 பிரிவு 4(1)-ன் கீழ் அறிவிப்பு ஏதும் செய்யப்படவில்லை. நிலத்திட்ட அட்டவணை ஏதும் நிலுவையில்லை.

03. நிலச்சீர்திருத்த சட்டம் 1961-ன் கவரப்படவில்லை.

04 நகர்ப்புற உச்சவரம்பு சட்டம் 1978-ன் கீழ் உட்படவில்லை.

05. பிரஸ்தாப புலம் மழை மற்றும் வெள்ளப்பெருக்கில் பாதிக்கப்படாத பூமியாகும்.

06. பிரஸ்தாப புலத்தில் அரசு கட்டிடங்கள், கோவில், மசூதி, புராதன சின்னங்கள், கடுகாடு மற்றும் இடுகாடு ஏதும் இல்லை.

07. பிரஸ்தாப புலத்தில் விமான ஓடுதளம், ரயில்பாதை, மணைப்பிரிவு ஏதும் இல்லை.

08. மேற்படி புலத்தில் விவசாயப்பணிகள் ஏதுவும் மேற்கொள்ளப்படாமல்

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இருந்துவருகிறது.

09. புலத்தில் எல்லைகள் வரையறை செய்யப்பட்டு, எல்லைகற்கள் நடப்பட்டு பராமரிக்கபட்டு வருகின்றன.

10. மேற்படி புலத்தின் உரிமை மற்றும் எல்லைகள் தொடர்பான தாவாக்கள் நீதிமன்ற வழக்குகள் எதுவும் நிலுவை இல்லை.

மேலும், மேற்படி பூமிக்கு நிலவரி, வருமான வரி, கனிம வரி போன்றவை எதுவும் இல்லை என்று 67607 உறுதிமொழி பத்திரம் கொடுத்துள்ளார் என்பதையும் தெரிவித்துக்கொள்கிறேன். சிறு கனிம சட்டம் 1959-ன்படி விதிகளுக்குட்பட்டு நடப்பதாக மனுதாரர் வாக்குமூலம் அளித்துள்ளார்.

எனவே, மனுதாரர் திரு.முத்துசாமி த/பெ.ரங்கசாமி என்பவருக்கு, காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண்.71/A தெ.காலையில் பு.ஹெக்டேர் 1.31.0 பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்க பரிந்துரை செய்து புவியியல் மற்றும் சுரங்கத்துறை உதவி இயக்குநருக்கு கடித வரைவு தயார் செய்து வைக்கவும்.

26.5.25 (26.5.25)

வருவாய் கோட்டாட்சியர்
தாராபுரம்.

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அனுப்புநர்
திரு.ரா.மோகனன்,
வருவாய் வட்டாட்சியர்,
காங்கயம்

பெறுநர்
வருவாய் கோட்டாட்சியர்,
தாராபுரம்.

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ந.க. 1764/2025/அ10 நாள்.17 .06.2025

அய்யா,

பொருள்:- கனிமங்களும் சுரங்கங்களும் - சிறு கனிமம் - சாதாரண கற்கள் - திருப்பூர் மாவட்டம் - காங்கயம் வட்டம் - கீரனூர் கிராமம் - புல எண்கள்: 71/A-ல் பு.ஹெக்:1.31.0 பட்டா நிலப்பரப்பில் சாதாரண கற்கள் / கிராவல் மண் வெட்டியெடுக்க 10 ஆண்டுகளுக்கு குவாரி குத்தகை உரிமம் கோரி திரு.முத்துசாமி என்பவர் மனு செய்தது - விசாரணை அறிக்கை அனுப்புதல் - தொடர்பாக.

பார்வை:- 1 உதவி இயக்குநர் புவியியல் மற்றும் சுரங்கத்துறை திருப்பூர் அவர்களின் ந.க.845/கனிமம்/2025 நாள்: 13.05.2025

2 தாராபுரம் வருவாய் கோட்டாட்சியர் அவர்களின் ந.க.1980/2005/இ நாள்: 19.05.2025

3 நத்தக்காடையூர் நிலவருவாய் ஆய்வாளரின் அறிக்கை உமு. 172/2025, நாள்.13.06.2025

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திருப்பூர் மாவட்டம், ஊத்துக்குளி வட்டம், மொரட்டுப்பாளையம் கிராமம், தெற்கு வீதி கு.எண்.77 என்ற முகவரியில் வசிக்கும் திரு.முத்துசாமி த/பெ.ரங்கசாமி என்பவர்,திருப்பூர் மாவட்டம்,காங்கயம்வட்டம், கீரனூர் கிராமம்,புல எண்.71/Aநே.காலையில் பு.ஹெக்டேர் 1.31.0 பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கக்கோரி மனு செய்திருந்ததின் பேரில், புலத்தணிக்கை மற்றும் விசாரணை எனது அறிக்கையினை கீழ்க்கண்டவாறு சமர்ப்பித்துக் கொள்கிறேன்.

1. குத்தகை வழங்கக் கோரும் புலத்தில் எல்லைகள் வரையறுக்கப்பட்டு எல்லைகற்கள் நடப்பட்டுள்ளது.அதன் புகைப்பட நகல் இத்துடன் இணைக்கப்பட்டுள்ளது.

2.குத்தகை வழங்கக் கோரும் புலத்தில் மனுதாரருக்கு குத்தகை வழங்குவது தொடர்பாக கீரனூர் கிராமத்தில் 26.05.2025 அன்று "அ1" விளம்பரம் செய்யப்பட்டுள்ளது. நாளதுவரை ஆட்சேபனை ஏதும் வரப்பெறவில்லை. மனுதாரருக்கு குத்தகை உரிமம்

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வழங்குவது சம்மந்தமாக பொதுமக்களுக்கு எவ்வித ஆட்சேபனையும் வாக்குமூலம் பெறப்பட்டு இணைக்கப்பட்டுள்ளது.

3. மேற்படி கிராமத்தில், குத்தகை வழங்கக் கோரும் புலத்தில் சாதாரண மற்றும் கிராவல் மண் வெட்டி எடுக்க அனுமதி கோரும் புலத்திலிருந்து சுமார் தொலைவில் பொதுப்பணித்துறை வாய்க்கால் உள்ளது. சுமார் 220 மீ தொலைவில் எண். 77/B2,B3 ஆகிய காலைகளில் திரு.விங்குசாமி, திரு.கோவிந்தசாமி மற்றும் ஆட்சியம்மாள் ஆகியோருக்கு பாத்தியப்பட்ட ஓட்டுவில்லை வீடுகள் மூன்றும், புல எண். 78/A2B காலையில் திரு.செல்லப்பகவுண்டர் என்பவருக்கு பாத்தியப்பட்ட ஓட்டுவில்லை வீடு ஒன்றும், உள்ளது. சுமார் 170 மீ தொலைவில் புல எண்.71/F1, F2A, G2A ஆகிய காலைகளில் திரு.செந்தில்குமார் என்பவருக்கு பாத்தியப்பட்ட கோழிப்பண்ணை மற்றும் சுமார் 250 மீ தொலைவில் திரு.செந்தில்குமார் என்பவருக்கு பாத்தியப்பட்ட தார்சு வீடு ஒன்றும் அமைந்துள்ளது. மேற்படி புல எண்.71/A நெ.காலையில் திரு.முத்துசாமி என்பவர் குவாரி அமைப்பதில் ஆட்சேபனை ஏதுமில்லை என மேற்கண்ட நபர்களிடம், "அ1" விளம்பரத்தில் ஒப்புதல் பெற்று இத்துடன் இணைக்கப்பட்டுள்ளது. மேலும் மேற்படி புல எண்.71/A புலத்திலிருந்து 300 மீ சுற்றளவில் ஊர் நத்தம், அங்கீகரிக்கப்பட்ட குடியிருப்பு மனைகள், மயானம்,கோவில், புராதான சின்னங்கள் மற்றும் வனக்காடுகள், பள்ளி கட்டிடங்கள் ஏதுமில்லை என உள்வட்ட நில அளவரின் வரைபட நகல், புலத்தணிக்கை மற்றும் கிராம் ஆவணங்களின் படி தெரியவருகிறது.

4. மேற்படி கிராமத்தில்,குத்தகை வழங்கக் கோரும் புலத்திலிருந்து 50 மீட்டர் சுற்றளவில் உயர் மின்னழுத்த கம்பிகள் மற்றும் அரசு புறம்போக்கு நீர்நிலைகள் ஏதுமில்லை.

5. மேற்படி அனுமதி கோரும் புல எண்.71/A காலை அருகிலேயே கிழபுறம் 70/A2,B2,C2 ஆகிய காலைகளில் திரு.தங்கவேல் என்பவருக்கு பாத்தியப்பட்ட விநாயகா குவாரியும், மேற்புறம் புல எண்.66/1,2 ஆகிய காலையில் மேற்படி மனுதாரர் திரு.முத்துசாமி என்பவருக்கு பாத்தியப்பட்ட முத்துசாமி குவாரியும், புல எண்.64/1,2A,2B ஆகிய காலைகளில் SRK புளூ மெட்டல்ஸ் என்ற கிரசர் மற்றும் எம்.சாண்டு யூனிட் ஆகியவை செயல்பட்டு,வருகிறது.

5. திருப்பூர் மாவட்டம்,காங்கயம் வட்டம்,கீரனூர் கிராமம்,புல எண்.71/A நெ.காலையில் பு.ஹெக்டேர் 1.31.0 மொத்தப்பரப்பளவில் பு.ஹெக்டேர் 1.31.0 பரப்பளவுள்ள பூமியானது, சென்னிமலை சார்பதிவாளர் அலுவலக கிரைய பத்திர எண்.2266/2008 நாள்.01.09.2008-ன்படி மனுதாரர் திரு.முத்துசாமி மற்றும் அவரது சகோதரர் திரு.நடராஜன்

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ஆகியோருக்கு கூட்டாக பாத்தியப்பட்டு, பின்பு சென்னிமலை சார்பதிவாளர் அலுவலக பாக பாத்திய விடுதலைப்பத்திரம் ஆவணஎண்.2293/2021, நாள்.17.06.2021 மற்றும் ஆவணஎண்.2402/2021, நாள்.30.06.2021-ன்படி மனுதாரர் திரு.முத்துசாமி என்பவருக்கு தனியாக பாத்தியப்பட்டு, மேற்படி பூமி மனுதாரரின் அனுபவத்தில் உள்ளது.

மேலும் கீரனூர் கிராமக் கணக்குகளின்படிபுல எண்.71/A நெ.காலையில் பு.ஹெக்டேர் 1.31.0 பூமியானது,பட்டா எண்.417-ன்படி திரு.ரங்கசாமி மகன் முத்துசாமி பெயரில் தனிப்பட்டாவாகதாக்கலாகியுள்ளது.

01. மேற்குறிப்பிட்ட புலம் அரசு புறம்போக்கு நிலம் இல்லை.

02. பிரஸ்தாப புலம் கையகப்படுத்தும் சட்டம் 1884 பிரிவு 4(1)-ன் கீழ் அறிவிப்பு ஏதும் செய்யப்படவில்லை. நிலத்திட்ட அட்டவணை ஏதும் நிறுவகையில்லை.

03. நிலச்சீர்திருத்த சட்டம் 1961-ல் கவரப்படவில்லை.

04 நகர்ப்புற உச்சவரம்பு சட்டம் 1978-ன் கீழ் உட்படவில்லை.

05. பிரஸ்தாப புலம் மழை மற்றும் வெள்ளப்பெருக்கில் பாதிக்கப்படாத பூமியாகும்.

06. பிரஸ்தாப புலத்தில் அரசு கட்டிடங்கள்,கோவில், மசூதி, புராதன சின்னங்கள், கடுகாடு மற்றும் இடுகாடு ஏதும் இல்லை.

07. பிரஸ்தாப புலத்தில் விமான ஓடுதளம், ரயில்பாதை, மனைப்பிரிவு ஏதும் இல்லை.

08. மேற்படி புலத்தில் விவசாயப்பணிகள் எதுவும் மேற்கொள்ளப்படாமல் இருந்துவருகிறது.

09. புலத்தில் எல்லைகள் வரையறை செய்யப்பட்டு, எல்லைகற்கள் நடப்பட்டு பராமரிக்கபட்டு வருகின்றன.

10. மேற்படி புலத்தின் உரிமை மற்றும் எல்லைகள் தொடர்பான தாவாக்கள் நீதிமன்ற வழக்குகள் எதுவும் நிலுவை இல்லை.

மேலும், மேற்படி பூமிக்கு நிலவரி, வருமான வரி, கனிம வரி போன்றவை எதுவும் இல்லை என உறுதிமொழி பத்திரம் கொடுத்துள்ளார் என்பதையும் தெரிவித்துக்கொள்கிறேன். சிறு கனிம சட்டம் 1959-ன்படி விதிகளுக்குட்பட்டு நடப்பதாக மனுதாரர் வாக்குமூலம் அளித்துள்ளார்.

எனவே, மனுதாரர் திரு.முத்துசாமி த/பெ.ரங்கசாமி என்பவருக்கு, காங்கயம் வட்டம்,கீரனூர் கிராமம்,புல எண்.71/A நெ.காலையில் பு.ஹெக்டேர் 1.31.0 பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்க பரிந்துரை செய்தும், மேலும், இத்துடன் நத்தக்காடையூர் நிலவருவாய் ஆய்வாளரின் அறிக்கை, கீரனூர் கிராம நிர்வாக அலுவலர் அறிக்கை, மனுதாரர் வாக்குமூலம், அ1 விளம்பரம், பொதுமக்கள் வாக்குமூலம் மற்றும் தொடர்புடைய கிராம

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ஆவணங்கள் ஆகியவற்றினை இணைத்து அனுப்பியுள்ளேன் என்பதையும்
தெரிவித்துக் கொள்கிறேன்.
இணைப்பு: மேற்சொன்னவாறு.

தங்கள் உண்மையுள்ள,
ஒம்./ரா.மோகனன்,
வட்டாட்சியர்,
காங்கயம்.

நகல்
திருப்பூர் மாவட்ட ஆட்சியர் அவர்களுக்கு பணிந்தனுப்பப்படுகிறது.

//உண்மை நகல்//உத்திரவுப்படி//

வட்டாட்சியருக்காக

12/6/1

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புலத்தணிக்கை குறிப்பு

மாவட்டம்	:	திருப்பூர்
வட்டம்	:	காங்கயம்
கிராமம்	:	கீரனூர்
புல எண்	:	ப.எ.71/A
தணிக்கை நாள்	:	17.6.2021

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திருப்பூர் மாவட்டம், ஊத்துக்குளி வட்டம், மொரட்டுப்பாளையம் கிராமம், தெற்கு வீதி க.எண்.77 என்ற முகவரியில் வசிக்கும் திரு.முத்துசாமி த/பெ.ரங்கசாமி என்பவர், திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண்.71/A நெ.காலையில் மு.ஹெக்டேர் 1.31.0 பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கக் கோரியது தொடர்பாக இன்று (17.6.2021) புலத்தணிக்கை மற்றும் விசாரணை செய்யப்பட்டது.

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண்.71/A நெ.காலையில் மு.ஹெக்டேர் 1.31.0 பரப்பளவுள்ள பூமியானது, சென்னிமலை சார்பதிவாளர் அலுவலக கிரைய பத்திர எண்.2265/2008 நாள்.01.09.2008-ன்படி மனுதாரர் திரு.முத்துசாமி மற்றும் அவரது சகோதரர் திரு.நடராஜன் ஆகியோருக்கு கூட்டாக பாத்தியப்பட்டு, பின்பு சென்னிமலை சார்பதிவாளர் அலுவலக பாக பாத்திய விடுதலைப்பத்திரம் ஆவணஎண்.2293/2021, நாள்.17.06.2021 மற்றும் ஆவணஎண்.2402/2021, நாள்.30.06.2021-ன்படி மனுதாரர் திரு.முத்துசாமி என்பவருக்கு தனியாக பாத்தியப்பட்டு, மேற்படி பூமி மனுதாரரின் அனுபவத்தில் உள்ளது. மேற்படி காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண்.71/A நெ.காலையில் மு.ஹெக்டேர் 1.31.0 பரப்பளவுள்ள பூமியானது பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்க, மனுதாரா திரு.முத்துசாமி த/பெ.ரங்கசாமி என்பவர் குவாரி உரிமம் கோரப்பட்டுள்ளது.

மனுதாரருக்கு குத்தகை வழங்குவது தொடர்பாக கீரனூர் கிராமத்தில் "அ1" விளம்பரம் செய்யப்பட்டதில் பொதுமக்கள் எவரும் "அ1" விளம்பரத்தில் ஒப்புதல் பெறப்பட்டுள்ளது. .மேலும், மேற்படி கிராமத்தில்,குத்தகை வழங்கக் கோரும் புலத்தில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க அனுமதி கோரும் புலத்திலிருந்து 300 மீ சுற்றளவில் ஊர் நத்தம், அங்கீகரிக்கப்பட்ட குடியிருப்பு மனைகள், மயானம்,கோவில்,

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புராதான சின்னங்கள் மற்றும் வனக்காடுகள் ஏதுமில்லை என தெரிவித்து
வருவாய் கோட்டாட்சியர் அவர்களுக்கு வரைவு தயார் செய்து

வைக்கவும்.

வட்டாட்சியர்,
காங்கயம்.

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நில வருவாய் ஆய்வாளர் அலுவலகம்
நத்தக்காடையூர்

உ.மு.172/2025

நாள் : 13.06.2025

பொருள்: கனிமங்களும் சுரங்கங்களும் - சிறு கனிமம் - சாதாரண கற்கள் - திருப்பூர் மாவட்டம் - காங்கயம் வட்டம் - கீரனூர் கிராமம் - புல எண்.71/A-ல் பு.ஹெக்டேர் 1.31.0 பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10ஆண்டுகளுக்கு குத்தகை உரிமம் கோரி திரு.முத்துசாமி, த/பெ.ரங்கசாமி என்பவர் மனு செய்தது - அறிக்கை சமர்ப்பித்தல் - தொடர்பாக.

பார்வை :

1. உதவி இயக்குனர் புவியியல் மற்றும் சுரங்கத்துறை திருப்பூர் அவர்களின் ந.க.845/கனிமம்/2025, நாள்: 13.05.2025
2. தாராபுரம் வருவாய் கோட்டாட்சியர் அவர்களின் ந.க.1980/2025/இ, நாள்: 19.05.2025
3. காங்கயம் வருவாய் வட்டாட்சியர் அலுவலக ந.க.எண். 1764/2025/அ10, நாள்: 30.05.2025
4. கீரனூர் கிராம நிர்வாக அலுவலர் வாக்குமூலம், நாள் : 12.06.2025

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பணிந்தனுப்பப்படுகிறது:-

திருப்பூர் மாவட்டம், ஊத்துக்குளி வட்டம், மொரட்டுப்பாளையம் கிராமம், தெற்கு வீதி க.எண்.77 என்ற முகவரியில் வசிக்கும் திரு.முத்துசாமி த/பெ.ரங்கசாமி என்பவர்,திருப்பூர் மாவட்டம்,காங்கயம்வட்டம், கீரனூர் கிராமம்,புல எண்.71/Aநெ.காலையில் பு.ஹெக்டேர் 1.31.0 பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கக்கோரி மனு செய்திருந்ததின் பேரில், புலத்தணிக்கை மற்றும் விசாரணை மேற்கொண்டு எனது அறிக்கையினை கீழ்க்கண்டவாறு சமர்ப்பித்துக் கொள்கிறேன்.

1. குத்தகை வழங்கக் கோரும் புலத்தில் எல்லைகள் வரையறுக்கப்பட்டு எல்லைகற்கள்நடப்பட்டுள்ளது.அதன் புகைப்பட நகல் இத்துடன் இணைக்கப்பட்டுள்ளது.

2.குத்தகை வழங்கக் கோரும் புலத்தில் மனுதாரருக்கு குத்தகை வழங்குவது தொடர்பாக கீரனூர் கிராமத்தில் 26.05.2025 அன்று "அ1" விளம்பரம் செய்யப்பட்டுள்ளது. நாளதுவரை ஆட்சேபணை ஏதும் வரப்பெறவில்லை. மனுதாரருக்கு குத்தகை உரிமம் வழங்குவது சம்மந்தமாக பொதுமக்களுக்கு எவ்வித ஆட்சேபணையும் இல்லை என வாக்குமூலம் பெறப்பட்டு இணைக்கப்பட்டுள்ளது.

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3. மேற்படி கிராமத்தில், குத்தகை வழங்கக் கோரும் புலத்தில் சாதாரண கற்
மற்றும் கிராவல் மண் வெட்டி எடுக்க அனுமதி கோரும் புலத்திலிருந்து சுமார் 1
தொலைவில் பொதுப்பணித்துறை வாய்க்கால் உள்ளது. சுமார் 220 மீ தொலைவில்
எண். 77/B2,B3 ' ஆகிய காலைகளில் திரு.லிங்குசாமி, திரு.கோவிந்தசாமி மற்றும்
ஆட்சியம்மாள் ஆகியோருக்கு பாத்தியப்பட்ட ஓட்டுவில்லை வீடுகள் மூன்றும், புல எண்.
78/A2B காலையில் திரு.செல்லப்பகவுண்டர் என்பவருக்கு பாத்தியப்பட்ட ஓட்டுவில்லை வீடு
ஒன்றும், உள்ளது. சுமார் 170 மீ தொலைவில் புல எண்.71/F1, F2A, G2A ஆகிய
காலைகளில் திரு.செந்தில்குமார் என்பவருக்கு பாத்தியப்பட்ட கோழிப்பண்ணை மற்றும்
சுமார் 250 மீ தொலைவில் திரு.செந்தில்குமார் என்பவருக்கு பாத்தியப்பட்ட தளர்சு வீடு
ஒன்றும் அமைந்துள்ளது. மேற்படி புல எண்.71/A நெ.காலையில் திரு.முத்துசாமி என்பவர்
குவாரி அமைப்பதில் ஆட்சேபனை ஏதுமில்லை என மேற்கண்ட நபர்களிடம், "அ1"
விளம்பரத்தில் ஒப்புதல் பெற்று இத்துடன் இணைக்கப்பட்டுள்ளது. மேலும் மேற்படி புல
எண்.71/A புலத்திலிருந்து 300 மீ சுற்றளவில் ஊர் நத்தம், அங்கீகரிக்கப்பட்ட குடியிருப்பு
மனைகள், மயானம்,கோவில், புராதான சின்னங்கள் மற்றும் வனக்காடுகள், பள்ளி
கட்டிடங்கள் ஏதுமில்லை என உள்வட்ட நில அளவரின் வரைபட நகல், புலத்தணிக்கை
மற்றும் கிராம ஆவணங்களின் படி தெரியவருகிறது.

4. மேற்படி கிராமத்தில்,குத்தகை வழங்கக் கோரும் புலத்திலிருந்து 50 மீட்டர்
சுற்றளவில் உயர் மின்னழுத்த கம்பிகள் மற்றும் அரசு புறம்போக்கு நீர்நிலைகள் ஏதுமில்லை.

5. மேற்படி அனுமதி கோரும் புல எண்.71/A காலை அருகிலேயே கிழபுறம்
70/A2,B2,C2 ஆகிய காலைகளில் திரு.தங்கவேல் என்பவருக்கு பாத்தியப்பட்ட விநாயகா
குவாரியும், மேற்புறம் புல எண்.66/1,2 ஆகிய காலையில் மேற்படி மனுதாரர் திரு.முத்துசாமி
என்பவருக்கு பாத்தியப்பட்ட முத்துசாமி குவாரியும், புல எண்.64/1,2A,2B ஆகிய
காலைகளில் SRK, புளு மெட்டல்ஸ் என்ற கிரசர் மற்றும் எம்.சாண்டு யூனிட் ஆகியவை
செயல்பட்டு வருகிறது.

5. திருப்பூர் மாவட்டம்,காங்கயம் வட்டம்,கீரனூர் கிராமம்,புல எண்.71/A
நெ.காலையில் பு.ஹெக்டேர் 1.31.0 மொத்தப்பரப்பளவில் பு.ஹெக்டேர் 1.31.0 பரப்பளவுள்ள
பூமியானது, சென்னிமலை சார்பதிவாளர் அலுவலக கிரைய பத்திர எண்.2266/2008
நாள்.01.09.2008-ன்படி மனுதாரர் திரு.முத்துசாமி மற்றும் அவரது சகோதரர் திரு.நடராஜன்
ஆகியோருக்கு கூட்டாக பாத்தியப்பட்டு, பின்பு சென்னிமலை சார்பதிவாளர் அலுவலக பாக
பாத்திய விடுதலைப்பத்திரம் ஆவணஎண்.2293/2021, நாள்.17.06.2021 மற்றும்
ஆவணஎண்.2402/2021, நாள்.30.06.2021-ன்படி மனுதாரர் திரு.முத்துசாமி என்பவருக்கு
தனியாக பாத்தியப்பட்டு, மேற்படி பூமி மனுதாரரின் அனுபவத்தில் உள்ளது.

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மேலும் கீரனூர் கிராமக் கணக்குகளின்படிபுல எண்.71/A நெ.காலையில் பு.ஹெக்டேர் 1.31.0 பூமியானது,பட்டா எண்.417-ன்படி திரு.ரங்கசாமி மகன் முத்துசாமி பெயரில் தனிப்பட்டாவாகதாக்கலாகியுள்ளது.

01. மேற்குறிப்பிட்ட புலம் அரசு புறம்போக்கு நிலம் இல்லை.

02. பிரஸ்தாப புலம் கையகப்படுத்தும் சட்டம் 1884 பிரிவு 4(1)-ன் கீழ் அறிவிப்பு ஏதும் செய்யப்படவில்லை. நிலத்திட்ட அட்டவணை ஏதும் நிலுவையில்லை.

03. நிலச்சீர்திருத்த சட்டம் 1961-ல் கவரப்படவில்லை.

04 நகர்ப்புற உச்சவரம்பு சட்டம் 1978-ன் கீழ் உட்படவில்லை.

05. பிரஸ்தாப புலம் மழை மற்றும் வெள்ளப்பெருக்கில் பாதிக்கப்படாத பூமியாகும்.

06. பிரஸ்தாப புலத்தில் அரசு கட்டிடங்கள்,கோவில், மசூதி, புராதன சின்னங்கள், கடுகாடு மற்றும் இடுகாடு ஏதும் இல்லை.

07. பிரஸ்தாப புலத்தில் விமான ஓடுதளம், ரயில்பாதை, மனைப்பிரிவு ஏதும் இல்லை.

08. மேற்படி புலத்தில் விவசாயப்பணிகள் எதுவும் மேற்கொள்ளப்படாமல் இருந்துவருகிறது.

09. புலத்தில் எல்லைகள் வரையறை செய்யப்பட்டு, எல்லைகற்கள் நடப்பட்டு பராமரிக்கபட்டு வருகின்றன.

10. மேற்படி புலத்தின் உரிமை மற்றும் எல்லைகள் தொடர்பான தாவாக்கள் நீதிமன்ற வழக்குகள் எதுவும் நிலுவை இல்லை.

மேலும், மேற்படி பூமிக்கு நிலவரி, வருமான வரி, கனிம வரி போன்றவை எதுவும் இல்லை என உறுதிமொழி பத்திரம் கொடுத்துள்ளார் என்பதையும் தெரிவித்துக்கொள்கிறேன். சிறு கனிம சட்டம் 1959-ன்படி விதிகளுக்குட்பட்டு நடப்பதாக மனுதாரர் வாக்குமூலம் அளித்துள்ளார்.

எனவே, மனுதாரர் திரு.முத்துசாமி த/பெரங்கசாமி என்பவருக்கு, காங்கயம் வட்டம்,கீரனூர் கிராமம்,புல எண்.71/A நெ.காலையில் பு.ஹெக்டேர் 1.31.0 பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்க பரிந்துரை செய்யலாம் என்பதைப் பணிவுடன் தெரிவித்துக் கொள்கிறேன். மேலும், இத்துடன் கிராம நிர்வாக அலுவலர் அறிக்கை,மனுதாரர் வாக்குமூலம், அ1 விளம்பரம், பொதுமக்கள் வாக்குமூலம் மற்றும் தொடர்புடைய கிராம ஆவணங்கள் ஆகியவற்றினை இணைத்து அனுப்பியுள்ளேன் என்பதையும் பணிவுடன் தெரிவித்துக் கொள்கிறேன்.

இணைப்பு : ஆவணங்கள்

நிலவருவாய் துணை ஆட்சியர்
நத்தக்காளைப்பட்டி உள்வட்டம்
காங்கயம் வட்டம்.

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காங்கயம் வட்டம்,கீரனூர் கிராமம், கிராம நிர்வாக அலுவலர் அறிக்கை

திருப்பூர் மாவட்டம், ஊத்துக்குளி வட்டம், மொரட்டுப்பாளையம் கிராமம், தெற்கு வீதி க.எண்.77 என்ற முகவரியில் வசிக்கும் திரு.முத்துசாமி த/பெ.ராங்கசாமி என்பவர்,திருப்பூர் மாவட்டம்,காங்கயம்வட்டம், கீரனூர் கிராமம்,புல எண்.71/Aநெ.காலையில் மு.ஹெக்டேர் 1.31.0 பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10 ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்கக்கோரி மனு செய்திருந்ததின் பேரில், புலத்தணிக்கை மற்றும் விசாரணை மேற்கொண்டு எனது அறிக்கையினை கீழ்க்கண்டவாறு சமர்ப்பித்துக் கொள்கிறேன்.

1. குத்தகை வழங்கக் கோரும் புலத்தில் எல்லைகள் வரையறுக்கப்பட்டு எல்லைகற்கள்நடப்பட்டுள்ளது.அதன் புகைப்பட நகல் இத்துடன் இணைக்கப்பட்டுள்ளது.

2.குத்தகை வழங்கக் கோரும் புலத்தில் மனுதாரருக்கு குத்தகை வழங்குவது தொடர்பாக கீரனூர் கிராமத்தில் 26.05.2025 அன்று "அ1" விளம்பரம் செய்யப்பட்டுள்ளது. நாளதுவரை ஆட்சேபனை ஏதும் வரப்பெறவில்லை. மனுதாரருக்கு குத்தகை உரிமம் வழங்குவது சம்மந்தமாக பொதுமக்களுக்கு எவ்வித ஆட்சேபனையும் இல்லை என வாக்குமூலம் பெறப்பட்டு இணைக்கப்பட்டுள்ளது.

3. மேற்படி கிராமத்தில், குத்தகை வழங்கக் கோரும் புலத்தில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க அனுமதி கோரும் புலத்திலிருந்து சுமார் 150 மீ தொலைவில் பொதுப்பணித்துறை வாய்க்கால் உள்ளது. சுமார் 220 மீ தொலைவில் புல எண். 77/B2,B3 ஆகிய காலைகளில் திரு.லிங்குசாமி, திரு.கோவிந்தசாமி மற்றும் ஆட்சியம்மாள் ஆகியோருக்கு பாத்தியப்பட்ட ஓட்டுவில்லை வீடுகள் மூன்றும், புல எண். 78/A2B காலையில் திரு.செல்லப்பகவுண்டர் என்பவருக்கு பாத்தியப்பட்ட ஓட்டுவில்லை வீடு ஒன்றும், உள்ளது. சுமார் 170 மீ தொலைவில் புல எண்.71/F1, F2A, G2A ஆகிய காலைகளில் திரு.செந்தில்குமார் என்பவருக்கு பாத்தியப்பட்ட கோழிப்பண்ணை மற்றும் சுமார் 250 மீ தொலைவில் திரு.செந்தில்குமார் என்பவருக்கு பாத்தியப்பட்ட தார்சு வீடு ஒன்றும் அமைந்துள்ளது. மேற்படி புல எண்.71/A நெ.காலையில் திரு.முத்துசாமி என்பவர் குவாரி அமைப்பதில் ஆட்சேபனை ஏதுமில்லை என மேற்கண்ட நபர்களிடம், "அ1" விளம்பரத்தில் ஒப்புதல் பெற்று இத்துடன் இணைக்கப்பட்டுள்ளது. மேலும் மேற்படி புல எண்.71/A புலத்திலிருந்து 300 மீ சுற்றளவில் ஊர் நத்தம், அங்கீகரிக்கப்பட்ட குடியிருப்பு மனைகள், மயானம்,கோவில், புராதான சின்னங்கள் மற்றும் வனக்காடுகள், பள்ளி கட்டிடங்கள் ஏதுமில்லை என உள்வட்ட நில அளவரின் வரைபட நகல், புலத்தணிக்கை மற்றும் கிராம ஆவணங்களின் படி தெரியவருகிறது.

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4. மேற்படி கிராமத்தில்,குத்தகை வழங்கக் கோரும் புலத்திலிருந்து சுற்றளவில் உயர் மின்னழுத்த கம்பிகள் மற்றும் அரசு புறம்போக்கு நிலங்கள்

5. மேற்படி அனுமதி கோரும் புல எண்.71/A காலை 70/A2,B2,C2 ஆகிய காலைகளில் திரு.தங்கவேல் என்பவருக்கு பாத்தியப்பட்ட குவாரியும், மேற்புறம் புல எண்.66/1,2 ஆகிய காலையில் மேற்படி மனுதாரர் திரு.முத்துசாமி என்பவருக்கு பாத்தியப்பட்ட முத்துசாமி குவாரியும், புல எண்.64/1,2A,2B ஆகிய காலைகளில் SRK புளூ மெட்டல்ஸ் என்ற கிரசர் மற்றும் எம்.சாண்டு யூனிட் ஆகியவை செயல்பட்டு வருகிறது.

5. திருப்பூர் மாவட்டம்,காங்கயம் வட்டம்,கீரனூர் கிராமம்,புல எண்.71/A நெ.காலையில் பு.ஹெக்டேர் 1.31.0 மொத்தப்பரப்பளவில் பு.ஹெக்டேர் 1.31.0 பரப்பளவுள்ள பூமியானது, சென்னிமலை சார்பதிவாளர் அலுவலக கிரைய பத்திர எண்.2265/2008 நாள்.01.09.2008-ன்படி மனுதாரர் திரு.முத்துசாமி மற்றும் அவரது சகோதரர் திரு.நடராஜன் ஆகியோருக்கு கூட்டாக பாத்தியப்பட்டு, பின்பு சென்னிமலை சார்பதிவாளர் அலுவலக பாக பாத்திய விடுதலைப்பத்திரம் ஆவணஎண்.2293/2021, நாள்.17.06.2021 மற்றும் ஆவணஎண்.2402/2021, நாள்.30.06.2021-ன்படி மனுதாரர் திரு.முத்துசாமி என்பவருக்கு தனியாக பாத்தியப்பட்டு, மேற்படி பூமி மனுதாரரின் அனுபவத்தில் உள்ளது.

மேலும் கீரனூர் கிராமக் கணக்குகளின்படி புல எண்.71/A நெ.காலையில் பு.ஹெக்டேர் 1.31.0 பூமியானது,பட்டா எண்.417-ன்படி திரு.ரங்கசாமி மகன் முத்துசாமி பெயரில் தனிப்பட்டாவாகதாக்கலாகியுள்ளது.

01. மேற்குறிப்பிட்ட புலம் அரசு புறம்போக்கு நிலம் இல்லை.

02. பிரஸ்தாப புலம் கையகப்படுத்தும் சட்டம் 1884 பிரிவு 4(1)-ன் கீழ் அறிவிப்பு ஏதும் செய்யப்படவில்லை. நிலத்திட்ட அட்டவணை ஏதும் நிலுவையில்லை.

03. நிலச்சீர்திருத்த சட்டம் 1961-ல் கவரப்படவில்லை.

04 நகர்ப்புற உச்சவரம்பு சட்டம் 1978-ன் கீழ் உட்படவில்லை.

05. பிரஸ்தாப புலம் மழை மற்றும் வெள்ளப்பெருக்கில் பாதிக்கப்படாத பூமியாகும்.

06. பிரஸ்தாப புலத்தில் அரசு கட்டிடங்கள்,கோவில், மசூதி, புராதன சின்னங்கள், சுடுகாடு மற்றும் இடுகாடு ஏதும் இல்லை.

07. பிரஸ்தாப புலத்தில் விமான ஓடுதளம், ரயில்பாதை, மனைப்பிரிவு ஏதும் இல்லை.

08. மேற்படி புலத்தில் விவசாயப்பணிகள் எதுவும் மேற்கொள்ளப்படாமல் இருந்துவருகிறது.

09. புலத்தில் எல்லைகள் வரையறை செய்யப்பட்டு, எல்லைகற்கள் நடப்பட்டு பராமரிக்கபட்டு வருகின்றன.

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10. மேற்படி புலத்தின் உரிமை மற்றும் எல்லைகள் தொடர்பான தாவாக்கள் நீதிமன்ற வழக்குகள் எதுவும் நிலுவை இல்லை.

மேலும், மேற்படி பூமிக்கு நிலவரி, வருமான வரி, கனிம வரி போன்றவை எதுவும் இல்லை என உறுதிமொழி பத்திரம் கொடுத்துள்ளார் என்பதையும் தெரிவித்துக்கொள்கிறேன். சிறு கனிம சட்டம் 1959-ன்படி விதிகளுக்குட்பட்டு நடப்பதாக மனுதாரர் வாக்குமூலம் அளித்துள்ளார்.

எனவே, மனுதாரர் திரு.முத்துசாமி த/பெ.ரங்கசாமி என்பவருக்கு, காங்கயம் வட்டம்,கீரனூர் கிராமம்,புல எண்.71/A நெ.காலையில் மு.ஹெக்டேர் 1.31.0 பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10ஆண்டுகளுக்கு குத்தகை உரிமம் வழங்க பரிந்துரை செய்யலாம் என்பதைப் பணிவுடன் தெரிவித்துக் கொள்கிறேன்.

இணைப்பு : ஆவணங்கள்

கிராம நிர்வாக அலுவலர்
கீரனூர்

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அ1 விளம்பரம்

கீரனூர் கிராமம், புல எண்.71/A-ல் 1.31.00 ஹெக்டேர் பரப்பளவு பட்டா பூமியிலிருந்து சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10.ஆண்டுகளுக்கு, திருப்பூர் மாவட்டம், ஊத்துக்குளி வட்டம், மொரட்டுப்பாளையம் தெற்கு வீதி க.எண்.77 என்ற முகவரியில் வசித்தும் திரு.முத்துசாமி த/பெ.ரங்கசாமி என்பவர் மனு செய்துள்ளார். மேற்படியாருக்கு குத்தகை உரிமம் வழங்குவது தொடர்பாக ஆட்சேபனை ஏதுமிருப்பின் 15 தினங்களுக்குள் கீரனூர் கிராம நிர்வாக அலுவலர், நத்தக்காடையூர் நிலவருவாய் ஆய்வாளர் மற்றும் காங்கயம் வட்டாட்சியர் ஆகியோர்களுக்கு நேரடியாகவோ எழுத்து மூலமாகவோ தெரிவிக்க வேண்டியது, ஆட்சேபனை ஏதும் வரப்பெறாத பட்சத்தில் மனுதாருக்கு குத்தகை உரிமம் வழங்க அரசு விதிமுறைகளின்படி மேல் நடவடிக்கை தொடரப்படும் என இதன் மூலம் தெரிவிக்கப்படுகிறது.

நிலவருவாய் ஆய்வாளர்
நத்தக்காடையூர் உள்வட்டம்
காங்கயம் வட்டம்.

மேற்படி விளம்பரத்தை கிராம பொதுமக்கள் அறியும்படி விளம்பரம் செய்து 15 தினங்களில் மீள சமர்ப்பிக்குமாறு கீரனூர் கிராம நிர்வாக அலுவலருக்கு தெரிவிக்கப்படுகிறது.

M. [illegible]
A. காந்தி
A. [illegible]
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[illegible]
P. [illegible]
PK[illegible]
S. [illegible]
PA [illegible]

பெறுநர்:

கிராம நிர்வாக அலுவலர்,
கீரனூர்

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திருப்பூர் மாவட்டம், காங்கயம் வட்டம்,கீரனூர் கிராமம், ஊர் பொதுமக்கள் ஆகிய நாங்கள் அளிக்கும் வாக்குமூலம்.

திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம், புல எண்.71/A-ல் 1.31.00 ஹெக்டேர் பரப்பளவு பூமியானது திருப்பூர் மாவட்டம், ஊத்துக்குளி வட்டம், மொரட்டுப்பாளையம் தெற்கு வீதி க.எண்.77 என்ற முகவரியில் வசிக்கும் திரு.முத்துசாமி த/பெ.ரங்கசாமி என்பவருக்கு பாத்தியப்பட்டதாகும். மேற்படி புலமானது பட்டா பூமியாகும். மேற்படி குத்தகை கோரும் புலத்தைச் சுற்றி எல்லைகள் வகையறுக்கப்பட்டு எல்லை கற்கள் நடப்பட்டுள்ளன. மேற்படி புலங்களின் வழியாக உயர் மற்றும் தாழ்வழுத்த மின்கம்பி தொடர் ஏதும் செல்லவில்லை,மேற்படி நிலங்கள் அரசு நடவடிக்கைகளான நில ஆர்ஜிதம், பூமிதானம், நில உச்சவரம்பு, நிலமெடுப்பு போன்றவைகளுக்குக் கட்டுப்பட்டதல்ல என்பதையும் நாங்கள் அறிவோம்.

எனவே திருப்பூர் மாவட்டம்,ஊத்துக்குளி வட்டம்,மொரட்டுப்பாளையம் தெற்கு வீதி க.எண்.77 என்ற முகவரியில் வசிக்கும் திரு.முத்துசாமி த/பெ.ரங்கசாமி என்பவர் திருப்பூர் மாவட்டம், காங்கயம் வட்டம், கீரனூர் கிராமம் புல எண்.71/A-ல் 1.31.00 ஹெக்டேர் பரப்பில் சாதாரண கற்கள் மற்றும் கிராவல் மண் வெட்டி எடுக்க 10 ஆண்டுகளுக்கு உரிமம் வழங்குவதில் ஊர் மக்களாகிய எங்களுக்கு எவ்வித ஆட்சேபனையும் இல்லை என்பதை தெரிவித்துக்கொள்கிறோம்.

//படித்துப் பார்த்தோம் சரி//
//படிக்கக் கேட்டோம் சரி//

P.P. 9894835763

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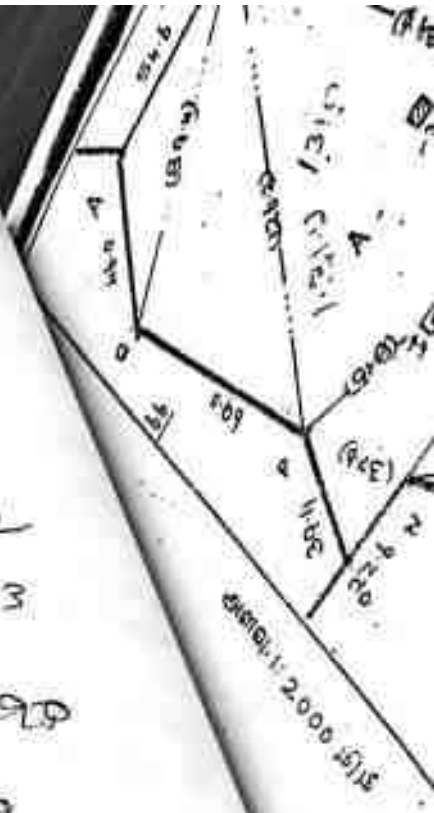
- S. சுரேஷ் - 9942450845
- [illegible] - 7639297453
- [illegible] - 8903963324
- A. [illegible] - 9750457122
- [illegible] - 9629826583
- Sadhya - 7868006490
- Divya - 9715891719
- [illegible] - [illegible]
- [illegible] - 9976627282
- [illegible]
- [illegible] 7576923435
- [illegible] 6375727676



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CHENNAI METTEX LAB PRIVATE LIMITED

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries
S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part),
of Keeranur Village, Kangeyam Taluk, Tiruppur District.

Test Certificate No : CML/25-26/T122116 Test Certificate Date : 27.02.2026
Location of Sampling : **AAQ – 1, Core Zone- Near Project Area - 11° 4'8.01"N 77°34'13.27"E**
Sampling Plan &Procedure : CML/LAB/ENV/SOP/AAQ (IS 5182 & USEPA Compendium)
Sampling Instrument ID &Calibration Due Date: CML/ENV/RDS/040 & 18.11.2026
Sampling Instrument ID &Calibration Due Date: CML/ENV/FDS/038 & 19.11.2026

Ambient Air Monitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	CO	Pb	Ni	As	C_6H_6	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	ng/m³	ng/m³	µg/m³	ng/m³
Date	Period,Hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.12.2025	7:00-7:00	58.8	31.2	18.5	4.2	26.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.12.2025	7:30-7:30	57.8	33.2	19.8	4.5	24.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.12.2025	7:00-7:00	62.8	42.7	26.3	4.5	25.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.12.2025	7:30-7:30	65.4	45.3	25.9	5.6	24.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.12.2025	7:00-7:00	63.7	43.6	23.4	5.4	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.12.2025	7:30-7:30	63.8	43.2	26.5	5.7	25.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.12.2025	7:00-7:00	64.2	46.5	23.1	5.2	26.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.12.2025	7:30-7:30	62.8	43.8	26.8	5.6	25.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.12.2025	7:00-7:00	64.5	45.2	26.3	4.5	25.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.12.2025	7:30-7:30	63.9	43.7	24.5	5.2	26.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.01.2026	7:00-7:00	64.5	43.6	23.7	5.5	25.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.01.2026	7:30-7:30	61.5	42.5	26.5	5.4	25.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.01.2026	7:00-7:00	63.8	44.3	22.6	5.5	24.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.01.2026	7:30-7:30	58.2	45.2	23.5	6.1	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.01.2026	7:00-7:00	56.4	46.2	22.4	5.4	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.01.2026	7:30-7:30	58.2	44.0	21.3	6.2	25.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.01.2026	7:00-7:00	60.6	33.2	18.3	4.5	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.01.2026	7:30-7:30	57.7	32.2	19.4	4.6	24.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.02.2026	7:00-7:00	64.5	43.4	22.9	5.4	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.02.2026	7:30-7:30	63.8	43.9	25.4	4.5	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.02.2026	7:00-7:00	64.8	43.6	26.1	4.6	21.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.02.2026	7:30-7:30	63.9	42.5	24.7	5.4	25.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.02.2026	7:00-7:00	65.2	44.2	22.5	4.5	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.02.2026	7:30-7:30	66.9	43.9	26.9	5.7	24.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.02.2026	7:00-7:00	65.4	46.7	26.4	5.9	25.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.02.2026	7:30-7:30	58.2	43.2	22.3	5.5	26.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;**DL**: Detection Limit ; **NH_3**: BDL (DL:20); **O_3**: BDL (DL:20); **CO**: BDL (DL:1.0);
Pb: BDL (DL:0.1); **Ni**: BDL (DL:1.0); **As**: BDL (DL:1.0); **C_6H_6**: BDL (DL:1.0); **BaP**: BDL (DL:0.1)
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited

[redacted]

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries
S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part),
of Keeranur Village, Kangeyam Taluk, Tiruppur District.

Test Certificate No : CML/2S-26/T122117 Test Certificate Date : 27.02.2026
Location of Sampling : **AAQ – 2, Near Project Area- 11° 4'3.38"N 77°33'56.21"E**
Sampling Plan &Procedure : CML/LAB/ENV/SOP/AAQ (IS 5182 & USEPA Compendium)
Sampling Instrument ID &Calibration Due Date: CML/ENV/RDS/042 & 18.11.2026
Sampling Instrument ID &Calibration Due Date: CML/ENV/FDS/039 & 19.11.2026

Ambient AirMonitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	CO	Pb	Ni	As	C_6H_6	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	ng/m³	ng/m³	µg/m³	ng/m³
Date	Period.Hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.12.2025	7:00-7:00	60.3	44.7	23.7	4.6	25.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.12.2025	7:30-7:30	64.7	42.6	23.5	6.3	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.12.2025	7:00-7:00	63.9	43.4	23.1	5.1	24.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.12.2025	7:30-7:30	62.8	41.8	22.6	4.9	26.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.12.2025	7:00-7:00	62.5	43.6	23.7	5.7	24.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.12.2025	7:30-7:30	64.7	45.5	22.1	6.9	25.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.12.2025	7:00-7:00	65.5	46.5	23.2	5.2	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.12.2025	7:30-7:30	62.9	42.9	21.7	4.5	24.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.12.2025	7:00-7:00	63.5	45.3	24.4	4.5	25.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.12.2025	7:30-7:30	62.4	43.9	23.9	5.5	26.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.01.2026	7:00-7:00	63.8	43.7	23.8	6.6	24.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.01.2026	7:30-7:30	65.5	42.6	23.3	5.5	25.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.01.2026	7:00-7:00	61.4	42.5	24.4	4.3	26.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.01.2026	7:30-7:30	63.7	43.3	23.6	5.9	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.01.2026	7:00-7:00	62.5	42.7	21.5	4.0	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.01.2026	7:30-7:30	66.8	42.8	23.7	5.1	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.01.2026	7:00-7:00	64.2	43.4	22.2	6.8	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.01.2026	7:30-7:30	63.7	42.9	21.6	4.7	20.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.02.2026	7:00-7:00	65.5	45.1	22.0	4.9	20.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.02.2026	7:30-7:30	62.9	43.6	23.7	5.7	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.02.2026	7:00-7:00	64.4	33.8	21.1	4.6	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.02.2026	7:30-7:30	63.7	35.7	22.6	5.5	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.02.2026	7:00-7:00	62.9	33.7	23.4	4.6	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.02.2026	7:30-7:30	62.3	33.8	22.0	4.9	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.02.2026	7:00-7:00	63.2	30.5	21.5	5.0	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.02.2026	7:30-7:30	62.0	30.6	22.4	5.1	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;**DL**: Detection Limit ; **NH_3**: BDL (DL:20); **O_3**: BDL (DL:20); **CO**: BDL (DL:1.0); **Pb**: BDL (DL:0.1); **Ni**: BDL (DL:1.0); **As**: BDL (DL:1.0); **C_6H_6**: BDL (DL:1.0); **BaP**: BDL (DL:0.1)
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries
S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part),
of Keeranur Village, Kangeyam Taluk, Tiruppur District.

Test Certificate No : CML/25-26/T122118 Test Certificate Date : 27.02.2026
Location of Sampling : **AAQ – 3; Near Project Area- 11° 4'21.49"N 77°34'24.65"E**
Sampling Plan &Procedure : CML/LAB/ENV/SOP/AAQ (IS 5182 & USEPA Compendium)
Sampling Instrument ID &Calibration Due Date: CML/ENV/RDS/043 & 18.11.2026
Sampling Instrument ID &Calibration Due Date: CML/ENV/FDS/040 & 19.11.2026

Ambient AirMonitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	CO	Pb	Ni	As	C_6H_6	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	ng/m³	ng/m³	µg/m³	ng/m³
Date	Period hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.12.2025	7:00-7:00	62.9	41.3	21.8	4.2	22.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.12.2025	7:30-7.30	61.5	42.3	19.3	4.4	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.12.2025	7:00-7:00	63.9	43.4	21.3	5.9	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.12.2025	7:30-7.30	62.4	42.7	18.3	5.2	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.12.2025	7:00-7:00	61.8	41.8	21.3	5.0	22.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.12.2025	7:30-7.30	62.4	42.3	22.7	5.2	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.12.2025	7:00-7:00	62.3	42.9	23.2	4.8	23.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.12.2025	7:30-7.30	62.9	42.1	21.4	4.4	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.12.2025	7:00-7:00	63.5	43.5	21.6	5.2	24.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.12.2025	7:30-7.30	62.6	41.7	22.7	4.3	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.01.2026	7:00-7:00	63.8	42.3	23.6	6.5	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.01.2026	7:30-7.30	61.4	43.1	21.5	4.9	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.01.2026	7:00-7:00	62.9	42.8	22.7	5.8	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.01.2026	7:30-7.30	63.7	42.5	21.4	4.3	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.01.2026	7:00-7:00	62.5	43.6	18.6	5.0	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.01.2026	7:30-7.30	63.6	43.1	19.3	4.2	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.01.2026	7:00-7:00	63.8	42.7	20.8	5.4	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.01.2026	7:30-7.30	64.7	43.8	22.4	5.3	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.02.2026	7:00-7:00	63.5	42.5	22.6	5.7	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.02.2026	7:30-7.30	62.4	42.8	23.0	5.4	23.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.02.2026	7:00-7:00	62.3	41.3	22.7	4.6	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.02.2026	7:30-7.30	63.7	42.7	21.3	5.7	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.02.2026	7:00-7:00	64.0	43.9	23.5	5.5	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.02.2026	7:30-7.30	63.1	42.6	20.6	5.1	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.02.2026	7:00-7:00	62.8	43.5	21.9	4.2	22.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.02.2026	7:30-7.30	63.9	41.8	22.4	5.4	24.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;**DL**: Detection Limit ; **NH_3**: BDL (DL:20); **O_3**: BDL (DL:20); **CO**: BDL (DL:1.0); **Pb**: BDL (DL:0.1); **Ni**: BDL (DL:1.0); **As**: BDL (DL:1.0); **C_6H_6**: BDL (DL:1.0); **BaP**: BDL (DL:0.1)
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries
S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District.

Test Certificate No : CML/25-26/T122119 Test Certificate Date : 27.02.2026
Location of Sampling : **AAQ – 4, Keeranur (Residential))- 11° 4'49.11"N 77°32'55.23"E**
Sampling Plan &Procedure : CML/LAB/ENV/SOP/AAQ (IS 5182 & USEPA Compendium)
Sampling Instrument ID &Calibration Due Date: CML/ENV/RDS/044 & 18.11.2026
Sampling Instrument ID &Calibration Due Date: CML/ENV/FDS/041 & 19.11.2026

Ambient AirMonitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	CO	Pb	Ni	As	C_6H_6	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	ng/m³	ng/m³	µg/m³	ng/m³
Date	Period hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.12.2025	7:00-7:00	60.8	42.7	21.7	5.1	20.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.12.2025	7:30-7.30	63.5	45.8	23.4	5.5	19.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.12.2025	7:00-7:00	62.9	41.5	21.6	4.8	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.12.2025	7:30-7.30	62.4	42.6	22.5	4.2	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.12.2025	7:00-7:00	63.6	43.9	21.9	4.5	18.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.12.2025	7:30-7.30	61.8	42.7	23.8	4.2	17.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.12.2025	7:00-7:00	62.1	42.6	22.6	5.4	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.12.2025	7:30-7.30	62.3	41.6	23.2	6.6	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.12.2025	7:00-7:00	62.7	43.9	21.7	4.5	18.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.12.2025	7:30-7.30	61.9	42.3	21.4	5.5	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.01.2026	7:00-7:00	63.6	43.4	24.7	5.4	20.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.01.2026	7:30-7.30	62.5	42.6	22.5	4.6	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.01.2026	7:00-7:00	60.8	43.3	21.9	5.8	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.01.2026	7:30-7.30	63.2	44.7	23.4	5.4	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.01.2026	7:00-7:00	62.4	41.5	23.6	5.2	20.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.01.2026	7:30-7.30	63.2	42.8	22.5	5.2	18.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.01.2026	7:00-7:00	61.9	41.2	21.9	5.4	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.01.2026	7:30-7.30	62.3	43.7	21.7	5.5	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.02.2026	7:00-7:00	63.0	44.5	22.3	5.5	21.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.02.2026	7:30-7.30	61.7	42.4	21.5	5.2	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.02.2026	7:00-7:00	62.9	43.9	24.8	4.9	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.02.2026	7:30-7.30	61.5	0.0	22.9	4.7	22.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.02.2026	7:00-7:00	63.6	41.1	21.4	5.6	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.02.2026	7:30-7.30	62.7	42.5	23.8	5.5	16.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.02.2026	7:00-7:00	61.9	40.7	22.1	5.4	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.02.2026	7:30-7.30	62.3	41.5	21.6	4.8	22.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ,**DL**: Detection Limit ; **NH_3**: BDL (DL:20); **O_3**: BDL (DL:20); **CO**: BDL (DL:1.0); **Pb**: BDL (DL:0.1); **Ni**: BDL (DL:1.0); **As**: BDL (DL:1.0); **C_6H_6**: BDL (DL:1.0); **BaP**: BDL (DL:0.1)
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries
S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part),
of Keeranur Village, Kangeyam Taluk, Tiruppur District.

Test Certificate No : CML/25-26/T122120 Test Certificate Date : 27.02.2026
Location of Sampling : **AAQ – 5, Paranjervali(School) - 11° 4'29.48"N 77°35'53.09"E**
Sampling Plan &Procedure : CML/LAB/ENV/SOP/AAQ (IS 5182 & USEPA Compendium)
Sampling Instrument ID &Calibration Due Date: CML/ENV/RDS/045 & 18.11.2026
Sampling Instrument ID &Calibration Due Date: CML/ENV/FDS/042 & 19.11.2026

Ambient AirMonitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	CO	Pb	Ni	As	C_5H_8	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	ng/m³	ng/m³	µg/m³	ng/m³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.12.2025	7:00-7:00	62.5	43.9	20.9	4.9	20.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.12.2025	7:30-7:30	63.6	41.8	18.7	4.8	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.12.2025	7:00-7:00	62.8	42.7	20.3	5.5	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.12.2025	7:30-7:30	61.4	40.4	21.4	5.2	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.12.2025	7:00-7:00	65.9	40.6	22.5	4.3	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.12.2025	7:30-7:30	63.1	41.9	24.1	5.2	23.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.12.2025	7:00-7:00	62.9	40.3	23.6	4.3	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.12.2025	7:30-7:30	60.7	42.4	23.8	4.3	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.12.2025	7:00-7:00	62.8	43.1	24.7	5.5	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.12.2025	7:30-7:30	62.3	41.8	23.6	4.1	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.01.2026	7:00-7:00	62.5	42.6	23.5	4.2	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.01.2026	7:30-7:30	63.9	42.8	21.8	5.5	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.01.2026	7:00-7:00	63.4	42.5	20.3	5.0	26.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.01.2026	7:30-7:30	61.2	43.4	23.5	4.5	24.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.01.2026	7:00-7:00	65.8	42.6	21.2	4.6	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.01.2026	7:30-7:30	65.1	43.4	19.7	4.5	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.01.2026	7:00-7:00	62.8	42.9	20.3	4.4	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.01.2026	7:30-7:30	62.9	43.6	21.4	5.5	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.02.2026	7:00-7:00	63.6	42.5	21.6	5.4	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.02.2026	7:30-7:30	65.9	42.7	21.4	5.6	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.02.2026	7:00-7:00	65.1	42.5	21.6	5.4	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.02.2026	7:30-7:30	62.8	42.7	20.5	5.1	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.02.2026	7:00-7:00	62.9	44.2	21.3	5.2	25.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.02.2026	7:30-7:30	63.6	45.3	22.6	5.5	23.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.02.2026	7:00-7:00	61.2	46.2	23.6	5.4	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.02.2026	7:30-7:30	60.9	47.2	21.9	5.6	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;**DL**: Detection Limit ; **NH_3**: BDL (DL:20); **O_3**: BDL (DL:20); **CO**: BDL (DL:1.0); **Pb**: BDL (DL:0.1); **Ni**: BDL (DL:1.0); **As**: BDL (DL:1.0); **C_5H_8**: BDL (DL:1.0); **BaP**: BDL (DL:0.1)
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited

[redacted]

Reviewed & Authorised By
V. SELVAKUMAR
Technical Manager

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Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries
S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part),
of Keeranur Village, Kangeyam Taluk, Tiruppur District.

Test Certificate No : CML/25-26/T122121 Test Certificate Date : 27.02.2026
Location of Sampling : **AAQ – 6, Varathappampalayam (Residential)**
Sampling Plan &Procedure : CML/LAB/ENV/SOP/AAQ (IS 5182 & USEPA Compendium)
Sampling Instrument ID &Calibration Due Date: CML/ENV/RDS/046 & 16.11.2026
Sampling Instrument ID &Calibration Due Date: CML/ENV/FDS/044 & 19.11.2026

Ambient AirMonitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	CO	Pb	Ni	As	C_6H_6	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	ng/m³	ng/m³	µg/m³	ng/m³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.12.2025	7:00-7:00	64.4	40.8	22.8	4.8	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.12.2025	7:30-7:30	63.8	42.3	22.6	4.5	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.12.2025	7:00-7:00	62.1	40.7	20.7	5.4	23.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.12.2025	7:30-7:30	62.9	40.1	21.9	4.5	2.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.12.2025	7:00-7:00	61.3	42.6	20.6	5.2	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.12.2025	7:30-7:30	62.9	41.3	20.3	4.2	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.12.2025	7:00-7:00	61.5	40.4	22.5	5.2	25.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.12.2025	7:30-7:30	62.3	41.9	21.8	5.1	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.12.2025	7:00-7:00	63.8	42.4	21.9	4.3	23.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.12.2025	7:30-7:30	62.9	41.9	20.3	4.2	21.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.01.2026	7:00-7:00	65.5	43.7	22.7	5.1	22.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.01.2026	7:30-7:30	61.4	41.6	21.1	5.4	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.01.2026	7:00-7:00	63.5	42.5	20.3	4.8	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.01.2026	7:30-7:30	62.9	43.8	22.6	5.5	21.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.01.2026	7:00-7:00	61.5	40.1	20.3	5.8	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.01.2026	7:30-7:30	62.3	40.2	23.9	4.5	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.01.2026	7:00-7:00	63.8	43.9	21.7	5.6	21.9	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.01.2026	7:30-7:30	62.4	42.8	20.4	5.7	19.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.02.2026	7:00-7:00	63.6	41.5	21.9	4.1	20.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.02.2026	7:30-7:30	62.1	40.7	20.6	5.6	21.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.02.2026	7:00-7:00	64.4	40.6	21.5	5.8	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.02.2026	7:30-7:30	63.8	42.5	21.6	5.0	21.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.02.2026	7:00-7:00	62.1	42.6	21.8	6.1	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.02.2026	7:30-7:30	62.9	43.8	20.4	6.4	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.02.2026	7:00-7:00	63.8	41.6	22.5	5.9	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.02.2026	7:30-7:30	64.3	42.6	21.4	6.1	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ;**DL**: Detection Limit ; **NH_3**: BDL (DL:20); **O_3**: BDL (DL:20); **CO**: BDL (DL:1.0); **Pb**: BDL (DL:0.1); **Ni**: BDL (DL:1.0); **As**: BDL (DL:1.0); **C_6H_6**: BDL (DL:1.0); **BaP**: BDL (DL:0.1)
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMARI
Technical Manager

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Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries
S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part),
of Keeranur Village, Kangeyam Taluk, Tiruppur District.

Test Certificate No : CML/25-26/T122122 Test Certificate Date : 27.02.2026
Location of Sampling : **AAQ – 7, Sivanmalai (Residential)- 11° 2'22.57"N 77°31'55.73"E**
Sampling Plan &Procedure : CML/LAB/ENV/SOP/AAQ (IS 5182 & USEPA Compendium)
Sampling Instrument ID &Calibration Due Date: CML/ENV/RDS/049 & 16.11.2026
Sampling Instrument ID &Calibration Due Date: CML/ENV/FDS/045 & 19.11.2026

Ambient AirMonitoring Details		Particulate Pollutant			Gaseous Pollutant					Metals Pollutant			Organic Pollutant	
Parameters		SPM	PM_{10}	$PM_{2.5}$	SO_2	NO_2	NH_3	O_3	CO	Pb	Ni	As	C_2H_2	BaP
NAAQ Norms		200	100	60	80	80	400	180	4	1	20	6	5	1
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	ng/m³	ng/m³	µg/m³	ng/m³
Date	Period.hrs	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
01.12.2025	7:00-7:00	22.8	41.7	22.7	4.6	22.1	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.12.2025	7:30-7:30	22.6	42.5	20.2	5.4	21.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
07.12.2025	7:00-7:00	20.7	44.3	21.3	5.8	22.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.12.2025	7:30-7:30	21.9	42.3	23.7	6.5	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
14.12.2025	7:00-7:00	20.6	43.6	21.4	4.4	24.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.12.2025	7:30-7:30	20.3	41.6	23.6	6.6	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21.12.2025	7:00-7:00	22.5	42.7	22.5	5.4	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.12.2025	7:30-7:30	21.8	40.9	21.8	4.8	25.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
28.12.2025	7:00-7:00	21.9	43.3	22.6	5.1	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
29.12.2025	7:30-7:30	20.3	42.4	21.7	4.2	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
04.01.2026	7:00-7:00	22.7	41.6	22.4	5.9	22.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
05.01.2026	7:30-7:30	21.1	42.5	21.3	4.1	23.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
11.01.2026	7:00-7:00	20.3	41.8	23.6	5.2	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
12.01.2026	7:30-7:30	22.6	42.4	21.9	4.1	23.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
18.01.2026	7:00-7:00	20.5	43.1	20.5	5.7	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
19.01.2026	7:30-7:30	23.9	42.9	21.3	4.6	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25.01.2026	7:00-7:00	21.7	43.2	22.8	6.1	22.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26.01.2026	7:30-7:30	20.4	42.3	21.5	5.7	23.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
01.02.2026	7:00-7:00	21.9	42.7	20.7	5.8	23.4	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
02.02.2026	7:30-7:30	20.6	42.5	20.3	4.5	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
08.02.2026	7:00-7:00	21.5	43.5	21.9	5.5	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
09.02.2026	7:30-7:30	62.3	42.5	20.8	4.8	22.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15.02.2026	7:00-7:00	61.5	42.6	21.8	5.1	23.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16.02.2026	7:30-7:30	62.5	41.9	22.6	4.4	23.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22.02.2026	7:00-7:00	61.9	40.8	21.7	5.7	21.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23.02.2026	7:30-7:30	60.2	36.8	20.9	5.2	22.0	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Note: BDL: Below Detection Limit ,**DL**: Detection Limit , **NH_3**: BDL (DL:20); **O_3**: BDL (DL:20); **CO**: BDL (DL:1.0); **Pb**: BDL (DL:0.1); **Ni**: BDL (DL:1.0); **As**: BDL (DL:1.0); **C_2H_2**: BDL (DL:1.0); **BaP**: BDL (DL:0.1)
Remarks: The values observed for the pollutants given above are within the CPCB standards.

End of Report

For Chennai Mettex Lab Private Limited

Compiled & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries
S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part),
of Keeranur Village, Kangeyam Taluk, Tiruppur District.

Test Certificate No : CML/25-26/T122123 Test Certificate Date : 27.02.2026
Sample Description : Ambient Noise Monitoring
Location of Sampling : N1 - Core zone - Project Area - 11° 4'10.52"N 77°34'11.80"E
Location of Sampling : N2 - Core zone - Project Area - 11° 3'59.95"N 77°33'57.56"E
Sampling Plan & Procedure: CML/LAB/ENV/SOP/N&L & IS 9989:1961
Sampling Instrument : CML/ENV/SLM/001 & CML/ENV/SLM/009

Sampling Date : 16.12.2025						
Location	N1 – Core zone - Project Area			N2 - Core zone - Project Area		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	43.8	34.2	43.8	41.7	32.6	41.7
07:00-08:00	40.2	32.9	40.2	40.2	32.4	40.2
08:00-09:00	41.4	33.8	41.4	44.5	36.5	44.5
09:00-10:00	40.9	32.6	40.9	47.8	38.9	47.8
10:00-11:00	38.2	31.7	38.2	48.7	40.5	48.7
11:00-12:00	45.5	36.1	45.5	49.8	41.2	49.8
12:00-13:00	46.2	38.4	46.2	46.5	42.1	46.5
13:00-14:00	47.5	39.2	47.5	49.8	43.5	49.8
14:00-15:00	48.3	40.7	48.3	47.6	42.1	47.6
15:00-16:00	45.8	36.9	45.8	48.1	41.6	48.1
16:00-17:00	49.2	41.2	49.2	49.3	40.1	49.3
17:00-18:00	47.5	39.5	47.5	47.3	36.8	47.3
18:00-19:00	48.3	41.7	48.3	44.9	35.8	44.9
19:00-20:00	45.7	36.8	45.7	40.3	32.6	40.3
20:00-21:00	38.2	31.5	38.2	44.9	35.2	44.9
21:00-22:00	40.9	32.5	40.9	47.2	34.5	47.2
22:00-23:00	43.3	34.1	43.3	39.5	31.2	39.5
23:00-00:00	38.5	30.6	38.5	44.3	34.6	44.3
00:00-01:00	40.7	32.5	40.7	40.6	32.9	40.6
01:00-02:00	39.5	31.9	39.5	40.4	32.3	40.4
02:00-03:00	40.2	32.3	40.2	39.1	31.5	39.1
03:00-04:00	39.5	31.7	39.5	40.6	32.7	40.6
04:00-05:00	40.3	32.5	40.3	40.3	32.6	40.3
05:00-06:00	38.5	31.8	38.5	40.7	32.4	40.7
Result	Day Mean		**41.8**	Day Mean		**43.4**
	Night Mean		**37.7**	Night Mean		**38.3**

Note: CPCB Norms Industrial Area Day Time:75 dB(A); Night Time:70 dB(A)
The Noise level in the above location exists within the permissible limits of CPCB.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries
S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part),
of Keeranur Village, Kangeyam Taluk, Tirupur District.

Test Certificate No : CML/25-26/T122124 Test Certificate Date : 27.02.2026
Sample Description : Ambient Noise Monitoring
Location of Sampling : N3 – Near Project Area - 11° 4'21.29"N 77°34'24.25"E
Location of Sampling : N4 – Keeranur (Residential) - 11° 4'49.12"N 77°32'55.65"E
Sampling Plan & Procedure: CML/LAB/ENV/SOP/N&L & IS 9989:1981
Sampling Instrument : CML/ENV/SLM/003 & CML/ENV/SLM/001

Sampling Date : 27.01.2026						
Location	N3 - Near Project Area			N4 – Keeranur (Residential)		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	41	33.4	41	40.1	33.2	40.1
07:00-08:00	42.5	35.6	42.5	42.6	34.5	42.6
08:00-09:00	43.5	34.8	43.5	43.5	35.6	43.5
09:00-10:00	44.5	36.9	44.5	47.8	36.8	47.8
10:00-11:00	45.8	40.1	45.8	49.8	40.5	49.8
11:00-12:00	47.8	41.2	47.8	48.7	41.5	48.7
12:00-13:00	48.7	42.5	48.7	49.8	42.5	49.8
13:00-14:00	49.8	43.5	49.8	47.8	43.6	47.8
14:00-15:00	47.4	44.5	47.4	48.9	42.1	48.9
15:00-16:00	49.8	45.6	49.8	47.8	41.6	47.8
16:00-17:00	47.5	42.7	47.5	49.1	40.8	49.1
17:00-18:00	48.9	39.8	48.9	47	38.7	47
18:00-19:00	46.5	37.8	46.5	47.9	39.4	47.9
19:00-20:00	44.1	36.5	44.1	41.2	32.6	41.2
20:00-21:00	43.2	34.8	43.2	44.3	35.8	44.3
21:00-22:00	45.9	32.4	45.9	45.5	36.1	45.5
22:00-23:00	40.3	31.5	40.3	46.2	35.4	46.2
23:00-00:00	40.8	32.9	40.8	44.9	36.2	44.9
00:00-01:00	44.2	36.5	44.2	43.2	35.9	43.2
01:00-02:00	43.4	34.3	43.4	44.5	34.5	44.5
02:00-03:00	40.6	32.7	40.6	43.7	36.2	43.7
03:00-04:00	41.3	32.1	41.3	44.2	36.7	44.2
04:00-05:00	39.1	32.6	39.1	43.8	34.4	43.8
05:00-06:00	40.3	32.8	40.3	44.5	36.9	44.5
Result	Day Mean		43.6	Day Mean		44.0
	Night Mean		38.9	Night Mean		41.9

Note: CPCB Norms Residential Area Day Time:55 dB(A), Night Time:45 dB(A)
The Noise level in the above location exists within the permissible limits of CPCB.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorized by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPOR

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries
S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part),
of Keeranur Village, Kangeyam Taluk, Tiruppur District.

Test Certificate No : CML/25-26/T122125 Test Certificate Date : 27.02.2026
Sample Description : Ambient Noise Monitoring
Location of Sampling : N5 – Paranjervali (School) - 11° 4'29.48"N 77°35'51.53"E
Location of Sampling : N6 – Varathappampalayam (Residential) - 11° 1'49.43"N 77°35'52.75"E
Sampling Plan & Procedure: CML/LAB/ENV/SOP/N&L & IS 9989:1981
Sampling Instrument : CML/ENV/SLM/009 & CML/ENV/SLM/001

Sampling Date : 17.02.2026						
Location	N5 Paranjervali(School)			N6-Varathappampalayam (Residential)		
Parameter	Min	Max	Result	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
06:00-07:00	39.5	31.9	39.5	40.1	33.5	40.1
07:00-08:00	40.3	32.3	40.3	41.2	34.5	41.2
08:00-09:00	42.5	33.5	42.5	42.1	35.6	42.1
09:00-10:00	47.8	36.8	47.8	43.5	36.5	43.5
10:00-11:00	46.7	38.9	46.7	45.8	40.8	45.8
11:00-12:00	45.8	39.7	45.8	47.8	41.2	47.8
12:00-13:00	49.8	40.5	49.8	48.9	42.4	48.9
13:00-14:00	48.7	41.6	48.7	48.7	43.5	48.7
14:00-15:00	48.1	42.4	48.1	49.7	42.6	49.7
15:00-16:00	47.1	43.4	47.1	48.1	41.5	48.1
16:00-17:00	47.3	42.1	47.3	46.7	40.8	46.7
17:00-18:00	48.2	41.5	48.2	45.7	38.9	45.7
18:00-19:00	46.8	40.1	46.8	40.3	32.4	40.3
19:00-20:00	45.7	38.7	45.7	39.7	31.5	39.7
20:00-21:00	44.7	37.6	44.7	40.5	32.7	40.5
21:00-22:00	43.8	36.8	43.8	40.3	32.6	40.3
22:00-23:00	40.5	35.4	40.5	39.1	31.2	39.1
23:00-00:00	41.4	33.9	41.4	38.7	34.2	38.7
00:00-01:00	38.9	31.8	38.9	37.8	32.8	37.8
01:00-02:00	40.3	31.9	40.3	36.8	31.5	36.8
02:00-03:00	38.9	31.5	38.9	35.6	32.9	35.6
03:00-04:00	40.7	32.8	40.7	34.6	31.5	34.6
04:00-05:00	41.4	33.4	41.4	33.6	32.1	33.6
05:00-06:00	51.6	38.1	51.6	32.7	31.7	32.7
Result	**Day Mean**		**43.3**	**Day Mean**		**40.1**
	Night Mean		**39.4**	**Night Mean**		**41.2**

Note: CPCB Norms Residential Area Day Time:55 dB(A); Night Time:45 dB(A)
The Noise level in the above location exists within the permissible limits of CPCB.

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries
S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District.

Test Certificate No : CML/25-26/T122126 Test Certificate Date : 27.02.2026
Sample Description : Ambient Noise Monitoring
Location of Sampling : N7 – Sivanmalai (Residential) - 11° 2'22.93"N 77°31'55.87"E
Sampling Plan & Procedure: CML/LAB/ENV/SOP/N&L & IS 9989:1981
Sampling Instrument : C/ENV/SLM/003

Location	N7 Sivanmalai (Residential)		
Parameter	Min	Max	Result
Time	dB(A)	dB(A)	dB(A)
06:00-07:00	40.1	32.3	40.1
07:00-08:00	41.5	33.4	41.5
08:00-09:00	42.8	34.5	42.8
09:00-10:00	43.7	35.6	43.7
10:00-11:00	46.7	37.8	46.7
11:00-12:00	48.7	39.8	48.7
12:00-13:00	49.1	40.5	49.1
13:00-14:00	47.8	41.5	47.8
14:00-15:00	48.1	42.1	48.1
15:00-16:00	49.3	40.5	49.3
16:00-17:00	47.5	38.7	47.5
17:00-18:00	45.4	37.9	45.4
18:00-19:00	44.5	36.8	44.5
19:00-20:00	43.5	35.4	43.5
20:00-21:00	42.5	32.9	42.5
21:00-22:00	41.5	35.8	41.5
22:00-23:00	40.8	34.2	40.8
23:00-00:00	42.3	31.9	42.3
00:00-01:00	40.7	32.5	40.7
01:00-02:00	39.8	32.9	39.8
02:00-03:00	38.7	31.5	38.7
03:00-04:00	36.4	32.7	36.4
04:00-05:00	37.6	31.9	37.6
05:00-06:00	36.8	32.5	36.8
Result	**Day Mean**		**42.6**
	Night Mean		**37.0**

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
M. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tirupur District.

T.C Date : 27.02.2026
T.C No : CML/25-26/T122127
Date Of Receipt : 18.02.2026
Analysis Commenced On: 18.02.2026
Analysis Completed On : 27.02.2026

Cust. Ref : SRF Dated : 17.02.2026
Lab No : 2657583/001
Sample Description : **Surface Water (SW-1) – Noyyal River**
(as stated by customer)

TEST	PROTOCOL	RESULTS
Discipline: Chemical	**Group:** Water	
Colour	IS 3025 Part 4:2021	1 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:2022 (electrometric method)	7.98
Conductivity @ 25°C	IS 3025 Part 14:2013	1280 µmhos/cm
Turbidity	IS 3025 Part 10:2023	3 NTU
Total Dissolved Solids	IS 3025 Part 16:2023	742.0 mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (EDTA titrimetric method)	224.0 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (EDTA titrimetric method)	52.9 mg/l
Magnesium as Mg	IS 3025 Part 46:2023	22.3 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:2023	211.2 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Argentometric Method)	254.2 mg/l
Sulphate as SO_4	IS 3025 Part 24/Sec 1-2022	46.2 mg/l
Iron as Fe	IS 3025 Part 53:2003 (1,10 phenanthroline method)	0.41 mg/l
Residual Free Chlorine	IS 3025 Part 26:2021	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 24th Edn. 2023:4500 F D	0.43 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Chromotropic acid method)	11.3 mg/l
Copper as Cu	IS 3025 Part 65:2022	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Mercury as Hg	IS 3025 Part 65:2022	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2022	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)

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TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2022	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-2021	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43/Sec 1 - 2022	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 3025 Part 68:2019	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27/Sec 1-2021 (Colorimetric method)	BDL (DL:0.01 mg/l)
BOD @ 27°C for 3 days	IS 3025 Part 44:2023	12.4 mg/l
Chemical Oxygen Demand	IS 3025 Part 58:2023	30.5 mg/l
Dissolved Oxygen	IS 3025 Part 38:1989 (Azide Modification)	6.2 mg/l
Barium as Ba	IS 3025 Part 65:2022	BDL (DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Nesslerization method)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 29-2022	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -2022	10.9 mg/l
Discipline: Biological	**Group:** Water	
Total Coliform	APHA 24th Edn. 2023-9221 B	1600 MPN/100ml
Escherichia coli	APHA 24th Edn. 2023-9221 F	210 MPN/100ml
Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number.		

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
G.S. RADHA
Technical Manager
Authorised Signatory

[redacted]

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District.

T.C Date : 27.02.2026

T.C No : CML/25-26/T122128

Date Of Receipt : 18.02.2026

Analysis Commenced On: 18.02.2026

Analysis Completed On : 27.02.2026

Cust. Ref : SRF Dated : 17.02.2026

Lab No : 2657583/002

Sample Description : **Ground Water (OW-1)- Near Project Area**
(as stated by customer)

TEST	PROTOCOL	RESULTS
Discipline: Chemical	**Group:** Water	
Colour	IS 3025 Part 4:2021	1 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:2022 (electrometric method)	7.56
Conductivity @ 25°C	IS 3025 Part 14:2013	1156.0 µmhos/cm
Turbidity	IS 3025 Part 10:2023	1 NTU
Total Dissolved Solids	IS 3025 Part 16:2023	678.0mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (EDTA titrimetric method)	204 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (EDTA titrimetric method)	51.3 mg/l
Magnesium as Mg	IS 3025 Part 46:2023	18.4 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:2023	186.0 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Argentometric Method)	223.3 mg/l
Sulphate as SO_4	IS 3025 Part 24/Sec 1-2022	40.9 mg/l
Iron as Fe	IS 3025 Part 53:2003 (1,10 phenanthroline method)	0.49 mg/l
Residual Free Chlorine	IS 3025 Part 26:2021	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 24th Edn. 2023-4500 F,D	0.38 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Chromotropic acid method)	2.6 mg/l
Copper as Cu	IS 3025 Part 65:2022	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Mercury as Hg	IS 3025 Part 65:2022	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2022	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)

...Contd....2

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TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2022	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-2021	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43/Sec 1 - 2022	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 3025 Part 68:2019	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27/Sec 1-2021 (Colorimetric method)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 65:2022	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Nesslerization method)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 29-2022	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -2022	BDL (DL:1.0 mg/l)
Discipline: Biological	**Group:** Water	
Total Coliform	APHA 24th Edn. 2023-9221 B	170 MPN/100ml
Escherichia coli	APHA 24th Edn. 2023-9221 F	< 1.8 MPN/100ml

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number. < 1.8 MPN/100ml can be taken as "No Microbial Growth".

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
G.S. RADHA
Technical Manager
Authorised Signatory

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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Phone : +91 44 22323163, 22311034, 42179490, 42179491 | CIN : U74999TN2008PTC069459
Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District.

T.C Date : 27.02.2026

T.C No : CML/25-26/T122129

Date Of Receipt : 18.02.2026

Analysis Commenced On: 18.02.2026

Analysis Completed On : 27.02.2026

Cust. Ref : SRF Dated : 17.02.2026

Lab No : 2657583/003

Sample Description : **Ground Water (OW- 2) - Paranjervali**
(as stated by customer)

TEST	PROTOCOL	RESULTS
Discipline: Chemical	**Group:** Water	
Colour	IS 3025 Part 4:2021	1 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:2022 (electrometric method)	7.21
Conductivity @ 25°C	IS 3025 Part 14:2013	1054 µmhos/cm
Turbidity	IS 3025 Part 10:2023	1 NTU
Total Dissolved Solids	IS 3025 Part 16:2023	611.0 mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (EDTA titrimetric method)	184 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (EDTA titrimetric method)	46.4 mg/l
Magnesium as Mg	IS 3025 Part 46:2023	16.5 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:2023	163.6 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Argentometric Method)	202.8 mg/l
Sulphate as SO_4	IS 3025 Part 24/Sec 1-2022	37.7 mg/l
Iron as Fe	IS 3025 Part 53:2003 (1,10 phenanthroline method)	0.35 mg/l
Residual Free Chlorine	IS 3025 Part 26:2021	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 24th Edn. 2023:4500 F.D	0.32 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Chromotropic acid method)	3.5 mg/l
Copper as Cu	IS 3025 Part 65:2022	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Mercury as Hg	IS 3025 Part 65:2022	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2022	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)

...Contd....2

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TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2022	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-2021	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43/Sec 1 - 2022	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 3025 Part 68:2019	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27/Sec 1-2021 (Colorimetric method)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 65:2022	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Nesslerization method)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 29-2022	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -2022	BDL (DL:1.0 mg/l)
Discipline: Biological	**Group:** Water	
Total Coliform	APHA 24th Edn. 2023-9221 B	150 MPN/100ml
Escherichia coli	APHA 24th Edn. 2023-9221 F	< 1.8 MPN/100ml
Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number,< 1.8 MPN/100ml can be taken as "No Microbial Growth".		

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
G.S. RADHA
Technical Manager
Authorised Signatory

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District.

T.C Date : 27.02.2026

T.C No : CML/25-26/T122130

Date Of Receipt : 18.02.2026

Analysis Commenced On: 18.02.2026

Analysis Completed On : 27.02.2026

Cust. Ref : SRF Dated : 17.02.2026

Lab No : 2657583/004

Sample Description : **Ground Water (OW- 3) - Sivanmalai**
(as stated by customer)

TEST	PROTOCOL	RESULTS
Discipline: Chemical	**Group:** Water	
Colour	IS 3025 Part 4:2021	5 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:2022 (electrometric method)	7.54
Conductivity @ 25°C	IS 3025 Part 14:2013	1001.5 µmhos/cm
Turbidity	IS 3025 Part 10:2023	2 NTU
Total Dissolved Solids	IS 3025 Part 16:2023	581.0 mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (EDTA titrimetric method)	168.0 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (EDTA titrimetric method)	46.4 mg/l
Magnesium as Mg	IS 3025 Part 46:2023	18.4 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:2023	141.2 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Argentometric Method)	189.7 mg/l
Sulphate as SO_4	IS 3025 Part 24/Sec 1-2022	45.3mg/l
Iron as Fe	IS 3025 Part 53:2003 (1,10 phenanthroline method)	0.32 mg/l
Residual Free Chlorine	IS 3025 Part 26:2021	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 24th Edn. 2023:4500 F D	0.29 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Chromotropic acid method)	6.8 mg/l
Copper as Cu	IS 3025 Part 65:2022	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Mercury as Hg	IS 3025 Part 65:2022	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2022	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)

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Lab No: 2657583/004 T.C No: CML/25-26/T122130 Dated : 27.02.2026

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2022	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-2021	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43/Sec 1 - 2022	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 3025 Part 68:2019	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27/Sec 1-2021 (Colorimetric method)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 65:2022	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Nesslerization method)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 29-2022	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -2022	BDL (DL:1.0 mg/l)
Discipline: Biological	**Group:** Water	
Total Coliform	APHA 24th Edn. 2023-9221 B	130 MPN/100ml
Escherichia coli	APHA 24th Edn. 2023-9221 F	< 1.8 MPN/100ml
Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number,< 1.8 MPN/100ml can be taken as "No Microbial Growth".		

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
G.S. RADHA
Technical Manager
Authorised Signatory

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District.

T.C Date : 27.02.2026

T.C No : CML/25-26/T122131

Date Of Receipt : 18.02.2026

Analysis Commenced On: 18.02.2026

Analysis Completed On : 27.02.2026

Cust. Ref : SRF Dated : 17.02.2026

Lab No : 2657583/005

Sample Description : **Ground Water (BW-1) – Near Project Area**
(as stated by customer)

TEST	PROTOCOL	RESULTS
Discipline: Chemical	**Group:** Water	
Colour	IS 3025 Part 4:2021	5 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:2022 (electrometric method)	7.22
Conductivity @ 25°C	IS 3025 Part 14:2013	938.0 µmhos/cm
Turbidity	IS 3025 Part 10:2023	1 NTU
Total Dissolved Solids	IS 3025 Part 16:2023	543.0 mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (EDTA titrimetric method)	156.0 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (EDTA titrimetric method)	35.2 mg/l
Magnesium as Mg	IS 3025 Part 46:2023	16.5 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:2023	126.2 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Argentometric Method)	189.1 mg/l
Sulphate as SO_4	IS 3025 Part 24/Sec 1-2022	32.6 mg/l
Iron as Fe	IS 3025 Part 53:2003 (1,10 phenanthroline method)	0.33 mg/l
Residual Free Chlorine	IS 3025 Part 26:2021	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 24th Edn. 2023:4500 F.D	0.27 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Chromotropic acid method)	2.9 mg/l
Copper as Cu	IS 3025 Part 65:2022	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Mercury as Hg	IS 3025 Part 65:2022	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2022	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)

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Lab No: 2657583/005 T.C No: CML/25-26/T122131 Dated : 27.02.2026

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2022	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-2021	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43/Sec 1 - 2022	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 3025 Part 68:2019	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27/Sec 1-2021 (Colorimetric method)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 65:2022	BDL(DL:0.06 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Nesslerization method)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 29-2022	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -2022	BDL (DL:1.0 mg/l)
Discipline: Biological	**Group:** Water	
Total Coliform	APHA 24th Edn. 2023-9221 B	140 MPN/100ml
Escherichia coli	APHA 24th Edn. 2023-9221 F	< 1.8 MPN/100ml

Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number,< 1.8 MPN/100ml can be taken as "No Microbial Growth".

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
G.S. RADHA
Technical Manager
Authorised Signatory

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District.

T.C Date : 27.02.2026

T.C No : CML/25-26/T122132

Date Of Receipt : 18.02.2026

Analysis Commenced On: 18.02.2026

Analysis Completed On : 27.02.2026

Cust. Ref : SRF Dated : 17.02.2026

Lab No : 2657563/006

Sample Description : **Ground Water (BW-2)- Varathappampalayam**
(as stated by customer)

TEST	PROTOCOL	RESULTS
Discipline: Chemical	**Group:** Water	
Colour	IS 3025 Part 4:2021	5 Hazen
Odour	IS 3025 Part 5:2018	Agreeable
pH at 25°C	IS 3025 Part 11:2022 (electrometric method)	7.15
Conductivity @ 25°C	IS 3025 Part 14:2013	913.0 µmhos/cm
Turbidity	IS 3025 Part 10:2023	1 NTU
Total Dissolved Solids	IS 3025 Part 16:2023	529.0 mg/l
Total Hardness as $CaCO_3$	IS 3025 Part 21:2009 (EDTA titrimetric method)	140 mg/l
Calcium as Ca	IS 3025 Part 40:1991 (EDTA titrimetric method)	32.0 mg/l
Magnesium as Mg	IS 3025 Part 46:2023	14.5 mg/l
Total Alkalinity as $CaCO_3$	IS 3025 Part 23:2023	136.7 mg/l
Chloride as Cl	IS 3025 Part 32:1988 (Argentometric Method)	172.2 mg/l
Sulphate as SO_4	IS 3025 Part 24/Sec 1-2022	29.8 mg/l
Iron as Fe	IS 3025 Part 53:2003 (1,10 phenanthroline method)	0.28mg/l
Residual Free Chlorine	IS 3025 Part 26:2021	BDL (DL:0.1 mg/l)
Fluoride as F	APHA 24th Edn. 2023:4500 F,D	0.26 mg/l
Nitrate as NO_3	IS 3025 Part 34:1988 (Chromotropic acid method)	2.1 mg/l
Copper as Cu	IS 3025 Part 65:2022	BDL (DL:0.01 mg/l)
Manganese as Mn	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Mercury as Hg	IS 3025 Part 65:2022	BDL (DL:0.0005 mg/l)
Cadmium as Cd	IS 3025 Part 65:2022	BDL (DL:0.001 mg/l)
Selenium as Se	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)

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Email : test@mettexlab.com | Web : www.mettexlab.com

Lab No: 2657583/006 T.C No: CML/25-26/T122132 Dated : 27.02.2026

TEST	PROTOCOL	RESULTS
Aluminium as Al	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Lead as Pb	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Zinc as Zn	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Total Chromium as Cr	IS 3025 Part 65:2022	BDL(DL : 0.02 mg/l)
Boron as B	IS 3025 Part 65:2022	BDL(DL : 0.05 mg/l)
Mineral Oil	IS 3025 Part 39-2021	BDL(DL : 0.01 mg/l)
Phenolic compounds as C_6H_5OH	IS 3025 Part 43/Sec 1 - 2022	BDL (DL:0.0005 mg/l)
Anionic Detergents (as MBAS)	IS 3025 Part 66:2019	BDL (DL:0.01 mg/l)
Cyanide as CN	IS 3025 Part 27/Sec 1-2021 (Colorimetric method)	BDL (DL:0.01 mg/l)
Barium as Ba	IS 3025 Part 65:2022	BDL(DL:0.05 mg/l)
Ammonia (as total ammonia-N)	IS 3025 Part 34-1988 (Nesslerization method)	BDL (DL:0.01 mg/l)
Sulphide as H_2S	IS 3025 Part 29-2022	BDL (DL:0.01 mg/l)
Molybdenum as Mo	IS 3025 Part 65:2022	BDL (DL:0.02 mg/l)
Total Arsenic as As	IS 3025 Part 65:2022	BDL (DL:0.005 mg/l)
Total Suspended Solids	IS 3025 Part 17 -2022	BDL (DL:1.0 mg/l)
Discipline: Biological	**Group:** Water	
Total Coliform	APHA 24th Edn. 2023-9221 B	120 MPN/100ml
Escherichia coli	APHA 24th Edn. 2023-9221 F	< 1.8 MPN/100ml
Note : APHA – American Public Health Association, BDL – Below Detection Limit, DL – Detection Limit, MPN – Most Probable Number,< 1.8 MPN/100ml can be taken as "No Microbial Growth".		

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
G.S. RADHA
Technical Manager
Authorised Signatory

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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Phone : +91 44 22323163, 22311034, 42179490, 42179491 | CIN : U74999TN2008PTC069459
Email : test@mettexlab.com | Web : www.mettexlab.com

TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District.

T.C Date : 27.02.2026
T.C No : CML/25-26/T122133
Date Of Receipt : 18.02.2026
Analysis Commenced On: 18.02.2026
Analysis Completed On : 27.02.2026

Cust. Ref : SRF Dated : 17.02.2026
Lab No : 2657584/001
Sample Description : **Soil – 1 – Core Zone - Project Area**
(as stated by customer)

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	5.69
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	221.0 µmhos/cm
03	**Texture :**		
	Clay	Gravimetric Method	29.2 %
	Sand		37.6 %
	Silt		33.2 %
04	Water Holding Capacity	By Gravimetric Method	41.3 %
05	Bulk Density	By Cylindrical Method	1.10 g/cm^3
06	Porosity	By Gravimetric Method	36.3 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	50.5 mg/kg
08	Magnesium as Mg		22.4 mg/kg
09	Manganese as Mn		26.6 mg/kg
10	Zinc as Zn		2.47 mg/kg
11	Boron as B		1.18 mg/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	71.5 mg/kg
13	Total Soluble Sulphate as SO_4	IS 2720 Part 27 : 1977 (Reaff:2016)	0.022 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	22.1 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Stannous chloride method)	3.31mg/kg
16	Total Nitrogen as N	IS 14684 : 1999	286.0 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		1.66 mg/kg
21	Iron as Fe		2.34 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	2.25 %
23	Organic Carbon	Methods of analysis of soils, plants, waters and fertilizers by HLS Tandon	1.31%
24	Cation Exchange Capacity	USEPA 9080 – 1986	25 meq/100g of soil

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District.

T.C Date : 27.02.2026
T.C No : CML/25-26/T122134
Date Of Receipt : 18.02.2026
Analysis Commenced On: 18.02.2026
Analysis Completed On : 27.02.2026

Cust. Ref : SRF Dated : 17.02.2026
Lab No : 2657584/002
Sample Description : **Soil – 2 – Project Area**
(as stated by customer)

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff.2016)	6.96
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	322.4 µmhos/cm
03	**Texture :**		
	Clay	Gravimetric Method	28.8 %
	Sand		37.6 %
	Silt		33.6 %
04	Water Holding Capacity	By Gravimetric Method	37.3%
05	Bulk Density	By Cylindrical Method	0.96 g/cm^3
06	Porosity	By Gravimetric Method	35.9 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	61.5 mg/kg
08	Magnesium as Mg		29.4 mg/kg
09	Manganese as Mn		23.5 mg/kg
10	Zinc as Zn		4.11 mg/kg
11	Boron as B		2.91 mg/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	56.5 mg/kg
13	Total Soluble Sulphate as SO_4	IS 2720 Part 27 : 1977 (Reaff.2015)	0.022%
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	19.8 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Stannous chloride method)	2.18 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999	284.8 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		1.11 mg/kg
21	Iron as Fe		3.98 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	3.10 %
23	Organic Carbon	Methods of analysis of soils, plants, waters and fertilizers by HLS Tandon	1.8 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	26.8 meq/100g of soil

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District.

T.C Date : 27.02.2026
T.C No : CML/25-26/T122135
Date Of Receipt : 18.02.2026
Analysis Commenced On: 18.02.2026
Analysis Completed On : 27.02.2026

Cust. Ref : SRF Dated : 17.02.2026
Lab No : 2657584/003

Sample Description : **Soil – 3 – Near Project Area (Agriculture Land)**
(as stated by customer)

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	4.56
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	286 µmhos/cm
03	**Texture :**		
	Clay	Gravimetric Method	29.5 %
	Sand		37.9 %
	Silt		32.6 %
04	Water Holding Capacity	By Gravimetric Method	36.3 %
05	Bulk Density	By Cylindrical Method	1.03 g/cm^3
06	Porosity	By Gravimetric Method	31.8 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	59.5 mg/kg
08	Magnesium as Mg		21.3 mg/kg
09	Manganese as Mn		24.6 mg/kg
10	Zinc as Zn		4.02 mg/kg
11	Boron as B		1.19 mg/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	58.7 mg/kg
13	Total Soluble Sulphate as SO_4	IS 2720 Part 27 : 1977 (Reaff:2015)	0.021 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	29.8 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Stannous chloride method)	5.79 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999	334.5 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		1.96 mg/kg
21	Iron as Fe		3.29 mg/kg
22	Organic Matter	IS : 2720 Part 22 : 1972	1.94 %
23	Organic Carbon	Methods of analysis of soils, plants, waters and fertilizers by HLS Tandon	1.13 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	25.6 meq/100g of soil

End of Report

For Chennai Mettex Lab Private Limited

Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District.

T.C Date : 27.02.2026
T.C No : CML/25-26/T122136
Date Of Receipt : 18.02.2026
Analysis Commenced On: 18.02.2026
Analysis Completed On : 27.02.2026

Cust. Ref : SRF Dated : 17.02.2026
Lab No : 2657584/004
Sample Description : **Soil – 4 – Keeranur (Residential Land)**
(as stated by customer)

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	5.64
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	312.0 µmhos/cm
03	**Texture :**		
	Clay	Gravimetric Method	29.0 %
	Sand		37.2 %
	Silt		33.8 %
04	Water Holding Capacity	By Gravimetric Method	42.2 %
05	Bulk Density	By Cylindrical Method	1.13 g/cm^3
06	Porosity	By Gravimetric Method	40.3 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	64.6 mg/kg
08	Magnesium as Mg		31.6 mg/kg
09	Manganese as Mn		22.7 mg/kg
10	Zinc as Zn		4.56 mg/kg
11	Boron as B		2.74 mg/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	182.0 mg/kg
13	Total Soluble Sulphate as SO_4	IS 2720 Part 27 : 1977 (Reaff:2015)	0.025 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	23.3 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Stannous chloride method)	3.56 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999	323.4 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		1.03 mg/kg
21	Iron as Fe		5.21 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	3.46 %
23	Organic Carbon	Methods of analysis of soils, plants, waters and fertilizers by H.L.S Tandon	2.01 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	42.1 meq/100g of soil

End of Report

For Chennai Mettex Lab Private Limited

[redacted]

Reviewed & Authorised by
V. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District.

T.C Date : 27.02.2026

T.C No : CML/25-26/T122137

Date Of Receipt : 18.02.2026

Analysis Commenced On: 18.02.2026

Analysis Completed On : 27.02.2026

Cust. Ref : SRF Dated : 17.02.2026

Lab No : 2657584/005

Sample Description : **Soil – 5 – Paranjervali (Barren Land)**
(as stated by customer)

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	5.33
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	294.0 µmhos/cm
03	**Texture :**		
	Clay	Gravimetric Method	30.2 %
	Sand		37.9%
	Silt		31.9%
04	Water Holding Capacity	By Gravimetric Method	40.8 %
05	Bulk Density	By Cylindrical Method	1.01 g/cm^3
06	Porosity	By Gravimetric Method	39.2 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	63.2 mg/kg
08	Magnesium as Mg		29.5 mg/kg
09	Manganese as Mn		24.8 mg/kg
10	Zinc as Zn		2.23 mg/kg
11	Boron as B		1.05/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	100 mg/kg
13	Total Soluble Sulphate as SO_4	IS 2720 Part 27 : 1977 (Reaff:2015)	0.019 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	22.7 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Stannous chloride method)	2.61 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999	362.8 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		1.97 mg/kg
21	Iron as Fe		6.03 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	2.34 %
23	Organic Carbon	Methods of analysis of soils, plants, waters and fertilizers by H.L.S Tandon	1.36 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	21.1 meq/100g of soil

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
M. SELVAKUMAR
Technical Manager
Authorised Signatory

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TEST REPORT

ISSUED TO: Thiru. Senthilkumar and Muthusamy

Site Address: M/s.Keeranur Rough Stone & Gravel Quarries S.F. No. 16/2 (P) & 16/3(P), 71/A, 16/2(Part), 16/3(Part), 19/1(Part), 19/4A, 19/4B & 15(Part), of Keeranur Village, Kangeyam Taluk, Tiruppur District.

T.C Date : 27.02.2026
T.C No : CML/25-26/T122138
Date Of Receipt : 16.02.2026
Analysis Commenced On: 18.02.2026
Analysis Completed On : 27.02.2026

Cust. Ref : SRF Dated : 17.02.2026
Lab No : 2657584/006
Sample Description : Soil – 6 - Sivanmalai (Barren Land)
(as stated by customer)

S. No	Test Parameters	Protocols	Results
01	pH @ 25°C	IS 2720 Part 26 - 1987 (Reaff:2016)	5.67
02	Conductivity @ 25°C	IS 14767 - 2000 (Reaff : 2016)	299 µmhos/cm
03	**Texture :**		
	Clay	Gravimetric Method	31.0 %
	Sand		36.9 %
	Silt		32.1 %
04	Water Holding Capacity	By Gravimetric Method	39.9 %
05	Bulk Density	By Cylindrical Method	1.04 g/cm^3
06	Porosity	By Gravimetric Method	37.8 %
07	Calcium as Ca	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	53.6 mg/kg
08	Magnesium as Mg		26.4 mg/kg
09	Manganese as Mn		17.9 mg/kg
10	Zinc as Zn		3.4 mg/kg
11	Boron as B		1.24 mg/kg
12	Chloride as Cl	APHA 23rd Edn 2019 4500 Cl B	7.8 mg/kg
13	Total Soluble Sulphate as SO_4	IS 2720 Part 27 : 1977 (Reaff:2015)	0.015 %
14	Potassium as K	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	18.7 mg/kg
15	Total Phosphorus as P	IS 10158 : 1982 (Stannous chloride method)	1.09 mg/kg
16	Total Nitrogen as N	IS 14684 : 1999	325.7 mg/kg
17	Cadmium as Cd	USEPA 3050 B – 1996 & USEPA 6010 C - 2000	BDL (DL : 1.0 mg/kg)
18	Total Chromium as Cr		BDL (DL : 1.0 mg/kg)
19	Copper as Cu		BDL (DL : 1.0 mg/kg)
20	Lead as Pb		1.0 mg/kg
21	Iron as Fe		4.98 mg/kg
22	Organic Matter	IS : 2720 Part 22: 1972	2.14 %
23	Organic Carbon	Methods of analysis of soils, plants, waters and fertilizers by HLS Tandon	1.24 %
24	Cation Exchange Capacity	USEPA 9080 – 1986	17.7 meq/100g of soil

End of Report

For Chennai Mettex Lab Private Limited

Reviewed & Authorised by
M. SELVAKUMAR
Technical Manager
Authorised Signatory

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Certificate of Accreditation

Geo Exploration and Mining Solutions, Salem

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

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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.